REGULATORY IMPACT ANALYSES OF ENVIRONMENTAL JUSTICE EFFECTS

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I. INTRODUCTION

The environmental justice movement was launched in 1982, when residents of Warren County, N.C., protested the construction of a hazardous waste landfill in their predominantly African-American community.[1] Minority communities' sense that such hazardous facilities are found disproportionately in their communities was soon borne out by two landmark studies by the United States General Accounting Office (GAO) in 1983[2] and the United Church of Christ in 1987.[3] Since then, research has shown consistently that poor and minority households tend to live in more polluted neighborhoods. This correlation appears to be quite robust to the statistical methods employed and to the type of pollution considered, including hazardous waste facilities, landfills, large air

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1. For an introduction to the topic, including these historical origins, see generally ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY (2d ed. 1994) [hereinafter BULLARD, DUMPING IN DIXIE].

2. UNITED STATES GEN. ACCOUNTING OFFICE, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES (1983) [hereinafter GAO REPORT].

3. UNITED CHURCH OF CHRIST, COMM'N FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES (1987).

polluters, and the concentration of air pollutants.[4] In short, the correlation qualifies as a "stylized fact" as much as anything in social science.

This finding of a disproportionate environmental burden borne by the poor and by people of color motivated President Clinton to issue Executive Order (EO) 12898.[5] Still in force, the order requires nondiscrimination in federal environmental programs and focuses federal resources, such as the United States Environmental Protection Agency's (EPA's) Brownfields Program, on low-income and minority communities.[6] EPA defines environmental justice as

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4. For the classic studies on the location of landfills and hazardous waste facilities, see generally ROBERT D. BULLARD ET AL., UNITED CHURCH OF CHRIST, TOXIC WASTES AND RACE AT TWENTY: 1987-2007 (2007); UNITED CHURCH OF CHRIST, *supra* note 3; GAO REPORT, *supra* note 2. For more recent work, see generally BENJAMIN A. GOLDMAN & LAURA FITTON, TOXIC WASTES AND RACE REVISITED (1994); Brett M. Baden & Don L. Coursey, *The Locality of Waste Sites within the City of Chicago: A Demographic, Social, and Economic Analysis,* 24 RESOURCE & ENERGY ECON. 53 (2002); Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?,* 103 YALE L.J. 1383 (1994). On the proximity of large polluters, see generally H. Spencer Banzhaf, Joshua Sidon & Randall P. Walsh, *Environmental Gentrification and Discrimination, in* THE POLITICAL ECONOMY OF ENVIRONMENTAL JUSTICE (H. Spencer Banzhaf ed., forthcoming July 2012); Evan J. Ringquist, *Equity and the Distribution of Environmental Risk: The Case of TRI Facilities,* 78 SOC. SCI. Q. 811 (1997); James L. Sadd et al., *"Every Breath You Take…": The Demographics of Toxic Air Releases in Southern California*, 13 ECON. DEV. Q. 107 (1999); Ann Wolverton, *The Role of Demographic and Cost-Related Factors in Determining Where Plants Locate — A Tale of Two Texas Cities, in* THE POLITICAL ECONOMY OF ENVIRONMENTAL JUSTICE (H. Spencer Banzhaf ed., forthcoming July 2012). On the emissions of air pollutants, see generally Seema Arora & Timothy N. Cason, *Do Community Characteristics Influence Environmental Outcomes? Evidence from the Toxics Release Inventory*, 65 S. ECON. J. 691 (1999); Nancy Brooks & Rajiv Sethi, *The Distribution of Pollution: Community Characteristics and Exposure to Air Toxics*, 32 J. ENVTL. ECON. & MGMT. 233 (1997). On estimated air pollution concentrations, see generally Michael Ash & T. Robert Fetter, *Who Lives on the Wrong Side of the Environmental Tracks? Evidence from the EPA's Risk-Screening Environmental Indicators Model*, 85 SOC. SCI. Q. 441 (2004); Rachel Morello-Frosch, Manuel Pastor & James Sadd, *Environmental Justice and Southern California's "Riskscape": The Distribution of Air Toxics Exposures and Health Risks among Diverse Communities,* 36 URB. AFF. REV. 551 (2001). For the classic book-length introduction to the literature over-all, see generally BULLARD, DUMPING IN DIXIE, *supra* note 1. For more recent reviews and discussion of this literature, see generally THE POLITICAL ECONOMY OF ENVIRONMENTAL JUSTICE (H. SPENCER BANZHAF ed., forthcoming July 2012); William Bowen, *An Analytical Review of Environmental Justice Research: What Do We Really Know?*, 29 ENVTL. MGMT. 3 (2002); Douglas S. Noonan, *Evidence of Environmental Justice: A Critical Perspective on the Practice of EJ Research and Lessons for Policy Design*, 89 SOC. SCI. Q. 1153 (2008); Evan J. Ringquist, *Assessing Evidence of Environmental Inequities: A Meta-Analysis,* 24 J. POL'Y ANALYSIS & MGMT. 223 (2005); Evan J. Ringquist, *Environmental Justice: Normative Concerns, Empirical Evidence, and Government Action*, *in* ENVIRONMENTAL POLICY: NEW DIRECTIONS FOR THE TWENTY-FIRST CENTURY 239 (Norman J. Vig & Michael E. Kraft eds., 6th ed. 2006).

5. Exec. Order No. 12,898, 59 Fed. Reg. 7,629 (Feb. 11, 1994).

6. *See* UNITED STATES ENVTL. PROT. AGENCY, ADDRESSING ENVIRONMENTAL JUSTICE IN EPA BROWNFIELDS COMMUNITIES (2009), *available at* http://epa.gov/brownfields/policy/ej_brochure_2009.pdf; UNITED STATES ENVTL. PROT. AGENCY, FINAL GUIDANCE FOR INCORPORATING ENVIRONMENTAL JUSTICE CONCERNS IN EPA'S NEPA COMPLIANCE ANALYSES (1998), *available at* http://www.epa.gov/region1/ej/pdfs/ej_guidance_nepa_epa0498.pdf [hereinafter EPA GUIDANCE].

> the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.[7]

This interpretation predominantly situates environmental justice within the larger concept of procedural justice, in which EPA's rulemaking and enforcement processes must be fair and open to the participation of all. But EPA's interpretation also hints at the goal of distributive justice, according to which the distribution of environmental quality should be fair and equitable.[8]

In practice, however, it is impossible to consider the environmental justice order in isolation. After all, it is but one in a series of executive orders that have shaped the promulgation of environmental regulations. Perhaps the most important was President Reagan's EO 12291, which required a Regulatory Impact Analysis (RIA), including an economic analysis of benefits and costs, for all major federal rules.[9] President Clinton's EO 12866 revised this order in some respects, emphasizing the non-quantitative effects of rules as well, but maintained the benefit-cost requirement for all "economically significant" rules, defined as those having costs greater than $100 million.[10] More recently, President Obama has affirmed these principles in his EO 13563.[11] These orders have implicitly made economic efficiency a criterion for evaluating potential actions to protect the environment. Historically, such efficiency

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7. United States Envtl. Prot. Agency, *Environmental Justice*, EPA.GOV, http://www.epa.gov/environmentaljustice/index.html (last visited Feb. 6, 2012) [hereinafter EPA, *Environmental Justice*].

8. But note EPA's aspiration that "everyone enjoys the same degree of protection" is subtly distinct from "enjoys the same level of environmental quality." *Id.* Government agencies are not in the business of promising utopia. On the tentative steps taken here toward a concept of distributive justice, see generally Matthew D. Adler, *Risk Equity: A New Proposal,* 32 HARV. ENVTL. L. REV. 1 (2008). For a more general discussion of the relationship between environmental justice and these more fundamental notions of justice, see generally Sheila Foster, *Justice from the Ground Up: Distributive Inequities, Grassroots Resistance, and the Transformative Politics of the Environmental Justice Movement*, 86 CALIF. L. REV. 775 (1998).

9. Exec. Order No. 12,291, 46 Fed. Reg. 13,193, 13,193-94 (Feb. 17, 1981).

10. Exec. Order No. 12,866, 58 Fed. Reg. 51,735, 51,735, 51,738 (Sept. 30, 1993).

11. Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 21, 2011).

considerations have carried much more weight than other considerations, including environmental justice.[12]

The environmental justice and benefit-cost executive orders, like the underlying policy objectives of fairness and efficiency that respectively motivate them, interact in important ways. For example, RIAs are a crucial part of the opportunity for public participation, providing critical information on the benefits and costs of proposed rules. Yet EPA's standard practice, like that of other agencies, is to document only *aggregate* benefits and costs, to whomsoever they may accrue. This article argues that expanding RIAs to include information on the *distribution* of benefits and costs of regulatory actions would provide environmental justice communities (and other communities too) with crucial information they need to participate fully in the process. Accordingly, providing such information would enhance procedural justice.

By the same token, documenting distributional effects in RIAs would provide the information agencies need to choose rules that would foster environmental equity as well as efficiency, enhancing distributive justice. Although such distributional effects are routinely omitted from benefit-cost analyses, both President Clinton's EO 12866 and President Obama's more recent EO 13563 have explicitly called for them to be included in such analyses, and there is in fact ample precedent for doing so. Thus, the over-arching theme of this article is that, far from necessarily being at loggerheads, the environmental justice and benefit-cost executive orders can mutually interact to improve environmental policy-making.

This article begins by exploring environmental justice objectives as they have been incorporated into RIAs to date. It suggests that these objectives have been too limited. In particular, it concludes that EPA's emphasis on providing *negative assurance* that its programs do not exacerbate environmental justice concerns hampers its ability to consider environmental justice factors in many regulatory settings. In addition, EPA's focus on environmental justice considerations at discrete "sites" and the surrounding local "communities" limits the domain in which environmental justice considerations come into play. Recognizing these limitations, the EPA has recently pledged to integrate environmental

12. For discussion of the role of this benefit-cost requirement in environmental regulations, see generally CASS R. SUNSTEIN, THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION (2002); ENVIRONMENTAL POLICY UNDER REAGAN'S EXECUTIVE ORDER: THE ROLE OF BENEFIT-COST ANALYSIS (V. Kerry Smith ed., 1984); REFORMING REGULATORY IMPACT ANALYSIS (Winston Harrington et al. eds., 2009); Robert W. Hahn, Sheila M. Olmstead & Robert N. Stavins, *Environmental Regulation in the 1990s: A Retrospective Analysis,* 27 HARV. ENVTL. L. REV. 377 (2003).

justice considerations into the "fabric" of its activities to develop regulatory actions.[13]

The paper argues that a more fruitful approach would simply be to think in terms of distributional impacts. In particular, RIAs should compute the benefits and costs of an action on specific demographic groups, as well as the aggregate benefits and costs. Crucially, costs, including indirect costs, must be documented as well as benefits, as they are every bit as relevant for the welfare of affected groups.

II. ENVIRONMENTAL JUSTICE OBJECTIVES AND REGULATORY ACTIONS

EPA has stated that it "will work to ensure that environmental justice is incorporated into the Agency's regulatory process"[14] and more recently that it will integrate environmental justice considerations into the "fabric" of its regulatory activities.[15] Of course, conducting a RIA is an integral part of the regulatory process, yet in comparison to the prodigious opportunities for incorporating environmental justice into an RIA, EPA's vision appears to be quite limited. EPA's *Environmental Justice Strategy* begins a statement of its objectives by stating: "No segment of the population, regardless of race, color, national origin, or income, *as a result of EPA's policies, programs, and activities*, suffers disproportionately from adverse human health or environmental effects . . . ."[16] That is, EPA appears to be focused more on avoiding exacerbating environmental justice concerns than on alleviating pre-existing concerns. In other words, first do no harm.[17]

Unfortunately, when it has incorporated even these limited environmental justice objectives into its RIAs, EPA has tended to stop at perfunctory, pro forma assertions that it is not creating or

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13. UNITED STATES ENVTL. PROT. AGENCY, EPA'S ACTION DEVELOPMENT PROCESS: INTERIM GUIDANCE ON CONSIDERING ENVIRONMENTAL JUSTICE DURING THE DEVELOPMENT OF AN ACTION 3-5 (2010), *available at* http://www.epa.gov/environmentaljustice/resources/policy/considering-ej-in-rulemaking-guide-07-2010.pdf [hereinafter EPA ACTION DEVELOPMENT GUIDE].

14. UNITED STATES ENVTL. PROT. AGENCY, THE EPA'S ENVIRONMENTAL JUSTICE STRATEGY 15 (1995), *available at* http://www.epa.gov/compliance/ej/resources/policy/ej_strategy_1995.pdf [hereinafter EPA JUSTICE STRATEGY].

15. EPA ACTION DEVELOPMENT GUIDE, s*upra* note 13.

16. *Id.* at 3 (emphasis added).

17. It might be argued that this focus is found in EO 12,898 itself, which mandates that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects *of its programs, policies, and activities* on minority populations and low-income populations." Exec. Order No. 12,898, 59 Fed. Reg. 7,629, 7,629 (Feb. 11, 1994) (emphasis added). However, as discussed *infra*, in the context of the benefit-cost executive orders, EO 12,898 can be read as providing a basis for more positive steps.

exacerbating an environmental injustice. For example, the RIA for arsenic in drinking water consists of these meager 116 words:

> Executive Order 12898 establishes a Federal policy for incorporating environmental justice into Federal agency missions by directing agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The Executive Order requires the Agency to consider environmental justice issues in the rulemaking and to consult with Environmental Justice (EJ) stakeholders.
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> The Agency has considered environmental justice related issues concerning the potential impacts of this regulation and has determined that there are no substantial disproportionate effects. Because the arsenic rule applies to all community water systems, the majority of the population, including minority and low-income populations will benefit from the additional health protection.[18]

An only slightly expanded treatment is given in the RIA for disinfection byproducts.[19] These recent RIAs have not even documented this absence of harm, but instead have only given negative assurance that no evidence of harm has come to EPA's attention. Thus, even if EPA confines itself to the objective "do no harm," there is room for improved documentation, for moving from "negative assurance" to "positive assurance" that it is doing no harm.

One reason for moving beyond simply asserting negative assurance toward actually documenting the distributional effects of an action is that it would facilitate informed citizen involvement and comment. Again, the importance of this involvement was emphasized in EO 12898 itself, which emphasizes that agency strategies for environmental justice should,

> *at a minimum*: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public par-

18. UNITED STATES ENVTL. PROT. AGENCY, PROPOSED ARSENIC IN DRINKING WATER RULE: REGULATORY IMPACT ANALYSIS § 8.9 (2000), *available at* http://yosemite.epa.gov/ee/epa/ria.nsf/vwAN/A200012B.pdf/$file/A200012B.pdf [hereinafter EPA, ARSENIC RIA].

19. UNITED STATES ENVTL. PROT. AGENCY, ECONOMIC ANALYSIS FOR THE FINAL STAGE 2 DISINFECTANTS AND DISINFECTION BYPRODUCTS RULE § 8.10 (2005), *available at* www.epa.gov/safewater/disinfection/stage2/pdfs/anaylsis_stage2_ecconomic_main.pdf [hereinafter EPA, ECONOMIC ANALYSIS FOR DISINFECTANTS].

> ticipation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations.[20]

EPA likewise recognized the role of public participation when it noted that environmental justice requires the "meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development . . . of environmental laws, regulations, and policies."[21] Its *Environmental Justice Strategy* elaborates, "[t]hose who live with environmental decisions—community residents, State, Tribal, and local governments, environmental groups, businesses—must have every opportunity for public participation in the making of those decisions. An informed and involved community is a necessary and integral part of the process to protect the environment."[22] Of course, to be full partners in decision making, these groups must have access to relevant data about the effects of these environmental actions, as EPA also recognizes: "EPA will work with affected communities, State, Tribal, and local governments, and others to have the best possible information available to identify and address disproportionately high and adverse human health or environmental effects on minority populations and low-income populations."[23]

Surely, the "best possible information" would include data on the distributional effects of a policy. Again, EPA seemingly recognizes this when it writes: "EPA will collect, analyze, and disseminate data that will compare environmental and human health risks to populations identified by race, national origin, or income."[24] But what could be more appropriate than to incorporate this information directly into its RIAs, which provide the critical information for both technical analysis of and public comment on proposed rules?

But there is also good reason to move beyond this defensive posture. "First do no harm" has always been wise counsel, but Hippocrates would never have had much of a medical career if his practice had ended there. Like the physician who acts to enhance his patient's health, EPA (or any federal regulatory agency) takes actions to achieve national objectives. As explicitly embodied in benefit-cost analysis, one of those objectives is to maximize an

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20. 59 Fed. Reg. at 7,630 (emphasis added).
21. EPA, *Environmental Justice*, *supra* note 7.
22. EPA JUSTICE STRATEGY, *supra* note 14, at 3.
23. *Id.* at 10.
24. *Id.* at 11.

aggregation of individuals' welfare. But in addition to this efficiency objective, a more equitable distribution of welfare is also a social objective in our society.

Accordingly, the analysis in an RIA should provide the information needed to design regulations with equity in mind as well as efficiency. There is ample precedent for doing so. Of course, EO 12898 does not explicitly require distributional analysis in RIAs, but the actions it specifically mentions are characterized as a *minimum* requirement of federal agencies.[25] Because RIAs are a crucial source for public comment, by stressing the public participation of all groups in the development of environmental regulations, the order implicitly requires the documentation of such effects in RIAs.

As previously noted, RIAs are governed primarily by benefit-cost orders.[26] But this overlap poses no problem; to the contrary, the environmental justice rationale for documenting distributional effects actually reinforces pre-existing precedents for doing so within benefit-cost analysis, taken on its own terms. Most recently, President Obama's recent EO 13563, issued January 18, 2011, requires the benefit-cost principle include "distributive impacts and equity."[27] This fulfills his earlier call to Office of Management and Budget (OMB) to produce a set of recommendations for a new Executive Order, with attention to "the role of distributional considerations, fairness, and concern for the interests of future generations."[28] President Obama was not the first to make this call. In setting forth a "statement of regulatory philosophy and principles," President Clinton's Executive Order 12866 included, "distributive impacts" and "equity" as part of benefits, broadly construed, and President Bush left this order intact. [29]

In calling for equity considerations to be folded into benefit-cost analysis, these last three presidents have made explicit a principle that has been implicit in the United States federal government for many years. The EPA's benefit-cost guidance documents recognize the importance of distributional considerations however it rarely incorporates them in practice.[30]

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25. *See supra* text accompanying note 20.

26. *See supra* text accompanying note 12.

27. Exec. Order No. 13,563, 76 Fed. Reg. 3,821, 3,821 (Jan. 21, 2011).

28. REFORMING REGULATORY IMPACT ANALYSIS, *supra* note 12, at 12.

29. Exec. Order No. 12,866, 58 Fed. Reg. 51,735, 51,735 (Sept. 30, 1993). Amendments to EO 12,866 by President Bush left this language intact. *See* Exec. Order No. 13,258, 67 Fed. Reg. 9,385 (Feb. 26, 2002) *and* Exec. Order No. 13,422, 72 Fed. Reg. 2,763 (Jan. 18, 2007), *revoked by* Exec. Order 13,497, 74 Fed. Reg. 6,113 (Jan. 30, 2009).

30. UNITED STATES ENVTL. PROT. AGENCY, GUIDELINES FOR PREPARING ECONOMIC ANALYSES § 11.1.4 (2010), *available at* http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf.

More substantively, the United States Water Resource Council has long allowed, though not required, effects on the income distribution to be included in benefit-cost analyses of water projects, and the OMB approved this practice at least as early as 1983.[31] For example, OMB has recommended that "[w]hen benefits and costs have significant distributional effects, these effects should be analyzed and discussed, along with the analysis of net present value."[32] It elaborates:

> Analysis should aim at identifying the relevant gainers and losers from policy decisions. Effects on the preexisting assignment of property rights by the program under analysis should be reported. Where a policy is intended to benefit a specified subgroup of the population, such as the poor, the analysis should consider how effective the policy is in reaching its targeted group.[33]

Thus, the principle of incorporating distributional considerations into the United States' benefit-cost analysis does not arise for the first time with the question of environmental justice.

Nor is the United States government alone in adopting this principle. Indeed, other nations, like the United Kingdom, have incorporated distributional issues into benefit-cost analysis much more effectively.[34] Furthermore, academic experts in benefit-cost analysis have called for this approach for decades,[35] and they

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31. UNITED STATES WATER RES. COUNCIL, ECONOMIC AND ENVIRONMENTAL PRINCIPLES AND GUIDELINES FOR WATER AND RELATED LAND RESOURCES IMPLEMENTATION STUDIES § 1.4.9 (1983), *available at* http://www.usace.army.mil/CECW/Documents/pgr/pg_1983.pdf; OFFICE OF MGMT. & BUDGET, BUDGET CIRCULAR NO. A-94 REVISED (1992), *available at* http://www.whitehouse.gov/omb/circulars_a094/.

32. OFFICE OF MGMT. & BUDGET, *supra* note 31, § 10.

33. *Id.* § 10(a).

34. *See* H.M. TREASURY, THE GREEN BOOK: APPRAISAL AND EVALUATION IN CENTRAL GOVERNMENT 24-25, 91-96 (2003), *available at* http://www.hm-treasury.gov.uk/d/green_book_complete.pdf.

35. For a history of efforts to incorporate distributional effects in the academic literature, see generally H. Spencer Banzhaf, *Objective or Multi-objective? Two Historically Competing Visions for Benefit-Cost Analysis,* 85 LAND ECON. 3 (2009) [hereinafter Banzhaf, *Objective or Multi-objective?*]. For specific early instances of academic experts and practitioners of benefit-cost analysis incorporating distributional effects, see for example, PARTHA DASGUPTA ET AL., GUIDELINES FOR PROJECT EVALUATION (1972); ROBERT H. HAVEMAN, WATER RESOURCE INVESTMENT AND THE PUBLIC INTEREST (1965); ARTHUR MAASS ET AL., DESIGN OF WATER-RESOURCE SYSTEMS: NEW TECHNIQUES FOR RELATING ECONOMIC OBJECTIVES, ENGINEERING ANALYSIS, AND GOVERNMENTAL PLANNING (1962); Burton A. Weisbrod, *Income Redistribution Effects and Benefit-Cost Analysis, in* PROBLEMS IN PUBLIC EXPENDITURE ANALYSIS 177 (Samuel B. Chase, Jr. ed., 1968); A. Myrick Freeman III, *Income Distribution and Planning for Public Investment*, 57 AM. ECON. REV. 495 (1967) [hereinafter Freeman, *Income Distribution*]; A. Myrick Freeman III, *Six Federal Reclamation Projects and the Distribution of Income,* 3 WATER RESOURCES RES. 319 (1967) [hereinafter Freeman, *Six Federal Reclamation Projects*]; Arnold C. Harberger, *On the Use of Distributional Weights in Social Cost-Benefit Analysis,* 86 J. POL. ECON. S87 (1978).

continue to endorse it.[36] All these authorities—political, academic, and historical—have understood that documenting distributional effects is essential for understanding the effect of regulatory actions on all policy objectives, including distributional ones as well as efficiency. The relative newer objective of environmental justice only reinforces the importance of documenting these effects, both for the sake of public participation and, ultimately, for the design of regulations.

III. DIFFUSING THE SITUATION

EPA's approach to environmental justice is limited in another respect as well. In particular, it has tended to focus mainly on local environmental problems, discrete in space. For example, EPA's *Environmental Justice Strategy* and its *Toolkit for Assessing Potential Allegations of Environmental Injustice* speak in terms of "major facilities" and "sites."[37] It also emphasizes activities such as brownfields remediation, the permitting of hazardous waste facilities under the Resource Conservation and Recovery Act (RCRA), or the permitting of air emissions under the Clean Air Act.[38]

This focus is understandable, for since its origins in the 1982 protests in Warren County, N.C. over hazardous waste siting and in the early research of Robert Bullard on solid waste siting in Houston, the three pillars supporting environmental justice—activism, research, and policy—have traditionally focused on discrete sources of pollution to be found at specific points in space.[39] This local perspective greatly simplifies questions about

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36. *See, e.g.*, REFORMING REGULATORY IMPACT ANALYSIS*, supra* note 12; Adler, *supra* note 8; Kenneth J. Arrow et al., *Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation?*, 272 SCI. 221, 222 (1996); John D. Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395, 524-26 (2008); Olof Johansson-Stenman, *Distributional Weights in Cost-Benefit Analysis—Should We Forget about Them?*, 81 LAND ECON. 337 (2005) [hereinafter Johansson-Stenman, *Distributional Weights*]; Olof Johansson-Stenman, *On the Value of Life in Rich and Poor Countries and Distributional Weights Beyond Utilitarianism,* 17 ENVTL. & RESOURCE ECON. 299 (2000) [hereinafter Johansson-Stenman, *On the Value of Life*].

37. EPA JUSTICE STRATEGY, *supra* note 14, at 10-11; UNITED STATES ENVTL. PROT. AGENCY, TOOLKIT FOR ASSESSING POTENTIAL ALLEGATIONS OF ENVIRONMENTAL INJUSTICE *passim* (2004), *available at* www.epa.gov/compliance/ej/resources/policy/ej-toolkit.pdf [hereinafter EPA TOOLKIT].

38. EPA JUSTICE STRATEGY, *supra* note 14, at 12-14, 16-21; EPA TOOLKIT, *supra* note 37, *passim*. There are some exceptions: for example, in addition to brownfields cleanup and enforcement of pollution permits, EPA's environmental justice demonstration projects include abatement of lead in paint and plumbing and general education programs. EPA JUSTICE STRATEGY, *supra* note 14, at 16-21.

39. The first generation of research in the 1980s, following the Warren Co. episode, followed up with examinations of communities near hazardous waste facilities. *See* GAO REPORT, *supra* note 2; UNITED CHURCH OF CHRIST, *supra* note 3. Soon after, the second generation of studies in the 1990s looked largely at large polluters listed in the Toxics Release

the appropriate spatial scale of analysis, though it by no means eliminates them.[40]

But this local approach is also limiting, making it difficult to think about diffuse pollutants, widely dispersed through the water or air. And many—perhaps most—pollutants fall into this category. Even when released from point sources, many pollutants disperse through water or air. Examples include municipal water supplies contaminated with disinfectants or disinfection byproducts or both, which disperse throughout the service area, and the long-range transport of air pollutants like fine particulates and ozone. Other pollutants are widely dispersed even at the point of emissions. Examples include air pollution from mobile sources and pathogens like cryptosporidium and giardia from livestock operations. Arsenic in drinking water is a particularly striking example, as it may enter water supplies through groundwater contaminated by arsenic occurring naturally in soil and rock, as well as from industry and agriculture.[41] Such pollutants range from EPA's historical priorities (pathogens in drinking water, criteria air pollutants) to more recent concerns (disinfection byproducts, air toxics).

And, in fact, the academic literature has long moved on from the bread-and-butter work of comparing the demographics around RCRA facilities, TRI facilities, or similar discrete sites. For example, Michael Ash and Robert Fetter have compared the distribution of modeled concentrations of air toxics—that is an entire spatial surface of pollution—to the distribution of demographic groups across space.[42] Similarly, others have compared the spatial distribution of ozone, a criteria air pollutant, to the spatial distribution of demographic groups.[43]

Environmental justice considerations are still relevant to such diffuse pollutants because there will still be spatial variation in the effects of the action—spatial variation which may be correlated with demographics. Such correlations may arise for at least three

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Inventory. *See, e.g.*, Arora & Cason, *supra* note 4; Brooks & Sethi, *supra* note 4; Sadd et al., *supra* note 4.

40. *See generally* Douglas L. Anderton et al., *Environmental Equity: The Demographics of Dumping*, 31 DEMOGRAPHY 229 (1994); Brett M. Baden, Douglas S. Noonan & Rama Mohana R. Turaga, *Scales of Justice: Is There a Geographic Bias in Environmental Equity Analysis?*, 50 J. ENVTL. PLAN. & MGMT. 163 (2007); Paul Mohai & Robin Saha, *Reassessing Racial and Socioeconomic Disparities in Environmental Justice Research*, 43 DEMOGRAPHY 383 (2006).

41. U.S. Envtl. Prot. Agency, *Basic Information about the Arsenic Rule*, EPA.GOV, www.epa.gov/environmentaljustice/index.html (last visited Feb. 6, 2012).

42. Ash & Fetter, *supra* note 4.

43. Brooks Depro & Christopher Timmins, *Residential Mobility and Ozone Exposure: Challenges for Environmental Justice Policy*, *in* THE POLITICAL ECONOMY OF ENVIRONMENTAL JUSTICE (H. Spencer Banzhaf ed., forthcoming July 2012); Florenz Plassmann & Neha Khanna, *Household Income and Pollution: Implications for the Debate about the Environmental Kuznets Curve Hypothesis*, 15 J. ENV'T & DEV. 22 (2006).

reasons. First, the action may affect pollution differently in different locations, and those effects may be spatially correlated with demographic patterns. Second, even if the effects of an action on pollution levels were uniform in space, other spatial differences may imply differences in the actual outcomes of interest. For example, if the concentration-response function relating pollution levels to health effects or other impacts is non-linear, then variation in background levels of pollution may result in different effects of even a uniform change in pollution. (For instance, there may be no effect of a decrease in pollution if it is already below a threshold.) Similarly, differences in background weather or climate may interact with a given change in pollution to produce differential effects. Or, differences in local residents' opportunities to avoid or mitigate pollution may imply different effects from a given change in pollution. For example, access to mass transit, air conditioning, or health care may differ across space. If these opportunities interact with pollution levels in important ways, and if they are correlated in space with demographics, then again the impact of an action may differ across groups.

Third and finally, even with identical changes in pollution and identical background conditions, different groups may have differential responses to a given change in pollution because of something about the group itself. Such group-level responses could arise from genetic differences, differences in economic conditions, differences in background health and nutrition, or any combination of the three. Sometimes there is evidence of such differential impacts on sensitive subgroups like children or women of childbearing age, but typically our understanding of concentration-response relationships is insufficient to document differential effects.

The differential effects of concern in the context of environmental justice have always been for particular groups of people: low-income and minority populations, including African-Americans, Hispanics, Asian-Americans, and Native Americans.[44] But traditionally, environmental justice analysts and researchers have taken their logical unit of analysis to be the "community," located in a fairly confined place. For example, one might define a community which is proximate to a hazardous waste facility or that is surrounded by a number of pollution sources. One might then look for a suitable "reference community" for purposes of

44. Naturally, the self-claimed goal (and title) of EO 12,898 itself is "To Address Environmental Justice in Minority Populations and Low-Income Populations." Exec. Order No. 12,898, 59 Fed. Reg. 7,629 (Feb. 11, 1994). For EPA's definition of "minority" in this context, see EPA TOOLKIT, *supra* note 37, at 17, 44.

comparison. One then looks at the demographic groups living in these communities.[45]

In the context of dispersed pollutants, it is better to reverse this logic. That is, the logical unit of analysis should be the group itself. One would then analyze the effects of an action on different groups, partly as a function of the communities in which they live. Put in these terms, incorporating environmental justice considerations into RIAs boils down to assessing the distributional impacts of an action. And such distributional considerations have a long history in benefit-cost analysis.[46] To be sure, environmental justice is a specific instance of such distributional analyses, one focused on environmental applications and on the demographic groups that have been identified by previous environmental justice research, by the communities themselves, and by agency guidance as being most at risk or facing the greatest cumulative burden of exposure to pollution. But as it is a special case of this wider issue, environmental justice analysts have the advantage of being able to tap into this larger literature.

One common argument against incorporating distributional effects into benefit-cost analysis is that government projects and regulations should be based only on efficiency, while distributional considerations should be dealt with in other policy settings, especially the tax code, welfare programs, and so forth. This perspective is implicit in the Kaldor-Hicks potential compensation tests commonly invoked in benefit-cost analysis, which requires only that losers from an action can *potentially* be compensated for their losses out of the winners' gains, not that they are actually made whole inside the policy.[47] Similarly, it is implicit in Richard Musgrave's three-branch theory of government (allocation, distribution, stabilization), as enshrined in his classic textbook on public finance.[48] It is also implicit in more modern work on optimal taxation, in which distributional effects are considered around the optimum.[49]

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45. For this approach in the classic studies, see for example, BULLARD, DUMPING IN DIXIE, *supra* note 1; GAO REPORT, *supra* note 2; UNITED CHURCH OF CHRIST, *supra* note 3; Been, *supra* note 4. For this approach in EPA's guidance, see for example, EPA TOOLKIT, *supra* note 37, at 58-63.

46. *See* sources cited s*upra* notes 34-36.

47. *See* J. R. Hicks, *The Foundations of Welfare Economics*, 49 ECON. J. 696 (1939); Nicholas Kaldor, *Welfare Propositions of Economics and Interpersonal Comparisons of Utility*, 49 ECON. J. 549 (1939).

48. *See generally* RICHARD A. MUSGRAVE, THE THEORY OF PUBLIC FINANCE (1959).

49. *See, e.g.*, Aanund Hylland & Richard Zeckhauser, *Distributional Objectives Should Affect Taxes but not Program Choice or Design*, 81 SCANDINAVIAN J. ECON. 264 (1979); Louis Kaplow, *On the (Ir)Relevance of Distribution and Labor Supply Distortion to Government Policy*, 18 J. ECON. PERSP. 159 (2004).

To this argument there are two rejoinders. First, actual compensations for the distributional effects of government projects and regulations are exceedingly rare, if not an outright fiction. At any rate, the tax system is far from optimal, so any regulatory action that effects a desirable transfer in more efficient ways than is being done through the tax code should be given credit for this achievement.[50] Second, as Stephen Marglin has argued, socially we care not only about the size of the pie and its distribution, but also the *method* of slicing it. Many would prefer to see a disadvantaged group aided through jobs or environmental protection than through the dole, for example.[51] The simplest way of making the point is that if redistribution is a national objective, then any regulatory action that promotes this objective, ceteris paribus, is obviously preferable to one that does not.

Perhaps the best example of recent work incorporating distributional issues into benefit-cost analyses of environmental regulations is work by Ronald Shadbegian, Wayne Gray, and Cynthia Morgan on the distributional effects of the sulfur dioxide trading program enacted in the 1990 Clean Air Act Amendments.[52] They compute estimated changes in particulate matter, and the consequent changes in mortality, at the county level. Using a model of the United States electricity sector and its costs of abating pollution,[53] they compute control costs at the state level.[54] Then, assuming that costs are passed on to consumers and that all households consume the same amount of electricity, they compute per-capita costs at the state level.[55] Finally, they compute estimated net benefits by different demographic groups, including African-Americans, Hispanics, and the poor.[56] More recently, other researchers have undertaken a still more detailed distributional analysis of the highway diesel fuel rule, but do not consider benefits and costs.[57]

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50. *See* Joel Slemrod & Shlomo Yitzhaki, *Integrating Expenditure and Tax Decisions: The Marginal Cost of Funds and the Marginal Benefit of Projects*, 54 NAT'L TAX J. 189 (2001).

51. Stephen A. Marglin, *Objectives of Water-Resource Development: A General Statement, in* DESIGN OF WATER-RESOURCE SYSTEMS: NEW TECHNIQUES FOR RELATING ECONOMIC OBJECTIVES, ENGINEERING ANALYSIS, AND GOVERNMENTAL PLANNING 17-18, 66-67 (1962).

52. Ronald J. Shadbegian et al., *Benefits and Costs from Sulfur Dioxide Trading: A Distributional Analysis*, *in* ACID IN THE ENVIRONMENT: LESSONS LEARNED AND FUTURE PROSPECTS (Gerald R. Visgilio & Diana M. Whitelaw eds., 2007).

53. *See* A. DENNY ELLERMAN ET AL., CTR. FOR ENERGY & ENVTL. POLICY RESEARCH, EMISSIONS TRADING UNDER THE U.S. ACID RAIN PROGRAM: EVALUATION OF COMPLIANCE COSTS AND ALLOWANCE MARKET PERFORMANCE (1997).

54. Shadbegian et al., *supra* note 52, at 249-55.

55. *Id.* at 252-53.

56. *Id.* at 254-55.

57. Ellen Post et al., *Distributional Benefit Analysis of a National Air Quality Rule*, 8 INT'L J. ENVTL. RES. & PUB. HEALTH 1872 (2011). For the original RIA of the diesel rule, see UNITED STATES ENVTL. PROT. AGENCY, REGULATORY IMPACT ANALYSIS: HEAVY DUTY ENGINE AND VEHICLE STANDARDS AND HIGHWAY DIESEL FUEL SULFUR CONTROL REQUIRE-

Many of EPA's RIAs are already detailed enough, and make use of scientific and economic models sufficiently rich enough, that extending them to incorporate such distributional issues would require only modest additional effort. EPA's RIA for its arsenic rule and its disinfectants and disinfection byproducts rule are cases in point.[58] For example, in the arsenic RIA, EPA identified a distribution of costs across individual water treatment systems (from under 100 people served to over 1 million).[59] In some cases, individual systems were modeled; in others, it categorized systems by statistical distributions. EPA considered the capital and operating costs of achieving a proposed arsenic standard using various treatment technologies, given background arsenic levels at each system. It then computed the least-cost method for individual facilities to achieve a standard, given background arsenic levels. These costs reflect the economies of scale enjoyed by larger facilities as well as the distribution of background arsenic levels.[60] Similarly, EPA determined benefits for its arsenic rule based on the population, by age category, exposed to various levels of arsenic. This combination of exposures and exposed populations implied the number of cases of bladder cancer that could be expected with and without the regulation.[61]

With these data and with this conceptual architecture, EPA essentially has already approached a distributional analysis in the style of Shadbegian et al.. It simply did not follow through to break them out and report them in the same way. In particular, once EPA had determined benefits and costs by water treatment systems, virtually all the steps needed to compute costs and benefits by demographic group were completed. All that would remain to be done would be to determine who lives in each of those systems, a small additional step in light of the tremendous amount of work that was done in the analysis.[62]

MENTS (2000), *available at* http://epa.gov/otaq/highway-diesel/regs/2007-heavy-duty-highway.htm.

58. EPA, ARSENIC RIA, *supra* note 18; EPA, ECONOMIC ANALYSIS FOR DISINFECTANTS, *supra* note 19.

59. EPA, ARSENIC RIA, *supra* note 18, § 6.2.5.

60. *See* EPA, ARSENIC RIA, *supra* note 18, § 6.

61. *See id.* § 5.

62. EPA individually modeled only the water treatment facilities serving the largest populations. Smaller facilities were characterized by a statistical distribution. This lowers the accuracy of both the estimated aggregate benefits as well as potentially estimated distributional effects, but in principle does not make it harder to extend the analysis to the latter, so long as the locations of the set of facilities in the statistical analysis are known.

IV. DISTRIBUTION OF WHAT?

A. General Considerations

How best to incorporate distributional effects into RIAs will depend on the distributional objectives. More equity, ceteris paribus, may be desirable, but equity of what? Of exposure to a particular contaminant (arsenic, say, in the case of the arsenic rule, or disinfection byproducts for the Stage 2 rule)? Of environmental health generally? Or, most generally, overall welfare? In some respects, this is a false choice. We care about environmental health *because* it affects overall welfare.

Accordingly, the most fundamental distributional objective is equity in welfare. Because it is the most fundamental, it is this objective that should guide our thinking about incorporating environmental justice considerations into RIAs. This conclusion may seem counterintuitive. After all, does not the "environmental" in "environmental justice" imply a concern about equity in environmental health per se? Actually, not necessarily. Instead, we can interpret it as implying a concern about the environment *insofar as* it affects overall welfare.

Indeed, focusing on more narrow types of equity could well result in counterintuitive and unintended, even perverse, decision rules for policy. Suppose, for example, that there is some particular environmental contaminant which minorities are actually less exposed to than whites. Suppose further that a particular regulatory action under consideration turns out to reduce the environmental concentrations of this contaminant, with reductions especially large in the minority communities.[63] If the underlying objective motivating distributional analyses were equity in a particular contaminant, the RIA would have to down-weight the net benefits of this action on the grounds that it helped the minority group! This is hardly a move toward greater justice if the minority group is otherwise disadvantaged. The problem, of course, lies in the mischaracterization of the objective. If the objective were instead greater equity in overall welfare, the benefit-cost analysis of this regulation would over-weight the net benefits of the action for its preferential treatment of the minority group.

To say that we are concerned with the distribution of overall welfare is a start, but other questions about what constitutes welfare soon follow. An early step of any RIA is to identify the potential impacts of an action which need to be analyzed. Similarly, an

63. Though this scenario is unlikely in most cases, it might well happen for some particular contaminant. In any case, I propose it only as a thought experiment.

early step of any benefit-cost analysis is to identify those impacts to be monetized. Should all of those effects be of interest for any distributional analysis? The relevant effects will differ on a case-by-case basis, but four general issues warrant discussion, two on the cost side and two on the benefit side.

B. Cost-side Considerations

First, and most important, it is essential to emphasize that overall welfare includes costs as well as benefits. Thus, it is not sufficient to look at the distribution of gross environmental benefits. It is the distribution of *net benefits* that is of ultimate interest. Wherever possible, RIAs should document the distributional effects of net benefits, as in the work by Shadbegian et al. on the Clean Air Act amendments.[64] As an alternative, it may be sufficient to separately document the distribution of benefits and costs. As noted above, OMB specifically mentions costs as well as benefits when discussing distributional effects.[65] Moreover, EPA has recognized the importance of costs within an expansive framework for understanding environmental justice.[66] In particular, EPA's *Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* urges "consideration of the distribution of costs to pay for environmental projects," as when there are user fees, for example.[67] It also notes that populations intended to benefit from regulations may rely on polluting industries for jobs and tax revenue, so that they may experience economic costs indirectly.[68]

C. Indirect Costs

The importance of jobs and the local tax base to citizens' welfare leads directly to the second issue, namely, indirect effects transmitted through markets (or, in the economist's jargon, so-called "general equilibrium" effects). Wherever possible, such effects should be considered in RIAs of dispersed pollutants. This recommendation does not follow simply from a commitment to thoroughness. It follows from research showing the importance of general equilibrium effects on the distribution of net benefits.[69] For

64. Shadbegian et al., *supra* note 52.
65. OFFICE OF MGMT. & BUDGET, *supra* note 31, § 10.
66. EPA GUIDANCE, *supra* note 6, § 2.3, Exhibit 3.
67. *Id.*
68. *Id.*
69. *See generally* DON FULLERTON, DISTRIBUTIONAL EFFECTS OF ENVIRONMENTAL AND ENERGY POLICY (Don Fullerton ed., 2009).

example, the indirect effects of a regulatory action on welfare through land markets may be particularly important. Because pollution is undesirable, the demand for housing in a polluted neighborhood is lower than in a clean neighborhood, lowering housing values. Poor people may live in these neighborhoods because they cannot afford to purchase more expensive housing in cleaner locations.[70] This is not to say that they do not value a clean environment as much as richer households. But because of their limited income, their willingness to pay for a clean environment is lower. The reverse of this logic is that when neighborhoods improve, demand increases and housing values rise. But housing prices may rise by *more* than existing residents' values for the environment, as richer gentrifying households bid up housing values by their own higher willingness to pay for the improvement. If the incumbent residents owned their home, they would of course reap the capital gains from these appreciating housing values. But in the United States, eighty-three percent of people living in poverty and receiving public assistance are renters.[71] These residents would have to pay higher rents, and the increase in these rents may more than offset the direct benefit they receive from the environmental improvement.[72]

My colleagues and I have called this process "environmental gentrification."[73] In empirical work examining air quality improvements in Los Angeles, we show that incorporating these general equilibrium effects significantly alters the distribution of net benefits of air quality improvements, with renters in those communities which began as the most polluted, but which saw the

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70. This raises the possibility that disadvantaged groups sometimes "come to the nuisance," as opposed to polluting facilities coming to their neighborhoods. For evidence on both sides of this debate, see Baden & Coursey, *supra* note 4; H. Spencer Banzhaf & Randall P. Walsh, *Do People Vote with their Feet? An Empirical Test of Tiebout's Mechanism*, 98 AM. ECON. REV. 843 (2008); Been, *supra*, note 4; Vicki Been with Francis Gupta, *Coming to the Nuisance or Going to the Barrios? A Longitudinal Analysis of Environmental Justice Claims,* 24 ECOLOGY L.Q. 1 (1997); Depro & Timmins, *supra* note 43; Manuel Pastor, Jr., Jim Sadd & John Hipp, *Which Came First? Toxic Facilities, Minority Move-in, and Environmental Justice*, 23 J. URB. AFF. 1 (2001); Wolverton, *supra* note 4. Also, see generally H. Spencer Banzhaf & Eleanor McCormick, *Moving Beyond Cleanup: Identifying the Crucibles of Environmental Gentrification, in* THE POLITICAL ECONOMY OF ENVIRONMENTAL JUSTICE (H. Spencer Banzhaf ed., forthcoming July 2012).

71. *See* U.S. Census Bureau, *American FactFinder*, CENSUS.GOV, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml (last visited Feb. 6, 2012).

72. *See* sources cited *supra* note 70. For a more whimsical take on this issue, see Armen A. Alchian, *The Beneficiaries of Cleaner Air*, *in* THE COLLECTED WORKS OF ARMEN A. ALCHIAN, PROPERTY RIGHTS AND ECONOMIC BEHAVIOR 145 (Daniel K. Benjamin ed., 2d vol. 2006).

73. Holger Sieg et al., *Estimating the General Equilibrium Benefits of Large Changes in Spatially Delineated Public Goods*, 45 INT'L ECON. REV. 1047, 1074 (2004); Banzhaf & McCormick, *supra* note 70.

greatest improvement in air quality, being harmed the most.[74] In extensions of this work re-examining benefit-cost analyses of the Clean Air Act, we show that these effects have tremendous importance for the relative winners and losers of actual environmental policies.[75] Far from being only of academic interest, these gentrification effects have been identified by the National Environmental Justice Advisory Commission (NEJAC) as an important unintended consequence of some environmental policies, such as brownfields redevelopment.[76]

Land markets are not the only avenue for important general equilibrium effects with distributional implications. Compliance costs fall on firms and thence the owners of capital, who are generally rich, but some of those costs may be passed on through higher prices. For example, the Clean Air Act has substantially raised the price of energy-intensive goods.[77] If energy-intensive goods are consumed disproportionately by the poor, the distribution of costs could be regressive. Moreover, if regulatory actions work through cap-and-trade-style permit markets, they produce assets with marketable value. If those assets are given to firms (as when pollution permits are grandfathered), they create new sources of wealth for the owners of capital (primarily the rich). Consequently, regulatory actions with grandfathered permits, such as the United States' SO_2 trading program, appear to be quite regressive when the indirect effects of asset prices and output prices are considered. The poor bear the burden of higher electricity prices, while the wealthy, through their ownership of capital, receive the rents from the permit allocation.[78]

The importance of such general equilibrium effects for benefit-cost analysis has been recognized by OMB. OMB notes:

> Individuals or households are the ultimate recipients of income; business enterprises are merely intermediaries.

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74. Sieg et al., *supra* note 73.

75. V. Kerry Smith et al., *General Equilibrium Benefits for Environmental Improvements: Projected Ozone Reductions under EPA's Prospective Analysis for the Los Angeles Air Basin*, 47 J. ENVTL. ECON. & MGMT. 559 (2004); *see also* Corbett A. Grainger, *The Distributional Effects of Pollution Regulations: Rental Housing and Air Quality Improvements* (Jan. 14, 2010) (unpublished manuscript, Job Market Paper), *available at* http://www.econ.gatech.edu/files/seminars/Grainger_Rents.pdf.

76. NAT'L ENVTL. JUSTICE ADVISORY COUNCIL, UNINTENDED IMPACTS OF REDEVELOPMENT AND REVITALIZATION EFFORTS IN FIVE ENVIRONMENTAL JUSTICE COMMUNITIES 1 (2006), *available at* http://www.epa.gov/environmentaljustice/resources/publications/nejac/redev-revital-recomm-9-27-06.pdf.

77. *See* Michael Hazilla & Raymond J. Kopp, *Social Cost of Environmental Quality Regulations: A General Equilibrium Analysis*, 98 J. POL. ECON. 853, 870-71 (1990).

78. *See* Lawrence H. Goulder & Ian W.H. Parry, *Instrument Choice in Environmental Policy,* 2 REV. ENVTL. ECON. & POL'Y 152, 155-59, 164-66 (2008); Ian W.H. Parry, *Are Emissions Permits Regressive?,* 47 J. ENVTL. ECON. & MGMT. 364, 377-80 (2004).

> Analyses of distribution should identify economic incidence, or how costs and benefits are ultimately borne by households or individuals.
>
> Determining economic incidence can be difficult because benefits and costs are often redistributed in unintended and unexpected ways. For example, a subsidy for the production of a commodity will usually raise the incomes of the commodity's suppliers, but it can also benefit consumers of the commodity through lower prices and reduce the incomes for suppliers of competing products. A subsidy also raises the value of specialized resources used in the production of the subsidized commodity. As the subsidy is incorporated in asset values, its distributional effects can change.[79]

In any case, the key point is that once we accept the objective to be overall welfare, then all channels by which a regulatory action significantly affects welfare should be documented in an RIA.

Whether the most important general equilibrium effects are to be found in land markets, product markets, or labor markets, or whether they are important at all, will differ from case to case. Land markets and gentrification may be particularly important for the traditional case of locally undesirable land uses and large point sources of pollution. Because they are so obviously observed by residents, these sources of pollution are easily incorporated into the demand for land, and hence into land prices. But some widely dispersed pollution, like the criteria air pollutants, are also fairly easy to observe and have been shown to affect property values.[80]

D. Inter-group Heterogeneity in Values

To these two cost-side considerations about what constitutes overall welfare we can add two benefit-side considerations. The third issue to consider is group-level heterogeneity in willingness to pay for health and environmental improvements. Providing a clean environment, like any other good, comes at the cost of other private or public goods that could have been provided with those resources. Determining the right balance between environment-

79. OFFICE OF MGMT. & BUDGET, *supra* note 31, § 10(b).

80. *See* Patrick Bayer, Nathaniel Keohane & Christopher Timmins, *Migration and Hedonic Valuation: The Case of Air Quality,* 58 J. ENVTL. ECON. & MGMT. 1 (2009); Kenneth Y. Chay & Michael Greenstone, *Does Air Quality Matter? Evidence from the Housing Market,* 113 J. POL. ECON. 376 (2005); Grainger, *supra* note 75; V. Kerry Smith & Ju-Chin Huang, *Can Markets Value Air Quality? A Meta-Analysis of Hedonic Property Value Models*, 103 J. POL. ECON. 209 (1995).

al improvements and costs is the objective of RIA. But different groups may be willing to make those tradeoffs differently, perhaps because of differences in their ability to pay, because of their differential access to other substitutes, or because of differences in preferences.

Introducing heterogeneity in willingness to pay into benefit-cost analysis seemingly poses a dilemma. On the one hand, we should not impose costs on one group that it is not willing or able to bear in order to achieve some benefit that another group desires. To the contrary, we do the greatest justice to groups when we honor their ability to set their own priorities.[81] On the other hand, allowing for heterogeneity in willingness to pay for benefits appears to discriminate against groups with lower valuations, biasing benefit-cost analysis toward rules that favor other groups. The backlash against the "senior death discount" for age-adjusted willingness to pay to avoid mortality risks is an example of that perception.[82] Such a concern is entirely valid for the standard benefit-cost regime without distributional weights. But it is *not* valid for generalized benefit-cost analysis with such weights. Indeed, this distinction might be viewed as the best argument for why distributional weights are necessary to give benefit-cost analysis more integrity.

Consider a hypothetical example of two policies that will save lives. Suppose further, the average value of a statistical life (VSL) is $6 million, but the VSL of the rich is $8 million and the VSL of the poor, because of their lower income, is $4 million. By virtue of the very fact of what it means to be poor, the poor cannot afford to pay as much money to reduce risks to their health and safety without foregoing other basic needs, while the rich can make such purchases while only foregoing luxuries. That is, these differences can be driven by the differences in ability to pay, even if preferences or "tastes" are the same.

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81. *See, e.g.*, Foster, *supra* note 8, at 802-07 (emphasizing as an example the importance of "sovereignty" for Native Americans).

82. On the controversy, see Katharine Q. Seelye & John Tierney, *E.P.A. Drops Age-Based Cost Studies*, N.Y. TIMES, May 8, 2003, http://www.nytimes.com/2003/05/08/us/epa-drops-age-based-cost-studies.html. On the economic and empirical basis for such discounts, see generally Joseph E. Aldy & W. Kip Viscusi, *Age Differences in the Value of Statistical Life: Revealed Preference Evidence*, 1 REV. ENVTL. ECON. & POL'Y 241 (2007); Mary F. Evans & V. Kerry Smith, *Do We Really Understand the Age-VSL Relationship?,* 28 RES. & ENERGY ECON. 242 (2006); Alan Krupnick, *Mortality-Risk Valuation and Age: Stated Preference Evidence*, 1 REV. ENVTL. ECON. & POL'Y 261 (2007); W. Kip Viscusi & Joseph E. Aldy, *Labor Market Estimates of the Senior Discount for the Value of Statistical Life*, 53 J. ENVTL. ECON. & MGMT. 377 (2007). For a critique of this practice, see Lisa Heinzerling, *The Rights of Statistical People,* 24 HARV. ENVTL. L. REV. 189, 192-94 (2000). For a rejoinder, see Graham, *supra* note 36.

Consider now two policies, Policy A and Policy B, that save lives. Details of the two policies are illustrated respectively in Tables 1A and 1B *infra*. The tables show that both policies impose gross costs of $1.7 billion on the rich but nothing on the poor. Policy A saves 100 statistical lives of the rich and 200 statistical lives of the poor, for a total of 300 statistical lives. Policy B saves 200 lives of the rich and 50 lives of the poor, for a total of only 250 lives. Both policies cost the same, yet Policy A saves more lives. Using the average VSL of $6 million implies aggregate net benefits of $100 million for Policy A, compared to an aggregate loss of $200 million for Policy B. Because it saves more lives at the same cost, Policy A must look better using this approach. If we use heterogeneous values, however, Policy A would generate -$900 million in net benefits for the rich and only $800 million in net benefits for the poor, for an aggregate loss of $100 million. Policy B would generate -$100 million in net benefits for the rich and $200 million in net benefits for the poor, for a net gain of $100 million in aggregate. Policy B has higher net benefits. Thus, using heterogeneous values, the efficiency criterion seemingly steers us to Policy B because it saves more rich lives. This would seem to imply that socially, we would trade 100 lives of the poor for 50 lives of the rich. Nothing could be less just or more reprehensible.

Yet in fact, *the supposed choice of Policy B does not follow from using heterogeneous VSLs per se, but only from doing so without distributional weights*. Giving greater weight to the net benefits of the poor would have steered us back to Policy A, which intuitively is the right choice.[83] Why use heterogeneous VSLs if we are going to undo them with the distributional weights? The reason can be made clear with the following example.

Consider two different policies, Policy C and Policy D, illustrated respectively in Tables 1C and 1D, *infra*. Both policies cost $700 million, but the split is $350 for rich and poor alike for Policy C, whereas with Policy D the split is $600 million for the rich and $100 million for the poor. Both policies save 150 lives, but Policy C saves 100 of the 150 from the rich, while Policy D saves 100 of the 150 from the poor. Using homogenous VSLs of $6 million, we see that the aggregate net benefits of both policies are $200 million. Using the efficiency criterion alone, the two policies appear to be tied. Looking next at distributional considerations, we would say that Policy C is better, because compared to Policy D it results in a

83. More precisely, a precise relationship between the social welfare of utilities of the rich and poor, respectively, the value of money to the rich and poor, and the value of avoiding risks to the rich and poor can be identified that would just offset one another so as to generate equal VSLs. However, this relationship need not hold in practice. *See* Johansson-Stenman, *On the Value of Life*, *supra* note 36, at 304.

costless transfer of $50 million from the rich to the poor. Policy C looks more favorable, so using these criteria we would choose it over Policy D. But this is the wrong conclusion. When we consider the groups' true VSLs, we now see that *both groups* are better off under Policy D than Policy C. Under Policy D, the poor get $100 million in net benefits versus only $50 million under Policy C, while the rich get $200 million versus $50 million.

The problem with Policy C is that the additional 50 lives saved from the poor over Policy D come at an incremental cost to the poor of $250 million, while the group is only willing to pay $200 million for those statistical lives. These costs may be direct effects (higher cost for water or energy) or indirect effects (higher rents or higher costs for consumer goods). In any case, imposing homogeneity in values does violence to each group's preferences. It requires the poor group to actually pay a cost they cannot afford: for them, more basic priorities (perhaps food and shelter) take precedence over the reduction in pollution, whereas the rich can afford the cost. Again, true environmental justice respects groups' own preferences rather than imposing them from the outside.[84]

The reason for the seeming dilemma is that in evaluating the relative merits of Policies A and B, we jumped too quickly to the conclusion that using heterogeneous VSLs favors Policy B. In fact, we only found that the *efficiency criterion alone* favored Policy B. What this actually shows is not the importance of imposing homogeneity in willingness-to-pay values, but the importance of considering the equity objective as well. Considering heterogeneous values, we see that Policy A, relative to Policy B results in a transfer of $600 million to the poor ($800 million to $200 million) at a cost of $800 million to the rich. Whether this distributional improvement is worth the loss in aggregate benefits is not necessarily obvious to everybody. But those who would argue that Policy A is preferable to B are essentially claiming that it is.

The only way to make the "right" choice in both comparisons (A over B and D over C) is to consider *both* heterogeneity in willingness to pay *and* distributional objectives in the analysis. This is a two-step process. First, when comparing benefits for a group to costs for the same group, that group's preferences should be respected. This is the only way to respect the group's preferences and its consumer sovereignty. The result of this step is group-by-group net benefits. Then, in the second step, group-level net benefits should be compared to one another or aggregated using some kind of social weight, or both. For example, using a social weight of 2:1 for the poor group relative to the rich would exactly undo the effect

84. Foster, *supra* note 8, at 802-07.

of the higher VSL for the rich. Net benefits would now be $700 million for Policy A and only $300 million for Policy B. Thus, we would now choose Policy A, which saves more lives, over Policy B. Policy D would continue to be chosen over Policy C.

A logically equivalent way to arrive at the same point would be to use the same VSL for all groups, but increase the weight on costs to the poor group. Although equivalent logically, this framing of the analysis may be more palatable politically. It can also be easily explained by the notion that costs to the poor are especially burdensome because of their more basic needs to be purchased. (In the language of economics, they have a higher marginal utility of income.)

E. Nonuse Values

The fourth and final issue to consider is the role of so-called nonuse or existence values in distributional benefits. These are values that households have simply for things being a certain way rather than for using them to produce some good or service.[85] For example, EPA's RIA for the regulation of cooling intake structures notes that households may hold significant existence values for the marine life that would be spared by the new rules.[86] (These values would be in addition to use values related to subsistence or recreational fishing.) It is entirely plausible that a stated preference study of such existence values would find that different demographic groups hold different values for those benefits.

If so, should the distribution of nonuse values also be incorporated into an analysis of distributional effects? One might argue in the affirmative, on the grounds that nonuse values are a part of overall welfare and benefits are benefits. On the other hand, if society's motivation in considering distributional considerations is to some extent paternalistic, perhaps nonuse values for particular groups should not be given extra weight. In any case, nonuse benefits are rarely quantified in most RIAs anyway. Extending the analysis of more tangible benefits (or "use values"), routinely quantified in benefit-cost analysis, to distributional considerations is a logical first step, before nonuse benefits are similarly extended.

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85. On the economic theory of nonuse values, see generally A. MYRICK FREEMAN III, THE MEASUREMENT OF ENVIRONMENTAL AND RESOURCE VALUES 137-61 (2d ed. 2003). For a defense of the role of nonuse values in federal environmental regulation, see David A. Dana, *Existence Value and Federal Preservation Regulation*, 28 HARV. ENVTL. L. REV. 343 (2004). For critiques of their role, see sources cited *supra* note 8.

86. UNITED STATES ENVTL. PROT. AGENCY, ECONOMIC AND BENEFITS ANALYSIS FOR THE FINAL SECTION 316(B) PHASE II EXISTING FACILITIES RULE (2004), *available at* http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/phase2/econbenefits_final.cfm.

V. INCORPORATING DISTRIBUTIONAL EFFECTS

Recognizing the importance of distributional effects is one thing; actually incorporating them into environmental RIAs is another. How is this to be done in practice? One approach is to incorporate the distributional objective into the efficiency objective by using distributional weights on net benefits, and then aggregating them up to total net benefits. That is, net benefits for poorer (or other disadvantaged) groups would receive a larger weight when aggregating up across groups.[87] For example, one common approach is to parameterize a utility function of the form

$$v(y) = \frac{a1-p}{} y1 - p$$

where y is income, ρ is a parameter, and α is an arbitrary scaling. Then the marginal utility of money *is* $\alpha y^{-\rho}$. These marginal utilities of money would be the social weights for a household with income y.[88]

Just as standard benefit-cost analyses using willingness-to-pay weights to combine different benefit categories (morbidity, mortality, recreation, etc.) into a single aggregate benefit, and uses dollars to combine benefits and costs into a single net benefit, so too would this approach combine efficiency and distribution by using these social welfare weights. Thus, it has the same advantage of reducing all the policy tradeoffs to a single criterion. Accordingly, this approach is advocated by those who have the most ambitious and lofty vision for benefit-cost analysis.

On the other hand, this approach has two disadvantages. First, most utility functions result in very severe penalties on benefits to richer households. For example, if, say, $\rho = 2$ in the above utility function (a common rule of thumb), then a household with an income of $100,000 would be given a weight 1/100 of a household with an income of $10,000. That is, these weights imply we would trade $100 to the first household for $1 to the second, even if the other $99 is wasted.[89] But however inefficient the tax system, surely there are more efficient ways to transfer funds than that! Arnold Harberger has suggested that one alternative might be to cap the

87. For early advocates of this approach, see for example, Freeman, *Income Distribution*, *supra* note 35; Freeman, *Six Federal Reclamation Projects*, *supra* note 35; HAVEMAN, *supra* note 35; Weisbrod, *supra* note 35. For more recent proposals, see for example, Adler, *supra* note 8; Johansson-Stenman, *Distributional Weights*, *supra* note 36; Johansson-Stenman, *On the Value of Life*, *supra* note 36.

88. *See, e.g.*, Harberger, *supra* note 35; Johansson-Stenman, *Distributional Weights*, *supra* note 36; Johansson-Stenman, *On the Value of Life*, *supra* note 36.

89. Harberger, *supra* note 35, at S112.

weights based on the marginal cost of public funds.[90] For example, based on recent evidence from European countries, the social cost of $1 in tax revenue appears to be about $2.[91] According to this approach, the weight on net benefits for the poorest group could be no more than two times the weight for the richest group, on the grounds that money can be transferred through the tax system at that rate of efficiency.

The second disadvantage of using distributional weights is the flipside of its greatest advantage: its attempt to reduce all objectives into a single scalar value is too ambitious by half. In making this attempt, it arrogates too much power to the benefit-cost practitioner.[92] An alternative approach is simply to display the distributional effects alongside aggregate benefits. For example, tables such as those accompanying the above examples could be displayed. Then, based on this information the truly authorized decision-makers can make the judgment call about the relative merits of an action. In other words, the decision-makers could use their own judgments—effectively, their own distributional weights—to shape policy.

This second broad approach of simply documenting distributional effects can in turn proceed along two paths. One path is to document the change in an index that reflects the degree of equity.[93] For example, for changes in income, one might show the change in the Gini coefficient or an Atkinson index, two well-known summary measures of inequality.[94] Recently, this approach has been extended to indices of distribution in health.[95] For example, Jonathan Levy et al. compute both the total changes in lives and the change in an Atkinson index of mortality rates resulting from a number of policies to control particulate emissions from buses.[96] They then display the combinations of the two objectives in a figure, with benefits on one axis and the distributional index on the other and various policies plotted in the two dimensions.[97] After providing this information, this approach would stop here

90. *Id.* at S115.

91. *See* Henrik Jacobsen Kleven & Claus Thustrup Kreiner, *The Marginal Cost of Public Funds: Hours of Work Versus Labor Force Participation*, 90 J. PUB. ECON. 1955 (2006).

92. *See generally* Banzhaf, *Objective or Multiobjective?, supra* note 35.

93. *See, e.g.*, Adler, *supra* note 8.

94. On both approaches, see Anthony B. Atkinson, *On the Measurement of Inequality*, 2 J. ECON. THEORY 244 (1970).

95. *See* Jonathan I. Levy, Andrew W. Wilson & Leonard M. Zwack, *Quantifying the Efficiency and Equity Implications of Power Plant Air Pollution Control Strategies in the United States,* 115 ENVTL. HEALTH PERSP. 743 (2007); Jonathan I. Levy et al., *Evaluating Efficiency-Equality Tradeoffs for Mobile Source Control Strategies in an Urban Area*, 29 RISK ANALYSIS 34 (2009) [hereinafter Levy et al., *Evaluating Efficiency-Equality Tradeoffs*].

96. Levy et al., *Evaluating Efficiency-Equality Tradeoffs*, *supra* note 95.

97. *Id.* at 42.

and allow policy makers to make the tradeoffs among these two objectives.

The second path to documenting distributional effects separately is simply to display the effects on different groups, whether monetized as net benefits or not, in a table. This is the approach taken by Shadbegian et al. in their work on the acid rain trading program[98] and illustrated with the simple example of Table 1 discussed previously. This approach is probably most appropriate for incorporating environmental justice considerations into RIAs for two reasons.

First, even choosing a summary statistic to capture the distribution of an effect, such as the Atkinson index, unnecessarily imposes a judgment about distributional tradeoffs. A policy analyst would have to impose assumptions about the importance of inequity, and not just as measured by the variance of the distribution but by higher moments as well.[99] Little empirical evidence being available to justify any assumptions, the analyst would imply a degree of false precision.

Second, identifying distributional effects only in a single summary statistic runs counter to the goal of providing information of interest to various demographic groups. In contrast, documenting the net benefits across groups would provide the most information to the public as well as to policy makers. In the short run, fully informing the public of distributional effects in this way would facilitate public comments on specific regulations; in the long run, it would empower citizens to shape the legislative agenda. In this respect, providing information on distributional effects is consistent with one of the leading goals of EO 12898 and EPA's interpretation of it: public participation.[100]

VI. CONCLUSIONS

Finding an appropriate way to incorporate environmental justice considerations into policy-making has been a procedural challenge since President Clinton issued Executive Order 12898 over 15 years ago. Moreover, environmental justice continues to be overshadowed by efficiency considerations as embodied in benefit-cost analysis.

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98. Shadbegian et al., *supra* note 52.

99. That is, unless one income distribution second-order stochastically dominates another, there may not be a clear-cut ranking between the two. Different indices will variously weight different portions of the income distribution, some emphasizing realizations near the median, others in the tails of the distribution. Another way to state this is that different inequality indices are consistent with different social welfare functions. *See generally* JAMES FOSTER & AMARTYA SEN, ON ECONOMIC INEQUALITY (2d ed. 1997).

100. *See supra* text accompanying notes 20-24 and references therein.

This article has argued that both types of analyses can be enhanced by bringing them closer together. In particular, the most fruitful way to think about incorporating environmental justice consideration into RIAs is to draw on the much older tradition of incorporating distributional effects into benefit-cost analysis. Environmental justice considerations are a specific form of such distributional effects, effects specifically working through environmental channels and on the poor, or minorities, or both.

There are many ways to incorporate distributional analyses into RIAs and specifically benefit-cost analyses, from using distributional weights to simply documenting them in a table as a side display. Side displays may be the most feasible scientifically, the most pragmatic politically, and the most informative for environmental justice communities and other stakeholders.

By providing such distributional information, EPA would further its environmental justice objectives, by providing the information that all groups, including the poor, minorities, and environmental justice communities, need to understand the impacts of a regulatory action. By incorporating such information into its RIAs, EPA would integrate environmental justice considerations into its development of regulations. Finally, by actually allowing the new information to inform the design and selection of regulations so as to better protect disadvantaged groups, adding distributional impacts to RIAs would improve the distributive justice associated with EPA's actions as well as the procedural justice. In this way, EPA could truly weave environmental justice considerations into the "fabric" of its regulatory actions as it has recently pledged to do.[101]

101. EPA ACTION DEVELOPMENT GUIDE, *supra* note 13.

Table 1A. Benefit-Cost Analyses for Policy A

Group	Costs	Lives Saved	Benefits without Hetero-geneity	Benefits with Hetero-geneity	Net Benefits without Hetero-geneity	Net Benefits with Hetero-geneity
Rich	$1.7B	100	$600M	$800M	-$1.1B	-$900M
Poor	0	200	$1.2B	$800M	$1.2B	$800M
Total	$1.7B	300	$1.8B	$1.6B	$100M	-$100M

Table 1B. Benefit-Cost Analyses for Policy B

Group	Costs	Lives Saved	Benefits without Hetero-geneity	Benefits with Hetero-geneity	Net Benefits without Hetero-geneity	Net Benefits with Hetero-geneity
Rich	$1.7B	200	$1.2B	$1.6B	-$500M	-$100M
Poor	0	50	$300M	$200M	$300M	$200M
Total	$1.7B	250	$1.5B	$1.8B	-$200M	$100M

Benefits without heterogeneity in willingness to pay are based on a VSL of $6M; benefits with heterogeneity are based on a VSL of $8M for the rich and $4M for the poor.

Table 1C. Benefit-Cost Analyses for Policy C

Group	Costs	Lives Saved	Benefits without Hetero-geneity	Benefits with Hetero-geneity	Net Benefits without Hetero-geneity	Net Benefits with Hetero-geneity
Rich	$350M	50	$300M	$400M	-$50M	$50M
Poor	$350M	100	$600M	$400M	$250M	$50M
Total	$700M	150	$900M	$800M	$200M	$100M

Table 1D. Benefit-Cost Analyses for Policy D

Group	Costs	Lives Saved	Benefits without Hetero-geneity	Benefits with Hetero-geneity	Net Benefits without Hetero-geneity	Net Benefits with Hetero-geneity
Rich	$600M	100	$600M	$800M	$0	$200M
Poor	$100M	50	$300M	$200M	$200M	$100M
Total	$700M	150	$900M	$1B	$200M	$300M

Benefits without heterogeneity in willingness to pay are based on a VSL of $6M; benefits with heterogeneity are based on a VSL of $8M for the rich and $4M for the poor.

"GREENING" THE SUPPLY CHAIN: WHY CORPORATE LEADERS MAKE IT MATTER

EMMA M. LLOYD*

I. INTRODUCTION

There is a growing trend in society in the United States to be more environmentally friendly. The overarching concern is that the environment is being destroyed through economic growth, and therefore, the well-being of future generations is being sacrificed. As this social need to go green, or become environmentally responsible, has become more prevalent in society, regulatory agencies have attempted to influence corporations to change their decision making norm from profit maximization to social responsibility for the environment to no avail. The norm entrepreneurs, or high profile CEOs leading the industry, are the ones with the power to

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adopt sustainability into the corporate decision making norm. Once the leading companies that dominate the market share of an industry adopt sustainable practices, there will be pressure among their suppliers and vendors to compete for the business of the industry leaders and to incorporate sustainability practices to achieve a competitive advantage. Therefore, the norm entrepreneurs of leading companies in a variety of industries, such as retail and manufacturing, will set the new standard of the decision making norm by making sustainability practices a prerequisite of companies doing business with one another.

Mike Duke, the CEO and President of Wal-Mart, a norm entrepreneur, leads the retail industry in implementing sustainability practices.[1] Wal-Mart has created a sustainability index "which assesses all of its suppliers worldwide based on . . . [the] environmental impact of their products" and services.[2] Therefore, in order to remain competitive in the marketplace, suppliers of Wal-Mart have great incentive to implement sustainability practices. One example of Wal-Mart's effect as a leader of sustainable practices in the retail industry is its commitment to reducing carbon pollution across the globe with its sustainability index.[3] Since Wal-Mart's supply chain is huge, tens of thousands of companies around the world have been competing to reduce their carbon emissions.[4] The effect throughout the industry is immediate because the results are competition based rather than "dependent upon any particular government body to act, or any specific laws or regulations, which may be appealed or changed."[5] Therefore, Wal-Mart is able to set the sustainable standards in the retail industry more effectively than regulatory agencies because of its position as a leader in the marketplace and its global supply chain.

Similarly, Nike leads the footwear industry in sustainable practices through its "gearing up" framework, by moving from mere compliance to integrating sustainability principles into its strategy and business processes.[6] Nike has utilized its suppliers,

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1. *See* Jerret Baker, *Wal-Mart CEO Mike Duke Implements Green Initiative*, LEADERS IN GREEN (Apr. 11, 2011), http://leadersingreen.blogspot.com/2011/04/wal-mart-ceo-mike-duke-implements-green.html.

2. Dana Newman, *Greening the Corporation–Advising Companies on Corporate Sustainability Requirements*, EZINE ARTICLES (Sept. 17, 2010), http://ezinearticles.com/?Greening-the-Corporation---Advising-Companies-On-Corporate-Sustainability-Requirements&id =5054035.

3. *Id.*

4. *Id.*

5. *Id.*

6. *See* Judd F. Sneirson, *Green Is Good: Sustainability, Profitability, and a New Paradigm for Corporate Governance*, 94 IOWA L. REV. 987, 993 (2009). The gearing up framework includes first gear as compliance; second gear as a focus on " 'eco-efficiency' and 'measuring, managing, and reducing' the direct impact of their operations"; third gear as

customers, and the government to recreate its design and production processes to reduce waste, reuse materials, and eliminate harmful toxins.[7] Examples of this include Nike "turn[ing] used athletic shoes into playing-field surfaces and replac[ing] adhesives with stitching on some of its footwear lines."[8] Nike has attained a competitive advantage and increased profits for its shareholders, as well as the entire industry, through its innovation in sustainability with its suppliers.[9] Nike's and Wal-Mart's motivation in addition to increasing profits is to improve their reputation in the eyes of the public, given their negative publicity in the past regarding sweat shops.[10] Even though implementing sustainable practices often results in increased profits in the long run, as proven by Wal-Mart and Nike, there is a question of what companies would do if going green goes against shareholder wealth maximization.

Part II of this article discusses the traditional view that corporations are formed to maximize shareholder wealth. However, leaders of corporations are shielded from liability to shareholders in making business decisions that include social responsibility by the business judgment rule.[11] Part III analyzes sustainability as a social norm and discusses whether norm entrepreneurs of leading companies have the ability to make business decisions taking into account social norms. Part IV examines why regulations and regulatory agencies are not in the best position to effectuate the implementation of the social norm of sustainability into the supply chain. Part V then provides a case study of Wal-Mart and Nike, to demonstrate how leading corporations are in the best position to shift sustainability practices in the industries by establishing the standards and encouraging competition among their business partners to meet the standards. Part VI concludes that norm entrepreneurs of leading companies make the biggest splash with sustainability practices on a global scale by integrating them into their business strategy and capitalizing on business-to-business pressure within their supply chain.

"partnering with the government as well as 'suppliers, customers, and others in [the] industry' to [create] sustainable solutions"; fourth gear as integrating sustainable practices into its business strategy; and fifth gear as redesigning the company's "business models, financial institutions, and markets to root out underlying causes of [non-sustainability]." *Id.* at 993-94 (quoting SUSTAINABILITY LTD., GEARING UP: FROM CORPORATE RESPONSIBILITY TO GOOD GOVERNANCE AND SCALABLE SOLUTIONS 34-37 (2004), *available at* http://www.unglobal compact.org/docs/news_events/8.1/gearing-up.pdf).

7. *Id.* at 994.

8. *Id.*

9. *See id.*

10. *See* Misti Walker, *Monitoring Foreign Suppliers–A Case Study,* SCRIBD, http://www.scribd.com/doc/21176055/Monitoring-Foreign-Suppliers (last visited Feb. 6, 2012).

11. *See* discussion *infra* Part II.D.

II. CORPORATE DECISION MAKING

Corporate decision making is influenced by shareholder obligations, corporate law, and the market place. Leaders of corporations must determine whether becoming sustainable contradicts the goal of continuing business operations in the current market place, in compliance with the law, to maximize shareholder profits. Directors and officers are protected by the business judgment rule, or a presumption that they are acting in the best interests of the corporation, to take into consideration social responsibility.[12] However, corporate leaders ultimately must balance short term and long term profitability with social interests in order to continue operating the business.

A. Maximize Wealth

In the traditional view, corporations are formed to maximize wealth for the owners of the corporations.[13] Shareholders own a corporation and elect directors to manage the company to increase profits.[14] The duty of care owed to shareholders by directors is referred to as the "shareholder primacy norm" and the norm most quoted by scholars is from the well-known case *Dodge v. Ford Motor Co.*:[15]

> A business corporation is organized and carried on primarily for the profit of the stockholders. The powers of the directors are to be employed for that end. The discretion of directors is to be exercised in the choice of means to attain that end, and does not extend to a change in the end itself, to the reduction of profits, or to the non-distribution of profits among stockholders in order to devote them to other purposes.[16]

In *Dodge v. Ford*, the Dodge brothers and a group of minority shareholders sued Henry Ford, the President of Ford Motor Co., to

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12. *See* discussion *infra* Part II.D.

13. E. Merrick Dodd, Jr., *For Whom Are Corporate Managers Trustees?,* 45 HARV. L. REV. 1145, 1146 (1932).

14. *Id.* at 1146-47.

15. The shareholder primacy norm of profit maximization has been quoted as guiding corporate decision making. *See, e.g.*, D. Gordon Smith, *The Shareholder Primacy Norm*, 23 J. CORP. L. 277, 278 (1998); Jason C. Jones, *The Oregon Trail: A New Path to Environmentally Responsible Corporate Governance?*, 54 ST. LOUIS U. L.J. 335, 343 (2009).

16. Dodge v. Ford Motor Co., 170 N.W. 668, 684 (Mich. 1919).

pay dividends from a surplus fund of nearly $112,000,000.[17] Mr. Ford owned fifty-eight percent of the capital stock in the company and decided to invest back into the business the profits of the company in excess of the payment of the regular dividend to shareholders of five percent of the two million dollars in capital stock.[18] The Michigan Supreme Court held that the directors of Ford Motor Co. abused their discretion when they did not declare an extra dividend without a justifiable reason when the company had about $54,000,000 cash on hand with expectations of $60,000,000 in the coming year.[19] The court stated that it will not interfere with the directors' discretionary powers to declare a dividend unless there has been bad faith, willful neglect, or abuse of discretion.[20] The court was convinced that Mr. Ford abused his powers and was not acting consistent with the purpose of maximizing profit for shareholders due to his statement asserting that the shareholders should be content with the dividends he chooses to allocate because they already receive large gains annually.[21]

However, there appears to be limited case law reiterating the shareholder primacy norm as stated in *Dodge*.[22] One theory for the limited precedents on point is that it is not possible or practical for courts to determine when a leader of a company is maximizing value for shareholders because current CEOs are coached by lawyers as to what to say.[23] Henry Ford did not acknowledge his obligation to maximize shareholder wealth in the courtroom, even though he could have said his goal was to increase market share for long term profit maximization.[24] This may be because Mr. Ford had an ulterior motive, of freezing out the Dodge brothers, by not distributing special dividends.[25] Therefore, it is difficult for courts to determine when CEOs are not engaged in shareholder wealth maximization for their own interests or merely taking risks for the growth of the company because the results may not be what the directors anticipated.[26] In practice, *Dodge* still enables leaders of companies to use discretion in making strategic decisions, as long as they state their goal to be shareholder maximization.[27]

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17. *Id.* at 670-71.
18. *Id.* at 671.
19. *Id.* at 683.
20. *Id.* at 682.
21. *Id.* at 683-84.
22. STEPHEN M. BAINBRIDGE, CORPORATION LAW AND ECONOMICS § 9.2 at 410-14 (2002) [hereinafter BAINBRIDGE, CORPORATION LAW].
23. *See* Jonathan R. Macey, *A Close Read of an Excellent Commentary on* Dodge v. Ford, 3 VA. L. & BUS. REV. 177, 183-84 (2008).
24. *See generally Dodge*, 170 N.W. 668.
25. Sneirson, *supra* note 6, at 1002.
26. *See* Macey, *supra* note 23, at 181.
27. *See id.* at 183.

Other jurisdictions have referenced the directors' goal of maximizing shareholder wealth, in addition to considering the effects on the corporation in the context of takeover bids. For example, in *Unocal Corp. v. Mesa Petroleum,* the Delaware Supreme Court stated that directors can balance the concerns of other constituencies in a takeover situation in addition to shareholders' concerns.[28] In *Revlon v. MacAndrews & Forbes Holdings, Inc.,* the Delaware Supreme Court held that there is a duty to maximize shareholder wealth in buyout situations.[29] Additionally in *Paramount Communications Inc. v. Time Inc*., the court differentiated *Revlon* by stating that the directors do not have a duty to maximize shareholder value in the short term, in the context of a takeover bid, as long as the directors act in an informed manner.[30]

B. Other Constituency

Thirty-three states have passed "other constituency" statutes in support of taking into consideration more than just shareholder interests when making decisions on behalf of the corporation.[31] One-third of the thirty-three states limit the other constituency statutes to the takeover context since the laws were developed to protect local corporations from out-of-state takeover attempts.[32] The majority of these statutes, however, enable corporations to take into account labor and local communities when making decisions.[33] All states provide provisions that support corporations in making charitable donations, but are split as to whether the donations must benefit the company at some level.[34] Finally, Oregon has recently taken a step further by amending its corporation code to enable companies to include in their articles of incorporation "[a]

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28. Unocal Corp. v. Mesa Petroleum Co., 493 A.2d 946, 955 (Del. 1985). The court did state that once the directors have decided to sell the company and abandon a long term strategy, they must focus on attaining the best price for the shareholders. *See id.*; *see also* Ian B. Lee, *Corporate Law, Profit Maximization, and the "Responsible" Shareholder*, 10 STAN. J.L. BUS. & FIN. 31, 36 (2005). However, the directors can make the decision to sell the company or change control of the company by taking into account non-shareholder interests. Lee, *supra* at 36.

29. Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc., 506 A.2d 173, 185 (Del. 1986).

30. Paramount Commc'ns, Inc. v. Time Inc., 571 A.2d 1140, 1150 (Del. 1989).

31. Sneirson, *supra* note 6, at 997-98 & n.52 (listing some examples of states with other constituency statutes including, but not limited to, ARIZ. REV. STAT. ANN. § 10-2702 (2004); CONN. GEN. STAT. § 33-756(d) (2007); IDAHO CODE ANN. § 30-1-602 (2005); IOWA CODE § 490.1108A (2007); KY. REV. STAT. ANN. § 271B.12-210(4) (West 2006); LA. REV. STAT. ANN. § 12:92(G) (1994); MD. CODE ANN., CORPS. & ASS'NS § 2-104(b)(9) (West 2008)).

32. *Id.* at 998.

33. *Id.*

34. *Id.* at 999 & n.57 (listing as examples: N.Y. BUS. CORP. LAW § 202(12) (McKinney 2003); VA. CODE ANN. §§ 13.1-627(A)(12), (13) (2006); and DEL. CODE ANN. tit.8, § 122(9) (West 2011)).

provision authorizing or directing the corporation to conduct the business of the corporation in a manner that is environmentally and socially responsible."[35]

Oregon has the first state corporate code that acknowledges the goal of sustainable business practices.[36] However, there is no definition in this statute of what environmentally and socially responsible means, which enables corporations who adopt the provision into its charters to determine the standard.[37] This general wording provides the directors some protection in making decisions regarding sustainable practices that do not maximize shareholder profits. However, it is up to the directors of the company as to whether they want to be held accountable and incorporate into their business strategy an environmentally conscious and socially responsible perspective.

The American Law Institute's Principles of Corporate Governance (ALI Principles), a doctrinal source of authority, states under section 2.01 that "a corporation . . . should have as its objective the conduct of business activities with a view to enhancing corporate profit and shareholder gain."[38] The ALI Principles expand the traditional view of wealth maximization by differentiating corporate profit from shareholder gain.[39] The ALI Principles appear to emphasize that a corporation should focus on shareholder wealth rather than corporate wealth except for complying with the law, making charitable contributions, and "devot[ing] a reasonable amount of resources to public welfare, humanitarian, educational, and philanthropic purposes."[40] Therefore, under these exceptions, managers may be able to devote resources to sustainability practices in pursuit of long-term corporate profits under the ALI Principles. This wording of "enhancing" shareholder gain as well as corporate profit gives directors more leeway in decision making than the short term profit maximization required in *Dodge* through the payment of dividends.[41] The question then becomes, What standards could directors use to determine practices that enhance shareholder gains?

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35. OR. REV. STAT. § 60.047(2)(e) (2009).

36. Press Release, Center for Earth Leadership, New Law Embeds "Sustainability" in Oregon Business Corporation Act (June 1, 2007), *available at* http://www.earthleaders.org/olsf/hb2826.

37. Alison Torbitt, Comment, *Implementing Corporate Climate Change Responsibility: Possible State Legislative and SEC Responses to Climate Change Through Corporate Law Reform*, 88 OR. L. REV. 581, 600 (2009).

38. A.L.I. PRINCIPLES OF CORPORATE GOVERNANCE § 2.01 (1992) [hereinafter A.L.I.].

39. *See* Donald E. Schwartz, *Defining the Corporate Objective: Section 2.01 of the ALI's Principles*, 52 GEO. WASH. L. REV. 511, 512 (1984).

40. A.L.I., *supra* note 38, § 2.01.

41. *See* Schwartz, *supra* note 39, at 512.

C. B Corporations (Certification)

A voluntary option for companies to prove their commitment to sustainability is to become certified as a B corporation by B Lab, a non-profit organization that is dedicated to using the power of business to solve social and environmental problems.[42] In order to achieve the certification, a corporation must fill out a questionnaire, which assesses the company's commitment to addressing social and environmental concerns and must include a provision in its articles of incorporation concerning the interests of employees, community, and the environment.[43] The provision requirement takes into account the structure of the company and where the company is incorporated to determine if a constituency statute applies.[44] An example of a provision approved by B Lab that could be used for a C Corporation incorporated in Oregon, which is similar to the other constituency provision in Oregon, is:

> In discharging his or her duties, and in determining what is in the best interests of the Company and its shareholders, a Director shall consider such factors as the Director deems relevant, including, but not limited to, the long-term prospects and interests of the Company and its shareholders, and the social, economic, legal, or other effects of any action on the current and retired employees, the suppliers and customers of the Company or its subsidiaries, and the communities in which the Company or its subsidiaries operate . . . together with the short-term, as well as long-term, interests of its shareholders and the effect of the Company's operations (and its subsidiaries' operations) on the economy of the state, the region, and the nation.
>
> Nothing in this Article express or implied, is intended to create or shall create or grant any right in or for any person or any cause of action by or for any person.[45]

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42. *See* Certified B Corp., *Frequently Asked Questions*, B LAB, http://www.bcorporation.net/faq (last visited Feb. 6, 2012).

43. *See* Certified B Corp., *supra* note 42, *Become a B Corp.*.

44. *See* Certified B Corp., *Legal Roadmap*, B LAB, http://www.bcorporation.net/legal-framework (last visited Feb. 6, 2012) [hereinafter *Legal Roadmap*].

45. *Id.* (select "C Corporation" from the "Corporate Structure" dropdown menu and "Oregon" from the "State of incorporation" dropdown menu; then click the "Next" button); *see also* Sneirson, *supra* note 6, at 1021 (stating that other constituency statutes as well as a B Corporation certification may limit the ability of shareholders to bring derivative suits, but do not open up a duty of care to non-shareholder constituencies).

These provisions are important for a B corporation to incorporate socially responsible interests into its DNA, making it more likely to survive the ever changing corporate ownership and leadership.[46] In addition, the provisions would enable managers to consider interests of constituencies other than shareholders, but still empower the shareholders to hold directors accountable.[47] The growth of B corporation certifications and public understanding of the requirements will enable consumers and investors "to support businesses that align with their values" and support multinational companies and governments in "implement[ing] sustainable procurement policies."[48]

B corporations are a good representation of businesses that use business methods and pursue social and environmental aims. This emerging business does not fit within the standard three organizational categories of non-profit, government, or business, but becomes a hybrid organization classified in a fourth organizational sector.[49] These hybrid organizations are categorized by their purpose of balancing and maximizing financial interests with social benefits.[50] Since there is not a fully developed supportive infrastructure in place for the fourth sector, "hybrid" entrepreneurs are constrained to operate within the standard three organizational categories and therefore "compromise their objectives, complicate their organizational structures, and invent new processes that distract their focus and deplete resources."[51] If a pioneering company implements new strategies, it may be "impeded by legal, capital, and other constraints" and possibly lose its competitive edge by straying too far from the standards accepted in the industry.[52] Therefore, hybrid businesses that have a socially consciousness purpose and want to maximize wealth are struggling to receive support as a business within current organizational structures.

However, there are many sources that corporations can utilize to develop socially responsible codes of conduct, as well as get certified as environmentally conscientious on a global basis. Some examples are the Organisation for Economic Cooperation and Development (OECD), the International Labour Organization, and the

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46. *See Legal Roadmap, supra* note 44.
47. Sneirson, *supra* note 6, at 1018.
48. *See* Certified B Corp., *supra* note 42, *Why B Corps Matter*.
49. *See The Emerging Fourth Sector*, FOURTH SECTOR, http://www.fourthsector.net/learn/fourth-sector (last visited Feb. 6, 2012).
50. *Id.*
51. *Id.*
52. *Id.*

United Nations.[53] There are also industry-specific organizations that offer guidance to companies to increase their compliance programs to become more socially responsible. One example is the Fair Labor Association (FLA), which provides a code of conduct for United States based clothing firms, such as Nike, who voluntarily join the association.[54] It is up to the leading corporations to utilize these resources to become socially conscious and therefore create pressure for the evolution of structures for hybrid organizations. Thus, the question becomes whether officers, directors, and managers in leading corporations are shielded from liability to shareholders when making business judgments to incorporate sustainability practices into their corporations' DNA regardless of whether the decision would increase profitability.

D. Business Judgment

The business judgment rule would help shield directors from shareholder liability when the directors take into account more than just shareholders when making decisions. The business judgment rule sets the standard that directors are judged by to determine whether they breached the duty of care owed to shareholders. The business judgment rule "is 'a presumption that in making a business decision[,] the directors of a corporation acted on an informed basis, in good faith and in the honest belief that the action taken was in the best interests of the company.' "[55] In other words, the courts will not intervene in the directors' decision making process if there was a "rational business purpose" in making the decision.[56] As a result of the business judgment rule, the directors take on a trustee role for the shareholders, but not for non-shareholder constituencies.[57]

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53. Aaron Grieser, *Defining the Outer Limits of Global Compliance Programs: Emerging Legal & Reputational Liability in Corporate Supply Chains*, 10 OR. REV. INT'L L. 285, 290-91 (2008).

54. *Id.* at 291-92. Some other examples of private certification include Leadership in Energy and Environmental Design (LEED) for certifying "green" buildings, developed by the U.S. Green Building Council (USGBC), and the Quality Assurance International Organic Food Certification. *See generally LEED*, U.S. GREEN BUILDING COUNCIL, http://www.usgbc.org/displaypage.aspx?categoryID=19 (last visited Feb. 6, 2012); QUALITY ASSURANCE INTERNATIONAL, http://www.qai-inc.com (last visited Feb. 6, 2012).

55. Gantler v. Stephens, 965 A.2d 695, 705-06 (Del. 2009) (quoting Aronson v. Lewis, 473 A.2d 805, 812 (Del. 1984), *overruled on other grounds*). The court held in *Gantler* that the board of directors did not act in good faith in stopping the sales process based on personal interests and were therefore not entitled to the protection of the business judgment rule. *Id.* at 707.

56. Torbitt, *supra* note 37, at 593.

57. *See* Smith, *supra* note 15, at 310.

An example of a court applying the business judgment rule is in the case *Shlensky v. Wrigley*.[58] In *Shlensky*, Philip Wrigley refused to install lights in the stadium to hold night games for the Chicago Cubs because of the adverse impact that the games would have on the neighborhood.[59] A shareholder challenged the decision because of the sacrifice in shareholder profits, given the potential for more scheduled night games if lights were installed.[60] The court deferred to the judgment of Philip Wrigley and the board because they made the decision in good faith with the company's best interest in mind, even though it could sacrifice profits.[61] This case proves that unless the directors of a company act based on fraud, illegality, or conflict of interest, the court will defer to the directors' decision and a shareholder's derivative suit will fail.[62] This case makes a point of showing that courts will not interfere with the business judgment related to social responsibility because an argument can be made that taking into consideration employees, customers, creditors, or the environment is in the long term interests of the shareholders.

Corporate managers should assume the responsibility for social issues because they are the leaders in the industry.[63] If the public opinion about businesses is that they have an obligation to the community, and specifically to their employees and customers, then leaders of the companies who are partial owners and agree with the public opinion will voluntarily change their perspective and potentially be open to adopting social norms in their decision making.[64] An example of this would be using corporate funds to give gifts to charities.[65] By taking into account social needs, corporations become good community citizens and increase their reputation in the eyes of the public. Under the business judgment rule, corporate managers appear to have the discretion to pursue sustainable practices even if the decision does not result in an increase of shareholder profits.

If corporate managers act in the best interests of the company's employees and consumers, then the profits for the shareholders

58. Shlensky v. Wrigley, 237 N.E.2d 776 (Ill. App. Ct. 1968).
59. *Id.* at 778.
60. *Id.* at 777.
61. *Id.* at 780.
62. *See also, e.g.*, FDIC v. Castetter, 184 F.3d 1040, 1046 (9th Cir. 1999) (finding that directors of a federally insured bank were insulated by California's business judgment rule from liability for negligence for losing money to the point of insolvency through investing in automobile lending).
63. Dodd, *supra* note 13, at 1156.
64. *See id.* at 1153.
65. *Id.* at 1158.

should increase in the long run.[66] This increase in profits would logically be the result of employees feeling secure in their jobs and livelihood, thus spending more money, increasing consumption, and creating a good reputation for the company in the community.[67] A manager may use corporate funding in the same manner a professional would without breaching the trust of a shareholder, if the company is considered a separate institution.[68] If the company is an institution that is separate from the individuals who make up the corporation, then "it [would be] affected not only by the laws[,] . . . but [also] by the attitude of [the] public . . . as to the social obligations of the company."[69] Therefore, the manager of a corporation should run business deals with the same obligations that a professional would in the community even if the shareholders that the manager owes a duty to may not be professionals.[70] Then the question becomes whether socially responsible managers will act voluntarily with the funds of the business when making strategic decisions, or whether the competitive marketplace of less socially conscious managers will prevail in focusing on increasing shareholder wealth. This determination could depend upon social norms, the public opinion of corporations, and the stringency of laws.

III. NORMS

Social norms have been defined as "informal obligations that are enforced through social sanctions or rewards."[71] According to Stephen M. Bainbridge, "the shareholder wealth maximization norm [of maximization of profits] . . . has been fully internalized by American managers."[72] However, D. Gordon Smith has stated that "the view . . . held by modern legal scholars—that [the wealth-maximization norm] is a major factor . . . in making ordinary business decisions—may not accurately reflect reality."[73] Corporate managers must have discretion to make decisions without constant

66. *Id.* at 1156; *see also* Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 GEO. L.J. 439, 451 (2001) (stating that companies governed by the standard shareholder primacy norm model may not always have a competitive advantage because these companies may operate inefficiently and may be forced to abandon potential opportunities due to cost).

67. *See* Dodd, *supra* note 13, at 1156.

68. *Id.* at 1161.

69. *Id.*

70. *Id.*

71. Michael P. Vandenbergh, *Order without Social Norms: How Personal Norm Activation Can Protect the Environment*, 99 NW. U. L. REV. 1101, 1104 (2005).

72. Stephen M. Bainbridge, *Participatory Management within a Theory of the Firm*, 21 J. CORP. L. 657, 717 (1996).

73. *See* Smith, *supra* note 15, at 291.

shareholder interference in order for the "highly efficient" centralized decision making process to be effective in large corporations.[74] The delegation of decision making to managers to incorporate social norms and other factors equates to sacrificing some accountability to shareholders, which appears to be permissible under the business judgment rule.[75] Therefore, social norms can affect the decision making of norm entrepreneurs based on their business strategy to keep up with the marketplace.

A. Sustainability as a Social Norm

Sustainability appears to be an increasing concern in society because of widespread public opinion about the destruction of the environment. Sustainability entails governments, businesses, and individuals "meeting the needs of the present without compromising the ability of future generations to meet their own needs."[76] Sustainable businesses pursue practices to achieve this goal by at least minimally complying with environmental regulations, treating employees well, or paying more for goods produced with the environment in mind.[77] Studies have shown that companies may enhance profitability with these sustainable practices.[78] One business strategy for sustainability is considering the "triple bottom line . . . '[of] economic prosperity, environmental quality, and social justice' " in addition to the financial performance of the company.[79] Another strategy for sustainability is called "gearing up," which takes a business from mere compliance to utilizing sustainable practices for innovation and growth, which the leading companies can use to transform an industry.[80] More and more companies are taking sustainability practices into consideration when deciding on

74. Sneirson, *supra* note 6, at 1015.

75. *See id.*

76. *Id.* at 990.

77. *Id.* at 991.

78. *See, e.g.*, Janet E. Kerr, *Sustainability Meets Profitability: The Convenient Truth of How the Business Judgment Rule Protects a Board's Decision to Engage in Social Entrepreneurship*, 29 CARDOZO L. REV. 623, 664-65 (2007) (citing studies measuring a positive correlation between corporate socially responsible behaviors and consumers' reaction to the company's products and services); JOHN ELKINGTON, CANNIBALS WITH FORKS: THE TRIPLE BOTTOM LINE OF 21ST CENTURY BUSINESS 314 (1998) (profitability may increase in business to business transactions with sustainable companies).

79. Sneirson, *supra* note 6, at 991.

80. *Id.* at 993-94 (citing Nike as an example). *See generally* NIKE, INC., INNOVATE FOR A BETTER WORLD: FY05-06 CORPORATE RESPONSIBILITY REPORT (2006), *available at* http://www.socialfunds.com/csr/reports/Nike_FY05-06_Corporate_Responsibility_Report.pdf.

their business strategy to increase their reputation in the eyes of the public as well as their profitability.[81]

Corporate social responsibility (CSR) refers not only to the obligation that the corporation has to its shareholders to maximize profits, but also to the obligation to have a long-term positive effect on society.[82] This trend for companies to be more socially responsible has been growing for the last fifteen years as seen by social investing, academic sustainability programs, and environmental marketing as well as institutional investors.[83] Adopting CSR policies is believed to increase profits according to seventy-nine percent of global CEOs and eighty-two percent of executives in the United States.[84] Additionally, businesses with a CSR policy have been proven to perform better than businesses without a CSR policy over a five year period.[85] As pressure increases from the public due to individuals developing their own personal norms related to the environment, CSR plans should be on the rise as sustainability becomes more of a social norm.

A personal norm is an obligation enforced through an internalized sense of a duty to act and guilt or related emotions for failure to act.[86] Consumers are becoming more conscious of the environment and the impact that they themselves have through recycling and purchasing products. Consumers tend to be conscientious of buying green products if they believe they are having a direct benefit on the environment through the purchase.[87] When evaluating a direct benefit, customers consider the reputation of the company that produces the product as well as the quantifiable impact that

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81. Joseph J. Swartz, Comment, *Thinking Green or Scheming Green?: How and Why the FTC Green Guide Revisions Should Address Corporate Claims of Environmental Sustainability*, 18 PENN. ST. ENVTL. L. REV. 95, 106-07 (2009).

82. *Id.* at 106. CSR refers to addressing "environmental, social, [and] financial concerns" whereas corporate sustainability "refers to minimizing a company's environmental footprint." Jeff Civins & Mary Mendoza, *Corporate Sustainability and Social Responsibility: A Legal Perspective*, 71 TEX. B.J. 368, 369 (2008). These terms are used interchangeably in this article since businesses tend not to differentiate between the two.

83. Swartz, *supra* note 81, at 106-07; Telephone Interview with John Wilson, Dir. of Corporate Governance, Teachers Ins. & Annuity Ass'n—Coll. Ret. Equities Fund (Jan. 31, 2011) (stating that companies are more willing to engage the shareholders in creating CSR polices and there is more acceptance of using sustainability as a competitive advantage).

84. Theodore E. Zorn & Eva Collins, *Is Sustainability Sustainable?: Corporate Social Responsibility, Sustainable Business, and Management Fashion*, *in* THE DEBATE OVER CORPORATE SOCIAL RESPONSIBILITY 405, 407-08 (Steve May et al. eds., 2007).

85. Swartz, *supra* note 81, at 108 (citing Michael J. King, *Sustainability: Advantaged or Disadvantaged? Do Organisations that Deliver Value to All Stakeholders Produce Superior Financial Performance?*, *in* the J. OF CORP. CITIZENSHIP, Autumn 2001, at 99, 114).

86. *See* Sneirson, *supra* note 6, at 1011 (quoting Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 340 (1997)).

87. *See* CONE COMMC'NS, 2008 GREEN GAP SURVEY FACT SHEET (2008), *available at* http://www.coneinc.com/stuff/contentmgr/files/0/57bfa0d65ae70c7e1122a05a9d0d67e0/files/2008_green_gap_survey_fact_sheet.pdf. Consumers tend to have more power because of all the product choices available to them in today's competitive market.

the product has on the environment.[88] However, the customer may still not purchase a green product if the customer does not think that his or her contribution has an impact. Again the decision point comes down to information provided by the corporation on the product that they sell, as well as the reputation the company has as being environmentally friendly.[89] An individual may feel that a corporation has more of an obligation to go green because the corporation can have more of an impact than one individual.[90] If more and more environmentally conscious individuals do their share, however, then the expectations on corporations will increase.

B. Norm Entrepreneurs

Social norms are adopted by companies over time through high profile CEOs and corporate managers leading the industry, or norm entrepreneurs, through the business practices of their companies.[91] Many norm entrepreneurs have already included sustainability standards in their new best practices.[92] For example, Mike Duke, the CEO and President of Wal-Mart, and Mark Parker, the CEO of Nike, could be considered norm entrepreneurs because of their concern of balancing long term sustainable practices with profit maximization for shareholders. Norm entrepreneurs have the leeway to make decisions that include sustainable practices because the business judgment rule gives them great deference to determine what is in the best interests of the company for long-term growth.[93] Norm entrepreneurs also have a direct duty to keep up with the desires of the ever-changing marketplace.

Norm entrepreneurs managing leading companies such as Nike and Wal-Mart are playing a critical role in the emergence and adoption of sustainability as a social norm in the marketplace.[94] This socialization is achieved through the power of persuasion.[95] The norm entrepreneurs persuade players in their industry to accept and internalize sustainability as a social norm through the policies they put in place in their companies.[96] There is a cascade

88. *See id.*
89. *See id.*
90. *See* Hope M. Babcock, *Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm,* 33 HARV. ENVTL. L. REV. 117, 130 (2009).
91. *See* Sneirson, *supra* note 6, at 1012.
92. *Id.* (listing as examples norm green entrepreneurs Texas oilman T. Boone Pickens and Duke Energy CEO Jim Rogers).
93. *See* Jones, *supra* note 15, at 343.
94. *See* Baker, *supra* note 1.
95. Babcock, *supra* note 90, at 144.
96. *See id.* at 143-44.

effect in which other companies within the industry will conform once a norm entrepreneur successfully changes the environment standards of the businesses that they partner with.[97] Norm entrepreneurs are capable of integrating sustainability practices industrywide with the information that they have about sustainability and the requirements of the industry they operate within by persuading businesses they partner with to adopt a new social meaning for sustainability.

In order to keep up with the marketplace, norm entrepreneurs balance multiple needs by tending to all the companies' constituencies rather than just the shareholders.[98] Norm entrepreneurs are concerned with the long-term success of their companies and therefore they focus on relationships with "customers, employees, financial backers, suppliers, regulators, and [the] communities" in which the companies are located.[99] In order to enhance these relationships, norm entrepreneurs may choose to incorporate sustainable practices into their corporate identities. These efforts, however, may detract from shareholder profits in the short term, so a corporate manager must make a long-term cost-benefit analysis. This may be challenging to measure because of the difficulty of taking into account the non-monetized social value of implementing sustainable practices in the eyes of a company's customers, employees, and community.

Norm entrepreneurs have an incentive to go green and conform to the social norm if it is profitable for the company. If implementing sustainable practices is not profitable, then it becomes a tougher decision especially if the company is a big player in the marketplace and leads the industry. If the norm entrepreneur takes into account the material and psychic costs of violating social norms affecting society's well-being in the cost-benefit analysis of implementing sustainable practices, then they may be more inclined to go green.[100] The norm entrepreneur would have some latitude, under the business judgment rule, to take into account social norms affecting the reputation of the company in order to continue doing business in the long-term.[101] Therefore, the norm entrepreneur may choose to sacrifice profit in the short term by implementing sustainability practices in the hopes of ensuring the longevity of the company by improving the company's reputation and brand image in the public's eye. The ultimate goal of the norm entre-

97. *Id.* at 145 (quoting Geoffrey P. Miller, *Norms and Interests*, 32 HOFSTRA L. REV. 637, 639 (2003)).

98. Smith, *supra* note 15, at 290-91.

99. Sneirson, *supra* note 6, at 1014.

100. *See* Vandenbergh, *supra* note 71, at 1108 n.32.

101. *See* Jones, *supra* note 15, at 343, 345.

preneur, however, is to stay in business so he or she will take only so much risk to sacrifice profit in the short term because sustainable practices will not matter if the company fails.

C. Social Norms Management

The government may be able to help effectuate the change in behavior of both individuals and corporations through "social norms management" by changing the psychic cost or benefit of participating in an environmentally conscious behavior.[102] Individuals will weigh the costs of participating in a green activity just as leaders of companies would and will act if the benefit to them outweighs the cost.[103] The sustainable norm will prevail if enough individuals believe in the worthiness of acting in an environmentally conscious way, understand the behaviors that they need to engage in, and communicate their beliefs to the community to gain momentum.[104] Therefore, the government could help manage the sustainable social norm by increasing the pride of doing the activity and the guilt for not doing it through ad campaigns or financial incentives, for example, without implementing expensive monitoring programs.[105]

IV. LEGISLATION INFLUENCE

Environmental and social goals appear to be such an issue in society that an argument can be made that "corporations are the only organizations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve [them]."[106] This is because regulations may be passed based upon interest group pressures rather than distributive justice.[107] Specific regulations covering sustainability that have profit-sacrificing objectives are usually not passed because of "the strong, regulation-wary

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102. Ann E. Carlson, *Recycling Norms*, 89 CALIF. L. REV. 1231, 1232-33, 1235 (2001) (mentioning as an example New York City's governmental program of advertising campaigns to increase recycling, which featured Oscar the Grouch and Joe Torre, when he was managing the New York Yankees).

103. *See id.* at 1237.

104. *See id.* at 1240. Corporations' behavior could be monitored through social media by receiving negative attention for non-compliance with the social norm.

105. *See id.* at 1250-51; *see also* Babcock, *supra* note 90, at 159-60 (noting that shaming is one sanction that is a cheap alternative to changing conduct that does not align with social norms). For example, the Environmental Protection Agency supports the recycling of solid waste rather than it going to landfills, which has led to the development of state and federal programs. Carlson, *supra* note 102, at 1262.

106. ELKINGTON, *supra* note 78, at 71.

107. *See* BAINBRIDGE, CORPORATION LAW, *supra* note 22, § 1.4 at 23.

business lobby."[108] Therefore, the government is left with the option of "pass[ing] general, ambiguous, and optional statutes to support [sustainable practices]," which may or may not be adopted by corporations.[109]

A. Environmental Protection Agency

The challenge for the Environmental Protection Agency (EPA) is how to regulate corporations that have an impact on the environment. The EPA currently requires corporations to disclose the storage of hazardous materials as well as CO_2 emissions.[110] Companies that are large quantity generators of hazardous waste must register facility locations with the EPA and then do annual inspections at the facilities to ensure that the companies are not storing hazardous materials in excess of ninety days.[111] The reporting required for CO_2 emissions is very specific and may not make any sense to external parties comparing data for two different companies.[112] Therefore, companies will consider the risk of whether they will be inspected by the EPA and receive a fine for violating a regulation in the cost of doing business, and disclose the minimum information required that shows them in a positive light. In other words, companies do not have much incentive to make fundamental changes in their environmental strategies with the current EPA regulations because minimal compliance is achievable. Until a leading company is made an example of for non-compliance and clear standards for the dissemination of information are set, government agencies will not make an impact on sustainable practices.

B. Federal Trade Commission

Corporations are known for voluntarily providing to the marketplace their own information on their sustainability practices to place the company in a favorable light when consumers are

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108. Torbitt, *supra* note 37, at 594.

109. *Id.*; *see also* Carlson, *supra* note 102, at 1235 (stating that traditional government regulation may be ineffective to solve a collective environmental problem that requires numerous people to act because of the costs of monitoring and enforcement and privacy concerns).

110. *See* Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. §§ 11001-21 (2006).

111. 40 C.F.R. § 262.34 (2011). Congress enacted the Resources Conservation and Recovery Act (RCRA) in 1976 to regulate the "generation, transport, storage, and disposal of hazardous" materials and to regulate landfills. *See* Carlson, *supra* note 102, at 1261.

112. *See, e.g.*, U.S. Envtl Prot. Agency, *Climate Leaders Partnership Directory*, EPA.GOV (Aug. 2010), http://www.epa.gov/climateleaders/documents/directory.pdf (publishing the goals of corporations that voluntarily commit to reducing greenhouse emissions).

making purchasing decisions.[113] The Federal Trade Commission (FTC) has the power to bring lawsuits against individuals or corporations for false or misleading marketing claims and can address corporate environmental marketing claims.[114] The FTC has authority to protect consumers under Section 5 of the Federal Trade Commission Act, which states that "[u]nfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are . . . unlawful."[115] In order to avoid liability under Section 5, corporations must substantiate their environmental marketing, qualify any claims that are only true under limited circumstances, and consider how the reasonable consumer would interpret the advertising.[116] Corporations must substantiate their marketing claims through evidence based on the expertise of professionals in the area, which is evaluated in an objective manner using generally accepted standards in the area.[117]

Currently the FTC publishes "green guides" to guide corporations as to how it will apply Section 5 of the FTC Act to environmental marketing so as to help companies avoid false or misleading advertising claims.[118] Thus far, the green guides have been updated to include recyclable, degradable, compostable, and ozone-safe products and practices and the FTC has proposed adding guidance regarding renewable materials, renewable energy, and carbon offsets.[119] Currently the green guides are voluntary and "are composed of general principles and specific guidance on the use of environmental claims."[120] The green guides are important, as more corporations claim to be sustainable or green in order to appeal to consumers, because the green guides give corporations examples of how to comply with the law.[121] Therefore, the guides also play a role in preventing corporations from "green washing" or deceptively presenting a product to be more environmentally friendly than it is.[122]

However, the FTC has not addressed corporations' claims to be "socially responsible" or "environmentally sustainable," which cor-

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113. *See* ORG. FOR ECON. CO-OPERATION & DEV., PROMOTING SUSTAINABLE CONSUMPTION: GOOD PRACTICES IN OECD COUNTRIES 29 (2008), *available at* http://www.oecd.org/dataoecd/1/59/40317373.pdf.

114. Swartz, *supra* note 81, at 95-96.

115. Federal Trade Commission Act, 15 U.S.C. § 45(a)(1) (2006).

116. *See* Swartz, *supra* note 81, at 99.

117. *Id.* at 101 (quoting Guides for the Use of Environmental Marketing Claims, 16 C.F.R. § 260.5 (2008)).

118. *Id.* at 100.

119. *See* Fed. Trade Comm'n, *Green Guides Summary of Proposal*, FTC.GOV (Oct. 6, 2010), http://www.ftc.gov/os/2010/10/101006greenguidesproposal.pdf.

120. Guides for the Use of Environmental Marketing Claims, 16 C.F.R. § 260.3 (2011).

121. Swartz, *supra* note 81, at 100.

122. *Id.* at 108.

porations are increasingly making in order to gain a competitive advantage.[123] Consumers consider the product label as well as the reputation of the company when purchasing a product and could be swayed by a company's claim of being environmentally friendly.[124] In addition, investors may be deceived by the claims of a company if they are concerned about the reputation of a company being socially conscientious. The FTC could incorporate examples and definitions of what it means to be environmentally sustainable in the green guides in order to provide a standard for corporations to look to before making claims of social responsibility or environmental sustainability. This could be beneficial if the green guides remain a voluntary guideline for corporations because the FTC would not have the overwhelming task of defining sustainability for each industry, and enforcing the standard for corporations to be considered environmentally sustainable.[125] No global change would likely occur, however, because corporations would still be free to manipulate their claims to be sustainable without backing them up since there would not be any liability for non-compliance.

C. Securities and Exchange Commission

The Securities and Exchange Commission (SEC) could provide sustainable guidelines, in addition to guidance on how to be compliant with current laws.[126] These guidelines could be uniformly implemented on a federal scale for an industry and have a direct effect on climate change, for example, by enabling investors to make informed decisions based on the reporting of companies. Businesses would then have a standard to abide by in order to minimize liability to shareholders in making decisions.[127] Congress could grant the SEC the power to bring suits under the FTC Act against corporations that are claiming to be environmentally sustainable because these claims affect investor decisions when the stock price increases as a result.[128] This relates to the securities market because if an investor makes a decision based upon false and deceptive claims by companies that they are "green," then SEC Rule 10b-5 would be violated.[129] However, the Supreme Court

123. *Id.* at 111.

124. *See id.* at 112.

125. *Id.* at 113-14 (stating that corporations could "have their claims certified by independent third [parties]," which are industry specific, to help alleviate consumer deception).

126. Torbitt, *supra* note 37, at 594-95.

127. *Id.* at 595.

128. Swartz, *supra* note 81, at 117. However, this enforcement could lead to stock manipulation.

129. *Id.*; *see also* Civins & Mendoza, *supra* note 82, at 371 (stating that "Section 10(b) of the Securities Exchange Act of 1934 . . . makes it unlawful for anyone to make an untrue

has held that a law suit could not be filed against a company for a material misstatement in violation of 10b-5 if there is no adverse effect on the stock price.[130] Therefore, the current power of the SEC is ineffective against companies claiming to be "green" as a violation of 10b-5, unless the SEC can enforce the green guides.

Some other regulations provided by the SEC may provide guidelines for reporting sustainability issues such as climate change. For example, Regulation S-K Item 101 requires the "disclosure of any material effect . . . environmental . . . costs may have on earnings and competitive position[ing]."[131] Regulation S-K Item 103 requires "disclosure of material legal proceedings" that are pending, which increasingly involve sustainability issues to determine what requirements a company should meet.[132] Finally, Regulation S-K Item 303 requires disclosure of trends or uncertainties that could reasonably affect the profitability of the company, which again could easily include sustainability issues.[133] The SEC has declined to expand these broad regulations to enforce sustainability issues because sustainability programs are predominantly voluntary.[134] Extending the power of the SEC to require disclosures under this rule would only make sense if the SEC also had the ability to enforce the green guides.

D. Other Alternatives

Another alternative would be to implement a standardized system of reporting in the form of a social return on investment (SROI) for corporations to follow. SROI measures whether the capital invested in corporations generates returns for managers, the investors, and society as a whole.[135] Specifically, SROI enables managers to understand the environmental, social, and public economic value by quantifying the indicators of this added value, converting this to net present value, and then dividing the number by

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statement or to omit to state a material fact in connection with the purchase or sale of any security" and could be a way to pursue a company for untruthful disclosures regarding its social responsibility claims).

130. *See, e.g.*, Dura Pharm., Inc. v. Broudo, 544 U.S. 336, 342-47 (2005).

131. Civins & Mendoza, *supra* note 82, at 370.

132. *Id.*

133. *See id.*

134. *See id.* at 371 (stating as an example that the SEC refused to act on a petition by Ceres, to specify "that material climate change information must be included in corporate disclosures under existing laws").

135. *See Measuring Social Impact: The Foundation of Social Return on Investment [SROI], The SROI Primer,* LONDON BUS. SCH., http://sroi.london.edu (last visited Feb. 6, 2012).

the amount of monetary investment.[136] An SROI analysis includes "information about the process by which the number was calculated," a context for the calculation to interpret the number accurately, and "non-monetized social value and information about its substance and context."[137] A standardized measure such as SROI could help norm entrepreneurs understand the implications of strategic and innovative decisions made related to sustainability. The issue then becomes how to motivate companies to use a standardized reporting tool, which would enable leading companies in each industry to have the power to influence sustainability practices by instigating competition between businesses based on compliance with standards in the industry.

There are instances when state and local governments pair up with business and industry to create programs to help with sustainable practices, such as tradable carbon programs. For example, California passed the Global Warming Solutions Act of 2006, which committed companies to monitoring the emissions of carbon dioxide.[138] Another example is the Chicago Climate Exchange (CCX), which was founded in 2003 to enable state and local governments, as well as businesses and individuals in the United States, to buy and sell carbon credits.[139] The CCX is a voluntary trading system with the goal of reducing greenhouse gas emissions.[140] In addition, extended product responsibility (EPR) programs have been implemented by multi-national firms to monitor the environmental impact of a product over its entire life cycle.[141] These programs are beneficial because they are voluntary and encourage corporations to disclose information regarding their impact on the environment with the support of the government.

There are other voluntary standards that have been established on an international scale by various agencies. For example, the International Organization for Standardization (ISO) has created a standard called the ISO 26000 to address various aspects of environmental management and what it means to be socially

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136. *See* SARA OLSEN & JEREMY NICHOLLS, SOC. VENTURE TECH. GRP., A FRAMEWORK FOR APPROACHES TO SROI ANALYSIS 4 (Sheila Bonini et al. eds., 2005), *available at* http://svtgroup.net/wp-content/uploads/2011/09/Framework-for-Approaches-to-SROI-Analysis.pdf.

137. *Id.*

138. *See Statewide Response to Climate Change*, CALIFORNIA CLIMATE CHANGE PORTAL, http://www.climatechange.ca.gov/state/index.html (last visited Feb. 6, 2012).

139. *See generally Chicago Climate Exchange*, *Markets*, ICE, https://www.theice.com/ccx.jhtml (last visited Feb. 6, 2012).

140. *See id.*

141. T. Rick Irvin & Peter A. Appel, *Sustainable Commerce: Public Health Law and Environmental Law Provide Tools for Industry and Government to Construct Globally-Competitive Green Economies*, 33 S. ILL. U. L.J. 367, 393 (2009). For example, Wal-Mart includes EPR in its assessment of the environmental impact of its vendors. *Id.* at 396.

responsible.[142] Additionally, the Global Reporting Initiative (GRI) provides a guideline for voluntarily reporting sustainability performance.[143] A network of industry experts from all over the world created the guidelines for the GRI, which include strategy and analysis, organizational profile, reporting parameters, governance, commitments, and engagement.[144] Furthermore, a non-profit international organization called the Carbon Disclosure Project (CDP) has set a goal to become the gold standard for carbon disclosure.[145] The CDP has requested that approximately 3000 companies worldwide disclose information on the risks and opportunities presented by climate change and greenhouse gas emissions.[146]

An argument could be made that legislation imposing legal liability on companies would align the interests of shareholders with social responsibility because the shareholders will lose money if the corporation's reputation is damaged by citations and fines for non-compliance.[147] If the corporation is already profitable, then the corporation can be proactive in incorporating environmental compliance into its business practices to increase its brand and reputation and avoid liability. If regulations are mandatory, the issue becomes how regulatory agencies will enforce the rules and how the agency would manage all the information to set reasonable standards in different industries. Therefore, corporations appear to be better equipped to handle the gathering of information and to implement sustainability standards that the corporation is willing to comply with in order to gain a competitive advantage in the marketplace.

V. LEADING CORPORATIONS INFLUENCE

According to Mike Duke, the CEO and President of Wal-Mart, sustainability practices are important because they "make Wal-Mart a better company by reducing waste, lowering costs, driving innovation, increasing productivity and helping [it] fulfill [its]

142. *See* Civins & Mendoza, *supra* note 82, at 369.

143. *See What Is GRI?*, GLOBAL REPORTING INITIATIVE, https://www.globalreporting.org/information/about-gri/what-is-GRI/Pages/default.aspx (last visited Feb. 6, 2012).

144. *See* GLOBAL REPORTING INITIATIVE, SUSTAINABILITY REPORTING GUIDELINES 19, *available at* https://www.globalreporting.org/resourcelibrary/G3.1-Guidelines-Incl-Technical-Protocol.pdf.

145. *See generally* CARBON DISCLOSURE PROJECT, https://www.cdproject.net/en-US/Pages/HomePage.aspx (last visited Feb. 6, 2012). Carbon Disclosure Project is an international non-profit that services international investors and has $78 trillion in managed assets. *Id.* https://www.cdproject.net/en-US/Pages/About-Us.aspx.

146. *See id.*

147. *See* Lee, *supra* note 28, at 43.

mission of saving people money so they can live better."[148] To further its sustainability efforts, Wal-Mart has implemented a sustainability index as a requirement for customer-suppliers.[149] Through the sustainability index, Wal-Mart acquires the input of suppliers on the product life cycle to determine what requirements they want customer-suppliers to meet in order to do business with them.[150] As a result of Wal-Mart being a major player in the retail industry and its "global supply chain, it is likely that Wal-Mart's sustainability [index] will [set] [the] standard" because of businesses competing to be Wal-Mart's suppliers and vendors.[151]

Similarly, as a retailer as well as a manufacturer, Nike leads the industry in innovative solutions to sustainability.[152] Sarah Severn, the Director of Stakeholder Mobilization for Nike, stated that Nike has "consciously moved away from the concept of corporate responsibility as a risk and reputation management approach to one that stresses sustainability as an opportunity for innovation and business growth."[153] To that end, Nike has incorporated lessons into its sustainability strategy from the new report by Ceres, which is the Coalition for Environmentally Responsible Economies, entitled "The 21st Century Corporation: Roadmap for Sustainability."[154] Nike has joined the Ceres coalition of investors, environmental groups, and other public interest groups working with companies to set new industry standards.[155] As a big player in the athletic footwear industry, Nike integrates opportunities listed in the Ceres roadmap as part of its requirements to partner with businesses, and a competitive race begins for businesses working with Nike to meet the same sustainability standards.[156]

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148. WALMART, GLOBAL SUSTAINABILITY REPORT 2010 PROGRESS UPDATE 1 (2010), *available at* http://cdn.walmartstores.com/sites/sustainabilityreport/2010/WMT2010GlobalSustainabilityReport.pdf [hereinafter GLOBAL SUSTAINABILITY REPORT].

149. *See generally* Walmart Corporate, *Sustainability Index*, WALMARTSTORES.COM, http://walmartstores.com/ sustainability/9292.aspx (last visited Feb. 6, 2012).

150. *See generally id.*

151. WILLIAM A. TANENBAUM & ANDREW ARMSTRONG, *Enhancing Corporate Environmental Sustainability by Combining IT and Environmental Management Practices*, *in* GREEN TECHNOLOGY LAW AND BUSINESS 2010: LEGISLATION, FINANCING, CARBON TRADING AND SUSTAINABILITY 259, 278 (2010).

152. *See* Sneirson, *supra* note 6, at 994.

153. Sarah Severn, *New Ceres Report Delivers Powerful Message and Roadmap for Companies*, NIKEBIZ (Mar. 11, 2010), https://secure.nikebiz.com/responsibility/considered_design/features/2010_SarahSevernCeresRoadmapBlog.html.

154. *See id.*

155. *See id.*

156. *See id.*

A. Case Study of Wal-Mart

Wal-Mart announced three goals five years ago: "be supplied 100% by renewable energy, create zero waste, and selling products that sustain [the world's] resources and the environment."[157] Wal-Mart proceeded to develop a sustainability index tied to various corporate goals including improving Wal-Mart's reputation, quality, efficiency, and sustainable practices.[158] Mike Duke stated that "[customers] increasingly . . . want information about the entire lifecycle of a product so they can feel good about buying it. They want to know that the materials in the product are safe, that it was made well[,] and that it was produced in a responsible way."[159] Duke further stated that since high customer expectations are a permanent part of the future, "[Wal-Mart is] working to make sustainability sustainable, so that it's a priority in good times and in the tough times."[160] Wal-Mart has shown its commitment to sustainability by making participation in its sustainability index a requirement for suppliers and vendors competing to provide products and services to Wal-Mart.[161]

Wal-Mart's first phase in its sustainability index is to provide a survey to its suppliers to evaluate their own sustainability and therefore provide Wal-Mart the information to choose between suppliers using their sustainability compliance as a decision point.[162] Wal-Mart sees the survey as promoting transparency in the supply chain by revealing information on "energy and climate[,] material efficiency[,] natural resources, and; [sic] people and community."[163] The next step in Wal-Mart's sustainability index is to help create a global database on product life cycles with a "consortium of universities that collaborate with suppliers, retailers, [non-governmental organizations], and government [officials]."[164] The final step in the sustainability index is a retail customer tool, which provides information on product history and quality so that consumers can make sustainable choices when it comes to product consumption.[165] In order to disseminate information to the consumers, Wal-Mart discloses to its suppliers and

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157. GLOBAL SUSTAINABILITY REPORT, *supra* note 148, at 5 (expanding the third goal to include concern for people and communities so it becomes to "[s]ell products that sustain people and the environment").

158. *See generally* Press release, Walmart, Walmart Announces Sustainable Product Index (July 16, 2009), *available at* http://walmartstores.com/pressroom/news/9277.aspx.

159. *Id.*

160. *Id.*

161. *See id.*

162. *See id.*

163. *Id.*

164. *Id.*

165. *Id.*

vendors through the survey what sustainable practices it considers important to report.[166]

Wal-Mart contacted all of its 100,000 vendors in the supply chain to emphasize that reducing carbon footprints or reducing energy usage will save money.[167] In response, vendors were racing each other to fill out a fifteen part questionnaire on what they are doing to become more sustainable.[168] In the process of becoming more sustainable, suppliers hire third parties such as the Carbon Disclosure Project to certify their practices, which enables Wal-Mart to rely on third party standards when evaluating suppliers.[169] Additionally, Wal-Mart publishes scores of companies on their Climate Counts Company Scorecard on a website for consumers to review.[170] This "motivates [suppliers] to . . . reduc[e] their impact on climate change."[171] Wal-Mart rates suppliers as "below target, on target, or above target" [172] in the categories listed in the following fifteen questions that suppliers answer: [173]

> Energy and Climate: Reduce energy costs and greenhouse gas emissions
>
> 1. Have you measured . . . your corporate greenhouse emissions? (Y/N)
> 2. Have you opted to report your greenhouse gas emissions . . . to the Carbon Disclosure Project (CDP)? (Y/N)
> 3. What are your total annual greenhouse gas emissions in the most recent year measured?
> 4. Have you set publicly available greenhouse gas reduction targets? If yes, what are those targets?
>
> Material Efficiency: Reduce waste and enhance quality
>
> 5. If measured, please report [the] total amount of solid waste generated from the facilities that produce your product(s) for Walmart for the most recent year measured.
> 6. Have you set publicly available solid waste reduction targets? If yes, what are those targets?

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166. *See generally* Walmart Corporate, *supra* note 149, *Supplier Sustainability Assessment* at 4.

167. *See id.* at 6.

168. *See id.* at 4 for the questionnaire.

169. TANENBAUM & ARMSTRONG, *supra* note 151, at 279.

170. *See* Dennis Walsh, *Green is Good for Business*, CORPORATE RESP. MAG., http://thecro.org/node/500 (last visited Feb. 6, 2012).

171. *Id.* (stating that the company scores can be found at www.climatecounts.org and Nike scored high on their Climate Counts Company Scorecard).

172. Walmart Corporate, *supra* note 149, *Supplier Sustainability Assessment* at 11.

173. *Id.* at 4.

> 7. If measured, please report total water use from the facilities that produce your product(s) for Walmart for the most recent year measured.
> 8. Have you set [publicly] available water use reduction targets? If yes, what are those targets?
>
> Natural Resources: High quality, responsibly sourced raw materials
> 9. Have you established publicly available sustainability purchasing guidelines for your direct suppliers that address issues such as environmental compliance, employment practices, and product/ingredient safety? (Y/N)
> 10. Have you obtained 3rd party certifications for any of the products that you sell to Walmart? . . .
>
> People and Community: Vibrant, productive workplaces and communities
> 11. Do you know the location of 100% of the facilities that produce your product(s)? (Y/N)
> 12. Before beginning a business relationship with a manufacturing facility, do you evaluate their quality of production and capacity for production? (Y/N)
> 13. Do you have a process for managing social compliance at the manufacturing level? (Y/N)
> 14. Do you work with your supply base to resolve issues found during social compliance evaluations and also document specific corrections and improvements? (Y/N)
> 15. Do you invest in community development activities in the markets you source from and/or operate within? (Y/N)

Wal-Mart uses this questionnaire as the first step in its sustainability index to gather information in order to accomplish the goals that it set for itself at the Beijing Sustainability Summit.[174] The goals that were set include "work[ing] with suppliers who share [Wal-Mart's] commitment to being socially and environmentally responsible, increasing transparency within [the] supply chain, achiev[ing] higher standards of product safety and quality, and improv[ing] energy efficiency in supplier factories."[175] Additionally, Wal-Mart implemented a new Supplier Development Program to update its auditing of suppliers in order to identify those suppliers that need assistance in improving their sustainable

174. GLOBAL SUSTAINABILITY REPORT, *supra* note 148, at 2.
175. *Id.* at 19.

practices at their factories.[176] By setting targets, gathering information from suppliers, and then auditing suppliers, Wal-Mart is able to implement the sustainability standards that it sets to further its corporate goals.

For example, Wal-Mart will soon require that "all direct import suppliers source 95 percent of their production from factories that receive one of [the] two highest ratings in audits for environmental and social practices" to prove it is working with environmentally responsible suppliers.[177] Wal-Mart reported its progress in meeting this requirement by highlighting the fact that "[n]inety-three percent of [its] direct sourcing merchandise is produced in top-rated factories."[178] To increase the transparency of the supply chain, Wal-Mart has gathered the information of all of its direct supplier factories and all the factories used to produce private label and non-branded merchandise.[179] To achieve higher standards of product safety and quality, Wal-Mart worked with suppliers to "reduce [its] customer returns on defective merchandise to 1.97[%]" through 2009.[180] Finally, Wal-Mart has partnered with suppliers and established, out of the top 200 factories Wal-Mart directly sources in China, "119 factories that have demonstrated greater than [five] percent improvement in efficiency."[181] These examples show how Wal-Mart has a direct impact on the sustainability practices of its global supply chain and is gradually changing the practices of its suppliers by setting sustainability standards that suppliers have to meet in order to be partners with Wal-Mart.

Wal-Mart believes that the cooperation of suppliers is instrumental in identifying solutions to reduce waste and improve efficiency, which is why Wal-Mart has created sustainable value networks (SVN).[182] Wal-Mart uses SVNs to bring suppliers together with academics, government, and nongovernment agencies to develop solutions to improve local and global communities.[183] Examples of areas in which SVNs have been created are logistics, packaging, electronics, sustainable buildings, and textiles.[184] Utilizing

176. *See id.* at 20.

177. *Id.* at 19.

178. *Id.*

179. *Id.* (stating that by the end of 2009, Wal-Mart was requiring "that all direct import suppliers, along with suppliers of private label and nonbranded products, provide the name and location of every factory they use to make the products Walmart sells.").

180. *Id.* In fact,Wal-Mart's target is to "work with suppliers to drive consumer returns on defective merchandise . . . to less than [one] percent by 2012." *Id.*

181. *Id.* (responding to the goal of "partner[ing] with suppliers to improve energy efficiency by [twenty percent] per unit of production by 2012 in the top 200 factories in China from which [Wal-Mart] source[s] directly").

182. *See* Walmart Corporate, *supra* note 149, *Sustainable Value Networks.*

183. *See id.*

184. *Id.*

SVNs to integrate sustainable practices into all parts of Wal-Mart's business is a way for Wal-Mart to get all the relevant parties on board with sustainable standards that they create together. The standards will be clear to all the parties because they have all had a voice in creating them and they have an incentive to be ahead of the competition with compliance. Therefore, the businesses in the retail industry dealing with Wal-Mart will shift towards becoming more environmentally friendly quickly and efficiently.

B. Case Study of Nike

Nike is another leader making an impact, and it started incorporating sustainability into its business practices over fifteen years ago, when there was no "best practices" for manufacturers to follow.[185] Nike prides itself on innovation and has therefore experimented with different approaches with select partners.[186] Nike initially reached out to its partners in the 1990s at a time when Nike was being criticized for "operating sweatshops with underage workers in Asia and using chemicals that polluted community water sources in less industrialized countries."[187] To improve Nike's reputation and to protect the "swoosh" brand, "Nike . . . requested that its suppliers adopt strict environmental standards for manufacturing processes."[188] By working with suppliers, Nike evaluated the product life cycle to integrate waste reduction and creative reuse.[189] Nike performed material assessments to eliminate toxic substances, redesign the shoebox, and substitute water based cements into its shoes.[190] As a result of Nike partnering with its suppliers to use more benign materials, to reuse, and to recycle, suppliers were able to reduce their cost of materials while increasing the quality of the product.[191]

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185. Severn, *supra* note 153.

186. *See id.*; *see also NIKE: Innovation Through Partnerships and Redesign Throughout the Life Cycle*, INVESTOR ENVTL. HEALTH NETWORK, http://www.iehn.org/publications.case.nike.php (last visited Feb. 6, 2012) [hereinafter *Innovation Through Partnerships*] (including the following partners: "Sustainability Partners, the Natural Step, and the Society for Organizational Learning, in addition to Bill McDonough and Michael Braungart's organizations").

187. *Innovation Through Partnerships*, *supra* note 186.

188. *Id.* Nike collaborated with Asian suppliers and installed new computer systems to "help local managers calculate investment costs and payoffs for environmental projects." *Id.*

189. *Id.* This concept of "cradle to cradle" is drawn from the field of industrial ecology by McDonough-Braungart and is innovative in thinking of reuse rather than disposal of a product as the end of its life. *See* William McDonough & Michael Braungart, *Transforming the Textile Industry*, GREEN@WORK, July/Aug. 2002, *available at* http://www.greenatworkmag.com/gwsubaccess/02julaug/eco.html.

190. *Innovation Through Partnerships*, *supra* note 186.

191. *Id.* For example, "from a baseline year of 1995, organic solvent use had been reduced [eighty-eighty percent], creating total savings by mid-2000 of $4.5 million in raw materials alone . . . [which] benefited the approximately 180,000 workers in its [thirty-seven]

Through experimenting, redefining, and redirecting its sustainability strategy, Sarah Severn, Director of Stakeholder Mobilization, has stated that Nike has learned "the need to establish Nike's social and environmental footprint; the value of partnership and collaboration in solving tough problems; and above all, the necessity of integrating sustainability into Nike's business operations and having governance and oversight at the board level."[192] Nike has a huge impact on the environment with its supply chain that includes over 900 factories and 650,000 workers.[193] Therefore, Nike has recently taken the opportunity to join a coalition of investors, environmental groups, and other public interest groups to check its progress with the roadmap provided by Ceres in its new report, *21st Century Corporation: Roadmap for Sustainability*.[194] "The report provides a practical roadmap for [incorporating] sustainability into the DNA of [the] business."[195]

The four key areas covered in the roadmap are governance, stakeholder engagement, disclosure, and performance, each of which includes expectations and action steps.[196] Examples of some of the twenty key expectations in the roadmap include "requir[ing] 75 percent of top tier suppliers to meet company sustainability performance standards; dedicat[ing] 50 percent of [research and development] investment to developing sustainability solutions; and compensat[ing] and provid[ing] incentives for top executives and other employees to drive sustainability into the business."[197] The report concluded that no company has yet fully integrated sustainable practices into "all aspects of its business, including its governance systems, overall performance, and top-to-bottom business strategy."[198] Understanding this need for improvement, Nike prioritizes implementing sustainability practices from top to bottom so there will be more pressure for companies in business with Nike to do the same.

Asian factories." *Id.* Another example is that Nike increased its percentage of garments made of organic cotton "from [twenty-two percent] in 1999 to [forty-seven percent] in 2004." *Id.*

192. Severn, *supra* note 153.

193. *See* Grieser, *supra* note 53, at 294.

194. *See* Severn, *supra* note 153.

195. Press Release, Peyton Fleming, Commc'ns Dir., Ceres, A Race Toward Sustainability–and Profits: New Report Delivers Powerful Message and Roadmap for Companies (Mar. 11, 2010), *available at* http://www.ceres.org/press/press-releases/a-race-toward-sustainability-and-profits-new-report-delivers-powerful-message-and-roadmap-for-companies. Ceres is a leading coalition of investors, environmental groups, and other public interest organizations working with companies to address sustainability challenges such as global climate change, and is the publisher of the report, *The 21st Century Corporation: The Ceres Roadmap for Sustainability*. *See id.*

196. *Id.*

197. *Id.*

198. *Id.*

Nike has thus far integrated sustainability in its governance systems and product innovation.[199] For example, Nike created a Corporate Responsibility Committee of the Board of Directors that meets throughout the year to review policies and to develop "recommendations regarding labor and environmental practices, community affairs, and sustainability initiatives."[200] Nike also launched GreenXchange last year, which is a "web-based marketplace designed to share intellectual property [to] lead to new sustainability business models and innovation."[201] Furthermore, Nike created a "Considered Design" ethos in order to reduce the environmental impact of producing its products.[202] Mark Parker, CEO of Nike, has stated that "[w]e are designing for the sustainable economy of tomorrow, and for us that means using fewer resources, more sustainable materials and renewable energy to produce new products."[203]

Hannah Jones, Vice President of Sustainable Business & Innovation at Nike, Inc., has stated that "[i]ntegrating sustainability is not just good for business; it is essential if we are to continue to grow economies and create jobs in a world of increasingly constrained resources."[204] In other words, sustainable practices have to be integrated into a business' strategy when considering long term growth in the current economic environment. Nike has been recognized for its commitment to leadership as shown when it received the highest score in the apparel sector according to a study in Map Change 2010, based on Nike's "climate-count methodology, . . . [its] environmental footprint, reduc[ing] [its] impact on global warming, [its] support for climate legislation, and [its] disclosure of climate actions."[205]

Nike's corporate sustainability goal by 2020, to be implemented from the co-founder down, is "zero waste, zero toxics, and 100%

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199. Severn, *supra* note 153.

200. *Id.* This practice follows the key area of governance under the Ceres Roadmap, which states that the "five areas for elevating sustainability [are] board oversight, management accountability, executive compensation, corporate policies and management systems, and public policy." Fleming, *supra* note 195.

201. Severn, *supra* note 153. The sharing of information follows the key area of disclosure under the Ceres Roadmap, which outlines six areas for elevating sustainability including "standards for disclosure, disclosure in financial filings, scope and content, vehicles for disclosure, product transparency, and verification and assurance." Fleming, *supra* note 195.

202. Severn, *supra* note 153. Evaluating its environmental footprint with the creation of its product falls within the five areas for improving sustainability performance under the Ceres Roadmap, which includes "operations, supply chains, transportation and logistics, products and services, and employees." Fleming, *supra* note 195.

203. *Nike Going 'Green*,' PORTLAND BUS. J., Oct. 28, 2008, *available at* http://www.bizjournals.com/portland/stories/2008/10/27/daily11.html.

204. Fleming, *supra* note 195.

205. *See Nike and Wal-Mart's Leadership in Sustainability,* BUS. NOT AS USUAL: IDEAS, INSIGHTS & INTUITION BLOG (May 24, 2010), http://www.anandnair.com/nairblog/2010/05/nike-and-walmarts-leadership-in-sustainability.html.

recovered product."[206] In order to accomplish this goal, Nike has progressed "from standard compliance . . . to an across the board corporate sustainability strategy combined with sustainable design concepts."[207] Nike has realized that merely increasing efficiency of current practices would not give it a competitive advantage since companies can copy its ideas.[208] Nike's strategy has been not only to reduce costs, but also to use health and environmental challenges as a competitive advantage.[209] Nike realizes that as a leader in the industry, it can create new revenue growth through innovative strategic change of environmental practices.[210] Nike has proven this by being a leading manufacturer with a forty-seven percent market share of the domestic footwear industry.[211]

C. Effectiveness of Nike's and Wal-Mart's Sustainability Practices

Both Nike and Wal-Mart have implemented successful sustainable programs that have had profound effects on their global supply chains, but one area to compare the two companies is in their monitoring of foreign suppliers. Wal-Mart and Nike began monitoring overseas compliance programs in response to bad publicity related to sweat shops in the 1990s.[212] Both Wal-Mart and Nike instituted codes of ethics, but Wal-Mart immediately implemented a program to audit suppliers.[213] Wal-Mart conducted audits frequently without notifying suppliers of the dates, while Nike conducted announced visits, and did so less often.[214] Wal-Mart would ban suppliers from producing its goods if serious infractions were found, whereas Nike would use a score card to determine the level of infraction, taking employee conditions into consideration when determining whether to stay with a supplier.[215] Overall, Wal-Mart appears to have a stricter compliance program, but that is most likely because Wal-Mart's reputation is under stricter scru-

206. *Innovation Through Partnerships*, *supra* note 186; *see also Nike and Wal-Mart's Leadership in Sustainability*, *supra* note 205 (stating that Nike has a "goal of no pre- or post-consumer waste" throughout the supply chain).

207. *Innovation Through Partnerships*, *supra* note 186.

208. *Id.*

209. *Id.*

210. *Id.*

211. Steven Van Dusen, *The Manufacturing Practices of the Footwear Industry: Nike vs. the Competition*, THE U. OF N.C. AT CHAPEL HILL, http://www.unc.edu/~andrewsr/ints092/vandu.html (last visited Feb. 6, 2012).

212. Walker, *supra* note 10.

213. *Id.*

214. *Id.* For example, Wal-Mart conducted 12,561 audits in 2004 while Nike conducted less than 1,500. *Id.*

215. *Id.*

tiny than Nike's, so Wal-Mart has more incentive to comply to stay in business.[216]

Both Nike and Wal-Mart have moved towards using organic cotton and have joined the non-profit trade group called the Organic Exchange to help develop the organic cotton market and have an impact with their sustainability programs.[217] Through Wal-Mart's commitment to purchasing organic cotton, the market for organic cotton has changed, "with retail sales . . . [having] doubled from $245 million in 2001 to $583 million in 2005."[218] Nike's goal has been to blend at least five percent organic cotton into all its cotton materials as well as "expand [its] offering of 100 percent certified organic cotton products."[219] Both companies have created a great demand for organic cotton, and therefore, continue to create funding in developing countries as well as provide greener products for consumers to further their sustainability practices.

Because Nike and Wal-Mart are leading companies with their sustainability practices, they are subject to public scrutiny and liability to ensure they are meeting the standards that they set. Both Wal-Mart and Nike have been involved in lawsuits that deal with the triple bottom line of economic prosperity, environmental quality, and social justice, in addition to the financial performance of the company.[220] Wal-Mart was sued by some employees of its overseas suppliers for not upholding its "Standards for Suppliers" code of conduct.[221] Some of the allegations against Wal-Mart for unfair business practices included negligent supervision of suppliers.[222] Additionally, the suppliers' employees sued for unjust enrichment based upon Wal-Mart's profiting from the situation.[223] The U.S. Court of Appeals for the Ninth Circuit dismissed the case, stating that Wal-Mart did not have a legal duty to monitor its suppliers or protect the plaintiffs from the supplier's labor

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216. *Id.* (listing examples of websites such as walmartwatch.com and wakeupwalmart.com to demonstrate the public scrutiny that Wal-Mart is under).

217. Walsh, *supra* note 170 (stating that Wal-Mart is the biggest buyer of organic cotton and more than 2.5% of the cotton Nike uses is organic).

218. *See id. But see* Telephone interview with Elizabeth Moon, Assoc. Manager of Prod., GAP Outlet (Jan. 31, 2011) (discussing how the recent cotton crisis has negatively impacted retail companies' endeavors to go green by offering organic products, unless there is a customer demand for the product and need for improving the corporate brand).

219. Walsh, *supra* note 170.

220. *CSR and the Triple Bottom Line*, ZIPCON INTERNET SERVS., http://www.zipcon.net/~laura/laws.htm (last visited Feb. 6, 2012).

221. Doe I v. Wal-Mart Stores, Inc., 572 F.3d 677, 679-80 (9th Cir. 2009). Wal-Mart has also been sued by Nike for patent infringement of Nike's Shox product line in the U.S. District Court for the Northern District of Illinois. *Nike Sues Wal-Mart*, THE HUFFINGTON POST (Oct. 16, 2008, 3:47 PM), http://www.huffingtonpost.com/2008/10/16/nike-sues-wal-mart_n_135240.html.

222. Doe I v. Wal-Mart Stores, Inc., 572 F.3d at 683.

223. *Id.* at 684.

practices and that there was no unjust enrichment because Wal-Mart was not the employer.[224] However, Wal-Mart received bad press for knowing that some of its suppliers had substandard labor practices.[225]

Nike has been sued for public statements it made after not complying with the code of conduct for labor rights that it published along its supply chain, based on California's law of unfair competition and false advertising.[226] Nike published an advertisement claiming that the conditions of overseas workers had improved.[227] The court stated that public statements defending labor practices and working conditions were commercial speech that may be regulated to prevent consumer deception.[228] Nike ended up settling the case before it was re-tried.[229] This case proves that there is a fine balance between a corporation claiming to be sustainable and substantiating those claims as to not be deceptive.

D. Corporations Make a Bigger Splash

Even with the criticisms of their sustainability programs, Wal-Mart and Nike still have the ability to make a bigger splash than regulatory agencies because of their ability to set the standards for their industries. Wal-Mart and Nike have the resources to measure suppliers by their environmental impact as well as the effectiveness of the goals of their sustainable commerce programs through comparing the supplier's practices to their own standards.[230] Wal-Mart and Nike can then choose suppliers based on the environmental impact in order to minimize environmental impact on the product life cycle.[231] Suppliers will succumb to the competitive pressure to meet the standards in order to gain business from Nike and Wal-Mart. Therefore, Nike and Wal-Mart have a ripple effect on sustainability practices throughout the retail and manufacturing industries by requiring their suppliers to meet their standards throughout their global supply chain.

Wal-Mart and Nike have an incentive to change sustainability standards by incorporating environmentally friendly practices into

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224. *Id.* at 685.

225. *See Some of the "Most Wanted" Corporate Human Rights Violators*, GLOBAL EXCHANGE, http://www.globalexchange.org/corporateHRviolators (last visited Feb. 6, 2012).

226. Kasky v. Nike, Inc., 45 P.3d 243, 248 (Cal. 2002), *cert. dismissed*, 539 U.S. 654 (2003) (the Supreme Court of the United States refused to decide the case and remanded it back to California).

227. *Id.*

228. *Id.* at 247, 260, 262.

229. *Kasky v. Nike Inc. Settled*, RECLAIMDEMOCRACY.ORG (Sept. 12, 2003), http://reclaimdemocracy.org/nike/nike_settles_lawsuit.html.

230. *See* Irvin & Appel, *supra* note 141, at 396.

231. *Id.*

their business strategies to become more profitable. Both Wal-Mart and Nike, as leading corporations, are concerned about their reputations as being socially responsible and therefore are eager to respond to consumer demands for more sustainable products. Wal-Mart's purpose of saving people money integrates with their strategy of making sustainable products more affordable and giving consumers the option to choose products based on their personal norms.[232] Nike's strategy to achieve profitable and sustainable growth leads the company to be innovative in minimizing its environmental impact, while generating profit and increasing its reputation.[233] By engaging associates, suppliers, communities, and customers, Wal-Mart and Nike have been able to show that being environmentally friendly enables a business to be efficient and profitable.[234]

Wal-Mart and Nike are leaders in sustainability and are gaining a competitive advantage as a result of being pacesetters.[235] Many companies are following their lead. Companies are still able to gain a competitive advantage as a follower if they adopt the existing standards of their customers, like the "Fishin' Company" did with Wal-Mart's standards to become Wal-Mart's largest sustainable seafood supplier.[236] Followers may also "[i]nfluence existing standards" through green advocacy groups, "[d]efine new standards" in their industry if there are none, or "[b]reak away from existing standards."[237] If followers pursue sustainability and CSR, the companies will outperform their peers in financial returns, according to a study done by AT Kearney.[238] The study found that

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232. Walsh, *supra* note 170; *see also* Toby Harnden, *Michelle Obama Joins Forces with Wal-Mart for Healthy Food Campaign*, THE TELEGRAPH (London), Jan. 20, 2011, *available at* http://www.telegraph.co.uk/news/worldnews/northamerica/usa/michelle-obama/8272391/Michelle-Obama-joins-forces-with-Wal-Mart-for-healthy-food-campaign.html (Wal-Mart's initiative to provide healthier and cheaper packaged foods, build more stores in poor areas, and increase donations to nutrition programs has the potential to transform the marketplace).

233. *See* Walsh, *supra* note 170.

234. *See generally id.*; *see also Top 20 Most Profitable Retail Stocks,* SEEKING ALPHA (Jan. 25, 2011), http://seekingalpha.com/article/248330-top-20-most-profitable-retail-stocks?source=marketwatch (listing Nike as being more profitable than its competitors over the last five years based on its gross profit margin of 44.88% versus the industry average of 41.9% and its net profit margin of 9.26% versus the industry average of 5.24%).

235. *See, e.g.*, Ariel Schwartz, *Sustainability Faceoff: Walmart vs. Target,* FAST COMPANY (Apr. 30, 2010), http://www.fastcompany.com/1634995/hip-scorecard-faceoff-walmart-vs-target (comparing Wal-Mart's profitability of 20.4% return on equity to Target's profitability of 15.3% return on equity in 2009 with taking into account sustainable practices).

236. *Catching Up in Sustainability*, MITCHELL OSAK ONLINE (Nov. 13, 2010), http://mitchellosak.wordpress.com/2010/11/13/catching-up-in-sustainability/.

237. *Id.*

238. MITCHELL OSAK ONLINE, *supra* note 236, *Green Companies Outperform in Times of Volatility* ("look[ing] at [ninety-nine] U.S. public companies [in the study] spanning [eighteen] industries [in the second half of 2008] to understand how [sustainability and] CSR focused companies fared against sustainability specific market indices").

sustainability focused firms out-performed their peers in sixteen out of the eighteen industries that were included, with a difference in shareholder value after six months of fifteen percent or an average of $650 million.[239]

Sustainability programs are becoming a strategic imperative based on business to business pressure from leading companies to ensure long term profitability. As Ben Clarke from Kraft Food states, "Sustainability is now about profit . . . it is the opportunity of the 21st century."[240] As companies scramble to become sustainable and green to gain a competitive advantage, the companies will promote their products and services as green in order to gain brand recognition and become known as socially conscientious businesses. Since the sustainable standards are guided by the leading companies and therefore are voluntary, there are not uniform reporting guidelines, performance metrics, or definitions of what it means to be sustainable. As companies attempt to create sustainable strategies, regulatory agencies would be best served to work with the companies to understand their industry and concerns.

VI. CONCLUSION

Norm entrepreneurs in corporations that lead the retail and manufacturing industries make a bigger splash on implementing sustainable practices than regulatory agencies because of the leading corporations' ability to impact business practices globally. For example, both Wal-Mart and Nike affect global supply chains with their business decisions regarding which suppliers to use. Wal-Mart and Nike have the power to require their suppliers to disclose their practices and to compete with each other for their business. Additionally, Wal-Mart and Nike have the incentive to create strategies that are environmentally friendly to be considered good corporate citizens and generate new revenue streams as they grow to further long term profit maximization. The CEOs of Nike and Wal-Mart, as norm entrepreneurs, are able to take into account social and environmental interests in decision making, in addition to shareholder interests with the protection of the business judgment rule. Furthermore, Wal-Mart and Nike are in a position to work with government and non-government agencies to determine what the standards should be because of their position and knowledge of the industry.

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239. *Id.*

240. PETER FISK, PEOPLE, PLANET, PROFIT: HOW TO EMBRACE SUSTAINABILITY FOR INNOVATION AND BUSINESS GROWTH 4 (2010).

Ideally, regulatory agencies could offer guidelines as to what is required to be considered a green company for any given industry. Realistically, it is hard for agencies to come up with appropriate guidelines for the retail and manufacturing industries, because they do not understand all the players and roles in the supply chain. Products would need to be monitored "cradle to grave" to grasp the overall picture. If there was incentive for companies along the supply chain to disclose their sustainable practices based on competition, then agencies could start offering consultation and advice on compliance to create industry standards. Otherwise, agencies would need to provide financial incentives for companies to disclose information to them or implement regulations with sanctions for non-compliance. However, companies will still perform a cost-benefit analysis of the financial investment of complying with the regulations with the risk of getting caught and fined, and so regulatory agencies would still struggle with buy in. The best role for regulatory agencies in helping to implement sustainability practices would be to draft voluntary guidelines, work with companies to comply, and offer certifications as independent third parties in order to further a company's competitive advantage.

Corporate leaders have the power to implement the solution to sustainability concerns in today's marketplace. Competition among businesses to provide products and services to big players in the industry will motivate leaders in companies to evaluate their own practices and to consider which companies to partner with in order to further a sustainable goal. In practice, it appears that sustainable practices pay for themselves and can potentially lead to long-term profits depending on the level of integration norm entrepreneurs decide on within the business strategy of the company. In the short term, norm entrepreneurs may sacrifice some shareholder profits by implementing sustainable practices to be competitive in the marketplace as the social norm of sustainability becomes the standard. How much of the profit norm entrepreneurs are willing to risk will depend on doing a cost-benefit analysis of how much of an impact sustainable practices will have long-term in their respective industry. Pondering clients' needs by evaluating the efficiency of the delivery of products or services and being proactive in offering solutions to clients will sell the company's brand as sustainable. This will increase the company's value and most likely increase profits in the long term as the company becomes known for going "green."

As Mark Parker, CEO of Nike, Inc. states, "[c]orporate responsibility must evolve from being seen as an unwanted cost to being recognized as an intrinsic part of a healthy business model,

an investment that creates competitive advantage and helps a company achieve profitable, sustainable growth."[241]

241. KIM MACKRAEL, THE NATURAL STEP, A NATURAL STEP CASE STUDY: NIKE, *available at* http://www.naturalstepusa.org/storage/case-studies/nike Case Study_Jan2009.pdf.

CLIMATE CHANGE AND INTERNATIONAL NORMS

AARON EZROJ*

I. INTRODUCTION

Over the next decade, the United States Environmental Protection Agency (EPA) Office of Climate Change will shape climate change policy for the next century. This will occur either through a large regulatory package mandated by Congress or piecemeal with authority under the Clean Air Act or an Executive Order. Unlike other countries that have come before it, the United States has not ratified the Kyoto Protocol and thus is not bound by its terms. The United States can choose to adopt international norms and model its system in a manner similar to other countries or it can forge a new path.

In light of the latitude the United States has in shaping its climate change program, there may be a push to develop a

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program overly protective of the United States' environmental and economic interests. For instance, early House and Senate recommendations for a national climate change program penalized offsets from foreign countries. It could be argued that such an approach is well reasoned because it will be difficult or impossible for the United States government to ensure that offsets from foreign countries meet the same standards as United States' offsets. Additionally, there has already been significant criticism of projects in developing countries. Favoring domestic offsets might also spur development of offset technologies in the United States as opposed to foreign countries where development costs, such as labor, are lower.

Moreover, whereas placing restrictions on other items generally runs afoul of international trade law, namely the General Agreement on Tariffs and Trade (GATT), there has never been a case determining that similar restrictions on offsets run afoul of GATT, although many have argued the contrary. That being said, even if placing limitations on offsets is legally cognizable under GATT, such an approach is unwise in light of the challenges the United States will face in combating global warming. In pressing its agenda, the United States will have to work collaboratively with other countries to gain acceptance of its plan to use large forestry sinks to meet its reduction obligations. Also, the United States will want foreign countries to purchase its offsets without restriction. Indeed, if GATT does not place restrictions on penalizing offsets, the United States also faces the risk that other countries will penalize its efforts to develop such an industry and sell these mechanisms abroad.

Climate change is a global problem requiring a global solution. Even if the United States does not ratify the Kyoto Protocol now or in the near future, the EPA Office of Climate Change should adopt international norms and model its plan for combating climate change on the framework established by the Protocol.

II. INTERNATIONAL CLIMATE CHANGE SCHEMATA

A. The Kyoto Protocol and Other International Agreements

In the 1970s, there was increasing interest in climate change as scientists determined that global temperatures were on the rise.[1] As a result, environmental negotiations began to take place

1. Barbara Buchner, *The Dynamics of the Climate Negotiations: A Focus on the Developments and Outcomes from The Hague to Delhi*, *in* CLIMATE CHANGE POLICY 19, 19 (Michael Bothe & Eckard Rehbinder eds., 2005).

on an international stage.[2] The United States Department of Energy published multiple studies drawing concerns that global temperatures were increasing and the trend could continue.[3] In 1972, the United Nations Conference on the Human Environment brought environmental issues to the forefront.[4] Here "the importance of international cooperation 'to effectively control, prevent, reduce and eliminate adverse environmental effects' was recognized."[5] In 1979, climate change was specifically discussed at the First World Climate Change Conference.[6] At the conference, increased carbon dioxide from, the burning of fossil fuels, deforestation, and land use changes, was identified as the main cause of global warming.[7]

In the 1980s and early 1990s, additional research predicted that global warming could bring drastic weather fluctuations.[8] The Intergovernmental Panel on Climate Change (IPCC), which was established to report on the causes and impacts of climate change, determined that the Earth warmed by half a degree Celsius over the past hundred years.[9] Furthermore, the IPCC reports indicated that if unchecked, the release of greenhouse gas emissions into the atmosphere could accelerate and lead to dangerous weather effects.[10] With increasing concerns over global warming, a Second World Climate Conference was held in 1990, where it was decided that an international convention on climate change was necessary.[11]

In 1992, The United Nations Conference on Environment and Development took place in Brazil. Here the United Nations

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2. *Id.* at 19-21.
3. *Id.* 19.
4. *Id.*
5. UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., TRADE AND CLIMATE CHANGE 68 (2009), *available at* http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf (citing the United Nations Conference on the Human Environment, Stockholm, Swed., June 5-16, 1972, *Stockholm Declaration on Environment and Development*, princ. 24, U.N. Doc. A/CONF.48/14/Rev.1 (June 16, 1972)).
6. Buchner, *supra* note 1, at 19.
7. *Id.* at 20.
8. *See* J. Hansen et al., *Global Climate Changes as Forecast by Goddard Institute for Space Studies Three-Dimensional Model*, 93 J. GEOPHYSICAL RES. 9341, 9341-64 (1988) (predicting a substantial increase in extreme heat waves and a much larger number of days with temperatures at or above 95 degrees Fahrenheit by the year 2050); Philip Shabecoff, *Global Warming Has Begun, Expert Tells Senate*, N.Y. TIMES (June 24, 1988), http://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html; James E. Hansen, Dir. NASA Goddard Inst. for Space Studies, Testimony before the United States Senate, Energy and Natural Resources Committee (June 23, 1998), *available at* http://image.guardian.co.uk/sysfiles/Environment/documents/2008/06/23/ClimateChangeHearing1988.pdf (warning that global warming could bring drastic weather changes such as life threatening heat waves).
9. Buchner, *supra* note 1, at 20.
10. *Id.* at 20-21.
11. *Id.* at 20.

Framework Convention on Climate Change was adopted.[12] "[It] was signed by 155 countries, agreeing . . . to prevent 'dangerous' warming from greenhouse gases, and setting an initial[,] [although non-binding] target of reducing emissions from industrialized countries . . . ."[13] The Convention also articulated "the principle of 'common but differentiated responsibilities,' which recognizes that even though all countries" need to address global warming, countries have not contributed equally to the problem and are not all in the same position to address it.[14] Negotiations at the first Framework Convention on Climate Change conference were tense.[15] Nonetheless, most participants "agreed to establish binding [emissions] reduction targets for developed countries but not for developing countries."[16]

Finally, in 1997, ten thousand delegates from various countries met in Japan, where they famously drafted the Kyoto Protocol.[17] For the first time, an international agreement set binding targets for developed or Annex I countries to reduce greenhouse gas emissions to an average of at least five percent below 1990 emission levels.[18] Building on the "principle of 'common but differentiated responsibility[,]' " the Kyoto Protocol did not assign obligations for reducing emissions to developing or Annex II countries which are arguably less culpable for global warming and less equipped to address it.[19]

In order for the Kyoto Protocol to become effective, "[c]ountries representing [fifty-five] percent of 1990 emissions from [Annex I] countries had to ratify, approve, accede to, or accept [it]."[20] Thus, either the United States or Russia, the largest Annex I emitters of greenhouse gases, "had to accept the agreement[.]"[21] The United States signed the Protocol, in 1998, "but President Bill Clinton did not send it to the Senate for ratification."[22] To this date the United

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12. *Id.*
13. *Id.*
14. UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., *supra* note 5, at 69.
15. Joseph F. C. DiMento & Pamela Doughman, *Climate Change: How the World is Responding*, *in* CLIMATE CHANGE: WHAT IT MEANS FOR US, OUR CHILDREN, AND OUR GRANDCHILDREN 101, 108 (Joseph F. C. DiMento & Pamela Doughman eds., 2007).
16. *Id.*
17. *Id.* at 103.
18. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3, *opened for signature* Mar. 16, 1998, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol]; *see also* DiMento & Doughman, *supra* note 15, at 103 ("In twenty-five years of international efforts to address climate change, the 1997 Kyoto Protocol marked the first agreement on binding limits of greenhouse-gas emissions.").
19. UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., *supra* note 5, at xiv; Buchner, *supra* note 1, at 26.
20. DiMento & Doughman, *supra* note 15, at 110; *accord* Kyoto Protocol, *supra* note 18, art. 25.
21. DiMento & Doughman, *supra* note 15, at 110.
22. *Id.* at 115.

States continues to be the only major industrialized country that has not ratified the Protocol.[23] Nonetheless, Russia ratified the Protocol in 2004 and ninety days later it went into effect.[24]

Although leaving a number of matters open for further negotiations, the Kyoto Protocol laid the groundwork for an international climate change schema that employs a range of climate change mechanisms.[25] This schema provides a means for monitoring and recording countries' emissions.[26] On an annual basis, parties are required to submit inventories of emissions and national reports.[27] Registries are established to track and record parties transactions and the United Nations Climate Change Secretariat maintains a log to verify State compliance with the Protocol.[28] In reaching emission targets, the Protocol also allows for flexibility mechanisms aimed at reducing abatement costs, including emissions trading and carbon offsets.[29]

B. The Clean Development Mechanism and Joint Implementation

Under the Kyoto Protocol, countries are required to meet their emission obligations "primarily through national measures."[30] However, the Protocol allows countries the flexibility to satisfy their emission obligations by purchasing offset credits generated by greenhouse gas reduction projects in other countries.[31] Carbon offset projects are a means of indirectly reducing greenhouse gases through alternative energy and greenhouse gas sequestration and destruction projects.[32] A compliance entity holding an offset credit can emit an additional ton of carbon dioxide into the atmosphere

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23. *Status of Ratification of the Kyoto Protocol*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php (last visited Feb. 6, 2012) [hereinafter *Status of Ratification*].

24. DiMento & Doughman, *supra* note 15, at 110.

25. *See Kyoto Protocol,* UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/items/2830.php (last visited Feb. 6, 2012) [hereinafter *Kyoto Summary*].

26. *Id.*

27. *Id.*

28. *Id.*; *see also* Kyoto Protocol, *supra* note 18, art. 12, § (7) (requiring the elaboration of "modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of project activities.").

29. *See* Kyoto Protocol, *supra* note 18, art. 17.

30. *Kyoto Summary*, *supra* note 25.

31. *See id.* (illustrating the market-based mechanisms for meeting enforcement goals, including emissions trading).

32. For an excellent explanation of the structure of a cap-and-trade program and how offsets fit into such a program, see TIM PROFETA & BRIGHAM DANIELS, NICHOLAS INST. FOR ENVTL. POLICY SOLUTIONS, DESIGN PRINCIPLES OF A CAP AND TRADE SYSTEM FOR GREENHOUSE GASES 3-4 (2005), *available at* http://nicholasinstitute.duke.edu/climate/policydesign/design-principles-of-a-cap-and-trade-system-for-greenhouse-gases.

because at some other location in the world, a developer of an offset project is reducing the amount of carbon dioxide emissions in the atmosphere through its project.

Annex B to the Kyoto Protocol sets targets for the reduction of greenhouse gases by Annex I countries.[33] In setting these targets, the Kyoto Protocol provides for three flexible cost containment mechanisms: International Emissions Trading (IET), Joint Implementation (JI), and the Clean Development Mechanism (CDM).[34] All three "flexible mechanisms" are forms of emissions trading.[35] JIs and CDMs are project-based mechanisms, allowing for the generation of credits for reductions made by investments in specific projects.[36] In 1997 when "parties to the United Nations Framework Convention on Climate Change (UNFCCC) negotiated and adopted the Kyoto Protocol[,]" they only decided "the basic features of" these mechanisms.[37] Later, in 2001, the Marrakech Accords further outlined the details as to how these mechanisms would operate.[38] Rather than reducing emissions domestically, these mechanisms allow investment in reductions or sequestration abroad.[39]

Reduction credits are generated through comparing actual emissions from a project with baseline emissions, or the emissions that would have occurred without the project.[40] Developed countries can use these credits to satisfy their emission reduction requirements under the Kyoto Protocol.[41] A major difference between JI and CDM mechanisms is that JI projects take place in developed countries with binding emission requirements, whereas CDM projects take place in developing countries without commitments under the Protocol.[42]

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33. Kyoto Protocol, *supra* note 18, Annex B.

34. UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., *supra* note 5, at 73.

35. *Id.* at 73-75. An excellent overview of the sale and purchase of credits from CDM and JI projects can be found in New Zealand's Guidelines and Procedures for Investment. The guidelines are for New Zealand-based entities seeking to invest in a CDM or JI project outside of New Zealand and who want to transfer resulting offset credits back into the New Zealand Emission Unit Register. *See generally* MINISTRY FOR THE ENV'T, JOINT IMPLEMENTATION AND THE CLEAN DEVELOPMENT MECHANISM UNDER THE KYOTO PROTOCOL: NEW ZEALAND'S GUIDELINES AND PROCEDURES FOR INVESTMENT (2009), *available at* http://www.mfe.govt.nz/publications/climate/kyoto-protocol-implement-clean-development/implementation.pdf.

36. *See* KOLLMUSS ET AL., STOCKHOLM ENV'T INST., A REVIEW OF OFFSET PROGRAMS: TRADING SYSTEMS, FUNDS, PROTOCOLS, STANDARDS AND RETAILERS 42, 57 (version 1.1, 2008), *available at* http://sei-us.org/Publications_PDF/SEI-ReviewOffsetPrograms1.1-08.pdf.

37. *Id.* at 42.

38. *Id.*

39. *See id.* at 42, 57.

40. Kyoto Protocol, *supra* note 18, art. 12, § 5(c).

41. *Id.* art. 12, § 3(b).

42. UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., *supra* note 5, at 73-74; *see also* Michael Wara, *Measuring the Clean Development Mechanism's Performance and Potential*, 55 UCLA L. REV. 1759, 1770 (2008) ("The CDM is a market-based approach to the problem of global warming. It allows buyers, who may be Annex B parties or firms within

In 2004, the first CDM project was registered, and the next year the first emission reduction credit, a Certified Emission Reduction (CER), was issued.[43] The number of CDM projects has grown quickly and they now make up the greater majority of the offset market,[44] "account[ing] for 87% of the project-based transaction volumes" in 2007.[45] There are currently 7,347 projects in the CDM project pipeline.[46] Twenty-six percent of these projects are hydro projects, twenty-five percent are wind projects, eleven percent are biomass projects, and ten percent are methane avoidance projects.[47] A large number of differing project types make up the remainder of projects in the CDM project pipeline.[48]

The CDM is a project-based mechanism.[49] Each CDM project is validated by third party verifiers and then registered by the CDM Executive Board (CDM EB).[50] Project applicants must demonstrate that their project is "voluntary, real, additional, and will not induce leakage."[51] A project is voluntary if it is "not compelled by national or provincial law or regulation."[52] Emission reductions are real if they "are monitored with sufficient care to ensure that they actually occur."[53] Emission reductions are additional if they would not have occurred without the CDM subsidy.[54] Leakage "occurs when emissions reductions that would have occurred from a CDM project absent the CDM subsidy are displaced to another location because of the subsidy."[55]

There are several stages in the validation and registration processes for CDM projects.[56] A project developer must prepare a

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Annex B nations, to purchase credits from emission reduction projects carried out in non-Annex B nations.").

43. KOLLMUSS ET AL., *supra* note 36, at 42.

44. *Id.*

45. *Id.* at 4.

46. UNEP Risoe Centre, *Content of CDM/JI Pipeline: CDM Projects By Type*, http://cdmpipeline.org/cdm-projects-type.htm (last updated Jan. 1, 2012) [hereinafter *CDM Projects*].

47. *Id.*

48. *Id.*

49. Wara, *supra* note 42, at 1770.

50. *Id.*; *see also* KOLLMUSS ET AL., *supra* note 36, at 42 ("The functioning of the CDM is overseen by the CDM Executive Board (EB), a 10-member team representing different UN regions and interest groups under the Kyoto Protocol.").

51. Wara, *supra* note 42, at 1770; *accord* Kyoto Protocol, *supra* note 18, art. 12, § 5.

52. Wara, *supra* note 42, at 1770.

53. *Id.*

54. *Id.*; s*ee also* United Nation Framework Convention on Climate Change, *CDM – Executive Board, Methodological Tool: Tool for the demonstration and assessment of additionality* (Version 05.2), UNFCCC (Aug. 26, 2008), http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf (explaining the four-step process recommended by the CDM Executive Board for demonstrating and assessing additionality).

55. Wara, *supra* note 42, at 1770.

56. KOLLMUSS ET AL., *supra* note 36, at 49.

Project Design Document (PDD) that explains how the project satisfies CDM approval requirements, the methodology used for quantifying emission reductions, and the monitoring process for the project.[57] Projects must either use "a previously approved . . . methodology that explains . . . how [they] will monitor emissions reductions made by the project or propose a new methodology."[58] The PDD is made available to the public for comments.[59] A CDM-approved auditor, a Designated Operational Entity (DOE), then reviews the PDD and public comments, visits the project site if necessary, then completes a Validation Report certifying that the project is valid.[60]

Each country hosting CDM projects has a CDM Designated National Authority (DNA) which must provide a letter of approval before a project is registered.[61] The DNA will issue a letter of approval if the project complies with the host country's laws and regulations, meets the country's sustainable development criteria, and fulfills any other requirements mandated by the DNA.[62] After a letter of approval is issued, all documents are sent to the CDM EB and made publicly available.[63] "The project will be registered assuming neither the countries involved with the project nor three or more [CDM] EB members reject it."[64]

After the project is registered, the project needs to be monitored.[65] A Monitoring Report must be assembled that records the emission reductions generated from the project.[66] The DOE is then required to prepare a Verification and a Certification Report, confirming the accuracy of the emission reductions.[67] These reports are then submitted to the CDM EB.[68] CERs are issued assuming neither the countries involved in the project nor three or more CDM EB members object.[69]

Like CDM, "JI . . . is a project-based mechanism."[70] The mechanism is limited to transactions between industrialized countries and "countries with economies in transition . . . that have commitments to limit or reduce their . . . emissions under the [Kyoto]

57. *Id.*
58. Wara, *supra* note 42, at 1770.
59. KOLLMUSS ET AL., *supra* note 36, at 49.
60. *Id.*
61. *Id.*
62. *Id.*
63. *Id.*
64. *Id.*
65. *Id.*
66. *Id.*
67. *Id.*
68. *Id.*
69. *Id.*
70. *Id.* at 57.

Protocol."[71] Most JI projects are being developed in Eastern Europe, in countries such as Russia and Ukraine.[72] Of 276 JI Track One projects, 94 are in Russia and Ukraine and 139 are in other Eastern European countries.[73] Of 238 JI Track Two projects, 189 are in Russia and Ukraine and 46 are in other Eastern European countries.[74] The total number of annual Emissions Reduction Units (ERUs) from JI projects includes 108,830,000 ERUs from projects in Russia and Ukraine, 17,319,000 ERUs from projects in other Eastern European countries, and 9,773,000 ERUs from projects elsewhere.[75]

The majority of JI projects are "renewable energy, methane reduction, cement[,] and coal bed methane project[s]" with most JI ERUs "com[ing] from methane reduction, cement[,] and coal bed methane projects."[76] There are 514 projects in the JI project pipeline.[77] Of these, 15.4% of are landfill gas projects, 9.7% are Nitrous Oxide projects, 13.6% are industry energy efficiency projects, 12.1% are fugitive gas emissions projects, 7.8% are wind projects, 8.0% are biomass energy projects, and 4.1% are coal bed methane projects.[78] A large number of differing project types make up the remainder of projects in the JI project pipeline.[79]

"The JI program is supervised by the [JI Supervisory Committee (JISC)], a [ten] member team with voting rights that represent . . . industrialized countries," countries with economies in transition, and developing countries.[80] There is a Designated Focal Point (DFP) responsible for administering JI activities in each industrialized country and in countries with economies in transition.[81]

There are two different approval tracks for JI projects: Track One and Track Two. Track One projects are approved by the country hosting the project.[82] These projects are based in countries that meet all the JI eligibility requirements and thus the host country can verify them.[83] Alternatively, Track Two projects require JISC approval.[84] These projects are based in countries that do not

71. *Id.*
72. *Id.* at 59.
73. UNEP Risoe Centre, *Content of CDM/JI Pipeline: JI Projects*, http://cdmpipeline.org/ji-projects.htm (last updated Jan. 1, 2012) [hereinafter *JI Projects*].
74. *Id.*
75. *Id.*
76. KOLLMUSS ET AL., *supra* note 36, at 59.
77. *JI Projects*, *supra* note 73.
78. *Id.*
79. *Id.*
80. KOLLMUSS ET AL., *supra* note 36, at 57.
81. *Id.* at 58.
82. *Id.*
83. *Id.* at 59.
84. *Id.* at 58.

entirely comply with the JI eligibility requirements, or the projects satisfy the eligibility requirements, but have chosen to use the Track Two verification process.[85] Under both Track One and Track Two, ERUs are issued by the country hosting the project.[86]

For Track Two projects, project developers need to prepare a project design document.[87] An independent auditor, an Accredited Independent Entity (AIE), must then review the project design document "to confirm that the project is eligible, additional[,] and compliant with [the host country's] national laws and environmental requirements."[88] The AIE requests public comments through the United Nations Framework Convention on Climate Change.[89] The AIE then assembles a Final Determination Report, which is made public through the JISC.[90] The JISC will then issue a final determination assuming that neither a party involved in the project nor three members of the JISC make a request to review it.[91]

Once a project is registered and operational, the project must be monitored periodically.[92] Project developers must prepare a Monitoring Report and an accredited auditor must prepare a Verification Report.[93] Both reports are made publicly available through the secretariat of the United Nations Framework Convention on Climate Change.[94] If no one asks the JISC to review the auditor's verification, then the assessment is finalized and the country where the project is based can issue ERUs for the emissions reduced by the project.[95]

III. UNITED STATES CLIMATE CHANGE SCHEMATA

A. Legislation from the House and Senate

The United States has been a leader in many important and innovative environmental efforts. This includes, for instance, the Unites States EPA Office of Climate Change introducing a trading program to control nitrogen and sulfur oxides[96] and

85. *Id.* at 58-59.
86. *Id.* at 59.
87. *Id.* at 61.
88. *Id.*
89. *Id.*
90. *Id.*
91. *Id.*
92. *Id.*
93. *Id.*
94. *Id.*
95. *Id.*
96. NANNAN LUNDIN ET AL., EU-CHINA CDM FACILITATION PROJECT, THE PRE-2012 CDM MARKET IN CHINA: POLICY CONTEXT AND CURRENT DEVELOPMENTS 11 (2009), *available at* http://www.euchina-cdm.org/media/docs/CDM_Project_The_Pre_2012_CDM_

the United States campaign for the inclusion of international emissions trading in the Kyoto Protocol.[97] However, the United States remains the only major industrial country that has not ratified the Kyoto Protocol.[98]

Policymakers in the United States have been reluctant to ratify the Kyoto Protocol due in part to concerns that the proposed international climate change schema disproportionately burdens the United States. Evidencing these concerns, in 1997, the Senate passed the Byrd-Hagel resolution by 95 to 0. The resolution pressured Kyoto negotiators for an agreement binding both industrialized and developing countries as opposed to an agreement binding just industrialized countries.[99] According to the resolution, Senate support for the Protocol would be withheld if the Protocol placed binding limits only on industrialized countries or if the terms of the Protocol appeared to seriously harm the United States economy.[100]

In 2001, President George W. Bush moved the United States further away from participating in an international climate change schema when he issued discouraging remarks about the Kyoto Protocol. He said that "[the Kyoto Protocol] exempts [eighty] percent of the world, including major population centers such as China and India, from compliance, and would cause serious harm to the U.S. economy."[101] The President also said that the Protocol would raise energy costs:

> [a]t a time when California has already experienced energy shortages, and other Western states are worried about price and availability of energy . . . we must be very careful not to take actions that could harm consumers. This is especially true given the incomplete state of scientific knowledge of the causes of, and solutions to, global climate change and

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Market_in_China_2009_07_20_EN.pdf (discussing the Acid Rain Program that was launched in 1995 with authority under the 1990 Clean Air Act amendments and that has been credited with dramatically decreasing emissions); *see also* Massachusetts v. EPA, 549 U.S. 497, 500 (2007) (stating that the EPA has the authority to regulate certain greenhouse gas emissions under the Clean Air Act); Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097, 1113 (2009) ("[T]he landmark passage of the federal Clean Air Act, promulgated through amendments to existing federal legislation . . . [r]equired the EPA to develop regulations reducing emissions of carbon monoxide, hydrocarbons, and nitrogen oxide, and provided rigid guidelines for the Agency.").

97. Jürgen Lefevere, *Greenhouse Gas Emissions Trading: A Background, in* CLIMATE CHANGE POLICY 103, 108 (Michael Bothe & Eckard Rehbinder eds., 2005).

98. *See Status of Ratification*, *supra* note 23.

99. DiMento & Doughman *supra* note 15, at 115.

100. *Id.*

101. *Id.* at 118 (quoting Press Release, Text of a Letter from the President to Senators Hagel, Helms, Craig, and Roberts (Mar. 13, 2001), *available at* http://georgewbush whitehouse.archives.gov/news/releases/2001/03/20010314.html).

> the lack of commercially available technologies for removing and storing carbon dioxide.[102]

Even though the United States remained reluctant to join an international climate change schema as described by the Kyoto Protocol, Congress began to push forward with efforts to create an independent United States climate change schema. Policymakers in the House and the Senate introduced bills establishing measures that favor domestic emission reductions and safeguard financial interests as the United States moves toward a less carbon dependent economy.[103]

First, in 2003, Senators Joseph Lieberman and John McCain brought the Climate Change Stewardship Act to a vote in the Senate.[104] The bill called for a market-based "system of greenhouse gas tradeable allowances."[105] It required the Administrator of the EPA to establish regulations to limit greenhouse gas emissions from electricity generation, transportation, industrial, and commercial economic sectors,[106] capping the 2010 aggregate emission level at the 2000 level.[107]

The Climate Change Stewardship Bill also allowed "for the trading of emission allowances and reductions."[108] According to the Bill, "[covered entities] would be allowed to satisfy up to [fifteen percent] of [their] total allowance requirements" through international credits, sequestration, registered reductions, and borrowed credits.[109] Covered entities "that agreed to emit no more than [their] 1990 levels by 2010 would be allowed [to] meet up to [twenty percent] of [their] requirement through . . . interna-

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102. *Id.* (alteration in original).

103. These bills include the Climate Change Stewardship Act, the Climate Security Act, the American Clean Energy and Security Act, and the Clean Energy Jobs and American Power Act, which will be talked about in turn.

104. *Summary of the Lieberman-McCain Climate Stewardship Act of 2003*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, http://www.pewclimate.org/federal/analysis/congress/108/summary-lieberman-mccain-climate-stewardship-act-2003 (last visited Feb. 6, 2012).

105. Climate Change Stewardship Act, S. 139, 108th Cong. (2003). The bill's purpose was

> [t]o provide for a program of scientific research on abrupt climate change, to accelerate the reduction of greenhouse gas emissions in the United States by establishing a market-driven system of greenhouse gas tradeable allowances that could be used interchangeably with passenger vehicle fuel economy standard credits, to limit greenhouse gas emissions in the United States and reduce dependence on foreign oil, and ensure benefits to consumers from the trading in such allowances.

Id.

106. *Id.* §§ 3, 331(a).

107. *Id.* § 316(b)(1).

108. *Summary of the Lieberman-McCain Climate Stewardship Act of 2003*, *supra* note 104.

109. *Id.*

tional credits, . . . sequestration, and . . . registered reductions, but not . . . borrowed credits."[110] The Bill failed garnering only forty three of the ninety eight votes cast, but indicated growing support for a global climate change program.[111]

Second, in 2008, Senators Joseph Lieberman and John Warner sponsored the Climate Security Act in the Senate.[112] The bill directed the Administrator of the EPA to create a program to reduce greenhouse gas emissions[113] and create a market-based cap-and-trade system covering over eighty percent of the United States total emissions.[114] Like the Climate Change Stewardship Act, the Climate Security Bill also allowed for the trading of emission allowances and reductions. Through the program, a large number of allowances would have been awarded initially and the number of allowances would have decreased over time.[115] Moreover, the bill would have allowed covered entities to satisfy fifteen percent of their compliance obligations by purchasing international allowances or credits.[116] The Climate Security Act was approved by a Congressional committee by a vote of eleven to eight.[117] A revised version of the bill was brought to the Senate where it died on the floor.[118]

Third, in 2009, Representatives Henry Waxman and Edward Markey brought the American Clean Energy and Security Act to a vote in the House.[119] The bill passed the House by a close margin of 219 to 212.[120] The bill would have amended the Clean Air Act

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110. *Id.*

111. *Id.*

112. *See Lieberman-Warner Climate Security Act Passes Committee*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, http://www.pewclimate.org/federal/analysis/congress/110/lieberman-warner (last visited Feb. 6, 2012).

113. Climate Security Act, S. 2191, 110th Cong. (2007). The purpose of the bill was "[t]o direct the Administrator of the Environmental Protection Agency to establish a program to decrease emissions of greenhouse gases, and for other purposes."

114. *Lieberman-Warner Climate Security Act Passes Committee*, *supra* note 112.

115. S. 2191, § 1201(d) (awarding 5,775,000 emission allowances in 2012, 4,924,000 emission allowances in 2020, and 1,732,000 emission allowances in 2050).

116. *Id.* § 2501; LYDIA OLANDER, NICHOLAS INST. FOR ENVTL. POLICY SOLUTIONS, DESIGNING OFFSETS POLICY FOR THE U.S.: PRINCIPLES, CHALLENGES, AND OPTIONS FOR ENCOURAGING DOMESTIC AND INTERNATIONAL EMMISSIONS REDUCTIONS AND SEQUESTRATION FROM UNCAPPED ENTITIES AS PART OF A FEDERAL CAP-AND-TRADE FOR GREENHOUSE GASES 20 (2008) (stating that "S. 2191 allows U.S. entities to purchase allowances from other countries facing similarly stringent caps (e.g., EU countries following a stringent post-Kyoto regime) and to use these allowances to meet compliance obligations in the U.S., but these allowances are limited to no more than 15% of U.S. compliance.").

117. *Lieberman-Warner Climate Security Act Passes Committee*, *supra* note 112.

118. *Analysis of the Lieberman-Warner Climate Security Act of 2008*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, http://www.pewclimate.org/analysis/l-w (last visited Feb. 6, 2012).

119. *The American Clean Energy and Security Act (Waxman-Markey Bill)*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, http://www.pewclimate.org/federal/congress/111/acesa (last visited Feb. 6, 2012).

120. *Id.*

to establish an economy wide cap-and-trade system designed to reduce greenhouse gas emissions to seventeen percent below 2005 levels by 2020 and eighty-three percent below 2005 levels by 2050.[121] Covered entities would have been phased into the program over a period of time.[122] When the phase-in schedule completed, the cap would have applied to entities accounting for over eighty-four percent of the total United States greenhouse gas emissions.[123]

Additionally, the American Clean Energy and Security Bill would have allowed for the trading of emission allowances and reductions and the purchase of international offsets. Compliance could have been demonstrated by surrendering one domestic offset credit or 1.25 international offset credits in place of an emission allowance.[124] Up to two billion tons of offsets could have been used for compliance, one billion from domestic sources, and another billion from international sources.[125] Additionally, bonus allotments of allowances would have been allocated for emission reductions achieved by carbon capture and storage technology.[126] Unfortunately this bill also did not pass.

Finally, in 2009, Senators Barbara Boxer and John Kerry championed the Clean Energy Jobs and American Power Act.[127] The bill assigned the Administrator of the EPA with the authority to create a system to cap and reduce greenhouse gas emissions amongst capped sources.[128] The bill set a greenhouse gas emissions reduction target of three percent below 2005 levels by 2012, twenty percent below 2005 levels by 2020, forty-two percent below 2005 levels by 2030, and eighty-three percent below 2005 levels by 2050.[129]

Like the American Clean Energy and Security Act, the Clean Energy Jobs and American Power Act allowed for the trading of emission allowances and reductions and the purchase of international offsets. As in the Clean Energy and Security Act, compliance could have been demonstrated by surrendering one

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121. American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 703 (2009).

122. *Id.* § 722.

123. *See id.* § 721(e)(2)(B)(iv).

124. *Id.* § 722(d)(1)(A).

125. *Id.*

126. *Id.* § 786(c)(3).

127. Press Release, Natural Res. Def. Council, Clean Energy Jobs and American Power Bill is Introduced in the Senate (Sept. 30, 2009), *available at* http://www.nrdc.org/media/2009/090930.asp.

128. *See generally* Clean Energy Jobs and American Power Act, S. 1733, 111th Cong. (2009).

129. *Summary of the Clean Energy Jobs and American Power Act*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, http://www.pewclimate.org/short-summary/clean-energy-jobs-american-power-act-chairmans-mark (last visited Feb. 6, 2012).

domestic offset credit or 1.25 international offset credits in place of an emission allowance.[130] Up to two billion tons of offsets could have been used for compliance,[131] 1.5 billion from domestic sources and 0.5 billion from international sources.[132] Like the bills that came before it, the Clean Energy Jobs and American Power Act ultimately never became law.[133]

B. Carbon Offsets in the United States

Although the House and the Senate have been moving forward with climate change legislation, there is currently no national compliance market for carbon offsets. There is, however, a significant and growing voluntary market. In the United States, several organizations develop, market, or sell offsets and their supply increased from approximately 6.2 to 10.2 million tons from 2004 to 2007.[134] The United States government has only limited involvement in the voluntary market with federal government agencies, such as the EPA and the Federal Trade Commission, providing some protection and technical assistance for customers.[135]

The United States' voluntary market involves a wide range of parties.[136] There are, for example, offset developers, offset retailers, offset aggregators, offset brokers, verifiers, and consumers.[137] Some parties are involved in multiple tasks such as developing projects, aggregating offsets from the project with offsets from other projects, and selling bundled offsets to consumers.[138]

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130. S. 1733, § 722(d)(1)(A)(ii).

131. *Id.* § 722(d)(1)(A)(i).

132. *Id.* § 722(d)(1)(B)(iii).

133. S. 1733 (111th): Clean Energy Jobs and American Power Act, GOVTRACK.US, http://www.govtrack.us/congress/bill.xpd?bill=s111-1733 (last visited Feb. 6, 2012). Major U.S. climate change conferences, agreements, and statements are as follows: 1997 – Passage of the Byrd-Hagel resolution; 1998 – U.S. signed the Kyoto Protocol, but did not submit it to Congress; 2001 – President George W. Bush issued discouraging remarks about the Kyoto Protocol; 2003 Climate Change Stewardship Act was defeated; 2007 – Climate Security Act was approved by a Congressional committee, but failed in the full Senate; 2009 – American Clean Energy and Security Act passed the House; and, 2009 – Clean Energy Jobs and American Power Act was approved by a Congressional committee, but never came to a vote in the full Senate.

134. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-08-1048, CARBON OFFSETS: THE U.S. VOLUNTARY MARKET IS GROWING, BUT QUALITY ASSURANCE POSES CHALLENGES FOR MARKET PARTICIPANTS 9 (2008) [hereinafter GAO REPORT, CARBON OFFSETS].

135. *Id.* "Although these voluntary markets are not tied to enforceable compliance requirements, U.S. exchanges . . . have formed around these markets and may contribute to an initial infrastructure for a U.S. compliance market." Jonas Monast et al., *U.S. Carbon Market Design: Regulating Emission Allowances as Financial Instruments* 14 (Nicholas Inst. of Envtl. Policy Solutions, Working Paper No. 09-01, 2009).

136. GAO REPORT, CARBON OFFSETS, *supra* note 134, at 10.

137. *Id.*

138. *Id.*

Additionally, there are entities that finance these projects such as investment banks.[139]

A number of different consumers purchase offsets, such as individuals, businesses, government agencies, and nonprofit organizations.[140] Consumers purchase offsets for many reasons, including public relations and compensating for emissions resulting from activities such as driving or flying.[141] Additionally, there are different ways for an offset transaction to take place.[142] For example, in some instances, consumers purchase offsets and hold them like they would a commodity.[143] In other instances, consumers pay for an offset to be retired.[144]

In years to come, the carbon market will continue to grow. Because an offset market involves a wide range of participants with a number of complicated tasks, it is extremely difficult to design a national offset market with a tradable commodity that can be used to meet compliance obligations.[145] The United States will need to create strict standards for measuring, accounting, and verifying offsets.[146] Additionally, there will need to be laws that ensure fiduciary responsibility.[147]

It is not entirely clear which agencies will manage a United States carbon market. Responsibility for issuing offsets and regulating the market will likely be shared by a number of federal agencies, rather than being centralized through governing bodies such as the CDM EB or the JISC. Recent bills proposed in the House and Senate charged the Administrator of the EPA with the responsibility for establishing a cap-and-trade system.[148] Within the EPA, the Office of Climate Change, which is a division of the Office of Air and Radiation, would likely be responsible for issuing most of the allowances and offsets for any United States climate change schema.[149] Recent proposed legislation has recommended assigning the responsibility for issuing allowances and offsets for agriculture specifically to the Department of Agriculture.[150]

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139. *Id.*
140. *Id.*
141. *Id.*
142. *Id.* at 11.
143. *Id.*
144. *Id.*
145. OLANDER, *supra* note 116, at 3.
146. *See id.*
147. *Id.*
148. *See, e.g.*, Climate Change Stewardship Act, S. 139, 108th Cong. § 331 (2003); Climate Security Act, S. 2191, 110th Cong. §§ 2, 3901 (2007); American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 786 (2009); Clean Energy Jobs and American Power Act, S. 1733, 111th Cong. § 721 (2009).
149. This would most likely be the case because in the past this division has been responsible for creating market-based programs for the Environmental Protection Agency.
150. *See, e.g.*, H.R. 2454, § 788 stating:

Several federal agencies may be charged in whole or in part with regulating a United States carbon market: the EPA, the Commodity Futures Trading Commission (CFTC), the Securities and Exchange Commission (SEC), and the Federal Energy Regulatory Commission (FERC).[151] First, the EPA regulates air quality, water quality, solid waste, and pesticides and toxic substances.[152] Generally, the EPA does not regulate financial markets, but it does oversee the country's trading market for sulfur dioxide.[153] Second, the CFTC regulates commodity futures and options markets.[154] It has jurisdiction over designated contract markets, exempt commercial markets, clearing organizations, and intermediaries, with varying regulatory requirements for each of these.[155] Third, the SEC enforces federal securities laws and regulates the country's stock and options exchanges.[156] The SEC also regulates mutual funds and collects information on their pricing, financial performance, and investment strategies.[157] Finally, the FERC regulates interstate electricity sales, and various aspects of hydroelectric power, natural gas, and oil.[158]

In creating a national offset market, the Nicholas Institute, a leading environmental think tank, suggested that such a project:

> follow a certified methodology which might require obtaining new data, using standard data, and standardized tools as much as possible[,] accept discounts to the value of offsets based on the uncertainty and risk of the project[,] obtain third-party verification for the projects and for the is-

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> Emission allowances allocated pursuant to section 782(u) shall be distributed by the Administrator at the direction of the Secretary of Energy and the Secretary of Agriculture in accordance with this section . . . .
>
> In designing this program, the Secretary shall ensure that it provides support for -- (A) development and demonstration of practices to reduce greenhouse gas emissions or sequester carbon in agricultural operations where there are limited recognized opportunities to achieve such emissions reductions or sequestration; and (B) projects that reduce greenhouse gas emissions or increase sequestration of greenhouse gases and also achieve other significant environmental benefits, such as the improvement of water or air quality.

151. Monast et al., *supra* note 135, at 15.
152. *Id.* at 19.
153. *Id.*
154. *Id.* at 15.
155. *Id.* at 15-16.
156. *Id.* at 17.
157. *Id.*
158. *Id.* at 18 (citing Brian M. Zimmet, *FERC's Authority to Impose Monetary Remedies for Federal Power Act and Natural Gas Act Violations: An Analysis*, 57 ADMIN. L. REV. 543, 544 (2005); *What FERC Does*, FED. ENERGY REGULATORY COMM'N, http://www.ferc.gov/about/ferc-does.asp (last updated Dec. 3, 2010)).

> suing of allowances[,] buy insurance or provide assurance for any permanence risk[,] and wait for government approval.[159]

As issuing and regulating a national offset market is an extremely complicated task, such mechanisms as well as active engagement by federal agencies in issuing and monitoring offsets will surely be necessary to the success of any market that develops.

IV. IMPACT OF INTERNATIONAL TRADE LAW

Without market intervention, international offset projects could dominate the market.[160] Requiring that a certain percentage of offsets come from domestic projects guarantees that the United States' offsets are part of the United States' market, even if these offsets are more costly than those produced abroad.[161] In fact, some have gone as far to say that "[i]t may [even] be necessary to . . . limit . . . international offsets" in order for domestic infrastructure to develop.[162]

A challenge to a country's climate change regime is an extremely unlikely scenario in itself.[163] Nonetheless, the legality of placing restrictions on the trading of international offsets has undergone considerable scholarly debate which has centered on the rules and regulations of the World Trade Organization (WTO), including, most notably, GATT. The WTO regulates international trade on a multilateral basis[164] and GATT is the main WTO agreement governing the trade of products.[165] There are several important concepts in the GATT that have been constructed to promote the agreement's underlying purpose of liberalizing trade:

> [o]ne is nondiscrimination, embodying the concepts of 'most favored nation' and 'national treatment.' Under the former concept, all contracting parties are bound to grant to each other treatment as favorable as they give to any country

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159. OLANDER, *supra* note 116, at 41.

160. *Id.* at 21.

161. *Id.*

162. *Id.* at 25.

163. *See generally* THOMAS L. BREWER, CTR. FOR EUROPEAN POLICY STUDIES, CEPS POLICY BRIEF NO. 28, THE KYOTO PROTOCOL AND THE WTO: INSTITUTIONAL EVOLUTION AND ADAPTATION 9-10 (2002) (explaining the process and motivation for bringing a dispute to the WTO).

164. *See* World Trade Organization, *Understanding the WTO: What We Do*, WTO.ORG, http://www.wto.org/english/thewto_e/whatis_e/what_we_do_e.htm (last visited Feb. 6, 2012).

165. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-94-83A, THE GENERAL AGREEMENT ON TARIFFS AND TRADE: URUGUAY ROUND FINAL ACT SHOULD PRODUCE OVERALL U.S. ECONOMIC GAINS 5 (1994) [hereinafter GAO REPORT, GATT].

> with regard to trade matters. Under the latter concept, the parties must treat other countries' industries no less favorably than they do their own domestic industries, once foreign goods have entered the domestic market.[166]

The agreement thereby articulates guidelines that "facilitate free and transparent international trade in products . . . between member countries."[167]

There is no definition for the term product in the WTO agreements.[168] The term, however, has been recognized to mean a tangible good.[169] The term has also been recognized to mean a specific product identified by WTO members for tariff reductions or included within the international commodity classification system, the Harmonized Commodity Description and Coding Systems.[170]

"GATT requires members to treat [all] foreign 'like products' [equally], and to give foreign products treatment that is 'no less favourable' [sic] than the treatment of domestic 'like products.' "[171] This is known as the principle of "non-discrimination."[172] Moreover, "Article XI of the GATT forbids the use of quotas, import or export licenses[,] or other measures to prohibit or restrict product imports or exports."[173] Nonetheless, while discrimination against foreign goods is generally prohibited, "WTO agreements allow Members to impose trade restrictions aimed at particular legitimate policy goals[, such as] protecting human, animal, plant life or health, provided that any measure used is 'proportionate' to [the country's] objectives"[174] and that such measures are not "a disguised restriction on international trade[.]"[175]

A. The General Agreement on Tariffs and Trade Does Not Apply to Carbon Offsets

Carbon offsets are not a good. Even if they were a good, they would probably not be considered a "like" good. Carbon offsets provide a compliance entity with the right to emit an additional ton of carbon dioxide into the atmosphere because at some other location

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166. *Id.*

167. M.J. MACE ET AL., ANALYSIS OF THE LEGAL AND ORGANISATIONAL ISSUES ARISING IN LINKING THE EU EMISSIONS TRADING SCHEME TO OTHER EXISTING AND EMERGING EMISSIONS TRADING SCHEMES 90 (2008).

168. *Id.* at 92.

169. *Id.*

170. *Id.*

171. *Id.*

172. *See* GAO REPORT, GATT, *supra* note 165, at 5.

173. MACE ET AL., *supra* note 167, at 92.

174. *Id.* at 93.

175. *Id.*

in the world, a developer of an offset project is reducing the amount of carbon dioxide emissions in the atmosphere through their project. Carbon offsets have not been found to be a good under the WTO and are not currently listed in the GATT tariff schedules or in the Harmonized Commodity Description and Coding Systems.[176]

Jacob Werksman, who worked as Managing Director of the prestigious Foundation for International Environmental Law and Development, summarized the difficulties in fully addressing these issues in the overview to his article, Greenhouse Gas Emissions Trading and the WTO:

> Precise conclusions about [the] relationship [between the Kyoto Protocol and WTO] are difficult to reach because the rules governing the operation of the Kyoto Protocol have not yet been agreed internationally, and states have not yet narrowed the options available to them in the design of an ETS. Furthermore, substantial portions of the WTO regime have been in force for [a short period of time] and the precise contours of these obligations have yet to be clarified through state practice and jurisprudence.[177]

Nevertheless, with these considerations in mind, he stated that "internationally traded emissions allowances are neither 'products' nor 'services' [under the WTO agreements], and thus the trade in these instruments is not directly governed by WTO disciplines."[178]

Annie Petsonk, who serves as International Counsel for the Environmental Defense Fund, said offsets and allowances are "fundamentally government creations to facilitate compliance with international obligations. They exist only in consequence of, and through, the legally binding commitments of sovereign nations to limit GHG emissions. In a common-sense fashion, they differ markedly from 'products' as such."[179] Importantly, Petsonk did warn that "if governments implement their Kyoto Protocol obligations by placing quantitative restrictions on trade in allowances, or arbitrarily or unjustifiably discriminating against certain nations engaged in emissions trading, such measures might raise WTO

176. *Id.* at 92.

177. Jacob Werksman, *Greenhouse Gas Emissions Trading and the WTO*, 8 REV. EUR. COMMUNITY & INT'L ENVTL. L. 251, 251 (1999).

178. *Id.* at 262.

179. Annie Petsonk, *The Kyoto Protocol and the WTO: Integrating Greenhouse Gas Emissions Allowance Trading into the Global Marketplace*, 10 DUKE ENVTL. L. & POL'Y F. 185, 200 (2000).

issues at the same time that they would diminish the environmental effectiveness of the protocol."[180]

Furthermore, Glenn Wiser, a senior attorney at the Center for International Environmental Law, likened offsets to a license rather than a good:

> If [CERs] are a kind of product or service, then they could fall under the purview of the WTO through [the] GATT or GATS. If they are something else – say, a licence [sic] – then they would be exempt from WTO coverage, meaning their international trade might be restricted by governments in any manner without worrying about violating WTO rules.[181]

CERs may be tangible things in the form of paper certificates, but only in the same manner that a printed license is a thing.[182] "The holder of the licence [sic] or CER does not value or use the certificate as a piece of paper but instead values it for the rights it symbolises [sic] or conveys."[183] CERs represent permission:

> to emit one [ton] of carbon dioxide equivalent, which the holder would not have been allowed to emit but for its possession of the CER. CERs thus should properly be viewed as a kind of licence [sic] that confers a right – *a future right to pollute*. Just as a licence [sic] is not a good but merely a permit to do something, so a CER should not be seen as a good.[184]

Even if carbon offsets would be considered a good, there is reason to believe that they would not be considered a "like" good. Carbon offsets are issued on a project by project basis and unlike allowances which provide a general right to emit one ton of carbon dioxide, carbon offset projects vary from one another in significant respects. Offsets come from different project types.[185] Some of these projects reduce emissions through changes in energy production and energy use.[186] Other projects reduce emissions through the

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180. *Id.* at 185.

181. Glenn Wiser, *Frontiers in Trade: The Clean Development Mechanism and the General Agreement on Trade in Services*, 2 INT'L. J. GLOBAL ENVTL. ISSUES 288, 293-94 (2002). The General Agreement on Trade in Services or GATS covers services, as its name indicates, whereas GATT covers products.

182. *Id.* at 294.

183. *Id.* at 294-95.

184. *Id.* at 295 (emphasis in original).

185. GAO REPORT, CARBON OFFSETS, *supra* note 134, at 12.

186. *Id.*

destruction of greenhouse gases, such as capturing and destroying methane from coal mines, landfills, and agricultural sites.[187] Still some other projects reduce emissions through biological sequestration, including planting trees or land management, or geological sequestration where projects capture and store carbon dioxide below ground.[188] Moreover, carbon offset projects are based in different locations where they face varying levels of scrutiny in their certification and monitoring processes.[189]

B. The Environmental Exception Also Provides a Defense for Discrimination

Furthermore, even if carbon offsets would be considered a "like" good, placing limitations on them may be allowed under the environmental exception. Specifically, GATT Article XX contains an environmental exception that allows World Trade Organization members to adopt trade measures that address environmental issues:[190]

> Subject to the requirement that such measures are not applied in manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:
> . . .
> (b) necessary to protect human, animal, or plant life or health;
> . . .
> (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption[.][191]

187. *Id.*
188. *Id.*
189. *See* discussion *supra* Part II.B.
190. General Agreement on Tariffs and Trade art. XX, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].
191. *Id.* art. XX, (b), (g).

In addition, even the Preamble to the Agreement establishing the WTO acknowledges the need to protect and preserve the environment:

> *Recognizing* that their relations in the field of trade and economic endeavor should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, ***while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment*** and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development[.][192]

Several high profile international trade cases have turned on whether discrimination can be justified under the environmental exception.[193] To assess the necessity of a restrictive measure a WTO panel or the Appellate Body first examines whether the measure "produce[s] a material contribution to the achievement of the [measure's] objective[.]"[194] Next, whoever is reviewing the measure applies a least-trade restrictiveness test.[195] After determining that a restrictive measure is necessary, a WTO panel or the Appellate Body will evaluate whether the restrictive measure is "arbitrary or unjustifiable" or whether it is "a disguised restriction on international trade."[196]

The Appellate Body's review of a recent WTO panel report on *Brazil – Measures Affecting Imports of Retreaded Tyres* illustrates the decision making process in evaluating the merits of an environmental exception defense.[197] In Brazil, waste retreaders, who

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192. Sebastien Thomas, *Trade and Environment Under WTO Rules After the Appellate Body Report in Brail-Related Tyres*, 4 J. INT'L COM. L. & TECH. 42, 42 (2009) (emphasis in original) (quoting Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, Annex 1C, 33 I.L.M. 1125 (1994)).

193. *See generally* Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R (Dec. 3, 2007) [hereinafter *Brazil-Tyres*]; Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, WT/DS285/AB/R (Apr. 7, 2005); Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Oct. 12, 1998); Appellate Body Report, *United States – Standards for Reformulated and Conventional Gasoline*, WT/DS2/AB/R (Apr. 29, 1996).

194. Geert van Calster, *Faites Vos Jeux—Regulatory Autonomy and the World Trade Organisation After Brazil Tyres*, 20 J. ENVTL. L. 121, 125 (2008).

195. *See id.*

196. *See id.* at 126-27.

197. *See generally Brazil-Tyres, supra* note 193.

repair and reuse old tires which they then resell, prefer to import old tires from abroad rather than use domestic ones.[198] This is likely partly because domestic tires were often in worse condition due to the quality of roads and the driving habits of local motorists.[199] Using imported waste tires also give Brazilian retreaders the ability to avoid collection efforts in their own country, efforts which could be time consuming and costly.[200]

The Brazilian government, however, banned the import of tires arguing that their import threatened the health and safety of their citizens.[201] According to the government, waste tires are a "breeding ground" for mosquitoes carrying a range of diseases and accrued waste tires can lead to fires which are difficult to control.[202] The Brazilian government argued that banning the import of such tires was necessary to stem the threat of this risk and this objective provides a justifiable defense under GATT Article XX(b), "protection of human, animal or plant life or health."[203]

In reviewing whether the ban on the import of tires was justifiable, the Appellate Body first examined whether the restrictive measure produced a material contribution to the achievement of the measure's objectives.[204] Like the WTO panel, the Appellate Body was satisfied that the restrictive measure would indeed lead to the measure's objective—less waste tires in Brazil.[205]

Next, the Appellate Body required a determination that the restrictive measure was the least restrictive measure within the meaning of Article XX(b).[206] The complaining Member, the European Union, argued that two least restrictive alternatives existed: (1) measures aimed at "reduc[ing] the number of waste [tires] accumulating in Brazil" and (2) measures "to improve the management of waste [tires] in Brazil."[207] In reviewing these alternatives, the WTO panel determined that the two measures were not "reasonably available alternative[s]" to the complete ban on the import of used tires.[208] According to the WTO panel, the proposed measures had "already [been] in place, would not allow Brazil to achieve its chosen level of protection, [and] would

198. Van Calster, *supra* note 194, at 122.
199. *Id.*
200. *Id.*
201. *Id.* at 121-22.
202. *Id.* at 122; *see also* Thomas, *supra* note 192, at 43 (citing Panel Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, ¶ 7.109, WT/DS332/R (June 12, 2007)).
203. *See Brazil-Tyres*, *supra* note 193, ¶ 3; *see also* Van Calster, *supra* note 194, at 122 (summarizing the position of the Brazilian government).
204. *Brazil-Tyres*, *supra* note 193, ¶ 178.
205. Van Calster, *supra* note 194, at 125.
206. *See Brazil-Tyres*, *supra* note 193, ¶ 156.
207. *Id.* ¶ 157.
208. *Id.*

carry their own risks and hazards."[209] The Appellate Body did not disagree with this analysis.[210]

After deciding that a restrictive measure was necessary, the Appellate Body evaluated whether the restrictive measure was arbitrary or unjustifiable or whether it was a disguised restriction on international trade.[211] In the Appellate Body's review of the WTO panel report, the Appellate Body focused its analysis on an exemption on retreaded tires imported from other countries that were part of the Southern Common Market, a regional trade agreement between Brazil, Argentina, Uruguay, and Paraguay (Mercado Comun del Sur or "MERCOSUR" countries).[212] Following the ruling of the MERCOSUR panel, which was brought forward by Uruguay, Brazil exempted the import of retreaded tires from other MERCOSUR countries.[213]

The WTO panel, however, found that the exemption was applied in a manner that was unjustifiable discrimination and was a disguised restriction on international trade.[214] The Appellate Body, held similarly on both accounts.[215] The Appellant body found that the rationale justifying the application of the ban bore "no relationship to the accomplishment of the objective that falls within the purview of one of the paragraphs of Article XX[.]"[216]

In creating a United States climate change schema, if the United States decides to place restrictions on foreign offsets, such as placing limits on foreign offsets or devaluing foreign offsets, it can likely defend this position by citing GATT Article XX(b), the environmental exception. The United States could point to instances where the integrity of offset projects has been in doubt and argue that restrictions on international offsets are necessary to ensure that the system truly meets its objective of achieving emission reductions.

According to the Kyoto Protocol, "[t]he clean development mechanism shall assist in arranging funding of certified project activities as necessary."[217] Emission reductions should be "additional to any that would occur in the absence of the certified

209. *Id.*
210. *Id.*
211. Van Calster, *supra* note 194, at 126-28.
212. *Id.*
213. *Id.* at 121.
214. Panel Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, ¶ 7.356 WT/DS332/R (June 12, 2007).
215. *Brazil-Tyres*, *supra* note 193, ¶¶ 228, 246.
216. *Id.* ¶ 246.
217. Kyoto Protocol, *supra* note 18, art. 12, § 6.

project activity."[218] They should also have "[r]eal, measurable, and long-term benefits related to the mitigation of climate change."[219]

Nonetheless, a number of environmental non-profit organizations and academics have questioned the integrity of emission reductions through the CDM mechanism. The World Wildlife Fund (WWF-UK) expressed concern that the additionality of projects is not guaranteed by CDM EB.[220] The report explained that, for example, a waste heat recovery project for a particular Indian steel plant would have been installed without funding through the CDM mechanism.[221]

According to International Rivers, a project in China was awarded thirty million dollars worth of credits through the carbon market even when bank documentation admitted that the project was not additional and project validators were informed of this fact.[222] The group explained that project documentation from the Asian Development Bank clearly stated that Xiagogushan was Gansu's least costly development option and that revenue from CERs did not factor into the decision to move forward with the project.[223]

In fact, research indicates that seventy-five percent, of registered CDM projects were already finished when it was time for them to be approved.[224] In a survey of CDM professionals, seventy-one percent of these professionals agreed that " 'many CDM projects would also be implemented without registration under the CDM' " and eighty-six percent of these professionals agreed that " 'in many cases, carbon revenues are the icing on the cake, but are not decisive for the investment decision.' "[225]

CERs have been described as more of "bonus" than a driver of investment.[226] According to International Rivers:

> of 370 Chinese hydropower projects submitted for CDM validation, [seventy-seven percent] are expected to start gen-

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218. *Id.* art. 12, § 5(c).

219. *Id.* art. 12, § 5(b).

220. WWF-UK, EMISSION IMPOSSIBLE: ACCESS TO JI/CDM CREDITS IN PHASE II OF THE EU EMISSIONS TRADING SCHEME 7 (2007), *available at* http://www.wwf.org.uk/filelibrary/pdf/emission_impossible.pdf.

221. *Id.*

222. *Id.* at 8 (quoting *Comments on World Bank PCF Xiaogushan Large Hydro Project (China)*, International Rivers, (Aug. 21, 2005), http://www.internationalrivers.org/en/climate-change/carbon-trading-cdm/comments-world-bank-pcf-xiaogushan-large-hydro-project-china).

223. *Id.*

224. FRIENDS OF THE EARTH, A DANGEROUS DISTRACTION: WHY OFFSETS ARE A MISTAKE THE U.S. CANNOT AFFORD TO MAKE 13 (2009), *available at* http://www.foe.org/sites/default/files/A_Dangerous_Distraction_US.pdf.

225. *Id.*

226. *Id.* at 12.

> erating within [twelve] months of their validation comment period . . . . Normally hydropower plants take at least several years to build, confirmed by the [Project Design Document] that provides a construction start date. This means that most of the Chinese hydropower projects in the CDM pipeline started construction prior to beginning the CDM validation process[.] Since construction began well before CDM registration, it is clear that these projects still would go ahead even if they were not successfully registered as CDM projects.[227]

Accounting methodology for CDM was summarized by a leading legal scholar, Michael Wara, as follows: "[t]he CDM is failing as a market because its rules, rather than producing real reductions, have accounting loopholes that allow participants to manufacture GHG credits at little or no cost beyond the payment of consultants necessary to surmount the necessary regulatory hurdles."[228]

For all these reasons, it would indeed appear that the environmental exception provides a defense against discrimination. First, placing restrictive measures on foreign offsets, where the integrity of the projects are in doubt, would produce a material contribution to the achievement of the measure's objective, ensuring that the United States' climate change schema truly meets its objective of achieving emission reductions.

Second, it would not be difficult for the United States to show that the restrictions it has imposed on foreign offsets are the least restrictive measures if a complaining Member identified possible alternatives to the measure at issue. Unlike Brazil in *Brazil – Measures Affecting Imports of Retreaded Tyres*, which proposed a complete ban on the import of used tires, the United States would not be proposing a complete ban on foreign offsets. Instead, the United States is proposing an overall quantitative limit on foreign offsets and is devaluing them. It would be difficult for the United States to impose a measure less restrictive than this. For these reasons, a WTO panel or an Appellate Body would likely find that the restrictions the United States has imposed on foreign offsets are the least restrictive measures for achieving its objective of ensuring that the climate change schema truly meets its objective of achieving emission reductions.

Lastly, so long as the United States is careful not to work in exempting certain countries or projects from its restrictions on

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227. *Id.*

228. Wara, *supra* note 42, at 1764.

foreign offsets, a WTO panel or Appellate Body should not find that restrictions on foreign offsets constitute an arbitrary or unjustifiable restriction or a disguised restriction on international trade.

V. RATIONALE FOR RESPECTING INTERNATIONAL NORMS

Even if placing limitations on offsets is legally cognizable under GATT, such an approach is unwise in light of the opportunities and challenges that the United States will face in combating global warming. Efforts to place limitations on offsets from other countries could result in retaliation from abroad, especially if international trade law places no limits on doing so.

The United States is not the only country considering placing restrictions on compliance instruments from other countries. In fact, the European Union commissioned a study to determine whether doing so was legally defensible under international trade law and found that doing so can be justified. The conclusion, which is similar to the one articulated in this article was as follows:

> emissions allowances would not be 'products' covered by the GATT and other WTO agreements regulating trade in products . . . . Even if emission reduction credits and offsets were at some point in the future viewed as 'products'. . . and if various credits were found by a tribunal to constitute 'like products', it could nevertheless be argued that measures taken through implementation of a linking agreement to set criteria for the inter-changeability of credits were justified under Article XX of the GATT, as measures designed to protect the environmental integrity of the EU ETS and ensure that actual emission reductions take place.[229]

Because the United States would likely wish for its program to be accepted by other countries so that its compliance instruments are accepted abroad, it should tread carefully when creating its climate change schemata.

A. Preventing Challenges to Forestry Offsets

Undoubtedly, forestry sinks will be a major component of any United States climate change schema. In international negotiations, the United States has pressed for maximum flexibility in

229. MACE, ET AL., *supra* note 167, at 92-93.

achieving emission reductions and has insisted on including carbon sinks from forestry projects.[230]

The vast majority of outside-the-cap mitigation opportunities in the United States are forestry projects.[231] The potential of forestry projects is already evidencing itself in the United States' voluntary offset market. For example, in 2007, seventeen percent of the U.S. offset supply came from forestry and other land use projects.[232] Among this number, fifty-two forestry projects were responsible for about seven percent of the United States entire supply.[233]

Recent House and Senate legislation has also attempted to advance forestry offsets. The American Clean Energy and Security Act provided incentives to farmers and ranchers for planting trees.[234] The Clean Energy Jobs and American Power Act had provisions that considered awarding offset credits for "agricultural, grassland, and rangeland sequestration and management practices," as well as "projects involving afforestation or reforestation of acreage[,] . . . forest management resulting in an increase in forest carbon stores, including harvested wood products[,]" and "changes in carbon stocks attributed to land use change and forestry activities[.]"[235]

It is not only the United States that stands to gain from increasing the availability for forestry and other land-use projects. Other countries also have large forestry sinks and could benefit from their inclusion in an international climate change schema. According to a study produced by the Nicholas Institute, there are significant forestry and land-use opportunities in other countries that have not yet been utilized.[236]

However, although the inclusion of forestry sinks is of paramount importance to the United States and could also benefit other countries, the inclusion of forestry sinks within climate change programs has long been controversial on the international stage. Because forestry and land-use projects could potentially sequester carbon dioxide, the Kyoto Protocol vaguely promised to award emission reduction credits for some of these activities.[237] Plants

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230. Buchner, *supra* note 1, at 24-25.

231. *See* OLANDER, *supra* note 116, at 18 (demonstrating that remaining forest land holds 745.1 million tons of carbon dioxide equivalent).

232. GAO REPORT, CARBON OFFSETS, *supra* note 134, at 14.

233. *Id.* at 16.

234. American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 205 (2009).

235. Clean Energy Jobs and American Power Act, S. 1733, 111th Cong. § 733(4)(E), (F), (G), (H) (2009).

236. OLANDER, *supra* note 116, at 24.

237. Buchner, *supra* note 1, at 29; s*ee also* Alejandro Caparrós Gass & Frédéric Jacquemont, *Biodiversity and Carbon Sequestration in Forests: Economic and Legal Issues*, *in* CLIMATE CHANGE POLICY 149, 151 (Michael Bothe & Eckard Rehbinder eds., 2005) (illustrating that "[u]nder the circumstances described in Articles 3.3 and 3.4 of the Kyoto Proto-

and soils can serve as sinks for carbon dioxide, but with these activities it is not certain how much carbon dioxide is taken out of the atmosphere or whether the carbon dioxide is being removed permanently.[238]

The inclusion of large forestry sinks in the United States' climate change schema faces opposition from its European counterparts that do not necessarily have the same amount of forestry sinks as the United States. Legal scholars have anticipated that some countries may choose to discriminate against the inclusion of forestry sinks within the United States' climate change schema. Glenn Wiser, for instance, said the following:

> [s]ome Annex I Parties may find it desirable to discriminate between CERs . . . . [I]f the COP decides to make 'sinks' (land use, land use change and forestry) projects eligible for the CDM, some Annex I countries may not want to accept CERs derived from them, especially if they believe the rules for measuring and guaranteeing the claimed climate benefits are inadequate.[239]

For all these reasons, other countries may be reluctant to accept United States' offsets and allowances if the United States includes forestry sinks in its system. Without international trade laws preventing these countries from discriminating against United States' offsets and allowances, these countries may also place limitations and quotas on the United States' system should the United States make forestry sinks a major component of its climate change schema. With this in mind, the United States should be careful to place limitations and quotas on offsets from other countries, as this could lead other countries to replicate these actions and place limitations and quotas on offsets and allowances from any program that it develops.

B. Preventing Additional Challenges to Offsets

Carbon offsets are part of a large multifaceted business. As mentioned previously, the offset market includes offset developers, offset retailers, offset aggregators, offset brokers, creators of quality assurance mechanisms, third party verifiers, and consumers.[240]

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col (UNFCCC 1997), developed State Parties may undertake forestry management, cropland management, and other resource-centered activities that remove and store carbon as a means to help meet their greenhouse gas emissions reductions commitments.").

238. Buchner, *supra* note 1, at 29.

239. Wiser, *supra* note 181, at 294.

240. *See supra* note 137 and accompanying text.

The carbon market presents enormous financial opportunities and significant financial players are already becoming active in the market. Moreover, international channels are developing for the sale of these mechanisms. For example, JP Morgan recently agreed to spend 204 million dollars to acquire an offset aggregator, EcoSecurities.[241] EcoSecurities, which has been involved in the carbon market for over fourteen years, works with companies in both developing and industrialized countries and promotes projects across a range of technologies.[242]

While placing restrictions on foreign offsets could benefit the development of domestic infrastructure and may even be necessary initially, restrictions on foreign offsets could hurt other market participants in significant respects, especially retailers, aggregators, and brokers of United States' offsets who are trying to sell these mechanisms abroad. For instance, if there are no prohibitions on restricting foreign offsets and the United States decides to take such actions, it is conceivable that its foreign counterparts might retaliate and place restrictions on the use of United States' offsets within their systems. With countries placing limitations on each other's offsets, the free flow of offsets will be restrained, potentially hampering business for international entities such as JP Morgan's EcoSecurities.

In order for the United States' climate change schema to function properly, the United States must cooperate with other systems and adopt international norms that allow for the free flow of offsets between countries. Where international trade laws do not apply, it is even more important to uphold the tenants behind these laws.

Moreover, there are alternatives to placing restrictions on foreign offsets which will not cause ill favor with the United States' foreign counterparts and can still protect the environmental integrity of the United States' climate change schema. The United States, for instance, can form bilateral agreements with foreign countries when it deems such agreements necessary, and it can subsidize technological advancements and monitoring in developing countries.

In Japan, private companies and government agencies have been buying a large number of CERs generated from Chinese CDM projects.[243] Although responsible for purchasing a much larger vol-

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241. Michael Szabo & Paul Sandle, *JP Morgan to Buy EcoSecurities for $204 Million*, REUTERS (London), Sept. 14, 2009, *available at* http://www.reuters.com/article/idUSTRE58D37020090914.

242. *Who We Are*, ECOSECURITIES, http://www.ecosecurities.com/Home/EcoSecurities_the_carbon_market/Who_we_are/default.aspx (last visited Feb. 6, 2012).

243. *See* NANNAN LUNDIN ET AL., *supra* note 96, at 8.

ume of shares in previous years,[244] Japanese private companies and government agencies were still responsible for CDM and JI purchases that amounted to five percent of the market in 2008.[245]

The Japanese government, however, has not been a passive purchaser of CERs. The country has worked actively to ensure the integrity of offset programs abroad. In 2008, Japan and China authored a Joint Statement on Climate Change where the "countries reaffirmed their commitment to the . . . principles [behind] the UNFCCC and the Kyoto Protocol and agreed on . . . a closer partnership to . . . strengthen cooperation, dialogue[,] and [technology] exchanges[.]"[246] Both countries also committed to examining improving the CDM mechanism and encouraging increased private investment in the mechanism.[247] Moreover, in 2008, Japan announced that it was creating a ten billion dollar "Cool Earth Partnership" fund to further promote climate change efforts in developing countries.[248] Eight billion dollars is provided "for assistance in climate change mitigation."[249] Two billion dollars is provided for "grants, technical assistance, and aid for countries switching to clean energy."[250]

Instead of placing blanket limitations on foreign offsets or devaluing these offsets, a United States' climate change schema could freely accept offsets from abroad, but like Japan, it could allow for bilateral agreements where it deems such agreements necessary and subsidize technological advancements and monitoring.

VI. CONCLUSION

The Earth's temperature is rising. Increasing concern from the scientific community over this phenomenon has led international policymakers to call for a global solution to this alarming problem. The majority of the world has moved forward in developing an international climate change schemata under the auspices of the Kyoto Protocol. The United States is the only major industrialized country that has not ratified the Protocol, but, nevertheless, the United States has been formulating its own plan for combating temperature increases.

Several climate change bills have been introduced in the House and Senate. These bills in many ways model international efforts,

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244. *Id.*

245. KARAN CAPOOR & PHILIPPE AMBROSI, THE WORLD BANK, STATE AND TRENDS OF THE CARBON MARKET 2009 33 (2009).

246. NANNAN LUNDIN ET AL., *supra* note 96, at 9.

247. *Id.*

248. *Id.*

249. *Id.*

250. *Id.*

however, in a very important respect these bills differ from the international climate change schemata developing across the rest of the world. These bills place restrictions on the free flow of foreign offsets into the United States, a decision which echoes continued concerns that the international climate change schema as described under the Kyoto Protocol unfairly burdens the United States.

There are sound policy reasons for placing restrictions on the flow of foreign offsets into the United States, such as allowing domestic projects to excel or at least develop initially and protecting the environmental integrity of the United States' system. Such limitations are also likely justifiable under international trade law. GATT likely does not apply to carbon offsets. Yet, even if GATT applies to carbon offsets, a country may be able to defend discriminating against foreign offsets by citing the environmental exception and arguing that it is impossible to ensure that foreign projects meet the same stringent standards as United States' projects.

However, even if GATT is not applicable to carbon offsets or a country cannot argue that discrimination against carbon offsets is justifiable under the environmental exception, it is still important for countries to uphold the underlying tenants of GATT. Countries will need to cooperate with one another so that programs are cohesive enough to allow trading of compliance entities in one country with compliance entities in another country. Actions taken by one system to limit or in some other way restrict the free flow of carbon offsets from another program will not foster cooperation. Along these lines, if the United States wishes for other countries to accept compliance instruments from its system, which will include contested forestry sinks, and if it wishes for its domestic offset developers to be able to sell offsets abroad without restriction, the United States should tread carefully when placing limitations on offsets from foreign countries.

Climate change is a global problem requiring a global solution. At some point in the near future, the United States EPA Office of Climate Change will be charged with developing the United States' climate change schema. Even if the United States does not ratify the Kyoto Protocol now or in the near future, when the EPA Office of Climate Change moves forward with enacting a climate change schema for the United States, it would be wise to adopt international norms and model the system in a manner similar to the framework established by the Protocol and followed by the rest of the world.

SYMBOLIC GESTURES OR OUR SAVING GRACE: THE RELEVANCE OF COMPENSATORY MITIGATION FOR FLORIDA'S WETLANDS IN THE CLIMATE CHANGE ERA

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I. INTRODUCTION

"If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering."[1] When it comes to wetlands management, Florida has been a fool. Almost half of Florida's original wetlands have disappeared[2] largely due to urban development and agriculture.[3] Florida is a main contributor to the United States' estimated loss of 58,500 acres of wetlands a year,[4] with the U.S. Army Corps of Engineers (Corps) issuing more permits to destroy wetlands in Florida than in any other state.[5] Florida, of course, is not alone in its misplaced enthusiasm to purge itself of wetlands.[6] Overall, the United States has depleted its wetlands acreage by half—from 400 million acres in the 18th century to just over 220 million acres today.[7] The unique and diverse wetland ecosystems Florida offers,[8] however, make their significant depletion surprising. For example, Florida's Everglades is a one-of-a-kind jewel and Florida's coastal waters "contain[] the only coral reef in the continental United States."[9]

Wetlands loss and degradation is a grave concern for Florida. In the climate change era, several services[10] provided by wetlands are becoming even more critical for the survival of Florida's human and wildlife populations, such as water storage, flood control,

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1. ALDO LEOPOLD, ROUND RIVER: FROM THE JOURNALS OF ALDO LEOPOLD 146-47 (Luna B. Leopold ed., 1993).

2. FLA. DEP'T OF ENVTL. PROT., INTEGRATED WATER QUALITY ASSESSMENT FOR FLORIDA: 2008 305(B) REPORT AND 303(D) LIST UPDATE 84 (2008), *available at* http://www.dep.state.fl.us/water/docs/2008_Integrated_Report.pdf [hereinafter FDEP INTEGRATED REPORT].

3. ST. JOHNS RIVER WATER MGMT. DIST., PROTECTING FLORIDA'S WETLANDS 2 (Apr. 2001), *available at* http://www.orange.wateratlas.usf.edu/upload/documents/fs_wetland.pdf.

4. *Id.*

5. Craig Pittman & Matthew Waite, *They Won't Say No*, ST. PETERSBURG TIMES SPECIAL REPORT: VANISHING WETLANDS, May 22, 2005, http://www.sptimes.com/2006/webspecials06/wetlands/ [hereinafter Pittman & Waite, *They Won't Say No* Article].

6. Wetlands have been viewed as health menaces and nuisances throughout most of our nation's history. GLICKSMAN ET AL., ENVIRONMENTAL PROTECTION: LAW AND POLICY 687-88 (2007). In fact, throughout the United States, there is an estimated loss of 58,500 acres of wetlands a year. ST. JOHNS RIVER WATER MGMT. DIST., *supra* note 3.

7. *See* CRAIG PITTMAN & MATTHEW WAITE, PAVING PARADISE: FLORIDA'S VANISHING WETLANDS AND THE FAILURE OF NO NET LOSS 7 (2009) [hereinafter PAVING PARADISE].

8. U.S. ENVTL. PROT. AGENCY, EPA PUB. NO. 230-F-97-008i, CLIMATE CHANGE AND FLORIDA 4 (1997), *available at* http://www.miamidade.gov/derm/library/air_quality/climate_change_and_florida.pdf [hereinafter CLIMATE CHANGE AND FLORIDA].

9. FDEP INTEGRATED REPORT, *supra* note 2, at 4. Modifications for flood control during the 1920's "resulted in the loss of much of the original Everglades wetlands." *Id.* at 11-12.

10. Functions provided by wetlands that human populations benefit from are called services. J. B. RUHL ET AL., THE LAW AND POLICY OF ECOSYSTEM SERVICES 15 (2007) [hereinafter RUHL ET AL., LAW AND POLICY].

groundwater recharge, filtration, storm buffer, and habitat for fish and wildlife.[11] For example, one acre of wetland can store nearly 1.5 million gallons of floodwater and every 2.7 acres of wetland reduces a hurricane's storm surge by a foot.[12] While Florida's laws have embraced the need for wetlands, its mandates fall short. Florida's laws tout many admirable standards; however, in practice something less-demanding is frequently implemented as agencies often lack sufficient guidelines and duties.[13] Some agency officials in Florida also blame low resources and staff levels for their low compliance and monitoring ratings.[14] Figures show federal agencies only monitor at most sixty-nine percent of their sites in Florida,[15] and state agencies range in the same ballpark.[16]

The cornerstone of wetlands regulation centers on the mandate of "no net loss," which is reached by using compensatory mitigation techniques.[17] "No net loss" was a policy shift made in 1989 under President George H.W. Bush to ensure that the total acreage of remaining wetlands remained constant.[18] Due to its political popularity, all presidents since H.W. Bush have adopted the policy, although its success is somewhat questionable.[19] Specifically, since the policy's institution in 1990, Florida has lost "at least 84,000 acres of [its] wetlands."[20] Since development and agriculture often require destruction of wetlands, in order to obtain the necessary permits to build in, fill, or dredge wetlands, federal and state wetlands permit programs require applicants to mitigate any unavoidable adverse impacts.[21] Compensatory mitigation is a toolbox

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11. *See generally* CLIMATE CHANGE AND FLORIDA, *supra* note 8 (providing a general description of climate change impacts on Florida).

12. PAVING PARADISE, *supra* note 7, at 7.

13. *See* RUHL ET AL., LAW AND POLICY, *supra* note 10, at 138-45 (detailing a general "history of regulatory inattention to wetland ecosystem services" and ambiguity in current wetland mitigation regulations).

14. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-05-898, WETLANDS PROTECTION: CORPS OF ENGINEERS DOES NOT HAVE AN EFFECTIVE OVERSIGHT APPROACH TO ENSURE THAT COMPENSATORY MITIGATION IS OCCURRING 20 (2005) [hereinafter GAO REPORT].

15. *Id.* at 17.

16. NAT'L RESEARCH COUNCIL, COMPENSATING FOR WETLAND LOSSES UNDER THE CLEAN WATER ACT 118, Table 6-12 (2001) (providing a compliance study by Florida's Office of Program Policy Analysis and Government Accountability in 2000 for fully implemented mitigation plans, which considered all unverified permits to be noncompliant).

17. The administration of George W. Bush endorsed the "no net loss" goal when it released a national Wetlands Mitigation Action Plan. U.S. FISH & WILDLIFE SERV., NATIONAL WETLANDS MITIGATION ACTION PLAN (Dec. 24, 2002), *available at* http://www.fws.gov/habitatconservation/MAPwithsignatures.pdf [hereinafter U.S. FISH & WILDLIFE SERV., MITIGATION PLAN].

18. PAVING PARADISE, *supra* note 7, at 2.

19. *See id.* (providing a brief summary of some of the failures of no net loss in Florida).

20. Pittman & Waite, *They Won't Say No* Article, *supra* note 5, at 1.

21. *See generally* 33 U.S.C. § 1344 (2006) (outlining the federal dredge-and-fill permitting program); FLA. STAT. §§ 373.413-.4139 (2011) (outlining Florida's dredge-and-fill permitting program).

of several techniques that "restor[e] a former wetland area, enhanc[e] degraded wetlands, creat[e] new wetlands, or preserv[e] existing wetlands."[22] The permittee or a paid third party can utilize these tools, although the permittee is often the one in charge.[23]

In order to achieve "no net loss," compensatory mitigation necessitates that the mitigation area uphold the same ecological condition and services.[24] Climate change, however, is vastly changing Florida's ecosystems—and quickly. While mitigation provides a workable solution for sustainable development and growth, the science and policies behind currently used methods are breaking down. According to several studies over the past eight years, compensatory mitigation's effectiveness is questionable at best.[25] While the lack of monitoring by agencies and compliance by permittees is a large part of the problem,[26] the scientific complexities surrounding recreation, restoration, and other methods are to blame as well[27] and will only worsen as climate and hydrologic cycles become unpredictable. Wetlands and endangered species habitat are often caught in development's line of fire and suffer first from superficial mitigation. Moreover, the services these habitats provide will collapse, taking vital needs for life with them.

This article examines the viability of using compensatory mitigation to help conserve and strengthen Florida's wetlands in spite of potential impacts brought from climate change. While compensatory mitigation will still be a necessary and useful tool, I argue for less reliance on this often unsuccessful measure and offer several recommendations for restructuring its use to ensure maximum effectiveness. Part II examines the current state of Florida's wetlands to illustrate the problems the wetlands face and their need for protection. Existing threats to Florida's wetlands originat-

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22. Royal C. Gardner, *Mitigation*, *in* WETLANDS LAW AND POLICY: UNDERSTANDING SECTION 404 253 (Kim Diana Connolly et al. eds., 2005).

23. *See* JESSICA WILKINSON & JARED THOMPSON, ENVTL. LAW INST., 2005 STATUS REPORT ON COMPENSATORY MITIGATION IN THE UNITED STATES 26-27 (2006) [hereinafter 2005 STATUS REPORT].

24. *See* U.S. FISH & WILDLIFE SERV., MITIGATION PLAN, *supra* note 17.

25. *See generally* 2005 STATUS REPORT, *supra* note 23; GAO REPORT, *supra* note 14; KELLY REISS, ERICA HERNANDEZ & MARK BROWN, AN EVALUATION OF THE EFFECTIVENESS OF MITIGATION BANKING IN FLORIDA: ECOLOGICAL SUCCESS AND COMPLIANCE WITH PERMIT CRITERIA (2007) [hereinafter 2007 BANKING STUDY]; PAVING PARADISE *supra* note 7; NAT'L RESEARCH COUNCIL, *supra* note 16.

26. For information regarding monitoring and compliance problems, see GAO REPORT, *supra* note 14, at 17-19; NAT'L RESEARCH COUNCIL, *supra* note 16, at 94-122.

27. *See* NAT'L RESEARCH COUNCIL, *supra* note 16, at 35-45; Craig Pittman & Matthew Waite, *They Can Build Roads, But Not Good Wetlands*, ST. PETERSBURG TIMES SPECIAL REPORT: VANISHING WETLANDS, Nov. 6, 2005, http://www.sptimes.com/2006/webspecials06/wetlands/ [hereinafter Pittman & Waite, *Build* Article]; Craig Pittman & Matthew Waite, *Sometimes, A Good Plan Just Doesn't Work*, ST. PETERSBURG TIMES SPECIAL REPORT: VANISHING WETLANDS, Nov. 6, 2005, http://www.sptimes.com/2006/webspecials06/wetlands/ [hereinafter Pittman & Waite, *Good Plan* Article].

ing from development and the agriculture industry are also explored. In addition, potential risks from climate change are discussed, including warmer temperatures, more severe storms, saltwater intrusion, and extreme variations in weather patterns.

In order to have an understanding of Florida's present fight against "no net loss" of wetlands, Part III of the article describes the regulatory framework governing Florida's wetlands and how it incorporates mitigation into its programs. The federal landscape is predominately encompassed by the Clean Water Act's (CWA), section 404, dredge and fill program.[28] Other federal programs involving wetlands are also briefly discussed such as the Wetlands Reserve Enhancement Program (WREP)[29] and the National Environmental Policy Act (NEPA).[30] Some of the federal laws work in tandem with state-level programs, creating a double layer of rules—or protection. Next, state wetland-related programs are described. Some of the more critical state programs for wetland protection include the Environmental Resource and Wetland Resource Permit Program[31] and the state's mitigation program.[32]

Part IV of the article then analyzes the strengths and weaknesses of permittee-responsible mitigation versus mitigation banking[33] in the wetland context. Permittee-responsible mitigation and banking are the two mitigation methods relied on most.[34] Although banking uses the same techniques as a permittee to mitigate offsets, this article focuses on project-specific application of permittee-responsible mitigation as compared to multiple-project use of banking. Specifically, permittee-controlled mitigation normally results in isolated, scattered mitigation areas that are usually on-site or adjacent to the project site, although they can occur off-site. In contrast, banking usually provides larger mitigation sites that mitigate for several projects and has an outside party—not the permittee—preserving, restoring, or creating wetlands. Each mitigation technique is evaluated for its current ability to conserve wetlands and the potential to combat new impacts from climate change. While there is still much to be learned about the complex inner workings of wetland ecosystems and valuation techniques, this article focuses primarily on the administrative

28. 33 U.S.C. § 1344 (2006).
29. 16 U.S.C. § 3837.
30. National Environmental Policy Act, 42 U.S.C. §§ 4321-47.
31. FLA. ADMIN. CODE r. 62-312.060 (2011); FLA. ADMIN. CODE r. 62-312.330.
32. FLA. STAT. §§ 373.413-.4139 (2011).
33. A mitigation bank is a restored, created, enhanced, or preserved wetland that is conducted by a third party specifically to provide compensatory mitigation for unavoidable losses to wetlands prior to the actual impacts. 2005 STATUS REPORT, *supra* note 23, at 1.
34. *Id.* at 26-27.

policies and the legal mechanisms necessary for compensatory mitigation to operate effectively.

Lastly, Part V of the article proposes recommendations on how the compensatory mitigation process can be improved to better combat Florida's current and foreseeable challenges in wetland conservation. First, mitigation will need to be relied on less during the permitting process to ensure the proper balancing of interests. Second, a new hierarchy of mitigation tools with banking as the first choice will provide more flexibility in managing mitigation sites needed to combat climate change. Permittee-responsible mitigation will be the last resort for offsetting impacts and will require several modifications to ensure greater success. Adaptive management and the precautionary principle will play important roles in reshaping the mitigation mandates and process.

Florida is on the front lines of climate change and has an opportunity to set an example for the rest of the world in wetlands management. It is time Florida takes a proactive approach in its policies on wetland conservation. Agriculture, development, pollution control, and land use policies and decisions will need to take into account climate variability. Compensatory mitigation techniques, with some modifications, can be used in preventative ways in order to address and alleviate the current and future threats to Florida's wetlands.

II. FLORIDA'S ENDANGERED WETLANDS

Florida's environment has suffered greatly from anthropogenic impacts. One illustration of man's potentially irreversible effect is the 116 terrestrial and marine wildlife species[35] and 55 plant species[36] listed under the Endangered Species Act (ESA) as endangered, threatened, or species of special concern. Like the ESA, the CWA has a comparable listing system for navigable waters[37] and approximately one fourth of Florida's rivers, streams, and lakes, and over half of Florida's estuaries are listed as having poor water quality.[38] Florida's wetlands are at risk of extinction because of continuous development, agriculture, mining, and pollution. More-

35. FLA. FISH & WILDLIFE CONSERVATION COMM'N, FLORIDA'S ENDANGERED SPECIES, THREATENED SPECIES, AND SPECIES OF SPECIAL CONCERN iii (2009), *available at* http://flaglerlive.com/wp-content/uploads/List-of-FloridaThreatened-Endangered-Species.pdf.

36. FLA. DEP'T OF AGRIC. & CONSUMER SERVS, FLA. FOREST SERV., *Florida's Federally Listed Plant Species*, http://www.fl-dof.com/forest_management/plant_conserve_list.html (last visited Feb. 6, 2012).

37. Clean Water Act, 33 U.S.C. §§ 1313(d), 1362(7) (2006). Although this program does not include "wetlands" per se, it covers the large majority of streams, lakes, and other water bodies that make up wetlands and are crucial for their survival.

38. FDEP INTEGRATED REPORT, *supra* note 2, at 8-10, 74.

over, climate change is—or will be—intensifying these anthropogenic stressors while bringing new challenges for maintaining healthy wetlands. While human existence necessitates some harm to the environment, mankind needs to find a balance where the "recuperative powers of nature" are maintained.[39]

A. Current Threats to Florida's Wetlands

When Florida became a state in 1845, its wetlands were targeted for "reclamation," which at that time meant draining, in order to make room for future growth, easier travel, and agriculture.[40] Since then our government has learned of the services wetlands provide and our policies have slowly changed toward protection[41] and "no net loss."[42] Ironically, despite this awareness, Florida has permitted development and agriculture practices to continue to degrade and destroy its wetlands. In fact, despite laws mandating protection, permits for destroying wetlands in the name of development or other needs are generally approved, with a denial being the rare exception.[43] This high approval rating is dangerous considering that the mitigation relied on to replace the impacted wetlands is rarely monitored and seldom successful.[44] As a result, there are few natural streams and rivers remaining in the southern portion of the peninsula.[45] The major anthropogenic stressors on wetlands today derive from unrestrained urban growth and the agriculture industry.

Population increase and development, or urban growth, places wetlands in a catch-22 by increasing demands for services while decreasing the amount of wetlands for production. Particularly, urban growth raises demands for water supply and increases wastewater runoff that needs to be disposed of or "treated." In spite of this, development destroys nearby wetlands that provide the groundwater recharge, filtration, and sewage treatment neces-

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39. Anthony D. Bradshaw, *Introduction and Philosophy*, *in* HANDBOOK OF ECOLOGICAL RESTORATION VOL. 1: PRINCIPLES OF RESTORATION 3 (Martin R. Perrow & Anthony J. Davy eds., 2002).

40. *See* PAVING PARADISE, *supra* note 7, at 8-9; FDEP INTEGRATED REPORT, *supra* note 2, at 11-12.

41. *See* PAVING PARADISE, *supra* note 7, at 9-17.

42. *See* U.S. FISH & WILDLIFE SERV., MITIGATION PLAN, *supra* note 17.

43. Pittman & Waite, *They Won't Say No* Article, *supra* note 5, at 1 (discussing how between 1999 and 2003 the primary agency in charge of wetlands protection in Florida, the U.S. Army Corps of Engineers, approved 12,000 permits and denied only 1).

44. *See generally* GAO REPORT, *supra* note 14; 2005 STATUS REPORT, *supra* note 23; 2007 BANKING STUDY, *supra* note 25; Pittman & Waite, *They Won't Say No* Article, *supra* note 5; PAVING PARADISE, *supra* note 7 (detailing the overall ineffectiveness of mitigation to achieve "no net loss" of wetlands).

45. FDEP INTEGRATED REPORT, *supra* note 2, at 8.

sary for clean water.[46] Paved surfaces and new buildings divert rainwater that recharge the aquifer and destroy wetlands that provide water storage.[47] Filling wetlands for economic development combined with growing populations overburdens Florida's ground water supply and can fuel "water wars" between states and within Florida itself.[48] For instance, the booming Orlando area has enraged watchdog groups over its receipt of a permit from the St. Johns River Water Management District allowing Seminole County to withdraw 5.5 million gallons of water a day from the St. Johns River in order to provide for Orlando's needs.[49]

In addition to intractable water supply dilemmas, development is causing severe sediment contamination, habitat loss, and pollution of Florida's wetlands. Development most often occurs in coastal communities where freshwater is scarcer, but also where ninety-five percent of the current population[50] and three-fourths of new residents choose to live.[51] Therefore, development is eliminating freshwater wetlands from areas where they are limited and most needed. Construction runoff is washed into the rivers, lakes, and estuaries contaminating sediments with heavy metals and toxic organics.[52] As sediments provide critical habitat for many organisms, this contamination destroys their home and can also be absorbed or ingested by the organisms which work their way up the food chain and threaten Florida's commercial fisheries.[53] Habitat loss for fish, birds, and other wildlife is also caused by dredging and filling of wetlands and deteriorates water quality from non-point source pollution. In addition to urban run-off and sewage sludge, agricultural run-off has devastating impacts on Florida's wetlands as well.[54]

With over half of Florida used as farmland, agriculture is an important industry, both locally and nationally, as it supplies over

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46. *See* J.B. Ruhl, James Salzman & Iris Goodman, *Implementing the New Ecosystem Services Mandate of the Section 404 Compensatory Mitigation Program—A Catalyst for Advancing Science and Policy*, 38 STETSON L. REV. 251, 255-58 (2009) (discussing the many services wetlands provide urban areas and how they are being relocated to rural areas from mitigation) [hereinafter Ruhl et al., *New Ecosystem Services*].

47. CYNTHIA BARNETT, MIRAGE: FLORIDA AND THE VANISHING WATER OF THE EASTERN U.S. 53, 56, 58 (2007).

48. *Id.* at 103-11.

49. *See* Neil Armingeon, *Riverkeeper Update*, THE KINGFISHER (St. Johns Riverkeeper, Jacksonville, Fla.), Spring 2009 at 1-2, *available at* http://www.stjohnsriverkeeper.net/newsletters/Spring2009.pdf; Kevin Spear, *Water from Mighty St. Johns River Will Flow from Seminole Faucets*, ORLANDO SENTINEL, Jan. 14, 2009, http://articles.orlandosentinel.com/2009-01-14/news/riverwater14_1_johns-river-water-seminole-gallons-of-water.

50. CLIMATEGROUP.ORG, FLORIDA SERIOUS RISK, BOUNDLESS POTENTIAL 1, *available at* http://www.theclimategroup.org/_assets/files/florida_seriousrisk_boundlesspotential.pdf.

51. FDEP INTEGRATED REPORT, *supra* note 2, at 4.

52. *Id.* at 4, 78-80.

53. *Id.* at 4, 24, 78-80, 81.

54. *Id.* at 4.

fifty percent of the winter vegetables for all eastern states.[55] This high productivity, however, is dependent on water quantity and quality.[56] One of the largest threats to wetlands from agriculture is nonpoint source pollution of excess nutrients, which leads to eutrophication.[57] "The rapid increase in nutrient levels stimulates algal blooms" that deplete dissolved oxygen leading to fish deaths or dead zones.[58] Nutrients, described more aptly by David Guest as "fertilizer and cow poop,"[59] degrade water quality, destroy fish habitat and fisheries, and can even be toxic to people. For example, in 2005 the St. Johns River had an algae bloom known as *Microcytis aeruginosa*, a type of toxic blue-green algae, which can cause skin irritation, staph infections, allergic reactions, gastrointestinal upset, liver damage, and if these conditions became serious enough, even death.[60] The County recommended no contact with the river until the bloom disappeared, which took over three months.[61] Another bloom in Lake Okeechobee was pushed into the Caloosahatchee and St. Lucie Rivers after federal officials released millions of gallons of its water into the rivers due to flooding concerns.[62] These toxic algae blooms are occurring statewide from the "St. Johns River in the Northeast Region, the Caloosahatchee River in the Southwest Region, and the Peace and Kissimmee Rivers in the Central Region."[63] Similar to the relationship between urban development and wetlands, agriculture ends up hurting the very services it depends on.

Although economies and the environment seem to clash at times, when one focuses on long-term gains and use, as opposed to short-term, their true interdependence is realized. A common fear and argument made by pro-development and agriculture interest groups is that Florida's economy will collapse if environmental

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55. Charles Aller, Director, Fla. Dep't of Agric. & Consumer Servs., Environmental Forum at Florida State University College of Law: Florida Agriculture and the Environment: What's on the Horizon? (Oct. 14, 2009), *available at* http://mediasite.apps.fsu.edu/Mediasite/Viewer/?peid=073ea752171a447687b742b7802c924d.

56. *Id.*

57. Eutrophication is "[t]he process of nutrient enrichment (usually by nitrates and phosphates) in aquatic ecosystems . . ." which "occurs naturally . . . but may be accelerated by human activities." THE CONCISE OXFORD DICTIONARY OF ECOLOGY 146 (Michael Allaby ed.,1994).

58. *Id.*

59. David Guest, Managing Attorney, Earthjustice, Environmental Forum at the Florida State University College of Law: Florida Agriculture and the Environment: What's on the Horizon? (Oct. 14, 2009), *available at* http://mediasite.apps.fsu.edu/Mediasite/Viewer/?peid=073ea752171a447687b742b7802c924d.

60. PAVING PARADISE, *supra* note 7, at 238-39.

61. *Id.* at 238.

62. *Id.* at 238-39.

63. *Earthjustice Files Federal Lawsuit to Stop Toxic Algae Blooms*, EARTHJUSTICE (July 17, 2008), http://www.earthjustice.org/news/press/2008/earthjustice-files-federal-lawsuit-to-stop-toxic-algae-blooms.html.

mandates are too stringent or proactive. Especially now, during our country's economic downturn, Florida's legislature and citizens believe this rhetoric when in actuality a healthy environment is crucial for Florida's economy. Two of Florida's top industries are agriculture and tourism,[64] which, unsurprisingly, cannot exist, much less flourish, without clean water.[65]

B. Risks from Climate Change

In addition to existing threats, Florida's wetlands face even more problems in the future. Even the U.S. Supreme Court has acknowledged that the "[t]he harms associated with climate change are serious and well recognized."[66] An apt example is found in Florida's wetlands, which are facing a severe ecological backlash in the immediate future. With 95% of Florida's population living within thirty-five miles of the coast,[67] climate change in tandem with other anthropogenic impacts are spawning an array of new challenges for Florida's wetlands. Warming temperatures, sea level rise, and extreme weather patterns are three main consequences of climate change that will have a disparate blow on Florida.[68] Past development and agricultural uses of land in Florida will only intensify the ramifications of these climatic and environmental shifts.

Based on projections by the Intergovernmental Panel on Climate Change ("IPCC"), Florida's temperatures could increase by three to four degrees Fahrenheit by 2100.[69] Warmer temperatures, while seemingly a bigger problem for less tropical areas,[70] create a

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64. *Florida Quick Facts*, STATE OF FLORIDA.COM, http://www.stateofflorida.com/Portal/DesktopDefault.aspx?tabid=95 (last visited Feb. 6, 2012).

65. FDEP INTEGRATED REPORT, *supra* note 2, at 4 (explaining how Florida depends on its water resources to maintain its large fishing and tourism industries).

66. Massachusetts v. EPA, 549 U.S. 497, 521 (2007).

67. AUDUBON OF FLORIDA, NATIONAL ACTION ON CLIMATE CHANGE NEEDED TO PROTECT FLORIDA'S UNIQUE HABITATS AND BIRDS, *available at* http://www.audubonofflorida.org/PDFs/Audubon_climatechange.pdf (last visited Feb. 6, 2012).

68. *Id.* (describing how climate change contributes to sea level rise, warmer temperatures, and extreme weather patterns).

69. CLIMATE CHANGE AND FLORIDA, *supra* note 8, at 2.

70. Warming in the Arctic causes a chain of events that result in increased warming or cooling known as the "albedo feedback." Mark Serreze, *Why is the Arctic So Sensitive to Climate Change and Why Do We Care?*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Aug. 28, 2008), http://www.arctic.noaa.gov/essay_serreze.html [hereinafter NOAA, *Arctic Climate Change* Article]. Albedo is how reflective or white a surface is. *Id.* The higher an albedo, the more of the sun's energy is reflected back to space. *Id.* Therefore, as Arctic snow and ice melts leaving less white areas to reflect energy, and the warmer it gets the more melting increases. *Id.* Melting of reflective snow and ice increases the polar region's energy absorption resulting in warmer temperatures worldwide. SUSAN JOY HASSOL, IMPACTS OF A WARMING ARCTIC: ARCTIC CLIMATE IMPACT ASSESSMENT 10 (2004), *available at* http://www.amap.no/acia/index.html.

domino effect that diminishes water quantity and quality. As temperatures warm, the rate of evaporation increases, which in turn increases precipitation.[71] These climatic shifts can trigger lower river flows, lower lake levels, flooding, and reduced groundwater.[72] Higher evaporation also lowers the moisture content in soil, which not only requires the agricultural industry to demand more water for irrigation, but also leads to flooding when combined with increased precipitation.[73] Although some project the agriculture industry's water demand will rise by only six percent in the next fifteen years,[74] most studies and policies have yet to take climate change impacts into account.[75] As water wars are already raging in Florida, this increased demand will only intensify them.

Higher temperatures will also cause agriculture production patterns to shift northward[76] and invite new vector borne diseases, habitat migration, degraded water quality, and algae blooms. Outbreaks of tropical diseases, like malaria and dengue fever, carried by insects will increase as habitats become warmer and more humid.[77] As these habitats temperatures increase, it will also force heat-vulnerable species northward. Although animals and plants migrated or adapted during past temperature increases, these spikes took centuries or millennia to occur as opposed to decades.[78] In addition, migration may be blocked for some species due to development creating scattered pockets of suitable habitat. Lastly, increased temperatures combined with "increased precipitation intensity," and "longer periods of low flows" foster algae blooms, increase bacterial content, and aggravate water pollution.[79] For example, as wastewater runoff, sewage sludge, and agriculture runoff continue to inundate Florida's wetlands, slow flows brought by climate change will hinder wetland's natural treatment process, which requires swift movement.[80]

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71. CLIMATE CHANGE AND FLORIDA, *supra* note 8, at 2; *See also* Intergovernmental Panel on Climate Change [IPCC], *2007 Summary for Policymakers, in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 7 (Solomon et al. eds., 2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

72. CLIMATE CHANGE AND FLORIDA, *supra* note 8, at 3-4.

73. *See generally* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], TECHNICAL PAPER NO. VI, *CLIMATE CHANGE AND WATER* 25-26 (Bryson Bates et al. eds., 2008), *available at* http://www.ipcc.ch/pdf/technical-papers/climate-change-water-en.pdf [hereinafter IPCC, WATER].

74. Aller, *supra* note 55.

75. CLIMATE CHANGE AND FLORIDA, *supra* note 8, at 4.

76. *Id.*

77. *Id.* at 3.

78. *Id.* at 2.

79. *See* IPCC, WATER, *supra* note 73, at 43.

80. For example, the St. Johns River has larger problems with pollution build-up due to its naturally slower flow. NAT'L OCEANIC & ATMOSPHERIC ADMIN., ST. JOHNS RIVER USER GUIDE 1, *available at* http://response.restoration.noaa.gov/book_shelf/777_Gnome_StJohns River_UG.pdf (last visited Feb. 6, 2012).

For more good news, temperature also plays a role in rising sea levels, which stems from increased surface runoff, melting ice caps, and thermal expansion of water.[81] By 2100, projections indicate "the sea level is likely to rise 18-20 inches" in Florida.[82] While this may sound negligible, mere inches will result in loss of land, structures, and wildlife habitat, as well as exacerbate coastal erosion, storm damage, and saltwater intrusion.[83] Sea level rise may not only eviscerate coastal communities but can also reduce freshwater.[84] Moreover, the predicted decline in groundwater recharge will allow inland aquifers, such as Florida's already shallow aquifer, to become more susceptible to saltwater intrusion.[85] Essentially, as sea levels rise salty water mixes with freshwater raising the salinity level in surface and groundwater supplies.[86] Wildlife and fish habitat, estuaries, freshwater marshes, hardwood swamps, and cypress swamps are all vulnerable to changes in salinity.[87] More direct impacts on the human population will include reductions in arable land and potable water supplies.

Finally, increased, varied weather patterns are very likely in Florida's future, which will mean more droughts, freezes, and intense storms—all of which need wetlands to mitigate their damage. Wetlands are versatile ecosystems that act as sponges during heavy rainfall and floods, provide a buffer from storm surges, and provide water during droughts.[88] Although normally wetlands adapt to sea level changes by migrating inland, sea level rise is occurring too quickly to maintain equal wetlands levels.[89] Additionally, according to a recent study by the IPCC, a range of models show that future hurricanes will be more intense, have higher wind speeds, and have heavier rainfall.[90] Since Florida's developed coastlines have created barriers for wetland migration and eradicated wetlands and dunes needed for storm buffers, its coastal and

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81. *See* IPCC, WATER, *supra* note 73, at 38. *See also* NOAA, *Arctic Climate Change* Article, *supra* note 70.

82. CLIMATE CHANGE AND FLORIDA, *supra* note 8, at 3.

83. *Id.*

84. *Id.* at 3; *see also* IPCC, WATER, *supra* note 73, at 43.

85. IPCC, WATER, *supra* note 73, at 43; *see also* CLIMATE CHANGE AND FLORIDA, *supra* note 8, at 4.

86. *See* U.S. Envtl. Prot. Agency, *Coastal Zones and Sea Level Rise*, EPA.GOV, http://www.epa.gov/climatechange/effects/coastal/index.html (last visited Feb. 6, 2012) [hereinafter EPA *Coastal Zones*].

87. *See generally* Kevin L. Erwin, *Wetlands and Global Climate Change: The Role of Wetland Restoration in a Changing World*, 17 WETLANDS ECOLOGY MGMT. 71 (2009).

88. MILLENNIUM ECOSYSTEM ASSESSMENT, ECOSYSTEMS AND HUMAN WELL-BEING: WETLANDS AND WATER, 32-33 (2005), *available at* http://www.maweb.org/documents/document.358.aspx.pdf.

89. *See* EPA *Coastal Zones*, *supra* note 86.

90. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], CLIMATE CHANGE 2007: SYNTHESIS REPORT 46 (2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

inland communities will suffer greater damage. The increased intensity and frequency of precipitation also worsens coastal erosion and leads to flooding.[91] Moreover, varied rainfall patterns can reduce "groundwater recharge in humid areas"—like Florida—because a higher frequency of heavier rainfall leaves the ground too saturated to allow infiltration before it evaporates.[92]

In many ways, past development and agricultural land uses have left us with few options for how we respond to these debacles. Future development and land use decisions must give wetlands a higher priority when faced with development pressures and water supply demands if we are to avert and alleviate some of the impending damage to Florida's wetlands. In order to truly achieve "no net loss," mitigation measures must consider climate change impacts when determining which wetlands may be impacted and how much harm must be offset. If Florida stays on its current track, wetlands will continue to be destroyed. Even if deficiencies in mitigation monitoring and compliance are solved,[93] mitigated sites will fail to replace wetlands if current scientific assumptions are relied on. While much remains uncertain, it is clear that nature's resilience is no longer a safe harbor for curing our development needs.[94]

III. EXISTING REGULATORY LANDSCAPE FOR WETLANDS

Florida's wetlands are protected through a mixture of regulatory programs at the federal and state level. These programs often overlap by requiring review and approval from multiple agencies for the same proposed action or project. Regardless of the regulation, agency, or level of government, compensatory mitigation plays a large role in each program's conservation and protection goals. Some programs have narrow scopes for addressing just one activity or type of wetland, whereas others affect all wetlands despite location or traits. Most rely on a command-control permit scheme in order to implement the "no net loss" mandate that allows otherwise illegal activity if the adverse impacts are mitigated. Unfortunately, the federal and state mitigation programs have been largely unsuccessful at replacing Florida wetlands destroyed by development, mining, or other uses. Since mitigation and "no

91. IPCC, WATER, *supra* note 73, at 41-43.

92. *Id.* at 38, 40.

93. For information regarding monitoring and compliance problems, see GAO REPORT, *supra* note 14, at 17-20; NAT'L RESEARCH COUNCIL, *supra* note 16, at 94-122.

94. *See* IPCC, WATER, *supra* note 73, at 127 (describing how the resilience of many natural ecosystems "is likely to be exceeded in the future by an unprecedented combination of change in climate change [and] and associated disturbances.").

net loss" were initiated, at least 84,000 acres of wetlands have been lost in Florida.[95]

A. Federal Framework

On the federal level, the Clean Water Act's (CWA) Section 404 dredge and fill program[96] contains the central mandates for regulating and mitigating harm to wetlands.[97] Other relevant federal programs that incorporate mitigation techniques in their implementation are the Food Security Act, the Wetlands Reserve Enhancement Program (WREP), and the National Environmental Policy Act (NEPA).

1. The Clean Water Act

The Clean Water Act (CWA) was enacted in 1972 "to restore and maintain the chemical, physical, and biological integrity of the [n]ation's waters."[98] In order to meet this end, Section 404 of the CWA requires "permits . . . for the discharge of dredged or fill material into the navigable waters . . . ."[99] The Corps and the U.S. Environmental Protection Agency (EPA) jointly administer this permit program, although the Corps is the primary permit issuer.[100] EPA promulgates environmental guidelines (404(b)(1) Guidelines)[101] that the Corps must follow when issuing permits and "also has the authority to veto any permit . . . [with] unreasonable adverse effect[s] on water supplies, fish, wildlife, or recreation."[102] EPA rarely uses this veto ability though and according to a 2006 study has not vetoed a permit in Florida since 1988.[103] States can also opt to take over administration of this program; however, only

95. Pittman & Waite, *They Won't Say No* Article, *supra* note 5.

96. 33 U.S.C. § 1344 (2006).

97. ENVTL. LAW INST., MITIGATION OF IMPACTS TO FISH AND WILDLIFE HABITAT: ESTIMATING COSTS AND IDENTIFYING OPPORTUNITIES 13 (2007) [hereinafter ELI HABITAT MITIGATION].

98. Clean Water Act, 33 U.S.C. § 1251(a).

99. 33 U.S.C. § 1344(a). Exemptions to the permit requirement include "farming, silviculture, and ranching activities[,]" but not "mechanized equipment used in land clearing." MICHAEL T. OLEXA & ZACHARY BROOME, UNIV. OF FLA., HANDBOOK OF FLORIDA WATER REGULATION: ACTIVITIES IN WETLANDS AND WATERSHEDS, FE606 UNIV. OF FLA. INST. OF FOOD & AGRIC. SCI. 2 (2005), *available at* http://edis.ifas.ufl.edu/pdffiles/FE/FE60600.pdf.

100. Lawrence R. Liebesman & Philip T. Hundemann, *Regulatory Standards for Permits Under the Clean Water Act Section 404 Permit Program, in* THE NATURAL RESOURCES LAW MANUAL 3 (Richard J. Frink ed., 1995).

101. 40 C.F.R. § 230.1-.12 (2011).

102. GLICKSMAN ET AL., *supra* note 6, at 688; 33 U.S.C. § 1344(b)-(c) (2006).

103. Pittman & Waite, *They Won't Say No* Article, *supra* note 5.

two states have assumed this responsibility to date—Michigan and New Jersey.[104]

Under 404(b)(1) Guidelines, no permit can be issued that "cause[s] or contribute[s] to the significant degradation" of U.S. waters.[105] Compensatory mitigation comes into play when considering whether a project will significantly degrade a wetland, and most permits are conditioned with a mitigation requirement.[106] Surprisingly, the wetland mitigation concept does not derive from the express language of the CWA. The EPA and Corps actually incorporated the concept into their regulations from the mitigation requirements in the NEPA and other federal laws.[107] After disputing the proper use of mitigation in 404 permits, the EPA and Corps resolved their differences in a 1990 Memorandum of Agreement (MOA).[108] The MOA recognizes wetlands protection as the prime goal and requires mitigation to follow a sequential order: avoid, minimize, and then mitigate.[109] The last step to limit impacts to wetlands is mitigation, which aims to achieve the CWA's goals and national policy of "no . . . net loss."[110] Late in 1993, both agencies again issued guidance "encouraging the use of mitigation banks . . . ."[111]

Although the Corps' stated preference is to avoid wetlands entirely, it is now routine for developers to mitigate for damages despite widespread skepticism of mitigation's effectiveness.[112] In fact, the Corps' regulations only require avoidance to the "extent practicable"[113] and practicable is determined by looking at the cost of avoidance in light of the project's purpose.[114] The 1990 MOA also recognized exceptions to the mitigation sequence for situations where the discharge will result in "environmental gain or insignifi-

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104. 33 U.S.C. § 1344(g); U.S. Envtl. Prot. Agency, *Wetlands Fact Sheets: State or Tribal Assumption of the Section 404 Permit Program*, EPA.GOV, http://www.epa.gov/OWOW/wetlands/facts/fact23.html (last updated July 28, 2010).

105. 40 C.F.R. § 230.10(c) (2011).

106. Liebesman & Hundemann, *supra* note 100, at 9.

107. Mark S. Dennison, *Denial of Wetland Permit as Basis for Landowner's Regulatory Taking Claim*, *in* 58 AM. JUR. 3D PROOF OF FACTS 81, 118 n.3 (2009).

108. RUHL ET AL., LAW AND POLICY, *supra* note 10, at 139; U.S. ENVTL. PROT. AGENCY, MEMORANDUM OF AGREEMENT: THE DETERMINATION OF MITIGATION UNDER THE CLEAN WATER ACT SECTION 404(B)(1) GUIDELINES (1990), *available at* http://www.epa.gov/owow/wetlands/regs/mitigate.html (last updated Sept. 29, 2011) [hereinafter EPA/CORPS MOA].

109. EPA/CORPS MOA, *supra* note 108; Liebesman & Hundemann, *supra* note 100, at 10. The permittee must avoid to the "maximum extent practicable" and minimize "to the extent appropriate and practicable" before resorting to mitigation. ELI HABITAT MITIGATION, *supra* note 97, at 13.

110. ELI HABITAT MITIGATION, *supra* note 97, at 13.

111. Liebesman & Hundemann, *supra* note 100, at 10.

112. Fred Bosselman, *Swamp Swaps: The "Second Nature" of Wetlands*, 39 ENVTL. L. 577, 582-83 (2009); *see also* GLICKSMAN ET AL., *supra* note 6, at 691-92.

113. 33 C.F.R. § 320.4(r) (2011).

114. 40 C.F.R. § 230.91(c)(2).

cant environmental losses."[115] In practice, mitigation can be used to show no overall "loss" in order to bypass the avoidance requirement, although this seems at odds with the intent of the sequencing mandate. For example, in 2003, 3,400 permits were approved in Florida and of the 3,282 acres of wetlands to be destroyed, the Corps only required 185 acres to be avoided.[116] Heavy reliance on uncertain mitigation is exacerbated by the fact that the Corps has no mandatory duty to conduct inspections for compliance.[117] Instead, compliance with mitigation requirements are specified in the permit conditions and the Corps generally relies on the permittee to provide reports[118]—who often fail to comply.[119]

Before even reaching the avoidance stage, two other implementing regulations, the practicable alternative requirement and the water dependency standard, provide potential shields against wetland destruction.[120] EPA 404(b)(1) Guidelines prohibit permits "if there is a practicable alternative . . . [with] less adverse impact[s] on . . ." wetlands, assuming there are no other significant adverse environmental impacts.[121] The alternative is not considered practicable if after "consider[ing] cost, existing technology, and logistics[,]" the basic purpose of the project cannot be fulfilled.[122] The water dependency standard creates a presumption that there is a practicable alternative for all non-water dependent projects.[123] These preliminary considerations could play a major role in eliminating damage to wetlands prior to the mitigation phase; however, in application they often have no bite.

Until recently, compensatory mitigation under Section 404 was conducted through "a mish-mash of guidances, inter-agency memoranda, and other policy documents issued over the span of seventeen years."[124] In order to provide clarity and improve the effectiveness of mitigation, in 2008 the Corps and EPA published joint regulations on compensatory mitigation standards and proce-

115. EPA/Corps MOA, *supra* note 108.

116. Pittman & Waite, *They Won't Say No* Article, *supra* note 5.

117. 40 C.F.R. § 230.96(a)(2) (stating the Corps "may" inspect sites for compliance).

118. *See id.* § 230.96(c)(2).

119. *See* GAO REPORT, *supra* note 14, at 17-18 (providing examples of the Corps requiring regulated entities to submit mitigation reports and failing to do so); *see also* NAT'L RESEARCH COUNCIL, *supra* note 16 at 94-122 (providing an overview of a general lack of mitigation compliance).

120. 40 C.F.R. § 230.10(a) (2011).

121. *Id.*

122. *Id.* § 230.10(a)(2).

123. GLICKSMAN ET AL., *supra* note 6, at 691. For permit approval, it must be shown that the non-water dependent activity has no "practicable alternative site . . . that would cause less damage to the wetlands." *Id.* If the project "does not require access or proximity to or siting within" a wetland to "fulfill its basic purpose," it is not water dependent. 40 C.F.R. § 230.10(a)(3).

124. Ruhl et al., *New Ecosystem Services*, *supra* note 46, at 251-52.

dures.[125] The new rule approves the use of three mitigation tools following a hierarchical order: mitigation banking, in-lieu fee, and permittee-responsible mitigation.[126] This new rule changes its traditional on-site, in-kind preference to in-kind, same watershed preference.[127] While banking is preferred, the other options are still allowed because certain areas of the country have yet to set up banks. The Corps believes mitigation banks will get quicker results and produce larger-scale wetlands "that will perform more functions more reliably."[128]

Another significant aspect of the new rule is its inclusion "of ecosystem services [in] mitigation decision making."[129] While "no net loss" implies an acre-for-acre approach, Corps guidance regulations also require consideration of wetland functions.[130] Functions, however, fail to focus decision-making on the benefits they provide to local populations. As discussed later in Part IV, development is taking services away from urban areas and replacing them—via mitigation—in rural areas.[131] The new rule addresses this issue by requiring "mitigation [to] be located within the same watershed as the impact site, and . . . where it is most likely to successfully replace lost functions and services . . . ."[132]

Despite the 404(b)(1) Guidelines, the Corps still has substantial discretion in issuing individual permits under their broad "public interest" test.[133] The public interest review essentially creates a presumption in favor of granting permits by placing the onus on the Corps to prove that a permit is contrary to the public interest.[134] The Corps must balance several factors including public need for the project, alternatives to the project, and the detrimental effect the project could have on the locality.[135] The regulations state, however, that each factor's weight will vary per project leaving it to the Corps' ultimate discretion whether or not the project passes the "public interest" test.[136] There is also an economic presumption in favor of finding a project in the public interest. Specifically, Corps' regulations state that all projects must be assumed to be needed in the marketplace, although Corps' staff is

125. 33 C.F.R. §§ 325, 332 (2011); 40 C.F.R. § 230.
126. 33 C.F.R. § 332.1(a)(1).
127. *See id.* §§ 325, 332; 40 C.F.R. § 230.
128. Bosselman, *supra* note 112, at 583-84.
129. Ruhl et al., *New Ecosystem Services*, *supra* note 46, at 263.
130. 33 C.F.R. § 332.2 (for definition), 332.3(a)(1), (b)(1) (2011).
131. Ruhl et al., *New Ecosystem Services*, *supra* note 46, at 256-58.
132. 33 C.F.R. § 332.3(b)(1).
133. *See* GLICKSMAN ET AL., *supra* note 6, at 690; *see also* 33 C.F.R. § 320.4(a) (2011) for the Corps' public interest review standard.
134. 33 C.F.R. § 320.4(a); Pittman & Waite, *They Won't Say No* Article, *supra* note 5.
135. 33 C.F.R. § 320.4(a).
136. § 320.4(a)(3).

allowed to conduct an independent analysis "in appropriate cases."[137] Moreover, although Corps' regulations state destruction to wetlands should be "discouraged,"[138] these presumptions push the other way, as evidenced by the Corps' Florida Training Manual that states destruction of wetlands is in the public interest.[139] Despite mandates to avoid impacts to wetlands, the Corps' main objective is to process permits—not deny.[140] To illustrate the Corps' viewpoint, between 1999 and 2003 the Corps approved over 12,000 permits and denied only one.[141]

2. Food Security Act and Wetlands Reserve Management Act

The Food Security Act provides several wetland conservation programs for farmlands, which illustrates Congress' recognition of the huge impact the agriculture industry has on wetlands. To discourage conversion of wetlands, the Act contains "Wetlands Conservation Compliance" or "Swampbuster" provisions that force farmers to mitigate harms to wetlands originating from certain agricultural activities.[142] The Swampbuster provisions provide a negative incentive to protect wetlands from being filled by withdrawing the farmer's eligibility for farm program benefits.[143] The U.S. Department of Agriculture through its Natural Resources Conservation Service (NRCS) monitors compliance and has discretion to allow the farmer to mitigate damages "by restoration, enhancement, or creation" of wetlands in order to remain in good standing.[144] The mitigation must replace all functions loss and be located in the same watershed.[145] The Swampbuster program and the CWA's Section 404 cover both differing agricultural activities and similar ones.[146]

One of the wetland conservation programs under the Food Security Act is the Wetlands Reserve Program and is a good example of how the Swampbuster disincentive operates.[147] Specifically, wetlands converted to non-wetlands after 1985 are ineligible for program benefits.[148] Essentially, this program provides financial as-

137. § 320.4(q).
138. § 320.4(b).
139. Pittman & Waite, *They Won't Say No* Article, *supra* note 5.
140. *Id.*
141. *Id.*
142. ENVTL. LAW INST., BANKS AND FEES: THE STATUS OF OFF-SITE WETLAND MITIGATION IN THE UNITED STATES 15 (2002) [hereinafter ELI BANKS].
143. *Id.*
144. *Id.*
145. *Id.*
146. *Id.*
147. *See* 16 U.S.C. § 3837 (2006).
148. § 3837(c).

sistance to farmers to "retir[e] eligible land from agriculture" and utilizes compensatory mitigation techniques like restoration and preservation to further wetland protection.[149] The NRCS provides financial aid to landowners by purchasing conservation easements or entering restoration cost-share agreements for conserving wetlands.[150] The landowner or the NRCS delegate carry out the activities required under the agreement.[151] Lands meeting the eligibility requirements are enrolled by granting an easement to the federal government or entering into a cost-share agreement.[152] As of 2008, 1.9 million acres were enrolled nation-wide,[153] with 160,415 acres residing in Florida.[154] Landowners can grant a permanent easement to have all restoration costs paid by the government, grant a 30-year easement, or enter a restoration cost-share agreement to have seventy-five percent of the restoration costs covered.[155] In 2007, the federal government obligated almost fifty million dollars in contracts under this program in Florida alone.[156]

3. National Environmental Policy Act

The National Environmental Policy Act (NEPA) is a look-before-you-leap statute that mandates procedural requirements—but not outcomes—before an agency undertakes a major federal action that will have a significant effect on the environment.[157] The Act created a Council on Environmental Quality (CEQ) within the executive office that oversees NEPA actions and adopts compliance guidelines.[158] The process requires an agency to conduct an environmental site assessment for actions determined to have a significant effect on the environment.[159] To avoid wasted efforts and re-

149. NATURAL RES. CONSERVATION SERV., U.S. DEP'T OF AGRIC., FARM BILL 2008 AT A GLANCE: WETLANDS RESERVE PROGRAM (May 2008), *available at* http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_008151.pdf [hereinafter 2008 FARM BILL].

150. U.S. FISH & WILDLIFE SERV., DEP'T OF THE INTERIOR, INTERAGENCY ACTIVITIES: WETLANDS RESERVE PROGRAM, 504 FW 3, 3.2 (Sept. 24, 2003), *available at* http://www.fws.gov/policy/504fw3.pdf [hereinafter U.S. FISH & WILDLIFE SERV., INTERAGENCY ACTIVITIES].

151. *Id.* at 3.5.

152. *Id.* at 3.8, 3.12; *see also* 2008 FARM BILL, *supra* note 149.

153. 2008 FARM BILL, *supra* note 149.

154. NATURAL RES. CONSERVATION SERV., U.S. DEP'T OF AGRIC., CUMULATIVE ACRES ENROLLED AS OF 2008 (2008), *available at* http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_006637.pdf.

155. 2008 FARM BILL, *supra* note 149.

156. NATURAL RES. CONSERVATION SERV., U.S. DEP'T OF AGRIC., FY 2007 WRP FINANCIAL ASSISTANCE DOLLARS OBLIGATED (2007), *available at* http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_006838.pdf.

157. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (2006).

158. 42 U.S.C. § 4342; GLICKSMAN ET AL., *supra* note 6, at 232. President Nixon issued an executive order to extend CEQ's duties to providing guidelines. *Id.* The guidelines are not binding, but federal courts give them significant weight. *Id.*

159. 42 U.S.C. § 4332(c).

sources, an agency can also conduct an environmental analysis (EA)—a brief document concisely addressing whether an environmental impact statement (EIS) is necessary.[160] If the EA concludes with a "finding of no significant impact" or "FONSI," then the agency can bypass the EIS process.[161]

NEPA requirements are invoked by development projects and agricultural activities that require CWA Section 404 permits. Just as the CWA mandates alternatives to be considered, NEPA's EIS analysis requires an agency to consider the likelihood of impacts from alternative actions.[162] Per CEQ regulations, alternatives are viewed in light of the "underlying purpose and need" of the project and must include a no-action alternative, other reasonable alternatives, and additional mitigation measures.[163] Mitigation measures include "avoiding, minimizing, rectifying, reducing, eliminating, and compensating for adverse environmental effects."[164] The U.S. Supreme Court, however, held in 1989 that agencies are only required to discuss potential mitigation measures, and are not required to develop a detailed mitigation plan in an EIS.[165] In addition, although CEQ regulations do not expressly allow mitigated FONSI's, CEQ guidance documents have stated that "agencies can include enforceable mitigation measures when they conclude an action is not significant."[166] Courts also allow agencies to consider mitigation and have held that an EA mitigation analysis is less thorough than one in an EIS.[167] Therefore, NEPA allows agencies to use mitigation measures to lessen an action's potential impacts.

Similar to the CWA, NEPA requires an agency to develop and describe alternatives to the proposed action; however, NEPA only mandates the process. The CWA, on the other hand, imposes a substantive requirement. Corps guidelines state, however, that the only real difference "is that under NEPA, alternatives outside of the applicant's control may be considered."[168] Therefore, in many cases NEPA documents will provide most of the information used in the CWA analysis.[169]

The requirements and goals set forth in NEPA, CWA, and other federal regulations provide the foundations for protecting Flori-

160. *See* 40 C.F.R. § 1508.9 (2011).
161. § 1508.13.
162. *See* 42 U.S.C. § 4332(c)(iii) (2006).
163. 40 C.F.R. §§ 1502.13-1508.14, 1508.25.
164. Liebesman & Hundemann, *supra* note 100, at 9; *see also* 40 C.F.R. § 1508.20.
165. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 358-59 (1989).
166. GLICKSMAN ET AL., *supra* note 6, at 254.
167. *Id.*
168. U.S. ARMY CORPS OF ENGINEERS, STANDARD OPERATING PROCEDURES FOR THE REGULATORY PROGRAM 11 (1999), *available at* http://www.saw.usace.army.mil/wetlands/Policies/SOPI.pdf.
169. 40 C.F.R. § 230.10(a)(4) (2011).

da's wetlands. Some of these federal laws work in tandem with state-level programs creating a double layer of protection, while others relinquish control over to the state entirely.[170] Regardless of the mode, the federal mandates shape state programs, which are then tailored to address the state's unique environment and needs.

B. State Framework

Beginning in the 1970's, Florida began creating comprehensive wetland protection programs to address development's impacts on "surface water flows, stormwater runoff, dredging and filling, and conservation . . . ."[171] Florida Department of Environmental Protection (FDEP) partners with "five regional Water Management Districts (WMDs)" and various local governments in order to implement these programs.[172] Pursuant to the CWA, Florida protects its water bodies by setting designated uses, a functional classification like drinking water or recreation, which must be attained or maintained.[173] If a water body does not attain its use, it is listed as an impaired water body on the "CWA 303(d) list" and the state develops total maximum daily loads (TMDL's) in order to reach and maintain the designated use.[174]

Although Florida sets designated uses for wetlands, it does not conduct routine monitoring or sampling for ensuring water quality.[175] "Water quality monitoring and data analysis are the foundation of water resource management decisions[,]"[176] and, as such, wetlands lack major safeguards given to other water bodies. Despite this, Florida's wetlands protection programs control development and pollution by other means that often involve mitigation techniques to compromise conflicting demands.

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170. For example, CZMA "punts" program formation to the states, whereas, NEPA requirements must be complied with as well as any state NEPA's. 15 C.F.R. § 923.40; 40 C.F.R. § 1506.2.

171. ENVTL. LAW INST., STATE WETLAND PROTECTION: STATUS, TRENDS, & MODEL APPROACHES, APPENDIX: STATE PROFILES, FLORIDA (2008), *available at* http://www.eli.org/pdf/core_states/Florida.pdf [hereinafter ELI FLORIDA PROFILE].

172. *Id.*

173. *See* FDEP INTEGRATED REPORT, *supra* note 2, at 1.

174. *Id.* TMDL's "represent[] the maximum amount of a given pollutant that a waterbody can assimilate and still meet its designated uses." *Id.* Florida's non-degradation policy can be found in sections 62-302.300 and 62-4.242 of the *Florida Administrative Code*.

175. FDEP INTEGRATED REPORT, *supra* note 2, at 83. Rivers, lakes, and other water bodies, which are a part of a wetlands ecosystem, are tested for water quality and can therefore provide some insight on wetlands water quality. *Id.*

176. *Id.* at 1.

1. Environmental Resource and Wetland Resource Permit Program

Like most other states, Florida's wetland permit program is similar to the CWA's Section 404 program and must be complied with in addition to Section 404. Although seemingly redundant, state and local governments are more familiar with local resources and issues and can expand jurisdiction of their programs beyond the federal scope. Florida has not assumed the 404 program yet because of their differing methodology for delineating wetlands and the fact that "most of Florida's waters are non-assumable."[177] Instead, Florida created two wetland permit programs in order to achieve no net loss of wetlands: the Environmental Resource Permit Program (ERP) throughout most of the state and the Wetland Resource Permit Program (WRP) in Florida's panhandle—the Northwest Florida WMD's territory. Issuance of an ERP or WRP satisfies the CWA's Section 401 water quality certification and Florida's Coastal Management Program's consistency requirement.[178]

The WRP program is a dredge and fill permit program administered solely by FDEP and is being phased out to be replaced by the ERP program.[179] The WRP program's wetland jurisdiction is similar to the federal Section 404 program and does not extend to isolated wetlands.[180] Since a WRP only addresses dredge and fill, separate permits are required for development that impacts stormwater movement, agricultural and forestry projects that impact surface waters, and any project impacting dams or levees.[181] With the submission or during a review of a WRP, the applicant may submit proposed mitigation measures for offsetting impacts to wetlands.[182] The WRP program, unlike the ERP program, imposes mandatory duties on the agency to conduct compliance inspections,[183] which is significant considering most permits are unmonitored.

The ERP Program combines FDEP's WRP program with the WMD's Management and Storage of Surface Waters program.[184]

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177. ELI FLORIDA PROFILE, *supra* note 171, at 7, n.50. Navigable waters under section 404 are non-assumable. *Id.*

178. FDEP INTEGRATED REPORT, *supra* note 2, at 86-87.

179. ELI FLORIDA PROFILE, *supra* note 171, at 3.

180. *See* FDEP INTEGRATED REPORT, *supra* note 2, at 86.

181. *See id.* at 87; *see also* FLA. ADMIN. CODE ch. 62-25 (2011); FLA. ADMIN. CODE ch. 40A-4 (2011).

182. *See* FLA. ADMIN. CODE r. 62-312.060, 62-312.330 (2011).

183. *Id.* r. 62-312.085.

184. ELI FLORIDA PROFILE, *supra* note 171, at 3. Exemptions to the permit process include general "agricultural activities and agricultural closed water management systems . . .

The ERP program "regulates virtually all alterations to the landscape, including all tidal and freshwater wetlands and other surface waters (including isolated wetlands) . . ." and covers "flood control, stormwater treatment, and wetlands protection."[185] FDEP, four of the WMD's, and delegated local governments jointly implement the ERP program pursuant to an operating agreement that establishes each ones' responsibilities.[186] Unlike the WRP, the ERP program regulates wetlands outside federal jurisdiction like isolated wetlands.[187] While Florida tailors the definition of "waters in the state" and "wetlands" to incorporate the state's "unique vegetation, hydrology, and soil features," the state's wetland delineation line is usually very close to the federal one.[188] For projects located in wetlands, the ERP program requires "avoidance and minimization of any potential adverse impacts" and that the project be in the public interest, which takes into consideration the loss of value from ecosystem functions.[189] Applicants may also submit mitigation plans in order to offset impacts that could otherwise make the project unpermittable.[190]

2. Mitigation

In 2004, Florida adopted a statewide Uniform Mitigation Assessment Method (UMAM) to provide a consistent way to calculate compensatory mitigation.[191] The UMAM will help Florida reach its goal of "no net loss" by calculating the "functional loss of impacted wetlands and [the] amount of proposed functional gains produced by mitigation wetlands."[192] According to the *Florida Administrative Code*, mitigation can only be considered once the project has been modified "to eliminate or reduce adverse impacts."[193] UMAM

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provided that the activities are consistent with agricultural activities." OLEXA & BROOME, *supra* note 99, at 2.

185. FDEP INTEGRATED REPORT, *supra* note 2, at 22, 85.

186. *Id.* at 86.

187. U.S. Envtl. Prot. Agency, *Wetlands: Regulation*, EPA.GOV, 3, http://www.epa.gov/owow/wetlands/initiative/pdf/regulation.pdf (last visited Feb. 6, 2012); *see generally* FLA. ADMIN. CODE ch. 62-340 (2011).

188. ELI FLORIDA PROFILE, *supra* note 171, at 2.

189. ELI FLORIDA PROFILE, *supra* note 171, at 4. The public interest test is similar to the federal standards and requires a balancing test that looks at "adverse effects to public health, safety, or welfare, or the property of others (based solely on environmental, not economic, considerations); adverse effects [to] the conservation of fish and wildlife . . . or their habitats; adverse effects on navigation or the flow of water, or causing harmful erosion or shoaling;" adverse effects on recreation, marine productivity, and other resources; the temporal impact; and current value of ecosystem functions in the area. *Id.* at 3-4, n.24.

190. *Id.* at 4 & n.15.

191. FDEP INTEGRATED REPORT, *supra* note 2, at 88; FLA. ADMIN. CODE ch. 62-345 (2011).

192. ELI FLORIDA PROFILE, *supra* note 171, at 10.

193. *Id.*; *see generally* FLA. ADMIN. CODE ch. 62-345.

quantifies mitigation by acreage, which focuses on the loss or gained wetland functions, or by bank credits, which focuses on the ecological value of a bank's activities.[194]

Since one of the major hindrances to successful mitigation is monitoring and compliance,[195] it is instructive to look at FDEPs and the WMDs duties and monitoring track record. Currently, FDEP has no express legal duty to conduct compliance inspections for mitigation sites except under a WRP.[196] The WMDs, on the other hand, have a statutory duty to conduct inspections, although it is highly discretionary on when and how many inspections must be done.[197] This express, but flexible duty has only slightly raised the frequency of monitoring by the WMDs, however. For example, a study conducted in 2000 found that the Southwest WMD had verified 82% of their permits issued after 1995 to be compliant, the St. Johns WMD had verified 78% of all permits to be compliant, and the Suwannee River WMD had verified 100%.[198] The FDEP had verified only 67% to be compliant in the Southeastern District, and 87% in the Northeastern District.[199]

Due to the problems associated with permittee-controlled mitigation—especially compliance and monitoring—Florida has legislatively stated a preference for the use of mitigation banks and in-lieu fee programs. Mitigation banks are large areas where wetlands are "enhanc[ed], restor[ed], and preserv[ed]."[200] Mitigation credits can be purchased to "offset damage to wetland functions[,]" and are valued by the increase in ecological value achieved at the bank site.[201] Florida's legislature has instructed FDEP and the WMDs to encourage mitigation banking and off-site regional mitigation as they find it superior to the normal on-site preference.[202] Specifically, banking and off-site mitigation "can enhance the certainty of mitigation and provide ecological value due to the improved likelihood of environmental success . . . ."[203] Local governments have also been barred from denying the use of mitigation

194. *See* FLA. ADMIN. CODE r. 62-345.100(2) (2011).

195. *See generally* GAO REPORT, *supra* note 14, at 17-18; NAT'L RESEARCH COUNCIL, *supra* note 16, at 94-122 (detailing the overall ineffectiveness of mitigation to achieve "no net loss" of wetlands).

196. FLA. ADMIN. CODE r. 62-312.085.

197. *See* FLA. STAT. § 373.423 (2011).

198. NAT'L RESEARCH COUNCIL, *supra* note 16, at 118, Table 6-12 (providing a compliance study by Florida's Office of Program Policy Analysis and Government Accountability in 2000 which considered all unverified permits to be noncompliant).

199. *Id.*

200. *See* FDEP INTEGRATED REPORT, *supra* note 2, at 88.

201. *Id.* at 88-89.

202. FLA. STAT. § 373.4135(1) (2011).

203. *Id.*

banks or off-site mitigation that are outside of their jurisdiction.[204] The legislature went even further when stating that off-site mitigation and banking need not be located within the same watershed as the impacted wetlands, as long as the impacts are offset.[205] If all impacts within a drainage basin are expected to be fully mitigated within the same basin, FDEP will consider the project to have "no unacceptable cumulative impacts upon wetlands."[206]

Public and private mitigation banks must apply for environmental resource/mitigation bank permits and fulfill certain requirements in order to be approved.[207] An interagency Mitigation Bank Review Team (MBRT) was established to oversee the establishment and operation of mitigation banks, aid bank applicants during the application process, and streamline applicable state and federal laws.[208] Essentially, through discussions with the MBRT, a bank sponsor chooses the location of the bank, the performance standards, the service area, liability, and management/monitoring requirements.[209] Credits are awarded based upon the proposed increase in ecological value at a mitigation bank and released or sold upon successful achievement of performance criteria specified in the permit.[210] Florida law permits credits to be awarded by phases and additional credits to be awarded if ecological values beyond the proposed value are achieved.[211] Memorandum of agreements (MOA's) are also required for government sponsored mitigation projects that provide mitigation banking or off-site regional mitigation "for five or more applicants" or "for thirty-five or more acres of adverse impacts."[212] These MOA's do not have to undergo rulemaking, which means no public comment period or hearing is required.[213]

3. Other Wetlands Programs

Florida has two other notable programs that apply to wetlands in sovereign submerged lands and along the beach or coastal zone. First, proprietary authorizations (PA) are required for activities on

204. *Id.* § 373.4135(2).
205. *Id.* § 373.4135(1)(c).
206. ELI FLORIDA PROFILE, *supra* note 171, at 10.
207. *Id.* at 10 n.64.
208. *Id.* at 10-11.
209. *See* MICHAEL BEAN, REBECCA KIHSLINGER & JESSICA WILKINSON, ENVTL. LAW INST., DESIGN OF U.S. HABITAT BANKING SYSTEMS TO SUPPORT THE CONSERVATION OF WILDLIFE HABITAT AND AT-RISK SPECIES 9 (2008) [hereinafter 2008 BANKING REPORT].
210. *See* FLA. STAT. § 373.4136(4)-(5) (2011).
211. *See id.* § 373.4136(4).
212. *See id.* § 373.4135(6).
213. *See id.*

sovereign submerged lands in addition to an ERP or WRP.[214] PA's handle issues arising from riparian rights, impacts to resources, and preemption of public water uses.[215] These permits attach to the ERP or WRP, so that neither permit can be issued until the requirements for both the PA program and the WRP or ERP program is satisfied.[216]

Second, Florida's Beach and Shore Preservation Act[217] is a program within Florida's Coastal Management Act[218] that requires FDEP to review and issue permits for coastal construction activities.[219] Florida's Coastal Management Act was federally approved under the Coastal Zone Management Act (CZMA),[220] which was passed by Congress in 1972 "to encourage and assist the states" in creating management programs addressing the "preserv[ation], protect[ion], develop[ment], and restor[ation] [of] resources" within the U.S. coastal zone.[221] After recognizing the problems associated with the majority of the population living near the coast, the CZMA was designed to provide grants as an incentive to coastal states to develop these CZMA programs.[222] Management of resources under the CZMA inevitably requires limits and conditions on development within the coastal zone.[223] The CZMA provides policy goals, some of which are fleshed out by Florida in its Beach and Shore Preservation Act.[224] Florida's program is required by the CZMA to describe land and water uses allowed within the coastal zone, how they will enforce these uses, and procedures for designating areas for preservation or restoration.[225] The Secretary of Commerce monitors Florida's performance and can withdraw the program or financial assistance if Florida fails to follow the approved program.[226]

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214. ELI FLORIDA PROFILE, *supra* note 171, at 5. All land waterward of the ordinary or mean high water line are sovereign submerged lands, unless the state has validly transferred them. *See id.* at 5 n.31.

215. *Id.* at 5. Florida's sovereignty submerged lands rules can be found under chapter 253, *Florida Statutes*.

216. ELI FLORIDA PROFILE, *supra* note 171, at 6.

217. *See* FLA. STAT. ch. 161 (2011).

218. *See* FLA. STAT. §§ 380.012-.12 (2011); *see also* FLA. DEP'T OF ENVTL. PROT., FLORIDA COASTAL MANAGEMENT PROGRAM GUIDE 23, 34 (2011), *available at* www.dep.state.fl.us/cmp/publications/fcmp_guide.doc [hereinafter COASTAL MANAGEMENT GUIDE].

219. ELI FLORIDA PROFILE, *supra* note 171, at 6; *see* FLA. STAT. §§ 161.52-.58 (2011); *see generally* FLA. ADMIN. CODE chs. 62B-41, 62B-33, 62B-49 (2011).

220. COASTAL MANAGEMENT GUIDE, *supra* note 218, at 6.

221. W. JACK GROSSE, THE PROTECTION AND MANAGEMENT OF OUR NATIONAL RESOURCES, WILDLIFE, AND HABITAT 172 (1992).

222. *Id.* at 172-73.

223. *See* RUHL ET AL., LAW AND POLICY, *supra* note 10, at 143.

224. *See id.* at 144.

225. *See id.* at 144.

226. GROSSE, *supra* note 221, at 183.

At the state level, the FDEP implements the Beach and Shore Preservation Act and coordinates processing of a coastal construction permit with other permits necessitated by the proposed activity, like an ERP or PA.[227] Instead of obtaining each permit separately, if the applicant meets the requirements for all permits they receive one joint coastal permit (JCP).[228] Florida is one of few states that expressly include ecosystem services in coastal management decisions.[229] Specifically, Florida's CCCL prohibits construction seaward of the line unless the developer can show it will not impair the beach's erosion control system.[230] Mitigation by creating man-made dunes is allowed to counteract impairment to the natural system, but must "meet or exceed the protective value" of the natural system.[231]

Federal and state regulations already inadequately protect Florida's wetlands as evidenced by their continual decline and degradation. Moreover, the legal framework fails to provide the flexibility needed to respond to future hydrologic changes. Wetlands programs lack the incentives and mandates necessary to ensure mitigation is carried out appropriately. While Florida's wetlands program has taken some innovative steps towards making mitigation more amenable to climate change adaptation, it is still too inflexible and ridden with inherent flaws.

IV. COMPARISON OF COMPENSATORY MITIGATION TECHNIQUES

Compensatory mitigation relies on the basic assumption that the area mitigated will maintain its same ecological condition and thus provide the same services and functions ad infinitum.[232] In the wetlands context, this premise assumes that past hydrologic cycles and climatic conditions are a good guide for future decisions in wetlands management.[233] Climate change, however, invalidates this theory and offers only the promise of uncertainty.

Climate change creates synergistic effects that alter hydrological conditions and the placement and quantity of wetlands.[234] In order for mitigation to achieve "no net loss," decision-making must consider these factors when determining how much harm must be

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227. *See* ELI FLORIDA PROFILE, *supra* note 171, at 6.

228. *See id.*; FLA. STAT. § 161.055 (2011) (detailing requirements for concurrent processing of permits).

229. *See* RUHL ET AL., LAW AND POLICY, *supra* note 10, at 145.

230. *See id.*

231. *See id.*

232. *See* NAT'L RESEARCH COUNCIL, *supra* note 16, at 22.

233. *See* IPCC, WATER, *supra* note 73, at 4 (discussing the use of past hydrological experiences as a guide for future conditions).

234. *See supra* notes 66-94 and accompanying text.

offset and where to place mitigation sites. With wetlands potentially drying up or migrating inland, mitigation must allow for migration of wetlands and for flexible management. Therefore, an analysis of the inherent traits and common outcomes of permittee-controlled mitigation and mitigation banking is necessary to reveal each tool's potential worth in the climate change era.

A. *Permittee-controlled Mitigation*

While permittee-controlled mitigation has received constant criticism over the past decade,[235] it is still one of the most commonly used methods in wetlands mitigation.[236] In addition, few critics have considered climate change as a factor or analyzed permittee-controlled mitigation in light of foreseeable ecological changes. With no federal or state mitigation policies addressing climate change, it is imperative to determine the effectiveness of permittee-responsible mitigation to facilitate informed policy making. Site selection, balanced decision-making, and incentives are three primary concerns with permittee-responsible mitigation that foretell its capacity to tackle climate change.

1. Location

Regardless of whether on-site or off-site mitigation is utilized, project-specific mitigation controlled by the permit holder will most often result in interspersed and unconnected mitigation sites for several reasons. This location-based propensity raises concerns when considering how to best manage wetlands in the face of climate change. Specifically, migration corridors for wetlands are vital to ensure wetland conservation as sea levels rise.[237] If "no net loss" is to be achieved, site selection needs to incorporate more than the watershed approach required by the Corps and extend to issues like migration capability, service distribution, and future needs.

Given the preference for on-site, adjacent, or nearby mitigation sites,[238] the location of development plays an important role in site

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235. *See* Royal C. Gardner et al., *Compensating for Wetland Losses Under the Clean Water Act (Redux): Evaluating the Federal Compensatory Mitigation Regulation*, 38 STETSON L. REV. 213, 216 (2009) [hereinafter Gardner et al., *Redux*].

236. 2005 STATUS REPORT, *supra* note 23, at 26-27.

237. *See* ROBERT R. TWILLEY, COASTAL WETLANDS & GLOBAL CLIMATE CHANGE: GULF COAST WETLAND SUSTAINABILITY IN A CHANGING CLIMATE 10 (2007), *available at* http://www.pewclimate.org/docUploads/Regional-Impacts-Gulf.pdf. As sea levels rise, wetlands naturally migrate inland but can be blocked by development causing a phenomena known as "coastal squeeze." *Id.*

238. ELI HABITAT MITIGATION, *supra* note 97, at 16.

selection for mitigation. Even though the Corps is moving away from the precise on-site preference, the Corps' new regulation still allows for flexible choices.[239] It is common knowledge that people prefer to live near the water, whether it is a freshwater lake or the coast. With 1,197 miles of coastline,[240] development is unsurprisingly highest around Florida's coast.[241] Therefore, on-site or near-site mitigation is dictated by development's location and not by where wetlands are needed. In the context of other permit uses, such as mining or agriculture, the on-site or near-by location options are tied to the productivity potential of the project site and similarly are not based on ecological factors.

Even when off-site mitigation is selected, permittee-controlled mitigation still fails because it is often guided by the "convenience, cost, and time rather than by the consideration of wetland functions and watershed conditions."[242] Moreover, off-site locations lead to additional problems because they will often remove wetlands—and their services—from urban areas and replace them in rural areas where the services are not in high demand.[243] This exacerbates pollution control and water quality in urban areas since more development brings additional waste and runoff; however, the wetlands needed for filtration and pollution control are in other locations. Because development does not follow the same best management practices as agriculture and attempt to move pollution sources away from water bodies,[244] we need to ensure wetlands remain intact in order to sufficiently deal with the pollution it produces.

2. Tilted Scales

The uncertainties and new problems posed by climate change necessitate balanced decision-making during the permit process to minimize adverse effects on wetlands. Climate change threatens more than just wetland conservation—it jeopardizes public

239. *See* Gardner et al., *Redux*, *supra* note 235, at 243.

240. *Florida Quick Facts*, *supra* note 64.

241. *See id.* (listing eight coastal communities in the top ten most populous metro areas).

242. N.C. DEP'T OF ENV'T & NATURAL RES., DIV. OF COASTAL MGMT., GIS DATA GUIDANCE DOCUMENT: GIS POTENTIAL RESTORATION AND ENHANCEMENT SITE MAPPING FOR THE NORTH CAROLINA COASTAL PLAIN, http://dcm2.enr.state.nc.us/Wetlands/restguidanceweb.pdf (last visited Feb. 6, 2012).

243. *See* J.B. Ruhl & James Salzman, *The Effects of Wetland Mitigation Banking on People*, 28 NAT'L WETLANDS NEWSL. 1 (2006) (discussing a 1997 study of mitigation banks in Florida) [hereinafter Ruhl & Salzman, *Banking*].

244. Guest, *supra* note 59 (discussing agriculture BMP that keeps cows from water in order to keep fecal contamination down.).

health.[245] Wetlands services are essential for Florida's population to survive and are at risk of extinction. The bottom line is someone will have to pay for mitigating damages from climate change.

Development and other activities cannot abruptly come to a halt, but can be more heavily scrutinized and trimmed down in order to guarantee Florida maintains sufficient potable water supplies, pollution control, and wetland's other numerous services. The problem, however, is that the permit process is developer friendly[246] and the permittee can heavily influence the agency's decisions. Specifically, the permittee defines the project's purpose to suit their business needs, which the agency then uses to evaluate alternative project sites.[247] The project purpose defined by the agency is "central" to the practicable alternatives analysis[248] and determines whether the water dependency presumption applies. When accepting or modifying the applicant's purpose, the agency must keep the applicant's goals in mind.[249] Although an applicant cannot "defin[e]-away" alternatives by making their purpose overly narrow or broad, which leads to no sufficient alternatives or too many, this is a commonly litigated problem.[250]

The alternatives analysis is the means for achieving "avoidance" before even reaching the true mitigation stage of avoid, minimize, and offset. First, a strategically framed purpose can effectively eliminate the water dependency presumption, which lessens an applicant's burden to show that no environmentally sound alternatives exist. Applicants are making the practicable seem impracticable by tying the project to a geographic region or required productivity rate,[251] which forecloses other project locations that are outside the area or provide less than the proposed recovery rate. This results in mitigation being the sole method for protecting wetlands on the proposed project site and mitigation's effectiveness is highly questionable at best.[252] As described in Part III, mitigation comes into play early in the NEPA process, which elim-

245. For example, possible effects from climate change include poorer water quality and increased vector-borne diseases. *See* NAT'L RES. DEF. COUNCIL, FEELING THE HEAT IN FLORIDA: GLOBAL WARMING ON THE LOCAL LEVEL 6-7, 12 (Jeff Fielder et al. eds., 2001).

246. *See* Susan Walker et al., *Why Bartering Biodiversity Fails*, 2 CONSERVATION LETTERS 149, 153 (2009).

247. 40 C.F.R. § 1502.13 (2011).

248. Nat'l Wildlife Fed'n v. Whistler, 27 F.3d 1341, 1345 (8th Cir. 1994).

249. Sierra Club v. Van Antwerp, 526 F.3d 1353, 1366 (11th Cir. 2008) (Kravitch, J., dissenting).

250. Simmons v. U.S. Army Corps of Eng'rs, 120 F.3d 664, 666 (7th Cir. 1997); *see generally* Fund for Animals, Inc. v. Rice, 85 F.3d 535 (11th Cir. 1996); *Whistler*, 27 F.3d at 1345; Fla. Clean Water Network, Inc. v. Grosskruger, 587 F. Supp. 2d 1236 (M.D. Fla. 2008).

251. *See Simmons*, 120 F.3d at 666; City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310-11 (9th Cir. 1990).

252. *See* Rebecca L. Kihslinger, *Success of Wetland Mitigation Projects*, 30 NAT'L WETLANDS NEWSL. 14 (2008).

inates opportunities for more thorough analysis in an EIS.[253] Therefore, mitigation can eliminate the breadth of analysis at the front-end and can also be used in the end stages as the sole means to offset impacts to wetlands. This heavy reliance on mitigation is dangerous considering its inherent deficiencies.

The permittee is also one of the agency's major informational sources during the process.[254] It is human nature, of course, for this information to be biased; therefore, the agency must give in-depth critiques and independently verify its accuracy.[255] This, however, does not always occur as much as we would hope in practice.[256]

3. Incentives

A common inquiry when evaluating the usefulness of a program or tool is how it incentivizes the involved parties to work towards the desired outcome. In the climate change era, the main objective is to conserve our natural resources to prevent further damages by reducing man's footprint—the major driver of climate change. Several studies have found that the Corps and FDEP are failing to enforce and monitor mitigation completion[257] whether due to lack of clear guidelines, staff, or resources. Moreover, agency incentives generally tend to correspond more frequently with development interests than with environmental ones.[258] In fact, past Corps employees in charge of permitting have even disclosed the agency's mantra which is to approve permits and help their "customer"—the applicant.[259] Awareness of the applicant's goals, therefore, is the key to understanding permittee-controlled mitigation's likely future success.

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253. *See supra* notes 157-168 and accompanying text.

254. *See Sierra Club*, 526 F.3d at 1368 (explaining an applicant will normally have more of an incentive to develop information).

255. *See id.* (explaining how the Corps must independently verify studies provided by applicants, especially once the information is challenged).

256. *See id.* at 1368.

257. *See* GAO REPORT, *supra* note 14, at 17-18; NAT'L RESEARCH COUNCIL, *supra* note 16, at 94-122 (detailing the overall ineffectiveness of mitigation to achieve "no net loss" of wetlands).

258. *See* Walker et al., *supra* note 246, at 153 (explaining that officials can "reduce their financial or political costs by offering development interests more palatable and less environmentally demanding options.").

259. *See* Pittman & Waite, *They Won't Say No* Article, *supra* note 5 (arguing that "the [C]orps regards developers as its customers" and quoting a Corps employee explaining that its role is "*not* to be an impediment to the development process" (emphasis added)); PAVING PARADISE, *supra* note 7, at 68 (providing comments from a 30-year Corps employee who stated he knew the intention of the regulations concerning mitigation "was for the Corps to side with the applicants" and joked about the ramifications on the public interest).

Liability for ensuring mitigation success is on the permittee and requires the permittee to conduct the required restoration or preservation, to monitor progress, and to manage the wetlands accordingly. Several studies indicate, however, that permit conditions are not being followed resulting in unmitigated sites or only short-term results.[260] While the evidence alone suggests there is no incentive for the permittee to comply, the nature of the business deal also leads to this conclusion. The permittee is an atypical buyer because he has no natural business incentive to conduct mitigation or maintain the site. The permittee receives his ultimate goal—the right to develop, mine, or other activity—upon issuance of the permit and receives no further gains by fulfilling the mitigation requirements, except for avoiding compliance penalties that are rarely invoked.[261] Moreover, the permittee has an incentive to make low functioning wetlands and only meet the minimum requirements in the permit to lower the costs.[262]

An excellent illustration of an agency's incentives coinciding with the developers is the fact that the Corps rarely pursues available enforcement measures and instead negotiates to settle the problem.[263] This soft enforcement method creates a disincentive for a permittee to comply because they have no real adverse consequences to face. In addition, the Corps has been criticized for failing to state precise requirements in permits, which leaves the permittee unclear on expectations and may foreclose possible legal recourse for noncompliance.[264] A permittee's business disincentive to monitor is also encouraged by the lack of agency inspections and follow-up.[265] The nature of permittee-controlled mitigation further fuels this problem because it is more costly and demanding on resources to inspect one site to check on a permittee's mitigation efforts as opposed to inspecting a mitigation bank which relates to several permittees. The result of this "leave it to the permittee" attitude can be seen in Pensacola Beach, Florida where a multimillion dollar, beachside condominium destroyed almost seven

260. Kihslinger, *supra* note 252, at 14.

261. *See* GAO REPORT, *supra* note 14, at 22-23 (describing the assessment of administrative penalties as an appropriate enforcement action and the fact that seven districts did not take any enforcement actions in 2003).

262. *See* James Salzman & J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 52 STAN. L. REV. 607, 653 (2000).

263. GAO REPORT, *supra* note 14, at 23.

264. *See id.* at 24 (describing how officials may be foreclosed from pursuing enforcement actions because they have not specified precise requirements for compensatory mitigation in the permits).

265. *See id.* at 17-18 (describing a general lack of agency oversight of mitigation); *see generally* Kihslinger, *supra* note 252 (describing a lack of overall success of wetland mitigation projects).

acres of crucial marshes and replaced them with man-made marshes that remain bone dry for most of the year.[266]

Finally, the permittee lacks a natural incentive to use his resources to determine the best site location for mitigation or consider hydrological complexities. This raises additional concerns in addition to the already low incentive to provide quality mitigation with long-term success. Specifically, climate change is making hydrologic cycles change and these uncertainties need to be a factor when determining which wetlands to restore or impact. The law in Florida, however, does not include ecosystem services in the decision-making process, so there is no legal basis to require the permittee or agency to strategically locate mitigation sites where services are or will be needed. The Corps has taken some steps to incorporate services, but there is still little guidance and research on how to accomplish it.[267]

In sum, permittee-controlled, project-specific mitigation naturally leads to conditions that will not allow for flexible, preventative management of wetlands. This method often results in scattered, isolated pockets of mitigation sites that will not allow for migration of wetlands as sea levels rise. Moreover, the permittee has little incentive to select sites where services will be needed in the future or to ensure the mitigated wetlands produce the same amount of services that were destroyed. Conservation and reducing the use of mitigation is necessary in the face of climate change because man's actions will only exacerbate the impacts.

B. *Mitigation Banking*

A mitigation bank is a restored, created, enhanced, or preserved wetland that is conducted by a third party specifically to provide compensatory mitigation for unavoidable losses to wetlands prior to the actual impacts.[268] The majority of mitigation banks are owned or sponsored by private companies and mitigation banking accounts for approximately "a third of all mitigation."[269] Once a permittee buys credits from a bank, the bank's sponsor assumes the liability for conducting the mitigation and ensuring its success.[270] Mitigation banking holds great promise for achieving the goal of "no net loss;" however, in practice it has been

266. PAVING PARADISE, *supra* note 7, at 110-12.

267. *See* RUHL ET AL., LAW AND POLICY, *supra* note 10, at 140-41 (explaining how the new "watershed approach" to mitigation expressly incorporates ecosystem services while giving little guidance as to how "consideration" is to be made).

268. 2005 STATUS REPORT, *supra* note 23, at 1.

269. *Id.* at 7-8, 26.

270. *See* 40 C.F.R. § 230.98 (2011) (defining mitigation banks and their functions).

falling below expectations. Despite its current deficiencies and poor results, banks are inherently more flexible than permittee-controlled mitigation and can potentially provide a more effective and easier way to conserve wetlands in the climate change era. As with permittee-responsible mitigation, three important traits of banking to analyze are its site selections, incentives, and quality decision-making.

1. Location

Site selection is considered one of the most influential factors for mitigation bank success.[271] Like under permittee-controlled mitigation, site selection for banks is not always in nature's or man's best interest. However, banking has the potential to choose better locations and respond flexibly as the climate changes. Moreover, the government created the banking market and can manipulate it with regulations or other means to help solve some of its flaws. Currently, the only express limits on site selection are the Corps' requirement to replace functions and services within the same watershed of the project site[272] and Florida's laxer standard that circumvents the watershed requirement, so long as the off-site mitigation offsets the adverse environmental impacts.[273]

Unlike permittee-controlled mitigation, mitigation banks are off-site from the project location and decision-makers focus on where the most ecological value can be obtained. The regulatory structure also directs the sponsor's attention to long-term success, which opens the door to larger considerations like climate change impacts. Specifically, a sponsor must show reasonable assurance that a site will have sustainable functions, and if higher levels of functions are achieved the sponsor receives more credits.[274] Therefore, bank sponsors may be more receptive to including climate change in the decision-making process because it would be a bad investment to create a bank in area predicted to become uplands due to hydrologic shifts. Location options are also broader because banks are not tied to the project location under the Corps' traditional on-site preference and, in Florida, can potentially escape the same watershed requirement altogether.[275] Although the government cannot dictate site locations for the majority of banks, which are in non-governmental hands,[276] the government can influence

271. 2008 BANKING REPORT, *supra* note 209, at 39.
272. 33 C.F.R. § 332.3(b)(1) (2011).
273. FLA. STAT. § 373.4135(1)(c) (2011).
274. *Id.* § 373.4136(1)(b), (4).
275. *Id.* § 373.4135(1)(c).
276. 2005 STATUS REPORT, *supra* note 23, at 7-8.

site selections during the banking permit process.[277] In addition, the federal and state legislatures have established guidelines and factors a site must meet in order to obtain a permit, including improvement of the regional watershed and sustainable functions.[278]

One of the biggest problems with bank sites is how they are redistributing wetlands. Studies in Florida indicate that banking is redistributing wetlands from urban to rural areas, which transfers wetlands services as well.[279] Logically, this occurs because land values in rural areas tend to be cheaper than in urban areas. Therefore, while development is occurring in high-priority and pricey urban locations, banks are landing in less-expensive rural areas.[280] For example, a project in Palm Beach County, Florida mitigated its wetlands impacts by buying credits from a bank nearly eighty miles away in Miami-Dade County.[281] The higher flexibility for site location afforded by federal and state laws allows for better planning but in reality is causing redistribution of wetlands services. A Florida bank on Little Pine Island, for instance, has most of its credits purchased for development in Lee and Collier counties more than thirty miles away, which will do nothing to aid local drinking water supply, filtration, or flooding for Little Pine Island.[282] Essentially, the relocation causes wetland scarcity in urban areas that leads to a higher demand for wetlands services, and thus increases the value of wetlands services.[283] Adjustments to the regulatory scheme mandating replacement of wetlands services in Florida and other requirements for site selection could potentially solve this dilemma and will be discussed later in this article.

Despite this locational flaw, banking has the ability to respond to climate change needs more readily than permittee-controlled mitigation. Off-site mitigation allows greater flexibility to select "hydrologically and ecologically favorable locations," as well as allows for offsetting several projects in one large site that is more self-sustaining.[284] While small, isolated wetlands can be desirable if they are in sufficient "abundance and proximity,"[285] mitigation

277. *See* 2008 BANKING REPORT, *supra* note 209, at 39, 42.

278. *Id.* at 40; *see also* FLA. STAT. § 373.4136(1) (2011).

279. Ruhl & Salzman, *Banking*, *supra* note 243, at 1, 9.

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

281. Craig Pittman, *When Dry is Wet*, ST. PETERSBURG TIMES SPECIAL REPORT: VANISHING WETLANDS, Dec. 12, 2006, http://www.sptimes.com/2006/webspecials06/wetlands/.

282. *Id.*

283. *See* Dennis M. King & Luke W. Herbert, *The Fungibility of Wetlands*, 19 NAT'L WETLANDS NEWSL. 10, 11-12 (1997).

284. Virginia C. Veltman, *Banking on the Future of Wetlands Using Federal Law*, 89 NW. U. L. REV. 654, 673 (1995).

285. Raymond D. Semlitsch, *Size Does Matter: The Value of Small Isolated Wetlands*, 22 NAT'L WETLANDS NEWSL. 5 (2000).

banks do not necessitate sole reliance on large sites. In the climate change era, having the flexibility to strategically locate mitigation sites will be useful for creating corridors to allow migration, employing an ecosystem-approach in management, and placing mitigation sites where emerging needs are found.

2. Incentives

The banking regulatory system provides incentives to create full functioning, self-sustaining wetlands, but it also incentivizes bankers to purchase cheap land in rural areas.[286] The underlying "incentives to produce and sustain mitigation,"[287] however, are seemingly stronger under mitigation banking than permittee-controlled mitigation. Since "credit release schedules for mitigation banks are tied to performance, . . ." it is easy to see how banks can provide economic incentives "to produce timely, successful mitigation . . . ."[288] Unlike permittee-responsible mitigation, bank sponsors have profit incentives to ensure long-term success. Specifically, a sponsor's interest is tied to the productivity of the mitigation site as opposed to an independent development project or other activity.

The biggest hurdle with banking lies in the natural business incentive to maximize profits while minimizing risks, which results in the purchase of cheap land in rural areas, use of inexpensive mitigation methods, and selection of easy to restore wetland types—i.e. lower functioning.[289] This causes wetlands to shift from urban to rural areas and from "complex to more simple systems."[290] On the other hand, minimization of risk encourages the use of mitigation methods with higher success rates so less successful methods are ignored, which can lead to better results.[291] The credit release structure also promotes continuous improvement in the wetland system and sustained functions. Specifically, if a site achieves higher functional values than expected, a sponsor is awarded more credits to sell.[292] While the results and some business incentives seem to imply low functioning wetlands are

286. *See* Ruhl & Salzman, *Banking*, *supra* note 243, at 9.

287. *Id.* at 12.

288. Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594, 19,599 (Apr. 10, 2008) (to be codified at 33 C.F.R. pts. 325 and 332 and 40 C.F.R. pt. 230).

289. *See* 2008 BANKING REPORT, *supra* note 209, at 39.

290. *Id.*

291. *See id.*

292. FLA. STAT. § 373.4136(4) (2011).

the natural result,[293] there are incentives to improve the simple systems over the long-term to keep the sites functioning and profits flowing. The bank sponsor wants a successful mitigation site in order to make a return on the investment.[294]

Moreover, there are safeguards within the regulatory scheme that create incentives for the bank sponsor to follow through with performance criteria. First, the sale of credits is "tied to performance based milestones" and the majority of credits cannot be sold until the performance standard is fully achieved.[295] Second, there are enforcement incentives on the bank sponsor and if mitigation does not achieve its performance milestones then the agency can "suspend[] credit sales" or "terminat[e] the instrument."[296] Therefore, if the evidence suggests banking is resulting in poor quality wetlands, perhaps these incentives need to be strengthened or enforced in the first place. Another remedy would be to specify and require higher levels of functions in the permit itself.

3. Quality Assurance

While there are still problems with the heavy reliance on mitigation to cure all ills, banking's theoretical ability to provide higher levels of quality assurance once the permit has been issued is worth noting. Like permittee-controlled mitigation, several studies indicate that banks are equally unsuccessful "at replacing lost acres and functions."[297] But, does the regulatory structure and incentives behind banking lead to better monitoring and management of lands? In the climate change era, frequent monitoring and flexible management is crucial. As discussed earlier, permittee-controlled mitigation is expensive and hard to monitor and provides no incentive for long-term management.

First, reviewing a few statistics will illustrate the current status of quality assurance measures in banking. Studies indicate that bank sponsors "often fail to comply with . . . permit conditions[,]"[298] but they also show that agencies provide slightly more oversight for banks.[299] In Florida, banks tend to be near the coast-

293. Like permittee-controlled mitigation, several studies indicate that banks are equally unsuccessful "at replacing lost acres and functions." Kihslinger, *supra* note 252, at 15.

294. *See* Royal C. Gardner, *Rehabilitating Nature: A Comparative Review of Legal Mechanisms that Encourage Wetland Restoration Efforts*, 52 CATH. U. L. REV. 573, 611 (2003) [hereinafter Gardner, *Nature*].

295. 33 C.F.R. § 332.8(o)(8) (2011); 40 C.F.R. § 230.98(o)(8) (2011).

296. 33 C.F.R. § 332.8(o)(10); 40 C.F.R. § 230.98(o)(10).

297. Kihslinger, *supra* note 252, at 15; 2008 BANKING REPORT, *supra* note 209, at 37.

298. 2008 BANKING REPORT, *supra* note 209, at 34.

299. GAO REPORT, *supra* note 14, at 18-19.

line making agency monitoring potentially less costly and time consuming, however, the Corps has been criticized for failing to do compliance inspections.[300] These statistics indicate that agencies are more likely to follow up on monitoring at the office as opposed to in the field[301] and that bank sponsors cannot always be trusted to dutifully perform their obligations. Interestingly, enforcement measures in banking do not follow a standardized regulatory scheme, but are incorporated into the bank permit or mitigation bank agreement.[302]

Although monitoring and adequate management to produce better functioning wetlands has not occurred in the majority of banks, banking has the potential to do better. The federal and state governments both agree that mitigation banking is the better alternative and should be encouraged. Mitigation banks "can enhance the certainty of mitigation and provide ecological value due to the improved likelihood of environmental success associated with their proper construction, maintenance, and management."[303] "[M]itigation banks must achieve certain milestones, [such as] site selection, plan approval, and financial assurances, before they can sell credits."[304] This means most mitigation occurs before an actual impact to a wetland, which would imply built-in assurance of "no net loss." Moreover, monitoring bank sites requires less time and resources than monitoring scattered, small, and isolated permittee-controlled sites, which should result in more monitoring overall.[305]

Although many studies show the regulatory rhetoric is not translating into real world results,[306] clearer guidelines in permits, more stringent enforcement measures, and required replacement of services could remedy the problem. After all, it is in the bank sponsors interest to ensure long-term success and maintenance. Interestingly, a recent study in Florida assessed 29 banks, most of which relied on enhancement instead of restoration, and found that seventy percent of the banks reached at least a moderate

300. *Id.* at 19-20; *see also* FLA. DEP'T OF ENVTL. PROT., Statewide Map of Banks and Service Area Coverage, *available at* http://www.dep.state.fl.us/Water/wetlands/docs/mitigation/perm_banks_msa.pdf (for a map of the location of mitigation bank service areas in Florida).

301. GAO REPORT, *supra* note 14, at 18-19.

302. *See* GAO REPORT, *supra* note 14, at 23. Florida has no statute or FDEP regulation that covers enforcement and penalties for banking non-compliance specifically.

303. FLA. STAT. § 373.4135(1) (2011).

304. Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594, 19,595 (Apr. 10, 2008) (to be codified at 33 C.F.R. pts. 325, 332 and 40 C.F.R. pt. 230).

305. *See* Gardner, *Nature*, *supra* note 294, at 618.

306. *See generally* Pittman & Waite, *They Won't Say No* Article, *supra* note 5 (arguing that despite the "no net loss" policy, Florida has lost tens of thousands of acres of wetlands).

range of function.[307] Perhaps this suggests enhancement of existing wetlands is the ideal method for banks, which would alleviate many complexities in the implementing phase.

Permittee-controlled use of preservation and restoration, as the law stands now, is a poor choice in the climate change era. These methods result in isolated and scattered mitigation sites that leave no corridors for wetlands to migrate as the climate changes and sea levels rise. Permittee-controlled mitigation also lacks incentives to ensure mitigation occurs successfully and to change the parcel's use as ecosystems shift. Mitigation banking, however, can theoretically choose more strategic locations, connect sites, create larger parcels when needed, shift as ecosystems change, and use an ecosystem-approach more easily. These traits allow banking to adapt as wetlands shift and needs change. Conserving Florida's remaining wetlands is a necessity to ensure a sustainable water supply, regulate local temperatures, and reduce pollution.[308] Superficial mitigation, especially in the face of climate change, is not an option.

V. POTENTIAL QUICK FIXES AND LONG-TERM SOLUTIONS

In order for Florida to achieve "no net loss" for the first time in history while successfully maneuvering around climate change obstacles, Florida must reduce its reliance on compensatory mitigation and take a more preventative approach towards wetlands management. Compensatory mitigation will still be a necessary mechanism and, with some modifications, it can help conserve Florida's wetlands. Like the polluter-pays principle,[309] compensatory mitigation makes the entrepreneur pay for environmental damage as opposed to having it land on the public's shoulder. Currently, however, mitigation's poor track record[310] is resulting in the entrepreneur paying the up-front costs of mitigation and the public bearing the cost of its ineffectiveness. Therefore, new regulations on compensatory mitigation's use, the methods used, and compliance will be needed.

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307. Kihslinger, *supra* note 252, at 15; 2008 BANKING REPORT, *supra* note 209, at 37.

308. *See* Ruhl et al., *New Ecosystem Services*, *supra* note 46, at 261.

309. United Nations Conference on Environment and Development, Rio de Janiero, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, Principle 16, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992)[hereinafter *Rio Declaration*]. The polluter pays principle stands for the proposition that the one causing the pollution or harm should pay to fix it. *Id.*

310. *See* NAT'L RESEARCH COUNCIL, *supra* note 16, at 23-45; *see generally* Pittman & Waite, *Build* Article, *supra* note 27 (detailing Florida Department of Transportation's lack of success at replacing wetlands when it builds roads); Pittman & Waite, *Good Plan* Article, *supra* note 27 (detailing a road project that wiped out more than 100 acres of wetlands that has been inadequately mitigated).

Two concepts that will help guide the use of compensatory mitigation in the climate change era are the precautionary principle and adaptive management. Climate change has helped ignite an emerging theme in environmental protection known as the precautionary principle, which bans activities when its impacts are uncertain.[311] In addition, adaptive management and regulation is growing due to its flexible approach towards managing uncertainty in our environment. Combining these two methods provides a more secure approach for handling the challenges ahead facing Florida's wetlands.

Before discussing how compensatory mitigation can be directly modified to better handle climate change issues, it is important to address how it should fall within the overall permitting scheme.

A. *Process*

While compensatory mitigation is a useful and necessary tool for our ever-growing population, available science has yet to produce tools on equal footing with nature's recuperative ability. Man's very existence necessitates impacts on the environment, but our overexertion has exceeded nature's threshold and triggered climatic changes at unprecedented speed. Currently, the federal and state wetlands programs rely heavily on compensatory mitigation despite its hierarchical structure that places it as the last resort. Moreover, compensatory mitigation's effectiveness is questionable. Therefore, in the face of all this uncertainty—whether regarding mitigation success or climate change—Florida should take a more preventative approach in implementing their wetlands permitting programs. To accomplish this, agencies will need to abide by the precautionary principle, which will enforce the law on the books that require avoidance to the maximum extent practicable before mitigation is utilized. There are two pivotal points in the permitting process that need to be modified in order to truly embrace this approach.

The alternatives analysis required by the CWA and NEPA provides one of the first opportunities during the permitting process to modify a project in order to circumvent impacts to wetlands. Although the evaluations under the CWA and NEPA are slightly different, a NEPA analysis typically provides most or all the information needed for the analysis under the CWA.[312] Additionally, under both analyses, the framing of the project purpose can play a key role in eliminating potentially valid alternatives. Essentially,

311. *Rio Declaration*, *supra* note 309, at Principle 15.
312. *See* 40 C.F.R. § 230.10(a)(4) (2011).

the alternatives analysis—the heart and soul of NEPA—needs to be given more teeth by forcing agencies to frame project purposes not too narrowly or too broadly. First, agencies cannot simply defer to the applicant's definition, which by nature will most likely be self-serving and make viable alternatives seem impracticable.[313] In order to achieve this, project purposes should not rely on a narrow geographic location or a stringent recovery rate. This will ensure that economics and geographic location receive only minimal weight as compared to environmental and public health interests during the decision-making process. Of course, there will be scenarios where a precise location or recovery rate will dictate the project site, but these should be allowed only when necessary to achieve a public need and not for profit.[314]

Perhaps this sounds harsh or even unrealistic to some, but allowing profit margins to dictate the depletion of Florida's wetlands will only line the pockets of a few and leave compensatory mitigation as the sole hope for replacing our wetlands. Although compensatory mitigation is required at a ratio of almost two mitigated acres for every impacted acre, the scientific community widely agrees that wetland functions are being lost, although the exact magnitude is indeterminable.[315] Our scientific knowledge and the level of an ecosystem's stability limit mitigation's potential. Climate change is throwing curve balls at our current understandings and guaranteeing more modifications in the future. Since a wetland's type, location, and amount of degradation all affect our ability to restore wetlands, it is prudent that avoidance is required for at least the wetlands that are the most difficult to restore.[316] An additional consideration is the function and overall value of a particular wetland. For example, riparian wetlands, or wetlands adjacent to streams, play a dominate role in water quality and stream health and cannot be duplicated in other locations.[317] Wetlands such as these should be left unaltered.

The second major hitch in the permitting process that needs restructuring is the mitigated FONSI. A mitigated FONSI is an interesting development in the NEPA process that reduces wet-

313. *See* Fla. Clean Water Network, Inc. v. Grosskruger, 587 F. Supp. 2d 1236, 1246 (M.D. Fla. 2008) (discussing two cases where the Corps failed to reframe the applicant's project purpose, which tainted the decision-making process and unnecessarily eliminated practicable alternatives).

314. *See, e.g.*, *id.* at 1246-47 (finding a project for aviation facilities needed to stimulate economic development must be tied to a geographic location because only one area in the region could handle the large-scale project while still avoiding hurricane storm surges).

315. NAT'L RESEARCH COUNCIL, *supra* note 16, at 2-3, 94-122 (focusing on compensatory mitigation in three states, including Florida).

316. *Id.* at 35-45. Examples of wetlands that are the most difficult to restore are fens, bogs, riparian wetlands, and riverine and slope wetlands. *Id.* at 37, 45, 59.

317. *Id.* at 59.

land impacts to a non-factor in the decision-making process. Specifically, mitigation tools like banking or restoration are used to offset a project's impacts on wetlands in order to avoid a "significant impact" finding. While this is theoretically the same way mitigation is used later on during the permitting process, using mitigation at the front-end of a NEPA analysis has major ramifications. First, mitigation plans in an EA are less thorough than in an EIS analysis[318] and plans in an EIS are not even required to be fully developed.[319] Second, early consideration of compensatory mitigation should be discouraged because mitigation may not truly offset the impacts.[320]

Moreover, mitigation during a FONSI creates the false impression of no overall loss and bypasses the more thorough—hence more costly—analysis in an EIS. Mitigation has failed to achieve "no net loss" in Florida and, therefore, it is illogical to allow mitigation to be used at the front-end to say no losses will occur. Claiming no significant loss in the beginning of a permit's analysis eviscerates wetlands from the decision-making process and prohibits the more detailed scrutiny necessitated in an EIS. With the uncertain future of Florida's hydrologic cycles, detailed scrutiny will enable more informed decision-making. Part of acting preventatively is stopping in the face of uncertainty and looking more closely. Moreover, avoidance of impacts to wetlands can generally be more cost-effective than reliance on compensatory mitigation measures.[321]

It is time the permitting process start practicing what it preaches and require developers and the agricultural industry to avoid impacts to wetlands. In addition, compensatory mitigation should be the last resort and not allowed to camouflage harm in early stages. EAs should first show that avoidance and minimization were completed to the maximum extent practicable and that there were no reasonable alternatives based upon a neutral project purpose before mitigation can be used to produce a FONSI. We are a capitalistic society with deeply rooted expectations in our property rights; however, it is also traditionally accepted that in order to function our government can regulate and diminish our property rights in the public interest. Losses in profits now will surely be a minute fraction of the cost to mitigate harms in the event our impacts on wetlands reaches a tipping point—irreversible damage of cataclysmic scale. In order to successfully conserve wetlands in the

318. GLICKSMAN ET AL., *supra* note 6, at 254.

319. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 359 (1989).

320. *See* Gardner, *Nature*, *supra* note 294, at 610.

321. PAUL D. CYLINDER ET AL., WETLANDS, STREAMS, AND OTHER WATERS: REGULATION, CONSERVATION, MITIGATION PLANNING 146 (2d ed. 2004).

climate change era, decision-making will need to be less swayed by pressures to develop.

B. *Mitigation*

Once compensatory mitigation enters permit negotiations, the question becomes what method of mitigation is best for handling existing wetland ecosystem complexities and climate change uncertainties. Combating climate change uncertainties alone demands a method that will enable flexible site selection, long-term management, and incentives for success. Although no mitigation technique has been considered wholly successful, mitigation banking is the preferred option by the federal and state government for a reason. Banking takes the permit-holder and his or her natural biases and business disincentives for mitigation success out of the picture. Instead, banking has a neutral third party or government agency handle site selection and management. As discussed earlier, there are clear incentives driving bank sponsors to succeed that increased monitoring and enforcement can help bring to fruition.

1. The Mitigation Banking Mandate

Since most agree banking holds the most promise, why leave it as a mere preference? Florida's legislature enacted statutes to encourage banking sixteen years ago, yet permittee-responsible mitigation is still the most used method.[322] The 2008 Corps/EPA rule lists banking as the preferred approach, but still provides flexibility in choosing a type.[323] Since climate change has raised the stakes and permittee-responsible mitigation has the least potential, the FDEP, WMDs and Corps should mandate—not prefer—banking. Realistically, of course, banking will not always be the best option so other mitigation techniques should be utilized when scientifically sound studies show it would be more beneficial. This may sound similar to the current preference approach; however, a mandate with exceptions approach will require a higher burden of proof. In order to circumvent banking, an applicant will need to provide in-depth studies and solid reasoning for using a different approach. This should cause sounder decision-making and a higher likelihood of success.

A banking mandate has several potential advantages. First, it embraces the precautionary approach by requiring most mitigated sites to be completed before impacts to existing wetlands. This

322. 2005 STATUS REPORT, *supra* note 23, at 26-27.
323. *See* Gardner et al., *Redux*, *supra* note 235, at 243.

preventative measure results in less temporal loss of wetland functions and reduces the risk inherent in mitigation.[324] Second, the decision-makers choose the site locations primarily based on where the most success or profit can be achieved, which translates into functioning wetlands. Third, the bank sponsor has incentives to ensure the proper completion of mitigation and long-term maintenance. Lastly, banking has the capability to incorporate emerging needs brought by climate change. Banking can be used as a planning tool that addresses where wetlands will migrate due to climate change and where services will be needed as Florida's hydrologic cycles shift. To accomplish this goal, however, Florida will need to embrace adaptive regulation and should assemble a wetland adaptation comprehensive plan (WAP).

Adaptive management is a "performance-based approach to ecosystem management in situations where predicted outcomes have high level[s] of uncertainty."[325] This approach is ideal for managing Florida's increasingly unpredictable hydrological conditions. Essentially, adaptive management is a continually changing process with frequent monitoring and review that revises its goals and plans as dictated by new information.[326] The Corps already requires bank sponsors to use adaptive management,[327] which forces sponsors to modify ineffective techniques and plans to guarantee their mitigation goals are met. The next step in making mitigation banking more flexible and successful in combating climate change's uncertainty is for Florida agencies to employ adaptive regulation by creating a WAP.[328]

Similar to a comprehensive plan for land use, the WAP should identify areas in Florida where mitigation sites are allowed, needed, or restricted. To achieve this, the WAP will map out where mitigation sites should be located based on likely migration routes from sea level rise and demands for wetlands services. The WAP can indicate areas vulnerable to water shortages, storm surges, flooding, and pollution—all of which are mitigated by wetland functions—that can help dictate decisions during a permit negotiation. In addition, Florida should establish a concurrency require-

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324. NAT'L RESEARCH COUNCIL, *supra* note 16, at 162-63. This report focused on compensatory mitigation in three states, including Florida.

325. Alfred R. Light, *Tales of the Tamiami Trail: Implementing Adaptive Management in Everglades Restoration,* 22 J. LAND USE & ENVTL. L. 59, 65 (2006); *See also* IPCC, WATER, *supra* note 73, at 51.

326. *See* Light, *supra* note 325, at 65.

327. Bosselman, *supra* note 112, at 628.

328. FDEP and the WMDs would be the agencies responsible for compiling this plan and ensuring permits are consistent with it.

ment to guarantee compliance.[329] Modeling can be used to aid this process as well as data already collected by Florida agencies.[330] For example, Florida created a water plan in 2001 that integrates FDEP's and WMDs' goals and needs for preserving water supply, flood control, water quality protection, and overall wetlands protection.[331] While the Florida Water Plan does not specifically address adaptation needs, it provides vital information for compiling the WAP.

To accurately identify locations where mitigation sites are needed, mitigation evaluation will need to incorporate ecosystem services as indicated above. Ecosystem services theory is an emerging theory in environmental law that will be particularly helpful in combating climate change's impacts on wetlands and vital for creating the WAP. To be more precise, wetland services—those benefits people derive from wetlands—should dictate where mitigation sites are located. Ecosystem services theory has already been integrated into mitigation valuation at the federal level[332] and Florida should follow suit.

The WAP will essentially help incorporate adaptive regulation into mitigation banking. Specifically, the WAP will be updated as needs, predictions, and climates change, which will redirect mitigation expenditures, management techniques, and future site locations accordingly. This will require continuous monitoring and data collection,[333] but will help prevent wasted resources on actions found to be ineffective. In the climate change era, current wetlands will transition into uplands and vice versa. Therefore, banks and mitigation sites should be located in areas predicted to remain or become wetlands. While potentially controversial, banks should be allowed to sell credits for dry uplands that are predicted to become wetlands in the future. To help ensure our goal of "no net loss," however, there should be a low cap on how many could be purchased per project. Dry lands are already allowed to be sold as credit under both the federal and state systems,[334] so the concept is

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329. Again, this concept is already widely utilized by Florida in land use laws. For example, there is a water concurrency requirement that requires local governments to ensure that there will be adequate water supply before approving building permits. FLA. STAT. § 163.3180(2)(a) (2011).

330. Florida already collects data from wetlands for numerous purposes that will be useful, such as the Lake Vegetation Index and Wetland Condition Index. FDEP INTEGRATED REPORT, *supra* note 2, at 48.

331. FLA. STAT. § 373.036; *see also* FLA. ADMIN. CODE r. 62-40.510 (2011).

332. Ruhl et al., *New Ecosystem Services*, *supra* note 46, at 263.

333. *See* Ruhl & Salzman, *Banking*, *supra* note 243, at 12 (providing examples of Florida wetland bank demographic statistics).

334. *See* Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594, 19,623 (Apr. 10, 2008) (to be codified at 33 C.F.R. pts. 325, 332 and 40 C.F.R. pt. 230); FLA. ADMIN. CODE r.62-342.470(2) (2011).

not new. Currently, there is a requirement that the uplands be essential for the nearby wetlands; in the future, uplands would be required to be essential for wetlands migration. Since a bank sponsor has an interest in a site's long-term use, the bank can also shift to other environmentally beneficial uses if climate change renders its wetlands functions obsolete. Specifically, carbon markets and other banking schemes could be implemented.

2. Reinforced Permittee-controlled Mitigation As The True Last Resort

Once studies show banking is not the best option for a particular project, the applicant and permitting agency should then look to permittee-controlled mitigation measures. As with mitigation banking, permittee-controlled mitigation must take a more precautionary approach and integrate adaptive management. Permittee-controlled mitigation is not as flexible as banking and has more deficiencies, therefore increased regulation and incentives are needed to help reshape it. Although this is not meant to be a comprehensive solution on fixing all shortcomings, below are a few modifications that would make permittee-responsible mitigation more effective at handling climate change uncertainties.

First, adaptive regulation and the WAP should apply with equal force to permittee-responsible mitigation measures. Specifically, applicants should be bound to the consistency requirement of the WAP, just as land use decisions are tied to the comprehensive plan. Due to the inherent problems with site selection, this method will ensure the applicant chooses a location where services are needed. At first glance this may seem like an increased burden on development, but it actuality relieves some time and expense on the part of the applicant. Instead of seeking out site locations, the applicant will already have a list of sites at his disposal—narrowing his options and saving time. Site selection for mitigation should not be bound to the on-site preference, absent evidence to the contrary, but instead to the WAP within the confines of the watershed approach. Although Florida allows banking and regional off-site mitigation sites to be placed outside the watershed where the impacts occurred, this seemingly more flexible approach should be abandoned.

A second modification to current permittee-controlled mitigation measures would be to create a new hierarchy for the methods that must be abided by absent proof that another method is more beneficial to the public—not the pocket book. The ideal hierarchy should be: (1) restore, (2) enhance, and (3) create. Preservation

should be eliminated from the mitigation list altogether. While preservation is a laudable goal and is necessary in many contexts, it does not logically fulfill the purpose of the mitigation mandate. Specifically, preservation is not replacing any lost functions or services.[335] Although preservation could be seen as adding functions by ensuring they are not taken in the future, it does nothing to offset the impacts when they occur. Preservation is useful during the avoidance and minimization stages of mitigation, but not during the compensatory mitigation stage. This proposed hierarchy places creation as the last resort because it is the most difficult to achieve and often only produces low functioning wetlands.[336] Although restoration is also an iffy process, it should be preferred to enhancement because it can theoretically result in the replacement of functions and acreage.[337] Enhancement only improves one or more functions, therefore it should only be utilized when there is a clear need for it or when a project will unduly impact a particular wetland service. Enhancement should remain the second choice because there is no gain in acreage and increasing one service can reduce another service provided.

Last, increased enforcement and monitoring—the most common critique for any environmental program—will be needed to ensure the mitigation takes place and is sustained. Incentivizing the permittee's and the agency's behavior is vital whether through perks or penalties. Since there is literature dedicated to this very subject, I offer a few of the more innovative techniques here. First, a note regarding the more obvious methods like administrative penalties, compliance orders, bond forfeiture, and permit revocation. Since the biggest problem with these enforcement methods and monitoring is the lack of use, government employees should be incentivized to enforce and monitor with the promise or potential for career benefits like raises, awards, or promotions. This would help overloaded agency staff to prioritize their workload in order to ensure mitigation sites are monitored and maintained.

Moreover, permittees can be financially incentivized by the common tax breaks, subsidies, or grants that are conditioned on creating self-sustaining wetlands or maintaining their wetlands for a certain number of years. Since a permittee is not concerned with long-term maintenance, this will provide a profit incentive and has been successful in other areas like the Wetlands Reserve Program.[338] Adverse incentive programs like the Swampbuster

335. *See* PAVING PARADISE, *supra* note 7, at 278.

336. NAT'L RESEARCH COUNCIL, *supra* note 16, at 22-45.

337. *See* U.S. ENVTL. PROT. AGENCY, WETLANDS COMPENSATORY MITIGATION (2008), http://www.epa.gov/owow/wetlands/pdf/CMitigation.pdf.

338. *See* U.S. FISH & WILDLIFE SERV., INTERAGENCY ACTIVITIES, *supra* note 150, at 3.2.

program[339] could also be created in the mitigation context by withdrawing development privileges from companies if their past mitigation sites are failing to reach their proper mitigation goals. In addition, green certification mechanisms for the permittee's company or project could be offered for successful completion and/or long-term maintenance. Good-will for restoration efforts may at first seem irrelevant to a condo-developer, but this mechanism can work both ways to keep the permittee's interest. A ranking system created for companies and developers operating in Florida that indicates the greenness of their projects may catch their attention. For example, like many companies right now, Wal-Mart is struggling to create a greener image.[340] Bad publicity from a low score could potentially affect their habits.[341] Climate change is spurring a new social movement—a "green revolution"[342]—that most smart businesses are recognizing and embracing.

All in all, in order to successfully protect Florida's wetlands, several steps must be taken to change current policies and outlooks governing the permit process and use of mitigation. First, the CWA, NEPA, and state law must start practicing what they preach and require avoidance and minimization before looking to mitigation to offset impacts. Second, mitigation banking should be the required method, except in the face of non-biased studies showing another tool would be more beneficial. Third, a wetland adaptation plan should be created and used like a comprehensive plan—dictating where mitigation sites should be located. This plan should be updated as new information is received and ecosystems shift. Lastly, if permittee-controlled mitigation is resorted to, measures must be taken to even the scales and incentivize long-term success.

VI. CONCLUSION

Climate change in Florida is altering wetlands and taking their services, such as flood control, groundwater recharge, and filtration, with it. Moreover, anthropogenic stressors on Florida's envi-

339. *See* ELI BANKS, *supra* note 142, at 15.

340. *See generally* Miguel Bustillo, *Wal-Mart to Assign New 'Green' Ratings*, WALL ST. J., July 16, 2009, at B1 (describing the new environmental labeling program of Wal-Mart Stores, Inc.).

341. For example, their man-made wetland in Oldsmar, Florida that is now covered with dead cypress trees only five years after its creation would surely reduce their score and efforts to convince Florida residents of their environmental stewardship. PAVING PARADISE, *supra* note 7, at 123-27.

342. *See generally* THOMAS L. FRIEDMAN, HOT, FLAT, & CROWDED: WHY WE NEED A GREEN REVOLUTION—AND HOW IT CAN RENEW AMERICA (2008) (describing how climate change is revolutionizing the way America tackles environmental issues).

ronment are exacerbating these impacts. Like most of the United States, Florida's past misconceptions on the value of wetlands and intense pressures for development and agriculture have depleted its supply by almost half.[343] The viability of using compensatory mitigation to help conserve Florida's wetlands in light of climate change impacts and their synergistic effects is questionable. The existing regulatory framework for wetlands protection fails to incorporate climate change into decision-making and relies too heavily on mitigation—a scheme whose underlying assumptions are breaking down due to climate change.

Mitigation relies on the basic assumption that the area mitigated will maintain its same ecological condition.[344] In the wetlands context, this premise assumes that past hydrologic cycles and climatic conditions are a good guide for future decisions.[345] Climate change, however, invalidates this theory and promises only uncertainty.

Development and agriculture have received government approval to destroy vast amounts of Florida's wetlands based on the promise to replace these majestic areas elsewhere. The problem, however, is that agencies have dropped the ball on monitoring permit holders and permittees have no incentive to successfully mitigate wetlands for the long-term.[346] Development and agriculture increase pollution, cause sediment contamination, reduce groundwater supplies, and rid Florida's shorelines of storm buffer. Ironically, if these impacts are the yin, then wetlands are its yang. Essentially, development and agriculture have increased demands for wetlands services while depleting the very source.

Climate change is exacerbating urbanization's impacts by bringing new challenges that only well-functioning wetlands can mitigate. Warmer temperatures threaten water quantity and quality, and start a domino effect leading to more intense storms, flooding, droughts, and freezes. Wetlands are needed to counteract these climatic shifts because they act as sponges during floods, provide buffer from storm surges, and provide water during droughts.[347]

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343. *See* FDEP INTEGRATED REPORT, *supra* note 2, at 84; *see also* ST. JOHNS RIVER WATER MGMT. DIST., *supra* note 3 (providing general facts about annual wetlands loss in Florida).

344. NAT'L RESEARCH COUNCIL, *supra* note 16, at 22.

345. *See* IPCC, WATER, *supra* note 73, at 4 (discussing the use of past hydrological experiences as a guide for future conditions).

346. For studies discussing these deficiencies, see GAO REPORT, *supra* note 14; PAVING PARADISE, *supra* note 7; NAT'L RESEARCH COUNCIL, *supra* note 16, at 23-45; Pittman & Waite, *Build* Article, *supra* note 27; Pittman & Waite, *Good Plan* Article, *supra* note 27.

347. MILLENNIUM ECOSYSTEM ASSESSMENT, *supra* note 88.

Federal and state regulations already inadequately protect Florida's wetlands as evidenced by their continual decline and degradation. Moreover, the legal framework fails to provide the flexibility needed to respond to future hydrologic changes. Since some of the founding principles of mitigation collapse in the face of changing ecosystems, this article assessed the likely potential for the two most frequently used mitigation tools—permittee-controlled mitigation and banking—to adequately mitigate wetlands while providing the necessary flexibility in light of climate change.

Project-specific, permittee-controlled mitigation, as the law stands now, is a poor choice in the climate change era. These methods result in isolated and scattered mitigation sites that leave no corridors for wetlands to migrate as the climate changes and sea levels rise. Permittee-controlled mitigation also lacks incentives to ensure mitigation occurs successfully and to change the parcel's use as ecosystems shift. Banking, however, can theoretically choose more strategic locations, connect sites, create larger parcels when needed, shift as ecosystems change, and provide more incentives to ensure success. These traits allow banking to adapt as wetlands shift and needs change while providing a better guarantee that wetlands will not be lost.

Despite all the uncertainty climate change is causing, it is clear that Florida's wetlands have been gravely depleted over the past century and without a change in our current pace of development, many more will suffer. While human existence necessitates some harm to the environment, nature's resilience is no longer a safe harbor for man's destructive habits.

WATER SUPPLY AND MANAGEMENT FOR A GROWING STATE

MELANIE LEITMAN*

I. INTRODUCTION

Throughout the history of human settlement, civilizations have often resorted to drastic measures to ensure a reliable and plentiful water supply. Ancient civilizations warred over control of the Tigris and Euphrates Rivers.[1] Prior to large-scale settlement in the

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1. Jonathan Watts Hull, *The War over Water*, S. LEGIS. CONF. 1 (2000), http://www.csg.org/knowledgecenter/docs/slc-0010-warwater.pdf.

arid American West, engineers and water managers constructed a massive water infrastructure system that transferred the waters of the Colorado River hundreds of miles to ensure that burgeoning population and agriculture in the southwestern United States could continue.[2] More recently, a drought and its impact on the City of Atlanta's water supply spurred the State of Georgia to revive a two-century-old debate regarding the location of the Georgia-Tennessee border in an effort to bring the Tennessee River wholly within its political boundaries.[3]

Historically, people saw the southeastern United States as having plentiful water; in fact, too much water was often the problem.[4] The abundance of surface water in Southern Florida created frustrating and seemingly insurmountable barriers to development.[5] The dominant mindset of Florida as having plentiful water continued on through the beginning of the twentieth century until finally, in the wake of decades of exponential growth, the realization dawned that perhaps South Florida might not have enough water after all.[6] This awareness initially proved to be a foreign concept, but as it settled in and water supply emerged as an issue, some began to focus on the less-populated, more water-abundant areas in the northern part of the state as a possible future supply of water.[7] People also began to realize that regardless of the approach, in order to continue to support existing populations and ecosystems as well as provide for inevitable future growth, we must manage water more effectively in Florida.[8]

In this comment, I intend to address interbasin water transfer as it relates to Florida. In Part II, I will examine interbasin transfers that are already in existence around the United States and the world, focusing on the problems that have arisen from large-scale interbasin transfer in both the environmental and political/economic arenas. In Part III, I will focus on Florida, examining Florida's unique water resources, the legal and statutory frame-

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2. *See generally* MARC REISNER, CADILLAC DESERT (1986).

3. *See, e.g.*, Sharyn Alfonsi, Patrick Doherty & Imaeyen Ibanga, *A Border Battle Brews – And Water is the Prize*, ABCNEWS.COM, Feb. 10, 2008, http://abcnews.go.com/GMA/story?id=4269092.

4. In fact, many men tried and failed to drain the Everglades to make it suitable for development. *See generally* MICHAEL GRUNWALD, THE SWAMP (2006).

5. *See id.*

6. *See generally* CYNTHIA BARNETT, MIRAGE 103 (2007); Dana L. Crosby, *Water, Water, Everywhere, but Not Enough to Drink?: A Look at Water Supply and Florida's Growth Management Plan*, 12 J. LAND USE & ENVTL. L. 153, 156 (1996).

7. *See* FLORIDA COUNCIL OF 100, IMPROVING FLORIDA'S WATER SUPPLY MANAGEMENT STRUCTURE: ENSURING AND SUSTAINING ENVIRONMENTALLY SOUND WATER SUPPLIES AND RESOURCES TO MEET CURRENT AND FUTURE NEEDS 14-15 (2003), *available at* http://www.fc100.org/documents/waterreportfinal.pdf [hereinafter COUNCIL OF 100 REPORT].

8. Crosby, *supra* note 6, at 156.

work governing Florida's water, why some people have proposed interbasin transfer in Florida, and potential consequences of taking this action. Finally, in Part IV, I will apply the lessons learned from the examples of interbasin transfer examined in Part II to Florida, and provide recommendations and proposals for alleviating Florida's water supply problems.

II. WATER TRANSFER

Large-scale interbasin water transfer is not uncommon—it exists in many countries worldwide as well as numerous states throughout the United States.[9] In fact, large-scale interbasin transfers move "trillions of gallons of water . . . each year to serve hundreds of thousands of farmers and millions of municipal residences."[10] International law has even taken a stab at governing interbasin transfer and other non-navigational uses of water in the United Nation's 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses.[11] In this section, I will examine two scenarios of large-scale interbasin water transfer: one international and one domestic.

A. International and Domestic Interbasin Transfer

One country that has notably employed interbasin water transfer to meet its population's water supply needs is India.[12] Policy-

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9. A sampling of countries that have instituted interbasin transfer include: United States, India, Canada, Mexico, Sri Lanka, and China. INST. OF ENG'RS (INDIA), WATER MGMT. FORUM, THEME PAPER ON INTER-BASIN TRANSFER OF WATER IN INDIA: PROSPECTS AND PROBLEMS ¶¶ 6.0-6.12 (2003), *available at* http://www.supportnarmadadam.org/inter-basin-transfer-water-india-prospects-problems.htm [hereinafter PROSPECTS AND PROBLEMS]; *See, e.g.*, LUNA BHARATI ET AL., ANALYSIS OF THE INTER-BASIN WATER TRANSFER SCHEME IN INDIA: A CASE STUDY OF THE GODAVARI-KRISHNA LINK, CONFERENCE PAPER FROM INT'L WATER MGMT. INST. 63 (2008), *available at* http://econpapers.repec.org/paper/iwtconppr/h041799.htm; GREENVILLE UTILS. COMM'N, INTERBASIN TRANSFER PETITION: FROM TAR RIVER TO CONTENTNEA AND NEUSE RIVER SUBBASINS (2009); Barbara Cosens, *The Eternal Quest for Water: Historical Overview and Current Examination of Interbasin Transfers of Water*, 55 ROCKY MTN. MIN. L. INST. 17-1, 17-2 (2009).

10. Cosens, *supra* note 9, at 17-2 (footnote omitted).

11. Convention on the Law of the Non-navigational Uses of International Watercourses, G.A. Res 51/229, U.N. Doc. A/51/49 (May 21, 1997). Article Five of the convention states,

> [w]atercourse [s]tates shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse [s]tates with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse [s]tates concerned, consistent with adequate protection of the watercourse.

Id. at 4.

12. C. D. Thatte, *Inter-basin Water Transfer for Augmentation of Water Resources in India – A Review of Needs, Plans, Status and Prospects* 1, 1 (2006), *available at*

makers proposed interbasin transfer in India over forty years ago and have studied and implemented it in the years since.[13] India receives adequate rainfall, approximately forty-six inches annually;[14] however, there is large seasonal and locational variability in this rainfall.[15] India has also experienced staggering population growth in the past half-century, and many of the areas that have experienced the greatest growth are not located in the most water-plentiful areas of the country.[16]

The Indian interbasin transfer approach differs from interbasin transfer in the United States in that it serves to link what the government has deemed "surplus" rivers to "deficient" rivers,[17] rather than simply providing a pipeline to a water treatment facility or reservoir for processing and municipal, agricultural, or industrial use. The National River-Linking Project contains two components: Himalayan Rivers Development and Peninsular Rivers Development.[18] The country's National Water Development Agency has a plan that involves using gravity to the greatest extent possible and only using pumping for elevation changes of 120 meters or less.[19] The Indian water management agency estimates that both projects, when completed, will make available for use an additional 145 to 217 billion gallons per day.[20] The Indian Government has projected that construction of both parts of the project will be complete by 2016, although some people view this as an unrealistically ambitious goal.[21]

Domestically, many people know Southern California as an area that relies upon water from external sources. On average, California receives a modest but not unreasonably low amount of rainfall annually: twenty-three inches.[22] However, similar to India, California has severe geographical variability in rainfall—the northwest areas of the state receive an average of 140 inches of rain annually, while the arid southeast areas receive less than four inches of rain annually.[23] California, more specifically southern

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http://hdr.undp.org/en/reports/global/hdr2006/papers/cdthatte_interbasin_water_transfer_india.pdf.

13. PROSPECTS AND PROBLEMS, *supra* note 9, ¶ 1.1.1.

14. The world average is 43.7 inches (converting 1,110 mm to 43.7 in). Thatte, *supra* note 12, at 1.

15. "At places, it rains for 200 days a year; at some for 10 days." *Id.* at 1-2.

16. *Id.* at 2.

17. BHARATI ET AL., *supra* note 9, at 63.

18. FEREIDOUN GHASSEMI & IAN WHITE, INTER-BASIN WATER TRANSFER: CASE STUDIES FROM AUSTRALIA, UNITED STATES, CANADA, CHINA AND INDIA 331 (2007).

19. *Id.* at 332.

20. *Id.* at 335 (converting 200 x 10^9 m^3 and 300 x 10^9 m^3 per year to gallons per day).

21. *Id.* at 336.

22. *Id.* at 215 (converting 584 mm to 23 in).

23. *Id.* (converting 3,500 mm to 140 in and 100 mm to four in).

California, has also experienced significant population growth over the past century.[24] During the twentieth century, the state's population grew over twenty-fold, from 1.5 million to 35.6 million people, and projections estimate that it will increase by another thirteen million people by 2030.[25] In addition to being the largest state in the country in terms of population, California is a major agricultural center—with its $36 billion-per-year agricultural sector, it "represents the world's fifth largest supplier of food and other agricultural commodities."[26] Agriculture is a major consumer of water, and in 2000, water demand for agriculture was nearly four times that for urban uses.[27]

Water managers in the southern part of the state recognized the region's limited water resources early on, and during the first three decades of the twentieth century, the Los Angeles water management board set its sights over 200 miles north to the Owens Valley, home of the Owens River and Owens Lake.[28] Los Angeles began buying up the town and surrounding farmland in order to acquire the water rights and began construction of the Los Angeles Aqueduct in 1908.[29] Upon completion in 1913, the project transferred 134 million gallons per day to the City of Los Angeles.[30] However, this was soon not enough to satisfy the thirst of the city. The City extended the Los Angeles Aqueduct by constructing a second aqueduct, which when combined with the first aqueduct, provides the city with 430 million gallons per day,[31] which currently represents only sixty percent of the total water supply for the city.[32]

B. Problems Encountered and Solutions Examined

The Indian government has faced several problems and has experienced negative impacts during the implementation and execution of its large-scale interbasin transfer that are distinct from

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24. *Id.*

25. *Id.* Approximately half of this estimated population growth is expected to occur in the southern coastal region, which is already experiencing serious water shortage and water supply problems. *Id.*

26. ETHAN N. ELKIND, BERKELEY SCH. OF LAW'S CTR. FOR LAW, ENERGY & THE ENV'T, ROOM TO GROW: HOW CALIFORNIA AGRICULTURE CAN HELP REDUCE GREENHOUSE GAS EMISSIONS 6 (2010), *available at* http://www.law.berkeley.edu/files/Room_to_Grow_March_2010.pdf.

27. GHASSEMI & WHITE, *supra* note 18, at 217.

28. Cosens, *supra* note 9, at 17-4; *See also* REISNER, *supra* note 2, at 61-62.

29. Cosens, *supra* note 9, at 17-4; GHASSEMI & WHITE, *supra* note 18, at 218.

30. GHASSEMI & WHITE, *supra* note 18, at 218 (converting 185 x 10^6 m^3 per year to gallons per day).

31. *Id.* (converting 594 x 10^6 m^3 per year to gallons per day).

32. *Id.*

consequences faced with in-basin development.[33] First, legal challenges have highlighted the various approaches taken by different levels of government in order to manage basins and interbasin transfers.[34] For example, at the national level, "tribunals have treated the basin as a 'unitary whole[,]' " while at the regional level, tribunals and local decision-makers divide an entire basin into sub-basins, treating and managing these sub-basins individually and differently.[35] This difference in approach can cause a regulatory disconnect, because water managers governing the same basin are managing the same resource differently.

In California, transfer of water from areas outside of Los Angeles to the city has caused much consternation and bitterness in the sending areas, to the point that this bitterness has earned a name: "Owens Valley syndrome."[36] Los Angeles water managers' rather underhanded means of acquiring a water supply for the city " 'has poisoned subsequent attempts to persuade farmers to trade their water to thirsty cities.' "[37]

Environmental impacts of interbasin transfer are numerous and widespread and are not limited to the basin of origin. The most obvious consequence is reduced flow in the basin of origin, but some other, less obvious consequences are soil erosion, deforestation, and habitat alteration.[38] Additionally, the receiving basin can experience adverse environmental impacts, including introduction of exotic flora and fauna and increased siltation and nutrification.[39] Also, depending on the circumstances, both the basin of origin and the receiving basin can also experience water quality degradation.[40] Experts predict that completion of the Indian project will inundate approximately two million acres of land, resulting in the destruction of native flora and fauna habitats and the displacement of up to three million people.[41]

Finally, interbasin transfer projects can be massively expensive.[42] The total estimated cost for the Indian river-linking project

33. PROSPECTS AND PROBLEMS, *supra* note 9, ¶ 9.1.2.

34. *Id.* ¶ 7.3.2.

35. *Id.* Management agreement signed for the Yamuna River as a singular basin even though it is a major tributary of the Ganges River. UPPER YAMUNA RIVER BOARD, MINISTRY OF WATER RESOURCES, http://uyrb.nic.in (last visited Feb. 6, 2012).

36. Cosens, *supra* note 9, at 17-5.

37. *Id.* (quoting Gary D. Libecap, *Chinatown: Owens Valley and Western Water Reallocation—Getting the Record Straight and What it Means for Water Markets*, 83 TEX. L. REV. 2055, 2056 (2005)).

38. *Id.* at 17-6; GHASSEMI & WHITE, *supra* note 18, at 350-53.

39. PROSPECTS AND PROBLEMS, *supra* note 9, ¶ 9.2; GHASSEMI & WHITE, *supra* note 18, at 101.

40. Cosens, *supra* note 9, at 17-11–17-14.

41. GHASSEMI & WHITE, *supra* note 18, at 337.

42. PROSPECTS AND PROBLEMS, *supra* note 9, ¶¶ 11.0-11.5.

is between $112 to $200 billion, which represents "twenty-three to forty percent of the country's [gross domestic product] in 2001."[43] Moreover, this figure includes only the costs associated with constructing the projects—upkeep and operation will require additional financial resources.[44]

Southern California water supply planning also did not come without substantial cost—the cost estimation, in 2004 dollars, is approximately $865 million for both aqueducts, which combined, run for a total of around 360 miles.[45] Once again, this figure represents just the construction cost. This may actually seem like a bargain, however, when compared to an April 2009 U.S. Army Corps of Engineers study predicting a $3 billion price tag for a 400-mile water transfer pipeline running from Wyoming to Colorado.[46] In addition, these water transfers generally require energy in some form to facilitate the transfer, and as energy costs rise, so will the overall costs of these projects.[47]

Opponents of interbasin water transfer projects have presented numerous criticisms of the current framework, which arguably encourages waste and discourages conservation in part because of the fact that the current water pricing structure does not accurately reflect the costs of withdrawing, processing, and delivering the water.[48] Artificial pricing of water as a result of subsidies, especially in the agricultural sector, creates a disincentive for conservation, which, in turn, presents a greater challenge for water supply managers—the more water people use, the greater the necessary supply.[49] One study found that farmers in the United States pay an average of $0.04 to $0.19 per thousand gallons of water, while municipal users pay $1.14 to $3.03 per thousand gallons.[50] Experts estimate that the government provides between $2.5 billion and $4.4 billion annually in subsidies for 4.5 million hectares of irrigated land in the western United States alone.[51] With respect to municipal use, another study found that "cities in rain-scarce regions have the lowest residential water rates and the highest level

43. GHASSEMI & WHITE, *supra* note 18, at 336.

44. *Id.* at 335-36.

45. *Id.* at 218.

46. Randy Stapilus, *CO/WY: Corps Studies Possible Pipeline*, RIDENBAUGH PRESS/WATER RIGHTS (Apr. 13, 2009, 12:39 PM), http://ridenbaugh.com/waterrights/?p=489.

47. David Zilberman et al., *Rising Energy Prices and the Economics of Water in Agriculture*, 1 WATER POL'Y 10 SUPP. 11, 15 (2008).

48. Brett Walton, *The Price of Water: A Comparison of Water Rates, Usage in 30 U.S. Cities*, CIRCLE OF BLUE, Apr. 26, 2010, http://www.circleofblue.org/waternews/2010/world/the-price-of-water-a-comparison-of-water-rates-usage-in-30-u-s-cities/.

49. *Id.*

50. David Pimentel et al., *Water Resources: Agricultural and Environmental Issues*, 54 BIOSCIENCE 909, 914 (2004) (converting from price per 1000 liters to price per 1000 gallons).

51. *Id.* at 914-15 (citations omitted).

of water use."[52] For example, using 100 gallons of water per day for a month will cost you around $65 in Boston, yet the same amount of water only costs about $35 in Phoenix.[53] This is a confusing result, considering that transporting water requires energy and infrastructure. Yet in arid regions like Phoenix, where the municipality must pump water in from hundreds of miles away, water is only marginally more expensive than in water-abundant cities located directly on their water sources, such as in cities around the Great Lakes.[54]

People have proposed several alternatives to interbasin transfer in India. The main proposal involves adjusting agricultural practices, which alone could significantly reduce the frequency and duration of water deficits. Planting high water intensity crops during the monsoon season only, and switching to low water intensity crops during the post-monsoon season could decrease water deficits by up to fifty-one percent in the basin examined.[55] Furthermore, opponents to the National River Linking project in India point out that the government has already invested billions of dollars in uncompleted water projects and it should complete these projects prior to embarking on new and expensive projects.[56] Opponents also encourage development of alternative strategies for water supply, noting that the government has abandoned tens of thousands of reservoirs and tanks that water managers could use for rainwater harvesting.[57] Practices such as increasing irrigation efficiency and removing some of the massive subsidization for water can go a long way towards easing water shortages.[58]

In the United States, basin-of-origin protection laws have done much to protect the economic, environmental, and water interests in the sending basin. Basin of origin protection laws cover the gamut of potential impacts from interbasin transfer: considerations for fish and wildlife,[59] re-vegetation and weed control,[60] fu-

52. Walton, *supra* note 48.

53. *Id.*

54. The same study found that water in the Great Lakes cities range from $24-$28 monthly for the same level of use. This is only $7-$11 per month cheaper than Phoenix, which must pipe its water in from hundreds of miles away. *Id.*; Gordon Baker, *Water in the Desert – Phoenix Water Supply*, PHOENIX WATER FRONT TALK (June 22, 2009), http://phoenixwaterfronttalk.com/2009/06/22/water-in-the-desert-phoenix-water-supply/ (providing a brief summary of Phoenix's water supply).

55. BHARATI ET AL., *supra* note 9, at 70-71.

56. GHASSEMI & WHITE, *supra* note 18, at 341.

57. *Id.* For more on rainwater harvesting, see *infra* notes 256-58.

58. *Id.* at 341-42.

59. CAL. WATER CODE § 1736 (West 2010).

60. COLO. REV. STAT. § 37-92-305(4.5)(a) (2011).

ture needs within the sending basin,[61] and impacts on water quality.[62] Traditionally, basin-of-origin protection laws apply to new transfers, "as well as to transfers of established rights."[63] California has an area of origin protection law that "gives an exporting area an absolute priority to make future use of water over that of the importing area, and it reserves for the county where water originates all the water it may need for future development."[64] One problem with these laws is that they provide no mechanism for a transferring basin to halt an existing transfer, meaning that, in reality, the law does not fully serve its purpose.[65]

One article discusses two different types of nontraditional "transfer" programs: surface water cutbacks and canal lining.[66] Surface water cutbacks are voluntary reductions in the surface water delivered to the receiving basin.[67] In addition to conserving water, this option results in the water-receiver paying less for water and associated transfer costs.[68] Canal lining involves improving water transport canals to reduce the conveyance losses.[69] Both of these methods serve to "create" more water, either through conservation or loss-prevention.

The above examples make it clear that large-scale interbasin transfer can have serious impacts on both sending and receiving areas. Hopefully, the experiences of both India and California can serve to help other areas, like Florida, determine whether or not the impacts of interbasin transfer outweigh the benefits.

III. WATER IN FLORIDA

Florida receives fifty-five inches of rain annually, more than the national average of thirty inches.[70] Northern Florida receives surface and groundwater inflow from several rivers and aquifers

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61. CONN. GEN. STAT. § 22a-369(10) (2011). Oklahoma even grants superior rights to future uses within the basin over rights to transfer water. OKLA STAT. tit. 82, § 1086.1(A)(4) (2011).

62. MASS. GEN. LAWS. ch. 21, § 8(D) (2011).

63. NAT'L RESEARCH COUNCIL, WATER TRANSFERS IN THE WEST: EFFICIENCY, EQUITY, AND THE ENVIRONMENT 78 (1992).

64. *Id.*

65. *Id.*

66. Keith C. Knapp et al., *Water Transfers, Agriculture, and Groundwater Management: A Dynamic Economic Analysis* 3-4 (2000), http://agecon.ucdavis.edu/people/faculty/scott-rozelle/docs/ChinaWater/Current-Research/JEMpaper8-23.pdf.

67. *Id.* at 3-4, 18.

68. *Id.* at 18.

69. *Id.* at 4.

70. Roy R. Carriker, *Florida's Water: Supply, Use, and Public Policy,* FE207 UNIV. OF FLA. INST. OF FOOD & AGRIC. SCI. 1 (2000), *available at* http://edis.ifas.ufl.edu/pdffiles/FE/FE20700.pdf.

that originate in Georgia and Alabama.[71] Just south of Gainesville, however, there exists a hydrologic divide that snakes across the state.[72] North of this line, much water is available from aquifers and surface waters having multi-state basins.[73] To the south of the divide, the peninsular area is completely dependent upon rainfall for fresh water.[74]

The fact that seventy-eight percent of the state's population resides south of the hydrologic divide further exacerbates the problem of distribution.[75] In fact, "[o]f Florida's fifty most populous cities, twenty-two are located in the three southeastern coastal counties of Palm Beach, Dade, and Broward alone."[76] Additionally, eighty percent of Florida's population lives in coastal areas, which have "the most limited water supplies in the state, and are particularly susceptible to problems such as saltwater intrusion."[77] Compounding these problems, a recent water supply report by the Florida Department of Environmental Protection (DEP) predicted that Florida's population will grow fifty-seven percent between 2000 and 2025, from 15.9 million people to around 25 million people.[78]

Paired with this population growth is, intuitively, an increased demand for water—the prediction is that Floridians will use approximately 8.7 billion gallons per day (bgd) in 2025, which is thirty percent more than their 2000 demand of 6.7 bgd.[79] Currently, agriculture is the largest user of water in Florida, but expert predictions forecast that public supply will eclipse agriculture in the near future.[80] The combination of these demographic and hydrologic variations with continued growth proves problematic for water resource allocation in Florida.

A. Water Management in Florida

Five regional Water Management Districts (WMDs) manage water in Florida.[81] The Florida Legislature formally established

71. ELIZABETH PURDUM, FLORIDA'S WATERS: A WATERS RESOURCES MANUAL FROM FLORIDA'S WATER MANAGEMENT DISTRICTS 37 (2002), *available at* http://sofia.usgs.gov/publications/reports/floridawaters/floridawatersresources.pdf.

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.* at 39.

76. Ronald A. Christaldi, *Sharing the Cup: A Proposal for the Allocation of Florida's Water Resources*, 23 FLA. ST. U. L. REV. 1063, 1064 (1996).

77. Frank E. Matthews & Gabriel E. Nieto, *Florida Water Policy: A Twenty-Five Year Mid-Course Correction*, 25 FLA. ST. U. L. REV 365, 366-67 (1998).

78. FLA. DEP'T OF ENVTL. PROT., SUSTAINING OUR WATER RESOURCES 4 (2010) [hereinafter DEP ANNUAL REPORT].

79. *Id.*

80. *Id.* at 7.

81. FLA. STAT. § 373.069 (2011).

the WMDs through the Florida Water Resources Act of 1972 (FWRA).[82] Although you can trace the origins of these districts back to the early 1900s, when Florida began to create single-purpose districts to manage problems as various as irrigation, Everglades drainage, flood control, sewer systems, and mosquito control.[83] The drafters of the 1972 Act creating the WMDs based the Act on a *Model Water Code* for Florida, previously drafted by several water law experts at the University of Florida.[84] The code combined concepts from the different water appropriation practices employed by eastern and western states and developed "a system of administrative regulation combining the strengths and avoiding weaknesses of both common law systems."[85] The Act divided the state into five separate WMDs, with boundary delineations based on watersheds[86] and gave the districts the power to levy *ad valorem* real estate taxes to fund operations.[87] The Department of Natural Resources (or any successor agency)[88] possessed the administrative powers associated with the Act, but the language of the Act encouraged interagency agreements between the state-level agency and the WMDs.[89] Ultimately, this has resulted in DEP delegating not only routine operational tasks, but also important policy-making to the regional districts.[90]

The FWRA uses several regulatory tools to manage Florida's water resources, including minimum flows and levels (MFLs),[91] consumptive use permitting (CUP),[92] and environmental resource permitting (ERP).[93] This comment will not examine ERP because the statutory framework indicates that interbasin transfer projects would be outside the purview of this regulatory mechanism.[94]

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82. *See generally* FLA. STAT. ch. 373 (2011).

83. FLA. STAT. § 373.069 (2011); Christaldi, *supra* note 76, at 1071; Adam B. Munson et al., *Determining Minimum Flows and Levels: The Florida Experience*, J. AM. WATER RESOURCES ASS'N 1, 4 (2005).

84. Christaldi, *supra* note 76, at 1072; FRANK E. MALONEY ET AL., A MODEL WATER CODE WITH COMMENTARY (1972).

85. Christaldi, *supra* note 76, at 1072. The common law systems referred to are prior appropriation and riparian rights. *Id. See also* MALONEY ET AL., *supra* note 84, at v-ix.

86. FLA. STAT. § 373.069 (2011).

87. *Id.* § 373.0697.

88. The legislature consolidated the Department of Natural Resources with the Department of Environmental Regulation in 1993 to form the Department of Environmental Protection, which is the present-day regulatory entity with water management authority. Carriker, *supra* note 70, at 4.

89. FLA. STAT. § 373.309 (2011).

90. Christaldi, *supra* note 76, at 1074.

91. FLA. STAT. § 373.042 (2011).

92. *Id.* §§ 373.203-.250.

93. *Id.* §§ 373.413, 373.414, 373.416.

94. *See id.* § 373.413 (listing the activities to be permitted under this program as "construction or alteration of any stormwater management system, dam, impoundment, reservoir, appurtenant work, or works . . . "); *Id.* § 373.406 (listing exceptions to ERP, including "capture, discharge, and use [of] water . . . ").

The MFL program is one component of the FWRA that has a significant impact on water resource management in the state. The 1972 Act mandated that all WMDs set MFLs for surface and ground waters in their respective watersheds.[95] The statutes defined "minimum flow" as that "limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area."[96] "Minimum levels" has a nearly identical definition with respect to groundwater levels, but it excludes the "or ecology" provision.[97] These statutory definitions vary only slightly from the *Model Water Code*'s provision.[98]

Initially, the WMDs, for the most part, ignored the requirement to set MFLs.[99] In 1997, however, in response to litigation, the legislature passed a series of bills addressing and reforming various water issues, including the MFL program, called the 1997 Water Act.[100] This Act prioritized and provided guidance for the setting of MFLs in Florida.[101] Furthermore, the 1997 legislation represented an important shift in the state's water policy. Previously, the WMDs were responsible for allocating existing water among existing uses (including natural systems), but subsequent to this legislation, the WMDs "would be charged with promoting expansion of the water supply through water resource development[,]" meaning that WMDs had to consider future uses as well.[102] In its 1997 guidance for setting MFLs, the legislature emphasized that it may not be practicable to re-establish historic hydrological conditions in the state's waters, thus the districts should consider current conditions and structural alterations when setting a water body's MFL.[103]

Currently, WMDs allocate water within their district through CUPs.[104] Many people consider CUPs to be one of the most important functions of the WMD, in part because *Florida Statutes* dictate that local governments cannot regulate consumptive use of

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95. *Id.* § 373.042.

96. *Id.* § 373.042(1).

97. *Id.* § 373.042(1)(b).

98. The Model Water Code creates a "harm" rather than "significant harm" standard and applies to "water resources *and* ecology" rather than "water resources *or* ecology." MALONEY ET AL., *supra* note 84, at 9 (emphasis added); FLA. STAT. § 373.042(1) (2011). Statutory interpretation provides that the legislature's choice of a different combination of words indicates that the drafters intended for there to be a distinction between harm and significant harm. Munson et al., *supra* note 83, at 7.

99. Matthews & Nieto, *supra* note 77, at 384.

100. *Id.* at 365.

101. *Id.* at 385; Munson et al., *supra* note 83, at 7.

102. Munson et al., *supra* note 83, at 6; Amendments to section 373.016, *Florida Statutes*, requires consideration of "all existing *and future* reasonable-beneficial uses and natural systems." FLA. STAT. § 373.016 (2011) (emphasis added).

103. FLA. STAT. § 373.0421.

104. *Id.* §§ 373.203-.250.

water—that responsibility belongs to state-level entities (DEP and the WMDs).[105] DEP and the WMDs have the authority to regulate almost all withdrawal or diversion of water within their boundaries.[106] The WMDs can issue CUPs for up to fifty years, but the permits "generally [have] a maximum duration of twenty years."[107] The main goals of the consumptive use allocation system are to "(1) prevent waste, (2) provide certainty to existing users, (3) provide equal rights irrespective of economic power, (4) protect natural resources and (5) provide for future users"[108] by addressing issues of comprehensive planning and resource development. This set of goals stays constant throughout all the districts, although the permitting process differs slightly from district to district.[109]

In order to obtain a CUP, the potential user must satisfy a three-prong test.[110] First, the use must be reasonable-beneficial.[111] A use is reasonable-beneficial if the use of the water is "in such quantity as is necessary for economic and efficient utilization for a purpose and in a manner which is both reasonable and consistent with the public interest."[112] Second, the applicant's proposed use must not interfere with any already existing legal use of water.[113] Third, the use must be "consistent with the public interest."[114] If the requested withdrawal does not meet these conditions, then the district can refuse the request.[115]

These requirements present some potentially interesting interpretations. For example, "in theory [the first] prong could be used to protect in-stream uses, such as recreational, aesthetic, or environmental uses,"[116] even though this has not yet been the case.[117] Additionally, these three prongs create some confusion—the FWRA does not define the third prong ("consistent with the public

105. *Id.* §§ 373.216, 373.217, 373.219. Local governments are prohibited from taking actions regulating consumptive use—the legislature specifies that Part II of the FWRA (*Florida Statutes* §§ 373.203 – .249) is to be the only vehicle for permitting the consumptive use of water. *Id.* § 373.217(2).

106. *Id.* § 373.219(1). This section of the *Florida Statutes* explicitly excludes domestic consumption from permitting requirements. *Id.*

107. Kevin E. Regan, *Balancing Public Water Supply and Adverse Environmental Impacts Under Florida Water Law: From Water Wars Towards Adaptive Management*, 19 J. LAND USE & ENVTL. L. 123, 135 & n.91 (2003).

108. PURDUM, *supra* note 71, at 12.

109. FLA. STAT. § 373.414(9) (2011).

110. *Id.* § 373.223.

111. *Id.* § 373.223(1)(a).

112. *Id.* § 373.019(16).

113. *Id.* § 373.223(1)(b).

114. *Id.* § 373.223(1)(c).

115. *Id.* § 373.223.

116. Regan, *supra* note 107, at 134.

117. *Id.*

interest"), yet it uses the third prong to define the first prong.[118] The *Florida Statutes* and *Florida Administrative Code* do provide some guidance in interpreting whether or not a proposed withdrawal is consistent with the public interest,[119] although some people have criticized these factors as being too vague or generic and not specific enough to the issue of interbasin transfer.[120]

B. Critique of the Current Water Management Structure in Florida

Many people and groups have criticized the current water management structure in Florida. The first of several main criticisms is that the current workings of the WMDs are unfaithful to the structure proposed in *A Model Water Code*, which served as the basis for drafting the FWRA of 1972.[121] The code dictated that regulation would be a function of the state level agency (currently the DEP), when in reality, the regional WMDs are the entities that conduct both regulation and management.[122]

Other major criticisms lie in the combination of the districts' ability to levy *ad valorem* taxes[123] and the perceived lack of oversight of the districts' operations. Some have claimed that this relative autonomy results in the districts not being accountable to the citizens whom they are taxing.[124] Others have criticized the ability of the districts to receive the proceeds of the taxes and then "operate in virtual independence of the Legislature . . . allow[ing] the districts to set their own priorities and to disregard those legislative mandates in which they are not interested."[125] However, overcoming the problems associated with the current taxation structure may prove to be problematic because Florida law prohibits funding of a state-wide water management structure through *ad valorem* taxes—it is unconstitutional for state agencies to levy this kind of tax.[126] Although the WMDs are technically state entities,

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118. MARY JANE ANGELO ET AL., REFORMING THE FLORIDA WATER RESOURCES ACT OF 1972: BEYOND THE FIRST 35 YEARS 6 (2008), *available at* http://www.law.ufl.edu/news/pdf/WaterLawBooklet.pdf.

119. Discussed *infra* notes 135-38.

120. ANGELO ET AL., *supra* note 118, at 5-6.

121. Christaldi, *supra* note 76, at 1076.

122. MALONEY ET AL., *supra* note 84, at 177 (proposing a statute prohibiting anyone from making "any withdrawal, diversion, impoundment, or consumptive use of water without obtaining a permit from the governing board." Considering that this model code was drafted prior to the enactment of the FWRA and creation of WMDs, the authors were clearly referring to the governing board of the state regulatory agency—DEP and its predecessors.); Christaldi, *supra* note 76, at 1076.

123. Christaldi, *supra* note 76, at 1082.

124. *Id.*; Crosby, *supra* note 6, at 160-61.

125. Christaldi, *supra* note 76, at 1082.

126. FLA. CONST. art. VII, § 1(a).

they escape this constitutional prohibition because they are considered "special districts" and are thus constitutionally allowed to levy taxes.[127]

A final criticism lies with the fact that some people believe that WMDs operate in an irresponsible manner.[128] Some parties feel that WMDs issue consumptive use permits somewhat haphazardly, without consideration of such basic factors as the physical limits of their water resources, thus bringing concerns about overuse into the picture.[129] Additionally, some people view the development of relatively autonomous WMDs as resulting in districts and localities believing that they "own the water," when in fact it is a state resource.[130]

C. Florida Law Regarding Interbasin Transfer

Currently, statutes governing water management in Florida highlight the need to investigate local water sources before acquiring external sources of water.[131] According to the legislation, "such sources shall include all naturally occurring water sources and all alternative water sources, including, but not limited to, desalination, conservation, reuse of nonpotable reclaimed water and stormwater, and aquifer storage and recovery."[132] The question then arises as to how strictly water managers should interpret this "local sources first" requirement. If WMDs and courts strictly interpreted this legislation, interbasin transfer would never be an option, because South Florida is surrounded by seawater, which desalination plants could process into potable water. Furthermore, conservation and reuse each have enormous potential to "create" new sources of water.[133]

In addition to the "local sources first" legislation, which speaks indirectly to interbasin transfer, the Florida Legislature has spoken directly about interbasin transfer, as well. Section 373.2295 provides a procedure for obtaining a permit for interbasin transfer of groundwater.[134] With respect to surface water, *Florida Statutes* section 373.223(3) requires the WMD or DEP to consider several

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127. FLA. CONST. art. VII, § 9(a).

128. Christaldi, *supra* note 76, at 1085; COUNCIL OF 100 REPORT, *supra* note 7, at 19.

129. Christaldi, *supra* note 76, at 1085.

130. COUNCIL OF 100 REPORT, *supra* note 7, at 19.

131. FLA. STAT. § 373.016 (2011).

132. *Id.* § 373.016(4)(a).

133. As pointed out later in this paper, returning to 1955 per-capita water use levels would save 630 million gallons per day—returning to those levels would allow Florida to grow by 4.5 million people while still remaining at the same water usage level. 630 million gallons per day divided by 140 gallons per person per day (1955 daily per capita water use) yields 4.5 million people. *Infra* note 260 and accompanying text.

134. FLA. STAT. § 373.2295 (2011).

factors in determining whether or not the transfer is consistent with the public interest.[135] These factors include: "[t]he proximity of the proposed water source to the area of use or application[;]" the availability of closer sources; potential alternatives to transfer, "including, but not limited to, desalination, conservation, reuse of nonpotable reclaimed water and stormwater, and aquifer storage and recovery[;]" environmental impacts upon the source basin as compared with the environmental impacts of the other options; current and future water demands of the sending and receiving areas; and impact upon local governments in the source basin.[136] Furthermore, the DEP has promulgated regulations creating additional considerations to assist in the public interest determination for proposed interbasin transfers:[137]

> The following shall apply to the transfers of surface and ground water where such transfers are regulated pursuant to . . .Chapter 373, [*Florida Statutes*]:
>
> (1) The transfer or use of surface water across District boundaries shall require approval of each involved District. The transfer or use of ground water across District boundaries shall require approval of the District where the withdrawal of ground water occurs.
> (2) In deciding whether the transfer and use of surface water across District boundaries is consistent with the public interest pursuant to Section 373.223, . . . the Districts shall consider the extent to which:
>
> (a) Comprehensive water conservation and reuse programs are implemented and enforced in the area of need;
>
> (b) The major costs, benefits, and environmental impacts have been adequately determined including the impact on both the supplying and receiving areas;
>
> (c) The transfer is an environmentally and economically acceptable method to supply water for the given purpose;
>
> (d) The present and projected water needs of the supplying area are reasonably determined and can be satisfied even if the transfer takes place;
>
> (e) The transfer plan incorporates a regional approach to water supply and distribution including, where appropriate, plans for eventual interconnection of water supply sources; and

135. *Id.* § 373.223(3).
136. *Id.*
137. FLA. ADMIN. CODE r. 62-40.422 (2011).

> (f) The transfer is otherwise consistent with the public interest based upon evidence presented.
> (3) The interdistrict transfer and use of ground water must meet the requirements of Section 373.2295, ...[138]

Thus, these regulations provide criteria that an applicant must satisfy prior to receiving a permit for an interbasin transfer.

The FWRA also prevents local governments from adopting laws that would restrict or eliminate the WMDs' power to authorize interbasin transfer of water.[139] This provision is significant because it removes a local government's ability to meaningfully manage its own water supply for current and future needs if that management conflicts with the WMD's plan for the water.

D. Proposal for Large Scale Interbasin Transfer

Interbasin transfer is not a completely new concept to Florida, but water managers have yet to implement it on a large-scale basis and across significant distances. For example, Brevard County, in the St. Johns River WMD, sought a CUP to withdraw water from a source in Osceola County, which is within the South Florida WMD.[140] Prior to issuance of the permit, Osceola County brought suit to prevent the St. Johns River WMD from considering the permit application because, in the County's view, "an individual water management district, lacked jurisdiction under the [FWRA] to consider a consumptive use permit relating to water to be diverted from outside its boundaries."[141] After examining the relevant statutory and regulatory authority, the Supreme Court of Florida rejected the petitioners' objections, emphasizing that while the FWRA does contemplate the transport of water across district boundaries,[142] the fact that both the sending district and the receiving district must consent to the transfer provides a safeguard against "anarchy among the districts[.]"[143] Interbasin transfer proponents, however, should not view the WMD's and court's approval of this transfer as strong support for larger-scale interbasin transfers, because not only are Brevard and Osceola Counties adjacent

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138. *Id.*

139. FLA. STAT. § 373.223(2) (2011).

140. Osceola Cnty. v. St. Johns River Water Mgmt. Dist., 504 So. 2d 385, 387 (Fla. 1987). Because WMD boundaries were drawn concurrently with watershed boundaries, in Florida, an interbasin transfer is synonymous with an interdistrict transfer. *See* FLA. STAT. § 373.069 (2011).

141. *Osceola Cnty.*, 504 So. 2d at 387.

142. *Id.*; FLA. STAT. § 373.223(2) (2011); FLA. ADMIN. CODE r. 62-40.422 (2011).

143. *Osceola Cnty.*, 504 So. 2d at 388.

to each other, but many parties objected to this relatively small-scale interbasin transfer.[144]

The Florida Council of 100 has expressed dissatisfaction with the current management and functionality of the regional WMDs.[145] According to its mission statement, the Council is a private, non-profit, and non-partisan advisory board established in 1961 that works closely with all branches of state government in order to advise and make recommendations "to promote the economic growth of Florida and to improve the economic well-being and quality of life of its citizens."[146] In September 2003, the Council released a report that evaluated the existing structure and power of the WMDs and how they planned to provide for future water demand in Florida.[147] In order to understand these issues, the Council put together a "task force to study water management issues and problems in Florida,"[148] which researched Florida's statutes, evaluated the operations and performance of the individual WMDs, interviewed citizens and stakeholders involved in local and state water management, and observed the water management structures in other states.[149] This research revealed that in order to keep up with population growth, by the year 2020, "Florida will need 9.1 billion gallons of water per day, a 26.4 percent increase from [2003]."[150] The Council expressed concerns that the management structure enacted in the FWRA is no longer relevant because Florida's population is twice what it was when the Act passed in 1972.[151] Additionally, the omission of a state water board to monitor the WMDs has led to "increas[ed] authority and responsibility for the water management districts, whose mission and role have changed dramatically since 1972."[152]

To conclude the report, the Council made a series of recommendations to assist in improving the structure of water management in Florida.[153] The first and last suggestions are the most radical and involve developing a "Water Supply Commission, with a statewide perspective, to ensure an adequate water supply to sustain the environment and accommodate forecasted population growth" and "determin[ing] [the] practicality of a statewide water distribution system that ensures all safeguards for future growth

144. *Id.* at 386-87.
145. *See generally* COUNCIL OF 100 REPORT, *supra* note 7.
146. *Id.* at 2.
147. *Id.*
148. *Id.* at 5.
149. *Id.* at 5-6.
150. *Id.* at 9.
151. *Id.* at 12.
152. *Id.* at 12-13.
153. *Id.* at 19-22.

and protection of the environment."[154] The proposed commission would contain at least seven Governor-appointed members, representative of every WMD, and its duties would include: "redefining the water supply relationship among the state, districts, and localities . . . exercising general supervisory authority over the water management districts for water supply planning . . . resolving conflicts relating to water supply . . . [and] making recommendations to the Governor and cabinet."[155]

These recommendations are the most significant portions of the Council's report, because, essentially, their main purpose is to remove power from the regional WMDs and shift it to a central authority with state-minded goals, which would more easily allow for the development and implementation of a system to transfer water from water-rich to water-poor areas. This shift in authority, likely intended to obviate the need for pre-transfer consent from both the sending and receiving districts, would not be viable without an amendment to the *Florida Administrative Code* removing the consent requirement.[156] As with any reorganization of power, this proposal carries many consequences that the Council's report does not address.[157] Additionally, any massive water transfer project will likely cause significant ecological impacts, because the hydrology of the source area will change.

In its report, the Council suggests reducing the "local sources first" legislation[158] to merely a "resource-based test as part of the regional water supply plans" in order to determine whether or not inter-district transfer is an economically realistic option.[159] Its proposed test consists of three prongs, which examine whether the transfer is more cost effective than developing alternative sources, whether the transfer is mutually beneficial, and if "there is no harm to the environment or the potential sender's needs."[160] If the proposed transfer meets these criteria, then the district should include transfer as a feasible possibility for its water supply plan. [161]

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154. *Id.* at 20, 23.

155. *Id.* at 20-21.

156. The *Florida Administrative Code* currently requires that "[t]he transfer or use of surface water across District boundaries shall require approval of each involved District." FLA. ADMIN. CODE r. 62-40.422 (2011).

157. Environmental consequences, local water management consequences, and growth management consequences are some examples–these are examined throughout the rest of the comment.

158. FLA. STAT. § 373.016(4)(a) (2011).

159. COUNCIL OF 100 REPORT, *supra* note 7, at 19.

160. *Id.*

161. *Id.*

E. Impacts of Interbasin Transfer

A telling omission from the Council's report is scientific data to support its assertion that "water distribution from water-rich areas to water-poor areas seems to make good environmental . . . sense."[162] However, scientists have conducted such research in at least one of the five WMDs.[163] The Suwannee River Water Management District (SRWMD) covers one of the least populated areas of Florida and contains "the second largest river in Florida in terms of average discharge."[164] Thus, some people consider this river basin to be a likely and ideal candidate for water transfer to parched South Florida. A 2002 report from the United States Geological Survey (USGS) examined the relationship between the flows of the Suwannee and the surrounding floodplain on the lower Suwannee River.[165] One of the purposes of this study was to assist with setting the MFLs of the lower Suwannee Basin,[166] and part of the USGS's analysis involved predicting what impacts reduced flows would have on the river and surrounding area.[167]

According to the USGS, "[i]ncreased consumption of water, supplied primarily from ground-water sources, could reduce ground-water discharge to the Suwannee River and decrease river flows[,] [which] in turn could affect hydrologic conditions in the forested floodplain."[168] Hydrologic conditions are major determinants of many attributes of floodplain areas, including "forest composition, soil characteristics, biogeochemical processes, and fish and wildlife habitat characteristics."[169] In changing the hydrologic conditions through flow reductions, conditions may be more suitable for the invasion of exotic species, which could out-compete existing communities.[170] For example, Japanese climbing fern is an exotic species present in the area of research and is highly tolerant of extreme hydrological conditions.[171] This species "has been observed to form tangled masses covering shrubs and . . . smothering

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162. *Id.* at 23.

163. HELEN M. LIGHT ET AL., U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER, SER. NO. 1656-A, HYDROLOGY, VEGETATION, AND SOILS OF RIVERINE AND TIDAL FLOODPLAIN FORESTS OF THE LOWER SUWANNEE RIVER, FLORIDA, AND POTENTIAL IMPACTS OF FLOW REDUCTIONS, (2002) [hereinafter, USGS REPORT].

164. *Id.* at 1; COUNCIL OF 100 REPORT, *supra* note 7, at 25.

165. USGS REPORT, *supra* note 163.

166. Interview with Helen Light, former USGS scientist, in Tallahassee, Fla. (Oct. 17, 2010).

167. USGS REPORT, *supra* note 163, at I.

168. *Id.* at 74.

169. *Id.*

170. *Id.*

171. *Id.* at 86.

seedlings of potential overstory tree species."[172] In addition, flow reduction could also result in decreased water filtration capacity because of decreased wetland area, greater vulnerability to human disturbance resulting from wetland conversion to upland forest, and loss of habitat for floodplain-dependent fauna.[173] Drastic reductions in flow have the potential to result in loss of these ecosystem services, which provide a substantial economic and environmental benefit annually.[174]

To help put this information into perspective, the USGS scientists examined several hypothetical flow reductions in their report, the largest of which is 2000 cubic feet per second (cfs), which translates into 1.3 billion gallons per day.[175] This level of withdrawal would seriously affect nearly 2500 hectares of forest, which equates to almost eighteen percent of the total forest area in the basin, with the most impacts felt farther upstream.[176] During the driest period of the year, flows on the Suwannee River generally drop to between 4000 and 5000 cfs.[177] Universally, water demand is greater during drier months and in South Florida this is especially the case because the region is entirely dependent upon rainfall—it has no other sources to supplement its supply when rain is not as plentiful.[178] If water managers implement a 2000 cfs withdrawal, that could equate to over fifty percent of the river's flow during drought.[179] In order to economically justify the substantial costs of constructing a mechanism for transferring water, the quantity of water withdrawn for transfer would have to be more than insignificant.[180] Thus, economics dictate greater rather than less withdrawals from the river, which would result in a lower in-stream flow, especially in times of drought.

In addition to affecting the surrounding forest, reduced in-stream flows have a negative impact on the fauna of the ecosystem. Alterations in streamflow, which can impact the timing and duration of floods, "can eliminate spawning or migratory cues for

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172. *Id.*

173. *Id.* at 87.

174. Economists have estimated that on a global level, the annual value of ecosystem services is approximately twice that of global gross national product. Robert Costanza et al., *The Value of the World's Ecosystem Services and Natural Capital*, 387 NATURE 253, 253 (1997).

175. USGS REPORT, *supra* note 163, at 83 tbl. 24.

176. *Id.*

177. *Id.* at 26-27.

178. PURDUM, *supra* note 71, at 37-38.

179. The ninety percent exceedance flow data in table 8 represents drought – the river's flow is only lower than this ten percent of the time. The flow for this value is 3,410 cfs. USGS REPORT, *supra* note 163, at 27.

180. *See supra* notes 42-47.

fish, or reduce access to spawning or nursery areas."[181] Economically, fishing is an enormously important enterprise in the United States and Florida—in the United States in 2006, thirty million people spent forty-two billion dollars on fishing-related expenses.[182] Of that forty-two billion, recreators spent over four billion dollars on fishing in Florida, which represents the most money spent in any state in the country.[183] If interbasin transfer impacts the spawning of game fish because of reduced in-stream flow, Florida may lose out on some of the substantial economic benefit of sport fishing.

IV. PROPOSALS FOR FLORIDA'S SITUATION AND LESSONS LEARNED

Although water resource management has become and remains a priority in Florida and Florida is essentially setting the curve when it comes to comprehensive water resource management,[184] the legal, regulatory, and management structure still has many fundamental problems if the goal is to ensure a sustainable water supply for both environmental health and human use. Furthermore, it is important to integrate lessons learned from the instances of interbasin transfer discussed in Part II in order to ensure that the same consequences do not play out in Florida.

A. Legal and Regulatory Proposals

1. Basin of Origin Legislation

Policymakers can enact several legal and regulatory adjustments to render interbasin transfer more difficult, thus avoiding its negative impacts. One idea, borrowed from California and other states, is basin of origin protection laws. The Florida Legislature could pass laws ensuring greater protection of water resources in the basin of origin that would cover a wide range of potential impacts. Environmentally speaking, these laws should ensure that

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181. Brian D. Richter et al., *How Much Water Does a River Need?*, 37 FRESHWATER BIOLOGY 231, 231-32 (1997).

182. U.S. DEP'T OF THE INTERIOR, FISH & WILDLIFE SERV., 2006 NATIONAL SURVEY OF FISHING, HUNTING, AND WILDLIFE-ASSOCIATED RECREATION 8 (2006), *available at* http://www.census.gov/prod/2008pubs/fhw06-nat.pdf.

183. *Id.* at 111. Tourists and residents alike spent $4.3 billion on fishing in Florida in 2006, which was over $1 billion more than the next highest state: Texas. *Id.*

184. Florida developed the model of water management based on a hybrid between Eastern water law (riparian rights) and Western water law (prior appropriation). PURDUM, *supra* note 71, at 1. Many view Florida's structure as "one of the most comprehensive and progressive water regulatory systems in the nation." ANGELO ET AL., *supra* note 118, at 1.

transfer of water does not cause serious degradation because of decreased flows in the sending basin. In addition, it is important to include language protecting against sudden and drastic degradation as well as degradation caused by cumulative impacts. Procedurally, these laws should ensure that both the sending and receiving districts have equal negotiating power and that decision-makers conduct everything in the open with opportunities for public input (thus avoiding the "Owens Valley syndrome").[185] Economically, local dollars from the receiving area should be the sole source of funding for these projects—it hardly seems just for citizens of the sending region to be funding these projects through their state or local tax dollars. Finally, these laws should have a clear mechanism for stopping the transfer at any point in the future should the sending basin determine that it needs the water resource, be it for environmental health, development, or any other reason.[186]

2. Change "Significant Harm" to "Harm" for MFLs

Another proposal involves only a minor adjustment of statutory language, yet it could potentially have a dramatic beneficial effect for Florida's water resources: namely, removing the "significant" modifier from the harm standard in the MFL provision.[187] Currently, when the WMDs are considering where to set the MFL, they set it only to avoid "significant" harm.[188] However, detrimental impacts resulting from changes in flow do not always occur at a tipping point—with even minor flow reductions, impacts can begin to manifest immediately. For example, research on the Suwannee River examining impacts from reductions in flow showed that each incremental flow reduction is paired with a similarly incremental estimated change in forest type.[189] Thus, if a river or lake is low, but still above the established minimum flow or level, negative consequences can still manifest.[190] Furthermore,

185. *See supra* note 36 and accompanying text.

186. Connecticut's law on interbasin transfer requires the applicant to file a report including, the

> effect of the transfer on present and future water uses in the proposed donor basin; . . . a plan for meeting water supply needs and demands in the donor basin for a minimum of twenty-five years; and . . . the alternative solutions to the water supply . . . problem including comparative cost analysis of the proposed transfer relative to alternative measures.

CONN. GEN. STAT. § 22a-369(10) (2011).

187. FLA. STAT. § 373.042 (2011).

188. *Id.*

189. *See* USGS REPORT, *supra* note 163, at 83 tbl. 24.

190. Although MFLs have not been established by the State of Florida for the Apalachicola River, this system has suffered extensive damage caused when flows were kept

while each incremental impact itself might not cause significant harm, cumulatively, the impacts can be devastating.[191] For example, cumulative ground water withdrawals, primarily from mining operations and agricultural irrigation, have lowered the Floridan Aquifer in the Upper Peace River basin by thirty to forty feet, causing large decreases in springflow and streamflow in the region.[192] Finally, drought is a concern: if WMDs apply the significant harm standard and keep ground and surface waters constantly at levels at or just above the MFLs, even a minor drought could drop flows or levels to dangerous lows and the surrounding ecosystem could suffer serious damage.[193]

With regards to the actual MFL itself, *Florida Statutes* do allow for seasonal variability in the MFL but do not require it.[194] Often, however, a single uniform MFL for the entire year may be inadequate to protect the seasonal variability critical to support most riverine biological processes.[195]

In contrast, a stronger harm standard could result in the more effective use of the variable range of flows approach to setting MFLs; water managers used this approach when establishing the Wekiva River MFLs, proving that this approach is possible.[196] A harm standard for MFLs (as opposed to a significant harm standard) would allow for greater consideration of the impacts upon the water resource, because the standard is more protective of the water body. Additionally, allowing for more conservative manage-

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at the Corps-established minimum flow of 5,000 cubic feet per second for much longer periods during the last ten to fifteen years than ever occurred under natural conditions in the historical record. Damage included a massive die-off of an endangered mussel species in 2006-2007. U.S. DEP'T OF THE INTERIOR, FISH AND WILDLIFE SERV., BIOLOGICAL OPINION ON THE U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT, REVISED INTERIM OPERATING PLAN FOR JIM WOODRUFF DAM AND THE ASSOCIATED RELEASES TO THE APALACHICOLA RIVER 66 (2008), *available at* http://www.fws.gov/southeast/drought/pdf/BO for RIOP 6-1-2008.pdf.

191. Florida courts have not addressed cumulative impacts in the context of water transfer, but they have addressed the consideration of individual versus cumulative impacts in the context of a permit for a phosphate mine in *Peace River/Manasota Reg'l Water Supply Auth. v. IMC Phosphates Co.*, 18 So. 3d 1079 (Fla. 2d DCA 2009). The court held that the statutory authority at issue in this case allowed DEP "to examine each project's impacts in isolation . . . [and never required the agency] to engage in a cumulative impacts analysis, regardless of the fact that each of these incremental impacts may be adding up to ultimately have a significant adverse impact across the basin as a whole." *Id.* at 1088-89. It is troubling, but not unrealistic, to think that the court might reach the same result with respect to water transfer.

192. SW. FLA. WATER MGMT. DIST., UPPER PEACE RIVER: AN ANALYSIS OF MINIMUM FLOWS AND LEVELS, DRAFT REPORT 3-26, 3-30 to -32 (2002), *available at* http://www.swfwmd.state.fl.us/projects/mfl/reports/upperpeacemfl1.pdf.

193. *See supra* note 189.

194. FLA. STAT. § 373.042(b) (2011).

195. *See* Richter et al., *supra* note 181, at 234.

196. R.B. HUPALO ET AL., ST. JOHNS RIVER WATER MGMT. DIST., PUB. SJ94-1, ESTABLISHMENT OF MINIMUM FLOWS AND LEVELS FOR THE WEKIVA RIVER SYSTEM 68 (1994) (demonstrating the St. Johns River WMD's use of a variable flow approach for setting MFLs in the Wekiva River Basin).

ment of MFLs could create, in essence, a buffer for the water resource so that in the event of a drought, more water would remain in-stream for purposes of protecting the resource itself.

Mandating that WMDs take this approach to MFLs would also make interbasin transfer less of a viable option. Because the MFL would often be higher under this standard, large withdrawals would be more likely to result in the water body falling below the MFL. The FWRA prohibits that result.[197] Thus, setting the MFL at a higher level (and thus closer to natural conditions) can help to ensure the sustainability and viability of the resource farther into the future.[198]

In order to make any withdrawal viable under the "harm" standard, the regulatory entity would have to allow an exception for *de minimis* harms to the water body. However, regulators should be very careful in how they define *de minimis* and should be required to pair the determination of what is considered *de minimis* with an analysis of cumulative impacts. It is imperative that cumulative impacts become an integral part of the analysis or else the "harm" standard will not effectively protect the water body. Although the Florida Second District Court of Appeal held in *Peace River/Manasota Regional Water Supply Authority v. IMC Phosphates Co.* that DEP was not required by the statutory language to consider cumulative impacts, it expressed reservations about the long term consequences of such a short-sighted approach to harm analysis.[199] Policymakers should seek to amend regulations and statutes to avoid the approach that the court warned about.

One possible way to approach the setting of MFLs, as mentioned above, is to use a variable approach to set the MFL for the water body. Water managers could base the targeted MFL on the natural and seasonal variation of the flow or level of the water body. This is called the "Range of Variability Approach" and it is designed to overcome the shortcomings of the current methods used to set flow-based management targets by identifying "annual river management targets based upon a comprehensive statistical characterization of ecologically relevant flow regime characteristics."[200] Conventional approaches are generally too narrow-minded for several reasons. They focus on flow level to the exclusion of frequency or timing, they monitor only a limited number of ecological processes and species, and they attempt to apply data and models from one river or other water body to another, different river or

197. *See* FLA. STAT. § 373.042 (2011).
198. *See* Richter et al., *supra* note 181, at 232.
199. 18 So. 3d 1079, 1088-89 (Fla. 2d DCA 2009).
200. Richter et al., *supra* note 181, at 235.

other water body.[201] Essentially, the argument is that setting MFLs with a wider consideration of more factors (such as frequency and duration of target flows, monitoring for more than just endangered species or charismatic megafauna, and working flexibility into the system based on seasonal norms) could help the WMDs to set these flows and levels in such a way that harm avoidance would be built more extensively into the permitting system.[202]

3. Create a Uniform Definition of "Public Interest"

Another language-based change that the legislature should pursue is adopting a uniform definition of "public interest."[203] Neither the legislature nor the relevant regulatory bodies have adopted a universal definition of what it means for a water-related activity to be "in the public interest," resulting in "decision-makers . . . conflat[ing] the public interest test with the reasonable-beneficial use test, or . . . ignor[ing] it altogether."[204] In fact, one district, the St. Johns River WMD, has adopted its own definition of "public interest" as it applies to CUPs.[205] The St. Johns River WMD defines public interest as "those rights and claims on behalf of the people in general."[206] It further provides that in making the public interest determination, "the Board will consider whether an existing or proposed use is beneficial or detrimental to the overall collective well-being of the people or to the water resources in the area, the District and the State."[207] In one geographic area, the WMD has affirmed that protection of the water resources from harm is not only a consideration, but that "[t]he public interest *requires* . . . [it]."[208] As an example, the St. Johns River WMD provides that a use resulting in significant saline intrusion could be "inconsistent with the public interest."[209]

Although the St. Johns River WMD's definition of "public harm" is a good one because it requires consideration of both impacts on the public at large and on the environment, allowing each district to adopt its own definition in a piecemeal fashion could create inconsistency in water management, which is one of the

201. *Id.* at 234-35.

202. *See id.* at 236-45.

203. FLA. STAT. § 373.223(1)(c) (2011).

204. ANGELO ET AL., *supra* note 118, at 10.

205. *Id.* at 7.

206. ST. JOHNS RIVER WATER MGMT. DIST., CONSUMPTIVE USES OF WATER APPLICANT'S HANDBOOK § 9.3 (2010), *available at* http://www.sjrwmd.com/handbooks/pdfs/cuphdbk.pdf.

207. *Id.*

208. *Id.* § 12.1.2(a) (emphasis added). Note the use of "harm," rather than "significant harm."

209. *Id.* § 9.4.1(a).

problems that India has experienced and continues to experience.[210] Adopting a clear definition of "public interest" could help to create uniform state-wide application of "in the public interest" as well as allow the third prong of the test for receiving a CUP to have its own significance, independent of the first prong. The definition should include mandatory considerations for the public at large, the health and viability of the water resource, the impact on adjacent land uses, and should also allow balancing so that significant impacts in any one of these areas could outweigh benefits realized in others.

4. Thoroughly Integrate Water Management, Land Use Planning, and Growth Management

One proposal that may require a more drastic change to the current water management structure involves the integration of water management, land use planning, and growth management. Opponents of interbasin transfer argue that policymakers should not consider interbasin transfer as an option until we take a serious and more drastic approach to growth management; otherwise, we will not actually be solving the problem of water supply and management, but instead delaying the inevitable and passing the problem on to future generations.

Growth management legislation adopted in 1985 created the state comprehensive plan, which was designed to "provide long-range policy guidance for the orderly social, economic, and physical growth of the state."[211] One of the policies adopted requires the state to "assure the availability of an adequate supply of water for all competing uses deemed reasonable and beneficial[.]"[212] Another element of the 1985 legislation extended the comprehensive planning requirement to counties and municipalities, requiring them to develop and adopt their own comprehensive plan as well.[213] Similar to the state requirement, the legislation requires localities to include water supply planning in their comprehensive plan[214] and encourages each locality to coordinate with the relevant WMD, as well as adjacent and nearby counties and municipalities, during plan development.[215] The purpose of the comprehensive plan is to guide growth and development according to a preconceived strate-

210. *See* sources cited *supra* notes 34-35.
211. FLA. STAT. § 187.101(1) (2011).
212. *Id.* § 187.201(7)(a).
213. *Id.* § 163.3167(2).
214. *Id.* § 163.3177(6)(a).
215. *Id.* § 163.3177(4)(a).

gy, thus, all development in the locality should be consistent with the comprehensive plan.[216]

In addition to the state and local comprehensive plans addressing water, the FWRA mandates that the DEP develop the Florida Water Plan, which addresses water quantity and quality within the state, as well as the future direction of water resource management in the state.[217] The DEP is required to include and consider water management plans from each WMD as part of its state water plan.[218] The Act requires that each WMD prepare a district water management plan, to be updated every five years, that comprehensively addresses water within each district.[219] The plan should "be based on at least a 20-year planning period" and should, among other things:[220] enumerate the methodologies the WMD used for setting MFLs;[221] identify the water supply planning region(s) that cover the entire WMD;[222] assess each water supply planning region's water supply in terms of "[e]xisting legal uses, reasonably anticipated future needs, and existing and reasonably anticipated sources of water and conservation efforts;"[223] and determine "[w]hether existing and reasonably anticipated sources of water and conservation efforts are adequate to supply water for all existing legal uses and reasonably anticipated future needs and to sustain the water resources and related natural systems."[224]

Furthermore, the WMD must:

> [c]onduct water supply planning for any water supply planning region . . . identified in the appropriate district water supply plan . . . *where it determines that existing sources of water are not adequate to supply water* for all existing and future reasonable-beneficial uses and to sustain the water resources and related natural systems for the [twenty-year] planning period.[225]

Thus, if WMDs predict that existing water supplies will not be sufficient to meet future needs (within the twenty-year planning hori-

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216. FLA. DEP'T OF CMTY. AFFAIRS, COMPREHENSIVE PLANNING IN FLORIDA: A GUIDEBOOK FOR FRONT PORCH FLORIDA COMMUNITIES 5 (2006).
217. FLA. STAT. § 373.036(1) (2011).
218. *Id.* § 373.036(1)(c).
219. *Id.* § 373.036(2).
220. *Id.*
221. *Id.* § 373.036(2)(b)(1).
222. *Id.* § 373.036(2)(b)(2).
223. *Id.* § 373.036(2)(b)(4)(a).
224. *Id.* § 373.036(2)(b)(4)(b).
225. *Id.* § 373.709(1) (emphasis added).

zon), the FWRA requires the WMD to engage in water supply planning to address and meet those needs.[226]

Although it is commendable that the State has mandated water supply planning at every level of government, one problem with Florida's approach is that the state's "growth management and water management have been governed by different laws, by different regulatory agencies, and with different policy objectives[,]" making it very difficult to have a cohesive and united approach.[227] Furthermore, although legislation requires municipalities to incorporate water resource availability into comprehensive planning,[228] municipalities have paid this requirement lip service, at best.[229]

Thus, it is important to integrate water resource management with comprehensive land use planning to make the approach more forward-looking and proactive as opposed to reactive and piecemeal. Growth management is an essential component of water resource protection—lack of it has gotten us into the predicament of water shortages to begin with.[230] If it were not for the exponentially increasing population of the State of Florida, taking place mostly in the southern areas, there would likely be no water shortage.[231] Areas experiencing water-shortage-related impacts are still growing. For example, "[w]ater use in the Tampa Bay area has [already] dried up lakes and wetlands[,]"[232] yet one indicator of growth—the area of impervious surfaces—increased three-fold in the region between 1991 and 2002.[233]

One group of scholars proposes integrating the WMDs' water supply plans into the local governments' comprehensive plan and requiring development permit applicants to first establish consistency with the local governments' comprehensive plan prior to even having access to the WMD water permitting process.[234] Part of the proposal involves linking the public interest requirement in water permitting to the local comprehensive plan by creating the presumption that any proposed use is *per se* contrary to the public

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226. *Id.* § 373.709.

227. ANGELO ET AL., *supra* note 118, at 29.

228. FLA. STAT. § 163.3167(13) (2011).

229. Because of the nature of the planning and permitting process, minimization and mitigation of environmental impacts are the main focus here—"[t]he [water management planning] burden has been passed on to the permitting agency, rather than dealt with as a land use and natural resource protection policy." ANGELO ET AL., *supra* note 118, at 33.

230. Debbie Salamone, *A Drying Oasis*, ORLANDO SENTINEL, Mar. 3, 2002, at A1.

231. *Id.*

232. Bruce Ritchie, *Florida Council Suggests Setup of Statewide Water Board*, TALLAHASSEE DEMOCRAT, Sept. 26, 2003, at 1A.

233. George Xian & Mike Crane, *Assessments of Urban Growth in the Tampa Bay Watershed Using Remote Sensing Data*, 97 REMOTE SENSING ENV'T 203, 203 (2005).

234. ANGELO ET AL., *supra* note 118, at 34-35.

interest if it is inconsistent with the local comprehensive plan.[235] Requiring developers to first comply with local government comprehensive plans would allow local governments to more effectively manage their water resources and plan for future demand, because they would have a greater degree of autonomy over use.

In the context of interbasin transfer, this new requirement would allow a local government to manage and meet its own water demands prior to allowing other local or regional governments access to the water. Restricting the availability of interbasin transfer as an option may help to force highly populated areas to better manage growth by incentivizing local solutions to water supply. Furthermore, requiring developers to go through the local government first will lend more legitimacy to the local government's plan.

Currently, developers and other water users can circumvent local water management by going to the WMD, and this creates a disincentive for the local government to develop a realistic plan and enforce it. In *Marion County v. Greene*, the county determined that Greene's proposal to withdraw groundwater for drinking water bottling was contrary to the public interest and "inconsistent with Marion County's interests, plans, and regulations."[236] The WMD, however, conducted its own public interest analysis and decided to grant the permit, and the Fifth District Court of Appeals affirmed the WMD's superseding of the County's determination.[237] Conversely, if local governments had a greater degree of autonomy over water within their own political boundaries, they could more realistically and effectively plan for current and future demand.

Ultimately, however, given a growing concern with sustainability at all levels of society,[238] it is irresponsible to allow such a thing as interbasin transfer, especially in Florida. Policymakers must place stronger emphasis on the existing requirement that every new development proposal provide a detailed justification for where its water supply will come from and why it will not place an additional undue strain on those water resources.[239] Additionally, the regulatory agencies and courts should more strictly interpret the local sources first provision of the FWRA.[240]

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235. *Id.* at 5.

236. Marion Cnty. v. Greene, 5 So. 3d 775, 777 (Fla. 5th DCA 2009).

237. *Id.*

238. *See e.g.*, Exec. Order No. 13,514, 74 Fed. Reg. 52,117 (2009) (setting sustainability goals for federal agencies).

239. FLA. STAT. § 163.3180(2)(a) (2011). This is known as concurrency.

240. *Id.* § 373.016(4)(a).

B. Alternative Sources of Water

1. Desalination

Many alternatives to interbasin transfer exist to provide for new sources of water within Florida's WMDs.[241] One alternative, which is currently in practice and has experienced some success, is seawater desalination, which "is the process by which sea or brackish water is processed to remove minerals, leaving fresh, potable water."[242] While desalination would seem to open the door for a nearly endless new supply of drinking water, this alternative does have its downside: cost.[243] Seawater desalination is a very expensive process, and also requires large amounts of energy, which further extends Florida's dependence upon fossil fuels.[244] Critics of this option continue to argue that while it would provide a new source of water, the amount "created" would not alone be enough to fully provide for projected use for the year 2020, and the great expense would most "likely be passed directly to the users of the water."[245]

Although desalination has its drawbacks, we should not abandon it—innovation can take us a long way. For example, converting desalination plants to run solely off of renewable energy is one example of an option to overcome one of desalination's major problems.[246] Commercial desalination is done in one of two ways: through phase-change[247] or through reverse osmosis,[248] and solar energy can be used to drive either one of these processes.[249] To date, solar desalination plants have been constructed in the Caribbean Islands, India, Greece, and Portugal.[250]

2. Reclamation and Reuse

Other possible alternatives for preventing a water shortage are storm and waste water reclamation.[251] Grey water is reclaimed

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241. Christaldi, *supra* note 76, at 1085-86.

242. *Id.* at 1086.

243. *Id.* at 1086.

244. *Id.* at 1087.

245. *Id.*

246. Soteris A. Kalogirou, *Seawater Desalination Using Renewable Energy Sources*, 31 PROGRESS IN ENERGY & COMBUSTION SCI. 242, 246 (2005).

247. Essentially this involves generation of vapor similar to the way that Mother Nature produces freshwater rain from the oceans. *Id.* at 249.

248. Uses a series of membranes to remove the salinity from the water. *Id.*

249. *Id.*

250. *Id.* at 248.

251. Craig Pittman, *Counties Clash over Last Cheap Fla. Water*, ST. PETERSBURG TIMES, Apr. 10, 2006, at 1A.

water that is minimally treated and is useful for irrigation purposes such as landscaping and plant growth, as well as inside for toilets.[252] There is certainly no need to use drinking-quality water for these purposes, and reuse of reclaimed water not only reduces existing use of water but also saves money in the treatment processes.[253]

Reuse has become a viable option in Florida. For example, Collier County, in southwest Florida, "reuses every drop of its treated sewage for irrigation and other uses, [and] Miami-Dade reuses [five] percent."[254] The Miami-Dade area has requested permission to pump an additional 100 million gallons a day on top of the 346 million it is currently pumping; it could probably benefit greatly from the reuse of grey water.[255]

Another branch of the reclamation proposal involves rainwater harvesting, which is "the small-scale concentration, collection, storage, and use of rainwater runoff for productive purposes[,]" such as domestic, industrial, or agricultural uses.[256] Rainwater harvesting is used all over the world and has been since the dawn of human existence.[257] In the past few decades, farmers have begun to re-discover the value of capturing rainwater for irrigation purposes.[258] As much precipitation as Florida gets annually, and as large as Florida's agricultural sector is, it only seems logical that at a minimum we would capture and use some of the rain for non-potable purposes.

3. Water Conservation

Routine use of simple conservation practices is the most important potential source of "new" water.[259] "Per-person water use has climbed from less than 140 gallons a day in 1955 to 174 gallons a day now"[260] in Florida, proving that it is possible to sustain a normal lifestyle while consuming significantly less water. If water managers educate the public and other users of water on ways

252. Odeh R. Al-Jayyousi, *Greywater Reuse: Toward Sustainable Water Management*, 156 DESALINATION 181, 182, 187 (2003).

253. *Id.* at 182.

254. Pittman, *supra* note 251.

255. *Id.*

256. Jean-Marc Mwenge Kahinda et al., *Domestic Rainwater Harvesting to Improve Water Supply in Rural South Africa*, 32 PHYSICS & CHEMISTRY OF THE EARTH 1050, 1050 (2007).

257. Deep Narayan Pandey et al., *Rainwater Harvesting as an Adaptation to Climate Change*, 85 CURRENT SCI. 46, 48-52 (2003).

258. Fengrui Li et al., *Rainwater Harvesting Agriculture: An Integrated System for Water Management on Rainfed Land in China's Semiarid Areas*, 29 AMBIO 477, 477 (2000).

259. *See* Pittman, *supra* note 251.

260. *Id.*

to conserve water in their daily routine without making any major sacrifices, we can save large amounts of water.[261] Another way to encourage conservation is by raising the price of water, especially for the large-scale users.[262]

If each resident of Florida could return to the usage rates in 1955, that would result in a saving of almost 630 million gallons of water per day.[263] Some simple water conservation measures that stand to significantly reduce per capita water use are: installing low flush toilets (savings of 10.5 gallons per capita daily),[264] installing low flow showerheads (savings of 5.5 gallons per capita daily),[265] and using high efficiency washing machines (savings of 5.6 gallons per capita daily).[266] While this is a relatively small portion of Florida's daily use of several billion gallons per day,[267] we should recognize that any amount of water conserved is less water that we must provide for the future from new sources. If citizens, agriculture, and municipalities can work together to eliminate wasteful use of water, we have the potential to significantly reduce the daily use of water in Florida. Conservation would be an especially effective measure in places like Orange County, which is home to Orlando, and is experiencing water shortage problems because of population pressures.[268] Experts estimate that approximately "644-million gallons a day is still available underground—but that's 200-million gallons less than growth demands."[269]

Although conservation will not solve all of our water woes, it could reduce the burden on Florida's rivers and aquifers and also reduce the attractiveness of interbasin transfers. Implementation of comprehensive conservation practices could also serve to carry us to water usage rates below those from 1950. Indeed, countries

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261. *See infra* notes 264-66.

262. A study found that "residential water demand is relatively price-elastic[,]" meaning that price changes cause proportionately larger changes in demand. Jasper M. Dalhuisen et al., *Price and Income Elasticities of Residential Water Demand: A Meta-Analysis*, 79 LAND ECON. 292, 306 (2003).

263. The discrepancy between per-capita water use in 1955 and today is thirty-four gallons per day. Multiply that times the population of Florida (18.5 million people as of July 2009) and the result is 629 million gallons per day. U.S. CENSUS BUREAU, ANNUAL ESTIMATES OF THE RESIDENT POPULATION FOR THE UNITED STATES, REGIONS, STATES, AND PUERTO RICO: APRIL 1, 2000 TO JULY 1, 2009 (2009), *available at* http://www.census.gov/popest/data/state/totals/2009/tables/NST-EST2009-01.xls.

264. GDS ASSOCIATES, TEXAS WATER DEVELOPMENT BOARD STUDY 3 (2001), *available at* http://www.twdb.state.tx.us/rwpg/rpgm_rpts/2001483390.pdf.

265. *Id.* at 5-6.

266. *Id.* at 6-7.

267. DEP ANNUAL REPORT, *supra* note 78, at 4.

268. Pittman, *supra* note 251.

269. *Id.*

such as China, India, and Japan have a "water footprint" that is less than half that of the United States.[270]

IV. CONCLUSION

As the Council of 100 noted it its report, Mother Nature has blessed Florida with a plentitude of water; the only impairment lies in the unequal distribution of the "abundant" fresh water.[271] However, water distribution was not always an obvious problem. When people began to settle South Florida in the early twentieth century, one of the major issues they encountered was the problem of too much water.[272] Now that development has dominated the southern half of the peninsula, South Florida has begun to outstrip its carrying capacity.[273]

The history of water management in South Florida has been a pattern of destruction and mistakes followed by very costly restoration efforts.[274] Expecting the northern areas of the state to remediate the mismanagement of water and development in South Florida hardly seems like a practical solution, especially considering that providing the southern part of the state with more drinking water supply would likely encourage further unchecked development. Furthermore, the fact that experts have predicted that Florida will have a five billion dollar budget shortfall for fiscal year 2012[275] begs the question of how the state will finance and fund an interbasin transfer project of this magnitude—is it reasonable to consider such an expensive project to be a practical and dependable future water supply? In addition, there may be a point in time at which the northern areas of the state develop to the point that they need all of their water, which would leave South Florida high and dry. Are Florida's policy-makers going to let interbasin

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270. A. Y. Hoekstra & A. K. Chapagain, *Water Footprints of Nations: Water Use by People as a Function of Their Consumption Patterns*, 21 WATER RESOURCE MGMT. 35, 44 (2007). "The water footprint of a country is defined as the volume of water needed for the production of the goods and services consumed by the inhabitants of the country." *Id.* at 35. The water footprint for the United States is 2480 m^3 per person per year, which is twice the global average. *Id.*

271. COUNCIL OF 100 REPORT, *supra* note 7, at 7.

272. *See generally* GRUNWALD, *supra* note 4.

273. *See* WOSSENU ABTEW & SCOTT HUEBNER, DROUGHTS AND WATER SHORTAGES IN CENTRAL AND SOUTH FLORIDA 1 (2001), *available at* http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/ema-396.pdf (highlighting the potential for increases in the frequency of drought and water shortage as demand for water increases).

274. *See, e.g.*, Alfred R. Light, *The Intergovernmental Relations of Water Policy and Management: Florida-Holland Parallels*, 23 TUL. ENVTL. L.J. 279, 299-300 (2009); South Florida Water Management District, Kissimmee Basin, http://www.sfwmd.gov/portal/page/portal/xweb protecting and restoring/kissimmee river (last visited Feb. 6, 2012).

275. NATIONAL CONFERENCE OF STATE LEGISLATURES, STATE BUDGET UPDATE: JULY 2009 (2009), *available at* http://www.ncsl.org/documents/fiscal/StateBudgetUpdateJuly Final.pdf.

transfer be another $13.4 billion black hole,[276] or will local and state officials work together to combine growth management, conservation, and responsible practices to create a truly sustainable water supply?

276. This number refers to the ever-growing cost of Everglades Restoration, as last updated by the Department of Environmental Protection on January 26, 2011. DEP'T OF ENVTL. PROT., WHO IS PAYING FOR EVERGLADES RESTORATION?, http://www.dep.state.fl.us/evergladesforever/restoration/funding.htm (last visited Feb. 6, 2012).

RECENT DEVELOPMENTS

FORREST PITTMAN*

I. NOTABLE FEDERAL CASES

A. American Electric Power Co. v. Connecticut

Any federal common law right to seek abatement of carbon dioxide emissions from power plants is displaced by the Clean Air Act and EPA actions under the Act.

In *American Electric Power Co. v. Connecticut*, two groups of plaintiffs including eight states, one city, and three land trusts filed federal common law nuisance complaints against five major electric power companies operating in twenty states, alleging that

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the defendants' emissions of carbon dioxide "created a substantial and unreasonable interference with public rights."[1] The district court dismissed the complaints, holding that the suits "present[ed] non-justiciable political questions."[2] On appeal, the Second Circuit reversed, holding that the political question doctrine did not bar the suit from proceeding.[3] Additionally, the Second Circuit found that all parties had sufficiently demonstrated Article III standing.[4] While ultimately upholding the court of appeal's ruling on standing, the Supreme Court declined to comment directly upon the political question issue, instead ruling that the Clean Air Act (CAA) and Environmental Protection Agency (EPA) regulations authorized by the Act displaced any federal common law claim for the plaintiffs in this case.[5]

The complaint alleged that the defendants were "the five largest emitters of carbon dioxide in the United States[,]" and that their collective emissions constitute more than 650 million tons of the greenhouse gas, representing twenty-five percent of domestic power sector emissions and 2.5% of all human-generated emissions worldwide.[6] The state and city plaintiffs claimed "that public lands, infrastructure, and health were at risk" from the climate change these continued emissions would bring.[7] Relying on prior Supreme Court decisions, the Second Circuit determined that the plaintiffs could successfully sue out-of-state industries and other states to stop air and water pollution under federal common law where federal legislation had not displaced this right.[8] The Second Circuit also determined that the federal common law was not displaced by the CAA.[9] In *Milwaukee v. Illinois* (*Milwaukee II),* however, the Supreme Court held that certain amendments to the Clean Water Act had displaced the state's right of action under federal common law because the amendments had created "an all-encompassing regulatory program" to control interstate water pollution.[10] The Second Circuit distinguished the instant case from

1. Am. Elec. Power Co. v. Connecticut, 131 S. Ct. 2527, 2533-34 (2011).
2. *Id.* at 2534 (citing the court's decision in Baker v. Carr, 369 U.S. 186 (1962)).
3. *Id.* Both the district court and the Second Circuit focused primarily upon the third factor from *Baker v. Carr*, "the impossibility of deciding without an initial policy determination of a kind clearly for nonjudicial discretion." Connecticut v. Am. Elec. Power Co., 582 F.3d 309, 319, 321 (2d Cir. 2009) (quoting Baker v. Carr, 369 U.S. at 217); Am. Elec. Power Co. v. Connecticut, 406 F. Supp. 2d 265, 271-72 (S.D.N.Y. 2005).
4. *Am. Elec. Power Co.,* 131 S. Ct. at 2534.
5. *Id.* at 2537.
6. *Id.* at 2534.
7. *Id.*
8. *See id.* (citing Illinois v. City of Milwaukee, 406 U.S. 91, 93 (1972) (*Milwaukee I*)).
9. *Id.*
10. *Id.* at 2534-35 (citing Milwaukee v. Illinois, 451 U.S. 304, 316-19 (1981) (*Milwaukee II*)).

Milwaukee II by the fact that no such regulatory scheme to regulate greenhouse gas emissions had yet been enacted by the EPA.[11]

Before addressing the other issues at hand, the Supreme Court swiftly addressed the matter of standing. With four justices holding that "at least some plaintiffs have Article III standing" under *Massachusetts v. EPA*, and four others either distinguishing or denying this standing, the divided Court affirmed the Second Circuit's exercise of jurisdiction.[12]

In the opinion, the Supreme Court initially discussed the recent ruling from *Massachusetts*, in which the EPA was compelled to set emission standards for greenhouse gases under the statutory authority of the CAA.[13] In response to that ruling, the EPA initiated greenhouse gas regulation, determining that emissions of these gases poses a number of current and future threats to public health and welfare.[14] While no regulations currently impose limits upon power generating plants, "the EPA has committed to issuing" such a rule by May 2012.[15] The Court recognized that "federal courts may fill in 'statutory interstices,' and, if necessary, even 'fashion federal law' " in areas that fall "within national legislative power."[16] Environmental regulation certainly falls within such a category, and the Court cited numerous cases in which federal common law has been utilized to address environmental issues.[17] However, the Court found that this history does not always justify the creation of new law by federal courts.[18] In fact, where possible, the body of state law should be adopted as the federal rule until Congress chooses to pursue a different course, and where state law cannot be substituted, the Court must recognize that "it does not have the creative power akin to that vested in Congress" to create laws.[19]

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11. *Id.* at 2535. The Second Circuit reasoned that until the EPA promulgates a final rule, any consideration as to whether a "hypothetical regulation of greenhouse gases under the Clean Air Act" has preempted the plaintiff's nuisance complaint would be a matter of pure speculation. *Id.*

12. *Id.* (citing Massachusetts v. EPA, 549 U.S. 497, 520-26 (2007)).

13. *Id.* at 2532-33 (discussing Massachusetts v. EPA, 549 U.S. 497 (2007), where the Court determined that the EPA had not acted "in accordance with law" by denying a requested regulation setting limits on greenhouse gas emissions from motor vehicles, and concluded that greenhouse gases qualify as "air pollutant[s]" within the meaning of the CAA).

14. *Id.* at 2533.

15. *Id.*

16. *Id.* at 2535 (quoting Henry J. Friendly, *In Praise of Erie—And of the New Federal Common Law*, 39 N.Y.U. L. REV. 383, 421-22 (1964)).

17. *Id.* at 2535-36 (listing as examples New Jersey v. City of New York, 283 U.S. 473 (1931) and Georgia v. Tenn. Copper Co., 240 U.S. 650 (1916)).

18. *Id.* at 2536.

19. *See id.; see also* Missouri v. Illinois, 200 U.S. 496, 519 (1906) (noting that "the fact that this court must decide does not mean, of course, that it takes the place of a legislature.").

The Court, however, did not determine whether common law need be created, as the opinion made clear that the CAA displaces any potential federal common law rights.[20] As *Massachusetts* made plain, emissions of carbon dioxide and other greenhouse gases qualify as air pollution, and thus for regulation under the CAA.[21] The CAA provides means to regulate greenhouse gas emissions from power plants,[22] which was the recourse sought by the plaintiffs in this case. The Court saw no reason to allow a separate right of action under federal common law when the CAA provided similar remedies.[23] The relevant question for displacement purposes, drawn from *Milwaukee II*, was not in what manner a particular field has been occupied, but more simply "whether the field has been occupied."[24] Even a decision by the EPA not to regulate emissions would not constitute a sufficient reason for federal courts to apply federal common law to similar complaints, because such an action would upset the EPA's expert determination.[25]

The Court, however, made clear that such a refusal to regulate on the part of the EPA would not be immune from judicial review.[26] Although, generally "federal judges lack the scientific, economic, and technological resources" used by an agency when determining how best to control issues such as greenhouse gas emissions, in light of the CAA and the ruling in *Massachusetts*, judicial review may be employed to ensure that any potential agency action or inaction is not "arbitrary, capricious, . . . or otherwise not in accordance with law."[27] Thus, if the parties involved in the instant case are unsatisfied with the outcome of the EPA's regulatory decisions, the proper course of action that they should follow would be to challenge the agency's judgment in a court of appeals review, rather than pursue a federal common law resolution.[28] Finally, the Court chose not to address the whether these claims would be viable under state nuisance laws, leaving such a matter open for future consideration.[29]

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20. *Am. Elec. Power Co.,* 131 S.Ct. at 2537. In order to displace federal common law claims, a statute must merely " 'speak[] directly to [the] question' at issue." *Id.* (quoting Mobil Oil Corp. v. Higginbotham, 436 U.S. 618, 625 (1978)).

21. *Id.*

22. *See id.* at 2537-38.

23. *Id.* at 2538.

24. *Id.* (citing *Milwaukee II*, 451 U.S. 304, 324 (1981)). Congress has the ability to utilize different regulatory schemes to address various problems. A permit-based system as in *Milwaukee II* is not required to displace common law claims, nor is such a system likely to be viable for regulating greenhouse gas emissions. *Id.*

25. *Id.* at 2538-39.

26. *Id.* at 2539.

27. *See id.* at 2539-40.

28. *Id.* at 2539.

29. *Id.* at 2540.

B. Montana v. Wyoming

> Wyoming water-appropriators may increase overall consumption of water through improvements in irrigation efficiency, so long as the amount of water diverted is left unchanged and its purpose and area of use remain the same. The Yellowstone River Compact does not protect Montana from potential harms resulting from lower downstream flow.

This case arose from a dispute between the states of Montana and Wyoming regarding water appropriation under the Yellowstone River Compact ("the Compact").[30] Montana alleged that Wyoming had breached the Compact by allowing water appropriators in the state to increase the efficiency of their irrigation systems, which resulted in less wastewater being returned to the river and depriving those appropriators downstream in Montana from their entitled amount of water.[31] The Compact divides the water of the Yellowstone River and its tributaries into three tiers,[32] the first of which was important in this case. The Compact provides that ' "[a]ppropriative rights to the beneficial uses of the water of the [Yellowstone] River System existing in each signatory state as of January 1, 1950, shall continue to be enjoyed in accordance with the laws governing the acquisition and use of water under the doctrine of appropriation.' "[33] In Montana's initial complaint, it alleged "that Wyoming was appropriating water for a number of post-1950 uses[,]" including water storage facilities and increased irrigation acreage in addition to the efficiency improvements discussed above.[34] The Court appointed a Special Master for the case, who found that while the Compact did prohibit new uses such as water storage and increasing acreage, efficiency improvements did not constitute a claim for relief under the Compact.[35]

Montana made two basic arguments to contest this finding, both of which were rejected by the Special Master and ultimately the Supreme Court.[36] First, Montana contended that the law of appropriation as incorporated in the Compact did not allow the

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30. Montana v. Wyoming, 131 S. Ct. 1765, 1769 (2011).

31. *Id.* The switch from flood-type to sprinkler-type irrigation systems meant that plants were able to use more of the water from a given withdrawal, and that less would seep back into the river system. *Id.* at 1767.

32. *Id.* at 1770.

33. *Id.* (citing Yellowstone River Compact, Pub. L. No. 82-231, 65 Stat. 663, art. V, § A (1951)).

34. *Id.*

35. *Id.* at 1770-71.

36. *Id.* at 1771.

type of increases in consumption that efficiency improvements provide.[37] The doctrine of appropriation is typically utilized in the western states, including Montana and Wyoming, to govern water rights.[38] Under the doctrine, earlier users of a particular water source are assigned seniority over newcomers to the water, who must take the source as they find it.[39] So long as they are not changing the purposes or area for which the water is used, more senior users may appropriate as much water as they need for "beneficial use," even if that means completely depriving other users.[40] As the Compact provides that Wyoming's upstream pre-1950 users have equal seniority to Montana's downstream pre-1950 users, both parties concede that in the process of fully exercising its water rights Wyoming might legally deprive Montana of the ability to fully exercise its own water rights.[41] The question was thus whether "a switch to more efficient irrigation with less return flow [is] within the extent of Wyoming's pre-1950 users' existing appropriative rights, or is it an improper enlargement of that right . . . ?"[42]

While the law of return flow was recognized to be an unclear area of the appropriation doctrine, the Court decided that the original appropriative right included efficiency changes so long as the total amount of water diverted from the stream remains unchanged.[43] Additionally, there is a recognized requirement that the irrigated acreage and original purpose must not be altered.[44] The Court cited several cases recognizing that the consumption of water may be changed so long as the purpose and place of use, and the point of diversion remain the same, as is the case when switching to a more water-intensive crop.[45] Pointing to water-rights litigation from both states, the Court explained that suits have typically contested "changes in point of diversion, purpose of use, and place of use."[46] Additionally, the Court noted that users retain the right to reuse wastewater so long as it does not leave the user's

37. *Id.*
38. *Id.* at 1772.
39. *Id.*
40. *Id.* Junior users may not prevent more senior users from fully exercising their water rights, even if flow is so low that junior users would essentially have no access to water. *See id.*
41. *Id.*
42. *Id.* at 1773.
43. *Id.*
44. *Id.*
45. *Id.* at 1773-74. Additionally, making day-to-day changes or repairs does not violate the rule, as in the instance of repairing a pump that has traditionally leaked water onto a neighbor's land. *Id.* at 1774.
46. *Id.* at 1774.

land and is used for a beneficial purpose on the land.[47] Thus, the Court concluded that efficiency improvements do not fall within prohibited changes under the Compact, even if such changes are to the detriment of those downstream.[48]

Montana's second argument was that even if efficiency improvements were allowed, the Compact's definition of "beneficial use" constrained the parties to the pre-1950 net volume of water consumed.[49] The Court also dismissed this argument, noting that nothing in the Compact suggested that "beneficial use" referred to a measurement of the amount of water consumed.[50] Indeed, the Compact defined "beneficial use" as "that use by which the water supply of a drainage basin is depleted when usefully employed by the activities of man."[51] The Court held that "beneficial use" under the compact means the "*type* of use that depletes the water supply," not a set amount of water.[52] In concluding, the Court noted that had the Compact been intended to apportion set amounts of water to the various states, it would have done so with more clarity, as in other provisions of the Compact and other similar water legislation.[53] Accordingly, Montana's efficiency related claims were dismissed.[54]

Justice Scalia wrote a dissent in which he essentially agreed with Montana's second argument, arguing that the Court overlooked the significance of the word "depletes" in the text of the Compact.[55] Noting that the Compact used the word "divert" in other sections, but intentionally chose to use "deplete" in defining "beneficial use," Scalia argued that the correct interpretation was the "amount of water depleted."[56] Thus, Scalia was unconvinced that the wording of the statute did not imply Montana's goal of ensuring that "whatever would have flowed back into Yellowstone

47. *Id.* at 1774-75. The right to recapture and use wastewater is precedent in both Wyoming and Montana. *See, e.g.*, Bower v. Big Horn Canal Assn., 307 P.2d 593 (1957); Rock Creek Ditch & Flume Co. v. Miller, 17 P.2d 1074 (1933).

48. *Montana*, 131 S. Ct. at 1777. The Court states that most water-law scholars agree with Wyoming's position and that Montana was unable to produce any evidence to the contrary. *Id.*

49. *Id.*

50. *Id.* at 1778

51. *Id.* at 1777-78 (citing Yellowstone River Compact, Pub. L. No. 82-231, 65 Stat. 663, art. II, § H (1951)).

52. *Id.* at 1778 (emphasis in original).

53. *Id.* at 1779. For example, the final and lowest tier of water rights granted in the Compact listed specific percentages of water to be given to each state, in the instance that some water remained after the higher tiers had been satisfied. *Id.* at 1770.

54. *Id.* at 1779.

55. *Id.* at 1780-81 (Scalia, J., dissenting).

56. *Id.* at 1781-82.

after Wyoming appropriators' beneficial uses in 1950 . . .will also flow back [every] year."[57]

C. In re Tri-State Water Rights Litigation (Phase One)

> Despite, not having a final ruling from the District Court in three of the four cases in this litigation, appellate jurisdiction is proper because the cases are so intertwined that independent resolution is not feasible. The Corps of Engineers is authorized to allocate a reservoir for water supply storage. Additionally, water supply is an authorized use of the Buford Project. Thus the Corps' denial of Georgia's water supply request, alleging a lack of authority to grant the request and that water supply is not an authorized use of the Buford Project is a clear error of law. Georgia's request is remanded to the Corps for further consideration.

This ruling is the latest in a series of four consolidated suits resulting from the United States Army Corps' of Engineers (Corps) decisions regarding the allocation of water supply from the Buford Project,[58] a system of dams, lakes, and hydroelectric generating plants along the Chattahoochee River.[59] The main motivations behind the construction of the Buford Dam, Lake Lanier, and the associated hydroelectric plants were the generation of electricity, navigation, flood control, and its use in providing water supply to metropolitan Atlanta.[60] In the beginning, some of the surrounding cities and Gwinnett County, were given small allotments of the water supply from the reservoir created by the project, which was completed in 1957.[61] As Atlanta grew quickly during the following decades, however, these water withdrawals soon proved inadequate.[62] Congress commissioned a study to determine a plan for Atlanta's long term water needs, while the Corps simultaneously

57. *Id.* at 1782.

58. *In re* MDL-1824 Tri-State Water Rights Litigation, 644 F.3d 1160, 1165 (11th Cir. 2011).

59. *See id.* at 1165, 1167.

60. *Id.* at 1167-69. The original study of potential improvements along the Apalachicola-Chattahoochee-Flint River Basin (ACF) issued in 1939 also mentioned other potential uses, but an amended report from 1946, the "Newman Report" focused on construction of the project in question. *Id.* at 1167-68.

61. *Id.* at 1169-70.

62. *Id.* at 1169-72.

entered into temporary water withdrawal contracts with several Georgia localities.[63]

Upon the expiration of these temporary contracts in 1990, the localities continued to withdraw water from the project under roughly the same terms.[64] Alabama subsequently filed the first of the suits at issue against the Corps, alleging that the continued withdrawal of water constituted a *de facto* reallocation of storage that would require Congressional approval under the Water Supply Act (WSA).[65] A stay of proceedings was issued, during which the Corps could not enter into any water supply contracts in the Apalachicola, Chattahoochee, and Flint River basin ("the ACF basin") unless expressly authorized by both Alabama and Florida, the other states within the ACF basin.[66] The three states ultimately entered into a subsequent agreement ("the ACF Compact") that allowed water-supply providers some ability to increase withdrawals over time.[67] Then Southeastern Federal Power Customers (SeFPC) filed the second suit against the Corps alleging that increased withdrawals had increased the price of electricity to its customers.[68] An agreed settlement of this suit was enjoined by the stay from *Alabama*, as the SeFPC, Corps, and Georgia had agreed to an allocation of roughly 22% of the potential water storage, but had failed to get the approval of Florida and Alabama.[69] Meanwhile, Georgia had submitted a formal request to the Corps requesting increased withdrawal of water from the reservoir, but received no response.[70] Therefore, Georgia filed the third suit at issue against the Corps, attempting to compel the granting of its request, the Corps denied the request with a legal opinion stating that without congressional approval the Corps lacked the ability to grant such a request because water supply was not an authorized purpose of the Buford Project.[71]

Then in 2008, the fourth suit was filed against the Corps by the City of Apalachicola, and all of these suits were consolidated into multidistrict litigation in the Middle District of Florida, and the

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63. *Id.* at 1771-72.

64. *See id.* at 1173-74.

65. *Id. See* Alabama v. U.S. Army Corps of Eng'rs, 357 F. Supp. 2d 1313 (N.D. Ala. 2005).

66. *Tri-State Water Rights Litigation (Phase One)*, 644 F.3d at 1174.

67. *Id.* at 1774-75.

68. *Id.* at 1175 (citing Se. Fed. Power Customers, Inc. v. Geren, 514 F.3d 1316 (D.C. Cir. 2008)).

69. *Id.*

70. *Id.* at 1176.

71. *Id.* (citing Georgia v. U.S. Army Corps of Eng'rs, 302 F.3d 1242 (11th Cir. 2002)). Additionally, the Corps stated that even with such authority, such a reallocation would constitute a "major operational change" and would thus require legislative approval in any instance. *Id.*

case was divided into two phases.[72] The first phase concerned the "Corps' authority for its operations of the project" and was at issue in this ruling.[73] The District Court granted partial summary judgment to the Corps in *Georgia* and to the plaintiffs in the other three cases, holding that the Corps had exceeded its authority by allocating water withdrawals.[74] The court held that under the WSA, both the increased interim withdrawals as well as Georgia's proposed twenty-two percent allocation would constitute major operational changes, and would thus require congressional approval.[75] The district court essentially set water withdrawals at levels consistent with the original agreements from the 1950s, but stayed its order until 2012 in order to allow parties to seek congressional approval for new agreements.[76]

On appeal, the Eleventh Circuit first addressed whether it could properly exercise jurisdiction.[77] Alabama and Florida argued that because the district court had not resolved Phase Two claims, three of the rulings below did not constitute a final judgment, and thus the Eleventh Circuit could not properly exercise appellate jurisdiction.[78] No party contested appellate jurisdiction over *Georgia*, since "the district's court order did amount to a final judgment in that case."[79] The Eleventh Circuit disagreed with the jurisdictional argument for three reasons. First and foremost, the court held that the issues in the four cases are "inextricably intertwined."[80] Resolution of all four requires an analysis of the Corps' authority under the WSA and an independent resolution of *Georgia* is not possible, thus jurisdiction is proper over all four.[81] Alternately, the other three cases fall within the Circuit's jurisdiction "because the district court's order amounted to an injunction."[82]

The Eleventh Circuit determined that the district court had improperly exercised jurisdiction in all cases, except *Georgia*, as "the Corps had not taken a final agency action."[83] As the Corps' denial of Georgia's water supply request constituted a final agency action, no parties contested the district court's jurisdiction in that

72. *Id.* at 1177.
73. *Id.*
74. *Id.*
75. *Id.*
76. *Id.* at 1178.
77. *Id.* at 1178.
78. *Id.*
79. *Id.*
80. *Id.*
81. *Id.* at 1179.
82. *Id.* at 1178. The order was a "clearly defined and understandable directive by the court to act or to refrain from a particular action." The order left the Corps little discretion in pursuing future water supply contracts. *Id.* at 1180.
83. *Id.* at 1181.

case.[84] For the three other cases, however, the Eleventh Circuit applied the two-part test for finality from *Bennett v. Spear*.[85] The first prong states that "the action must mark the 'consummation' of the agency's decisionmaking process . . . it must not be of a merely tentative or interlocutory nature."[86] The court held that the continuing reallocations of water under the existing ACF Compact did not meet the first prong of the test, because the contracts were temporary in nature and did not purport to provide any permanent right to storage.[87] The second prong from *Bennett* requires that in order to constitute finality, an action must be one "by which rights or obligations have been determined, or from which legal consequences will flow."[88] Again, the court held that the acknowledged temporary nature of the reallocations failed to meet the second prong, and that the Corps actions were not final in nature.[89]

The second main issue addressed by the court of appeal is the Corps' denial of Georgia's request for water supply as an unauthorized use of the Buford Project.[90] The Newman Report made clear that the project was primarily intended to control floods and generate power, yet there were also significant references to water supply as an authorized purpose in both the report and in the Rivers and Harbors Act (RHA), the statute which authorized the project.[91] Congress even saw fit to include a minimum flow requirement within the statute, in consideration of Atlanta's water needs.[92] The language of both the Corps' report and the authorizing statute make it clear that the Corps was in fact authorized to allocate water supply storage within the Buford Project.

The Corps argued that its interpretation of the authorizing statute should be granted deference by the court[93] Under *Chevron*, deference is "due if (1) Congress has not spoken directly on the precise . . . issue and its intent is unclear, and (2) the agency's interpretation is based on a permissible construction of the statute."[94] In denying deference, the Eleventh Circuit found that the

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84. *Id.*
85. *Id.* at 1181-82 (citing Bennett v. Spear, 520 U.S. 154 (1997)).
86. *Id.* at 1181 (quoting *Bennett*, 520 U.S. at 177-78).
87. *Id.* at 1182.
88. *Id.* at 1184.
89. *Id.*
90. *See id.* at 1186-92.
91. *Id.* at 1186-87. The statute authorizing the Buford Project is the 1945 and 1946 Rivers and Harbors Act. *Id.* at 1186.
92. *See id.* at 1187-88. Although all of the downstream water needs could at the time be met with flow incidental to power generation, Congress nevertheless addressed the issue of water supply, even speculating that Atlanta's water needs would likely increase with time. *Id.*
93. *Id.* at 1192-93 (citing Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837 (1984) as support for the court's deference to the Corps' interpretation).
94. *Id.* at 1193.

Corps' argument failed on both prongs.[95] The Court once again noted that Congress had clearly intended for water supply to be an authorized purpose of the project as is evident in both the Newman Report and the RHA.[96] The Court also found that the Corps had been inconsistent in statements regarding its authority to grant water supply, and that the Corps' misinterpretation of the RHA was essential to its decision to deny Georgia's request.[97] Thus, the Court remanded the request back to the Corps, for reconsideration given the Corps' authority under both the RHA and the WSA.[98]

Finally, the court issued several remand instructions to the Corps, instructing it to reconsider Gerogia's request consistent with the opinion that water supply is in fact an authorized use of the project.[99] In addition to balancing Atlanta's water needs against those of power generation, the Corps was given one year to "arrive at a well-reasoned, definitive, and final judgment as to its authority under RHA and the WSA."[100]

D. Defenders of Wildlife v. Bureau of Ocean Energy Management, Regulation, and Enforcement

> Environmental organization's complaints regarding BOEMRE's failure to modify its offshore oil leasing practices in light of Deepwater Horizon disaster survive the defendants' and intervening parties' motions to dismiss in part; defendants are now required to file answers to the complaint.

In this case, Defenders of Wildlife (DOW) brought a series of complaints against several federal agencies ("the Federal Defendants"), alleging that in light of the recent Deepwater Horizon explosion and subsequent spill the defendants had failed to modify their practices of issuing offshore oil drilling leases in the Gulf as is required by federal law.[101] The complaints alleged that after the disaster began, the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) continued to accept bids for deepwater drilling leases, specifically in Lease Sale 213, while re-

95. *Id.*
96. *Id.*
97. *Id.* at 1193-94.
98. *Id.* at 1197.
99. *Id.* at 1200-05.
100. *Id.* at 1205.
101. Defenders of Wildlife v. Bureau of Ocean Energy Mgmt., Regulation, & Enforcement, 791 F. Supp. 2d 1158, 1161 (S.D. Ala. 2011). The Defendants included: The Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE); the United States Department of the Interior; and Ken Salazar, Secretary of the Interior. *Id.*

lying upon an outdated Environmental Impact Statement (EIS).[102] DOW asserted that by failing to incorporate new information gathered from the Deepwater Horizon incident, the Federal Defendants were in violation of the National Environmental Policy Act of 1969 (NEPA), the Endangered Species Act (ESA), and the Administrative Procedure Act (APA).[103]

Under this basic theory, DOW advanced four claims against the Federal Defendants.[104] Claim One was that BOEMRE relied upon the conclusions of a 2007 EIS when considering eleven leases, including Lease Sale 213, for drilling in the Gulf of Mexico despite the fact that several conclusions of that EIS were demonstrated to be invalid by the Deepwater Horizon disaster.[105] DOW's Claim Two focused upon Lease Sale 213, asserting that BOEMRE's decision to accept more than 200 drilling bids in reliance upon the existing EIS were invalid without a Supplemental EIS (SEIS) based on the new information.[106] Claim Three contended that the Federal Defendants were in violation of the APA and ESA by failing to "reinitiate consultation with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS) based on new information from the Deepwater Horizon spill showing that deepwater drilling in that area may harm endangered or threatened species and critical habitat."[107] Finally, Claim Four maintained that under the APA and ESA, BOEMRE was "in violation of its independent duty to insure that its actions are not likely to jeopardize the continued existence of any listed species."[108] DOW sought to vacate and remand the current EIS, and to obtain an injunction against "all future lease sales authorized therein until [an SEIS] is prepared," taking into consideration the new information provided by the recent oil spill disaster.[109]

After the complaint was filed by DOW, several oil-industry trade associations ("the Association Intervenors") and Chevron U.S.A., Inc. ("Chevron") were allowed to intervene.[110] The Federal Defendants, as well as both sets of intervening parties, filed motions to dismiss DOW's complaint.[111]

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102. *Id.* at 1161-62.
103. *Id.* at 1161.
104. *Id.*
105. *Id.* at 1161-62.
106. *Id.* at 1162.
107. *Id.*
108. *Id.*
109. *Id.*
110. *Id.*
111. *Id.* at 1162-63. The court first addressed the Federal Defendants' motion to dismiss, then addressed only those aspects of the intervening parties motions that were not redundant. *Id.* at 1162.

The Federal Defendants' argued in their motion to dismiss that Claim One was moot simply because the BOEMRE had begun to prepare a SEIS like the one requested by DOW's complaint.[112] In response, DOW asserted the claim was not moot because despite BOEMRE's effort to create a SEIS it was still violating the NEPA since it continued to approve drilling plans and lease sales using the old EIS.[113] DOW's complaint, however, did not advance any claims about drilling plans that BOEMRE had allegedly approved in reliance upon the faulty EIS.[114] Therefore the court found that the portion of Claim One seeking to compel BOEMRE to create a SEIS was moot, because the agency was already voluntarily creating an SEIS.[115] On the other hand, Claim One also asserted that BOEMRE was in violation of the NEPA because it was still accepting bids on Lease 213 based on the old EIS. This portion of Claim One was found not to be moot because the Federal Defendants did not address this issue in the motion to dismiss.[116] The Federal Defendants also asserted that Claim One was seeking an injunction based on future leases, and since it is unknown what the planned SEIS will say or even if future lease sales will occur, the claim was not ripe for review.[117] In response, DOW conceded that its argument was confined solely to existing lease sales, specifically Lease 213, made in reliance on the old EIS, thereby disclaiming any intent to challenge future lease sales, thus the court found no need to further examine the ripeness issue.[118]

The court then went on to address Claim Three which addressed BOEMRE's duty under the ESA and the APA to reinitiate consultation with certain agencies after the oil spill.[119] In its defense, BOEMRE presented letters to the court that it sent to both NMFS and FWS in July 2010, requesting that the agencies reinitiate consultation in response to the Deepwater Horizon disaster.[120] Therefore, the court agreed with the Federal Defendants and dismissed Claim Three as moot, because BOEMRE had already done

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112. *Id.* at 1164. BOEMRE published in the Federal Register on November 10, 2010 its intent to prepare a SEIS that would take into account new information from the spill. Outer Continental Shelf (OCS), Western and Central Planning Areas, Gulf of Mexico (GOM) Oil and Gas Lease Sales for the 2007-2012 5-Year OCS Program, 75 Fed. Reg. 69,122 (Nov. 10, 2010).

113. *Defenders of Wildlife*, 791 F. Supp. 2d at 1165.

114. *Id.* Had the complaint alleged such invalid drilling plan approvals, the complaint would have been moot nonetheless, as only a United States court of appeal would have jurisdiction over such claims. *Id.* at 1165-66 (citing 43 U.S.C. § 1349(c)(2)).

115. *Id* at 1166-67.

116. *Id.* at 1166.

117. *Id.* at 1168.

118. *Id.* at 1168-69.

119. *Id.* at 1169.

120. *Id.* at 1169-70.

what DOW was requesting.[121] The court then denied the motion to dismiss Claim Four because the Federal Defendants relied upon a faulty understanding of the complaint, that Claim Four addressed future lease sales, and therefore the motion to dismiss dealt with an issue that DOW was not pursuing.[122] In fact, DOW made no reference to future lease sales in Claim Four, but instead focused purely upon past and current agency actions such as the reliance upon a faulty EIS in making post-disaster lease sales.[123] The court next turned to the additional issues raised in the motions to dismiss from the intervening parties.[124] The Association Intervenors sought to dismiss the entire complaint for improper venue, contending that none of the administrative decisions at issue had taken place in the Southern District of Alabama.[125] This motion was denied because the Federal Defendants had not objected to venue and based on precedent intervenors are not able to assert a venue challenge, since they consent to venue upon intervention.[126]

The Association Intervenors' also sought dismissal of Claims One and Two based upon the theory that BOEMRE was under no obligation to prepare a SEIS for use in Lease Sale 213 as no "major Federal action" was still pending at the time of the disaster.[127] The basic thrust of the theory was that prior to the disaster, all major aspects of the lease sale had been completed with the exception of an economic "determination of the adequacy of individual high bids."[128] The court denied this motion by pointing to the fact that BOEMRE retained the right to reject any bid on the Lease Sale 213 tract, regardless of the price offered.[129] The acceptance of individual bids was thus seen by the court as constituting a major federal action, as BOEMRE retained significant discretion in deciding whether or not to approve them.[130] A similar motion to dismiss Claim Four was also denied by the court because it also was based on the theory that the lease sale had already occurred prior to the spill.[131]

Finally, the court addressed the remaining outstanding issues in Chevron's motion to dismiss. In particular, Chevron argued that

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121. *Id.* at 1170.
122. *Id.* at 1172.
123. *Id.* at 1171-72.
124. *Id.* at 1172-73.
125. *Id.* at 1173 (citing 28 U.S.C. § 1391(e)(2) which provides that "a civil action against an agency of the United States may 'be brought in any judicial district in which . . . a substantial part of the events . . . occurred.' ").
126. *Id.* at 1174-75.
127. *Id.* at 1175.
128. *Id.* at 1176-77.
129. *Id.* at 1177.
130. *Id.* at 1177-78.
131. *Id.* at 1178-79.

Claim Four should be dismissed for inadequacy of pleading.[132] In Chevron's view Claim Four had not identified a specific "final agency action" that allegedly violated the ESA and NEPA and thus was inadequately pleaded and not subject to judicial review.[133] This contention was held by the court to be based upon an incorrect reading of the complaint.[134] In fact, DOW referred specifically to BOEMRE's continued acceptance of lease bids for Lease Sale 213 after the oil spill, as the action that is in violation of the agency's duties.[135] Finally, the court also quickly denied Chevron's motion to dismiss Claim Four based upon DOW's supposedly inadequate pre-suit written notice to BOEMRE.[136] The very letter from DOW to the Federal Defendants that Chevron produced at trial demonstrated that the Federal Defendants were put on notice of DOW's contention that the agency's decision to continue with lease sales in the Gulf was in violation of the ESA and NEPA, and thus DOW met the sixty day statutory notice requirement.[137] Now that the court had issued decisions on all the motions to dismiss, it ordered all the defendants to file answers to the surviving claims from DOW's complaint.[138]

E. Ensco Offshore Co. v. Salazar

> BOEMRE has a non-discretionary duty to either grant or deny drilling permits under the Outer Continental Shelf Lands Act and must act now that the Secretary of the Interior's moratorium on deepwater drilling activities has expired.

Another case arising out of the recent Deepwater Horizon disaster, *Ensco Offshore Co. v. Salazar*, concerned inaction on the part of the Department of the Interior (DOI) and the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) in issuing new deepwater drilling permits.[139] Immediately following the disaster, the Department of the Interior placed "a blanket moratorium on [all] deepwater drilling in the Gulf of Mexico."[140] After five months, the drilling ban was lifted, although new regulations for drilling permits in the Gulf were added, and

132. *Id.* at 1179-80.
133. *Id.* at 1180.
134. *Id.*
135. *Id.*
136. *Id.* at 1181-82.
137. *Id.*
138. *Id.*
139. Ensco Offshore Co. v. Salazar, 781 F. Supp. 2d 332, 334-35 (E.D. La. 2011).
140. *Id.* at 334.

some of the new regulations must be complied with before permit applications may be processed.[141] Ensco filed a complaint, seeking a preliminary injunction to force BOEMRE to act on five specific permit applications in which Ensco had a contractual stake– the permits that had been filed by other companies planning to use Ensco drilling equipment.[142] Ensco's claims derived from the fact that, prior to the disaster, permits were processed in approximately two weeks, while the permits in question had been pending from "four to some nine months."[143] Initially, the court denied the motion for a preliminary injunction, questioning its authority to force government action and questioning what time frame would be appropriate for such a mandate.[144] These preliminary questions were resolved, however, in the parties' supplemental briefing.[145]

In deciding ultimately to grant Ensco's motion for preliminary injunction, the court provided a brief overview of the necessary requirements that the moving party must meet to succeed on a motion seeking a preliminary injunction, noting that the burden of persuasion is high for such motions.[146] The first of four factors that must be met is "a substantial likelihood of prevailing on the merits,"[147] which might be satisfied if the plaintiffs can show an unreasonable time delay.[148] Under § 706(1) of the Administrative Procedure Act (APA), a reviewing court must compel "unreasonably delayed" agency action.[149] The court noted that not all failures to act on the part of agencies are remediable under the APA, as courts can only compel an agency to take a non-discretionary or "ministerial" action.[150] Looking to the statutory authorization for the drilling permits, the Outer Continental Shelf Lands Act (OSCLA), the court found that it imposed a non-discretionary duty to grant or deny permit applications upon the DOI.[151] To determine if the DOI's delay was in fact unreasonable, the court outlined six guiding factors used for similar determinations.[152] The first factor the court focused on was "the time agencies take to make decisions

141. *Id.*

142. *Id.*

143. *Id.* at 334-35. BOEMRE contends that that four of the five permit applications are not technically pending because they were sent back due to inadequacies, although the applying company disputes this claim. *Id.* at 334.

144. *Id.* at 335.

145. *Id.*

146. *Id.* at 335-36. *See, e.g.*, Bluefield Water Ass'n v. City of Starkville, Miss., 577 F.3d 250 (5th Cir. 2009).

147. *Enesco Offshore Co.*, 781 F. Supp. 2d at 335 (citing Ridgely v. FEMA, 512 F.3d 727, 734 (5th Cir. 2008)).

148. *See id.* at 336.

149. *Id.*

150. *Id.*

151. *Id.* The Court found, "beyond question" that the DOI had "failed to act." *Id.* at 337.

152. *Id.* (citing Ingalls Shipbuilding, Inc. v. Asbestos, 17 F.3d 130, 133 (5th Cir. 1994)).

must be governed by a 'rule of reason.' "[153] The second factor the court focused on asks whether "Congress has provided a timetable" by which agency decisions are to adhere, but the court noted that such schedules "need not be express" to find delay unreasonable.[154] So long as the agency can show that a delay was necessary or inevitable due to factors outside its control, and that it is not acting to the detriment of certain parties or classes, it is unlikely the delay will be found unreasonable.[155] As the OSCLA is silent regarding the length of time permit applications require, Ensco pointed out that Congress had mandated a thirty day period for BOERME to approve or deny drilling exploration plans and urged its application by the court.[156]

The DOI argued that the delays experienced were necessary, as the BOEMRE had only recently taken over for a "crumbling and disreputable" precursor agency and the post-Deepwater Horizon environment is more subject to regulation.[157] The court dismissed this argument, stating that after nearly a year since the disaster, the regulations were no longer new and that "the threat of rigs leaving the Gulf becomes more forceful each day."[158]

The court quickly noted that the other three factors necessary to grant a preliminary injunction were also met.[159] The second, a "substantial likelihood of irreparable injury if preliminary relief is not granted," was satisfied as the court noted that the rights being infringed make calculating a "dollar value of the loss . . . especially difficult [and] speculative," therefore a finding of irreparable harm was warranted.[160] The third, that the "threatened injury outweighs any harm that will result to the government if [the] preliminary relief is granted," was also found to be present in the form of potential economic losses from drilling rigs departing the region.[161] The fourth factor requires that "the injunction will not disserve the public interest," and the court noted that an injunction compelling the processing of permit applications would "restore normalcy to the Gulf region and repairing the public's faith in the administrative process" which satisfies this factor.[162]

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153. *Id.*
154. *Id.*
155. *See id.* at 337-38.
156. *Id.* at 338. Exploration represents an earlier stage in OCSLA's four-part administrative process for issuing drilling permits. *Id.*
157. *Id.* at 339.
158. *Id.* Several oil wells, including at least one of Ensco's, were sent to other areas, such as French Guiana. *Id.* at 340.
159. *Id.* at 340.
160. *Id.*
161. *Id.*
162. *Id.*

In conclusion, the court held that the government's inaction on the five permits specified by Ensco were unreasonable to an extent that justified the grant of a preliminary injunction.[163] In keeping with that determination, BOEMRE was ordered to either approve or deny the permits within thirty days, and report its compliance to the court.[164]

II. NOTABLE FLORIDA CASES

A. Miccosukee Tribe of Indians of Florida v. South Florida Water Management District

> South Florida Water Management District has authority to issue COPs for the purchase of land to be used for various public purposes, including Everglades restoration. However, COPs issued for the purchase option of additional land were invalid, as the District advanced no public purpose for the future purchase.

This case arose from an attempt of the South Florida Water Management District ("the District") to validate the issuance of certificates of participation (COPs) that would allow it to purchase land from the United States Sugar Corporation ("U.S. Sugar") for Everglades restoration.[165] Several parties, including New Hope Power Company ("New Hope") and the Miccosukee Tribe ("the Tribe"), challenged the validation.[166] In 2009, the circuit court issued a judgment validating $650 million of COPs, which would allow the district to purchase 73,000 acres from U.S. Sugar.[167] The COPs would be issued to finance "acquiring, constructing, and installing facilities on the sites."[168] New Hope and the Tribe filed formal administrative challenges to the District's purchase of land, which the District consolidated and dismissed for lack of standing.[169] New Hope and the Tribe subsequently filed administrative appeals with the district court, and the District asked the Florida Supreme Court to take jurisdiction over the appeals, "because the

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163. *Id.*

164. *Id.*

165. Miccosukee Tribe of Indians of Fla. v. S. Fla. Water Mgmt. Dist., 48 So. 3d 811, 815 (Fla. 2010).

166. *Id.* at 815-16.

167. *Id.* at 816.

168. *Id.* Under the District's plans, the property would be purchased and leased to a nonprofit Leasing Corporation, which would then lease the property back to the District for management and improvement. *Id.*

169. *Id.*

cases dealt with the same issues presented in the bond validation proceedings."[170] The court granted the request and transferred the cases.[171]

The court noted that in bond validation proceedings like the case at hand, the court is "limited to determining: (1) whether the public body has the authority to issue the subject bonds; (2) whether the purpose of the obligation is legal; and (3) whether the authorization of the obligation complies with the requirements of law."[172] However, the Tribe and New Hope attempted to argue that the trial court's factual findings in its judgment were incomplete as the court failed to make a determination of the project's economic feasibility.[173] The court disagreed with the Tribe and New Hope and upheld the trial court's determination that financial feasibility was outside the scope of judicial review, as such questions must be resolved via executive or administrative means.[174] The court held that it did not have the authority to substitute its own judgment for that of the District.[175]

The challengers also alleged that the validation was not legal because the COPs will not be used to further the public purpose designated by the district, but rather just to buy land.[176] The court held that the "legislative declaration of public purpose," which included water storage, energy production, and sustainability improvements, is to be presumed valid unless "patently erroneous."[177] The Legislature also made clear that the conservation and protection of water is "necessary for the public health and welfare," and that the purchasing of property "for this objective shall constitute a public purpose."[178] The Tribe and New Hope cited the court's decision in *State v. Suwannee County Development Authority* in an attempt to show support for their claims that no public purpose was present in the District's project.[179] The court dismissed this argument, noting that in *Suwannee County*, the specific lands to be purchased were not specified, while in this case the land to be purchased, the financing structure of the agreement, and the pur-

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170. *Id.* at 816-17.
171. *Id.* at 817.
172. *Id.*
173. *Id.*
174. *Id.* at 817-19 (citing State v. Manatee Cnty. Port Auth., 171 So. 2d 169, 171 (Fla. 1965)).
175. *Id.* at 818.
176. *Id.* at 819.
177. *Id.*
178. *Id.*
179. *Id.* at 820. In *State v. Suwannee Cnty. Dev. Auth.,* 122 So. 2d 190 (Fla. 1960), a development authority sought to issue similar revenue certificates to purchase unspecified lands that would then be leased to private businesses, and was found to be lacking a public purpose.

pose the land is to be used for is clear, which is enough supporting evidence to justify validation of the COPs.[180]

The Tribe and New Hope also argued that the validation was invalid under three provisions of the Florida Constitution.[181] The first challenge alleged that the leasing of the purchased land would violate article VII, section 10, which provides that no state agency shall "give, lend or use its taxing power or credit to aid any corporation, association, partnership or person."[182] The Tribe and New Hope claimed the proposed land purchase violates this provision because the lands would be leased back to U.S. Sugar for several years and thus it does not meet the paramount public purpose test.[183] The court noted that the test for determining violation of this constitutional provision was whether or not the expenditure of public funds accomplishes a public purpose.[184] "If the District has used either its taxing power or pledge of credit to support issuance of bonds, the purpose of the obligation must serve a paramount public purpose and any benefits to a private party must be incidental."[185] On the other hand, if the District has not used its taxing power or pledged its credit in support of the bond, then the public purpose served does not have to be paramount.[186] The court determined that the COPs in question fell under the latter category and thus "only a public purpose, not a paramount public purpose need be shown."[187] Additionally, the court noted several cases in which it had recognized a broad range of projects as "valid 'public purposes,' " including such minor tasks as an "on-site road improvement project within a unit of a water control district."[188] Thus, the court held that since the District will retain title to the purchased land, and the eventual use of the property will serve the public purpose of Everglades restoration, article VII, section 10 was not violated.[189]

The second state constitutional challenge alleged was that under article VII, section 12, any debt incurred by the State or its subdivisions that would extend more than twelve months and is payable from ad valorem taxes would have to be approved by a voter referendum.[190] The court cited *State v. Miami Beach Rede-*

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180. *Miccosukee Tribe of Indians*, 48 So. 3d at 820-21.
181. *Id.* at 821.
182. *Id.* at 822.
183. *Id.*
184. *Id.*
185. *Id.* at 822.
186. *Id.*
187. *Id.*
188. *Id.* at 822-23 (citing*, e.g.*, N. Palm Beach Cnty. Water Control Dist. v. State, 604 So. 2d 440, 443 (Fla. 1992)).
189. *Id.* at 823.
190. *Id.* at 823-25.

velopment Agency to explain that without a direct pledge of the state's taxing power, there is no violation of article VII, section 12, because without such a pledge the bondholder has no power to compel the levy of an ad valorem tax.[191] In fact, the District's plan specifically stated that future lease payments "[were] not payable 'from any source of taxation,' " and therefore there was no violation of article VII, section 12.[192] The Tribe and New Hope attempted to show that the non-appropriation clause prohibiting the use of taxation to make lease payments was, in fact, illusory, and that the District could not simply "walk away from its obligation."[193] Again, the court noted that even if the District were to fail to allocate money for lease payments, the structure of the arrangement is such that at the termination of the lease to the Leasing Corporation, the District would regain possession of the land and at all times would retain title.[194] Thus, the District does not need a voter referendum to issue COPs.[195] The court disposed of the final state constitutional challenge similarly, holding that, "for purposes of finance and taxation under article VII," the District is not the "state" and thus is not subject to article VII, section 11, which requires any project that is financed with revenue bonds issued by the state or its agencies to obtain legislative approval.[196]

The Tribe additionally asserted that the financing structure of the project was invalid because the District lacked the authority to create the non-profit Leasing Corporation and also that the lease lacked adequate consideration.[197] The court dismissed this argument, citing section 373.584(2), *Florida Statutes*, which gives the District the power to "do all things necessary and desirable in connection with the issuance of revenue bonds," and concluded that this broad grant of authority grants the ability to establish the Leasing Corporation.[198] The court also found no merit in the lack of consideration argument.[199]

Additionally, the court also reviewed the trial court's validation of the District's purchase price of $536 million for 73,000 acres of land, with a $50 million option to buy 107,000 more acres in the

191. *Id.* at 823.
192. *Id.* at 824.
193. *Id.* The Tribe and New Hope cited two cases that each involved non-appropriation clauses that compelled the government entities to either find some means of making payments, such as increasing ad valorem taxation, or lose the benefits of the contracts altogether (citing, *e.g.*, Frankenmuth Mutual Ins. Co. v. Magaha, 769 So. 2d 1012 (Fla. 2000); Volusia Cnty. v. State, 417 So. 2d 968 (Fla. 1982)). *Id.* at 824-25.
194. *Id.* at 825.
195. *Id.*
196. *Id.* at 826.
197. *Id.* at 826-27.
198. *Id.* at 827-28 (quoting FLA. STAT. § 373.584 (2008)).
199. *Id.* at 828.

future for a set price.[200] The District asserted that neither the Tribe nor New Hope challenged the validity of the $50 million option during the trial court's hearing, and therefore the Florida Supreme Court could not review this issue.[201] The court, however, noted the presence of various written responses from the initial hearing that contradicted the District's assertion.[202] Unlike the initial 73,000 acres, the District offered very little information on how the additional land would be utilized, with no public purpose shown.[203] Thus, the court reversed the lower court's validation of the $50 million worth of COPs intended for purchasing the land option.[204]

The court quickly dismissed the Tribe's final argument, finding no merit in the claim that the District's plan to convey some of the purchased land to local communities for further economic development makes the transaction illegal.[205] Quoting section 373.056(4), *Florida Statutes*, the court confirmed that the District has statutory authorization to "convey or lease to any governmental entity . . . land or rights in land owned by such district not required for its purposes."[206] In concluding, the court affirmed in part the ruling of the lower court, validating the District's ability to issue COPs to finance the purchase of land from U.S. Sugar, except for the purchase option for the additional 107,000 acres, as the District had not demonstrated a public purpose for those lands.[207]

B. Cohn v. Grand Condominium Ass'n, Inc.

> The Florida Constitution prohibits retroactive application of the Condominium Act's voting structure requirements where the condominium's declaration has not provided for compliance with future statutes.

Cohn v. Grand Condominium Ass'n involved an appeal from the Third District Court of Appeal ("Third DCA"), which held that a state statute resulted in "an unconstitutional impairment of contract as applied to the Grand [Condominium Association ("the Association")]."[208] The condominium in question was formed in 1986 as a mixed-use condominium consisting of residential, commercial,

200. *Id.* at 828-29.
201. *Id.* at 828.
202. *Id.*
203. *Id.* at 829.
204. *Id.*
205. *Id.*
206. *Id.*
207. *Id.* at 830.
208. Cohn v. Grand Condo. Ass'n, Inc., 62 So. 3d 1120, 1121 (Fla. 2011).

and retail units, with a large majority of the units being residential.[209] The Association, in its governing role over the condominium, consists of seven board members, with each type of unit electing two members and the seventh elected at large.[210] In 1995, Florida enacted section 718.404, *Florida Statutes*, which regulated mixed-use condominiums by requiring those with more than a fifty percent residential composition to allow the residential units to vote for a majority of the governing board members.[211] The Legislature amended this statute in 2007, intending to make the requirements retroactive and thus effective on governing bodies such as the Association.[212]

Cohn, the owner of a residential unit in the condominium, subsequently requested that the Association alter its voting system to comply with the statute.[213] The Association filed a complaint, seeking a declaratory judgment that section 718.404(2) constituted an "unconstitutional impairment of contract."[214] The trial court granted the Association's request, and the Third DCA affirmed the ruling.[215] The Grand Condominium's declaration, filed in compliance with section 718, ("the Condominium Act"), did not provide "language subjecting it to future statutory changes to the Condominium Act," but rather made it subject only to the statute in effect at the time the declaration was recorded.[216] Under Article I, section 10 of the Florida Constitution "the enactment of any law [that] impair[s] the obligation of contracts" is prohibited.[217] Thus, court held that the retroactive application of section 718.404(2) "would alter the rights of the Grand's unit owners in contravention of their contractual agreement," and was thus unconstitutional as applied.[218]

C. Allen v. City of Key West

> Nonconforming use of property is lawful where owners had relied upon City's prior interpretation of "transient housing," and thus is grandfathered in where owners have complied with all other relevant regulations.

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209. *Id.*

210. *Id.* The residential units elect two board members, as do the commercial and retail units. *Id.*

211. *Id.* (citing FLA. STAT. § 718.404 (2011)).

212. *Id.* (citing FLA. STAT. § 718.404(2) (2011)).

213. *Id.*

214. *Id.*

215. *Id.*

216. *Id.* Specifically, the declaration does not contain the language "as amended from time to time." *Id.*

217. *Id.* at 1122.

218. *Id.*

In *Allen v. City of Key West*, the Third District Court of Appeal ("Third DCA") reviewed and overturned the lower court's denial of several property owners' ("the Owners") claims for injunctive relief against the City of Key West ("the City").[219] The Owners bought their properties with the intention of using them for short-term rentals during part of the year.[220] At the time the properties were purchased, the City's Growth Management Ordinance (GMO) defined "transient housing" as "commercially operated housing, **principally available to short-term visitors**[] . . . and other housing available for rent for fewer than twenty-eight days."[221] In 1998, however, the City adopted several Land Development Regulations (LDRs) that eliminated the above definition of "transient housing."[222] Over the course of several years, the City passed several LDRs that did not include the "principally available" language in a new definition of "transient housing" and required any owner wishing to rent their home for more than twenty-eight days a year to apply for a "City-issued transient license."[223]

The Owners sought unsuccessfully to have their properties grandfathered in under the old definition of transient housing, since for some time, before passage of the new LDRs, owners and administrators in Key West had interpreted "principally available" to exclude those properties that were rented for less than fifty percent of the year.[224] Evidence presented to the lower court showed that the City's chief licensing official sent out a memorandum in 1997, declaring that during the interim between the elimination of the old definition and the passage of new regulations, the City would continue to employ the "50% rule" interpretation.[225]

In an earlier case, *Rollison v. City of Key West*, the Third DCA had granted another property owner the right to have a similar non-conforming use grandfathered in under the old "transient housing" definition as the property use lawfully existed prior to the redefinition efforts.[226] In that case, the owner had sought and received confirmation from the City that it would continue to evaluate the short-term rentals of her property under the interim "tran-

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219. Allen v. City of Key West, 59 So. 3d 316, 317 (Fla. 3d DCA 2011).

220. *Id.*

221. *Id.* (citing CITY OF KEY WEST, FLA. CODE ch. 24½, § (2)(F) (1986) (emphasis in original)).

222. *Id.*

223. *See id.* at 317-18.

224. *Id.* at 317.

225. *Id.*

226. *Id.* at 318 (citing Rollison v. City of Key West, 875 So. 2d 659, 663 (Fla. 3d DCA 2004)).

sient housing" definition.[227] Although, the court acknowledged this difference, it held that the absence of confirmations from the city was not "sufficient to defeat the Owners' claims," and that neither the time of purchase nor the actual renting of a property need have occurred during the short interim period.[228] The City also sought to demonstrate that the holding in *Rollison* was limited only to the specific developments at issue in that case, but the court also rejected this interpretation.[229]

Therefore, the court found *Rollison* to be the controlling precedent and held that the nonconforming uses were to be grandfathered in under old development plans because the same factors found in *Rollison* were present in this case.[230] First, the rentals must have met the old definition of "non-transient housing."[231] Second, the rentals must have complied with the "50% rule." Lastly, the Owners must have obtained all other relevant non-transient rental licenses.[232] Accordingly, the court reversed the judgment of the lower court and awarded the Owners' claims for declaratory and injunctive relief.[233]

D. Katherine's Bay, LLC v. Fagan

> Administrative Law Judge's determination that an area has severe environmental limitations is not sufficient alone to render invalid an amendment to a comprehensive plan authorizing development given that the plan comprehends development in these areas.

This case resulted from the review of a final order issued by the Administration Commission ("the Commission"), which adopted the ruling of an Administrative Law Judge (ALJ) that invalidated an Amendment ("the Amendment") to Citrus County's Comprehensive Plan ("the Plan").[234] The ruling asserted that the Amendment constituted a violation of the Plan on two grounds, both of which were challenged by Katherine's Bay, LLC ("Appellant"), which had applied for the indicated Amendment in order to change the future land use designation under the plan of land it owned.[235]

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227. *Id.*
228. *Id.* at 319.
229. *Id.*
230. *Id.*
231. *Id.*
232. *Id.*
233. *Id.*
234. Katherine's Bay, LLC v. Fagan, 52 So. 3d 19, 21 (Fla. 1st DCA 2010).
235. *Id.*

The property in question is located in a region of "Coastal Area," and was formerly designated under the plan as Low Intensity Coastal and Lakes (CL), which was defined as an area "sensitive to development and therefore should be protected."[236] The Amendment changed the appellant property's land use category to Recreational Vehicle Park/Campground (RVP), which allowed much greater development on the property, as is necessary for building an RV park.[237] After the amendment was adopted by the Citrus County Board of County Commissioners, appellee, a neighboring property owner, challenged the Amendment, identifying two policies within the Plan's Future Land Use Element (FLUE) with which the Amendment did not comply.[238] Specifically, the policies provided the County should "guide future development to the most appropriate areas . . . specifically those with minimal environmental limitations," and that the County should allow only development "which reduces incompatible land uses."[239]

At the hearing challenging the amendment, a report from the County Staff, as well as testimony from two county planners, made clear that there were several environmental limitations on the property, such as being in a Coastal High Hazard Area (CHHA) and a Karst Sensitive Area (KSA).[240] None of the County Staff's various representatives specifically recommended denial of the Amendment, although the environmental planner did not issue a recommendation either way, and some representatives recommended approval only with conditions.[241] The report also noted that even if the Amendment were approved, two additional FLUE policies could potentially restrict development to less than that otherwise allowed under a particular land use category, if such development would allow increased land use in a KSA or would be harmful to natural resources.[242] Testimony from one of the county planners noted that while the Plan did not prohibit RV parks from being constructed in either of the listed areas, it would be "highly unlikely that Appellant would be permitted to develop the space at the maximum build-out potential theoretically allowed under the new designation," and that "complete protection of the wetlands

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236. *Id.* at 22. Areas zoned as CL under the plan are permitted a maximum of one dwelling unit per 20 acres, and a number of other uses are allowed, including agriculture and commercial fishing/marina-related uses. *Id.*

237. *Id.* at 22-23.

238. *Id.* at 23.

239. *Id.*

240. The testimony from the county planners noted that the property was in a Coastal High Hazard Area, prone to coastal flooding, contained significant wetlands, and was a Karst Sensitive Area, in which porous limestone bedrock allows pollutants to travel easily. *Id.* at 24 & n.2.

241. *Id.* at 24.

242. *Id.* at 24-25.

would be required."[243] As a result of the hearing, the ALJ issued a recommended order which concluded that the Amendment was inconsistent with the FLUE policy requiring the County to direct development to "the most appropriate areas, . . . specifically those with minimal environmental limitations" and the property in question did not meet this criteria.[244]

The ALJ additionally concluded that the Amendment was inconsistent with the FLUE policy requiring "compatibility" of land uses, taking the definition from the *Florida Administrative Code*, which provides that "compatibility" means that no land use will be "unduly negatively impacted directly or indirectly by another."[245] The Commission subsequently adopted the ALJ's conclusion and held that the Amendment "had no legal effect."[246] Katherine's Bay, LLC appealed the decision, alleging both that the finding of "severe environmental limitations" was an error considering that the many of the County Staff's representatives had recommended approval of the Amendment, and that the ALJ had failed to apply FLUE policies that were more specific to RV parks, as opposed to the general policies that Appellee had raised.[247]

On review of the Commission's holding, the court first determined that the standard of review would be governed by section 120.68(7), *Florida Statues*, which provides that a court shall set aside an agency action or remand the case to the agency for further consideration if it finds either that the agency's "finding of fact is not supported by competent, substantial evidence in the record of a hearing" or that "the agency has erroneously interpreted a provision of law."[248] The court first found that the evidence provided by the County Staff report supported the ALJ's finding of "severe environmental limitations."[249] The court noted that if the ALJ were compelled to follow the County Staff's recommendation for approval despite the obvious demonstration of problems, then such ALJ review "would serve no purpose."[250]

However, the court noted that a FLUE policy that the Appellee did not raise "specifically anticipated" coastal RV park development, and made clear that the ALJ's resort to other portions of the Plan was not inappropriate in itself.[251] The provisions of the Plan

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243. *Id.* at 25.
244. *Id.* at 26.
245. *Id.* at 26 (quoting FLA. ADMIN. CODE r. 9J-5.003(23) (2010)).
246. *Id.*
247. *Id.* at 27-28.
248. *Id.* at 26-27 (quoting FLA STAT. § 120.68(7)(b), (d) (2010)).
249. *Id.* at 28.
250. *Id.*
251. *Id.* at 29. FLUE Policy 17.2.7, directing development to areas with "minimal environmental limitations" articulates a general preference that the ALJ correctly applied. *Id.*

that troubled the court showed that the entire coastal region is "considered environmentally sensitive," but that future development was expected and thus that environmental limitations are not a basis to prohibit such development altogether.[252] Thus, the court overturned the ALJ's finding that the Amendment violated FLUE Policy 17.2.7.[253]

Regarding FLUE Policy 17.2.8, the court found that the Appellee had not provided sufficient evidence to show that the new future land use of the Appellant's property would be incompatible with his own.[254] The Appellee's testimony regarding potential harm to the "natural beauty of [the] area" would be acceptable evidence for the ALJ to consider, but his claims regarding potential noise, light, pollution, and traffic problems would not be because he was not an expert on such matters.[255] Additionally, the Appellee's opinion that an RV park nearby would devalue his property is insufficient to find the Amendment in violation of the FLUE policy without some expert analysis.[256] Having found that the ALJ's conclusions were incorrect interpretations of the Plan's FLUE Policies, the court remanded the case to the Commission, with instructions to reinstate the Amendment.[257]

E. Graves v. City of Pompano Beach

> Plat approvals constitute development orders, and are thus challengeable under section 163.3215(3), *Florida Statutes*.

This case represented a rehearing of the Fourth District Court of Appeal's ("Fourth DCA") earlier decision, in which it held that a plat approval was not a development order.[258] Under section 163.3215(3), *Florida Statutes*, "[a]ny aggrieved or adversely affected party may maintain a de novo action for declaratory, injunctive, or other relief against a local government to challenge . . . a development order . . . which is not consistent with the comprehensive plan."[259] The trial court had granted the City's motion to

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252. *Id.* at 29-30.

253. *Id.* at 30.

254. *Id.* at 30-31.

255. *Id.* at 30. Most matters require expert testimony, while mere opinion questions such as the natural beauty of land do not. *Id.*

256. *Id.*

257. *Id.* at 31.

258. Graves v. City of Pompano Beach, 74 So. 3d 595, 596 (Fla. 4th DCA 2011) (referencing Graves v. City of Pompano Beach, 36 Fla. L. Weekly D778, (Fla. 4th DCA 2011), *opinion withdrawn*).

259. FLA. STAT. § 163.3215(3) (2011).

dismiss, holding that the plat approval was not a development order within the meaning of section 163.3215(3).[260] The Fourth DCA initially agreed with this finding, but on rehearing determined that the plat approval in the instant case did constitute a development order.[261]

Both the original hearing and this rehearing arose as an appeal of the Appellants' dismissed complaint filed against the City of Pompano Beach ("the City"), challenging a resolution that approved a plat for development.[262] The resolution in question authorized an expansion of the current uses of the property.[263] Namely, an authorization for a large number of horse-related facilities and an additional casino building of 230,000 square-feet, which also included space for a large number of businesses.[264] The City also used the resolution to preliminarily endorse compliance with local land development codes.[265] The Appellant's complaint alleged that the approval was a development order and the "juxtaposition of intensive commercial and recreational uses" with the existing, less-intensive uses did not comply with the City's comprehensive plan.[266] Chapter 163, *Florida Statutes*, provides that any development order must be consistent with the local comprehensive land use plan.[267] Section 163.3164(7) defines development order as "any order granting, denying or granting with conditions an application for a development permit."[268] Development permits are further defined by section 163.3164(8) as "any building permit, zoning permit, subdivision approval, rezoning, certification, special exception, variance, or any other official action of local government having the effect of permitting the development of land."[269] Development is itself defined by section 380.04(2)(b) as a "change in the intensity of use of land such as . . . a material increase in the number of businesses . . . ."[270] This time on rehearing, the court held that the plain language of Chapter 163 included plat approvals like the one

260. *Graves,* 74 So. 3d at 596.

261. *Id.* at 596-97.

262. *Id.* at 596.

263. *Id.* at 597. "The resolution authorized the continued use of the existing racetrack and casino, authorized an expansion and conversion of land uses, and increased the development of the Park." *Id.*

264. *Id.*

265. *Id.*

266. *Id.* (the complaint alleged that the plat approval would shift the dominant use of the property to commercial uses, as opposed to the existing recreational uses, and that the approval was inconsistent with the comprehensive plan, as it violated "various traffic policies and public-facility standards.").

267. *Id.* at 598 (citing FLA. STAT. § 163.3194(1)(a) (2009)).

268. *Id.* (citing FLA. STAT. § 163.3164(7) (2009)).

269. *Id.* (citing FLA. STAT. § 163.3164(8) (2009) (emphasis omitted)).

270. *Id.* (citing FLA. STAT. § 380.04(2)(b) (2009)).

in question under the broader definition of development order.[271] As the plat approval granted the developer the right to develop the property according to the terms of the development order, the court held that the City's assertion that additional permits were still required for development was insufficient to render the approval not a development order.[272] The court also cited several cases that clearly reject the City's assertion that the plat approval only constituted a "map" of future development.[273] Thus, the court held that the City's granting of plat approval to the developer constituted a development order, and reversed its prior dismissal of the complaint, remanding the case to the trial court.[274]

The dissenting judge largely agreed with the original Fourth DCA determination, and wrote that "the appellants' motion for rehearing [was] based upon inapplicable authorities."[275] As the appellants would have the ability to challenge the development at a later stage in the approval process, the dissent held that to allow this challenge was improper.[276] The dissent also wrote that the case used to reject the trial court's interpretation of plat approval was improper, as the case relied on was decided two years prior to the enactment of section 163.3125.[277]

F. Wilson v. Palm Beach County

> The Right to Farm Act only prohibits enactment of new local agricultural regulations, not enforcement of existing ordinances. Additionally, counties have authority under section 125, *Florida Statutes*, to regulate their land so long as there is no conflict with other statutes regarding agricultural uses.

Wilson v. Palm Beach County arose as an appeal from a trial court ruling that declared Palm Beach County's ("the County") enforcement of various ordinances enacted prior to the passage of the Florida Right to Farm Act ("the Act") was not preempted by the subsequent Act.[278] Wilson and his two businesses (collectively, "the Plaintiffs") operated a nursery within the County, on land that he

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271. *Id.* The court additionally noted that the City had specifically listed plat approvals as examples of development permits, but noted that the City "cannot expand the statutory definition of development permit." *Id.*

272. *Id.* at 598-99.

273. *Id.* at 599 (citing Kass v. Lewin, 104 So. 2d 572, 579 (Fla. 1958)).

274. *Id.*

275. *Id.* (Gerber, J., dissenting).

276. *Id.* at 599-600.

277. *Id.* at 600.

278. Wilson v. Palm Beach Cnty., 62 So. 3d 1247, 1248 (Fla. 4th DCA 2011).

had owned for more than twenty years.[279] The Plaintiffs had obtained both a Grower's Certificate as well as a State Nursery Inspection license for the nursery, but following an inspection by an agent of the County, were informed that the nursery was in violation of the Unified Land Development Code (ULDC) because they did not have "the proper zoning approval."[280] The County issued a "special permit" for the operation of the nursery, but required that the Plaintiffs comply with several conditions.[281] The Plaintiffs would be required to abide by ULDC provisions, including mandatory set-backs for structures, prohibitions on operation of commercial vehicles during the night, and required buffers around internal roads.[282]

Responding to these demands, the Plaintiffs filed a complaint seeking injunctive and declatory relief under two theories.[283] First, the Plaintiffs contended that the "special permit's" conditions violated Florida's Right to Farm Act, as that act prohibited enforcement of development ordinances on farm operations.[284] Second, the Plaintiffs claimed that the farming operations being regulated by the County did not constitute "development" under chapter 163, *Florida Statutes*, which excludes agricultural uses from its definition.[285] The County responded by filing a motion for summary judgment, claiming that the Act prohibits only the enforcement of new ordinances, not the enforcement of those ordinances already in existence, and that the ordinances were not intended to limit farm activity.[286] The County also claimed that in any case, the ordinances being enforced were authorized under "general grants of constitutional and statutory authority."[287] The trial court ruled in favor of the County, agreeing that the Act prohibited only those ordinances passed after the Act's enaction in June 2000, and that a definition of development which excludes agricultural purposes does not prohibit all local government regulation of farming uses.[288] Additionally, the trial court held that the special permit's requirements were not regulations "to prohibit, restrict, regulate, or otherwise limit an activity of a bona fide farm

279. *Id.*
280. *Id.*
281. *Id.*
282. *Id.* at 1248-49.
283. *Id.* at 1249.
284. *See id.*
285. *See id.* at 1249-50.
286. *Id.* at 1249.
287. *Id.* The general grants of authority being specified are constitutional home-rule powers in addition to those granted under Chapter 125, *Florida Statutes*. *Id.* at 1252.
288. *Id.* at 1249.

operation," and thus that the County had authority to enforce its ULDC upon the Plaintiffs.[289]

On appeal, the Fourth District Court of Appeal agreed with the trial court, finding that the Act only prohibited counties from adopting new ordinances related to agriculture, and did not prevent the enforcement of existing requirements.[290] The court cited an example of similar legislation that prohibited both the adoption and enforcement of regulations upon other types of enterprise, stating that since the Legislature did not include the word "enforce" in the Act it did not intend to preempt the enforcement of existing regulations.[291] Thus, the set-back and other provisions of the ULDC could be enforced against the Plaintiffs, with the exception of the need for obtaining a "special permit" for nurseries, which was enacted after the passage of the Act.[292] The court was also skeptical of the trial court's use of two Attorney General opinions to determine that the set-back requirements of the ULDC would not impact farming operations.[293] As both of those opinions were issued in regards to specific cases, with significant differences from the case at hand, the court held that nothing in the record supports the trial court's conclusion that the ULDC provisions would not in fact interfere with farming operations in this case.[294] Thus, the trial court's grant of summary judgment to the County was improper, as a "genuine issue[] of material fact remain[ed]" unresolved—the question of what impact the ULDC provisions might have upon farming operations.[295]

The court, however, affirmed the trial court's conclusion that the definition of development, "which excludes the use of land for agricultural purposes does not preempt all local regulation" of a property's agricultural uses.[296] The relevant definition is provided in section 380.04(1), *Florida Statutes*, which includes as development any "change in the use or appearance of any structure or land," while excluding operations such as growing crops or raising

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289. *Id.*

290. *Id.* at 1250-51 (citing J-II Investments, Inc. v. Leon Cnty., 908 So. 2d 1140 (Fla. 1st DCA 2005)).

291. *Id.* at 1250 (citing FLA. STAT. § 403.7603 (2004) (prohibiting the adoption and enforcement of regulations that discriminate against privately owned solid waste management facilities)).

292. *Id.* at 1250-51. The ordinance requiring a special permit for nurseries of less than five acres was enacted subsequent to the Act in 2002. *Id.* at 1251.

293. *Id.* at 1251 (citing 2001-71 Fla. Op. Att'y Gen. (2001); 2009-26 Fla. Op. Att'y Gen. (2009)). The Attorney General opinions, issued in response to specific cases, state that some proposed enforcements do not appear to interfere with farming operations. *Id.*

294. *Id.* For instance, one of the opinions dealt with a set-back requirement of a non-farm related guest house on the property. *Id.*

295. *Id.* at 1252.

296. *Id.*

livestock.[297] Lastly, while section 163.3164 may exclude agricultural uses of land from "development" regulations, the County has the general authority to regulate the land within its jurisdiction under Section 125, *Florida Statutes*, which authorizes the County's to enforce ULDC provisions upon the Plaintiffs, as long as no other statutes prohibit such regulation.[298]

G. St. Johns River Water Management District v. Koontz

> A water management district's denial of a permit to dredge additional wetlands does not constitute a taking of property; the rule from *Nollan* and *Dolan* applies only where an exaction sought by the government involves an owner's existing interest in real property in exchange for permit approval.

St. Johns River Water Management District v. Koontz represents the latest in an extensive series of litigation surrounding the denial of a permit for additional development in Orange County.[299] In 1994, Koontz, owner of a piece of property in Orange County, applied to the St. Johns River Water Management District ("St. Johns") for a permit to develop a greater area of property than existing regulations would have allowed.[300] When that permit was denied, the owner brought suit, asserting "an improper 'exaction' of property by St. Johns."[301] While governments may deny a permit, they may not approve those same permits by attaching the approval to arbitrary conditions.[302] After the trial court determined that a taking had occurred, St. Johns appealed the decision to the Fifth District Court of Appeals ("Fifth DCA"), arguing that—among other reasons—no exaction had occurred as nothing was ever taken from the owner.[303] The Fifth DCA dismissed this argument, stating that an exaction occurs where an owner "refuses to agree to an improper request from the government resulting in the denial of the permit."[304] Over vigorous dissent, the Fifth DCA also

297. *Id.* (quoting FLA. STAT. § 380.04(1), (3)(e) (2011)).

298. *Id.*

299. St. Johns River Water Mgmt. Dist. v. Koontz, 77 So. 3d 1220. Litigation over the permit request at issue has been going on since 1994 when the permit request was first made. *See id.* at 1223.

300. *Id.* at 1223.

301. *Id.* An exaction is "a condition sought by a governmental entity in exchange for its authorization to allow some use of land that the government has otherwise restricted." *Id.*

302. *Id.*

303. *Id.* at 1224-25. St. Johns also argued that the trial court lacked subject matter jurisdiction, as judicial review was statutorily limited to cases in which a taking had actually occurred; this argument was dismissed. *Id.* at 1225.

304. *Id.* at 1225.

denied St. Johns' argument that no taking had occurred, because the conditions imposed upon approval of the permit did not affect the owner's property, but rather separate lands owned by St. Johns.[305] The dissent in that particular case argued that the issue of whether or not a taking has occurred turns on the question of whether or not an owner has relinquished any protected interest in their land.[306] Following that decision, the Fifth DCA certified the question as one of great public importance to the Florida Supreme Court, which issued the following decision.[307] The Florida Supreme Court recognized that takings generally take the form of either a permanent physical occupation of private property, or a regulation that "deprives an owner of all economically beneficial use of his or her property."[308] In regulatory takings cases, where no physical invasion has occurred, the seminal *Penn Central Transportation Co. v. New York City* governs, in which a number of factors are examined, including the economic impact of the regulation on the owner's investments and the character of the governmental action.[309] Supplementing the *Penn Central* analysis are two United States Supreme Court cases of great importance, *Nollan v. California Coastal Commission* and *Dolan v. City of Tigard*, both of which outline the analysis to be used when a governmental exaction is alleged.[310] In *Nollan*, the Court outlined the "essential nexus test," in which the government must prove that a condition attached to approval of a permit serves the same public purpose that would have supported the denial of the permit.[311] In *Dolan*, the Court expanded the essential nexus test to require "rough proportionality" between the required permit condition and the extent of the impact of the proposed development.[312]

The Florida Supreme Court declined to expand these doctrines any further and determined that under the takings clause the doctrines from *Nollan* and *Dolan* apply only where the conditions imposed by the government involve "a dedication of or over the owner's interest in real property."[313] Therefore, the court determined that the Fifth DCA had improperly applied *Nollan* and *Dolan* to

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305. The condition involved the enhancement of non-contiguous wetlands elsewhere in St. Johns' jurisdiction. *Id.* The Fifth DCA asserted that the United States Supreme Court had already decided that issue as adverse to St. Johns position in Ehrlich v. City of Culver City, 512 U.S. 1231 (1994). *Id.*

306. *Id.* at 1225-26.

307. *Id.* at 1226.

308. *Id.* at 1226-27.

309. *Id.* at 1227 (citing Penn Cent. Transp. Co. v. New York City, 438 U.S. 104 (1978)).

310. *Id.* (citing Nollan v. Cal. Coastal Comm'n, 483 U.S. 825 (1987); Dolan v. City of Tigard, 512 U.S. 374 (1994)).

311. *Id.*

312. *Id.* at 1228.

313. *Id.* at 1230.

the case at hand.[314] In so holding, the court reasoned that if property owners were able to argue that an exaction had occurred "any time regulatory negotiations are not successful and a permit is denied," then regulation of land use would become prohibitively expensive.[315] In the instant case, the court held that St. Johns' requirement that the owner engage in off-site mitigation efforts did not result in anything being taken from the owner.[316] The court thus held that *Nollan* and *Dolan* may not be applied in situations where an "[owner's] challenge is based not on excessive exactions but on a denial of development."[317] Where, as in this case, the denial of a permit is based on existing regulations, no exactions analysis may be applied.[318]

III. NOTABLE FLORIDA LEGISLATION

A. Growth Management
Chapter 2011-139 / House Bill No. 7207

This Act constituted a major overhaul of Florida's growth management practices, it streamlined the procedure by which local governments make amendments to comprehensive plans, and generally delegated more power to local authorities.[319] The Act touches on a great number of existing Florida statutes, with a broad range of subject matter. With the exception of small-scale developments and amendments that are in "an area of critical state concern," all changes to comprehensive plans will now be subject to the "expedited state review process."[320] Additionally, several previous requirements of plan amendments were removed by the legislature. Perhaps most importantly, the bill repeals *Florida Administrative Code* Rule 9J-5.[321] No longer must local communities demonstrate that a plan is "financially feasible."[322] Many state specifications for optional elements in comprehensive plans have been removed, alt-

314. *Id.* at 1231.

315. *Id.* at 1230-31. The court also noted that in addition to becoming prohibitively expensive, the effect would be for agencies to simply deny permits without the opportunity for negotiation between the owner and government, so as to prevent litigation. *Id.* at 1231.

316. *Id.* at 1231.

317. *Id.*

318. *Id.*

319. Act effective June 2, 2011, ch.2011-139, § 17, 2011 Fla. Laws (amending FLA. STAT. § 163.3184 (2011)).

320. *Id.* (amending FLA. STAT. § 163.3184(2), (3)).

321. *Id.* § 72. Rule 9J-5 contained the criteria that local comprehensive plans had to satisfy. Some of the criteria formerly contained within the rule have been incorporated by the bill under other statute sections. *See id.* pmbl.

322. *Id.* § 12, (amending FLA. STAT. § 163.3177). References to "financially feasible" have also been removed throughout various statutes. *See generally id.*

hough local authorities may be allowed to keep these elements within the plans.[323] The Act also makes concurrency requirements for transportation, schools, and parks and recreation in local plans optional.[324] Again, communities in which these concurrencies have already been enacted will be able to keep them in place, with the option to modify their plans through the revised amendment process.[325] The Act eliminates the twice-yearly limitation on making amendments to plans, opening the door for local governments to respond quickly to changing zoning needs.[326] Although, the Act still requires a minimum of two planning periods after the adoption of comprehensive plans, and sets definite time limits on these two periods at a minimum of five and ten years respectively.[327] The Act also changes the optional sector planning process, removing many of the prior limits.[328] Now any local government or combination of local governments can adopt sector plans, with the purpose of coordinating planning strategies for future development and conservation.[329] Revisions are also made to the state's rural land stewardship program, providing for the establishment of such programs, and for transferable incentives.[330] Importantly, the Century Commission for a Sustainable Florida is abolished, with a two year sunset period ending in 2013.[331]

B. Governmental Reorganization
Chapter 2011-142 / Senate Bill No. 2156

The enactment of this bill dramatically changed many of Florida's executive departments by abolishing several of them, by changing the duties of others, and most significantly, by creating the Department of Economic Opportunity (DEO).[332] The responsibilities of the DEO include providing oversight and coordination of economic development and growth management, and to manage public-private partnerships.[333] Both the Office of Tourism, Trade,

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323. *Id.* (amending FLA. STAT. § 163.3177(1)).

324. *Id.* § 15 (amending FLA. STAT. § 163.3180). Concurrency requirements are general infrastructure requirements that any particular comprehensive plan must ensure are present concurrent with the actual development, and need not be in place prior to the beginning of development.

325. *See id.* § 12.

326. *Id.* § 18 (amending FLA. STAT. § 163.3187).

327. *Id.* § 12.

328. *Id.* §§ 8, 28 (amending FLA. STAT. §§ 163.3168(2), .3245).

329. *Id.*

330. *Id.* § 32 (amending FLA. STAT. § 163.3248).

331. *Id.* § 31 (amending FLA. STAT. § 163.3247).

332. Act effective July 1, 2011, ch.2011-142, § 13, 2011 Fla. Laws (to be codified at FLA. STAT § 20.60).

333. *Id.*

and Economic Development (OTTED) and the Ready to Work Programs, as well as some parts of the Agency for Workforce Innovation (AWI), have been transferred to the DEO.[334] The bill also consolidated some public-private development partnerships under Enterprise Florida, Inc. (EFI), which is chaired by the state Secretary of Commerce.[335] Space Florida, VISIT Florida, and the Black Business Investment Board all fall under EFI direction, while Workforce Florida, Inc. remains an independent corporation.[336] EFI's purpose is also redefined by the bill, with the goal of increasing private trade in Florida, revitalizing the space industry, and the promotion of minority-owned businesses are now listed among the list of responsibilities.[337] The bill also streamlined the economic development incentive application process, with approval or denial required from the DEO within 10 days.[338]

With regards to the Deepwater Horizon disaster, the bill looked to address the economic impacts by listing "disproportionately affected counties," and waiving many job, wage, and other state requirements for businesses seeking incentives in those counties.[339] Additionally, the bill created the Commission on Oil Spill Response Coordination, appropriating $10 million per year for three years to contract with the Office of Economic Development and Engagement within the University of West Florida to research and develop an economic strategic plan for the affected counties.[340]

The Florida Energy and Climate Commission (FECC) was abolished by this act as well.[341] Its duties were largely transferred to the Department of Agriculture and Consumer Services.[342] The FECC's previous duty of petroleum management, however, was transferred to the Division of Emergency Management (DEM), and the Act also mandated that DEM create an emergency energy contingency plan.[343] In addition, the Coastal Energy Impact Program was transferred to the Department of Environmental Protection.[344]

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334. *Id.*
335. *Id.* § 22 (amending FLA. STAT. § 288.901).
336. *See id.* pmbl.; *see also* §§ 487-88, 2011 Fla. Laws (repealing FLA. STAT. §§ 288.12295, .707).
337. *Id.* § 22.
338. *Id.* § 18 (amending FLA. STAT. § 288.061).
339. *Id.* § 497 (to be codified at FLA. STAT. § 253.02(6)).
340. *Id.* §§ 497-98.
341. *Id.* § 500 (amending FLA. STAT. § 377.701).
342. *Id.*
343. *Id.* §§ 512-13 (amending FLA. STAT. §§ 377.701, .703).
344. *Id.* § 513.

C. Agricultural-related Exemptions to Water Management Requirements Chapter 2011-165 / House Bill No. 421

This bill was a revision of the current process for obtaining an exemption from water management district (WMD) permitting requirements for agricultural uses that "alter the topography of any tract of land."[345] Such alterations may impede or divert the flow of water in such a way as to harm wetlands, as long as the particular alteration's predominate purpose is not to change the wetland.[346] The bill made this exemption retroactive to July 1st, 1984, and provided that the exemption is to be extended to those lands that have been classified as agricultural, as well as to activities that would otherwise require an environmental resource permit.[347] However, those uses that had previously been authorized by other permits do not fall under the new exemption.[348]

The bill additionally delegated the sole authority to determine whether or not a particular use qualifies for the agricultural-use exemption to the Department of Agriculture and Consumer Services (DACS).[349] Either the WMD or a landowner may request such a determination, and both the DACS and WMD are required to enter into an agreement regarding the processes and procedures that DACS will follow in making the determination.[350] The bill provided that any land converted from agricultural to another type of use will not be subject to mitigation requirements if the prior usage that adversely affected wetlands occurred within the previous four years.[351] The bill expanded the definition of agricultural activities to include not only cultivation, fallowing, and leveling, but also any "best management practic[e]" that either the DACS or the United States Department of Agriculture's Natural Resources Conservation Service provides, so long as that use is not for the predominant purpose of "impeding or diverting the flow of surface waters or adversely affecting wetlands."[352]

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345. Act effective July 1, 2011, ch.2011-165, § 1, 2011 Fla. Laws (amending FLA. STAT. § 373.406).

346. *See id.*

347. *Id.*

348. *Id.*

349. *Id.* § 2 (amending FLA. STAT. § 373.407).

350. *Id.*

351. *Id.* § 3 (amending FLA. STAT. § 403.927(3)).

352. *Id.* (amending FLA. STAT. § 403.927(4)).

D. Infrastructure Improvement
Chapter 2011-164 / House Bill No. 399

This bill made a number of changes to the regulatory requirements of public seaports, with the intention to "expand the state's role as a global hub for trade."[353] Under this bill, the Florida Seaport Transportation and Economic Development Council (FSTED) must annually submit a list of prioritized projects to the Florida Department of Transportation (FDOT).[354] Each seaport is now required to submit a ten-year strategic plan, identifying business targets, desired infrastructure projects, potential regulatory issues facing those projects, and a plan to coordinate the seaports' goals with other government organizations.[355] The bill exempted overwater piers from inclusion in stormwater management systems, so long as the seaport maintains compliance with the National Pollutant Discharge Elimination System Program and provides other pollution prevention measures for activities occurring on the overwater piers.[356]

The process for obtaining a seaport conceptual permit was also changed, and now the Department of Environmental Protection (DEP) has only sixty days to approve or deny an application.[357] Additionally, the DEP may only request additional information regarding a conceptual permit application twice, unless the applicant waives this limitation.[358] The bill also establishes that the burden of persuasion in any third party challenge to the issuance of a conceptual permit is on the third party.[359]

The permitting process for dredging was also changed by the bill, with the fourteen listed seaports no longer required to obtain permits for "maintenance dredging" of previously dredged areas, so long as the activity only returns the area to its previous specifications, no undisturbed areas are impacted, and the work does not endanger protected areas for manatees.[360] The bill also clarified the definition of "mixing zone for turbidity" of water extracted during dredging activities, stating that ditches, pipes, and other linear conveyances are not to be considered waters for the purpose of

353. Act effective July 1, 2011, ch.2011-164, § 1, 2011 Fla. Laws (amending FLA. STAT. § 20.23(1)(d)).
354. *Id.* § 2 (amending FLA. STAT. § 311.09(3)).
355. *Id.* § 3 (amending FLA. STAT. § 311.14).
356. *Id.* § 6 (to be codified at FLA. STAT. § 373.406(12)).
357. *Id.* § 7 (amending FLA. STAT. § 373.4133(8)(a)).
358. *Id.*
359. *Id.*
360. *Id.* § 8 (amending FLA. STAT. § 403.813(3)).

separating them from wetlands.[361] Seaports are now also allowed to use any "sovereignty submerged lands" for maintenance dredging.[362] Finally, the bill also permits seaports to deposit the materials removed during dredging in a "self-contained, upland disposal site," so long as several capacity and verification requirements are met.[363]

361. *Id.* The statute requires a 150 meter radius from the water discharge, which cannot encompass any wetland communities or aquatic vegetation. Linear conveyances may now enter this radius, so long as no discharge takes place in the wetlands. *Id.*

362. *Id.*

363. *Id.*