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NEWS & ANALYSIS

The Waiter at the Party: A Parable of Ecosystem Management in the Everglades

by Alfred R. Light

Editors' Summary: Adaptive management has emerged as a response to the complexity of environmental policy implementation. Development, regulatory advances and shortcomings, and other contextual nuances all conspire to complicate policymaking. In this Article, Prof. Alfred Light explores how to adapt to changing circumstances by adopting more flexible management strategies. He explains how horizontal, intergovernmental networks may facilitate policy implementation more efficiently and effectively than traditional legal or hierarchical structures. Using a case study of the Florida Everglades, he illustrates the inevitability of surprise and the importance of adaptive management for achieving results.

I. Introduction

Imagine a waiter at a large party, with several million guests. His responsibility is to make sure that each guest's glass is full at all times.¹ But instead of a pitcher, he is issued a flat plate on which to carry beverages to the guests. The plates are filled from a vat—not-so-clean at the bottom—built and maintained by the waiter's uncle who hangs out in the kitchen, where beverage trucks arrive to fill the vat on the half hour. If the vat gets too full, the uncle has to open an overflow drain to let some out—a waste. Occasionally, one of the truck drivers, many of whom go by their first names—Dennis, Katrina, Rita, Wilma—crash into the building or monkey with the drains. The waiter's plate is a paper plate, which immediately begins to leak through when water is poured on it. There will be hell to pay if the waiter spills the plate on a guest, or if a guest gets sick from a drink,

or if, heaven forbid, the vat were to overflow. More and more guests arrive; a few leave, but the total continues to rise. The waiter is going to have to think on his feet.

Implementation of environmental policy is a story of high-stakes politics, as rich with contextual factors as the time the policy was formulated.² Everglades restoration is being implemented in a rapidly changing South Florida—inevitably adapting to these changing conditions. Intergovernmental networks, built along horizontal lines of action, are shaping results rather than traditional legal or hierarchical public administration structures.³ How these intergovernmental relationships work may be of interest both within and outside Florida.

To return to the parable of our hypothetical waiter, this Article is a case study about thinking on one's feet—what environmental professionals like to call “adaptive manage-

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1. Nicolas J. Gutierrez Jr., Esq., Governing Board, South Florida Water Management District (the District), has attributed the image of the waiter at the party and its parallels to South Florida's situation to the District's former executive director, Henry Dean, who is now the principal of Henry Dean and Associates, L.L.C., in St. Augustine, Florida. The adaptation herein, and in particular any errors or omissions, however, are solely my own.

2. DENISE SCHEBERLE, *FEDERALISM AND ENVIRONMENTAL POLICY: TRUST AND THE POLITICS OF IMPLEMENTATION* 2 (2d ed. 2004). Political scientists struggle to describe complex intergovernmental relations in policy implementation. E.g., Robert Agranoff, *Managing Within the Matrix: Do Collaborative Intergovernmental Relations Exist?*, 31 *PUBLICUS*; J. FEDERALISM 31 (2001); Deil S. Wright & Chung-Lao Cho, *State Administration and Intergovernmental Interdependency: Do National Impacts or State Agencies Contribute to Organizational Turbulence?*, in *HANDBOOK OF STATE GOVERNMENT ADMINISTRATION* (John J. Gargan ed., 2000); Daniel J. Elazar, *Opening the Third Century of American Federalism: Issues and Prospects*, 509 *THE ANNALS* 11 (1990) (coercive cooperation); William T. Gormley Jr., *Intergovernmental Conflict on Environmental Policy: The Attitudinal Connection*, 40 *W. POL. Q.* 285, 286 (1987) (poor working relationships “almost guarantee implementation problems”); Deil S. Wright, *Models of National, State, and Local Relationships*, in LAWRENCE J. O'TOOLE JR., *AMERICAN INTERGOVERNMENTAL RELATIONS: FOUNDATIONS, PERSPECTIVES, AND ISSUES* (1982) (surveying changing relationships over time).

3. See generally STEPHEN GOLDSMITH & WILLIAM D. EGGERS, *GOVERNING BY NETWORK: THE NEW SHAPE OF THE PUBLIC SECTOR* (2004).

ment.” To appreciate the fancy footwork, though, one needs some background on the ecosystem—the building if you will—and the nature of the game—or the party if you will—going on in South Florida. After touring the building and the party, we’ll look at some of the recent plays—“ecosystem management” (EM) in real-time 2006—in the continuing saga of Everglades restoration. The Article concludes with a couple of recommendations and quick observations, time and space permitting.

II. Paper Plates: Geology

Florida’s Everglades is extremely flat, only sloping about two inches per mile on average from Lake Okeechobee to tidal waters.⁴ Until Col. William S. Harney led a military expedition in pursuit of Native Americans in 1840 and published his account the following year, little was known about the region.⁵ It is a very unusual wetland. Historically, except for overflows of Lake Okeechobee principally affecting only the northern Everglades, the bulk of the ecosystem received nutrients only from the atmosphere—a “sheet flow” ecosystem independent of river or stream channels.⁶ Marjory Stoneman Douglas famously provided the moniker, “Everglades: River of Grass.”⁷

Geologically, much of South Florida is comprised of limestone, which has been “partially dissolved by percolating rainwater, producing its labyrinth of finger-sized holes and channels that now carry the Biscayne aquifer.”⁸ This Biscayne aquifer is very close to the surface in the southern part of South Florida, such that rainfall and waters of the interior Everglades enter it directly.⁹ Beneath this surficial aquifer lies the Hawthorn formation, which from north of Lake Okeechobee southward is composed of fine impermeable clays, effectively isolating the brackish to saline Floridan aquifer beneath it from the surface. Where wells previously have been drilled through to the Floridan aquifer, it has at times been necessary to find and plug the wells with concrete to prevent salty contamination of surface waters.¹⁰ In northern to central Florida, e.g., Orlando, upper Floridan aquifer water is potable.

From central Florida southward, there are intermediate confining layers (aquicludes) in the Floridan aquifer, dividing it into upper and lower layers. About 3,000 feet below the surface is the boulder zone—so-called because of the large volume of void spaces within it—which has been used for disposal of oil-field brine waste since 1943.¹¹ More recently, the zone also has been used to dispose of municipal wastewater from West Palm Beach to Miami.¹²

On the surface, the historic Greater Everglades Ecosystem included a number of environments: freshwater marshes (the classic “Everglades”); wetland tree islands

(broad-leaved types); cypress heads, domes, and dwarf cypress forests; tropical hardwood hammocks; pinelands; mangrove swamps and mangrove islands; coastal saline flats, prairies, and forests; tidal creeks and bays; and shallow, coastal marine waters.¹³ A prior cypress swamp no longer exists except for a fragment in Loxahatchee Wildlife Refuge.¹⁴ Sawgrass dominated the northern Everglades interior, which was 40 miles wide and extended almost 100 miles to the tidal waters of the Florida Bay and Gulf of Mexico.¹⁵ Differences of a few inches in elevation cause large differences in types of vegetation.¹⁶

III. The Trucks and the Vat: The Central and South Florida Flood Control Project

South Florida’s climate is divided into two seasons, which meteorologists call wet and dry and residents usually refer to as “hurricane” and “tourist.” Three-quarters of the average annual rainfall in South Florida of 50 to 60 inches comes in the six-month period of May through October.¹⁷ More impressively, in an “average” year about 60% of the rainfall comes in the four-month summer period of June through September, and only 25% falls in the six-month dry season of November through April.¹⁸ Frequently there is too much water. South Florida is a “low-lying region where, as of 2000, more than one million people lived in flood-prone areas and nearly 900,000 lived in Category 1 hurricane surge zones.”¹⁹ In dry years, however, there has been saltwater intrusion into the freshwater aquifers and uncontrollable soil fires, with attendant choking smoke.²⁰

Lake Okeechobee, the second-largest freshwater lake in the United States (second only to Lake Michigan), spans 730 miles but is relatively shallow, averaging only a depth of nine feet.²¹ After catastrophic flooding and over 3,000 deaths associated with hurricanes in 1926 and 1928, the U.S. Army Corps of Engineers (the Corps) built the Herbert Hoover Dike—a 140-mile long earthen dam completely surrounding Lake Okeechobee. After flooding of the entire South Florida peninsula associated with two consecutive hurricanes in 1947, the Corps constructed the Central and South Florida Flood Control Project (C&SF).²² The C&SF has four main components: a perimeter levee through the eastern portion of the Everglades to protect land further east from direct Everglades flooding, designation of a large area of the northern Everglades south of Lake Okeechobee to be managed for agriculture (the Everglades Agricultural Area (EAA)), designation as water conservation areas most of the

4. THOMAS E. LODGE, *THE EVERGLADES HANDBOOK: UNDERSTANDING THE ECOSYSTEM* 20 (2d ed. 2005).

5. *Id.* at 13.

6. *Id.* at 14.

7. MARJORY STONEMAN DOUGLAS, *EVERGLADES: RIVER OF GRASS* (1947).

8. LODGE, *supra* note 4, at 10.

9. *Id.*

10. *Id.* at 8.

11. *Id.* at 7.

12. *Id.*

13. *Id.* at 15-16.

14. *Id.* at 15.

15. *Id.* at 20.

16. *Id.* at 21.

17. *Id.* at 16.

18. *Id.*

19. JAMES F. MURLEY ET AL., *CHARTING THE COURSE: WHERE IS SOUTH FLORIDA HEADING?* 36 (2006).

20. LODGE, *supra* note 4, at 222.

21. U.S. ARMY CORPS OF ENGINEERS, *LAKE OKEECHOBEE AND THE HERBERT HOOVER DIKE 2* (undated), available at <http://www.saj.usace.army.mil/dp/images/PDFs/FloodControlandEcosystem/LakeOandHHDike.pdf>.

22. After the second hurricane, the entire greater Everglades area was inundated. Downtown Ft. Lauderdale’s streets and businesses were in deep water for weeks. LODGE, *supra* note 4, at 113.

remaining Everglades between the EAA and Tamiami Trail, and enlargement of the overall canal system into a more interconnecting network to completely regulate the waters of the system, including the Calossahatchee, Kissimmee, Lake Okeechobee, St. Lucie, and the Everglades.²³ It is very important that the Corps manage lake levels properly. Recent Corps analysis indicates that the Herbert Hoover Dike leaks, that numerous areas of the dike have seepage and piping problems when the lake level reaches 18.5 feet, and that dike failure would be “likely” if the lake level reaches 21 feet.²⁴

In addition to the Herbert Hoover Dike, the Corps maintains and operates project works on the St. Lucie Canal, Calossahatchee River, and other levees, channels, locks, and spillways connected to Lake Okeechobee, portions of the C&SF directly connected to the Lake. The South Florida Water Management District (the District) operates and maintains other levees, canals, and pumping station parts of the C&SF throughout the South Florida region, including the main outlets from Lake Okeechobee to Water Conservation Areas 1, 2A, and 3A to the east and south.²⁵ The C&SF protects both urban and agricultural interests during extreme rainfall events by quickly discharging runoff into the Atlantic or the Gulf. An average of 1.7 billion gallons of water per day that once flowed south is now discharged to tide.²⁶

Hurricanes are a Florida fact of life. In 2005, for example, Hurricanes Dennis, Katrina, Rita, and Wilma all passed through the state.²⁷ Recent hurricanes stirred up sediments in Lake Okeechobee, concentrating phosphorus in the water column and contributing to the presence of blue-green algae in the lake as well as in coastal estuaries where discharges from the lake became necessary due to the hurricanes.²⁸ These phosphorus concentrations are the legacy of prior decades of agriculture and cattle grazing and their attendant “backpumping” of the polluted water into the lake.²⁹

23. LODGE, *supra* note 4, at 222-24.

24. U.S. ARMY CORPS OF ENGINEERS, *supra* note 21, at 6. Piping is the erosion of soil that erodes beneath the dike. The erosion of soil creates a path by which water flows and erodes more soil. *Id.* at 4. In July 2006, the Corps announced a new tentatively selected plan for the Lake Okeechobee Regulation Supply Schedule (LORSS) which for public safety reasons avoids lake levels above 17.25 feet at any time during the year. See LORSS Tentatively Selected Plan Evaluation, available at http://www.saj.usace.army.mil/pao/hotTopics/docs/lorss/FactSheet-LORSS_2006JUL10.pdf.

25. See Comprehensive Everglades Restoration Plan (CERP), Development of the Central & South Florida (C&SF) Project, http://www.evergladesplan.org/about/restudy_csf_devel.cfm (last visited July 10, 2006); South Florida Water Management District, Agency Overview, <http://www.sfwmd.gov/site/index.php?id=61> (last visited July 11, 2006).

26. 1 SOUTH FLORIDA ECOSYSTEM RESTORATION TASK FORCE, STRATEGIC PLAN AND BIENNIAL REPORT 4 (2002-2004), available at http://www.sfstore.org/documents/2004_strategic%20plan_volume%20I.pdf.

27. MURLEY ET AL., *supra* note 19, at 36.

28. South Florida Water Management District, Blue-Green Algae Home, <http://www.sfwmd.gov/site/index.php?id=611> (last visited July 10, 2006).

29. See 1 SOUTH FLORIDA WATER MANAGEMENT DISTRICT, SOUTH FLORIDA ENVIRONMENT REPORT 8 (2006), available at http://www.sfwmd.gov/sfer/SFER_2006/volume1/vol1_table_of_contents.html.

The pattern has created a vicious circle in which turbid water limits the regrowth of submerged vegetation and the absence of plants on the bottom allows sediments to be easily resuspended, lowering light penetration and hampering recovery.

IV. The Guests: South Florida

In 2004, South Florida's population reached 5.9 million—up from 5.5 million in 2000—and is projected to reach 8.4 million by 2030.³⁰ While Florida has long been known as a desirable retirement destination, the reality is that South Florida's population growth is now largely the result of immigration from the Caribbean and Latin America, followed by a natural increase (births minus deaths), and a small portion from domestic migration.³¹ From 2000 to 2004, this strong impact of international immigration was felt mainly in the southern counties of Broward, Miami-Dade, and Monroe.³² In fact, Miami-Dade saw negative domestic migration during this period.

The seven-county South Florida region—Broward, Indian River, Martin, Miami-Dade, Monroe, and Palm Beach counties—cover 5.3 million acres. The three southernmost counties—Broward, Miami-Dade, and Monroe—cover 2.7 million acres, roughly 70% of which still remain part of the original Everglades. The rest is largely urbanized with some agriculture.³³ These counties are poster children for urban sprawl.³⁴ In these counties, the populations of the western areas grew by at least 30% from 1990 to 2002, and many exceeded 65%. In contrast, most urbanized eastern communities grew by less than 20% and some even lost population.³⁵ Today, South Florida ranks eighth among the top 20 sprawling economic areas of the country.³⁶ The attendant pressures from developers on rural landowners to sell their land is obvious. It is projected that, at a minimum, an additional 1.5 million residential units will be needed during the next 25 years to house the region's population and to replace old structures. A Florida Atlantic University survey concludes, “Overall, this will result in a 52 percent region-wide increase in residential units. The total number of residential units, including new and existing units, will reach over three million.”³⁷

The lake remains in the disturbed condition to this day and widespread surface algae blooms, particularly blue-green (*Mycrocystis*) have been reported from a variety of locations around the lake as a result.

See also LODGE, *supra* note 4, at 230 (“Without treatment, EAA stormwater contained high phosphorus levels from the fertilizer applications, often in excess of 500 parts per billion (ppb). As the entire EAA became developed in the 1970's, the problem of where to put excess stormwater was increasingly solved by backpumping to Lake Okeechobee.”).

30. These numbers consider South Florida to be seven counties (Broward, Indian River, Martin, Miami-Dade, Monroe, Palm Beach, and St. Lucie). See MURLEY ET AL., *supra* note 19, at 7. The projection comes from Smith, Stanley and Stefan Rayer, “Population Projections by Age, Sex and Race and Hispanic Origin for Florida and Its Counties, 2003-2030,” *Florida Population Studies*, Vol. 37, No. 3, Bulletin 139, July 2004.

31. MURLEY ET AL., *supra* note 19, at 7.

32. *Id.*

33. *Id.* at 29.

34. See generally Joanna Celeste Sakowicz, *Urban Sprawl: Florida's and Maryland's Approaches*, 19 J. LAND USE & ENVT'L. L. 377 (2004).

35. *Id.*

36. ROBERT BURCHELL ET AL., *SPRAWL COSTS: ECONOMIC IMPACTS OF UNCHECKED DEVELOPMENT* (2005). This “sprawl” statistic includes Glades, Hendry, and Okeechobee counties, which are included in the Miami-Ft. Lauderdale Economic Area analyzed in this publication.

37. MURLEY ET AL., *supra* note 19, at 32.

Each of South Florida's guests needs water. In 1972, Florida adopted by statute a modified riparian system.³⁸ There are no property rights in water, and the right to use water is not limited to those whose property abuts the water. Rather, the use of water is regulated using the consumptive use permit (CUP), which is issued on a case-by-case basis to applicants who demonstrate that the proposed consumptive use of water: (1) is reasonable-beneficial; (2) will not interfere with existing legal uses; and (3) is consistent with the public interest.³⁹ Public interest factors include environmental protection, flood protection, water quality protection, and water resource protection.⁴⁰ CUPs operate in conjunction with the District's water supply plans, water shortage plans, and minimum flow and levels (MFLs).⁴¹

Florida Water Law since the 1970s has also provided an additional water management tool called the reservation. A reservation is a certain quantity of water set aside by rule for fish and wildlife protection and public health and safety.⁴² To date, the provision remains unimplemented in South Florida. When implemented, reservations also would constrain the issuance of CUPs.

V. The Uncle in the Kitchen: The Comprehensive Everglades Restoration Plan (CERP)

In 2000, the U.S. Congress adopted CERP, also known as "The Yellow Book."⁴³ CERP came about after almost two decades of wrangling: beginning with Florida Gov. Robert Graham's (D-Fla.) "Save Our Everglades" program, substantial state and federal environmental initiatives, and a lawsuit by the United States against the District; followed by Gov. Lawton Chiles' (D-Fla.) high-profile "surrender" in this suit shortly after his election, numerous challenges to this "settlement" before state and federal agencies and judges, the creation of a South Florida Ecosystem Restoration Task Force and Working Group, and a Statement of Principles among stakeholders staying several legal challenges; and concluding with the state Everglades Forever

Act,⁴⁴ which was intended to embody and even force compromise among the stakeholders.⁴⁵ Indeed, there was some remarkable ecosystem restoration well underway prior to CERP, such as the Everglades Construction Project creating stormwater treatment areas for runoff from the EAA and the Kissimmee River Restoration, some of which is now visibly complete.⁴⁶ CERP is intended to totally revise and update the C&SF in order to restore, preserve, and protect the South Florida ecosystem while providing required flood protection and water supply.⁴⁷

To many in the process, among the more significant reasons for the Everglades restoration consensus was Governor Chiles' creation in 1994 of the Commission for a Sustainable South Florida.⁴⁸ The Commission consisted of 42 members from the business, government, agricultural, environmental, and public sectors with a mandate to "make recommendations for achieving a healthy Everglades ecosystem that can co-exist and be mutually supportive of a sustainable South Florida economy and quality communities."⁴⁹ Today the Commission is often wistfully remembered as a consensus-building institution no longer present on the Florida scene.⁵⁰ The Commission's work took on issues far beyond the environmental problems of the Everglades and the water supply and flood control needs of South Florida. Its ultimate recommendations addressed economic, cultural, and social sustainability as well. For example, it examined issues concerning the regional labor pool, education, and transportation infrastructure.⁵¹ This inquiry was based on the Commission's recognition of the interdependent nature of and the need for balance between the resource requirements of the natural environment, the built environment, social institutions, and the economy.⁵²

CERP both added to and modified the already important roles of the Corps in managing South Florida's ecosystem. The "Yellow Book" outlined 60 elements covering 16 coun-

38. FLA. STAT. §373.016.

39. *Id.* §373.223(1).

40. Michelle Diffenderfer & Tara W. Duhy, *Florida's Approach: Minimum Flows and Levels and Reservations of Water*, in AMERICAN BAR ASSOCIATION SECTION OF ENVIRONMENT, ENERGY, AND RESOURCES, EASTERN WATER RESOURCES: EMERGING ISSUES IN COMPETITION, SCIENCE, AND POLITICS 7 (2006); see also Kevin E. Regan, *Balancing Public Water Supply and Environmental Impacts Under Florida Water Law: From Water Wars Toward Adaptive Management*, 19 J. LAND USE & ENVT'L. L. 123 (2003).

41. FLA. STAT. §373.0361 (water supply plan); §373.246 (water shortage plan); §373.042 (minimum flow and levels).

42. *Id.* §373.223(4).

The governing board or the department, by regulation, may reserve from use by permit applicants, water in such locations and quantities, and for such seasons of the year, as in its judgment may be required for the protection of fish and wildlife or the public health and safety. Such reservations shall be subject to periodic review and revision in the light of changed conditions. However, all presently existing legal uses of water shall be protected so long as such use is not contrary to the public interest.

See John J. Fumero, *Florida Water Law and Environmental Water Supply for Everglades Restoration*, 18 J. LAND USE & ENVT'L. L. 379 (2003).

43. Water Resources Development Act, Pub. L. No. 105-541, §601, 114 Stat. 2572, 2680 (2000).

44. FLA. STAT. §373.4592.

45. This history has been described in more detail elsewhere. Alfred R. Light, *Ecosystem Management in the Everglades*, 14 NAT. RESOURCES & ENV'T 166 (2000). See also *infra* Part X.

46. See South Florida Water Management District, Everglades Construction Project, http://www.sfwmd.gov/org/erd/ecp/3_ecp.html (last visited July 10, 2006); South Florida Water Management District, Kissimmee River Restoration Project, <http://www.sfwmd.gov/org/erd/krr/index.html> (last visited July 10, 2006).

47. LODGE, *supra* note 4, at 249.

48. See GOVERNOR'S COMMISSION FOR A SUSTAINABLE SOUTH FLORIDA, RESTUDY PLAN REPORT (1999), available at <http://www.state.fl.us/everglades/gcssf/gcssf-reports.html#>.

49. National Park Service, The Everglades Restoration Efforts, <http://www.nps.gov/ever/eco/restore.htm> (last visited July 10, 2006).

50. See Richard A. Pettigrew & Janice Fleischer, *Quality and Implementation of Agreements: Are Products of Environmental/Public Policy Conflict Resolution and Consensus Building Efforts Being Implemented? How Do They Compare to Products of Traditional Forums?*, Implementation, <http://consensus.fsu.edu/epp/implementation.html> (last visited July 10, 2006). Neither the governor's Commission on the Everglades, which Gov. John Ellis "Jeb" Bush (R-Fla.) created to succeed Governor Chiles' Commission, or the Water Resources Committee of the South Florida Water Management District, which the District created to perform a similar role, seems to have developed the "consensus-building" culture of the earlier Commission. *Id.*

51. See GOVERNOR'S COMMISSION FOR A SUSTAINABLE SOUTH FLORIDA, PLANNING FOR 2050: A CONCEPTUAL PLAN TO ACHIEVE SUSTAINABLE COMMUNITIES IN SOUTH FLORIDA (1999), <http://www.state.fl.us/everglades/gcssf/2050-Report.pdf>.

52. *Id.* at 1-2.

ties over an 18,000 square mile area to be completed over a 30-year period and initially estimated to cost \$7.8 billion.⁵³ Its major components include: (1) surface water storage reservoirs; (2) water preserve areas; (3) management of Lake Okeechobee as an ecological resource; (4) improved water deliveries to the estuaries; (5) underground water storage; (6) treatment wetlands; (7) improved water deliveries to the Everglades; (8) removal of barriers to sheetflow; (9) storage of water in existing quarries; (10) reuse of wastewater; (11) pilot projects; (12) improved water conservation; and (13) additional feasibility studies.⁵⁴ CERP contemplates that the Corps will select cost-effective alternatives consistent with all federal and state regulatory requirements in a Project Implementation Report (PIR) or Pilot Project Design Report (PPDR), which will serve as the basis for congressional appropriations for each project.⁵⁵ The Florida Forever Act and the Everglades Forever Act provide the state's financial commitments for CERP, especially the purchase of land required for the CERP projects and providing the District with authority to participate.⁵⁶ The state's Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) provides the state's regulatory process to support CERP.⁵⁷

VI. The Waiter on His Feet: Acceler8

In 2004, more than three years after CERP had been approved, the Corps was still early in the process of conducting feasibility studies and selecting among alternative designs that were statutory preconditions to the congressional appropriation of funds to construct most projects. Only one PIR, for a relatively noncontroversial Indian River Lagoon-South Project, had been submitted to Congress. To many insiders, CERP seemed enmeshed in a multistage federal agency decision process that would not yield progress on the ground for many years.⁵⁸ While Florida was spending considerable funds on Everglades restoration under the Everglades Forever Act, primarily to acquire land needed for various projects, federal CERP primarily funded studies, models, and engineering design work.

The District, with the support of Florida's Department of Environmental Protection (DEP), approached Gov. John Ellis "Jeb" Bush (R-Fla.) with a plan to accelerate a number of CERP projects (8 to 14 depending on how you count).⁵⁹

Using borrowing authority previously used primarily by school districts for school construction (certificates of participation (COPs)), the District could borrow money to accelerate construction of these projects without raising taxes.⁶⁰ The state then negotiated a timetable for accelerated construction with the Secretary of the Army. With very ambitious target dates set for construction, Florida and the Corps agreed that the District and the Corps administrative processes would be adjusted for each project so as to improve the chance that the state could be reimbursed for the CERP projects for which Congress subsequently approves appropriations.⁶¹ This has become known as Florida's Acceler8 initiative.⁶²

Without any statutory amendments or new regulations, both the District and the Corps then set about to develop a parallel expedited design and construction process. As the two agencies sought to integrate the Corps' PIR preparation process with the District's Acceler8, public participation clearly was an afterthought.⁶³ While the initial document in the Acceler8 process, the Basis of Design Report (BODR) prepared by the District, contemplates "stakeholder and technical review," there is no invitation of the general public to comment nor mandatory public availability of the document. In any event, the "review" of the BODR by interested persons is limited to two weeks, placing meaningful outside input at the early stage of the process.⁶⁴ The BODR serves as the basis for development of the project's preliminary design, which the Corps committed to approve as its own tentatively selected plan (TSP) for the project within the PIR process. Under this agreement, the District can only go forward with 30% of its design until the Corps approves the TSP. Clearly, the District will not receive "credit" under CERP if it proceeds without Corps approval. There does not appear to be any public participation procedures required under this new TSP procedure, which was not part of the Corps' PIR process prior to Acceler8.

53. CERP, About CERP: A Brief Overview, http://www.evergladesplan.org/about/about_cerp_brief.cfm (last visited July 10, 2006).

54. CERP, CERP: The Plan in Depth, Part I, http://www.evergladesplan.org/about/rest_plan_pt_01.cfm (last visited July 10, 2006).

55. See generally Alfred R. Light, *Of Square Pegs, Round Holes, and Recalcitrants Lying in the Weeds: Superfund's Legal Lessons for Everglades Restoration*, 12 Mo. ENVTL. L. & POL'Y REV. 91 (2004-2005).

56. FLA. STAT. §§259.105, 373.4592.

57. *Id.* §§373.1501, 373.1502.

58. See U.S. ARMY CORPS OF ENGINEERS JACKSONVILLE DISTRICT & SOUTH FLORIDA WATER MANAGEMENT DISTRICT, CENTRAL AND SOUTHERN FLORIDA PROJECT, COMPREHENSIVE EVERGLADES RESTORATION PLAN, FINAL DRAFT MASTER IMPLEMENTATION SEQUENCING PLAN (2004), available at http://www.evergladesplan.org/pm/pm_docs/misp/111904_draft_misp_final.pdf.

59. Acceler8 was prepared within a small circle at the South Florida Water Management District and the Florida DEP. Interview with Ernest Barnett, Dir. of Ecosystem Projects, Fla. Dep't of Env'tl. Prot., in Tallahassee, Florida (Feb. 7, 2005).

60. Memorandum of Agreement Regarding Acceleration of the Comprehensive Everglades Restoration Plan, Between Jeb Bush, Governor of Fla., and Nicolas J. Gutierrez Jr., Chair, South Fla. Water Management Dist. Governing Bd. (Oct. 1, 2004), available at http://www.evergladesnow.org/a8_moa.pdf.

61. Construction start dates for the projects were agreed to in the "Woodley-Allbright Letter Dated Oct. 13, 2004." See Accelerated Everglades Restoration Projects, presented at Regional Project Delivery Team (RPDT) Meeting (Jan. 25, 2005), http://www.evergladesplan.org/pm/pm_docs/rpdt/central_docs/CRPDT_JAN05_PIR_Acceler8.pdf (last visited Nov. 15, 2005). Web links to the minutes of the RPDT meetings on the Corp's CERP website have been removed; see http://www.evergladesplan.org/pm/public_meetings/meetings.cfm. However, the author personally attended these meetings and vouches for the accuracy of the statements made herein; KENNETH G. AMMON, P.E., ASSISTANT DEPUTY EXECUTIVE DIRECTOR, ACCELER8 PROGRAM, WORKING GROUP MEETING (2005), available at http://www.sfrestore.org/wg/wgminutes/2005meetings/26jan2005/Acceler8_update_012605.pdf.

62. Alfred R. Light, *Spark Plugs of Policy Implementation: Intergovernmental Relations and Public Participation in Florida's Acceler8 Initiative to Speed Everglades Restoration*, 30 VT. L. REV. (forthcoming 2006).

63. As to public involvement, the Acceler8 website simply states: "Opportunities for agency and stakeholder input will continue to be provided in the Acceler8 process through numerous avenues, including public Governing Board meetings/workshops and state/federal permitting processes." Everglades Now, Acceler8 Questions and Answers, https://my.sfwmd.gov/portal/page?_pageid=54,926218&_dad=portal&_schema=PORTAL&navpage=qa.

64. Interview with Greg Knecht, CERP Liaison, Fla. Dep't of Env'tl. Protection, in Tallahassee, Fla. (Feb. 8, 2005).

Because an Acceler8 project moves at such a quick pace after the BODR and preliminary design are prepared, the key public participation process for the project, including other federal agency input from outside the Corps, will likely take place in connection with the Corps' regulatory procedures required for issuance of a §404 "dredge and fill" permit under the Clean Water Act (CWA).⁶⁵ CERP's PIR process did not contemplate the need for such a permit, but since an Acceler8 project is envisioned to move in advance of that process' creation of the PIR and its associated documents under the National Environmental Policy Act (NEPA),⁶⁶ the §404 permit is required. The District must comply with the terms of the Corps' §404 permit whether or not the Corps adopts the BODR as its TSP for CERP purposes. This §404 process mimics the process that the District had to follow in connection with its building of a number of stormwater treatment areas under the old Everglades Construction Project program.⁶⁷ In that earlier process, federal coordination, public participation, and controversy revolved around the §404 process.⁶⁸

Acceler8 also fits uneasily with the preexisting state law process for addressing CERP projects. Florida's CERPR included a process through which the state gave the Corps assurances that a CERP project, if constructed, would comply with all applicable state regulatory requirements.⁶⁹ This so-called §1501 approval process was a precondition to a PIR's submission to Congress.⁷⁰ Once funds were appropriated, the state was to follow through and issue the permits under §1502 of the statute.⁷¹ For Acceler8 projects, however, materials that the state DEP would typically prepare in connection with CERPR §1502, such as certification that the project is consistent with state water quality standards and other requirements, must now be prepared in connection with the District's application for a CWA §404 permit. As a practical matter, the relevant public participation procedures for the state permit will be merged into the §404 permit process. The key federal approval for the project is the Corps' issuance of the §404 permit.

In deciding how Acceler8 will operate, state officials looked to the precedent set by a state project to fill the northern seven miles of the Prairie Canal, part of the larger Picayune Strand (or Southern Golden Gate Estates) project, for which a PIR was about ready to be submitted to Congress.⁷² There, federal officials literally faxed approvals of the project to the District on the date the project was to break ground.⁷³ The "Prairie Canal" project had been part of each

of the alternatives the Corps had developed for the Picayune Strand PIR so that an early "breakout" for this portion of the project with state funds became plausible.⁷⁴

A first test of Acceler8 came in early 2005, as contractors prepared the BODR for the C-43 Reservoir on the Caloosahatchee River.⁷⁵ Although the Corps' tentative plans for the project were consistent with the District's plans, the U.S. Environmental Protection Agency (EPA) appeared at the South Florida Regional Project Delivery Team (PDT) meeting in January and objected to construction of the reservoir without provision for a stormwater treatment area.⁷⁶ Neither the Corps nor the District had included this feature in early proposals for the reservoir. Those among the public following the Corps' PDT process, however, may not have even been aware that the District's statement of work for the BODR had been issued and that the BODR would undergo its two-week "stakeholder and technical review" within a matter of weeks.⁷⁷ The Corps' elaborate outreach program and PDT process became less relevant to the important accelerated state decisionmaking processes.⁷⁸ Acceler8 funnels "public" input into the CWA §404 regulatory process, which usually happens at a stage where many technical decisions about the project have already been set.⁷⁹ The Corps' timetable for Acceler8 clearly envisions that the Corps' approval of a TSP would already have occurred and, thus, that the design for the project would have proceeded beyond the 30% mark approaching an "intermediate design" before public notice for issuance of the §404 permit.⁸⁰ Although the Corps' PIR and related processes are supposed to have passed the public comment stage by the time the Corps would issue the §404 permit, the precise links between the

available at <http://www.dep.state.fl.us/evergladesforever/news/2004/0519.htm>; Press Release, Fla. Dep't of Env'tl. Protection, Governor Bush Moving the Earth to Restore Everglades (Oct. 17, 2004), available at <http://www.dep.state.fl.us/evergladesforever/news/2003/101603.htm>.

74. Interview with Ernest Barnett, Dir. of Ecosystem Projects, Fla. Dep't of Env'tl. Protection, Tallahassee, Fla. (Feb. 7, 2005).

75. See generally *Everglades Now*, C-43 (Caloosahatchee River) West Reservoir—ACCELER8 Project, https://my.sfwmd.gov/portal/page?_pageid=54,926237&_dad=portal&_schema=PORTAL; CERP, C-43 Basin Storage Reservoir—Part 1, http://www.evergladesplan.org/pm/projects/proj_04_c43_basin_1.cfm (last visited July 10, 2006).

76. See Minutes of South Florida RPDT Meeting, Jan. 27, 2005, available at http://www.evergladesplan.org/pm/rpdt_docs_south.cfm (last visited Nov. 15, 2005).

77. See http://www.evergladesplan.org/pm/pm_docs/rpdt/central_docs/CRPDT_JAN05_PIR_Acceler8.pdf (slide 3—"Integrated PIR/Acceler8 Process") (last visited Nov. 15, 2005). Public input occurred at an Issues Workshop meeting of the District's Water Resources Advisory Committee on March 7, 2005, announced by the District's Executive Director at the meeting of the South Florida Ecosystem Restoration Task Force on February 16, 2005.

78. At the February 16, 2005, meeting of the South Florida Ecosystem Restoration Task Force, Dexter Lehtinen, Esq., Counsel to the Miccosukee Tribe, complained that Acceler8 circumvents the scientific analytical and public participation process inherent in the preparation of PIRs.

79. See http://www.evergladesplan.org/pm/pm_docs/rpdt/central_docs/CRPDT_JAN05_PIR_Acceler8.pdf (slide 3—"Integrated PIR/Acceler8 Process") (last visited Nov. 15, 2005). On the CWA §404 permitting process, see generally U.S. Army Corps of Engineers Jacksonville District, Section 404 of the Clean Water Act, <http://www.saj.usace.army.mil/permit/regulations/section404.htm> (last visited July 10, 2006).

80. Interview with Temperince Morgan, Env'tl. Manager, Permitting, Water Quality Standards and Special Projects Program, Fla. Dep't of Env'tl. Protection, in Tallahassee, Fla. (Feb. 8, 2005).

65. 33 U.S.C. §1344.

66. 42 U.S.C. §§4321-4370d, ELR STAT. NEPA §2-209.

67. The Everglades Construction Project is described on the District's website at http://www.sfwmd.gov/org/erd/ecp/3_ecp.html (last visited July 31, 2006).

68. See Keith Rizzardi, *Regulating Watershed Restoration: Why the Perfect Permit Is the Enemy of the Good Project*, 27 NOVA L. REV. 51, 55-62 (2002).

69. FLA. STAT. §373.1502.

70. *Id.* §373.1501.

71. *Id.* §373.1502.

72. See CERP, Picayune Strand (Southern Golden Gate Estates) Hydrologic Restoration, http://www.evergladesplan.org/pm/projects/proj_30_sgge.cfm (last visited July 10, 2006); *Everglades Now*, Picayune Strand (Southern Golden Gate Estates) Restoration—ACCELER8 Project, https://my.sfwmd.gov/portal/page?_pageid=54,926611&_dad=portal&_schema=PORTAL.

73. See Press Release, Fla. Dep't of Env'tl. Protection, First Project to Restore America's Everglades Bringing Results (May 19, 2004),

District's Acceler8 decisionmaking and the Corps' parallel PIR process continue to evolve.

By May 2006, however, limits far more serious than integrating Acceler8 under CERP were becoming all too apparent. Although the state courts endorsed the District's novel use of COPs, statutory limits to its authority to borrow arrived quickly—about \$1.8 billion—in connection with the bonds issuance slated by the end of 2006.⁸¹ A single proposed Acceler8 project, a surface reservoir in the southern part of the EAA one-half the size of the reservoir contemplated in CERP, was projected to require most of this, without inclusion of a stormwater treatment area needed to reduce phosphorus levels in what one environmentalist referred to as a “dirty bathtub.”⁸² As the less controversial Indian River Lagoon-South project languished in Congress, the District's executive director Carol Wehle told members of the South Florida Ecosystem Restoration Task Force that the billion dollar cost estimate for that project was no longer realistic in light of skyrocketing land prices in Palm Beach County. Purchase of the “natural lands” or wetlands envisioned for the project would more than double total costs.⁸³ Outright purchase no longer seemed practical. The total borrowing authority for Acceler8 is set at \$1.8 billion.⁸⁴

VII. “New Water” to and From the Cellar: Aquifer Storage and Recovery (ASR)

The South Florida consensus over CERP in 2000 turned on the unique circumstance that billions of gallons of water were being discharged each year to the ocean, “to tide.” CERP thus envisioned a reengineering of the system that would capture and store this “new water” for a variety of uses, including agriculture, urban growth, and to help the remaining natural areas of the Everglades. By “enlarging the pie,” a “win-win” situation was possible that may not be plausible in many other situations.⁸⁵ The Yellow Book contemplated that this increased storage in the system would be met in large measure through more than 300 ASR wells, mostly in and around Lake Okeechobee, to store more than 1.7 billion gallons of water per day from the wet season for use during the dry season.⁸⁶ To return to our party analogy,

the uncle would use a storage cellar so that no guest's glass goes unfilled.

ASR has been used in South Florida since 1983 when the first ASR system was located near Lake Manatee.⁸⁷ The Corps and the U.S. Geological Study also initiated scientific investigations into groundwater recharge and recovery systems from the Floridan aquifer in the early 1980s.⁸⁸ However, the largest existing ASR system to date comprises less than 50 ASR wells.⁸⁹ CERP envisioned the use of ASR technology for several reasons. First, the use of underground storage eliminates the considerable water loss due to evaporation and seepage that were projected from the use of storage reservoirs, and the costs of constructing ASR wells compare favorably with surface storage facilities.⁹⁰ Second, wells could be located in areas of greatest need, reducing water distribution costs.⁹¹ Third, ASR requires limited land acquisition and provides the ability to recover large volumes of water during severe droughts, presumably when surface reservoir levels would be low.⁹² As land acquisition costs in South Florida are skyrocketing and as the availability of water there is seasonal, these advantages are of particular importance.⁹³

In 2004, CERP managers prepared plans for a regional ASR study as well as several pilot projects demonstrating ASR technologies in areas where ASR wells might be contemplated.⁹⁴ While public interest in these projects was not intense, considerable attention in the public workshops had to be devoted to concern over potential “failure” of the technology. Part of this resulted from prior media attention in South Florida to problems associated with Florida's underground injection control (UIC) program.⁹⁵ Wastewater injected into very deep underground aquifers reportedly had migrated up (freshwater on top of saltwater).⁹⁶ While ASR

at http://www.sfrestore.org/wg/wgminutes/2005meetings/19-20apr2005/ASR%20update%20_issue_team_update.pdf.

81. See Randy Smith, *Financing Plan Approved for Accelerated Everglades Projects Judge Okays “Certificates of Participation,”* South Florida Water Management District Press Release, Feb. 24, 2006, available at http://www.sfwmd.gov/newsr/2_06_newsrel.htm.

82. The “dirty bathtub” image appeared during the Corp's Everglades Agricultural Area Presentation of Revised Draft PIR and Revised Draft Operating Manual, Mar. 15, 2006, at Belle Glade, Florida, http://www.evergladesplan.org/pm/public_meetings/031506_mtg_eaa.cfm (streaming video) (last visited July 10, 2006).

83. Carol Wehle, the District's Executive Director, provided this estimate at the May 17, 2006, meeting of the South Florida Ecosystem Restoration Task Force, Anne Kolb Nature Center, West Lake Park, Broward County, Florida.

84. Minutes of the South Florida Ecosystem Restoration Task Force, Feb. 22, 2006, at 6, available at http://www.sfrestore.org/tf/minutes/2006_meetings/feb22,23/feb2006_tf_minutes.pdf (last visited July 31, 2006) [hereinafter South Florida Ecosystem Restoration Task Force].

85. Presentation of Richard A. Pettigrew, Keynote: Balancing the Everglades and the Built Environment, 4th Annual Florida Environmental Ethics Conference, Living on the Edge: South Florida's Environmental Future, Broward Center for the Performing Arts (Feb. 11, 2005).

86. SOUTH FLORIDA ECOSYSTEM RESTORATION TASK FORCE, FINAL ASR ISSUE TEAM CHARTER 1 (approved July 24, 2001), described

87. CH2MHILL, FINAL REPORT—RECHARGE-RECOVERY AT LAKE MANATEE: PHASE II (1984).

88. MICHAEL L. MERRITT ET AL., SUBSURFACE STORAGE OF FRESHWATER IN SOUTH FLORIDA: A PROSPECTUS 2003, 69 (U.S. Geological Survey Water Resources Investigation Report 83-4214) (1983).

89. PYNE RDG, GROUNDWATER RECHARGE AND WELLS: A GUIDE TO AQUIFER STORAGE RECOVERY (1995).

90. U.S. ARMY CORPS OF ENGINEERS & SOUTH FLORIDA WATER MANAGEMENT DISTRICT, FINAL PROJECT MANAGEMENT PLAN FOR THE CERP ASR REGIONAL STUDY 10 (2003), available at http://www.evergladesplan.org/pm/pmp/pmp_44_regional.cfm.

91. *Id.*

92. *Id.* at 10-11.

93. South Florida Ecosystem Restoration Task Force, *supra* note 84.

94. CERP, Aquifer Storage and Recovery Regional Study, http://www.evergladesplan.org/pm/projects/proj_44_asr_regional.cfm (last visited July 10, 2006); CERP, Hillsboro Aquifer Storage and Recovery Pilot, http://www.evergladesplan.org/pm/projects/proj_34_hillsboro_asr_pilot.cfm (last visited July 10, 2006); CERP, Lake Okeechobee Aquifer Storage and Recovery Pilot, http://www.evergladesplan.org/pm/projects/proj_32_lake_o_asr_pilot.cfm (last visited July 10, 2006); CERP, Caloosahatchee River Basin (C-43) Aquifer Storage and Recovery Pilot, http://www.evergladesplan.org/pm/projects/proj_33_cal_river_c43_asr_pilot.cfm (last visited July 10, 2006).

95. See Florida DEP, Underground Injection Control (UIC), <http://www.dep.state.fl.us/water/uic/> (last visited July 10, 2006).

96. For example, note the comments of the Arthur R. Marshall Foundation and Florida Institute, Inc. (complaining that the upper migration of waste from UIC wells “implies a hydrologic connection between the injection zone and overlying monitoring zone”). APPENDIX E, COMMENTS RECEIVED ON THE DRAFT EIS AND RESPONSES, cmmt.

wells involved a different aquifer geologically, the concern persists.⁹⁷ Moreover, even though water utilities in Florida have been using ASR technology for years, this experience was mostly in southwest and west central Florida rather than in the central and southern Florida regions where the CERP projects were proposed.⁹⁸

Water managers attributed public misperceptions in part to the penchant for sensationalism and controversy in journalism, that is, the tendency of journalists to write stories that emphasize controversy and the unusual.⁹⁹ Hyperbolic statements from the Florida Sierra Club helped feed this penchant.¹⁰⁰ Misperceptions regarding ASR are reminiscent of the risk communication literature concerning nuclear energy.¹⁰¹ Much like the confusion of nuclear reactor risks with nuclear weapons, the confusion of ASR with deep well injection of wastewater has fed misunderstanding of the “actual” risks of a technology.¹⁰²

In January 2005, the National Research Council of the National Academies published its Committee on Restoration of the Greater Everglades Ecosystem’s (CROGEE’s) “study” entitled, *Reengineering Water Storage in the Everglades: Risks and Opportunities*.¹⁰³ The report empha-

sized that managers of the restoration “reconsider” water storage options in connection with CERP in light of a perceived decline in the viability of sugar production in the EAA and development pressures. The Committee urged: “Land should be purchased or conservation easements obtained now to prevent additional loss of land to development and to provide a buffer between the built and natural environments.”¹⁰⁴ This recommended “priority,” coupled with the group’s emphasis on potential uncertainties of ASR, came just as the Corps was about to request appropriations for the ASR pilot studies. In any event, CROGEE did little to alleviate public confusion over ASR. If anything, the report encouraged environmentalists to continue overblown rhetoric against a technology already supplying drinking water to thousands of Floridians.¹⁰⁵

The state of Florida did not include any ASR pilot projects in its Acceler8 program announced in late 2004. Initial explorations at one of the proposed ASR pilot project sites on the Caloosahatchee River did not go well.¹⁰⁶ At one point in early 2005, apparent consternation leaked out from the Corps, when a federal manager seemingly questioned the state’s commitment to ASR in internal memos.¹⁰⁷ Nonethe-

ARM-40, available at http://www.evergladesplan.org/pm/projects/project_docs/pdp_asr_combined/asr_eis_app_e_part_1.pdf (appendix to U.S. Army Corps of Engineers, Final Environmental Impact Statement (FEIS), for Lake Okeechobee, Hillsboro, and Caloosahatchee (C-43) River ASR Pilot Projects, Oct. 22, 2004, available at http://www.evergladesplan.org/pm/projects/pdp_asr_comb_deis_ppdr.cfm. Note also Comment LEAF-14 of the Legal Environmental Assistance Foundation concerning exemptions from water quality criteria to be requested in connection ASR wells. *Id.* cmmt. LEAF-14. While most ASR wells generally comply with standards developed for drinking water, application of these standards to injection and extraction of water not being used for that purpose is problematic.

97. Florida DEP depicts the differences between UIC and ASR on its website. See Florida DEP, Typical Municipal Class I Injection Well, ASR Well, and Water Well in Southeast Florida, http://www.dep.state.fl.us/water/uic/docs/ASR_mun.pdf (last visited July 10, 2006).
98. A map of current ASR wells in Florida is found on the Florida DEP website. See Florida DEP, Aquifer Storage and Recovery Facilities in Florida, http://www.dep.state.fl.us/water/uic/docs/ASR11_2003%20map.pdf (last visited July 10, 2006).
99. See generally Paul Slovic, *What’s Fear Got to Do With It? It’s Affect We Need to Worry About*, 69 Mo. L. Rev. 971, 982 (2004).
100. E.g., Alan Farago, *Plan to Fix Everglades: Bicycle With Cardboard Wheels*, ORLANDO SENTINEL, Sept. 1, 2004, at A17, available at <http://www.counterpunch.org/farago09042004.html> (“But the fact is, government agencies are ‘studying’ aquifer storage and recovery through ‘pilot’ wells. Beware of engineers studying the suitability of cardboard for bicycle wheels. That bike will not ride.”) Mr. Farago, President of Florida’s Sierra Club, suggests that ASR is a “pie-in-the-sky” alternative that will permit “Big Sugar” to convert its fields to houses rather than water storage reservoirs, stating: “A lot of houses can materialize on 500,000 acres of the Everglades Agricultural Area if permitted. And sugar, if allowed to by government, would hold the Everglades hostage to its development plans the way it has to its pollution.” *Id.*
101. See Paul Slovic, *Rational Actors and Rational Fools: The Influence of Affect on Judgment and Decisionmaking*, 6 ROGER WILLIAMS L. REV. 163, 179-80 (2000).
102. A good example of this confusion appears in W. Hodding Carter’s recent book. W. HODDING CARTER, *STOLEN WATER: SAVING THE EVERGLADES FROM ITS FRIENDS, FOES, AND FLORIDA* 115-16 (2004) (“[ASR] [s]ounds great, except that no one’s quite sure it’s going to work. Of the current one hundred municipal underground treated-wastewater injection units (similar to the proposed new wells in the Everglades) in use in Florida, 33 percent leak into the aquifer.”).
103. COMMITTEE ON RESTORATION OF THE GREATER EVERGLADES ECOSYSTEM, *REENGINEERING WATER STORAGE IN THE EVERGLADES: RISKS AND OPPORTUNITIES* (Nat’l Research Council of the Nat’l

Academies 2005), available at <http://www.nap.edu/openbook/0309095298/html/R1.html#pagetop>. At the February 15, 2005, meeting of the South Florida Ecosystem Restoration Task Force, members complained bitterly about CROGEE’s abandonment of its scientific mission and its advancement of an “outside agenda.” In 2004, CROGEE ended and a new independent science review panel was created. CROGEE earlier had recommended a “go-slow” approach on ASR. COMMITTEE ON RESTORATION OF THE GREATER EVERGLADES ECOSYSTEM, *REGIONAL ISSUES IN AQUIFER STORAGE AND RECOVERY FOR EVERGLADES RESTORATION: A REVIEW OF THE ASR REGIONAL STUDY PROJECT MANAGEMENT PLAN OF THE COMPREHENSIVE EVERGLADES RESTORATION PLAN* (Nat’l Research Council of the Nat’l Academies 2002), available at <http://www.nap.edu/catalog/10521.html>; COMMITTEE ON RESTORATION OF THE GREATER EVERGLADES ECOSYSTEM, *AQUIFER STORAGE AND RECOVERY IN THE COMPREHENSIVE EVERGLADES RESTORATION PLAN: A CRITIQUE OF THE PILOT PROJECTS AND OTHER PLANS FOR ASR IN THE LAKE OKEECHOBEE AND WESTERN HILLSBORO AREAS* (Nat’l Research Council of the Nat’l Academies 2001), available at <http://www.nap.edu/books/0309073472/html/>.

104. COMMITTEE ON RESTORATION OF THE GREATER EVERGLADES ECOSYSTEM, *supra* note 103, at 103.
105. See Alan Farago, *Heaven and Hell in the Everglades*, ORLANDO SENTINEL, Feb. 1, 2005, at A11, available at <http://www.counterpunch.org/farago02012005.html>:

[The Report’s] key point is that options for water storage—mainly the multibillion-dollar gamble on aquifer storage and recovery wells (ASR)—are so rife with uncertainty that there is an immediate need for government to regroup around the single option we know works: more wetlands, on the order of several hundred thousand acres . . . Chances are if the governor ignores the NRC report, Everglades restoration will turn into the most innovative scheme for profiteering since buccaneers in the Florida Keys lured shipwrecks to the reef by setting out lights on the shoals to convey a safe way home.

106. The District’s Bob Verastro, when asked to describe the subsurface material at the Caloosahatchee site, said, “it was like we had run into a beach.” South Florida Regional Project Delivery Team Meeting (Feb. 24, 2005); see RICHARD DASHER ET AL., *ASR PILOT PROJECTS 8* (2005), available at http://www.evergladesplan.org/pm/public_meetings/docs/sept_2005_crpdt_central_rpdt.pdf (“Encountered problems with a sandy aquifer during installation of an exploratory ASR well and borehole.”) (last visited Nov. 15, 2005).
107. For example, an internal Corps memorandum from Everglades manager Gary Hardesty, stated:

[Congress] will also [have] questions like—if ASR Pilot Projects are so critical to implementing ASR in CERP, why isn’t the State building them? . . . Should we be looking at

less, outside of Acceler8, the District did commit funds from its ad valorem taxes for one of the ASR pilot projects (Hillsboro), currently underway while the pilot project design report for this and other demonstrations, as well as the ASR Regional Study, languishes in Washington, D.C.¹⁰⁸

VIII. Quarrels Among the Guests: Quantity, Quality, Timing, and Distribution

Rufus Miles' famous law of public administration states: "Where you stand depends on where you sit."¹⁰⁹ In 2000, all the key "guests" interested in full glasses, e.g., local governments, water utilities, the state, agriculture, environmentalists, closed ranks behind a CERP intended to store and use new water currently discharged to tide. Six years later, the devil, as always, appears in the details. Reengineering the quantity, quality, timing, and distribution of Everglades water to meet restoration, supply, and flood control objectives is great in principle. But in practice, each guest worries about having his or her own glass full without any unfortunate spills. South Florida's guests now have to worry about the uncle in the kitchen. Developers, farmers, and ordinary consumers are beginning to perceive more clearly how CERP and Acceler8 will affect their daily lives.

CERP overlays and impacts the preexisting water management policies and arrangements in South Florida. For example, CERP mandated that the president and the governor of Florida enter into a "binding agreement" in which the state would assure

by regulation or other appropriate means, that water made available by each [Everglades restoration] project in the Plan shall not be permitted for a consumptive use or otherwise made unavailable by the State until such time as sufficient reservations of water for the restoration of the natural system are made under State law in accordance with the project implementation report for that project and consistent with the Plan.¹¹⁰

Florida's DEP promulgated rules to provide the water management districts with guidance as to how to implement reservation rules in 2002, but the rules were challenged by the Association of Florida Community Developers.¹¹¹ While an administrative law judge (ALJ) upheld the rules in

2006, petitioners appealed the ALJ's decision to the Florida intermediate court of appeals.¹¹² The reservations process thus remains unsettled, but federal law now mandates that the process be used.

In 2005, moreover, the Florida legislature enacted amendments to its growth management legislation to require communities to develop plans for water supply and infrastructure before allowing population and urban growth, a so-called pay-as-you-grow provision.¹¹³ In accordance with this new legislation, Florida DEP's Secretary and the District's Executive Director refused to approve Miami-Dade County's request for renewal of its water utility's CUP. This resulted in negotiation of an "interim permit" while the county searches for alternative water supplies. CERP and Acceler8 in this instance directly impacted land use regulation, as the need to preserve Everglades water for restoration purposes impacts the ability of local governments to obtain water for new urban growth.¹¹⁴ The District as permittee must consider itself as the Everglades restorer.

More generally, the District has now set up specific protocols for proposed developments within or adjacent to a planned restoration project, be they CERP or Acceler8 projects. An environmental resources permit (ERP) in such a "footprint" is subject to additional internal agency review and coordination by the District's regulatory CERP and land acquisition staff. The coordinated review yields staff recommendations to the Governing Board of the District, which accounts for compliance with permitting criteria, Everglades restoration needs, and land acquisition requirements.¹¹⁵ The Governing Board has broad general authority to consider more than compliance with permitting rules in granting or denying a permit, including a statutory policy of "restoring, preserving, and protecting, the South Florida ecosystem."¹¹⁶ A recent Florida ALJ decision indicated that the District must balance a number of factors in deciding whether a development is consistent with a CERP project, such as the purpose of the restoration project; extent of completion of the restoration project design, permitting, and construction; likelihood that the restoration project will be constructed; timing of planned restoration project construction; impact of the ERP permit without special conditions for the restoration project; and existence of feasible alternatives for the District to accomplish the same objectives as those in the planned restoration project.¹¹⁷ These are over and above the "reasonable assurances" that an applicant must provide in the District's permitting criteria with respect to water quality impacts, environmental im-

a new CERP without ASR? Another good question! I submit that this report should discuss SFWMD ASR contingency plan briefed by Henry Dean at the February 2005 Task Force meeting.

See 5-YR REPORT TO CONGRESS HQUSACE GUIDANCE (2005), available at http://www.peer.org/docs/ace/2005_21_3_everglades_5-year_report.pdf; see also Curtis Morgan, *Glades Project in Disarray*, *Feds Say*, MIAMI HERALD, Mar. 22, 2005, at A1, available at <http://www.truthout.org/cgi-bin/artman/exec/view.cgi/34/9877>.

108. Pete Kwiatkowski, the District's project manager for the Hillsboro site, has reported publicly on progress there several times of the past year, e.g., at the Everglades Coalition Conference on January 28, 2006. E.g., Working Group Meeting, Aquifer Storage and Recovery (ASR) in the Comprehensive Everglades Restoration Plan (CERP), Apr. 19, 2005, at 11, available at http://www.sfrestore.org/wg/wgminutes/2005meetings/19-20apr2005/WG_asr_Kwiat_041905.pdf ("SFWMD funding in advance of PCA").
109. Rufus Miles, *The Origin and Meaning of Miles' Law*, 38 PUB. ADMIN. REV. 399, 399-402 (1978).
110. Water Resources Development Act, Pub. L. No. 106-541, §601(h)(2)(A), 114 Stat. 2572, 2687 (2000).
111. Association of Fla. Community Developers v. DEP, Case No. 04-0880RP (Fla. Div. Admin. Hrings. 2006).

112. Diffenderfer & Duhy, *supra* note 40, at 12.

113. MURLEY ET AL., *supra* note 19, at 27.

114. News Release, South Florida Water Management District, Water Managers Approve Interim Water Use Agreement With Miami-Dade, May 10, 2006, available at http://www.sfwmd.gov/newsr/5_06_newsrel.html.

115. See Luna E. Phillips & John J. Fumero, *Everglades Restoration and Developments: Hurdles and Opportunities*, in FLORIDA ENVIRONMENTAL & LAND USE LAW SECTION, FLORIDA ENVIRONMENTAL AND LAND USE LAW: HOT TOPICS, PROJECTS, AND CASES 8.1 to 8.16 (Florida Bar, 2006).

116. FLA. STAT. §373.1502(2)(a); see also *id.* §§373.413, 373.414, 373.416.

117. Florida Audubon Soc'y, Inc. v. South Fla. Water Management Dist., SFWMD Order No. 2003-013 FOF ERP; DOAH Case No. 02-1629 (known as *The Lakes by the Bay* decision); see Phillips & Fumero, *supra* note 115, at 8.10 to 8.11.

pacts, and the Corps' "public interest criteria" under CWA §404 permitting.¹¹⁸

Florida courts have upheld the use of restoration objectives as a basis for denying permits.¹¹⁹ Florida's Land Water Advisory Committee has prohibited the construction of a housing development inside a Water Preserve Area.¹²⁰ More recently, the Corps denied a §404 permit for the Harmony Ranch near the proposed C-44 Basin Storage Reservoir CERP Project because the development project "did not comply with the [Corps' CERP] Guidelines because there may be a practicable alternative with fewer impacts within the CERP boundary."¹²¹

And, of course, just because the Corps and the District do not challenge a development project does not mean that it will go unchallenged. Another guest may object. Consider, for example, one historic resident of the Everglades interested in continuing to live there despite the restoration imperative: the Miccosukee Tribe.¹²² The Tribe doesn't want polluted water spilling into its homeland. So after remand from the U.S. Supreme Court, the Miccosukee Tribe continues its litigation to require the District to obtain a national pollutant discharge elimination system permit in connection with the potential backpumping of water from urbanizing Broward County into Water Conservation Area 3A for flood prevention.¹²³ It also wants to get the water out of its reservations. So it has also challenged the U.S. Fish and Wildlife Service's 2002 revised biological opinion concluding that releases through the S-12 structures, which are spillways under Tamiami Trail, are adversely affecting the endangered cape sable seaside sparrow.¹²⁴ The Tribe contends that the biological opinion was issued without an environmental impact statement (EIS) and, thus, violates NEPA. And the Tribe doesn't like the quality of the water either, so it also is challenging the state's water quality standards for phosphorus.¹²⁵ Such litigation obviously has the potential to obstruct or reshape the Corps' and the District's plans to manage these Everglades waters through CERP projects.

The most infamous controversy among Everglades stakeholders involves the "8½ Square Mile Area," most frequently referred to as "Modified Water Deliveries to Ever-

glades National Park."¹²⁶ Initially authorized in 1989 to improve water flows into Everglades National Park, a necessary preliminary Everglades restoration project technically not a part of CERP, public controversies and conflicts resulted in litigation, project redesigns, and escalating costs now approaching \$400 million—nearly five times the original estimate.¹²⁷ The project includes flood mitigation for a residential area near the park for residents who refused to be bought out despite being on the "wrong side" of the levee; raising a section of U.S. Highway 41, known as the Tamiami Trail; and construction of features to pass and control water flows into the park.¹²⁸ The unique degree of complexity and controversy over this project led the South Florida Ecosystem Restoration Task Force to set up an advisory committee of stakeholders to advise it and, through it, the Corps to go forward with this and related projects. This committee, the Combined Structural and Operation Plan (CSOP) Advisory Team,¹²⁹ reached a partial consensus after intervention of a professional facilitator and issued a report to the Task Force in May 2006 recommending a number of design features to improve flows to the Park while maintaining flood protection.¹³⁰

One of the more interesting struggles over the past several years involves Florida's effort to attract the Scripps Research Institute for a major biotech center. The state legislature, at Governor Bush's behest, committed substantial state funds and authorized a special expedited process for resolving challenges to the necessary permits, development orders, and comprehensive plan amendments. Palm Beach County purchased Mecca Farms in the western portion of the county and made other financial commitments to Scripps. This was so despite the fact that the site is adjacent to the Corbett Wildlife Management Area on agricultural reserve lands that CERP contemplates may be needed to store water for the restoration of the Loxahatchee River.¹³¹ Public interest organizations alleged illegal contract zoning and challenged comprehensive plan amendments and development orders.¹³² They finally prevailed in their challenge to the Corps' §404 permit for the biotech center on the basis of

118. See FLA. ADMIN. CODE ANN. IT. 40E-4.301, 40E-4.302; 33 C.F.R. §§220, 320.4 (2006).

119. *E.g.*, In re Surface Water Management Permit No. 50-014-S, 515 So. 2d 1288 (Fla. 4th DCA 1987) (denying permit as impinging upon "the District's ability to regulate the level of Lake Okeechobee" and directly conflicting "with stated policy of the State of Florida to restore and protect the natural values of Lake Okeechobee").

120. Florida Audubon Soc'y v. South Fla. Water Management Dist., FL WAC Case No. WMD RFR-98-001 (Nov. 30, 1998) (decision of the Land Water Advisory Committee).

121. See Phillips & Fumero, *supra* note 115, at 8.13 to 8.15.

122. See generally William H. Rodgers Jr., *The Miccosukee Indians and Environmental Law: A Confederacy of Hope*, 31 ELR 10918 (Aug. 2001).

123. South Fla. Water Management Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95, 34 ELR 20021 (2004).

124. See Miccosukee Tribe of Indians v. United States, 430 F. Supp. 2d 1328 (S.D. Fla. 2006) (partially dismissing suit).

125. An ALJ upheld the Florida Environmental Regulatory Commission's rule on June 17, 2004. Miccosukee Tribe of Indians v. Florida Dep't of Env'tl. Protection, DOAH No. 03-2872RP (Final Order June 17, 2004), *aff'd per curiam* Miccosukee Tribe of Indians v. New Hope Sugar Co., 906 So. 2d 1064 (Fla. 1st DCA 2005). The Tribe seems to be pursuing this matter now through EPA.

126. *E.g.*, U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF THE INSPECTOR GENERAL, MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK, AUDIT REPORT (Report No. C-IN-MOA-0006-2005) (2006).

127. *Id.* at i.

128. *Id.* at 3.

129. South Florida Ecosystem Restoration Task Force, CSOP Advisory Team, http://www.sfrestore.org/issueteams/csop_advisory_team/index.html (last visited July 19, 2006).

130. CSOP ADVISORY TEAM, DRAFT RECOMMENDATIONS ON KEY REMAINING ISSUES ON THE CSOP TENTATIVELY SELECTED PLAN (2006), available at http://www.sfrestore.org/issueteams/csop_advisory_team/documents/CSOP%20Adv%20%20Team%20cover%20Reccs%204-26-06.pdf. My colleague at St. Thomas University, Prof. Maria Dolores (Loly) Espino, ended up chairing this Advisory Committee after the former chair took a job out of state.

131. Richard Hamann, *Hot Topics in the Old Swamp—The Role of Public Interest Litigation in Everglades Restoration*, in FLORIDA ENVIRONMENTAL AND LAND USE LAW SECTION, *supra* note 115, at 4.9.

132. 1000 Friends of Fla. v. Dep't of Community Affairs, DOAH Case No. 04-4492 GM, 2005 Fla. ENV LEXIS 42; 5 ER FALR 91 (DCA Final Order May 9, 2005) (administrative order of Department of Community Affairs); 1000 Friends of Fla. v. Palm Beach County, No. 502004 CA 010990 XXXX MB AY, 2005 Fla. ENV LEXIS 86; 5 ER FALR 133; 12 Fla. L. Weekly Supp. 721a (Fla. Palm Beach County Ct., May 26, 2005).

noncompliance with NEPA.¹³³ The federal court enjoined work necessary to locate Scripps at Mecca Farms pending completion of an EIS.¹³⁴ This has led to the siting of the Scripps campus at an eastern, more urbanized location adjacent to the Abacoa campus of Florida Atlantic University.¹³⁵ Nonetheless, development pressures in western Palm Beach County are unrelenting.

IX. Deus Ex Machina: The Federal Court

Over the years, the various guests have resorted to litigation to resolve their disputes. But the most important litigation for Everglades restoration was between the uncle and the waiter. On October 10, 1988, Interim U.S. Attorney Dexter Lehtinen filed a lawsuit on behalf of the United States to force Everglades restoration. The United States complained that water managed by the District had polluted the Everglades and “resulted in the destruction of lower forms of aquatic life essential to the preservation of the sensitive ecosystems in the [Everglades National] Park and [the Loxahatchee Wildlife] Refuge.”¹³⁶ Normally, in large-scale environmental cases the United States is represented by attorneys from the Environment and Natural Resources Division of the U.S. Department of Justice in Washington, D.C. This was an unusual suit.¹³⁷ Reportedly, Lehtinen filed suit without going through the usual channels.¹³⁸ Taxpayers paid the fees of lawyers on both sides of the case in what the U.S. Court of Appeals for the Eleventh Circuit called “years of lengthy, complex, and acrimonious litigation. . . .”¹³⁹ Former Governor Chiles famously decided to “surrender” in 1991,¹⁴⁰ and the parties entered into a consent decree. Administration of the consent decree continues. The decree, which was followed by Florida’s passage of the Florida

Forever Act,¹⁴¹ contemplates that Florida would promulgate and comply with a numerical state water quality standard for phosphorus. If the state defaulted, the statute mandated that a 10 parts per billion (ppb) criterion would become effective.¹⁴²

In 2005, the Miccosukee Tribe (whom Dexter Lehtinen now represents) filed suit, arguing that the state was in violation of the consent decree.¹⁴³ The complaint had alleged violations of the previous narrative state standard for nutrients, which prohibits pollution causing “an imbalance in natural populations of aquatic flora and fauna.”¹⁴⁴ As the District’s regular reports show, considerable progress has been made in Everglades water quality, derived from construction of stormwater treatment areas, changes in agricultural practices in the EAA (mandatory best management practices), and the like.¹⁴⁵ But Judge Federico Moreno ruled in June 2005 that two high phosphorus readings in Loxahatchee Wildlife Refuge put the state in violation of the consent decree and ordered a hearing on remedies.¹⁴⁶ The court ordered the special master to hold a hearing and recommend remedies, emphasizing the need for the parties to propose “specific acts to be performed and specific dates by when those acts must be completed.”¹⁴⁷

The role of the district court overseeing this decree on Everglades restoration, like any deus ex machina, can be determinative but is contrived and artificial.¹⁴⁸ For general audiences outside Everglades aficionados, the court is the good cop and there to ensure restoration from the recalcitrant. As a congressional spokesperson for members of the U.S. House of Representatives said in May 2006, “They don’t want the state in any way, shape or form to weasel out of the consent decree.”¹⁴⁹ Florida’s governor, on the other hand, has explained, “It’s an unnatural position for a federal judge to be responsible for the administering of state law. I’m generally against that across the board.”¹⁵⁰

133. *Florida Wildlife Fed’n v. Corps of Eng’rs*, 401 F. Supp. 2d 1298 (S.D. Fla. 2005).

134. *Florida Wildlife Fed’n v. Corps of Eng’rs*, 2005 WL 3418302, 10 Fla. L. Weekly Fed. D44, *clarified* at 2005 WL 3465181, 19 Fla. L. Weekly Fed. D52 (S.D. Fla. 2005).

135. *Palm Beach County: Scripps Lease OK’d by Florida Cabinet*, MIAMI HERALD, May 17, 2006, at B10, *available at* 2006 WLNR 8429322. Scripps had temporarily located in university buildings pending preparation of the Mecca Farms. See Josh Hafenbrack, *Biotech’s Board Oks Plans in Palm Beach County*, SUN-SENTINEL (Ft. Lauderdale), May 23, 2006, at 4B; Josh Hafenbrack, *Scripps Picks Abacoa Site Owned by FAU in Jupiter*, SUN-SENTINEL (Ft. Lauderdale), Dec. 8, 2005, at A1, *available at* <http://www.sun-sentinel.com/news/local/palmbeach/sfl-pscripps08dec08.0.7024238.story?coll=sfla-news-palm>.

136. *United States v. Southern Fla. Water Management Dist.*, 28 F.3d 1563, 1568 (11th Cir. 1994).

137. See generally Alfred R. Light, *The Myth of Everglades Settlement*, 11 ST. THOMAS L. REV. 55 (1998).

138. See Lisa Gibbs, *Knee-Deep in the Endless Muddy*, MIAMI REV., June 14, 1991, at 13A, 17A:

The newly appointed acting U.S. attorney had told nobody of his plans in advance, Lehtinen says, not even his own bosses in the Justice Department. State water management district officials found out about the suit from reporters’ phone calls. . . . Roger Marzulla, then assistant attorney general [for Environment and Natural Resources] summoned him for what one lawyer calls a ‘walk to the woodshed’ on Nov. 7.

139. *Southern Fla. Water Management Dist.*, 28 F.3d at 1568.

140. *Glades Water Suit Valid, Chiles Admits*, SUN-SENTINEL (Ft. Lauderdale), May 21, 1991, at 1A, *available at* 1991 WLNL 4060525 (“‘I’m here with my sword,’ the governor said after the pretrial hearing. ‘I want to give the sword to someone. I want to surrender.’”).

141. FLA. STAT. §359.105.

142. *Id.* §373.4592(4)(e)2.

143. *United States v. South Fla. Water Management Dist.*, 373 F. Supp. 2d 1338 (S.D. Fla. 2005).

144. FLA. ADMIN. CODE ANN. r. 62-302.530(48)(b).

145. See SOUTH FLORIDA WATER MANAGEMENT DISTRICT, 2006 SOUTH FLORIDA ENVIRONMENT REPORT (2006), *available at* <http://www.sfwmd.gov/sfer/>. This reports, for example, that stormwater treatment areas constructed to improve water quality have reduced the total phosphorus load that would have gone into the Everglades by over 600 metric tons. On average, this has reduced phosphorus concentrations from 147 ppb to about 41 ppb (about 71%). See *id.* ch. 4, *available at* http://www.sfwmd.gov/sfer/SFER_2006/volume1/chapters/v1_ch_4.pdf. The South Florida Ecosystem Restoration Task Force also reports regularly on restoration progress and setbacks. 1 SOUTH FLORIDA ECOSYSTEM RESTORATION TASK FORCE, FY 2002-2004 STRATEGIC PLAN AND BIENNIAL REPORT 58 (2004), *available at* http://www.sfstore.org/documents/2004_strategic%20plan_volume%20I.pdf.

146. *United States v. South Fla. Water Management Dist.*, 373 F. Supp. 2d 1338 (S.D. Fla. 2005).

147. *Id.* at 1347.

148. A person, god, or event that comes just in time to solve a difficulty in a story, play, or other literary or dramatic work, especially when the coming is contrived or artificial. 1 THE WORLD BOOK DICTIONARY 572-73 (1990).

149. John Scofield, spokesman for House Appropriations Committee Chairman Rep. Dave Hobson (R-Ohio), as quoted in Curtis Morgan & Lesley Clark, *Millions for Glades in Jeopardy*, MIAMI HERALD, May 22, 2006, at 1A, 22A, *available at* 2006 WLNR 8751693.

150. *Id.*

In any event, even the popular press in South Florida has caught on that no one really knows what the consequences of the state's "violation" of timetables set in the decree back in the early 1990s will be, e.g., a reshaping to restoration plans by court injunction or "levying fines."¹⁵¹ In April 2006, before Judge Moreno's special master John Barkett, the state argued that the formula devised 14 years ago for monthly measurements in Loxahatchee Wildlife Refuge is "fatally flawed," showing a precipitous drop in phosphorus concentrations despite a huge surge in pollution flows after two years of hurricanes.¹⁵² Ironically, the state used this to urge the court to not order further remedy for the "violations," which the judge found in 2005, until the state's entire 60,000-acre system of stormwater treatment areas has been "optimized," which is not expected to happen until 2015.¹⁵³ The federal court released Barkett's Report in July 2006. While it did not recommend any sanctions or additional remedies because of past violations, neither did it recommend changes in the measurement methods or the compliance deadlines, including an important deadline for the meeting of water quality standards by the end of 2006.¹⁵⁴

X. Everglades Restoration: Phosphorus Mitigation or EM?

All agree that one of the major ecosystem changes of concern for the Everglades has been phosphorus. It was not surprising, therefore, that the United States' Everglades lawsuit against Florida focused on the changes on federal lands such as Everglades National Park that resulted from increased concentrations of phosphorus—changing the ecology of the "sawgrass prairie" to that of cattails.¹⁵⁵ Moreover, no one can dispute that the increase in phosphorus is associated with the conversion of Everglades land in the environs of Lake Okeechobee to agricultural production, especially sugar production.¹⁵⁶ Economists therefore associate destruction of the Everglades with congressional price supports that artificially encourage domestic sugar production.¹⁵⁷ Environmentalists therefore advocate the imposition of the costs of restoration on the sugar industry, through

taxes or environmental liability.¹⁵⁸ According to public and media perception, therefore, a long-term remedy is to eliminate the use of phosphorus fertilizer, or better yet "Big Sugar" altogether, in the EAA.¹⁵⁹ The caricature is that the elimination of the use of phosphorus fertilizer will lead to reduction of phosphorus levels to preagriculture levels.

One problem with this public and media caricature is its misperception of the soil chemistry that has led to the increased phosphorus concentrations in Everglades water. In reality, some of the increased levels of phosphorus in Everglades waters results from the compaction and oxidation of soil rather than the application of fertilizer.¹⁶⁰ Of course, this is especially apparent for areas of the Everglades more distant from the sugar cane fields, where there are also increased phosphorus levels.¹⁶¹ "Upon organic matter oxidation, large quantities of nutrients may be released into the soil solution reducing off-site water quality."¹⁶² These are anthropogenic causes, but not always agricultural causes.¹⁶³ In other words, some of the Everglades' problem with phosphorus may be attributed to past clearcutting of Florida's cypress forests and more recent clearing of Everglades lands for agricultural or other purposes rather than to the application of fertilizers. Because of the buildup of phosphorus in lake sediments and elsewhere, total elimination of phosphorus fertilizer could not, even theoretically, restore phosphorus to "natural" levels, even in the EAA. Nonetheless, the importance of soil oxidation to the Everglades phosphorus story is almost invariably missing from media descriptions

151. *Id.*

152. Curtis Morgan, *State Calls Formula Unreliable*, MIAMI HERALD, May 22, 2006, at 22A, available at 2006 WLNR 8753560.

153. *Id.*

154. See *United States v. South Fla. Water Management Dist.*, No. 88-1886-CIV-Moreno (S.D. Fla. 2006) (Report of the Special Master), available at <http://www.flsd.uscourts.gov/default.asp?file=cases/index.html>. The December 31, 2006, deadline is important because federal legislation has tied continuation of Everglades restoration funding to the state's meeting the deadline. See generally Pervase Sheikh & Barbara Johnson, *Phosphorus Mitigation in the Everglades*, CRS Report RL32121. Updated Jan. 13, 2004, available at <http://www.cnire.org/NLE/CRSreports/04jan/RL32131.pdf>.

155. See generally *United States v. Southern Fla. Water Management Dist.*, 28 F.3d 1563, 24 ELR 21397 (11th Cir. 1994); Light, *supra* note 137.

156. F.J. Coale et al., *Phosphorus in Drainage Water From Sugarcane in the Everglades Agricultural Area as Affected by the Drainage Rate*, 1994 J. ENVTL. QUALITY 121-26; see Aaron Schwabach, *How Protectionism Is Destroying the Everglades*, 31 ELR 11499 (Dec. 2001); Christine A. Klein, *The Emerging Paradigm of Restoration*, 31 ELR 10486 (May 2001).

157. E.g., Clay J. Landry, *Unplugging the Everglades*, in DONALD R. LEAL & ROGER E. MEINERS, *GOVERNMENT VS. ENVIRONMENT* 79 (2002).

158. See, e.g., Mike Clary, *Bittersweet Tale: Economic Pressures Put Florida's Powerful Sugar Industry at a Crossroads*, SUN-SENTINEL (Ft. Lauderdale), Apr. 25, 2004, at A1, available at 2004 WLNR 20037350.

159. E.g., CARTER, *supra* note 102, at 256.

160. See R.E. Terry, *Nitrogen Mineralization in Florida Histosols*, 44 SOIL SCI. SOC. AM. J. 747 (1980); O.A. Diaz et al., *Phosphorus Mineralization of Histosols of the Everglades Agricultural Area*, 156 SOIL SCI. PLANT ANALYSIS 178 (1993).

161. See Paul McCormick et al., *Chapter 3: Ecological Needs of the Everglades*, in SOUTH FLORIDA WATER MANAGEMENT DISTRICT, *EVERGLADES INTERIM REPORT 3-2* (1998), available at http://www.sfwmd.gov/org/ema/everglades/interimrpt_98/chpt3.pdf:

Soil [total phosphorus (TP)] concentrations near canal inflows can be more than two-fold higher than those in the marsh interior. In WCA-2A, TP concentrations in surface soils downstream of canal inflows have increased over three-fold since the 1970s and may be continuing to increase as far as 7 km away from these inflows. Increased soil P in other areas (Holey Land, Rotenberger, and northern WCA-3A) appears to be a result of soil compaction and oxidation caused by overdrainage.

162. D.R. Morris et al., *Sugarcane Yield and Rhizosphere Characteristics in Flooded Organic Soil Determined from a Pot Study*, 24 J. AM. SOC. OF SUGARCANE TECHNOLOGISTS 18 (2004), <http://www.assct.org/journal/JASSCT%20PDF%20Files/vol24/A03-02morris.pdf>; see also McCormick et al., *supra* note 161, at 3-10:

High P concentrations at reference stations [in areas not impacted by agricultural production] can be attributed to P released as a result of oxidation of exposed soils (Swift & Nicholas, 1987), increased fire frequency during droughts (Forthman, 1973), and difficulties in collecting water samples that are not contaminated by flocculent marsh sediments when water depths are low.

163. If one views phosphorus "pollution" as related to oxidation as much as fertilizer, one might look for a "solution" such as changing agriculture from sugar to rice, or to look for an economical means of cultivating sugar under flooded conditions. Some scientists have explored the latter possibility. E.g., Morris et al., *supra* note 162, at 18.

of the problem.¹⁶⁴ This is not to say, of course, that fertilizer application has not contributed to the increase in phosphorus levels.¹⁶⁵

So why does the “fertilizer” myth persist in the public and media consciousness? And why is there such a deep suspicion of the state of Florida’s motivations regarding the consent decree? An adequate explanation probably needs to go beyond the unavailability of the science of hydrogeology or soil chemistry to the average citizen. Everglades restoration often becomes a “polluter should pay” story. While Governor Chiles’ Commission for a Sustainable South was developing its consensus about Everglades restoration in the 1990s, environmentalists fought a public battle with “big sugar” over a tax on sugar to pay for restoration.¹⁶⁶ While Everglades “pollution” is as much the result of urban development and flood control as agricultural production, the urge to find a “polluter” responsible (other than ourselves) for the destruction of the ecosystem continues to loom large for environmentalists, newspapers, and the general public.¹⁶⁷ The media story that “big sugar” or the state caused

and is therefore responsible for “Everglades pollution” influences public perception. The truth, of course, is what Pogo of the comic strips told his friend Albert Alligator, “We have met the enemy, and he is us.”¹⁶⁸ Or, to return to the parable, all the guests—Floridians, Disney World tourists, and sugar consumers—are contributors.

Within the law reviews, a battle currently wages over the term “ecosystem management.” Profs. J.B. Ruhl and Bruce Pardy, for example, have exchanged parries over a period of several months in the *Pace Environmental Law Review*.¹⁶⁹ Professor Pardy’s latest parry provides a flavor:

EM is a choice. There are other choices, too. Those who advocate EM should be expected to justify, coherently and persuasively, why it is the best of the choices—why it is necessary to place environmental futures in the hands of a professional elite empowered to shape conditions one ecosystem at a time as it sees fit according to its own technical or political judgment. Environmental managers are not even subject to the same systemic limitations as judges, because EM’s main premise is that every decision is unique and, therefore, there is no room for the notion of precedent, and no such thing as a general rule. EM prevents environmental law from becoming a coherent, predictable discipline. The most effective excuse for arbitrary environmental decisions is to maintain at the outset that each case must be based on its own particular circumstances. In other words, the best way to acquire undemocratic control over environmental conditions is to insist that EM is inevitable.¹⁷⁰

This debate has an all too familiar ring to those who litigated Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)¹⁷¹ cases in the last century—the attempt to adapt regulatory tools designed for other purposes to remediation. The problem in that context

164. E.g., Sanjida O’Connell, *Science and Technology: A Bittersweet Harvest; Our Insatiable Appetite Is Causing Massive Environmental Damage to Some of the World’s Most Complex and Delicate Ecosystems*, THE INDEPENDENT (London), Dec. 8, 2004, at 8-9, available at 2004 WL 13446649 (“Phosphorus and nitrates from fertilizers used for sugar cane have been pouring into drainage canals and thus into national parks. As a result of the extra fertilizers, species such as cattails, a native grass, have grown rampantly, choking the Everglades and preventing wading birds from feeding.”); Brendan Farrington, *4-Year Drought Latest Burden for Florida’s Lake Okeechobee; Competing Demands Make Environmental Woes Hard to Fix*, WASH. POST, June 3, 2001, at A4 (attributing phosphorus pollution in Lake Okeechobee to fertilizer from agriculture and suburbia); William Booth, *The Everglades Forever? Critics Say Cleanup Act Is Sweet Deal for Sugar*, WASH. POST, May 3, 1994, at A1 (“At the heart of the plan are 40,000 acres of newly created filtering marshes, which are being designed to “absorb” fertilizers from the farm runoff choking the Everglades.”).

165. McCormick et al., *supra* note 161, at 3-24. (“In the Refuge and WCA-2A, elevated TP concentrations are associated primarily with increased [phosphorus] loading from canal waters and have been linked directly to the use of fertilizer (Zielinski et al., 1997).”); Yongshan Wan, *Effectiveness of Best Management of Practices, Responses to Public and Peer Review Comments*, in SOUTH FLORIDA WATER MANAGEMENT DISTRICT EVERGLADES CONSOLIDATED REPORT (2004) app. 1, A1-3e-2 (public and peer review panel comments), available at http://www.sfwmd.gov/org/ema/everglades/consolidated_01/appendix%2001/A01-3e.pdf (“[S]oil mineralization and fertilization are both significant P sources for the EAA, and their relative contribution depends largely on crops and soil conditions.”). Farmers, moreover, would look to find a more remote cause of the problem than soil oxidation, such as the “big old mines” in central Florida. See CARTER, *supra* note 102, at 189.

166. E.g., David Olinger, *Butterworth: Bill Big Sugar for the Everglades*, ST. PETERSBURG TIMES, Nov. 13, 1996, at 1B, available at 1996 WLNR 2356401 (“Many, but not all, of those costs are intended to be spent on reducing phosphorus, a fertilizer from sugar fields that alters downstream plant growth in the Everglades.”); Jan Hollingsworth, *Everglades Restoration to Continue*, TAMPA TRIBUNE, Nov. 7, 1996, at 1 (“Studies indicate that sugar farms contribute 47 percent to 75 percent of the phosphorus-based fertilizer flowing into the glades.”); David Beard & Neil Santaniello, *Florida Voters Reject Sugar Tax: Industry’s Ad Blitz Pays Off at the Polls*, SUN-SENTINEL (Ft. Lauderdale), Nov. 6, 1996, at 1A; Jan Hollingsworth, *Sugar Fee Foes Fighting to Bitter End*, TAMPA TRIBUNE, Nov. 3, 1996, at 1 (“Taxpayers already are paying more than 80 percent of the cost of filtering phosphorus-based fertilizer out of water flowing from sugar farms into the Everglades.”).

167. See, e.g., Mike Clary, *A Bittersweet Tale: Economic Pressures Put Florida’s Powerful Sugar Industry at a Crossroads*, SUN-SENTINEL (Ft. Lauderdale), Apr. 25, 2004, at 1A:

Environmentalists paint the industry as rapacious exploiters, using a publicly funded flood-control system for private gain.

“They operate like the Mafia or a motorcycle gang, ignoring any code of civil conduct,” said David Guest, a Tallahassee lawyer who represents the Sierra Club and other environmentalists. Consumer groups charge that sugar is costly to health and to household budgets. According to a recent General Accounting Office study, quotas and the price supports to cane and beet farmers add \$1.9 billion a year to the overall food bill of average Americans while helping make the nation the fattest on Earth.

168. See I Go Pogo, *We Have Met*, http://www.igopogo.com/we_have_met.htm (last visited July 19, 2006). This webpage explains the origins of the Pogo quote as follows:

Walt Kelly first used the quote “We Have Met The Enemy and He Is Us” on a poster for Earth Day in 1970. . . . In 1971, he did a two panel version with Pogo and Porky in a trash filled swamp. This is the only example I know of with a balloon, indicating Pogo responding to Porky with “YEP, SON, WE HAVE MET THE ENEMY AND HE IS US.” In 1972, it was the title of a book, *Pogo: We Have Met the Enemy and He Is Us*.

The official Pogo website is Welcome to Pogo’s Website, <http://www.pogopossum.com/> (last visited July 19, 2006).

169. Bruce Pardy, *Changing Nature: The Myth of the Inevitability of Ecosystem Management (Changing Nature)*, 20 PACE ENVTL. L. REV. 675 (2003); J.B. Ruhl, *The Myth of What Is Inevitable Under Ecosystem Management: A Response to Pardy*, 21 PACE ENVTL. L. REV. 3154 (2004); Bruce Pardy, *Ecosystem Management in Question: A Reply to Ruhl*, 23 PACE ENVTL. L. REV. 209 (2006) [hereinafter *Ecosystem Management in Question*]; see generally Robert B. Keiter, *Ecological Restoration and the Public Lands: Toward a More Natural Order*, 33 ELR 10443 (June 2003).

170. Pardy, *Ecosystem Management in Question*, *supra* note 169, at 217.

171. 42 U.S.C. §§9601-9675, ELR STAT. CERCLA §§101-405.

was the need to accommodate the remedial goals at a particular Superfund site, with its particular set of complex environmental conditions on the ground, with “environmental” goals and objectives embodied in regulatory and permitting requirements under laws other than the remedial CERCLA statute. In Superfund parlance, this became known as the “how clean is clean” or the Applicable or Relevant and Appropriate Requirements (ARARs) issue.¹⁷² EPA developed ARARs policy in its revisions to CERCLA’s principal regulation, the national contingency plan, in 1985 and in the 1986 amendments to CERCLA, the Superfund Amendments and Reauthorization Act.¹⁷³

The PIRs prepared for CERP projects typically contain a chapter of “compliance” with environmental laws that is separate and apart from the interim goals and other internal CERP evaluative methods. CERP’s programmatic regulations require the Corps to “comply with all applicable Federal, State, and tribal laws” in a PIR.¹⁷⁴ The state of Florida, in turn, has linked the participation in a CERP project of the nonfederal sponsor, the District, to specific findings in a PIR. CERCLA, under Florida law, requires the District to convene a “preapplication conference with all state and federal agencies with applicable regulatory jurisdiction.”¹⁷⁵ The District must “determine with reasonable certainty that all project components are consistent with applicable laws and regulations, and can be permitted and operated as proposed.”¹⁷⁶ This has led some impatient commentators to argue that the potential for interference with restoration efforts through permitting challenges and litigation is so serious that Congress should exempt CERP and other watershed restoration projects from federal regulatory requirements and that the state should consolidate its regulatory requirements for such projects into one law.¹⁷⁷

While CERCLA channels judicial review of EPA remedial actions into federal court, CERP, in effect, diffuses judicial review of Everglades restoration decisions into multiple challenges, mostly in state court, despite the existing federal consent decree concerning aspects of Everglades restoration. CERP might benefit from a federal “waiver” authority similar to CERCLA §121(f) for situations in which it becomes too irrational, inefficient, or costly for a restoration project to accommodate regulatory standards devised for other purposes. Sometimes, society must stop trying to fit the square peg into the round hole.¹⁷⁸ Moreover, CERP would benefit from federal control of court jurisdiction, similar to CERCLA §113(h), to rationalize judicial review

of agency decisions and to ensure that litigation does not unreasonably delay restoration projects.¹⁷⁹

XI. Conclusion: “The Best-Laid Schemes”¹⁸⁰

“All is flux, nothing stays still Nothing endures but change.”¹⁸¹

As restoration of the Everglades unfolds over the next several decades, surprise and adaptation are inevitable. Earlier this year project managers had to cap many irrigation wells drilled into the Floridan aquifer in a citrus grove being converted to a water preserve area.¹⁸² Later, the District found the remains of a giant sloth in excavations for another reservoir.¹⁸³ In May alligators attacked and killed women in several locations around Florida, for the first time in recent memory.¹⁸⁴ Discovery of abandoned hazardous materials has become so frequent in Everglades excavations that the District’s executive director has complained about her own individual potential CERCLA liability.¹⁸⁵ All of these were site-specific surprises calling for site-specific solutions. To call this ecosystem management, however, does seem a bit arrogant.¹⁸⁶ Perhaps there is a better term.

The expected, however, is difficult enough. Hundreds more guests arrive every day for the South Florida party. The trucks come on the half hour; hopefully, the paper plates

179. 42 U.S.C. §9613(h).

180. ROBERT BURNS, TO A MOUSE ON TURNING HER UP IN HER NEST WITH THE PLOUGH (1785) (“The best-laid schemes o’ mice an’ men Gang aft agley”), available at <http://www.robertburns.org/works/75.shtml>.

181. Heraclitus of Ephesus, Diogenes Laertius, *Lives of Eminent Philosophers*, bk. 9, §8, Plato, Cratylus 402A, as quoted in JOHN BARTLETT, FAMILIAR QUOTATIONS 69 (15th ed. 1969).

182. The project manager for the Ten Mile Creek Water Preserve Area site, located in St. Lucie County southwest of Ft. Pierce, described the capping of these irrigation wells during a field trip at the Everglades Coalition Meeting in January 2006. This critical pre-CERP project is described at Ten Mile Creek Water Preserve Area, <http://www.saj.usace.army.mil/projects/lprproj11.htm> (last visited July 19, 2006).

183. News Release, Randy Smith & Roberto Fabricio, Bones From Ancient Giant Sloth Discovered at Everglades Construction Site (Apr. 10, 2006), available at http://www.sfwmd.gov/newsr/3_newsrel.html.

184. See Phil Davis, *Congressman Calls for More Gator Trappers*, Associated Press, May 20, 2006, available at <http://www.ocala.com/apps/pbcs.dll/article?AID=/20060520/NEWS/60520007/1002/News>.

Tension between Floridians and alligators has reached a fevered pitch this week after three women were killed by alligators [in central and South Florida]. Authorities said they have trapped and killed the alligators responsible for the attacks. . . . Before the recent attacks, only 17 alligator-related deaths had been recorded in Florida since 1948, the Florida Fish and Wildlife Commission reported. Authorities said there is no pattern or common element in the attacks.

185. Carol Wehle, the District’s executive director, complained publicly about this at the meeting of the South Florida Ecosystem Restoration Task Force at the Anne Kolb Nature Center, West Lake Park, Broward County, Florida, on May 17, 2006. She complained in the context of a 1999 wetlands restoration effort that caused the death of pelicans because of pesticide contamination on the area that the effort had flooded.

186. Alfred R. Light, *Micosukee Wars in the Everglades: Settlement, Litigation, and Regulation to Restore an Ecosystem*, 13 ST. THOMAS L. REV. 729, 737 (2001); Light, *supra* note 45, at 171.

172. For a history of the concept, see EPA’s proposed rule at 53 Fed. Reg. 51393, 51435 (Dec. 21, 1988).

173. 40 C.F.R. §300.400(g)(2) (1998); 42 U.S.C. §9621.

174. 33 C.F.R. §385.26(a)(3)(iii), 68 Fed. Reg. 64200, 64234 (Nov. 12, 2003).

175. FLA. STAT. §373.1501(5)(c)1.

176. *Id.* §373.1501(5)(c).

177. Rizzardi, *supra* note 68, at 76-78.

178. 42 U.S.C. §9621(f) (2006); Light, *supra* note 55, at 129.

won't leak too badly and there won't be too many spills.¹⁸⁷
The guests must have their glasses full. Whether the deus ex

187. Cf. Valerie Bauerlein & Avery Johnson, *Government Predicts Bad Hurricane Season*, WALL ST. J., May 23, 2006, at D1.

machina will order the waiter also to change the water into wine is a party parable for another day.¹⁸⁸

188. Cf. *John* 2:1-4 (New International Version):

On the third day a wedding took place at Cana in Galilee. Jesus' mother was there, and Jesus and his disciples had also been invited to the wedding. When the wine was gone, Jesus' mother said to him, "They have no wine." Dear woman, "why do you involve me?" Jesus replied. "My time has not yet come."