

## Adaptive Governance and Water Conflict

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Nowhere in the eastern U.S. is water more the subject of controversy than in Florida. Exuberant population growth and economic development coupled with fragile groundwater stocks and delicate ecosystems make Florida the focus of tensions between the developer and the environmentalist. It was in Florida that some of the earliest battles between development and preservation interests were played out: in the 1960s proposals for an Everglades jetport and for a Cross-Florida barge canal led to national changes in environmental politics.

In a project involving 22 investigators, the DeVoe Moore Center examined nine Florida water conflicts that illustrate both the challenges of Florida water policy and the promise of pragmatic American problem solving. In two case studies drawn from water supply planning efforts in the *Tampa Bay* and *East Central Florida* regions, we considered conflicts over water supply among competing municipal users. In three cases involving pollution regulation, we considered conflicts over industrial discharges on the *Fenholloway River* and *Rice Creek*, and agricultural non-point source pollution on the *Suwannee River*. And, in four cases, we explored conflicts that pitted human water use with habitat restoration or ecological preservation in the *Apalachicola-Chattahoochee-Flint* dispute among Georgia, Florida and Alabama, the *Oklawaha* River dam decommissioning controversy, *Everglades* restoration, and statewide proposals for *Aquifer Storage and Recharge*. These cases were chosen to explore the range of long lasting policy conflicts that Florida faces, geographically and in terms of stages of the policy cycle, jurisdictional type and leading branch of government.

We sought to analyze these current vexing water policy cases through the lens of *Adaptive Governance*, our application of principles of Adaptive Management to broader governance. When faced with uncertainty about the natural system, institutions using Adaptive Management test policy assumptions as part of the implementation process and revise policy in response to emerging data. *Adaptive governance* applies the experimental orientation of Adaptive Management to the policy institutions themselves. The central question of our research concerns how Florida's water policy institutions themselves change as they react to new knowledge about the resources and the user groups. We approach this by examining five critical challenges faced by the governance system: representation, deliberative process design, scientific learning, public learning, and problem responsiveness.

### Representation

Who should be involved in what decisions, with what resources and what authority? Democratic ideals suggest that citizens should have equal access to decision processes intended to change public policies, but pragmatically, fully participatory processes are costly and cumbersome. In the *Everglades* case, a

Governors Commission for a Sustainable South Florida, followed by the South Florida Ecosystem Restoration Task Force, provided reasonably successful venues in which the broad array of competing interests succeeded in developing several hundred integrated joint projects valued at over 20 billion dollars. Less successfully, in the *Apalachicola* Basin representation was along state lines rather than user groups, creating a strain within state negotiating teams. In both cases, the traditional political representational system appears ill-suited as a serious arena for resolving these new conflicts.

Many of the water conflicts involved new interests seeking representation in existing decision processes that previously excluded them. It may be that we must be more proactive in gaining the participation and representation of peripheral interests, through surveys, interviews, and specialized workshops. It also seems that we need new ways of ensuring maintained engagement of interests as long decision processes wind their way toward closure.

### Process Design

We need processes that elicit reasonable understanding of what the represented groups prefer, an ability to translate these preferences into policy options, and resources and skills to gain approval of the preferred policies. Several of our cases began with court cases (*Everglades*, *Apalachicola*) that were stayed pending the attempt to develop agreements through the adaptive governance process. All of them involved administrative agencies that generally signed Memoranda to ratify agreements reached within the processes. And often, as in *Tampa Bay* and *Ocklawaha*, ratification by the state and/or federal legislatures was necessary. Processes were often *ad hoc*, offering the advantage of flexibility and experimentation, suggesting that ensuring accountability is a concern. Professional standards of collaboration are often not well adhered to in many participatory activities. Consistent guidelines are called for, but are in tension with the very flexibility that drives the interest in adaptive processes. With this tension, the value of consensus-derived policies is underscored, as are the needs to effectively gauge the interests of involved groups, to provide independent technical resources to deliberations, and to systematically develop innovative alternatives.

### Scientific Learning

One source of legitimacy for adaptive governance rests on its ability to incorporate scientific learning into the policy process. The case studies found that science and policy have an uneasy relationship rooted in the disagreements among scientists, the emerging nature of science, and the experimental nature of some

policy. In the *Everglades*, biologists studying a species or ecosystem were frequently concerned with different questions than were the officials responsible for managing the habitat, and in *Fenholloway*, the standard of scientific proof was itself in dispute. In *Aquifer Storage and Recharge*, the Florida legislative leadership showed clear signs of preferring science that would justify their decisions, rather than a sincere interest in adjusting policy to reflect growth in science.

It appears we need better policy recognition of the social nature of science leading to design of decision processes aimed at producing consensus on the scientific definitions and applications in given cases.

### ***Public Learning***

Users of water resources will ultimately have to change behaviors if changes in water policy are to be successful. These users, however, are seldom directly involved in policy making. In *Tampa Bay*, it took decades to convince some of the stakeholders of the need for compromise. In *Fenholloway*, the news media played a critical role in forming public opinion. In *Suwanee*, expectations of reciprocity among neighboring farmers led to what might be seen as surprisingly high levels of user involvement. In short, public learning involves not only participation and trust, but in the end also rests on providing incentives to align individuals' interest with the mutually agreed goals of the collective.

### ***Problem Responsiveness***

Sound policy development will enhance efficiency and equity while protecting environmental quality. The currency of the cases studied, coupled with the difficulty of measuring efficiency, equity and environmental quality, made it difficult to assess the outcome effectiveness of the processes involved. From a theoretical perspective we argue that collaborative processes should lead to resolutions that will be superior to resolutions imposed by administrative fiat. Administrative resolution will likely reward a winning side at the expense of a losing side. Collaborative processes should provide an opportunity to probe alternative solutions that may be preferable to both sides.

### ***Stronger Collaboration, Pragmatic Science, Wiser Competition***

Conclusions suggest the need for stronger collaboration in consensual processes, more realistic use of scientific information, and greater incorporation of market incentive structures in Florida water policy.

We need to select the best personnel for consensual processes: stakeholder representatives chosen by the constituencies they represent should be people who embrace leadership; surrogates should be used when constituencies cannot name representatives; neutrals should be properly qualified. Neutrals should have control of the process, rather than dominant agencies. Ground rules should be worked out in advance, fostering specific, clear, and confidence-building assessments of the views of the parties, and requiring consensus. It may be that the time has come for formal, well considered, state- or national-standards for how to conduct inter-agency consensual water policy development.

We need better ways to incorporate science into water policy discussions. Unrealistic expectations of neutrality should be amended to recognize the partisan nature of scientific debate. Divergence in goals between science and policy has to be realistically assessed in designing procedures. This will require careful selection of technical resources appropriate to the decision process, perhaps including independent scientific consultants hired as staff, rather than enjoined by advocates. It may involve separate scientific consensus processes intended to provide agreements on 'facts' to be used by the policy deliberators. Ongoing processes for monitoring changes in scientific understanding and adjusting policy will often be necessary.

The cost structure of water in Florida greatly undervalues the worth of the resource. We need better market incentives, yet these have been avoided in Florida water contexts, presumably because of the challenges posed by the belief that water is a 'right' rather than a commodity, and the political unsavoryness of raising prices for something that all voters must use. It is appropriate to search for ways to overcome these pressures.

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