

Fostering partnerships between regional government and ecology

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We boarded a Lear jet, and the co-pilot offered us champagne from a full bar as we settled into plush leather seats with expansive leg room. For a tropical biologist who expects to find no flush toilets at her field sites, I was overwhelmed. I was the token scientist for a special meeting with Florida's Governor, Jeb Bush, flying to Tallahassee with a state senator, a college president, a county commissioner, and two lobbyists. After we landed, a waiting limousine whisked us to the capitol building, where we found ourselves in a boardroom exchanging jokes with the Governor. He claimed to remember me from a prior meeting to discuss ways to enhance Florida middle school science education with distance learning. Whereas biologists are great at bandying about Latin names of ants or plants, politicians become expert at matching human faces with names and party loyalties. I listened in awe as our state senator skillfully navigated the conversation. Like a captain steering a ship through a maze of reefs, he incorporated stories and "hooks" into the conversation, elegantly leading up to our funding request. I knew that I was learning from a pro about how to effectively communicate with regional government. At the end of the meeting, our message was delivered and the response was enthusiastic. We emerged after an hour with a pledge from the conservative Republican Governor to support our vision for a center of excellence to research best practices in land use and ecological management in subtropical Florida and beyond.

In just one short meeting with a state policymaker, we made great strides forward, turning the dream of an integrative research center focusing on land use ecology, the Florida Land Institute (FLI), into a reality. During the meeting, we communicated one important message to the Governor: that our project would enhance the quality of life for his constituents. This was strengthened by linking effective land use to Florida's economy. If Florida saves 1% of GSP (gross state product) from our FLI initiatives, over \$5 billion would be accrued annually (S Mulkey pers comm). The stakes are high – an estimated 900 people move to the Sunshine State every day. Ironically, they move to Florida because of its natural environment; so implementing effective ecological management translates into revenue from real estate, health care, and tourism. FLI will engage professionals in transportation ecology, sustainable construction, hurricane-resistant building, renewable energy, and ecosystem management.

In mid-career, I find my role as an ecologist shifting away from the comfort zone of conventional research, writing

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technical reports, and communicating almost exclusively to colleagues at annual meetings. Ecologists are increasingly being drawn into "a new social contract of active engagement" (Bradshaw and Bekoff 2001), where issues of sustainability, land use, ecosystem services, and restoration ecology demand an interface between scientists and other community stakeholders. Ecologists are inevitably called upon to include humans in ecosystem analyses and to expand our formerly reductionist views to a whole-systems approach. In Florida, the development of best practices in land use represents a good example where professional ecologists need to be at the table with developers, businessmen, and policy makers. Recently, ecologists and developers joined together to formulate a plan for the development of a sustainable community on Babcock Ranch, the largest state-owned land parcel in south Florida. With encouragement and scientific expertise, the Babcock development will include a large conservation tract (Lowman 2006). Governor Bush signed the Babcock parcel over to state ownership in May 2006 (Figure 1).

How do concerned ecologists juggle an emerging new duality as objective scientists and engaged citizens at a regional level? Over the past decade, ecologists have successfully entered the policy arena on global issues such as climate change, biodiversity conservation, and pollution through groups such as the International Panel for Climate Change, National Academy of Science, and national ecosystem assessments (eg Heinz 2002). But at a local level, the distinction between scientist and citizen can easily blur (Hammond and Bradshaw 2001). The politicization of science, termed "scientizing" (Sarewitz 2004), can also undermine positive environmental outcomes. Alpert and Keller (2003) define a two-hat strategy, whereby ecologists increasingly provide objectivity and neutrality wearing a science hat, but advocate policy as private citizens. Scientists have been defined as the early warning system in regional communities (Pouyat 1999), the equivalent of the canary in the coal mine, whereby their views strike a balance between objectivity and concern (Rykiel 2001).

The Aldo Leopold Leadership Program (ALLP) trains scientists to become effective communicators to policy makers and to the public (Lubchenco *et al.* 1998). Three simple communication tips from my ALLP training facilitate my ability to translate science to regional policy makers in Florida: (1) keep it simple and without jargon; (2) tell a story; and (3) link science to economics and/or human health. Economic- and health-related platforms were essential to the success of our conversation with Governor Bush. The ALLP also recommends that communication of science to regional government (or other non-scientific audiences) should be delivered in short, simple



Governor Jeb Bush announces the creation of a regional conservation tract on Babcock Ranch in South Florida.

stories or soundbytes. (For example, my technical research on nutrient cycling between canopy and forest floor processes via herbivory was translated by local journalists into “the scoop on poop”.)

States are beginning to assume a larger role in science policy, probably as a consequence of the growing costs of regional environmental issues (eg invasive species, infectious disease, and land use). Nonetheless, state funding for science has declined from 8.1% to 6.6% of total spending for university research and development between 1990 and 2004 (Andres 2006). A few states, such as Oregon, have appointed science advisors to link environmentally sound stewardship with policy. With growing populations and development, regional governments face increasing pressure to use ecologically based decision making. In Florida, a leadership group (www.leadershipflorida.org) provides statewide networking to facilitate policy decisions. Ecologists remain a minority (albeit growing) voice in this group of predominantly bank presidents, mayors, attorneys, and business leaders. Other states have similar leadership groups.

Scientists historically solved issues like disease, and explained actions such as gravity or earthquakes. Now, ecologists are called upon to respond to complex environmental problems and create multi-scale and multi-cultural predictions of outcomes. Ecologists of the next generation will therefore require new training in public outreach, new job descriptions, the ability to communicate science to policy makers, and the skill needed to play effective roles in regional decision making. A 21st century mission statement for ecologists was defined by Alpert and Keller (2003): “to provide the most useful scientific information possible for making the legislative and administration decisions that affect society and nature, by meshing their interests with those of policy makers.”

A growing number of ecologists recognize the need for a stronger link between science and policy (Schlesinger 2005). At the 2006 ESA annual meeting in Memphis, TN, plenary speaker Ron Sims quoted former Speaker of the House Tip O’Neill by saying, “All politics is local”. Sims, the County Administrator for King’s County, WA, recently received the prestigious 2006 Edgar Wayburn award from the Sierra Club for outstanding service to the environment by someone in government. In speaking about his initiatives, Sims called King’s County a “living laboratory of

innovation” where he “listens first to scientists and then to policy makers”. With staff scientists fully engaged in research and think-tank activities, Sims’ team has restored the habitat of endangered salmon, built the largest hybrid articulated bus fleet in the country, and implemented some of the most progressive land use policies in the US.

More and more ecologists are serving their local communities by bringing science into regional decision making. Some write newspaper columns to educate their public sector (W Schlesinger and S Pickett pers comm). Others serve as leaders in science education, raising the science literacy of youth and contributing to future decision making (Brewer 2002a,b). Programs such as neighborhood nest watch lead to tangible political action and awareness “one backyard at a time” (Evans *et al.* 2005). Others have forged partnerships in multi-state geographical areas, leading to the establishment of marine reserves (Lubchenco *et al.* 2006). Even when conservation policies are initiated at a national level, the practice and execution often remain local (eg Chatre and Saberwal 2005).

What will your community look like in the year 2050? Getting involved in regional government as an ecologist is one important way to shape that outcome.

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