

Acting Outside of the Box

If you are like me, you spend way too much time inside at meetings and not nearly enough time outside doing actual ecological restoration. But every once in a while I go to a meeting that reminds me why I do what I do, and inspires me to do more. I attended such a meeting this past February at Florida International University in Miami. It was the third biennial meeting of the Pine Rockland Working Group, an organically grown loose coalition of U.S. federal and local agency personnel, nonprofit staffers, private property owners, and representatives from the Bahama Archipelago. It all began in south Florida in 2004 with an informal workshop and a field trip organized by Chris Bergh, the Director of The Nature Conservancy's Florida Keys Program. In 2006 the meeting expanded to include representation from the northern Bahamas and a field trip to the pine forests of Great Abaco, one of the last homes of the Abaco Amazon parrot, which nests in cavities in the limestone substrate of what the Bahamians call pineyards. This year, representation grew to include the Turks and Cacos Islands, where a few small patches of pine forest exist in a complex wilderness of tropical dry forests and coastal wetlands; there, an introduced scale insect is obliterating both adult and seedling pine trees in this little-understood ecosystem.

What made the meeting so compelling to me was that the topic—protecting, restoring, and managing pine forests that grow on a harsh, nutrient-poor limestone substrate in south Florida and the Bahama Archipelago—captures so well the complexity of ecological restoration and how it fits within larger contexts of nature conservation and the political realities of regions under intense development pressure. These efforts also clearly illustrate how the past cannot suffice to guide our actions. Restoring and protecting these pine forests is a topic I am deeply committed to and very familiar with, having worked on them for more than 20 years.

In the northern Bahamas, more than 300,000 acres of pine rocklands remain, mostly on Andros and Great Abaco islands. This is the last stronghold of this rare ecosystem on the planet. Although logged in the past, the pineyards of the northern Bahamas are healthy, and have been managed through local knowledge that keeps the forests burned on a regular basis. A few small patches of exotic pest plants

have invaded the pine forests of Andros and Abaco, and The Nature Conservancy has been working with the Bahamas National Trust to identify and eliminate this threat. More problematic are feral cats and a new population of exotic raccoons that have become established on Abaco and are rapidly spreading in the direction of Abaco National Park, where the parrots nest. The biggest problem in the Bahamas, however, is development pressure. Numerous golf courses and linked residential developments are proposed on a regular basis. One only need visit areas around Nassau or Freeport to see the long-term consequences of development on native ecosystems.

In contrast to the northern Bahamas, the pine rocklands of south Florida are a mess. On the mainland, a few thousand acres are protected in Everglades National Park, while outside of the park more than 98% of these forests have been obliterated by agriculture and urban development. Dozens of small, highly disturbed fragments lie scattered across the landscape from the park entrance north almost to the Miami River. Within these tiny fragments survive plants found nowhere else in the world. In the lower Florida Keys, disjunct patches of pine rocklands are protected in the National Key Deer Refuge and other conservation areas. But large areas have been lost to development and sea level rise.

In south Florida, the complexities of restoration are intense: figuring out when and how to burn; removing hardwoods in fire-suppressed patches; controlling dozens of species of non-native plants and animals; dealing with illegal dumping; thinking ahead about moving pollinators and species with poor dispersal mechanisms among fragments; not to mention finding money and support for restoration and management. At the Pine Rockland Working Group meeting, Steve Green, one of my staffers at The Institute for Regional Conservation, presented on our efforts to restore pine rocklands on privately owned sites with financial assistance from the U.S. Fish and Wildlife Service and the U.S. Department of Agriculture. Joe O'Brien of the U.S. Forest Service made a compelling argument that frequency of burning trumps seasonality in an urban environment where opposition to prescribed fire is intense, the ecological effects of off-season fire being far less clear than the long-term effects of lower fire frequency. Mike Ross of Florida International University hammered home the point that sea-level rise is not new, but has been going on for thousands of years. Projected sea-level rise is simply a continuation or perhaps an acceleration of what

has been going on since the last ice age. Pulse effects of hurricanes and storm surge, however, have been underestimated, and the pine rocklands of the lower Florida Keys suffered greatly from Hurricane Wilma in 2005. When we think about restoring pinelands in the lower Florida Keys, thinking ahead about elevation becomes paramount; ecosystems are already shifting upslope or shrinking.

At the end of the day, it occurred to me how well the pine rockland restoration effort represents what needs to be done elsewhere. For ecological restoration, the future is here. We can no longer just think outside of the box, we must act. Intact ecosystems need to be protected and

managed; degraded ecosystems need to be restored. History provides reference, but we must also think about future ecological realities. We must think about the ecosystems we are restoring within regional contexts. We can't do everything, so we have to make choices. And these choices will be affected by political and economic pressures. So our only hope is to work together as a community, across borders, and across ecosystems, and with the rising tide of change, not futilely against it.

George Gann

Chair, Society for Ecological Restoration International

A Special Issue of *Ecological Restoration*

CALL FOR SUBMISSIONS

What does Climate Change Mean for Ecological Restoration?

Editors, Mrill Ingram and Andrew Light

Ecological Restoration is seeking submissions for a theme issue devoted to climate change and restoration. We welcome submissions reflecting the ecological and social implications of climate change for restoration science and practice, as well as policy, ethical, and technological considerations. Article topics might include:

- What does environmental change mean for the value of reference conditions in restoration practice?
- How are restoration managers setting goals in the context of natural "moving targets"?
- How well can current federal and state land management policies that support restoration respond to climate change?
- Will climate change alter our understanding and definition of invasive species?
- If, as is frequently argued, climate change underscores the dependence of human well-being on "ecological security," how can we assure that restoration efforts are informed by the needs of more vulnerable human populations?
- Metaphors of healing abound in the restoration literature. Yet climate change involves global-scale, unpredictable and perhaps permanent ecological shifts that may not be best understood as an affliction from which we can be healed. What metaphors will prove most effective for communicating to a larger audience about the need to restore ecosystems in the context of climate change?

Deadline for submissions: **August 30, 2008**. Please visit www.ecologicalrestoration.info for author guidelines. Email contributions to mingram@wisc.edu and include "climate change" in subject line.