Proceedings of the Indiana Academy of Science
(1994) Volume 103 (3-4) p. 143-146

WETLANDS: MORE OR LESS?

William Beranek, Jr.
Indiana Environmental Institute, Inc.
Indianapolis, Indiana 46204

ABSTRACT: Swamps, marshes, and wet forests have long been considered poor quality land which needed to be drained or filled in order to be free of disease vectors or to be useful for agriculture or development. Increasingly, different types of wetlands have come to be valued for passive uses, including flood control, groundwater recharge, and wildlife habitat. National laws and policies exist mandating no net loss of certain types of wetlands, but the scientific definition of what constitutes a wetland is still being refined. In this paper, the technical and social components of the conflict in Indiana between those wishing to protect or restore wetlands and those concerned about developing the properties will be reviewed.

KEYWORDS: Biodiversity, groundwater, public policy, wetland.

THE POLICY ISSUE

The fate of Indiana's wetlands is a scientific and public policy issue of the highest priority, which can be resolved only through the application of good science and well-considered public discussion. Most of the disagreement results from a lack of scientific clarity about what constitutes a wetland and from a lack of specific policy guidelines suited to different types of wetlands. One size does not fit all for wetland preservation; different wetlands need to be maintained or restored for quite different reasons.

The name, wetlands, itself inhibits good public policy debates. Such debates are often frustrated because, like the ten blind men and the elephant, each party has a different wetland in mind (say a marsh at the edge of a lake versus a slight depression in a clay field). Each type of wetland must have its own set of policy guidelines — the swamp, the seepage on a hillside, the depression in clay soil, the slough, the bog, the marsh, the drainage ditch, the flood way, the pond, the stream, the lake, and the river.

Some Indiana wetlands are lakes over six feet in depth (*lacustrine* wetlands). Others are streams flowing in channels (*riverine* wetlands). Most Indiana wetlands have less than six feet of water, a slow rate of water flow, and are characterized by the presence of water-loving plants (*palustrine* wetlands).

Most policy conflicts center on palustrine wetlands. Some palustrine wetlands are at the edges of lakes and streams. Others are seeps from the water table on the sides of a hill, in forest bottoms, or in valleys. Still others are formed in clay depressions which hold water above the water table or well away from the nearest surface water body.

A hundred years ago, the wetland was the enemy of civilization. It was the swamp that held infectious diseases; the muddy land that made roads impassable; potentially rich farmland, if only it were drained and levees were built to prevent future flooding. The only good wetland was a drained wetland. In Indiana, our original 5.6 million acres of wetlands have been drained down to the current one million acres.

Gradually, society has begun to see the value of wetlands *per se,* first as a place for hunting and fishing but now for a variety of reasons. Today, additional productive uses for specific types of wetlands include: 1) floodwater storage; 2) protection for groundwater recharge; 3) protection of lakes from runoff containing nutrients and sediment; 4) shoreline erosion control; and 5) natural habitat for indigenous species.

The anxiety resulting from combining all wetlands into one policy category reached its peak in the late 1980s. President Bush endorsed a "no net loss" policy for "wetlands." In 1989, his administration expanded the definition of wetlands to include many lands in the "sometimes-wet" category. This new definition came under sharp attack as did a subsequent revision. Congress then asked the National Academy of Sciences to advise it on what constituted the best policy measures for wetlands. President Clinton reduced tensions in the debate by eliminating previously drained farmland from government policy and by asking Federal regulatory agencies to use the 1987 definition of a wetlands.

Society has changed its views on what is the best use of our remaining wetlands. More reasons are accepted to maintain specific wetlands for specific purposes. Because much of the remaining wetlands is in private hands, we must deliberate carefully and with complete public participation and fairness relative to the wetlands' owners about how to bring our public policies more in line with our new wetland objectives.

THE STAKEHOLDERS

Who are the stakeholders in wetland policy? One stakeholder is the current landowner. The person who owns the land already has a set of expectations for its productive use. This person has well-understood property rights.

The neighbor of the wetland property is another stakeholder. Anything society requires the first landowner to do regarding wetlands can change the value or the degree of enjoyment of the neighbor's property.

The local government is a third stakeholder. If the taxable value of the land in the area is reduced by promoting wetlands, the remaining property owners could bear a larger burden of the cost of essential government services.

The recreational user is another important stakeholder. For many years, outdoor recreation groups have donated money and pressured government officials to maintain wetlands for sport. If wetland policies or economic forces cause those with State hunting licenses to be restricted to private lands, the State must find new sources of revenue for wildlife management.

Often overlooked as stakeholders are the downstream or upstream property owners. A landowner removing a levee to restore a wetland can affect the drainage on farm land upstream and the chemical and physical properties of the water downstream.

A new stakeholder is the environmentalist arguing for regional biodiversity. Actively managing large connected wetland corridors for native species' ecosystems will be the only means of preserving those ecosystems. Private hunting preserves could further reduce biodiversity for some wetland habitats.

A related stakeholder is the advocate of Indiana's responsibility for global biodiversity. Migratory birds from the tropics need nesting habitat in Indiana for

their existence. The preservation of the potholes in the Great Plains for migratory wildfowl is a great success story as is Indiana's Pulaski Preserve for the migratory sandhill crane.

A final set of stakeholders are the government regulatory agencies charged with different aspects of wetland management. Some agencies are still implementing the important priorities of the past, while others are implementing new priorities. In Indiana, four Federal and two State agencies are responsible for some type of "wetland" regulatory decision.

The Federal Clean Water Act requires a permit for filling a wetland adjacent to a water of the United States. Depending on the waters, either the Army Corps of Engineers or the U.S. Environmental Protection Agency is responsible for that decision. In Indiana, either the Department of Natural Resources or the Department of Environmental Management might be the lead agency for the implementation of smaller projects. The Federal Food Security Act has a Wetlands Preservation Program providing an incentive for farmers to preserve wetlands on their land. Under this program, the Natural Resources Conservation Service and the U.S. Fish and Wildlife Service have a regulatory role in wetlands.

However we configure our Indiana wetlands' policy, we must take into account the interests of all these stakeholders.

THE POLICY CHOICES

Four basic policy choices exist: 1) the government can purchase the wetland; 2) the government can mandate certain behaviors relative to the wetland; 3) the government can provide incentives for private owners to maintain the wetland; or 4) private groups can work with the owners to protect the wetland.

The government does purchase land (e.g., game land, reservoirs, and wildlife reserves). This land is off the tax roles and under government management. This approach is effective for specialized purposes, but it can never cover the bulk of the wetlands that need coordinated attention.

The government can mandate a private landowner to behave in a specific way. Requiring permits for filling wetlands is such a tool (one that needs considerable refinement with respect to various wetland priorities). Federal and State water pollution discharge controls are another example.

One example of a government incentive is the payment of agricultural subsidies for wetland restoration. The purchase of development rights for an area is another successful tool.

Examples of private initiatives include land purchases for special habitat protection by The Nature Conservancy and the hunting preserves funded by organizations such as Ducks Unlimited.

RECOMMENDATION

Implementing an appropriate wetlands policy in Indiana is a critically important scientific and public policy initiative our generation can establish to improve the quality of life for those who follow us. We should restore that which makes sense to restore and maintain that which makes sense to maintain.

Indiana scientists will have the greatest success bringing good science to bear on this matter if five key components of an Indiana wetlands policy are kept in mind:

1. Have *focused* initiatives for different types of land conservation;
2. Include these initiatives as part of a comprehensive, coordinated State land-use plan;
3. Promote *focused* public awareness to invest in a future with wetlands;
4. Compensate land owners for "taking" their property rights; and
5. Consider appropriate political timing and equitable sharing of the burden.

Wetlands policy is too important to leave to chance. We must develop an intelligent policy for Indiana.

SUGGESTED READINGS

Hansen, E.L. 1992. Indiana's wetland conservation program. Indiana Dep. Natur. Res., Indianapolis, Indiana.

National Research Council. 1995. Wetlands characteristics and boundaries. National Academy Press, Washington, D.C., 307 pp.