



The Tools of Habitat Restoration: Wetland International's Approach

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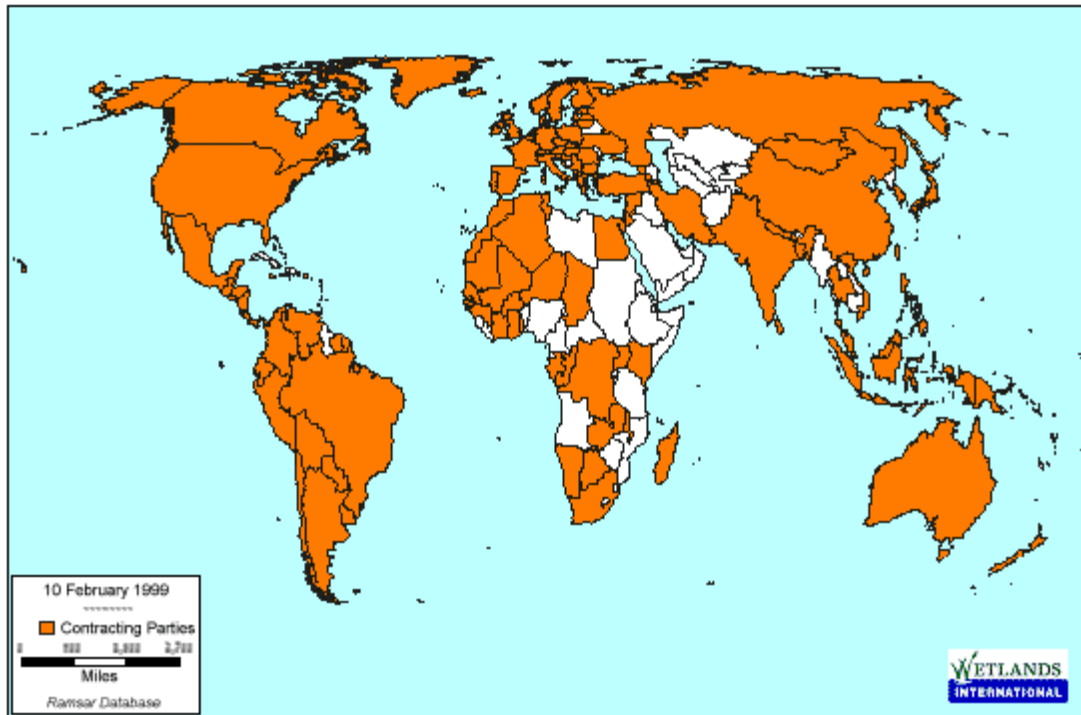
Conservation and management of wetland habitats are critical to sustaining healthy wildlife populations and reclaiming endangered ones regardless of political boundaries. For example, fish which spawn in a United States river or estuary may mature and be harvested in Canadian waters. Eurasian cranes (*Grus grus*), swans (*Cygnus cygnus*), and white-headed ducks (*Oxyura leucocephala*) are just several of the hundreds of bird species that depend wetland habitats in more than one country. As the world's population and technological advances have expanded, humans and wildlife have been forced into a tightening spiral of competition for natural resources especially at the interface between land and water, where wetlands occur. Wetland managers, government agencies, and environmental organizations worldwide have become increasingly interested in the concept of wetland restoration as a method to regain hydrologic functions and species diversity (Hollis, 1992). This paper will discuss the wetland restoration efforts of a globally active non-profit organization, Wetlands International (WI), exploring their program priorities and progress to date, and providing examples of their projects to illustrate their mechanisms for involvement.

Organization

WI emerged in 1995 from the convergence of 3 international wetland organizations: 1) the International Waterfowl and Wetlands Research Bureau (IWRB), based in the United Kingdom; 2) the Asian Wetland Bureau, then based in Malaysia; and 3) Wetlands for the Americas, based in Canada. WI chose to continue the international distribution of offices, establishing three regions (Asia-Pacific, Africa Europe and the Middle East, and Americas) headquartered in Malaysia, the Netherlands, and Canada. Each region also has as many as six permanent satellite offices placed within its geographic area. WI's Coordinating Council facilitates communication and activities between the regions from an office in Wageningen, the Netherlands. The new organization's mission is "to sustain and restore wetlands, their resources and biodiversity for future generations through research, information exchange and conservation activities worldwide" (WI Africa Europe and Middle East, 1998). The organization's governing Board is comprised of representatives from more than 50 countries, environmental groups, and individual wetland specialists (WI Asia Pacific, 1997).

Due to the wide geographical representation of WI members and activities (Figure 1), their wetland restoration efforts have ranged from peatlands to tropical mangroves. Recognizing the challenges presented in managing and conserving such a diversity of wetland resources in the face of increasing conflict, the IWRB held a symposium in St. Petersburg, Florida during November, 1992 (Moser et. al, 1993) to "examine specific topical issues to enable participants to exchange expertise, and ... provide guidance to IWRB..." The Technical Workshop on Restoring and Rehabilitating Degraded Wetlands put forth guidelines for defining restoration, establishing criteria for selecting wetlands for restoration, developing monitoring strategies, and identifying resource needs in the different regions. The Workshop recommended these concepts be formally adopted and that the IWRB form a Wetland Restoration Specialist Group (Slimbridge, 1992).

The 114 Contracting Parties to the Convention on Wetlands (Ramsar, 1971)



The delineation of boundaries on this map is not authoritative, nor does it imply any opinion whatsoever by the Ramsar Convention Bureau or Wetlands International

The Specialist Group's (Group) mission within WI is to promote "the restoration of wetlands as an integral part of wise use and conservation of wetlands" (Jepsen, 1997). The Group guides WI restoration efforts by reviewing programmatic plans and provides the international community with technical support as they carry out wetland restorations in their respective countries. Currently, individual restoration projects are initiated by a local/national government or environmental group and technical expertise is solicited from the Group by WI's international members.

Group members are nationally recognized technical specialists on wetland restoration with familiarity in the region and experience in integrated management/planning. It is also necessary that the members bring a substantial support network of their own to the Group. Candidates meeting these requirements must be approved by at least two other Group members before final acceptance (Jepsen, 1997). The Group has identified six objectives in meeting its mission which involve the collection, exchange, and identification of wetland restoration resources (Jepsen, 1997). Three of those goals are as follows:

- Facilitate the exchange of information and expertise on wetland restoration through the development and maintenance of an international network of experts and expert organizations;
- Promote and assist in the development of new approaches and guidelines/manuals for planning and implementation techniques, policy and legislation, and the monitoring and evaluation of wetland restoration.

- Promote the monitoring of success of wetland restoration efforts, and promote the inventory of state-of-the-art wetland restoration.

Wetland International's priority actions include expanding the number of active Group contacts, developing a regional database of wetland restoration experts and regional wetlands restoration projects, and developing guidelines and criteria for the selection of priority wetlands for restoration (Jepsen, 1997). All the data gathered on wetland restoration is made available to the international community through the Internet, e-mail, and publications in a variety of languages. Funding for these activities is provided by international aid agencies such as the U.S. Agency for International Development and the World Conservation Union, as well as national and local communities.

Monitoring and evaluation of restoration projects and techniques is encouraged by WI in all international projects, in line with the objectives of the Wetland Restoration Specialist Group. WI does not "judge" success per se, but does provide access to a number of conferences regarding wetland restoration and management (Wetlands International, 1998), and program newsletters. The international wetland restoration community can access this information and make use of whatever information applies to individual project(s).

Examples of Past and Present Accomplishments in Wetland Restoration

In general, WI chooses restoration projects with potentially wide applicability as demonstration projects (e.g., detailing a technique that works well for lake restoration that can be applied across temperate regions). One example is the restoration completed at Lake Hornborga, Sweden, a massive wetland restoration effort (30km²) that cost an estimated \$20 million (Larsson, 1992). Drainage channels had reduced the water levels by almost 2m and the area experienced a consequent invasion of reeds (*Phragmites*) and shrubs. Planning began in the 1960s to restore the severely altered hydrology and vegetation but it wasn't until the 1980's that the international birding community and Swedish environmental agencies were able to get a restoration plan approved by the Swedish Parliament. WI provided some technical support over the life of the project and recently published the history of Lake Hornborga's restoration in cooperation with the Swedish Environmental Protection Agency. The book (Hertzman and Larsson, 1999) was written by the lead organizers of the restoration and chronicles the complete life of the project. Political, social, and wetland restoration expertise gained during the Lake Hornborga project should significantly aid future lake restoration projects and provide valuable insights into what it takes to restore such a large site.

WI also provides scientific and educational information to help a host country develop interest in and an understanding of wetland restoration activities (N. Davidson, pers. comm.). A comprehensive bibliography compiled by Kevin Erwin (Erwin, 1996), the America's region Specialist Group Coordinator, which is available for downloading free of charge from WI's web site, is one example. Another example is the database created by WI - Asia Pacific which lists coastal wetland restoration projects planned, on-going, or completed in the region (WI Asia Pacific, 1997). WI publications are distributed by the Natural History Book Store, based in the United Kingdom, to facilitate timely distribution of numerous brochures, proceedings, educational materials, and books which detail wetland restoration and conservation issues. The

goal is to provide information to project managers and wetland professionals regarding techniques and contacts that may save time and money while producing the desired environmental outcome.

Conclusions

It is a common lament that too little is known regarding wetland restoration as a science (Hollis, 1992). Predicting success of a given restoration technique for a particular wetland type increases as it is repeated and refined, but the typical time and funding constraints applied to many restoration projects often preclude collecting and publishing results. Far too many restoration projects are viewed as isolated activities, instead of as part of a learning process for future restoration efforts. Knowledge of wetland restoration techniques, and on-the-ground projects as well as availability of technical support can mean the difference between a successful project and a failed one, both economically and environmentally. Even a failed restoration effort can provide valuable data if the details are published and made available to the public. A positive public perception of wetland restoration is also fostered by interpretation of restoration efforts, an aspect often essential to acquiring funding from government and environmental agencies.

It would appear there is a definite niche for organizations such as Wetlands International to collect, digest, and disseminate information on the current science and social considerations of wetland restoration if the discipline is to move forward. WI's established network of international contacts and a long history of wetland conservation activities allow the newly formed organization to be productive very quickly. The Restoration Specialist Group is in the process of defining the criteria for WI's involvement in specific restoration activities and compiling a list of priority sites (Jepsen, 1997). A more systematic approach with an emphasis on identifying the wetlands most at risk, by region, and how best to address them would be a valuable addition to WI's list of wetland restoration publications. As WI continues to collect, examine, and promote discussion of wetland restoration, the scientific community will be able to more accurately assess if/how humans can adequately return lost wetland functions to pre-disturbance conditions.

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