

WETLANDS

by Susan Herrington

"Wetlands are parcels and which have water at or near the surface. Wetlands often have unique soils that differ from adjacent higher grounds, diversity of animal and vegetation."

Introduction

Eighty percent of the freshwater wetlands in our country have been drained since the 18th century. The draining and filling of these wetlands has been performed mainly to create more farmland and buildable space. These statistics are alarming because wetlands are bound up in the "health" of our environment. Specifically wetlands perform functions which determine the quality and quantity of our drinking water. When the wetlands are filled or drained these functions cease to exist.

Approximately forty to fifty percent of the remaining wetlands in our country are overlying productive, potable water supplies. These groundwater supplies are a vital provider of water. Wetlands associated with groundwater aquifers play

cycle as a groundwater aquifer recharge and water purifier.

Other functions which wetlands perform in our environment are as follows:

Functions of Wetlands

1. Flood and stormwater control: During periods of heavy rains and/or excessive run-off, wetlands act like a sponge, absorbing and retaining water, and eventually releasing it in a slow, steady fashion through streams and/or groundwater aquifers.

2. Wildlife and vegetative habitat: The dense variety of trees, grasses, and shrubs coupled with the presence of water make wetlands an excellent eating, living, and/or hiding place for an array of birds, mammals, reptiles, and fish.

3. Water purifier: Wetlands act like kidneys of the landscape because they purify the water which flows through them.

4. Recreation: Wetlands provide a place for hunting, fishing, boating, bird watching, picture taking, nature walking, and a variety of other activities.

5. Open space and aesthetic appreciation: Wetlands provide visual variety in both the urban and rural environment. Protected wetlands in the urban setting

provide a vital connection with the natural world. Wetlands in the non-urban setting, if protected, can provide a vestigial remnant of the rural environment.

Examples of Wetland Legislation

In light of these functions and benefits, the preservation, conservation, and protection of wetlands have become a public concern. Early interest in wetlands by the U.S. Government was first reflected in activities such as the sale of federal Duck Stamps to waterfowl hunters, which began in 1934. Over 3.5 million acres of wetlands were preserved through this program alone during the period 1934-1984.

Wetland publications in the late 1950s began to stimulate broad public interest and in 1963 the Massachusetts legislature passed the first wetland protection law in the U.S. The act required a state permit to alter a coastal wetland. Soon inland wetlands were also protected by a similar law.

In 1975, the New York State Legislature passed the Freshwater Wetlands Act which preserves, protects, and conserves freshwater wetlands and their benefits. The main objective of this act is to regulate and balance the use of wetlands. To this purpose, wetlands which are 12.4 acres or larger are subject to New York State jurisdiction. Subsequently, many cities and towns have delineated their own wetlands. These local wetlands are often controlled by a municipal authority, such as a Wetlands Commission, who are directed by a local wetlands ordinance.

Normally a permit is required to conduct an activity in a state and/or local wetland. If the proposed activity does not seriously impact the wetland, a permit is usually issued. If the proposed activity does impact the wetland, a permit is not granted unless the applicant can demonstrate that the benefits of the activity are greater than the wetland benefits.

Although the functions of wetlands have become highly regarded in our current legal system, popular conceptions of wetlands are still that of a damp, insect-ridden, often foul-smelling, muddy place where strange animals and plants live. However, this perception can be changed. If wetlands are healthy, they can provide a wonderful opportunity to enjoy nature's subtle beauty.

Revitalizing Abused Wetlands

Wetlands which have been disturbed by filling, dumping, or other actions can be improved (amended), rejuvenated, rehabilitated, or restored. These efforts can constitute a revitalization of both functional and aesthetic values inherent

in wetlands:

- Improve (amend) — to slightly modify the wetland for the better.
- Rejuvenate — to develop the youthful features of a wetland.
- Rehabilitate — to restore a wetland to a condition of health or to a useful and constructive activity.
- Restore — to return wetland to a former or original state.

These activities are based on the premise that the enhancement of a wetland's aesthetic value can result in a more efficiently operating wetland. Indeed, these activities should be performed by individuals who possess a strong understanding of both the ecology and majesty of wetlands. Professionals, such as landscape architects, now have an opportunity to mesh their comprehension of the natural environment with their sensitivity towards the beauty of the environment to create "wetland gardens". Wetland gardens may incorporate improvement, rejuvenation, rehabilitation, and/or restoration and may be created at a large or small scale.

For example, on a small scale, the replacement of phragmites and purple loosestrife (which are relatively low in nutrient value) with wet meadow vegetation, emergent vegetation, and wetland shrubs such as spike rush (*Eleocharis* spp.), pickerelweed (*Potenderia cordata*), and bog rosemary (*Andromeda glaucophylla*), may enable the wetland to cleanse entering water more efficiently. These plants add color and texture to the wetland, while simultaneously providing food and cover for wildlife and aid for the purification and polishing of incoming water.

On a larger scale, by implementing dif-

ferent wetland and wetland associated structural groups into the wetland's ecosystem, one may increase the diversity of plants and associated wildlife in the wetland. When a wetland contains diverse vegetative and wildlife communities, the wetland's nutrient status and flooding fluctuations become more stable and the ecosystem becomes less sensitive to the condition of its surroundings. As a result, the wetland will function more efficiently in the environment.

It is significant to note that the vegetation for a wetland garden must be carefully selected. Plants which use energy in the wetland system but do not contribute to natural wetland function should not be planted merely for their ornamental value. Indeed, the net result would be neither functional nor beautiful.

Summary

In summary, wetlands are a vital, yet vanishing, element in our landscape. By exercising a sound ecological understanding and sensitivity towards the beauty of the natural environment, one can revitalize abused wetlands. This revitalization may entail small improvements, rejuvenation, rehabilitation, and/or restoration which reflect the concept that a healthy, stable landscape is a beautiful landscape. Once a holistic understanding of this concept is grasped by concerned professionals, decision and policy makers, and federal, state, and local municipalities, meaningful wetland management programs will emerge — programs which strike an uncompromising balance between people's desires and the needs of the natural environment.

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