

# **Society of Wetland Scientists Position Paper**

**TITLE: Wetland Mitigation Banking**

## **POSITION STATEMENT**

The Society of Wetland Scientists supports wetland mitigation banking to improve mitigation success and contribute to the goal of no net loss of wetlands. Banked wetlands are systems that have been restored or created for compensatory mitigation in advance of those unavoidable impacts to wetlands permitted by regulatory authorities. The banked wetlands should be managed, protected in perpetuity, functionally similar to the altered systems and within defined geographical areas.

## **SCALE OF ISSUE**

United States (This is currently a U.S. issue, but the considerations are likely to be world wide in the future).

## **BACKGROUND**

Wetland protection regulations were adopted in the U.S. starting some thirty years ago when individual states and the federal government became convinced that wetlands have functions important to the environment and society. The regulations permitted wetland alteration, if the changes were unavoidable, and required compensation or mitigation.

Successful wetland mitigation requires agreement among the regulatory authorities and the proponents on size, type, timeline, required and desired functions, management, funding and oversight. Good science, design, construction and maintenance must support all this. Because some mitigation wetlands have not developed required functions – as described by vegetation, soil characteristics, invertebrate communities, hydrology – in the area or time expected, wetland mitigation banking is evolving as an institutional mechanism to improve the likelihood of successful development (Environmental Law Institute 1994a, Marsh et al. 1996, Stein 1999).

Wetland mitigation banks have defined legal rights and obligations. Banked wetlands produce mitigation credits that may be purchased to compensate for destruction or alteration of a natural wetland, providing there is a match with type, size and location of the wetlands.

Wetland mitigation banks are established under either or both state and federal guidelines (Federal Register 1995). They have some or all of the following characteristics: a mission statement, a board of directors/regulators, technical staff, scientific oversight, funding, a geographical scope (state, county, watershed, embayment), accounting procedures, methods for determining credits and debits, and policies on public review, land

ownership, long-term land management and wetland types and conditions suitable for mitigation (Army Corps of Engineers et al. 1998).

Pre-construction credits may be necessary to establish a bank. Federal wetland policies allow that up to 30% of the wetland mitigation bank credits can be sold before restoration; not all of the remaining 70% of the credit should be sold until the wetland has developed the required functions. This may take from 10 to 25 years (Mitsch & Wilson 1996, Simenstad & Thom 1996, Craft et al. 1999).

## STATEMENT OF ISSUE

Wetland mitigation banking allows already restored or created wetlands to be used for compensatory mitigation. The functions of these already restored wetlands may be evaluated objectively and compared directly to the wetland to be altered. This eliminates the risk that the compensatory wetland will not be comparable to the altered wetland. Advanced mitigation allows wetland functions to be established in the watershed before they are lost; there is no net loss of wetland function in time or in space. In addition, it is easier to monitor wetlands and enforce mitigation goals in larger bank sites as compared to numerous individual mitigation wetlands (Environmental Law Institute 1994c).

Preference should be given to restored wetlands over created wetlands because they are more likely to reestablish required and desired functions (Mitsch & Wilson 1996). Wetlands created out of upland need more complex design, construction, and management to establish and maintain required and desired functions. Substantial pre-construction credit should be limited to restoration rather than creation projects because of their higher likelihood of reaching functional equivalence. An adaptive management protocol should also be agreed to if the mitigation wetland is not fully functional at the time the credits are sold (National Research Council 1992). Mitigation banks that incorporate preserved or enhanced existing wetlands or upland buffer may be given partial credits as long as the preservation or enhancement and buffers bring value to the biological success of the bank.

Before the credits from a banked wetland may be sold, the technical staff must evaluate, among other things, whether or not the wetland is functional, in a suitable landscape position to compensate for the altered wetland, and of the same or similar type. This assumes the bank regulators have adopted policies identifying what is meant by functional. At a minimum, they should include assessment of and comparison to local, natural wetlands of the same type for vegetation (diversity, abundance, size), soils, and hydrology. If the bank does not have access to technical staff, the opinions of independent experts who specialize in the wetland type under consideration should be used.

Wetland banks are currently administered by the U.S. Army Corps of Engineers, state agencies, especially transportation departments, and private organizations. We encourage adoption of uniform policies and methodologies for determining functional attributes of banked wetlands.

The ability of a bank to come to fruition and develop successfully is driven by the available market. The same laws of supply and demand that apply to any good or service also drives banks. Wetland mitigation banking produces a market value for wetlands that should encourage business, industry, government and individual property owners to consider restoring, enhancing or preserving wetlands.

## SCIENTIFIC CONSIDERATIONS

Created wetlands have a higher likelihood of failure to meet functional standards than restored wetlands (Kusler & Kentula 1989, Mitsch & Wilson 1996). This is largely due to the greater scientific and technical challenges that wetland creation possesses (Environmental Law Institute 1994b). Restored wetlands have an advantage when there are remnant features of the former wetland such as hydric soils, hydrology, seed banks, roots and rhizomes. Brown (1999) found that 38% of scrub-shrub wetlands created for mitigation in Massachusetts did not function as wetlands at all. Of the 62% that were wet, most became open wet meadows; none became scrub-shrub wetlands.

A large banked wetland may be used to compensate for several small alterations. Generally, large wetlands are preferred over small ones because they provide habitat for species that do not survive in small, isolated wetlands. In addition, they have a wider variety of habitat types and larger seed banks that may make them less sensitive to environmental changes and natural disasters (U.S. Army Corps of Engineers 1994c). Exceptions are wetlands with vernal pools which are necessary to the lifecycles of many species (such as salamanders), and small wetlands, such as prairie potholes, that provide food support along migratory paths.

Successful wetland mitigation requires that the mitigation bank be functional. To some extent, structure is an indication of function. Growth of wetland vegetation in itself may establish functions that are vegetation-dependent. The mere presence of desired vegetation, however, may not be a sufficient indicator of function. This was illustrated in California where marsh grasses were present but did not grow tall enough to attract nesting light-footed clapper rails for which the marsh was designed (Zedler 1998).

Functional assessment of hydrology seems simpler than that of other characteristics. Floodwater storage can be achieved in a short time by designing and constructing a catchment area; however, monitoring is needed to ensure that the flood storage capacity is maintained. Other wetland functions take longer to develop. Wetland grasses may take from 1 to 5 or more seasons to become established. Habitat for swamp dwelling animals that require a closed tree canopy could take decades to develop, unless mature trees are already present or are planted.

## SUMMARY REMARKS

In all cases, banked mitigation wetlands will require long-term monitoring and management to ensure that they continue to meet the required and desired functions. Not

only do some functions take a long time to develop, but there is also a lack of enough data on natural variability and disturbances to project long-term trends (Simenstad & Thom 1996). Monitoring and management might range from annual visits of experts and regulators to detailed daily measurements of some functions. Management of any mitigation wetland by a responsible party is important to ensure its success. Mitigation banks are subject to significant federal and state oversight that provide assurances that management and wetland success will be a top priority.

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