

Created Wetlands Getting Better with Age

By Jack Broughton, Applied Ecological Services, Inc. ©1997

WE recently read the comments of a Wisconsin woman who quoted scientists as having admitted that “they don’t really know how to create a sustainable wetland”. We were chagrined because we certainly believe, and have demonstrated, otherwise.

This kind of misunderstanding about the capabilities of scientifically developed wetlands is a reflection of the past in which too many underachieving projects were designed and constructed by engineers and other professionals, without the essential assistance of ecological scientists.

When ecology becomes an integral part of the wetland design and construction process, the results can be sustainable. And as our mitigation banks are demonstrating, they mature and improve with age. All wetland mitigation banks designed and installed by Applied Ecological Services are exceeding expectations for performance of the planted vegetation systems. And wildlife species, including Illinois-listed endangered and threatened species, are responding with increasing use of the wetland sites.

Otter Creek Wetland Mitigation Bank

Otter Creek, in rural St. Charles, Illinois, the first private wetland mitigation bank in the country, will be entering its fourth year of maintenance and monitoring in 1997. Monitoring of the site in 1996 has revealed some interesting results.

For instance, of the 78 species seeded or planted at the site, 60 (77%) have been observed growing at the bank. In all, over 140 plant species have been identified at the site since construction in 1994. Of these, 69% were native species.

Within wet prairie and emergent zones, native wetland and prairie species accounted for 78% and 68% of the relative cover. Foxtail grass, a non-native aggressive weed which dominated the site in 1994, was almost absent in 1996.

Ferson Creek Wetland Mitigation Bank

Within four miles of Otter Creek, the emergent and wet prairie zones of the 96-acre Ferson Creek Wetland Mitigation Bank were seeded last fall and this spring. Ferson Creek was only the third private wetland bank established in the Chicago region and it features mostly wet prairie, some aquatic emergent zone areas and some mesic prairie. In addition to seeding, restoration of hydrology and earth moving, the



Otter Creek, the grandfather of midwestern wetland mitigation banks, is home to 100 species of native prairie and wetland plants.

Ferson Creek site also required the realignment and restoration of over a half-mile of previously channelized stream. The old stream channel was backfilled and planted this spring, as the new stream flow is directed through a series of meandering wet swales.

In 39 acres of wet prairie, crews sowed over 800 pounds of native seed from over 20 native species, including Big bluestem, New England aster, Blue-joint grass, Great blue lobelia and Spiderwort, among others.

Because wetland seed is generally much smaller than upland seed, it only took 135 pounds to seed 31 acres in the emergent zone. Twenty-four species were seeded and hundreds of live emergent plants were installed, including three species of Bulrush, Rice cutgrass, Arrowhead or Duck potato, Cordgrass, Blue flag iris and native sedges. This spring in the riparian zone, crews installed over 30,000 live stakes of Red Osier dogwood, Silky dogwood and Sandbar willow on the subtle terraces sculpted along the newly created streambank. A 9.98-acre buffer of mesic prairie will also be seeded this year.

Vulcan Materials Wetland Mitigation Bank

To compensate for quarry activities of Vulcan Materials Corp., a corporate member of the Wildlife Habitat Council, AES team members conducted a prolonged mitigation site selection process before satisfying their own demanding criteria for the site of this 90-acre wetland mitigation project.

The created wetland is located in a key inholding within Joliet Arsenal and Des Plaines River Conservation areas near Wilmington, Illinois. After careful site exploration, team members concluded the site offered unequalled opportunities for conducting off-site mitigation, while helping protect the perimeter of the Midewin National Tallgrass Prairie.

The selected site was seeded last spring and fall. This spring, field crews conducted a prescribed burn on the site, and this fall they'll apply a prescribed herbicide treatment to control an invasion of reed canary grass that became apparent this summer.

It's not a big problem yet, but it could become one very quickly, so we want to treat it before that happens," Korfmacher said. The site will also be dormant-seeded in some areas this fall, or possibly next spring. This wetland mitigation is located just west and adjacent to the Midewin National Tallgrass Prairie project (former Joliet Arsenal), and will be a welcome neighbor to what will become one of the largest ecosystem restorations in the Midwest.

Metra Antioch Wetland Mitigation Bank

Construction began this winter and spring on this 40+ acre site in unincorporated Antioch township, Lake County, Ill., which has become the first agency-owned, single-use wetland bank in the state of Illinois. The passive wetland park is being used by Metra rail lines to mitigate off-site wetland impacts associated with their capital improvement activities and is intended ultimately to become property of the Antioch Park District.

The created wetland will provide restoration of native landscapes, shallow marshes, wet prairies and upland buffers, utilizing a diverse native vegetative planting design. Goals of the project are to:

- Provide for the protection of wetland resources
- Provide water quality management
- Protect wildlife habitat
- Provide alternative flood control
- Provide opportunities for educational/recreational use.

Following excavation in winter and early spring, crews planted the entire site this spring with customized seed mixes designed to thrive in the various hydrologic zones.

Seeding began in April and finished in June, with a cover crop of oats established. The first monitoring will begin next spring when the earliest native species will become observable.

There's no question that wetland creation or restoration is a complex process. Dozens of factors impact the sustainability, and advisability, of creating or restoring a wetland – factors ranging from soils and hydrology, to species selection, to watershed considerations.

Our team has restored hundreds of wetlands to healthy conditions in the past 20 years, with demonstrated sustainability, and proven quality improvements in ecological systems. And we hope our experience will contribute to the success of a growing number of people interested in recreating wetlands.

With enlightened leadership and cooperation of the regulatory agencies in the Chicago region, Illinois has become the nation's leader in creating restored wetlands that incorporate ecological science in their development. Other wetland projects led by restoration ecologists in Florida, Minnesota and Wisconsin are also benefiting from the broad range of ecological considerations and species interactions.

We continue to search new locations for sustainable wetland creation/restoration, and are currently working on establishing new projects in Wisconsin, Illinois, Michigan, Indiana, North Carolina and elsewhere. **L&W**

