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## Lanchester Landfill Pond 7 Habitat Enhancement

Pond - 7 was originally a stormwater and sediment detention facility located immediately southeast of the primary Lanchester Landfill footprint. Pond 7 also lacked quality habitat features to attract and support a very diverse or abundant community of wildlife species that might otherwise utilize this aquatic habitat. The objectives of enhancement of Pond 7 and the surrounding area is to:

- Support existing waterfowl populations that utilize the sedimentation pond by increasing the habitat functions/values of the pond;
- Encourage use of pond by turtles and amphibians by installing habitat structures;
- Promote transition habitats (i.e., early successional habitats) between existing forest stands and herbaceous/aquatic habitats, focusing on improving habitat quantity and quality for the American woodcock, a target species of interest for the Lanchester Landfill property; and
- Increase habitat diversity to attract more wildlife and a greater diversity of wildlife species.

Enhancement of the aquatic environment of the pond included the establishment of aquatic vegetation in shallow water areas along the pond margins. The aquatic species planted in and around the pond are native to southeastern Pennsylvania. These plant species provide food and cover for waterfowl, turtles, amphibians, and aquatic insects, as well as water-dwelling mammals such as beaver and muskrat. In addition to these benefits, well-stocked aquatic emergent plant communities help increase oxygen levels in the pond and assist in preventing algal blooms. These plants also take up metals and nutrients from sediments during the growing season, buffer runoff entering the pond during rain events, and reduce pond turbidity. Established stands of cattails offer primary singing and nesting habitat for red-winged blackbirds.

Native emergent wetland vegetation was also established around the periphery of the ponds. The wetland species seeded are native to southeastern Pennsylvania. An additional enhancement that was performed in Pond 7 was the planting of three clusters of live willow stakes. These clusters were planted in the eastern, northwestern, and southwestern portions of the Pond to provide shade over the pond and roosting habitat for birds. Healthy, diverse, and well-established wetland communities provide food and cover for a wide range of wildlife species such as waterfowl, songbirds, upland birds, insects, amphibians, reptiles and aquatic mammals. Native wildflowers mixture was planted to create a pollinator friendly landscape.

The upland area between the fringe wetlands of Pond 7 and the adjacent forested areas was vegetated as a transitional shrubland habitat. Transitional habitats are highly valuable for several reasons. For wildlife species that utilize multiple distinct habitats during various stages of their life cycle, transitions between two or more different habitats offer safe travel corridors that provide cover and protection from predators. For example, amphibians such as wood frogs, redback salamanders, eastern red-spotted newts, and others spend the majority of their lives in mixed or mature deciduous forests but utilize vernal pools and fishless ponds (such as Ponds 7) for egg laying and larval development. Transitional habitats between forest and aquatic habitats provide amphibians and other species that utilize these habitats with relatively safe passage between the forested and aquatic areas. In addition to seeding the transitional habitat, a native early successional shrub buffer was established between the mature forest areas and the ponds. The shrub species planted in this area are native to southeastern Pennsylvania and provide valuable resources to a range of wildlife species in the form of food and high-quality cover due to high stem densities.