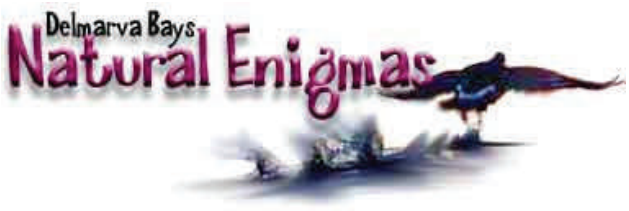
Delmarva Bays

Delaware's Coastal plain ponds, also called Delmarva Bays, are isolated, small, shallow, seasonally-wet areas, often circular/elliptical in shape, fed by groundwater/rainfall/snow melt in winter/spring and drying up in summer/fall. Over a thousand of these exist in the state, concentrated in inland parts of lower New Castle and upper/middle Kent counties. Often surrounded by woodlands, the inner (wetter) zones feature a variety of low shrubs (e.g. buttonbush) and non-woody plants.

Despite their isolated, seasonal nature, coastal plain ponds provide critical habitat to many rare and threatened plants and animals, and are especially vital to frog and salamander breeding. Many of these habitats have been lost already, and those remaining are vulnerable to development. Preservation of adjacent contiguous forested habitats is a high conservation priority.



Below are excerpts from an article written by Maryland's Department of Natural Resources.

The full article can be found at: http://www.dnr.state.md.us/naturalresource/spring2001/delmarvabays.html

The author, Dorcas Coleman, is a staff writer in DNR's Public Communications Office.

Environmental phenomena

Delmarva bays are mysterious wetlands found along the peninsula's backbone, the Maryland-Delaware line, where soil drainage is poor and 50 feet above sea level qualifies as upland. Elliptical depressions with distinct sandy rims, the value of these subtle aberrations in the Shore's topography has long been underestimated. Many have since been destroyed, however, through clearing and contouring the land for farming purposes.

Known by a variety of colorful terms - potholes, kettles, sinkholes, whale wallows, round ponds, black bottoms and loblollies - their origin is still the subject of considerable controversy. An appealing but improbable idea suggests that primeval whales, stranded by shallow receding seas, were left to wallow helplessly, thus creating the depressions. Others include ancient meteorite impact and the melting of stranded ice debris following the last Ice Age.

What is known is that the Delmarva bays are part of an extensive sand dune wetland ecosystem, the bays being the actual interdunal depressions. They are estimated to be 16,000 to 21,000 years old, probably forming when the peninsula's climate was similar to that of the Siberian taiga - cold, sandy and very, very windy.

Delmarva bays are in every sense of the word geological and biological enigmas. Seasonally flooded, they are formed from rainwater or snow melt in late winter, drying out by late summer. Unlike marshes, they are fed by rain and groundwater only; there is no natural drainage into or out of them. Their entire ecosystem is dependent upon the natural fluctuation of rain and the water table.

Although they are not covered by water year round, Delmarva bays are classified as wetlands -- areas that hold water for significant periods during the year, characterized by anaerobic (low oxygen) conditions favoring the growth of specific plant species and the formation of specific soil types. While wetland communities vary dramatically, all are important natural resources providing fish and wildlife habitat, flood protection, erosion control and water quality preservation.

Maryland *(and Delaware)* has lost roughly half of its original wetlands and Delmarva Bays have been particularly hard hit. The most humble of wetlands - sometimes little more than glorified puddles - to the untrained eye a Delmarva bay would be unrecognizable, particularly during the summer or fall months. Averaging 3 acres, with some being as large as 15 acres, most are small and easily overlooked. Because they often lie unprotected on private lands, they are sometimes destroyed even before being discovered.

Over the years, many bays have been drained and contoured for agricultural purposes, while others have been built upon, bulldozed or paved over without anyone knowing the ponds were present. These natural depressions have also been turned into stormwater ponds to receive runoff from nearby roads and parking lots, which can be extremely detrimental to a bay's inhabitants.

Fertile Breeding Ground

To see a Delmarva bay at the height of its splendor, it is necessary to trek out in the late winter or early spring, when the bays are just yawning to life. The bays can appear as grassy openings, shrub swamps or forested wetlands called "flatwoods." Dominated by grasses and sedges such as giant grass, Walter's sedge, twig-rush and maiden-cane, most also harbor sphagnum moss, a wetland indicator species. Shrub layers often feature buttonbush, mountain sweet pepperbush and highbush blueberry. Trees that are water tolerant enough to grow in the bays are sweet gum, red maple and willow oak. Persimmon is also found in these wetlands, unusual for this dry-ground tree.

Nesting colonies of green herons, great blue herons, and various species of waterfowl, feed on the animals and plants that come to life when the pond is full of water. As the water dries up, several of these species then become dormant, forming protective coverings or burrowing into the drying mud until the pond fills again.

Delmarva bays also provide both a breeding ground and nursery to many imperiled species, foremost among them amphibians, a group of animals in decline worldwide. Rare Eastern tiger salamanders, seldom seen above ground, slither out of their subterranean dens each winter to breed and lay eggs, often under ice, while the endangered barking tree frog and the threatened carpenter frog await the warmer weather of spring and summer to breed in the bays.

What lures these reclusive creatures to the bays as opposed to other bodies of water is exactly what these temporary ponds lack: fish. Because the bays dry up every year, they cannot support fish, which leaves these amphibians to breed in relative safety.
Unlike fish, salamanders and frogs are only water dwellers for part of their lives. They spend their first two to five months as larvae, swimming in the bays and feeding throughout the night. When the pools begin to dry out in the summer, the larvae reabsorb their gills and tail fins and emerge from the water, spending the remainder of their lives on land.

Among the other Delmarva bay breeders is the spring peeper. Like the salamanders, they congregate in the water in late winter and spring, where they mate and lay gelatinous eggs. The Shore's fields and forests offer a cacophony of sound for the region's residents as spring evenings warm and bedroom windows open. The peepers' chorus of croaks and creaks not only serve to announce the season but often reveals the location of more remote bays. Many insects, especially mosquitoes, also breed in the bays, which in turn attract dragonflies, damselflies, frogs and toads to feed while the water lasts.