Aquatic Habitats That Serve As Habitat For Wildlife (Mangroves, Marshes, Submerged Aquatic Vegetation, Agroecosystems, Etc.) In The Nile Delta Systems

Abstract

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The Nile is the longest river in the world, extending 6,695 km from the mountains on the eastern side of Lake Tanganyika to the Mediterranean Sea, with an estimated basin area of 3,026,000 km^2.

The Nile Delta Flooded Savanna ecoregion extends along the River Nile from the Aswan High Dam, 1,100 kilometers (km) downstream to the mouth of the Nile as it enters the Mediterranean Sea. The delta is about 175 km long and 260 km wide. Since the construction of the Aswan High Dam, the riverine floodplains and delta are no longer subject to annual flooding.

However, impoundment of the Nile River in association with extensive development of irrigated agriculture has had the opposite effect on the four large coastal lagoons of the Nile Delta. A large portion of the Nile's water is distributed diffusely over the delta by numerous irrigation/drainage channels, most of which discharge into the four coastal lagoons at their downstream end and not back into the two river channels.

The remaining marshland is associated with lakes and lagoons along the seaward face of the delta. Outer margins of the delta are eroding, and salinity levels of some of the coastal lagoons are rising as their connection to the sea increases. Traditionally, the delta area was considered the heart land of Lower Egypt. Originally, the delta had 7 equal tributaries; today two of them dominate, the Rosetta and the Damietta rivers.

There are several brackish lagoons or lakes, of which Manzala and Burullus are the largest, Idku is the third largest lying between Alexandria and Rosetta, the fourth is Maryout lies west of Alexandria City. Because of the stability and higher volume of freshwater inflow salinity was lower and more stable in Burullus and Manzala lagoons. The general shift in all four lagoons was toward a more stable freshwater lacustrine ecology.

The Nile Delta was once known for large papyrus (*Cyperus papyrus*) swamps, but papyrus is now largely absent from the delta. July 2000, *C. papyrus* L. stand flourished at Sharabas, on the bank of Damietta Nile branch, 24 km south of Damietta Now, vegetation consists of *Phragmites australis, Typha capensis*, and *Juncus maritimus*, with some small sedges.

The large Manzala coastal lagoon supports beds of *Ceratophyllum demersum, Potamogeton crispus*, and *P. pectinatus* around the southern shore as well as dense phytoplankton. Other typical species found here are *Najas pectinata, Eichhornia crassipes*, and *Cyperus* and *Juncus* spp. that grow along lake shores. The salt tolerant *Halocnemum* spp. and *Nitraria retusa* grow in marshes along the Mediterranean coast. The ecoregion is largely unprotected. Ashtoun el Gamil-Tanee Island natural area and the Lake Burullus Ramsar site are the only two protected areas in the delta

and cover a total area of less than 500 km^2. Lake Burullus is threatened by fishing and pollution although it remains the most unspoiled of the delta wetlands.

Farther south along the river, dense swamp vegetation grows unchecked without the seasonal fluctuations of the Nile, held back by the Aswan Dam. *Phragmites* and *Typha* grow along riverbanks that were previously bare. The islands along the river, especially those found between Luxor and Kom Ombo, hold reed swamp vegetation that is attractive to waterfowl.

Aswan (High) Dam totally stopped flooding and most of the former seasonally or permanently flooded habitats have subsequently been converted to settled agriculture. However, since the closure of Aswan Dam, floodplains are farmed year-round, causing the loss of much of the wetland habitats of the delta and lower Nile River floodplain.

The delta ecosystem no longer receives a yearly input of sediments and nutrients from upstream. Consequently, the soils of the floodplains are poor and large amounts of fertilizers are applied to the land each year. Run-off of fertilizers and dumping of wastewater and sewage sludge is leading to the accumulation of trace elements in the sediments of the delta.

Surface irrigation accounts for more than 85% of the total volume of water used for irrigation in the Nile Delta region. Perennial irrigation allows two or three crops a year in the delta. About half of the area is used for agriculture. Industry is another important activity here.

Prior to impoundment by the Aswan High Dam tilapia constituted 35 percent of the catch but this rose to 75 percent afterwards. The predominance of tilapia is due to a decrease in current velocity resulting from impoundment. This created a favourable tilapia habitat which is undoubtedly enhanced by the simultaneous increased macrophyte growth. At the same time the loss of floodplain spawning habitat undoubtedly strongly depresses recruitment of migratory taxa such as mormyrids, cyprinids, characoids, catfish and Nile perch. Thus the number of fish species recorded from the lower Nile has decreased since impoundment - from 71 to 31. There were 72 species in 1940 but now only 25 survive.

The mangrove stand at Nabq fronts the shoreline at the mouth of Wadi Kid, the location and density of trees suggests that there is infiltration of fresh water, reducing the salinity to levels tolerated by the species.