**Ramsar site Umeälvens delta 438:**

**Physical features of the site**

The site is a large delta area formed by the River Umeälven at the river outlet to the Gulf of Bothnia. The delta consists of two main flood arms, the shallow and narrow Västerfjärden and the somewhat deeper and broader Österfjärden. The delta is constantly changing as fine grained material is deposited by the river in the area and the constantly ongoing land elevation process. Annual water level variation is approximately 2 metres. The bedrock consists of sedimentary gneiss of greywacke or argillite type. The river delta wetland area is surrounded by plains with forests and arable land.

**Description of the catchment area**

The catchment of the river Umeälven covers 16 800 km2, stretching from the border between Sweden and Norway in the Scandinavian mountain range, to the Gulf of Bothnia. The bedrock of the catchment can be divided into two main parts. The western, upstream part consists of bedrocks of the Scandinavian mountain range, formed some 300 million years ago. Schists and amphibolites dominate, with sparagmites and quartzites on the westernmost limits (Kulling 1953). The highest mountain in the catchment (Norra Storfjället) reaches 1 767 m above sea level. The eastern part of the catchment lies on old, pre-Cambrian bedrocks of the Baltic shield (Hjelmqvist 1953). The bedrock is dominated by granites and gneisses. The geomorphology of the catchment is shaped by the repeated glaciations during the Quaternary period (Anonymous 1984, Rudberg 1970).

The river Umeälven is about 470 km long, and has its sources at about 520 m above the sea level at the lake Överuman close to the border to Norway. The soils of the upper parts of the catchment consist of glacial tills and glaciofluvial sediments (Anonymous 1984, Rudberg 1970). Where the dam of the Bålforsen power station now stands, the river crosses the former highest coastline attained following the last ice age (Fredén 1998). Since then, crustal rebound has caused the land to rise about 240 metres, and the coastline to recede about 170 km (Fredén 1998). After crossing the former highest coastline, the river start to cut into deposited lacustrine and marine sediments.

The mean annual discharge at the mouth is about 450 m3/s (Melin and Gihl 1957). Where the Ume River and the Vindel River join, the mean annual discharge of the Ume River is 230 m3/s, and that of the Vindel River is 190 m3/s. The mean annual precipitation is largest in the mountain range in the westernmost parts of the catchment, reaching 1 300 mm/year (Raab and Vedin 1995). To the west of the mountain range, precipitation falls to about 700 mm/year, and is lowest around the lake Storuman (about 600 mm/year). Much of the precipitation falls as snow. The mean depth of the deepest snow cover per winter season is >130 cm furthest to the west, about 80 cm in the inland, and about 70 cm closest to the coast (Raab and Vedin 1995). Patterns in runoff mirror those of precipitation: The highest values, about 800 mm/year, are reached in the westernmost parts of the catchment, but decreases to around 300-400 mm/year in the inland region (Raab and Vedin 1995).