

Kitiya Ninlapat 2007: Application of Geo - informatics for Wetland Classification in Bangkok and Surrounding Areas. Master of Science (Forestry), Major Field: Forest Biology, Department of Forest Biology. Thesis Advisor: Assistant Professor Yongyut Trisurat, D.Tech.Sc. 87 pages.

The objectives of Application of Geo-informatics for Wetland Classification in Bangkok and Surrounding Areas research aimed to develop wetland GIS database, to classify and delineate wetland types, and to assess wetland changes according to the Wetland Classification System of Thailand in 2000. This system classifies wetlands into 5 levels, namely 1) type 2) system 3) subsystem 4) class, and 5) subclass. The spatial data for analysis included primary data and secondary data. The primary data consisted of five layers. The first three layers, including 1) land use, 2) water regime, and 3) water body size were derived from visual interpretation of Landsat - 5 TM images both in wet and dry seasons. The other two layers, water salinity and river & stream network, were gathered from field survey and buffered from hydrography, respectively. In addition, the secondary data included 2 layers viz. 1) study area boundary, and 2) soil group. Consequently, these spatial data were analyzed by using GIS software according to Wetland Classification System of Thailand.

The results showed that there are both freshwater wetlands and saltwater wetlands in Bangkok and Surrounding Areas. In 1998 the wetlands cover an area of 1,390.21 km.², or 56.51 percent while in 2004 they encompassed 1,386.68 km.² or 56.37 percent. The wetland areas decreased 3.53 km.² or 0.14 percent. There are three freshwater wetland systems, including riverine, lacustrine, and palustrine. They can be subdivided to be 10 sub-classes. Saltwater wetland include 2 systems that are marine system and estuary system and are classified into five subclasses. Subclass FRF2am2 (paddy field) occupied the largest proportion of the total wetland areas and followed by SEN1jm2 (aquaculture), FRF2bm2 (tree), FRF2 cm2 (vegetable) and FPP2a1 (palustrine), respectively. Subclass FRS1bm2 (seasonal canal) covered the smallest area.

Meanwhile, the analyses of wetland changes between 1998 and 2004 showed that the areas of FRF2am2 (paddy field), FPP2a1 (palustrine), SEN1jm2 (aquaculture) FRF2 cm2 (vegetable), increased relatively while FRF2bm2 (tree), SEI 2d2 (Nypa forest) and SMI2d2 (mangrove) decreased. It is predicted that in 2010 palustrine system, lacustrine system, marine/coastal system and nonwetlands will enlarge, while riverine system will diminish.

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