Land-use change and impacts on wetland ecosystem in east part of Meriç River's Delta (Turkey)

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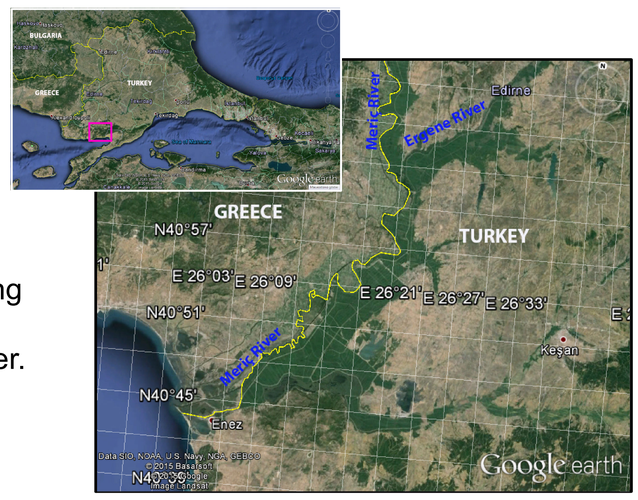
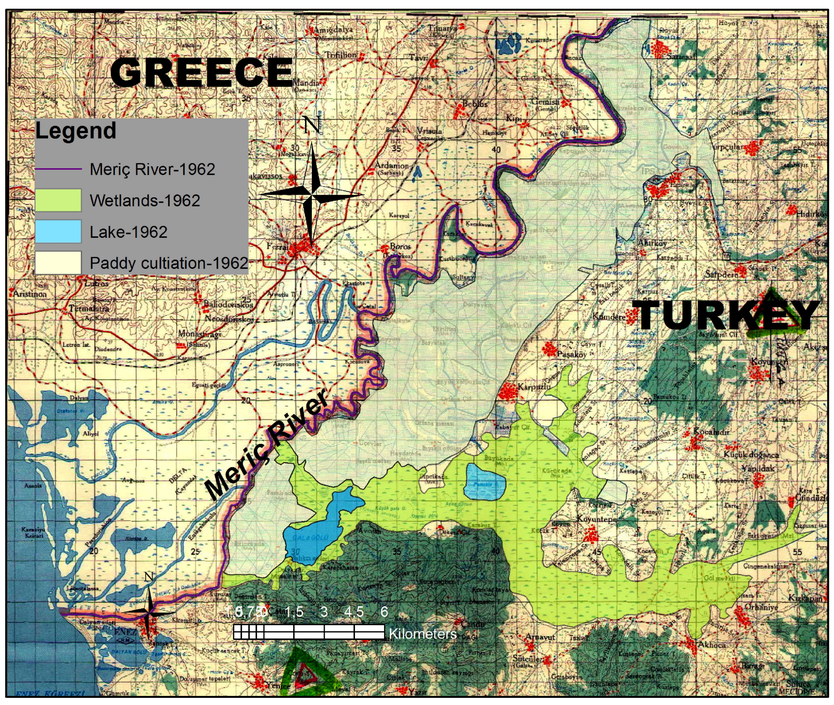
Overview

Eco-system problems regarding wetland have become very important in the flood plain.That is the place where Meriç River meets Ergene River in the Turkish territory in the recent years. The problems result from the land use changing for different purposes. In this research, the direct and indirect reasons causing the ecosystem problems in the wetland such as the land use changing in the area, which is the Edirne-Enez part of Meriç River. The effects of the measures taken in MeriçValley and its surroundings were investigated.



Meriç River Delta (1962)







Method

The basic data collected for this research include the Landsat images taken on the different dates,the usage of 1/25.000 topographic maps and the archives of the Ottoman Empire and those of the Turkish Republic, and the previous ecological studies for Meriç Delta. The Geographical Information System (GIS) and Remote Sensing Technologies were used to determine the land use changes from the past to the present. Those methods were also used to obtain a digital database to make the surface analysis of the flood plain and to measure the differences occurring in the shapes and the areal of the river and lakes.

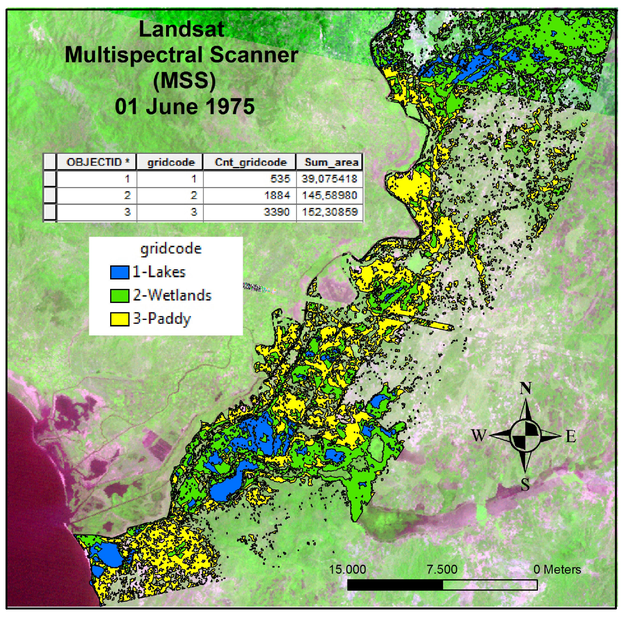
Findings

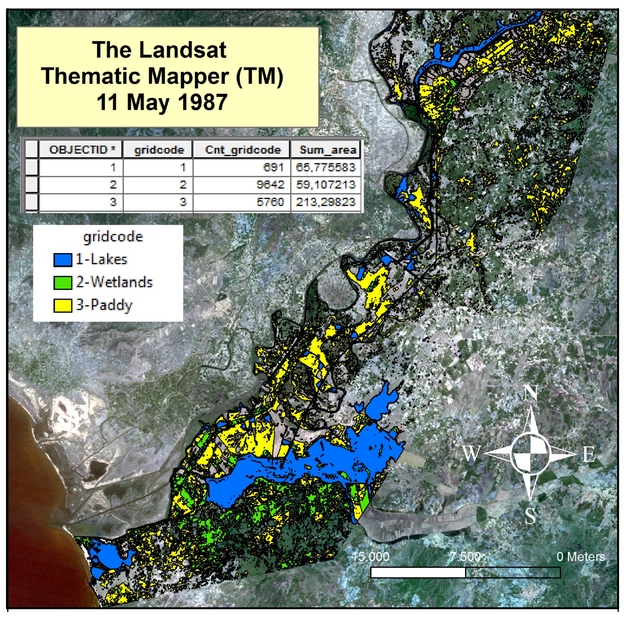
The results of the temporal and spatial analysis show the types and the limits of some certain landuse changes in the flood plain of the lower Meriç River.It is understood that the flood prevention projects in Lower Meriç Valley, from Edirne city to Enez, have important role on landuse change in Meriç River's Delta.Landuse changing in Lower Meriç Valley flood plain and its delta have triggered to the limnological problems of the Gala Lake and Pamuklu Lake in time, and the degradational changes in wetlands of Meriç River Delta that is significance for indigenous and migratory bird populations and fish. As a pollutant, the impacts of Ergene River on the water quality in wetlands of delta have moved very serious dimensions to the flood plain wetland ecosystem problems.

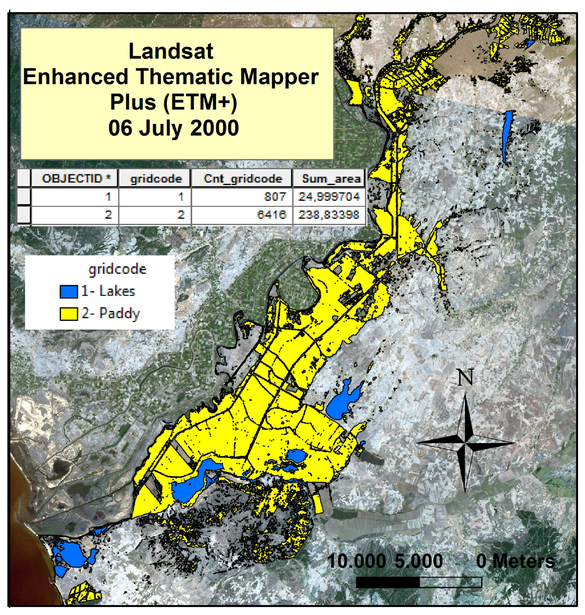
Landuse Changes

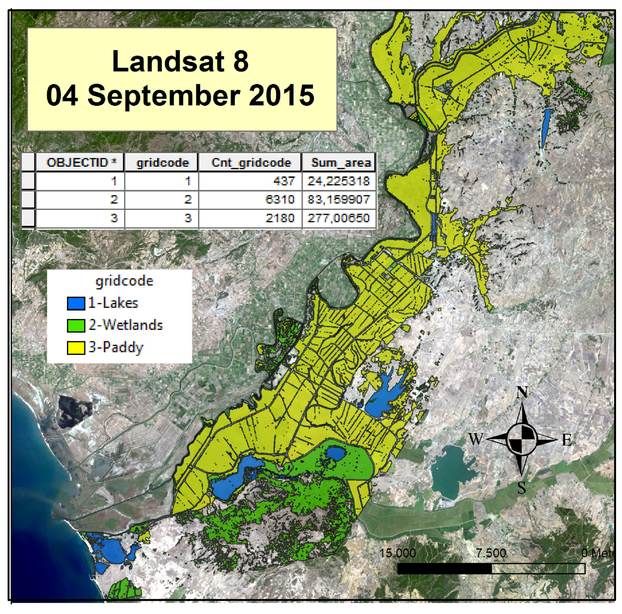
Images	Date	Lakes	Wetlands	Paddy	Other
MSS	01.06.1975	39,1	145,6	152,3	364,5
TM	11.05.1987	65,8	59,1	154,7	421,9
ETM+	06.07.2000	25,0		238,8	437,7
LANDSAT 8	04.09.2015	24,3	83,2	277,0	317,1

Flood prevention projects in Lower Meriç Valley have led to significant changes on wetlands and landuse in Meriç River's Delta for last 50 years. Landsat satellite images in different dates were analysed. Supervise analysis results are below.









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