

Survey of Agricultural Ponds in Taoyuan Plateau by Satellite Imagery and
Air Photography
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Abstract

The thousands of agricultural ponds in the Taoyuan plateau were developed for farmland irrigation adjustment by early inhabitants. Due to the large number, area and density of the water bodies, the ponds created a characteristic landscape on the Taoyuan county, and earned a name of “county of thousands ponds”. However, the ponds disappeared rapidly during the last 30 years because many of the land use change to non-agriculture, and so dramatically change the landscape and the eco-environment. The government and NGOs recognized the historic, social, and ecologic values of the ponds, announcing the ponds “national wetlands” and implemented a comprehensive survey for the ponds. This paper documented the results of survey which utilized remote sensing (RS) and geographic information system (GIS) technologies to analyze high resolution Formosat II satellite imagery and air photography to identify the water bodies, and to compare the growth and decline during 2004 to 2011. The Taoyuan county pond database was created for the government to manage and utilize the ponds and to create new life to the ponds in the Taoyuan area.

Keyword : Agricultural Pond, Satellite Imagery, Air Photography, Formosat II