



Satellite remote sensing used for wetland flooding duration and habitats monitoring

A. Sandoz (1), P. Chauvelon (1) and M. Pichaud (1)

(1) Station Biologique de la Tour du Valat, Le Sambuc, 13200 Arles
(sandoz@tourduvalat.org/00 33 4 90 97 20 13)

In the Mediterranean basin, during last decades, more than half of wetland areas disappeared. Some regions, these destructions rise more than 90%. The first ones to be concerned with conservation of wetlands were ornithologists. Very quickly, they included/understood, that in order to maintain the diversity of migratory birds presents in these areas, it was necessary to preserve their habitats. Jointly, they became aware that wetlands had an importance in the regulation of water cycle, for protecting subsoil waters, for water retention, their purification, and of course, as support for many animal and flora species. Satellite images could play a major role in the study and monitoring context. When we started our satellite images collection in 1975, it allowed us to map annual variations of habitats and flooded areas. Today, we've acquired an important quantity of Spot 5 images through a special programming (ISIS program), which cover the area during hydrological year with 8 images. We show limits and potential applications of satellite images linked with wetland habitats and flooded duration problematic. Using them, the knowledge of spatiotemporal dynamics of habitats and flooded areas, could then, be best formalised. We present results of inventory and monitoring in the Rhone delta context, in South of France, an area of high wetland biodiversity in a Mediterranean catchment area. A spatial knowledge of wetland habitats and hydrological surface dynamics can be therefore generated. This knowledge, linked together with ecological models, allows us to better understand functioning of wetland dynamics. Our objective is also to propose an operational methodology for inventory and monitoring of wetland habitats and wetland flooded duration. The exceptional spatial and temporal resolution sharpness is demonstrated.