

“Action E.4: MONITORING OF BIRD AND AMPHIBIAN SPECIES AND HABITATS”

"Action E4: Monitoring of species and types of habitats of birds and amphibians" of the Project with the acronym "ACCOLAGOONS" was implemented according to the Contract signed on February 22nd 2014 between the Region of Central Macedonia and Dr. Chronis Ioannis.

Aim of this action is to systematically monitor the presence of populations or other demographic parameters of selected bird species and amphibians as well focusing on bird species of Directive 2009/147/EC - Annex I. Monitoring and reporting period last from 28-02-2014 to 30-09-2015.

Parameters monitored under this action and its main results as well are summarized as follows:

❖ BIRDS

- Inventory (count) of bird fauna (during the day and the night)
 - In 30 day light visits that took place in each study area, 16 bird species of the Annex I of Directive 2009/147 were identified, 15 in each wetland. The most populous species was Mediterranean Gull (*Larus melanocephalus*) and the Billed Gull (*Larus genei*) and the Avocet (*Recurvirostra avosetta*) and the Black-winged Stilt (*Himantopus himantopus*) are following.
 - In 14 nightly visits taking place in each study area, 6 species of the Annex I were recorded. The European nightjar (*Caprimulgus europaeus*) had wide presence in the wetland of Epanomi.
 - In wetland of Aggelochori higher values of diurnal species were recorded in the prebasin area, the salt works and the beach and nocturnal species found mainly in the meadows, the flooded wet meadows and the salt works-prebasin area. In Epanomi higher values of diurnal species were recorded in the lagoon area and the beach and nocturnal species found mainly in the meadows and the flooded wet meadows.

Comparing Action's E4 monitoring results with those of the year 2011 (action A5 of "ACCOLAGOONS" Project) it seems that number of recorded priority species' individuals visited the two sites (with the exception of *Larus melanocephalus*) as well as number of recorded nests during 2014-2015 were less than those recorded on 2011, probably due to local conditions, taking into account neighboring sites as witnesses.

Comparing the data of same monitoring periods recorded before and during construction of technical works of Project's actions C2 and C4 (total data of action A5 and data of action E4 for the period 3rd 2014 to 9th 2014) and also those after completion of these technical works (from 10th 2014 to 8th 2015) it should be noted that populations of protected birds living and wintering in the area have increased significantly.

- Monitoring of invertebrates



- Sampling conducted in each site and 30 stations in the area of the Epanomi and 22 in the area of Aggelochori were selected. Stations were selected so as to cover all habitats of recorded priority species and all different habitat types as well and sited in a systematic way.
- «Rich» stations for the area of Epanomi are designated those located around the lagoon perimeter and along the south coast of the protected area and for the area of Aggelochori are those at the southwest side of the lagoon and along the west coast of protected area.
- Higher values of invertebrates' biomass were recorded in both areas during the spring.
- Monitoring of predators
 - Six types of preys were identified including three mammals ("fox - *Vulpes vulpes*", "Dog - *Canis domesticus*" and "Badger - *Meles meles*") and three birds ("Magpie - *Pica pica*", "Crow - *Corvus corone cornix*" and "Gull Mediterranean - *Larus michachelis*").
 - The main mammal predator in Epanomi is the fox and in Angelochori is the dog. Regarding birds the main predator is the Magpie, but Crow has a serious presence as well.
- Monitoring of vegetation
 - Sampling conducted at same stations with monitoring of invertebrates.
 - Stations with higher coverage of live vegetation in the area of Epanomi are those along lagoon's south side and the southwest coast of the protected area. In the area of Aggelochori stations with the higher coverage of live vegetation are those along the southwest side of the lagoon.
 - Higher average visual obstruction was recorded in the area of Epanomi at the lagoon's south side and the channels east of it. In the area of Aggelochori higher values we recorded along the south side of the lagoon and the dunes south of it.
 - Higher values of live vegetation coverage and visual obstruction were recorded in both areas during spring and summer sampling.
- Hydrological regime and water chemistry
 - Higher values of conductivity and salinity were recorded during summer months.
 - Mapping of water surface was performed with images from three different periods (March 2014, August 2014 and January 2015). Great differences of flooded surface area were identified between periods of August 2014 and January 2015, periods with low and high water level respectively.
 - Mapped water surface area of Aggelochori lagoon was approximately 600 acres with minor changes during the year that do not exceed 10%. At Epanomi lagoon mapped water surface showed great decrease during summer months and significantly increased at winter (about 90% increase).
- Monitoring pressures-activities
 - Monitoring of pressures and activities took place during bird inventories.

- Major pressures recorded at the area of Epanomi are regular and "off road" movement of vehicles and their uncontrolled and unregulated parking and also predation and competition with "domesticated" animals. Habitats with most recorded pressures are dunes, beach and meadows.
 - Major pressures recorded at the area of Aggelochori are regular and «off road» movement of motor vehicles and their unregulated and uncontrolled parking (especially during summer months) and predacity. Habitats with most recorded pressures are also (as at the site of Epanomi) dunes, meadows and beach.
 - Strongly flood events were recorded during winter and early spring at the meadows, the flooded salt marshes and the main area (lagoon, prebasin area) of both wetlands.
- ❖ AMFIBIANS
- Breeding recording
 - Tadpoles were found around the perimeter of Aggelochori lagoon and at the dense vegetated area southeast of Epanomi lagoon.
 - Recording of reproductive calls
 - Reproductive calls were not recorded in any visit of the monitoring team. Not recording of reproductive calls in combination with the identification and recording of tadpoles, probably indicate that the period of amphibians' breeding calls in the area may start earlier than the one chosen by the monitoring team.