

INTRODUCTION

LIFE Salinas (LIFE17 NAT/ES/000184) is a conservation project focused on the increasing and improving of the animal diversity and the habitats of Community interest present in Salinas y Arenales de San Pedro del Pinatar Regional Park, coastal ecosystems located in Southeast Iberia. Designed as SCI and SPA sites, and part of the the Mar Menor RAMSAR wetland: is important for **32 bird species** listed in Annex I of the Birds Directive and has **11 priority habitats** included in Annex II of the Habitats Directive



THREATS TO BIODIVERSITY

Saltworks exploitation has been environmentally friendly for decades, allowing the establishment of a diverse bird community (gulls, terns, waders and waterfowl). However, **extremely increase of the Yellow-legged Gull (*Larus michahellis*) population have led to nitrification and modification and reduction of others birds breeding habitats.** Furthermore, this situation could increase predation on the waterbirds breeding colonies.

WATERBIRDS BREEDING AREA 1994



WATERBIRDS BREEDING AREA 2015



Disconnection of the large pond *Coterillo* from the salt circuit, resulted in an extreme salinity and, ultimately, the **local extinction of the Spanish Killifish (*Aphanius iberus*)**, an endangered species listed in the Annex II of the Habitats Directive. Loss of old embankments by erosion in very large ponds have caused poor water circulation, resulting in their stagnation and **impoverishment of the saline macroinvertebrate community** (essential trophic link in this ecosystems).

BIODIVERSITY CONSERVATION ACTION

Action C1. Creation of green infrastructure to increase the waterbirds breeding habitat:

Construction of new embankments provides a suitable nesting habitat for Audouin's Gull, terns and waders. They are covered with mudextracted from the salt ponds that will inhibit any vegetation. In addition, the rocky base of this green infrastructure provides a new breeding microhabitat for Spanish Killifish. Finally, it will also improve the water circulation in the saltworks.



Action C2. Connection of Coterillo pond in the saltworks circuit through a green infrastructure:

Restoration of this old saltworks pond will allow the recolonization of spanish killifish, increasing the habitat distribution of this endangered fish within the Regional Park. In addition, aquatic macroinvertebrate community will diversify and stabilize in this ecosystem.



MONITORING OF BIOLOGICAL INDICATORS

In order to evaluate the success of the wildlife conservation actions implemented during LIFE Salinas project, three bioindicators have been selected:

WATERBIRD COMMUNITY:

- **Monthly censuses** to evaluate changes in the use of birds foraging in the ponds.
- **Monitoring of breeding colonies** to evaluate the new green infrastructures as new nesting habitats, as well as to detect changes in the breeding parameters.



SPANISH KILLIFISH POPULATION:

- **Seasonal samplings** in target and control ponds. Minnow-traps are used to trap the *Spanish Killifish* populations. Trapped individuals are measured and sexed. Data collected are incorporated into an index, which integrates information regarding abundance, population structure and habitat quality.



AQUATIC MACROINVERTEBRATE COMMUNITY:

- **Seasonal samplings** are carried out in different ponds of the saline circuit, following the salinity gradient. Data collected are incorporated into SALINDEX. This index integrates different metrics such as: family richness, dominance of taxonomic orders or presence of quality indicator species or habitat degradation.



PRELIMINARY RESULTS

Thus far, actions implemented has provide successful results very soon. An increase in the *Spanish Killifish* population has been detected in the ponds where the new embankments have been placed and two bird species have already breed in them. A few months after the partial development of C1 action, 45 pairs of Little Tern and 22 pairs of Pied Avocet have nested in the new habitats. In addition, two flamingo nests were found, being the first breeding attempt recorded by this species.

