

GENERAL AIMS OF THE TANCAT DE MILIA GREEN FILTER

1. Improve water quality of Albufera Lake and reducing the pollutants concentrations, improving the surrounding areas of the lake.



2. Encourage the development of underwater grassland vegetation. This type of plant communities dominated the lake before the waters became eutrophic.



3. Create a natural reservoir of seeds of native vegetation.



4. Create permanent aquatic habitats, not affected by the availability of irrigation water and seasonality of rice fields.



5. Create flora and fauna reserves.



6. To spread this kind of innovative and integrated system in natural areas, with specialized public visits and dissemination projects.



FLORA AND FAUNA IN MILIA

Flora and fauna represent the most important living components of the area. Between them there is a great dependence, many of the birds feed on the vegetation. With these points of constant water and vegetation, many of the birds went past on their annual migration, now stop to rest, feed and breed in the area restored.



TANCAT de MILIA Green Filter

A RENATURALIZATION EXPERIENCE



Sedesa



MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE

acuaMed

Information: www.tancatdemilia.org
Contact: albufera@fundacionglobalnature.org

ALBUFERA SOUTH PROJECT

The project "Reuse of Albufera Sur wastewater" is in the framework of the Immediate Action Plan, in the chapter "Recovery of the quality of water inputs" and within the subprogram "Rehabilitation of the lakes and the wetlands". This action was assigned to the Spanish public company for the management of Mediterranean rivers water (ACUAMED) by the Ministry of Agriculture, Food and Environment.

On January 25th, 2008, ACUAMED contracted SEDESA and COMSA companies to implement this project.



WHAT IS TANCAT DE MILIA?

Tancat Milia is an old rice field located on the south shore of L'Albufera, in the municipality of Sollana. The word "Tancat" comes from Valencian (our local language) and means "closed". It is the word used to identify the rice plots that have an independent management of the irrigation water, something like a community of small landowners.

The Tancat de Milia has an area of 334.000m² (33,4 Ha) dedicated to the implementation of a green filter system to reuse the effluent of Albufera Sur treatment plant and to improve the quality of water draining to the Albufera Lake.

WHAT IS A GREEN FILTER?

Green filters are natural, ecological and sustainable water purification systems.

GREEN FILTER STRUCTURE

The green filter has 33,4 Ha divided into three sectors. From south to north the Green Filter is structured as follows:

SECTOR A

Sub-Flow System (SFS) to remove phytoplankton. The water runs through an underground gravel bed in which macrophytes plants are rooted. The surface of this area covers 4,5 Ha where chlorophyll is eliminated, the water leaving this sector is transparent.

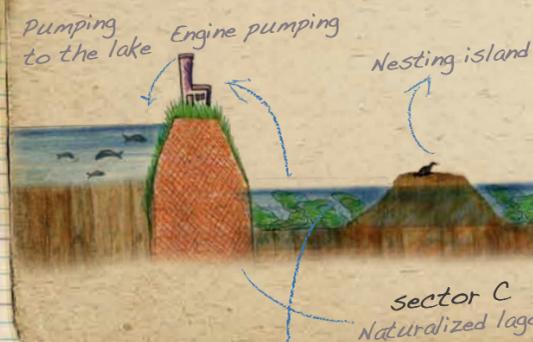
The section of this sector has:

- * A layer of clay to enhance waterproofing.
- * A layer of geotextile to prevent mixing with the underground water.
- * A gravel bed 50cm thick where the water flows and plants are rooted.
- * A layer of geotextile to prevent clogging of the gravel.
- * A layer of topsoil 10cm thick.

The vegetation of this sector is reed (*Phragmites australis*) and cattail (*Typha latifolia*) by 50% occupancy.



Map of the 3 sectors



SECTOR C

The objective of this third sector is diverse, first of all, to make the final treatment of water from Sector B, while global integration is favored as the green filter in the environment in which it is framed.

Moreover, is used to enhance the development of underwater vegetation. These communities in the 60's were typical in lake areas with good water quality inside the Natural Park. This lagoon covers 10 Ha, of which 7,3 ha are a water free surface and 2,7 Ha belong to two islands for birds nesting and resting.

SECTOR B

In the central part of the green filter, an artificial wetland based on surface flows (SF) is located, and there is therefore a visible film of water. This wetland occupies 18 Ha.

In this kind of wetlands, the superficial layer is aerobic, while the deeper are anaerobic.

These conditions provide a very effective situation for removing nitrogen and phosphorus, elements that in a high concentration cause eutrophication. To be effective in phosphorus removal, we need to increase the retention times in the wetland.

The wetland vegetation in terms of species and occupancy rates is the same as in Sector A.



sector C



sector B



sector A

Lagoon vegetation

The vegetation distribution is heterogeneous, both in shores and underwater habitats.

The vegetation introduced on the banks is, floating hat, paleyellow iris, junks and tamarisk.

Concerning the aquatic communities, the species that are intended to be potentiated are, Charas, Myriophyllum, Potamogeton. These communities had suffered a significant regression during the last decades. Restoring these plant communities in the Green Filter is one of the main priorities in order to have an approach to long-term solutions for the rest of the natural park.



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