

# MACROPHYTE REINTRODUCTION IN A SMALL SANDPIT LAKE AFTER HABITAT RESTORATION

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# Introduction

The Small Negovan Lake is located on the remnants of the Negovan Swamp, which was drained in mid 30s of the 20th century. The swamp was part of an extensive wetland with high biodiversity and conservation value, situated at the confluence of Lesnovska River and Iskar River. The territory was exploited for gravel and sand pit production, thus retaining water and providing refuge to a number of the original flora and fauna of the Negovan swamp. After the exploitation, the lake regained a semi natural appearance, partly due to a series of projects for improving the aesthetical appearance of abundant sandpit lakes through macrophyte reintroductions.

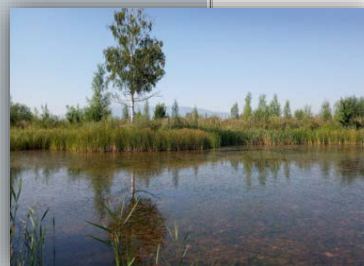
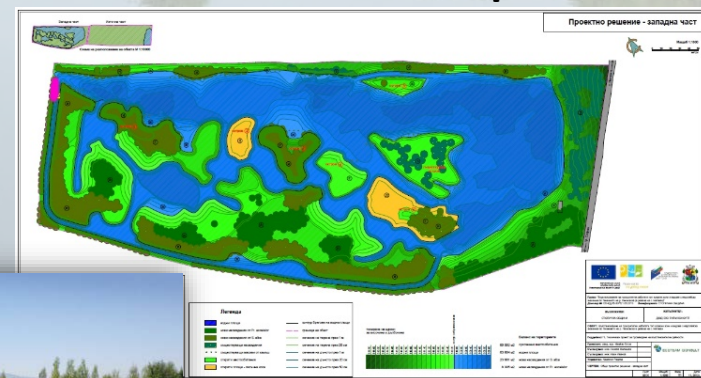
The most recent and complete restoration took part in the period 2013-2015 through a “Demonstration Project for restoration of priority habitat type wetlands and species of European importance along Lesnovska River (near the Negovan Village)”, a project of the Sofia Municipality supported by EU funds (Project № 5103020-C-013/2012). Since then, a monitoring program was launched to assess the results of the macrophyte reintroduction.



Pre-restoration period



Post-restoration period





# Results

The study presents results of a four-year monitoring program on the macrophyte reintroduction success in a restored sandpit lake.

The reintroduction included macrophytes with high conservation value (*Aldrovanda vesiculosa*, *Nymphaea alba*, *Nymphoides peltata*, *Marsilea quadrifolia*, etc.) as well as some common species (*Potamogeton lucens*, *Lemna trisulca*, *Myriophyllum verticillatum*, etc.).

The monitoring also includes one of the most aggressive invasive species - *Elodea nuttallii*, and the development of tall-growing species *Phragmites australis* that modify habitat structure and thus influence associated organisms and impair recreational use. The expansion of the reeds poses strong pressure on the rooted floating-leaf type macrophytes (*Nymphoides peltata*, *Marsilea quadrifolia*), leading to their suppressed development and consequent disappearance from the community.



*Nymphaea alba*



*Nymphoides peltata*



*Marsilea quadrifolia*

## Reintroduction of *Aldrovanda vesiculosa* (2014)

*Aldrovanda vesiculosa*



Source material – Dragoman Marsh



Reintroduction in Negovan Lake - unsuccessfully

