RESTORATION OF DEGRADED SALT MARSHES OF THE SOUTH MORAVIAN PANNONIAN REGION

within the LIFE in Salt Marshes Project

D. Ružanski, M. Kotasová Adámková

ENVIROP, Ústav botaniky a zoologie, PřF MU, Brno

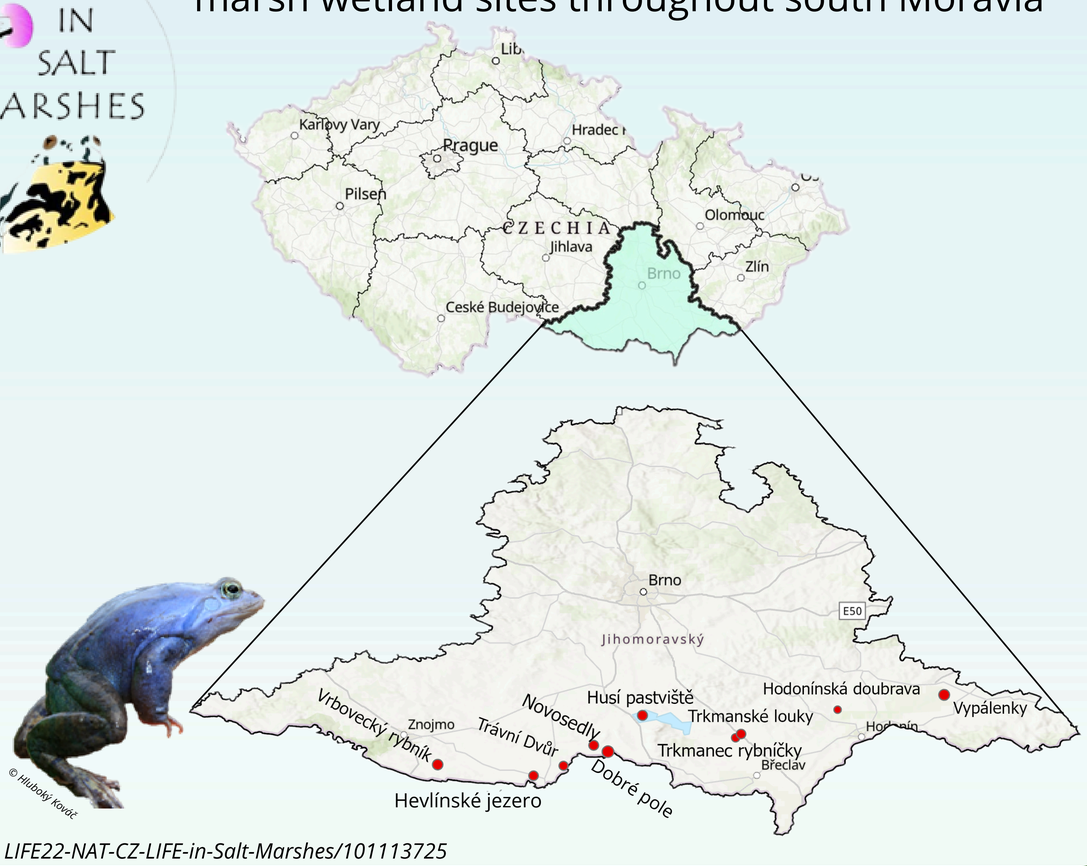
Web ENVIROP

South Moravian salt marshes are among the **rarest** habitats in the Czech Republic. Currently, they are **threatened by degradation**, particularly due to **advanced succession, eutrophication, alterations of the water regime and pollution.**

In the past, these habitats served as refuges for many **amphibian species** that are now endangered (e.g., ***Bombina bombina, Rana arvalis*** and ***Triturus dobrogicus***).

As salt marshes disappear, the numbers of amphibian populations are declining as well.

The main aim of the LIFE in Salt Marshes is to stop and prevent degradation of 10 of salt marsh wetland sites throughout south Moravia



Under the project: LIFE22-NAT-CZ-LIFE-in-Salt-Marshes/101113725

Main drivers of degradation (20th century)

Agriculutural intensification

Increased nutrient input

Wetland drainage

River straightening

Overgrowth - high succession rates

Loss of habitat mosaic/habitat connectivity

How to mitigate degradation?

Through Restoration practices

They aim to restore hydrological conditions and improve habitat quality by using:

Extensive grazing

Hemiparasites

Biofilters

Water regime changes

Manual mowing

These measures are expected to reduce nutrient accumulation, limit succession, and create suitable breeding habitats for amphibians.

Implications for amphibians

- **High nutrient levels** → algal blooms
- **Pollution** → impaired development
- **Succesion** → overgrowth
- **Unstable water regime** → loss of breeding sites

Water chemistry results (2025)

- Elevated nutrient concentrations indicate ongoing **eutrophication** at several sites.
  - Phosphorous: up to 33 µg/l
  - Amonia: up to 60 µg/l
- **Heavy metals:**
  - Arsenic: 2.4 - 6.8 µg/l
  - Lead: <1.0 - 3.2 µg/l
- **Pesticides** (2024)**:**
  - Glyphosate: 0.1 - 11.2 µg/l
  - Metabolites: chloridazon, AMPA (accumulation in soil)

Spolufinancováno Evropskou unií

MUNI SCI Ústav botaniky a zoologie

ENVIROP

Výzkumný ústav meliorací a ochrany půdy, v.v.i.

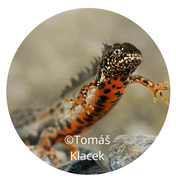
WORLD FROM SPACE

ČSO Jihomoravská pobočka

NATURA 2000

Ministerstvo životního prostředí

Project species of interest



Triturus dobrogicus

Bombina bombina

Rana arvalis

Tringa totanus

Anas querquedula

Cirsium brachycephalum