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***Urban wetlands in cross border region Latvia-Lithuania: challenges of improvement of eco systems and services***

# Latvian experience in wetland management for the conservation of rare European herpetofauna in border region Latvia - Lithuania: *from problem to solution*

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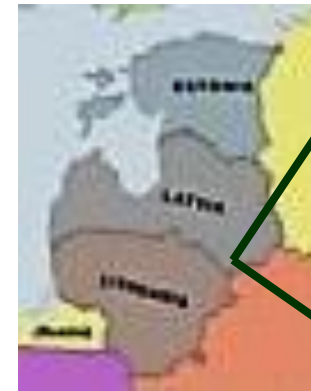


## What is the Latgales Zoo?

**The Latgales Zoo** is a small municipal zoo located in the city of Daugavpils, about only **18** km from the border with Lithuania and we have every year many thousands visitors - nature friends from Lithuania

In accordance with our original concept, our zoo does not have wild-caught animals. Near to all our animals were unnecessary to their owners and now live in our zoo, as in a shelter.

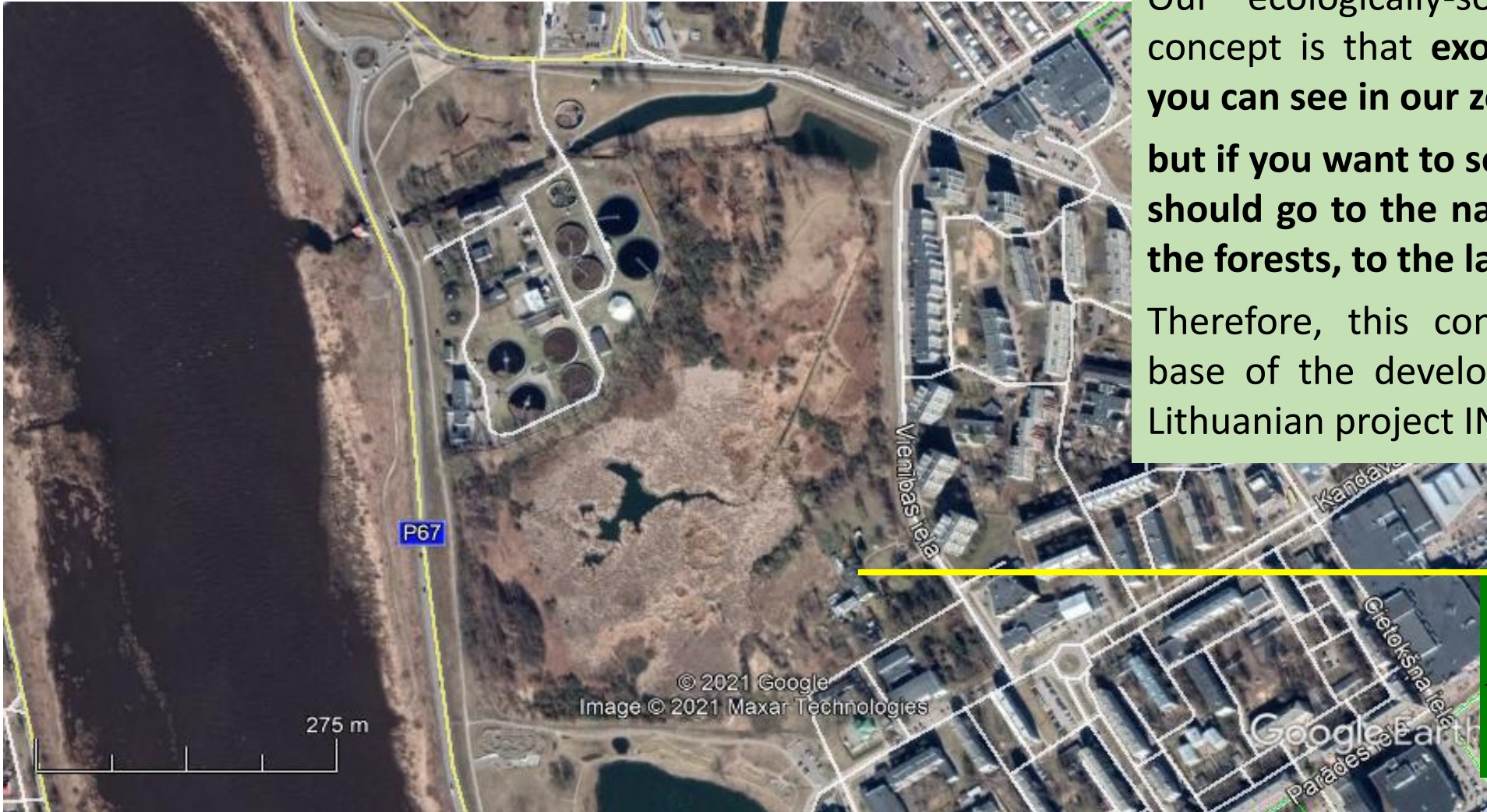
**We keep only zooculture domesticated animals in our Zoo-shelter, but not wild-caught!**











Our ecologically-social and educational concept is that **exotic zooculture animals you can see in our zoo,**

**but if you want to see Latvian animals, you should go to the natural wild biotopes: to the forests, to the lakes, to the wetlands.**

Therefore, this conception was also the base of the development of this Latvian-Lithuanian project INTERREG proposal.





## How does Latgales Zoo carry out EU requests for zoos?

The EU directives on zoos require zoos to actively take part in scientific research and in nature conservation.

For many years, Latgales Zoo has been successfully involved in both - **scientific research** and **nature conservation** activities in a cooperation with the Daugavpils City Council and with the Daugavpils University.



## What is Latgales Zoo's contribution to the protection and study of the herpetofauna of Latvia?

Our interest in science and nature conservation is the least studied in Latvia and the most threatened group of vertebrates in our country and in other European countries - **herpetofauna and its ecology**.

The herpetofauna of Latvia (and Lithuania) consists of 12 species of amphibians and 8 species of reptiles (from 2020).

Most of modern scientific researches of herpetofauna in Latvia and projects for its protection have been carried out by the scientists of our team in cooperation with the Daugavpils University and with the support of many European and Latvian programs.

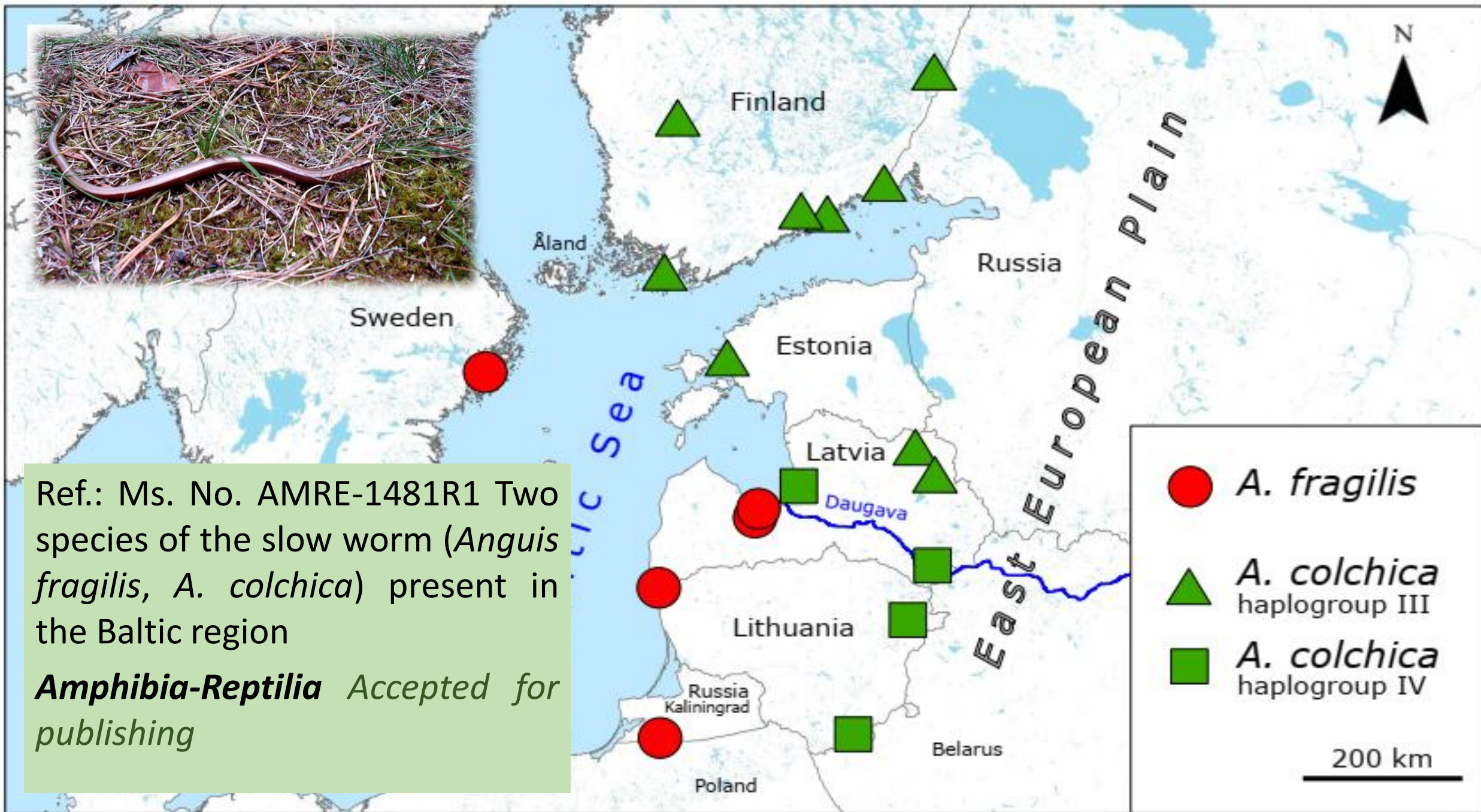






Ref.: Ms. No. AMRE-1481R1 Two species of the slow worm (*Anguis fragilis*, *A. colchica*) present in the Baltic region

***Amphibia-Reptilia*** Accepted for publishing



## What are the found main **PROBLEMS** of the herpetofauna and its wetlands in Latvia?

The main **natural threat** in the northern EU countries is the cold climate, therefore the Latvian herpetofauna populations are small in number and vulnerable to anthropogenic threats.

The main **anthropogenic** problems include 1) ***degradation of biotopes*** due to anthropogenic *pollution* and 2) ***over-visiting***, and 3) the influence of ***invasive species*** (predators, parasites and competitors).

**The problems will be resolved in Daugavpils wetland in the framework of this INTERREG Project.**



## What should be the **SOLUTIONS** of the problems?

The solutions are:

- 1) *restoration of the degraded wetlands and its water-bodies,*
- 2) *management of visiting,*
- 3) *education of people and visitors.*

**These solutions will be implemented in the Daugavpils urban wetland within the framework of this INTERREG Project.**



## Why is it so important to protect the wetlands for the protection of herpetofauna in Latvia?

The wetlands include a wide variety of environmental conditions, required for herpetofauna species: different types of water bodies, many shelters, wintering places, breeding sites, migration routes etc.

Therefore most of the Latvian herpetofauna species live or may live in wetlands.

These main species groups are newts, frogs, toads, snakes, one species of lizards, and pond turtle.





## Why is it important to protect the herpetofauna of Latvia in the border area with Lithuania?

Latvia is located more northern than Lithuania.

Therefore, most of the populations of Latvian thermophilic herpetofauna species are northern parts of the stronger populations of more southern and warmer Lithuania.

This is especially important for populations of **fire-bellied toad**, **great crested newt**, and **European pond turtle**.



## Why is cooperation in the protection and restoration of wetlands important in the border region of Latvia and Lithuania?

The wetlands don't end at the border. They continue in both countries and are common.

It is impossible to protect only one country part of the ecosystem, it is necessary to protect the entire ecosystem in both countries.

Therefore, it is important to jointly protect wetlands in the border area in Latvia and Lithuania.

Only such cooperation will make it possible to preserve both the wetlands and the populations of herpetofauna species inhabiting them.



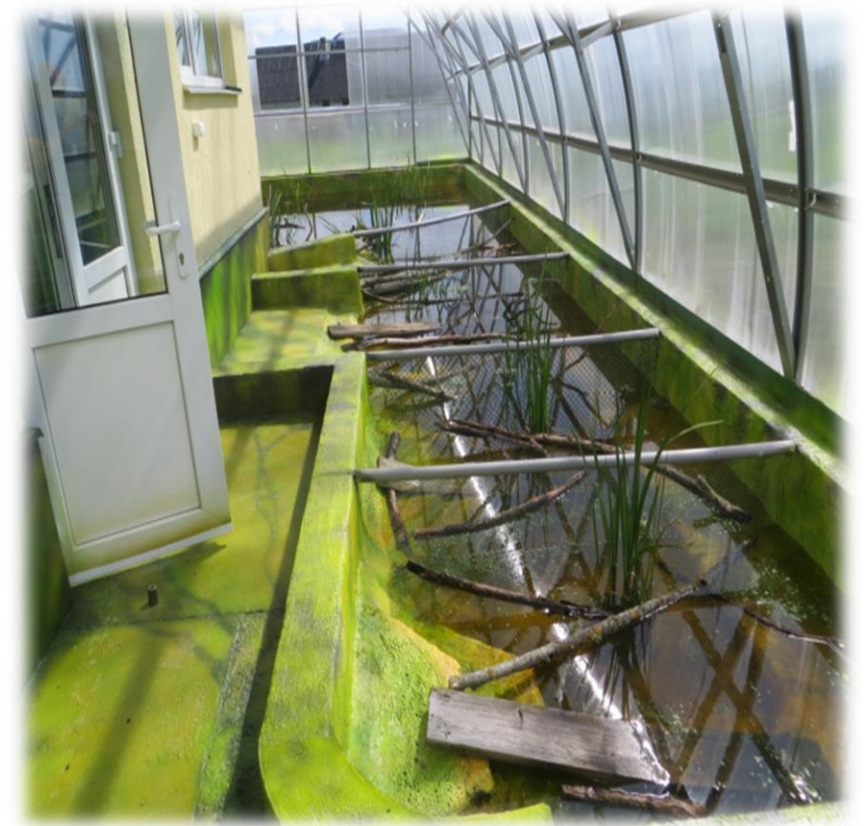


## What is the Latvian experience in wetland management in border region Latvia – Lithuania?

For more than 25 years we have been studying and protecting herpetofauna species and their habitats - wetlands, in the border region of Latvia near Lithuania.

The main actions were: 1) *preliminary research*, 2) *development of management plans*, 3) *supervising of restoration works*, 4) *breeding of animals and releasing in wild*, and 5) *monitoring of restored wetlands and herpetofauna populations*.

These actions were carried out with the support of many Latvian and European programs, organizations, private persons, stakeholders, and funds.



## What are the Latvian practical results of the wetland and populations management in the border region?

We have restored more than **80 ponds** and **hundreds of hectares** of the surrounding **wetland** biotopes in the border region Latvia - Lithuania.

We have also bred in captivity and released **62 adult pond turtles** and **several thousand juvenile fire-bellied toads** and other amphibians.

In a results we restored three populations of turtles and hundreds of local populations of fire-bellied toads in the border region with Lithuania.









## But why is this INTERREG Project especially important for the transboundary protection of wetlands and their herpetofauna?

All of our previous projects have been implemented in nature protected areas Natura2000.

But in order to preserve wetlands and their herpetofauna, it is very important to preserve them in the most vulnerable areas. Such territories are urbanized territories of cities and other settlements.

It is very important here to protect the urban wetlands from 1) *degradation*, 2) *over-visits*, 3) *pollution*, and 4) *invasive species*. Therefore the **Daugavpils wetland** is the target area of this Project in the city of Daugavpils, Latvia.





## Thank you for your attention!

But before the *Comfort break* – a small practical meeting with the target species of herpetofauna, which can be protected in the urban wetland of Daugavpils:

- Great crested newt *Triturus cristatus* - **Skiauterētasis tritonas** LT
- Fie-bellied toad *Bombina bombina* – “**Leishu varde**” LV, **Raudonpilvē kūmutē** LT
- European pond turtle *Emys orbicularis* - **Balinis vēžlys** LT



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