



## Joint management of Latvian – Lithuanian transboundary river and lake water bodies (TRANSWAT)

### The need for bilateral harmonization of assessment and monitoring methods, management

Jolanta Jēkabsone, Marina Čičandajeva

Latvijas Vides, ģeoloģijas un meteoroloģijas centrs

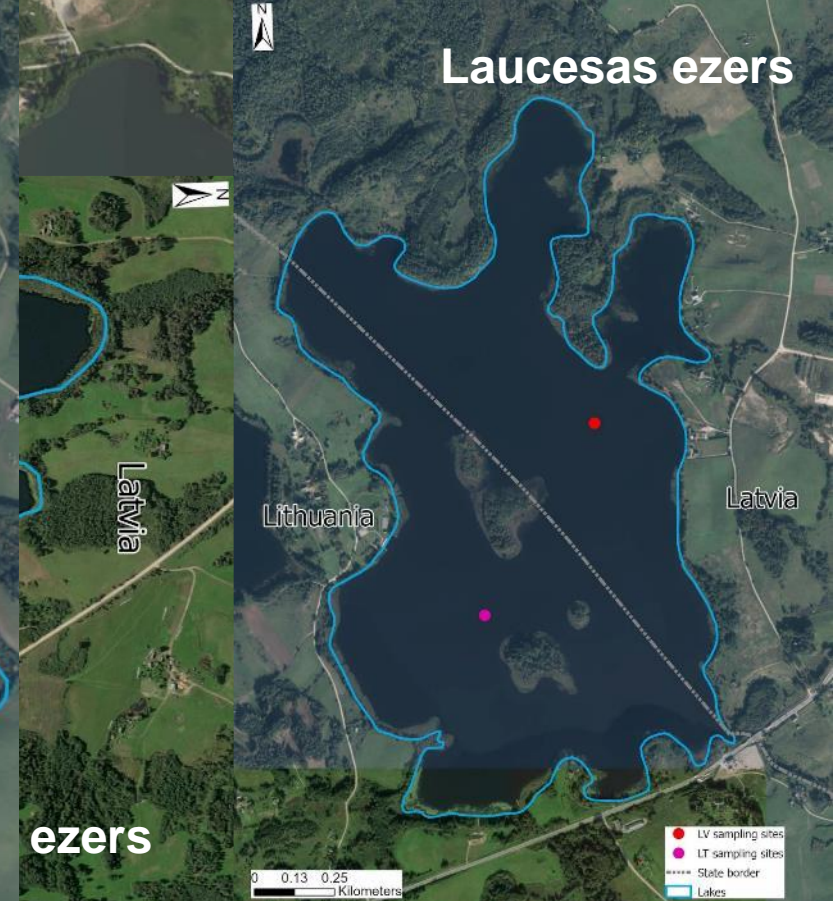
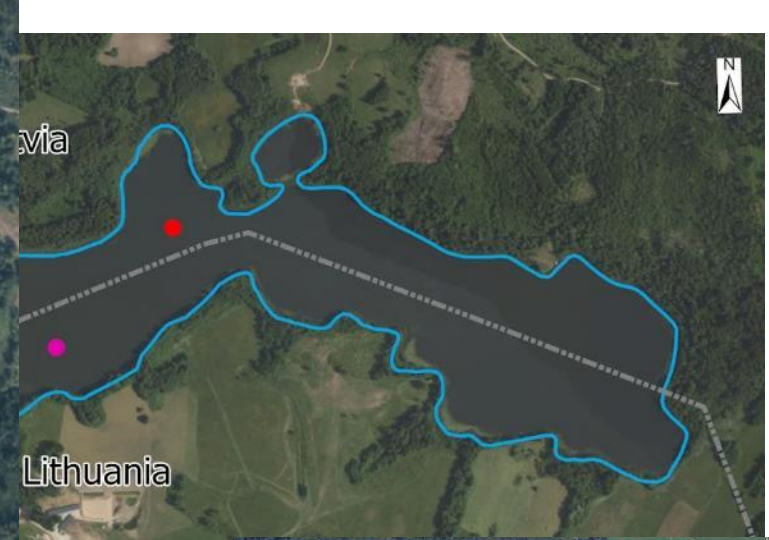
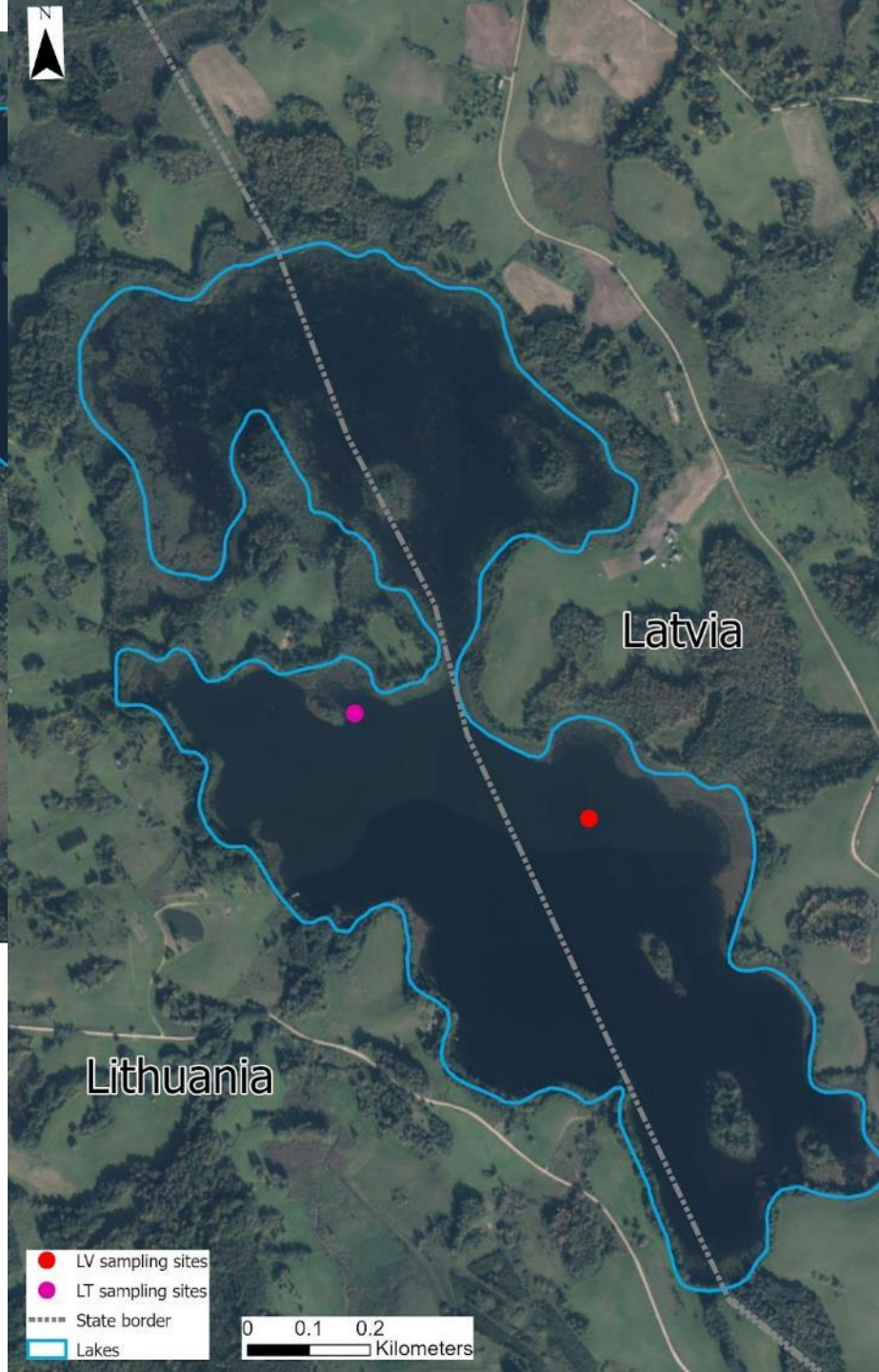
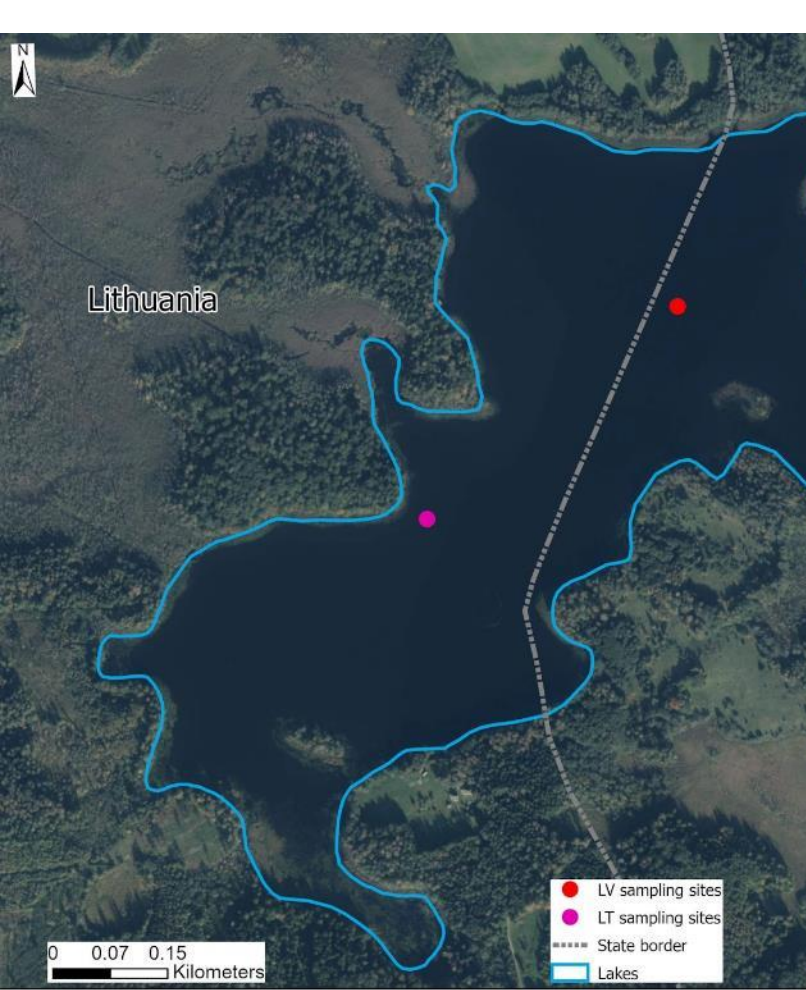
*Transwat Final conference, 06.09.2022.*

... or your neighbor is your best friend



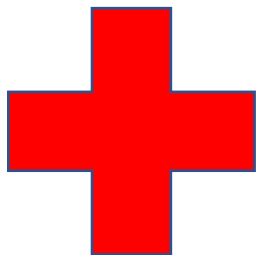
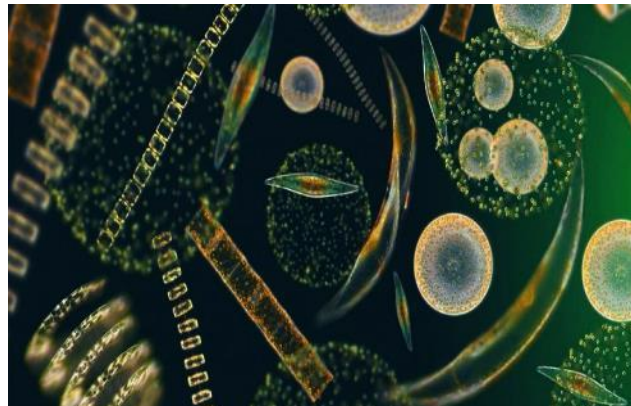
Latvia and  
Lithuania  
share 43  
transboundary  
water bodies:  
5 lakes and  
38 rivers





# Biological quality elements

- According to WFD: fish, macroinvertebrates, macrophytes, phytoplankton and phytobenthos.
- All methods, except LV phytobenthos, are intercalibrated and theoretically must be comparable.



-LV frequency



Minor differences



# Physico-chemical (ecological) monitoring

- Insignificant differences: BOD<sub>5</sub> or BOD<sub>7</sub>, Secchi as annual average or summer average.
- Latvia have more stricter boundaries for most of chemical parameters, which mostly affects high/good boundary.
- Lake Lauces (Laucesas) is defined as priority salmonid fish waters and additional parameters (index of phenols, petroleum hydrocarbons) must be monitored.
- Monitoring of Priority and Hazardous substances was not discussed within this project. Most of these lakes are in remote areas and significant chemical pressure is unlikely.

# Monitoring strategy: general differences

- Latvia are planning to monitor these lakes once in 6 year cycle, but Lithuania: 1 or 2 times.
- Actual monitoring programmes have different periods: Latvia 2021-2026, Lithuania 2022-2027. Latvia is planning next transboundary lake assessment not earlier than in 2027.
- Sampling frequency:
  - +Latvia collects chemistry samples 4x year, but Lithuania 7x year. Based on pressure-impact analysis, these transboundary lakes are not going to be monitored 12x year in Latvia.
  - +Latvia collects phytoplankton samples 2x year which is insufficient.

# Ecological status harmonisation

|                         | Ilzu (Garais)/Ilge |                | Lielais Kumpinišku/Kampiniskiai |       | Galiņu/Salna |       | Skirnas |       | Laucesas/Laukesas |                |
|-------------------------|--------------------|----------------|---------------------------------|-------|--------------|-------|---------|-------|-------------------|----------------|
|                         | LV                 | LT             | LV                              | LT    | LV           | LT    | LV      | LT    | LV                | LT             |
| Macroinvertebrates      | Good               | Good           | Good                            | Good  | Good         | Good  | Good    | Good  | Good              | Good           |
| Macrophytes             | Poor               | Moderate       | Good                            | Good  | Good         | Good  | High    | Good  | Moderate          | Poor           |
| Fish                    | Poor               | Moderate       | High                            | Good  | Moderate     | Good  | High    | High  | Good              | Moderate       |
| Phytoplankton           | Good               | Moderate       | Good                            | High  | High         | High  | High    | High  | Good              | Moderate       |
| Biology, total          | Poor               | Moderate       | Good                            | Good  | Good         | Good  | Good    | Good  | Moderate          | Poor           |
| Ntot, mg/L              | 1.14               | 1.14           | 0.64                            | 0.64  | 0.9          | 0.9   | 0.55    | 0.55  | 0.94              | 0.94           |
| Ptot, mg/L              | 0.033              | 0.033          | 0.013                           | 0.013 | 0.016        | 0.016 | 0.011   | 0.011 | 0.029             | 0.029          |
| Secchi, m               | 1.1                | 1.1            | 3.3                             | 3.3   | 3.1          | 3.1   | 5       | 5     | 1.3               | 2.1            |
| Physico-chemical, total | Moderate           | Moderate       | Good                            | Good  | Good         | High  | Good    | High  | Moderate          | Good           |
| HYMO                    | Moderate           | Less than good | Good                            | Good  | Good         | Good  | Good    | Good  | Moderate          | Less than good |
| Total status            | Poor               | Moderate       | Good                            | Good  | Good         | Good  | Good    | Good  | Moderate          | Poor           |

Although some parameters show different quality classes, total ecological status assessment is comparable.

# Significant pressures in transboundary lakes

|                                 |    | Point source | Diffuse | Hymo | Transboundary | Other      |
|---------------------------------|----|--------------|---------|------|---------------|------------|
| Ilzu (Garais)/Ilge              | LV |              |         |      | x             |            |
|                                 | LT |              |         |      |               | x          |
| Lielais Kumpinišku/Kampiniskiai | LV |              | x       |      | x             |            |
|                                 | LT |              |         |      |               | ?          |
| Galiņu/Salna                    | LV |              |         |      |               |            |
|                                 | LT |              |         |      |               |            |
| Skirnas                         | LV |              |         |      |               |            |
|                                 | LT |              |         |      |               |            |
| Laucesas/Laucesas               | LV |              | x       |      | x             |            |
|                                 |    |              |         |      |               | Historical |

Mismatch in pressure-impact analysis.

Both countries, especially LT, must revise pressure-impact analysis and harmonize pressures.



# Our proposal for transboundary cooperation

- We propose to distribute transboundary water bodies between countries.
- Latvia will continue to monitor lakes Laucesas/Laukesas, Galiņu/Salna and Skirnas, but Lithuania - Lielais Kumpinišku/Kampiniskiai and Ilzu (Garais)/Ilge. Both countries have one (two) good quality lakes and one less than good quality lake.
- If Latvia will monitor macrophytes within whole lake (in all 5 lakes), Lithuania will carry out phytoplankton monitoring in all 5 lakes. There are no qualified macrophyte experts in Lithuania, and macrophyte monitoring has been carried out by Latvian experts in recent monitoring cycles. In order to save time and money, Latvian experts could create transects throughout the lake, not only in one side of border. It must be decided which country will cover expenses for such extra work.
- Both countries will continue to monitor fish in all lakes and no cooperation can be possible due to fundamental methodological differences.

# Conclusions

- Latvia must increase phytoplankton sampling frequency from 2 times/vegetation season to at least 4 times/ vegetation season. Actual frequency is not in line with WFD guidelines.
- Both countries must revise pressure-impact analysis for transboundary lakes. Currently there are large inconsistencies and it is not possible to carry out a qualitative analysis of pressures at the scale of the catchment area.
- Shared monitoring can help save financial resources, but lot of planning prior preparation of monitoring programmes must be done.
- **More meetings are needed at all levels (field experts, ministry...).**

# Thank you!

✉ [jolanta.jekabsone@lvgmc.lv](mailto:jolanta.jekabsone@lvgmc.lv)



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