



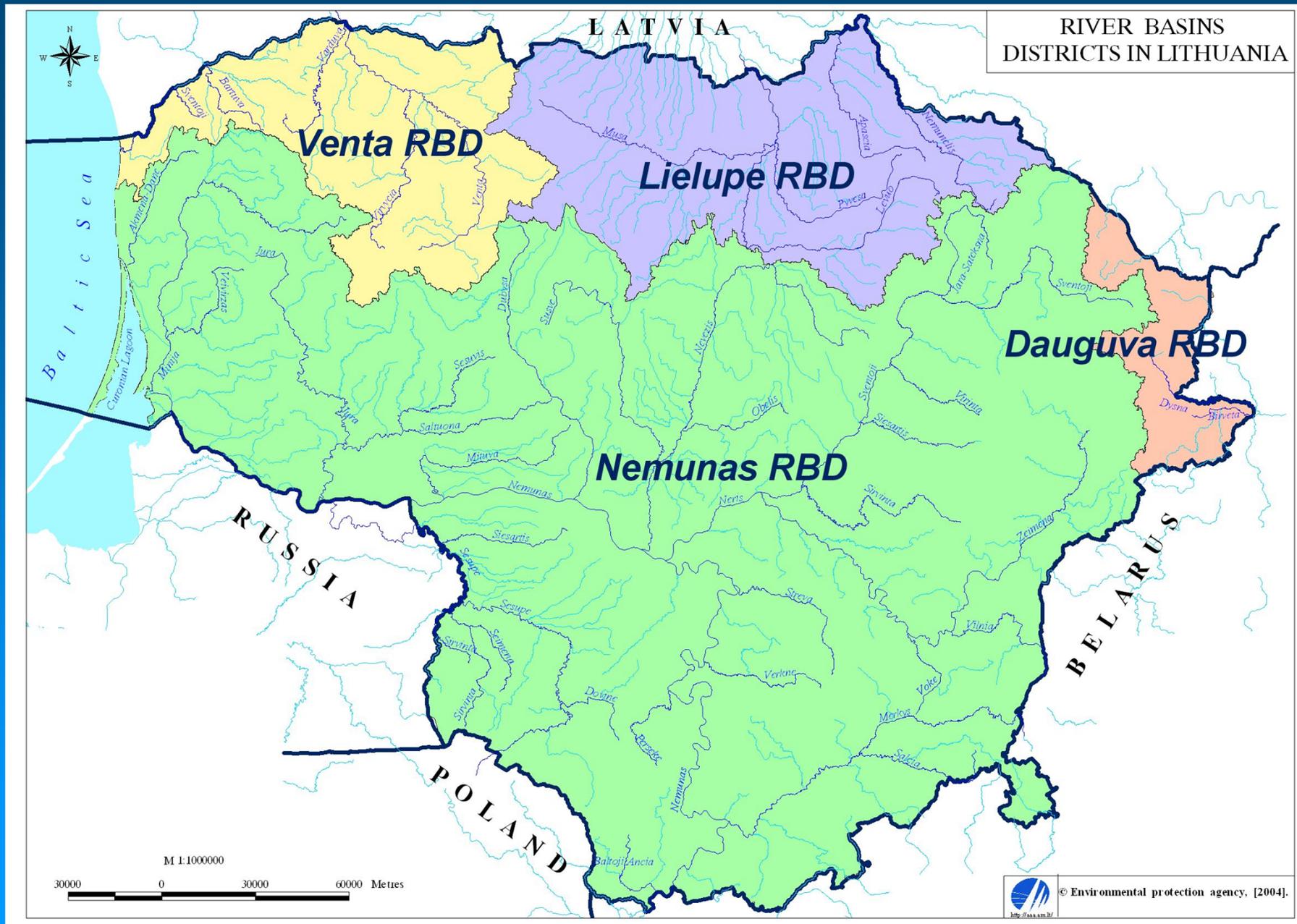
INTEGRATED MARINE AND INLAND WATER MANAGEMENT PROGRAMME

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Two big projects

Strengthening of marine and inland waters management capacities – Part 1

(Hazardous substances theme)

Strengthening of marine and inland waters management capacities – Part 2

(WQ and human impact data collection and assessment; Air pollution impacts on ecosystems assessment; Implementation of WQ enhancement measures; etc.)



Strengthening of marine and inland waters management capacities – Part 1

A C T I V I T I E S

I. Analysis of available data on priority and hazardous substances in Lithuanian environment, determination of pollution sources and amounts;

II. Monitoring of priority and hazardous substances in water, bottom sediments and biota, as well as in wastewaters and wastewater sludge in Lithuania during years 2015 - 2016;

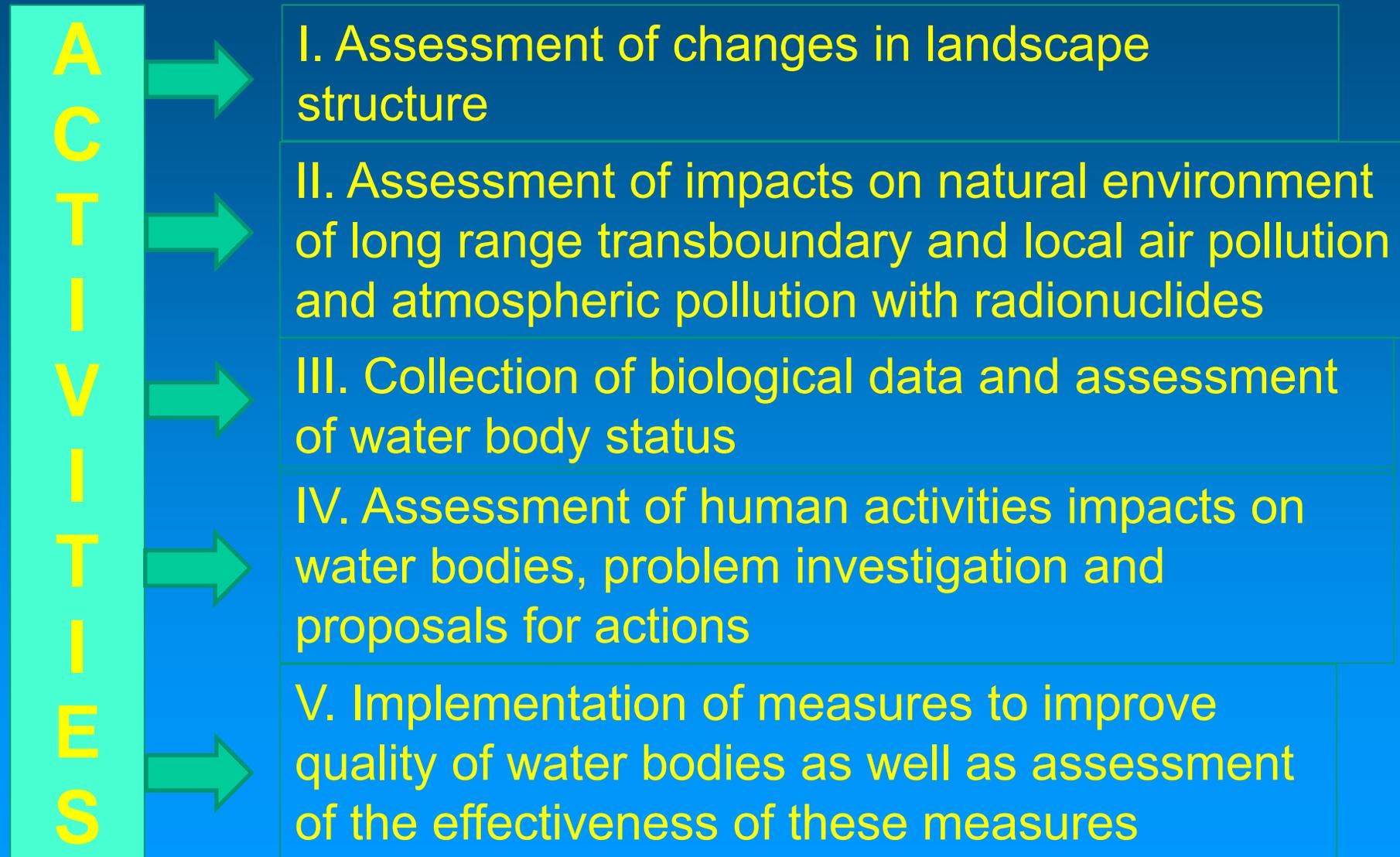
III. Assessment of water chemical quality, taking into account long-term data and results from implemented projects, trend analysis;

IV. Preparation of optimized monitoring program for priority and hazardous substances for period 2016-2021, taking into account results from first three tasks, for rivers, lakes, Curonian lagoon and Baltic Sea.

V. Preparation of proposals for measures to reduce the occurrence of hazardous substances in surface water bodies



Strengthening of marine and inland waters management capacities – Part 2



III. Collection of biological data and assessment of water body status

- Data collection on phytobenthos and macrophytes and assessment of status of water bodies
- Data collection on fish and assessment of status of water bodies



Data collection on phytoplankton and macrophytes and assessment of status of water bodies

Species composition and abundance data from 152 rivers and 269 lakes and ponds in the period 2014-2015



Macrophyte sampling by using a rake (<4m depth) or scraper (>4m depth)



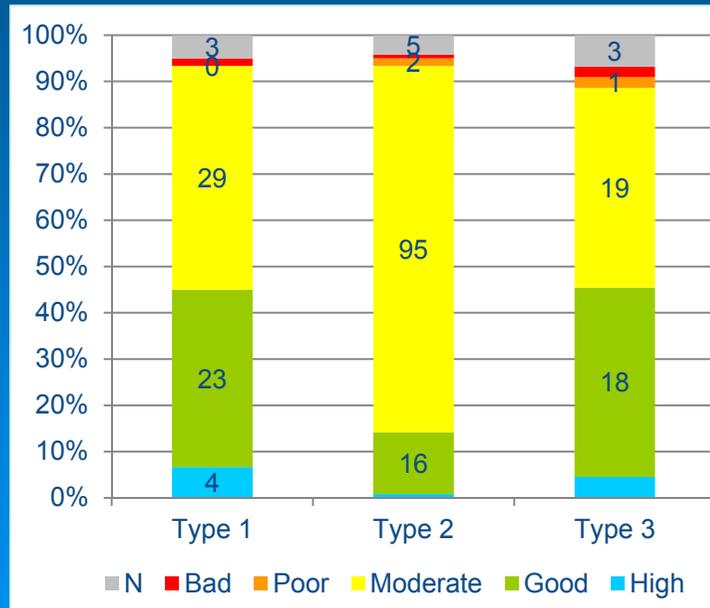
Exploring submerged vegetation by using hydroscope



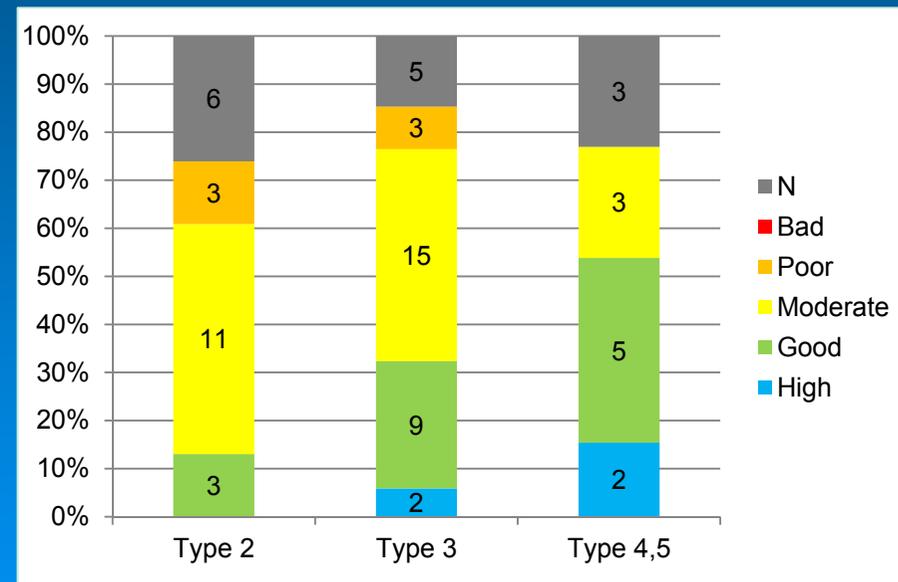
Diatom sampling from stones with toothbrush, from macrophytes using a jar



Data collection on phytobenthos and macrophytes and assessment of status of water bodies



Overall, 3% of lakes have high ecological quality, 25% - good, 64% - moderate, 1% - poor, 1% - bad, 5% of lakes are without assessment.



Overall, 6% of rivers have high ecological quality, 24% - good, 41% - moderate, 9% - poor, 0% - bad, 20% are without assessment.

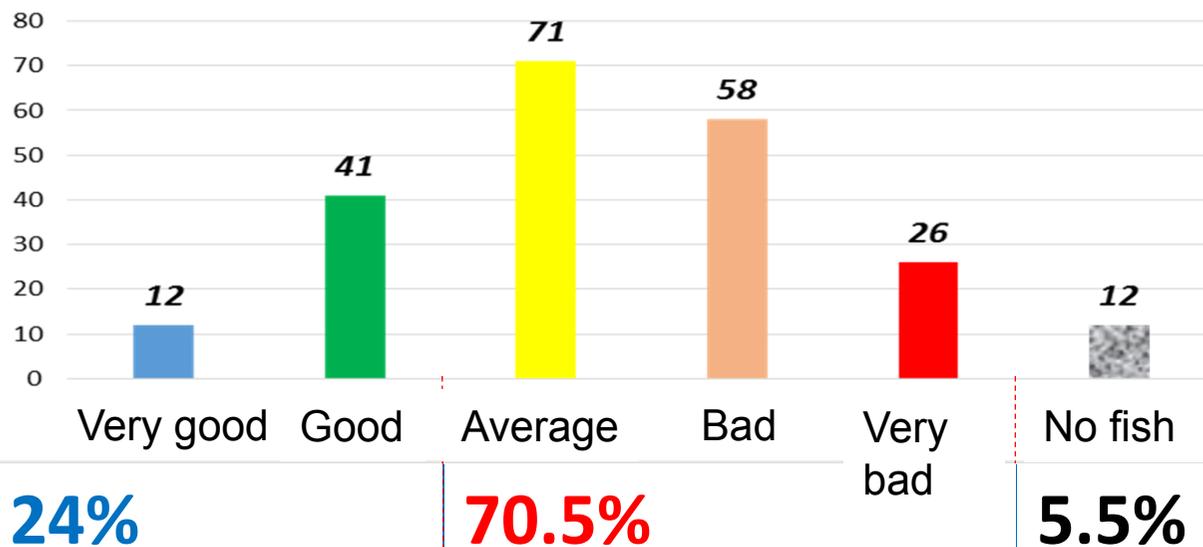


Data collection on fish (assessment of status of water bodies and migratory fish commercial stocks)

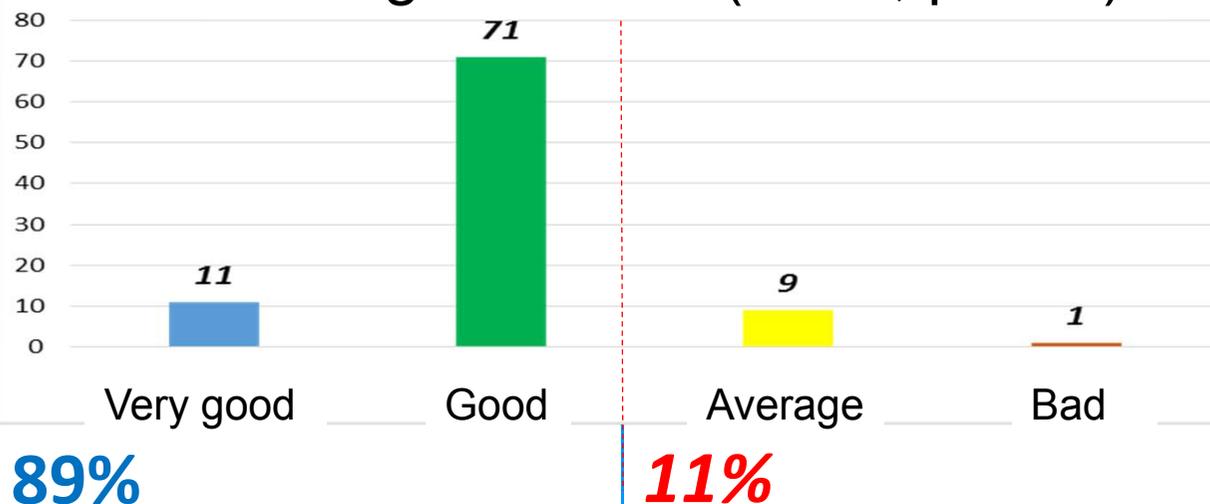
- Samples in 220 river sites, 77 lakes and 15 ponds for fish status assessment
- Samples in 136 river sites for migratory fish commercial stocks assessment
- 42 fish species found (in lakes – 21, in ponds – 18, in rivers– 38).

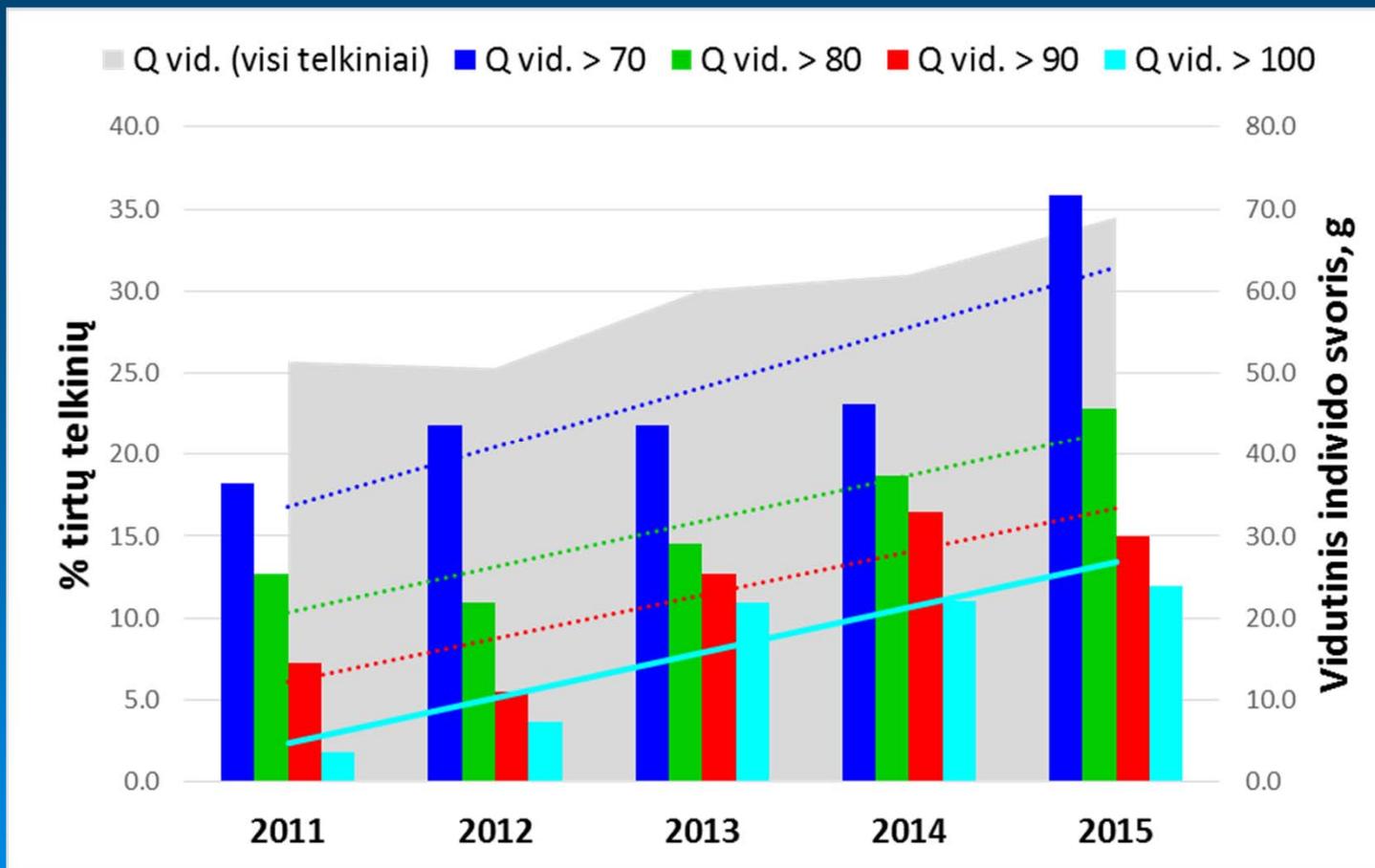


Ecological status (rivers)



Ecological status (lakes, ponds)





A rapid rise in abundance, biomass and average weight (most likely) due to introduction of large fines for illegal catch and a ban on commercial fishing in inland waters.

After those changes, leisure fishing tops commercial catches by a factor of 10.



IV. Assessment of human activities impacts on water bodies, problem investigation and proposals for actions

- Assessment of agriculture impacts on a water body in a small basin (ended in 04/2016)
- Elaboration of system for ballast water and sediment management and control (ended in 03/2016)
- Investigation of Klaipeda harbor water quality problems and elaboration of solutions (ended in 04/2016)
- Assessment of sediment biogenic flows and effects on the state of Curonian Lagoon waters and proposal of appropriate measures (expected to end by 08/2016)
- Investigation of problems at certain risk water bodies (expected to end by 08/2016)
- Development of methodology to assess hydropower damage on ecosystems (expected to end by 08/2016)

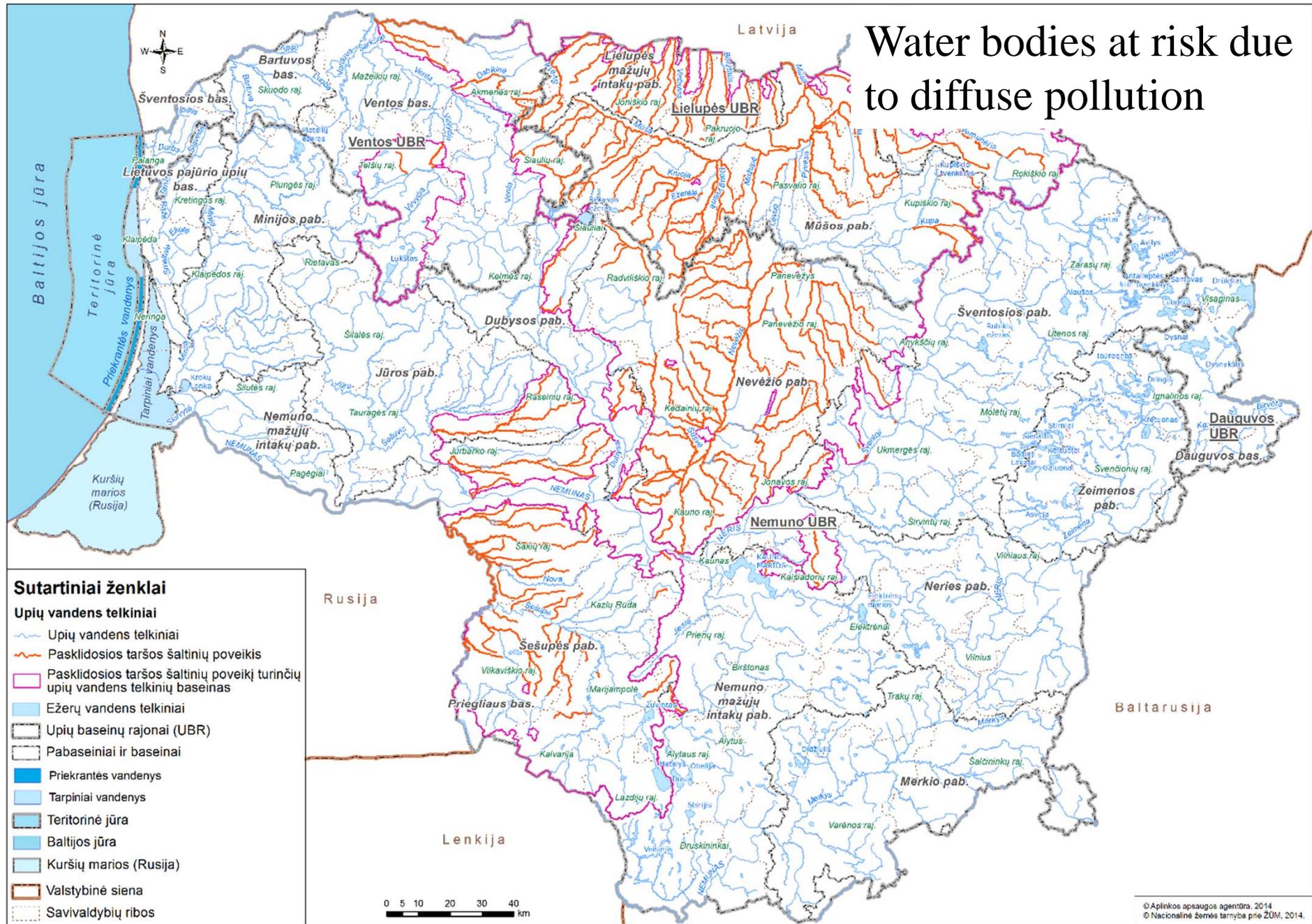


V. Implementation of measures to improve quality of water bodies as well as assessment of the effectiveness of these measures

- Implementation of agricultural pollution reduction measures in a pilot basin
- Implementation of river renaturalization pilot project
- Construction of pilot fish passage

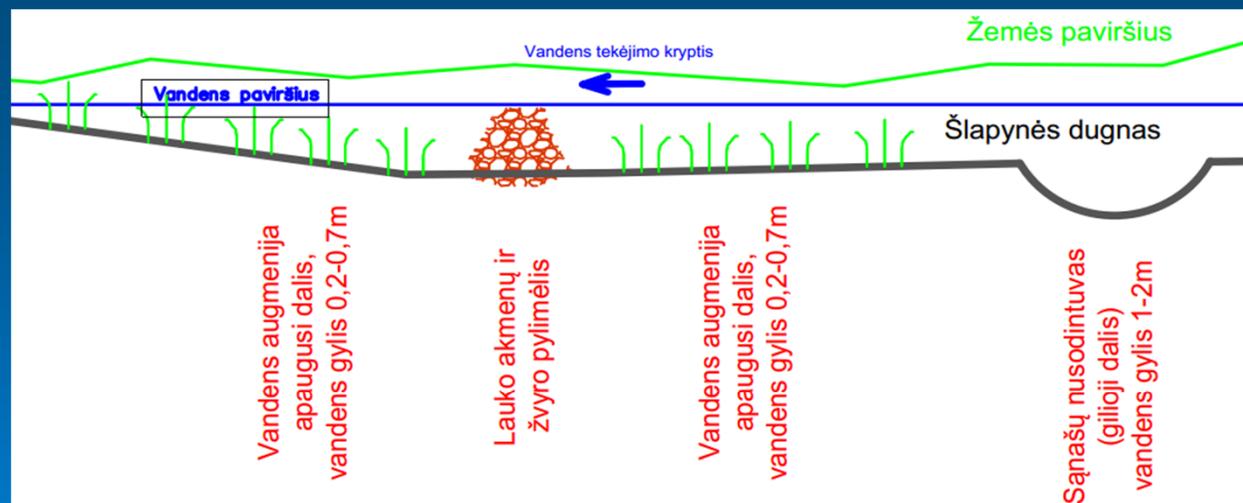


Water bodies at risk due to diffuse pollution

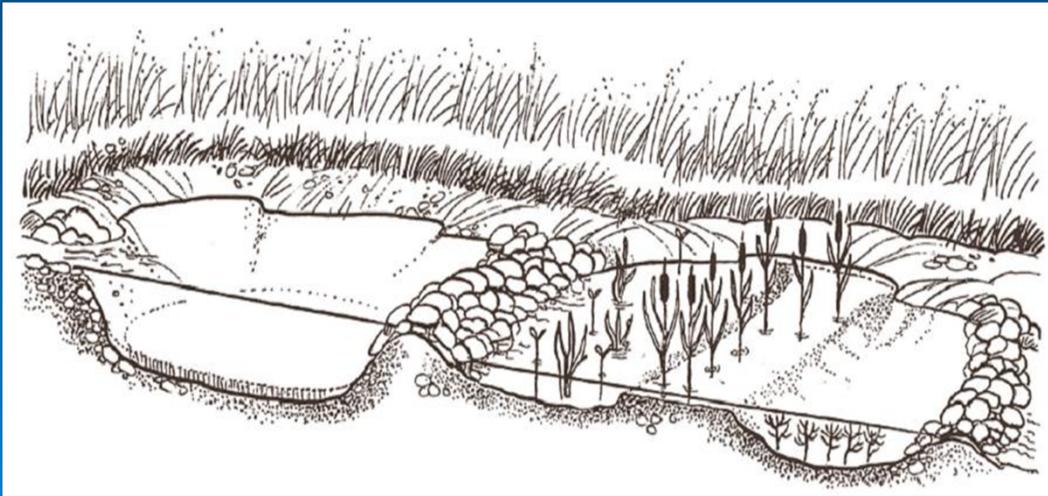


Implementation of agricultural pollution reduction measures in a pilot basin

Wetland size – 2.5 ha
Water catchment area – 400 km²
Reduction: N – 40 %,
P – 12 %.



Implementation of agricultural pollution reduction measures in a pilot basin



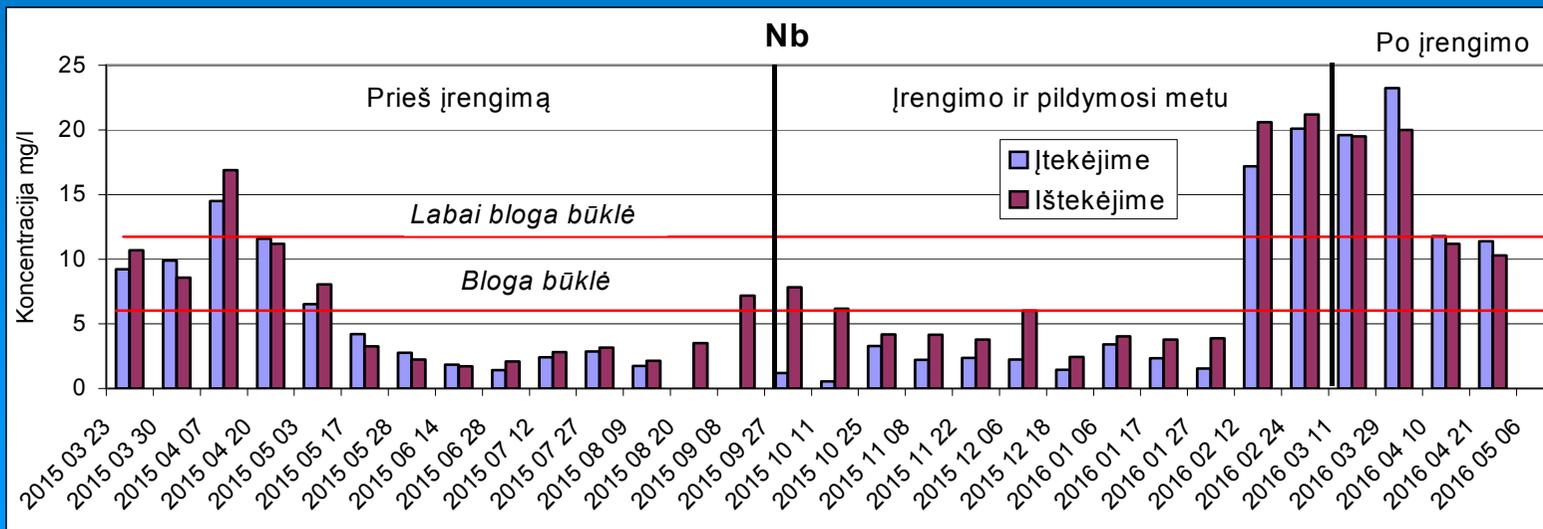
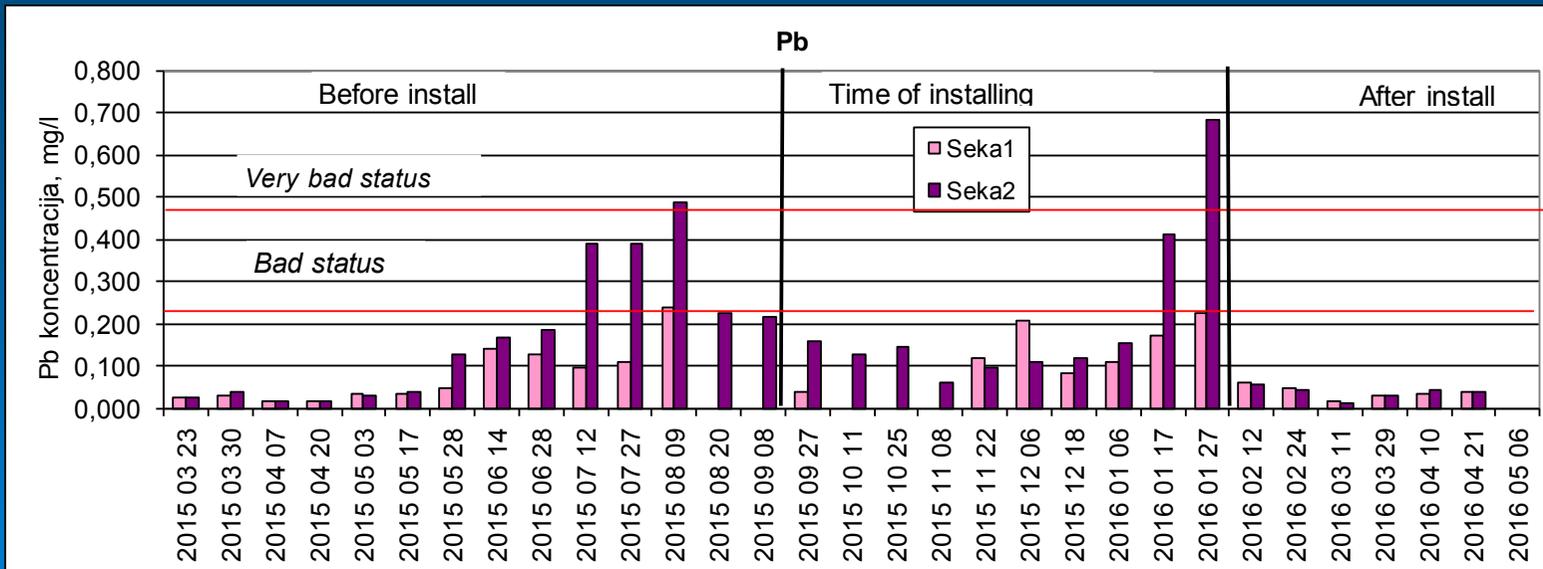
Aim – catch sediments from agricultural land.

3 sedimentation ponds, 0.1 ha size.

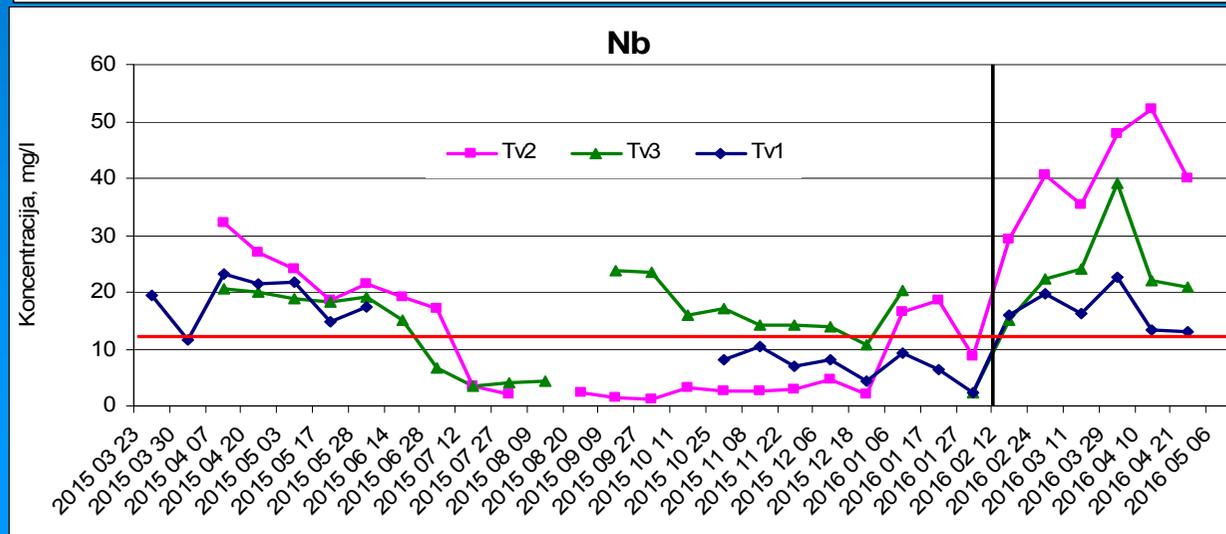
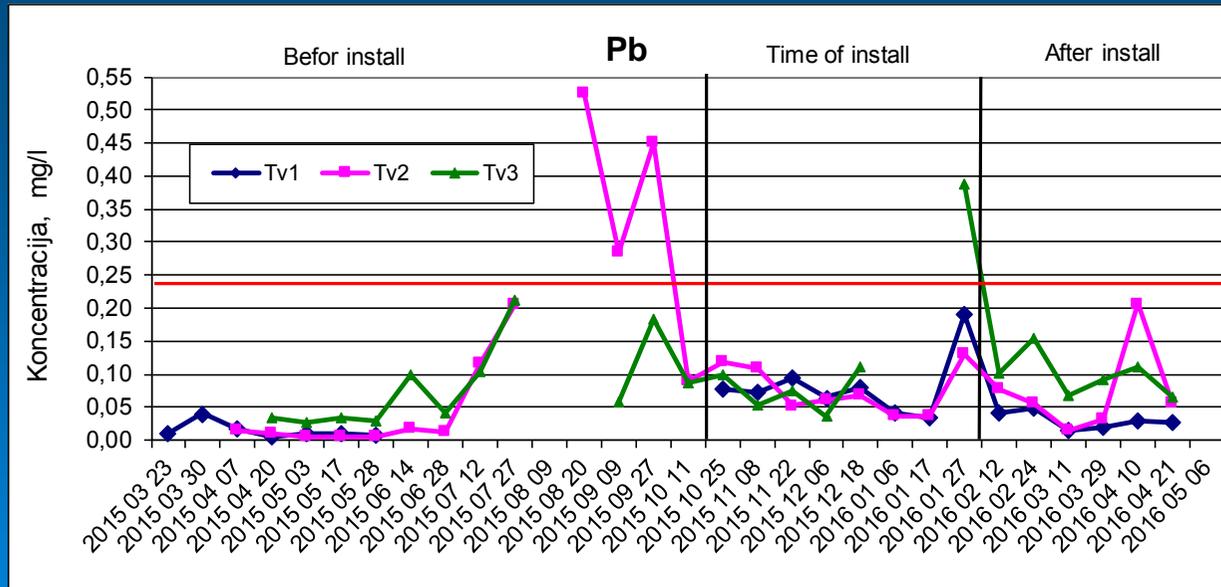
Reduction: biogenic substances – 30 %, sediments – 90 %

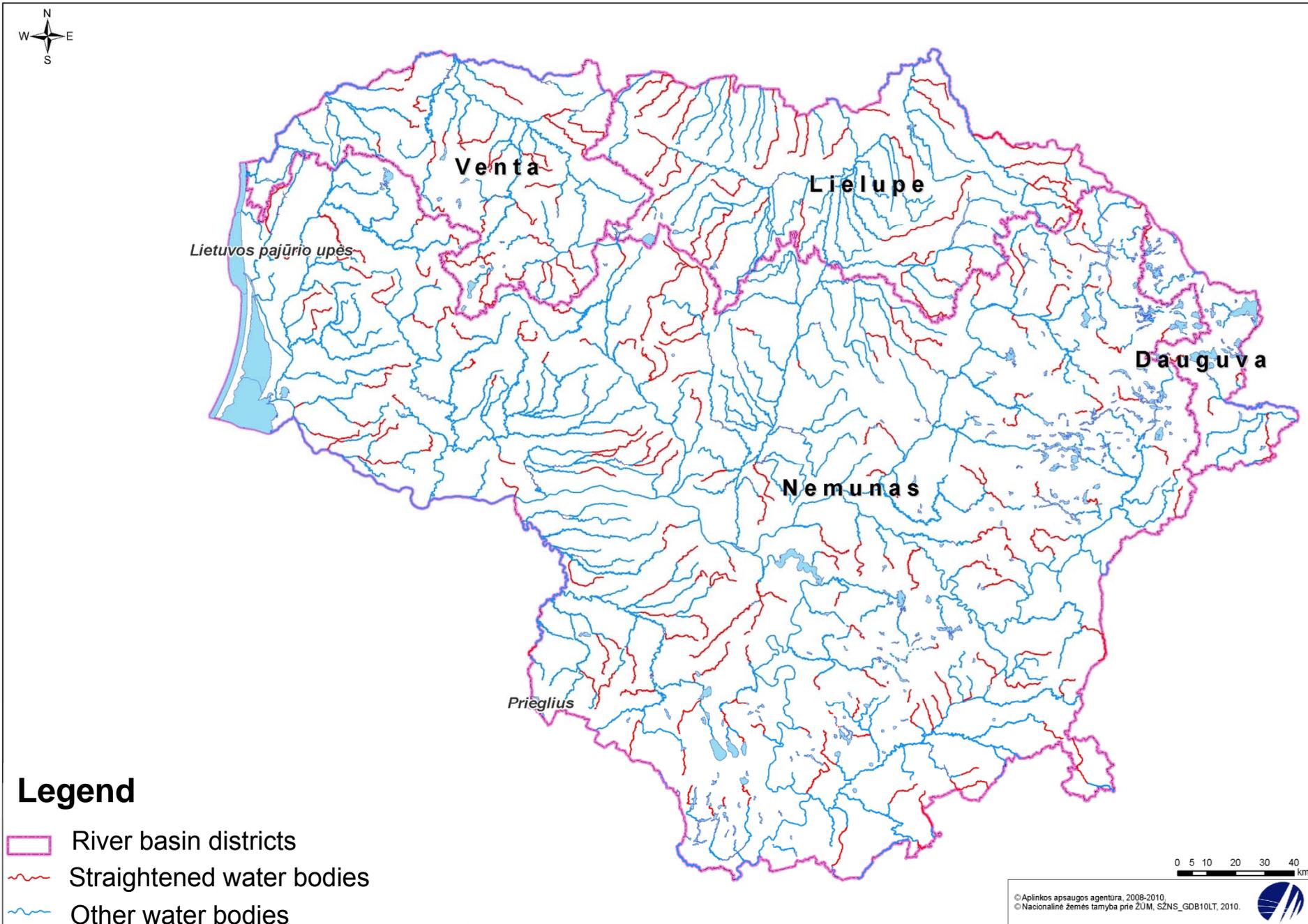


Wetland impact on water quality



Impact of sedimentations ponds on water quality





Implementation of river renaturalization pilot project

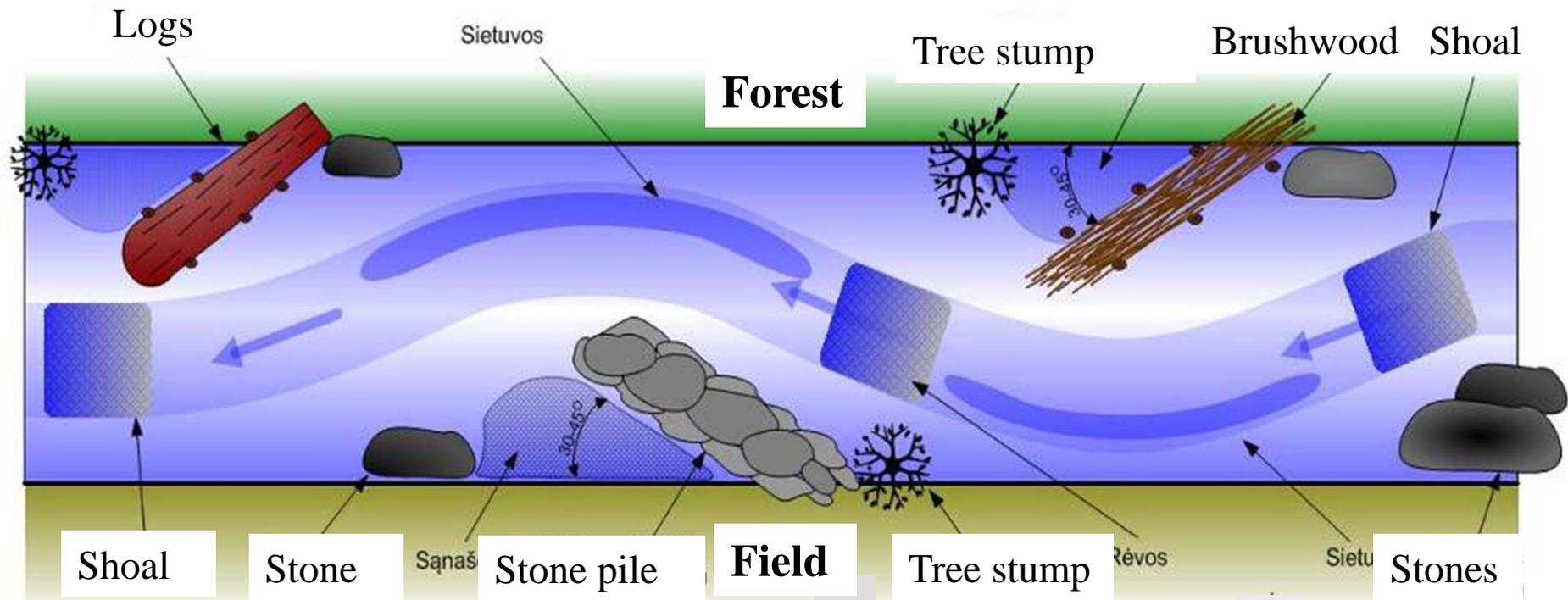


Objective – to improve ecological status in morphologically affected pilot river stretches by applying “mild” renaturalization techniques.

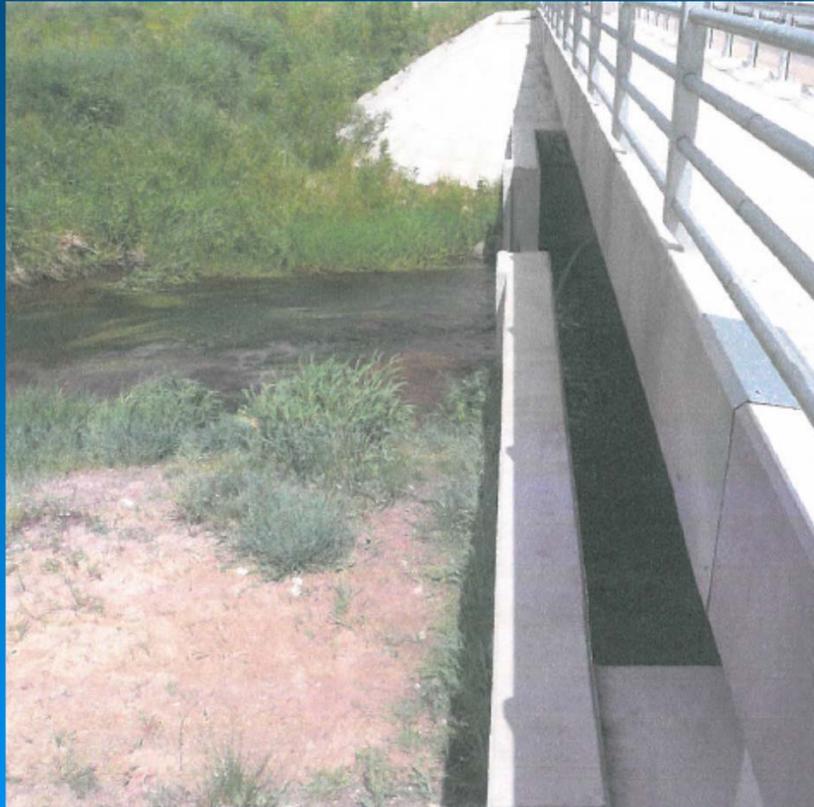
10 river stretches selected, out of which 3 were chosen for renaturalization. For 2 of them technical documentation prepared, endorsed, all permits received, now construction work is under way. 1 picked stretch was substituted with the other because of disagreements with owners. For this stretch technical documentation is under preparation.



Renaturalization scheme



Construction of pilot fish passage



Objective – construct fish pass for salmon and trout. All technical documentation approved, all permits granted, now procurement for construction is under way. Surveillance and tracking cameras will be installed.



For further questions:

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