



Lithuanian  
Hydrometeorological  
Service

# Hydrological measurements and forecasts in Lithuania

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2024

# Hydrological *tasks*

## Hydrological Observation Division:

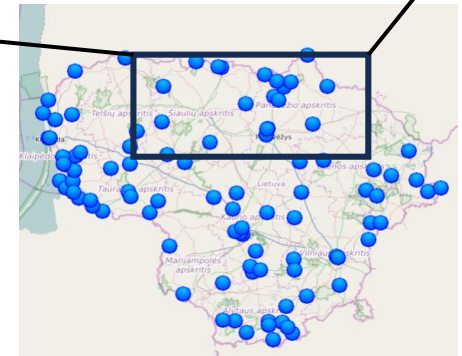
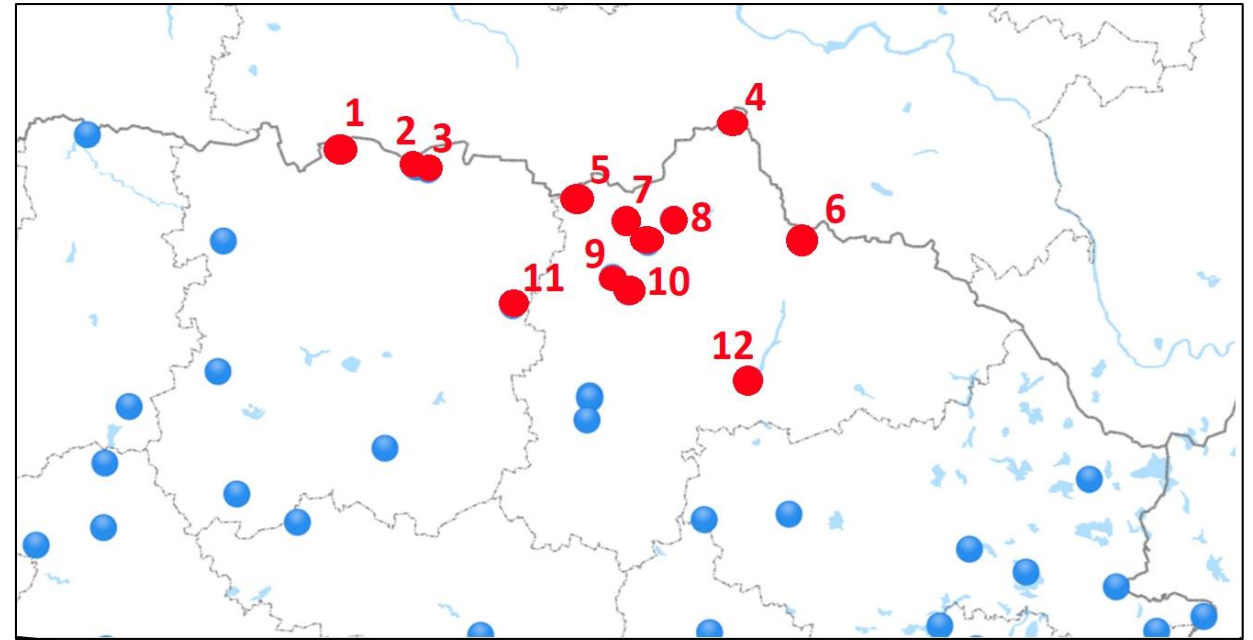
- Water gauging station network management;
- Field measurement management;
- Data quality management;
- Custom service concerning hydrological data and calculation

## Forecasting and Warning Division:

- Hydrological forecasting and warnings.

## Measurement Quality and Technical Division:

- Measurement equipment calibration;
- Measurement equipment technical maintainments.



Lielupe basin WGS: 1) Svete - Zagare; 2) Platonis - Vainekiai; 3) Sidabra – Sarkiai; 4) Nemunelis – Tabokine; 5) Yslikis – Kiburiai; 6) Nemunelis – Kvetkai; 7) Musa – Zilpamusis; 8) Smardone – Likenai; 9) Musa – Ustukiai; 10) Pyvesa – Zadeikiai; 11) Daugyvene – Rimsoniai; 12) Levuo - Kupiskis

# Measurements and forecasts in Lithuania

## Measurements and observations, which are made in stations:

- water level and flow;
- water temperature;
- ice thickness (in 24 stations), water supplies in snow cover (18 stations);
- meteorological measurements (air temp., precipitation, snow thickness, atmospheric phenomena);
- observations of ice formation and observations of water plants (15 stations);
- salinity (2 stations), wave height and wave direction (6 stations) observations;

2022-05-31 09:00							
Water body	Water gauge station	Water level above station zero (cm)				Water temp. (°C)	Water Flow (m3/s)
		Measured at 09:00	Change in a day	Perrenial			
				Highest	Lowest		
Nemunėlis	Tabokinė	98	17	311	32	13,2	
Venta	Leckava	-13	23	349	-52	15,2	
Bartuva	Skuodas	51	21	244	3	13,1	
Nemunas	Druskininkai	92	15	774	13	15,2	229
Nemunas	Nemajūnai	88	9	638	-4	14,5	267
Kauno marios	Birštonas	514	4	422	422	16,0	
Neris	Vilnius	291	4	523	221	12,5	134

# Measurements and forecasts in Lithuania

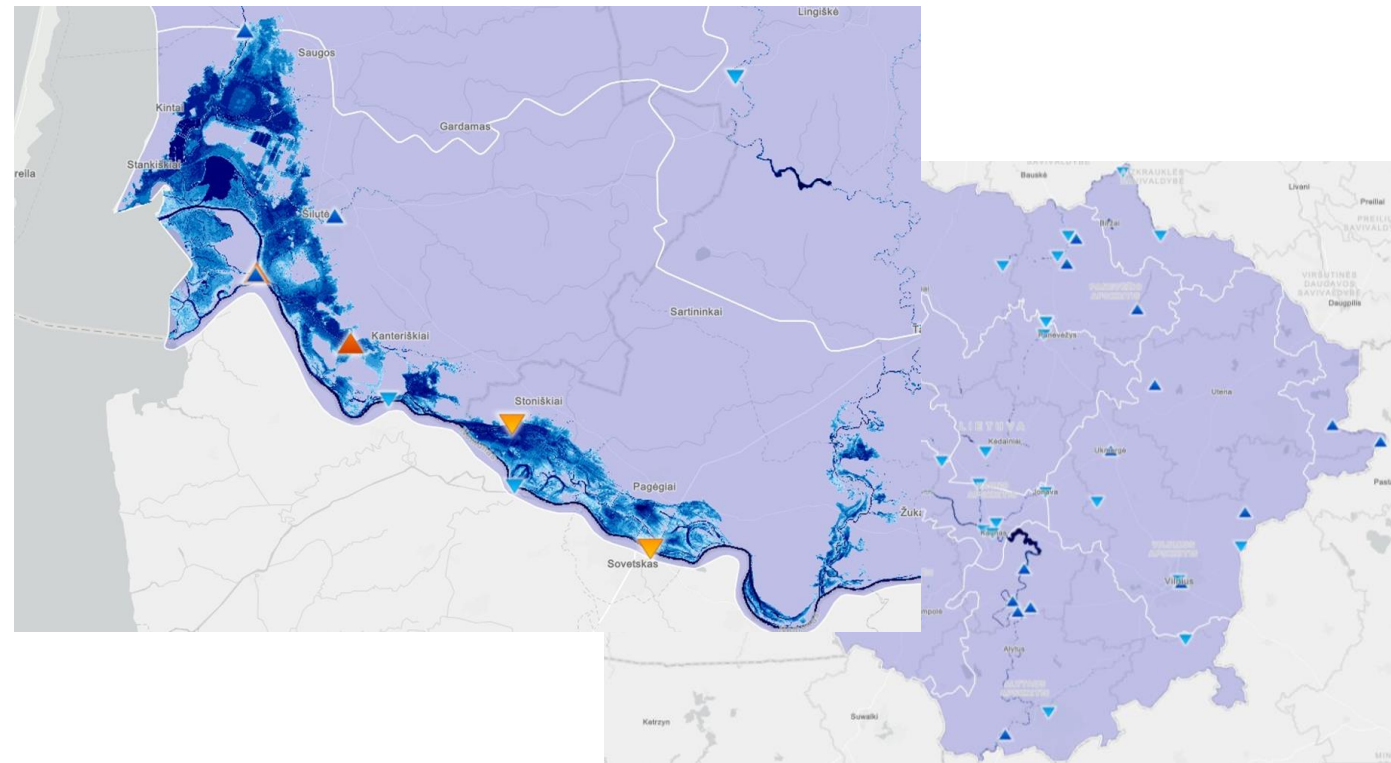
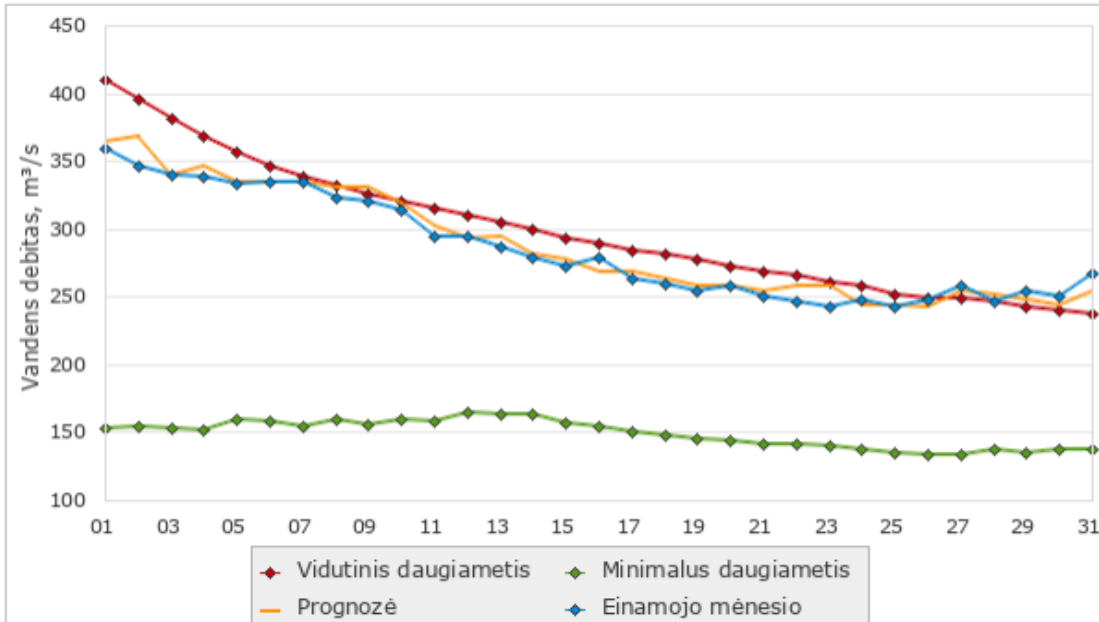
## Hydrological forecasts

- water level forecasts in rivers;
- water flow forecasts in Nemunas river (for 1-3, 5 and 10 days);
- spring flood forecasts;
- forecast of ice appearance in rivers;
- winter ice pack forecast;
- hydrological drought forecast.

## MIKE

- Modeling system for better forecast import observed data from WGS, weather stations, radar data, numerical weather forecast data and also calculate evaporation;
- Forecast of water level fluctuations are made for 60 WGS. Using this model, our specialists have a possibility to make flood warnings for **3 day** in advance.

Vandens debitas ir jo prognozė Nemune ties Nemajūnais  
2022 m. gegužės mėn.



# Water management in Lielupe basin

- The management plan applies to the territories, where there is a high risk of flooding or there is a possibility that a flood may occur, which may cause significant negative consequences.
- There are 8 rivers in the Lielupe basin (Musa, Kruoja, Daugyve, Levuo, Pyvesa, Tatula, Nemunelis, Apascia) sections, where flooding may occur.
- Flood hazard maps have been prepared for 435 km of river sections in the Lielupe river basin area.
- During floods caused by snowmelt and rains, floods can cover more than 8.7 thousand territory, where about 1200 inhabitants can be affected.
- Potential flood damage from one flood event amounts to ~5.2 million Eur.



The territory of the Lielupe river basin, that is subject to the Flood Risk Management Plan

## Future plans

- We could make available not only daily average,- all measured data can be provided via API. OR even have a unified HYMER system (but this still requires conversation and cooperation from our both sides)
- **ICEREG project.** The overall objective of the project is to improve the management of ice-jam flood risk using corresponding flood maps and the conceptual model of ice-jam flood formation with respect to climate change.
- LEGMC and LHMS provide hydro-meteorological monitoring and collect data, including ice-jam phenomena information.
- LEI, together with the Inland Water department of LEGMC, have the capability to analyze hydrological processes and their conditions of the formation using different advanced methods and models.





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