

Floods



Threat assessment: The occurrence of a severe flood in Estonia is considered likely. Due to climate change, the risk of flooding is increasing, and as floods occur with a certain frequency, the probability of a flood with serious consequences has risen compared with earlier years. Compared with the previous assessment, the threat level has increased from unlikely to likely.

Flooding in Estonia can arise primarily from rising water levels in inland bodies of water and the sea, but also in areas not directly connected to water bodies, where the soil is unable to absorb water from heavy rainfall or snowmelt. It can also occur in urban settlements where surfaces are covered with impermeable materials. In recent years, stormwater flooding has been frequent in urban areas. Most towns and cities are covered with impermeable surfaces, such as asphalt or buildings. The denser and more impermeable the urban space, the greater the probability that such floods will occur.

The rise in water levels in inland water bodies is mainly caused by the spring floods, including ice jams formed by the accumulation of drift ice. In Estonia, 34 densely populated risk areas have been identified that are expected to be affected in the future by rising sea levels and inland water flooding.

On Estonia's coastal areas, as elsewhere in the eastern Baltic Sea, water level rise is caused by strong south-westerly and westerly storms. These storm surges are sharp, short-lived (lasting 1–2 days), and localised.

THREATS

- ✓ Climate change forecasts indicate that in the 21st century, storms in the Baltic Sea region will become more frequent, and consequently the risk of flooding caused by rising sea levels will increase. The melting of continental ice sheets and the thermal expansion of the oceans have already accelerated the rise of global sea levels, and this rise is projected to intensify further throughout the 21st century.
- ✓ Forecasts also indicate both an overall increase in average annual precipitation and an increase in the frequency of extreme rainfall events, especially in the summer months. Heavy, intense downpours are expected to cause local flooding particularly in urban areas with large impermeable surfaces.
- ✓ By the end of the 21st century, a significant reduction in snow cover is projected, together with an

- ✓ overall increase in average precipitation. This suggests that spring river floods caused by snowmelt may increasingly be replaced by floods in autumn resulting from heavy rainfall.

ACTIONS

- ✓ To mitigate flood risks, Estonia prepares a flood risk management plan, designates risk areas, and maps potential flood hazards.
- ✓ Preventive measures against flooding mainly involve spatial planning regulations and the preparation of information to support planning decisions.
- ✓ Protective measures against floods require the designation and implementation of various technical solutions. These include the construction of embankments or other traditional protective barriers, as well as the protection of technical equipment, improvements in drainage, or the redirection of water flow.
- ✓ It is also necessary to ensure preparedness for floods. This means taking measures to safeguard the population and prevent environmental damage during a flood, ensuring the functioning of flood forecasting and warning systems, and raising public awareness.

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