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# Community-led, nature-based adaptation in Tallinn, Estonia

Rewetting Pääsküla Peatland to combat heatwaves, flooding and biodiversity losst

**Climate hazards** **Main themes**

**Tallinn, Estonia**

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**Key figures**

**47 ha**
of rewetted degraded peatland

**400 volunteers**
mobilised

**Implementation timeline**

**2020-2025**

**Budget**

**€12 345 678,9**

## Solutions

**Peatland restoration in Tallinn followed a nature-based approach that required hydrological restoration and subsequent monitoring, while keeping the interventions community-based through adaptive infrastructure that allows for public access.**

1. **Hydrological restoration.**
Degraded peatland has been rewetted to restore its natural functions of carbon storage, flood regulation and biodiversity. This was done by closing drainage ditches using peat dams based on hydrological modelling and ground surveys, to raise and stabilise the water table and create conditions for peat accumulation and long-term carbon storage.

2. **Monitoring.**
Vegetation has been continuously monitored and the site was designed to support the return of species that enable carbon dioxide removal.

3. **Adaptive infrastructure.**
Floating boardwalks that cope with fluctuating water levels have been installed to ensure year-round public access and ecological compatibility.

## Co-benefits

### Economic
The restoration of Pääsküla Peatland reduces the risk of urban hazards including flooding and heatwaves, lowering the economic burden of recovery. It also avoids long-term costs linked to carbon emissions and ecosystem degradation.

### Social
Enhanced environmental ownership was encouraged through community participation in dam construction, invasive species removal and environmental education days. The project also strengthens the link between citizens and nature by providing accessible green space within the urban environment.

### Environmental
Scientific assessments predict that rewetting the peatland will reduce carbon dioxide emissions by 0.8 to 3 tonnes per hectare per year. Within 20 years, the site can become a net carbon sink, and within 50 years, the ecosystem may be fully recovered, contributing to long-term climate regulation and biodiversity restoration.

## Replicability – *Who can use this approach and how*

**Transferable peatland restoration interventions for adaptation and mitigation**

How regions can adopt Tallinn's nature-based approach for peatland restoration and community engagement

### Best suited for
Regions facing increased flooding and extreme heat risks, particularly those with degraded peatlands or drained wetlands in peri-urban or urban areas. The approach is especially relevant where historical land drainage has reduced natural water retention capacity.

### Stakeholders' role
The model is based on a shared governance approach combining municipal leadership, national technical expertise, non-governmental organisations and strong volunteer participation. This distributed responsibility reduces implementation pressure on public authorities while embedding the project in local communities, increasing durability and social legitimacy.

### Built-in scalable tools
The approach is scalable and replicable because it relies on modular, low-tech interventions that can be implemented progressively, adapted to local conditions and carried out using locally available materials and skills, allowing regions to start small and expand over time. A key driver is the strong community dimension: by mobilising volunteers in hands-on restoration activities, the model reduces costs while fostering local ownership and long-term stewardship.

### Funding pathways
EU programmes, national and regional budgets, and complementary financing through climate adaptation or biodiversity strategies. The relatively low-tech nature of interventions makes them suitable for blended finance approaches and phased investments.

Mission story