

## **Floodplain and river restoration at RSPB Scotland Insh Marshes**

**Update: February 2025**

### **1. What is the issue?**

A floodplain is a large, flat expanse of land that forms on either side of a river, stretching to the valley edges. Created over thousands of years as the river meanders back and forth across the valley floor, floodplains are a dynamic system that provide a range of benefits to the ecosystems and communities that surround them.

Stretching between Kingussie and Kincaig along the River Spey, RSPB Scotland Insh Marshes is a 1,000-hectare floodplain. Due to historical modifications, this amazing floodplain is unable to function in a sustainable way, with knock-on negative impact on floodplain management, wildlife and people.

Where a floodplain should slowly and sustainably store water and sediment that flows through its ecosystem, the River Tromie on the floodplain at RSPB Scotland Insh Marshes has been constrained by artificial banks. These mean that sediment and water are not able to spill into the spongy floodplain, and instead sand and gravel is deposited on the riverbed, raising the height of the river, and putting pressure on the banks.

However, the artificial banks downstream on the River Spey stop this channel from easily flowing back into the Spey and actually divert the river water through the Dell of Killiehuntly and Coull fens. This water will potentially impact on neighbour's land, infrastructure, and the ecology of the Reserve, so doing nothing is not an option.

### **2. What will the proposed work involve?**

Having reviewed our options, and consulted with stakeholders and river experts, our best option is to encourage water out of the west of the channel, creating a more naturally functioning river ecosystem that can still overspill, but not onto land that will have negative impacts. This water will be able to re-join the Spey, and over time a naturally functional fan will develop, which will slow the flow of water, provide habitat for fish and invertebrates, and reduce flood risk – both downstream and on our neighbour's land.

Traditionally, dredging would have been used to remove the excess sediment from the riverbed. However, in line with Scottish Government targets and advice, this is not a sustainable solution for us – it damages the ecology of the river and floodplain, reduces the ability of the floodplain to slow the flow of water thereby reducing flood risk, and isn't feasible on a designated site such as RSPB Scotland Insh Marshes.

### **3. What will be the impact on ecology?**

Modelling of both the vegetation response and fish passage show maintained or enhanced conditions for the internationally important habitats and species found on the Reserve, with mire communities expanding and conditions for fish passage being maintained.

#### **4. What is the plan for the other restoration projects at Raitt's Burn and Lynchat?**

##### **Raitt's Burn:**

The situation at Raitts Burn, a channel in the North-East of RSPB Insh Marshes, is highly complicated due to the poor condition of the existing channel, upstream infrastructure and the site's designations. Further scientific monitoring work is required to understand both the long- and short-term impacts of restoration on the wetland habitats (particularly the transition mire, a rare type of wetland habitat of which 29% of the UK resource is found at Insh Marshes). Any restoration work will also need to protect Atlantic Salmon.

Since we first started the River and Floodplain Restoration Project at RSPB Scotland Insh Marshes, Atlantic Salmon has sadly become classified as critically endangered. We therefore need to include extra consideration to ensure the existing fish population in Raitts Burn is protected and enhanced by the restoration plans and this work is ongoing.

##### **Lynchat:**

The hydrological modelling work concluded that there is high connectivity between the river and floodplain at Lynchat through the existing breached wall and removing the whole wall is not necessary.

#### **5. What will be the impact on farming?**

The RSPB is committed to maintaining a farming operation at the Dell of Killiehuntly and Invertromie. Grazing is fundamental to maintaining the important species and habitat found on the reserve wetlands and grasslands.

The changes we are seeing on the River Tromie are a response to natural river processes. If we do nothing, we will see further erosion with the river creating a new route across the improved grassland fields at the Dell of Killiehuntly, which will significantly impact downstream land and infrastructure.

RSPB Scotland are working with specialist consultants to design a solution for the river that achieves the following:

- Contributes to our long-term vision to transform Insh Marshes into a prime example of a restored floodplain and river system, bringing benefits for people, climate, and nature.
- Will not increase the flood risk on our neighbour's land.
- Minimise impact on floodplain infrastructure (tracks and culverts)
- Reduce the impact of the current flow on the grassland fields at the Dell of Killiehuntly
- Maintain the designated habitat and species of the Insh Marshes SAC, SPA, RAMSAR and SSSI, in particular Atlantic Salmon and Transition Mire.

Whilst we can't design a scheme that doesn't impact on the farming operation, we have minimised impacts by taking the majority of the flow across less agriculturally productive land (the wetland area) at Invertromie. The Dell improved fields that have been impacted by the current Tromie flow

are likely to become drier as a result of the proposal. RSPB Scotland will work with the farming tenant to minimise impacts.