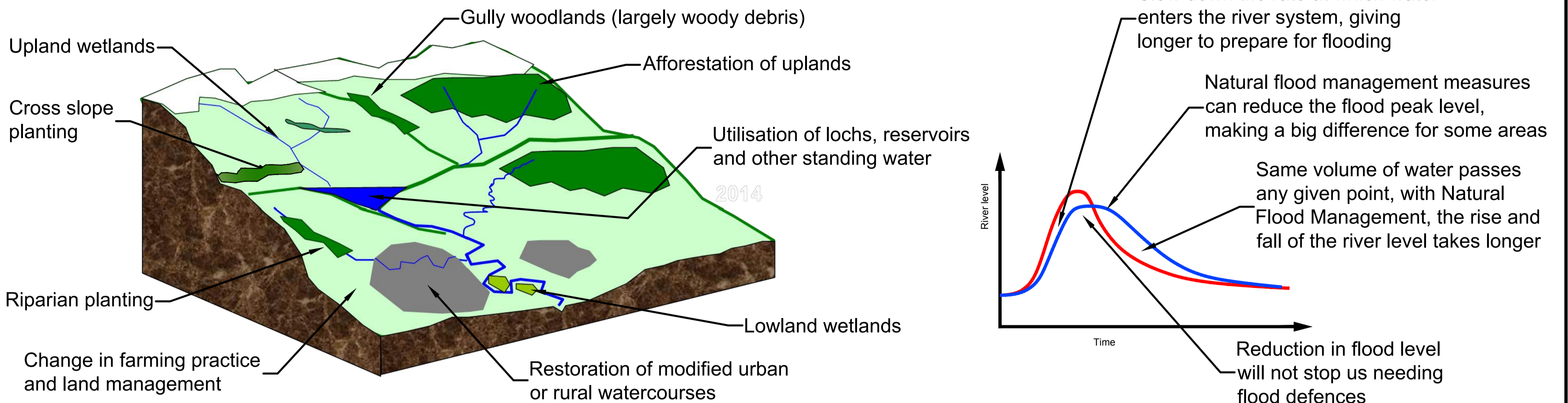


selkirk flood protection scheme

What is Natural Flood Management?

Flooding occurs when the volume of water in a river system is greater than the capacity of the system to carry it to the sea. The two main sources of water affecting Selkirk come from rainfall or snowmelt and it is the rate at which it enters and passes through the river system which causes flooding. If we can slow down or reduce the rate this water reaches the river, we can potentially reduce the peak flood levels further downstream. Natural Flood Management techniques can help us achieve this. By working in harmony with the river system and subtly managing it to flood in places away from properties and businesses or slowing down the rate at which water enters the system we can provide real benefits to the communities and landowners further down the catchment.



How could it make a difference for Selkirk?

1) Riparian and flood plain planting

By planting along field boundaries and river bank with trees, hedges and other vegetation, we introduce the concept of a "leaky barrier". When the river bursts its banks onto the flood plain, the vegetation holds the water on the flood plain for a little longer than if there were no trees and bushes. The vegetation also acts as a trap for floating debris which would otherwise cause problems further downstream at bridges and other flow constrictions.



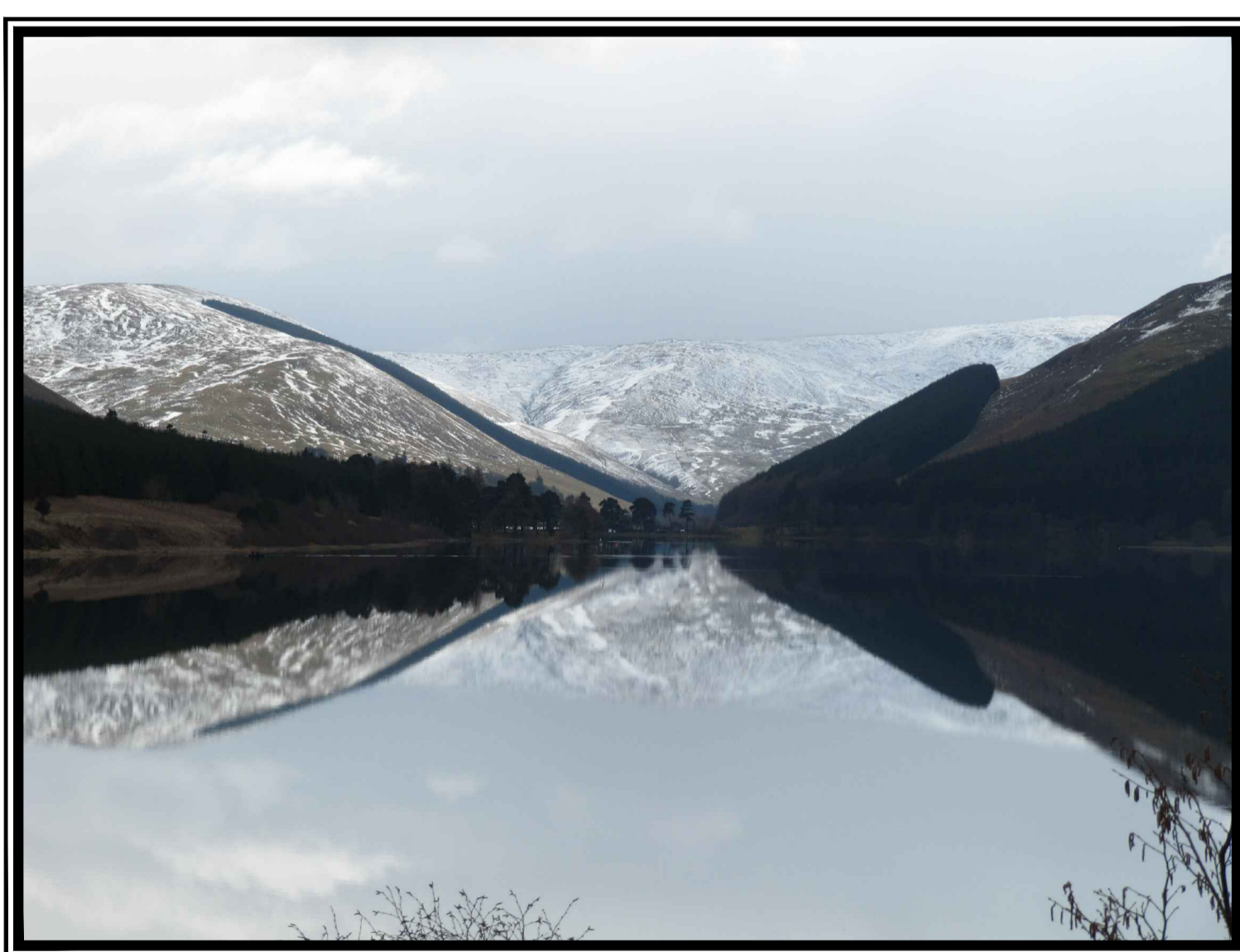
Carter Haugh, Ettrick Water - candidate for riparian and flood plain planting



Cleuch or gully woodlands to slow down the flow rate - Fauldshope

2) Flood Storage

Providing measures to store flood water behind specially constructed embankments or adaption of existing waterbodies allows us to quantify and control the reduction in flood levels. For the Selkirk Scheme, we are looking to utilise this approach through the adaption of St Mary's Loch (see board number 4) on the Yarrow Water and, potentially, through flood storage on the Long Philip Burn (see board number 8)



Utilisation of St Mary's Loch to reduce flood impact on Yarrow Valley



Utilisation of flood storage to reduce flood impact of Long Philip Burn

Limitations

Natural Flood Management can only help to reduce flood levels and will not be used to replace flood walls and embankments completely. It is currently difficult to measure the impact and benefits - therefore it can only be used to "future proof" the Flood Protection Scheme to provide a greater level of protection than designed for or to combat the effects of climate change.

3) Land management

By working with the farming community, small scale measures could be introduced to locally make a difference - if implemented across the catchment, the overall impact could be significant:

- Ploughing arable fields across the slope to prevent runoff from the fields taking the shortest route to the watercourse
- Reducing poaching at river banks to reduce compaction of the ground and consequently reducing the erosion risk and improving water quality
- Considering small scale reduction in stock densities to reduce compaction of the ground, increasing the permeability of the surface and reducing run off.



Ploughing up the slope - not a good idea!!
Plough across instead.