Good afternoon, My name is Gareth Browning, I am the Forestry Commissions Area Forester for North and West Cumbria and a partner in Wild Ennerdale.

In this presentation, Wild River Wilder Valley , I hope to share with you our experiences , the benefits and lessons learnt from letting the River Liza find its own way through the Ennerdale forest

Presentation Plan

- Wild Ennerdale
- The Forest
- River Liza
- River/Forest Experiences
- Lessons & Benefits

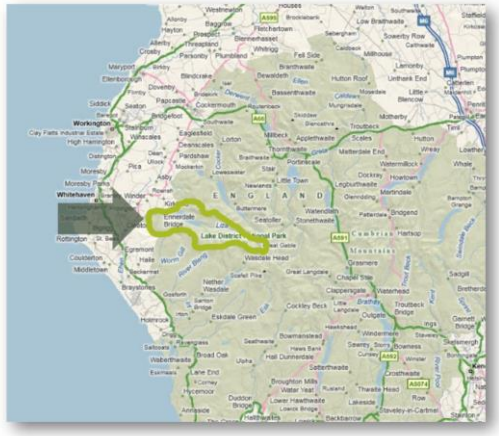
My presentation plan is divided into five sections.

First I would like to set the scene with a brief back ground to Wild Ennerdale and a pen picture of both the valleys Big forest and its unique River Liza which in old Norse means bright shining.

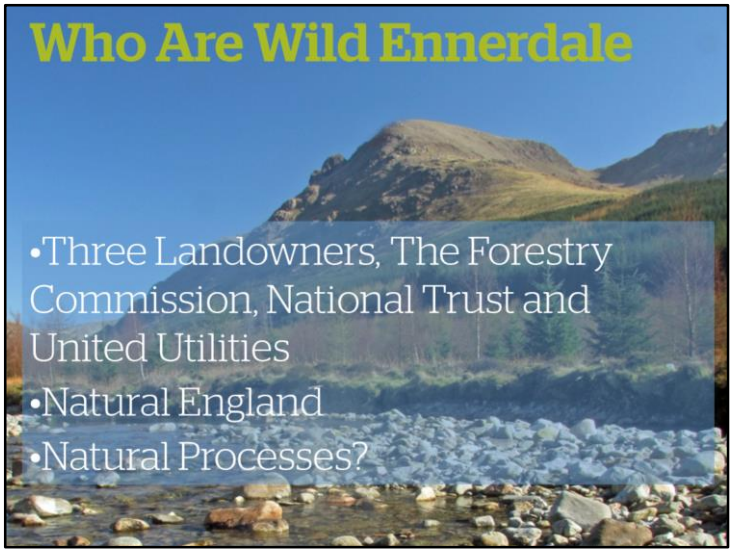
I will then spend some time sharing some of our experiences from being involved in the river/forest relationship within this valley over the last 15 years

Finally I shall draw together 4 lessons and benefits from this approach before finishing.

Where is **Ennerdale?**

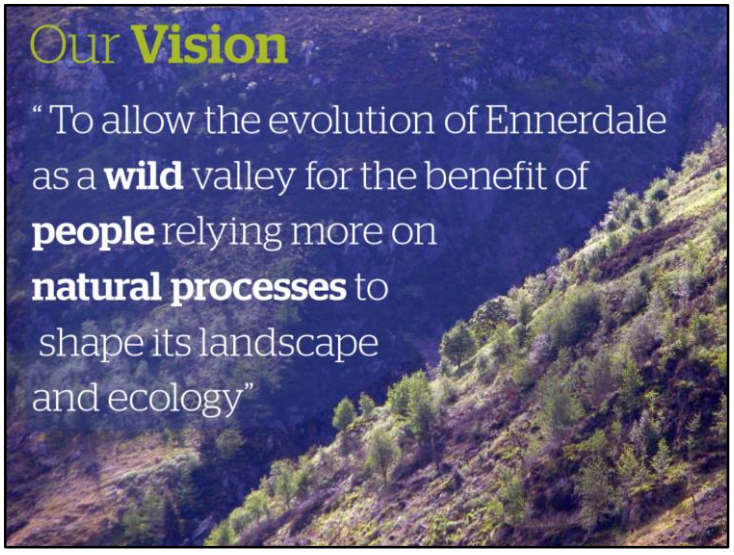


The Ennerdale Valley is located in the north western corner of the Lake District



Wild Ennerdale is a partnership of people and organisations led by the three main landowners in the valley, The Forestry Commission, National Trust and United Utilities with the support of Natural England. A great combination of 2 Government Agencies, a National Charity, FTSE 100 Company and Natural Processes, our 5th Partner who rarely turns up to meetings , is very determined and always operating in the valley even when we are on holiday.

But seriously we do see ourselves trying to work alongside naturally processes in a new innovative way where we relinquish more of the detail of the valleys management to this silent partner and we operate more at the landscape scale.



Our vision focusses on allowing the valley to develop as a wilder place for the benefit of people in a very broad sense including recreation, business, spiritual refreshment, learning, personal exploration and more.

Our vision is very much forward looking focussed on the future natural not a past point in time.

Partnership

- Formed in 2003
- Extends to 4300ha
- Guided by a strong Vision
- Forgotten who owns what
- Act as one landowner
- No finish date or defined end point
- Opportunistic and natural process led

Wild Ennerdale is a long running partnership, over 10 years, but we still say we are only just beginning.

Our partnership extends to around 4300 hectares and our strong vision is supported by 12 principles that guide our decision making.

We share a philosophical approach to managing the valley balancing both the ecological and people centred accepting the sense of wildness is a human construct. Wild nature doesn't sense the wild.

We have very much forgotten who owns what and we act as though we are one land owner bound by a memorandum of agreement, two sides of A4 signed by our Chief Executives.

Wild Ennerdale is not a project so it does not have a defined end point and our approach is opportunistic trying to release and act alongside rather than dominating natural processes.

So what about the forest.

The Ennerdale Forest is mostly formed of conifers planted, felled, replanted and regenerated over the last 100 years with a couple of pockets of stunningly beautiful ancient semi natural woodland and increasing areas of diverse natural regeneration of native broadleaves as well as significant areas of native woodland planting. Our native woodland planting is aimed at planting the seed source for the future forest not the future forest directly.

It's a big forest extending to 750 hectares with a range of forest types from monoculture plantation through to more diverse forests managed under Continuous Cover with Big trees, gaps seedlings, saplings and small trees. Mountain edge forests fading out into the mists and montain heath with the ancient woodlands of The Side excitingly starting to regenerate uphill towards the subalpine meadows where you find dwarf juniper and willow forests that your walk over rather than walking through.

Finally there is the forest that engages in a love embrace with the River Liza, always uncertain of its future, never guaranteed to reach maturity, always stunning, regularly food for the hungry river.

The River Liza is the creative force behind the valley bottom. Always on the move, it is one of England's most natural river systems from its birth under Great Gable to its end in Ennerdale Water .

11 kilometres in length with a large catchment it regularly experiences high energy storm events that contribute significantly to the valleys annual rainfall approaching nearly 3m per year.

Walking up the liza you continually come across a changing landscape that never disappoints that always excites and leaves you feeling like you have been transformed across space into some Scottish or north American wilderness where just around the corner you may come across a group bears catching fish . Instead you may be surprised by a heard of freely roaming self willed Galloways, otter, deer, heron making the most of the rivers seclusion.

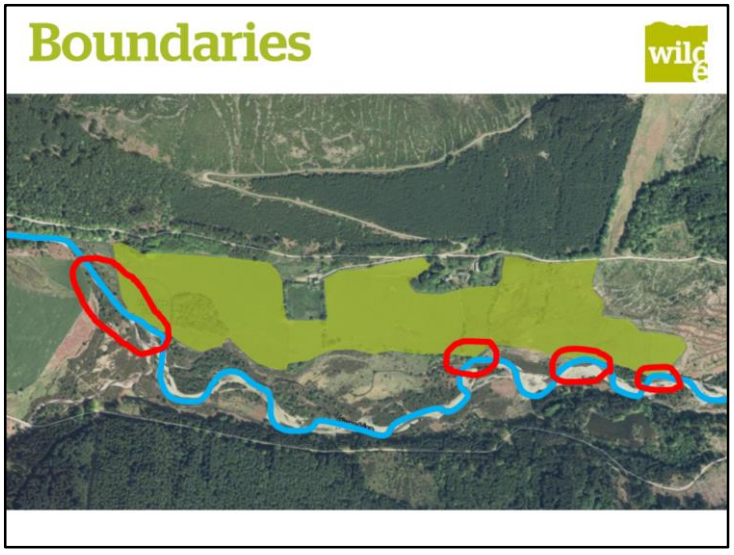
The River Liza flows into Ennerdale Water, a natural lake, which is also a reservoir supplying over 70,000 customers with water. In addition the lake is a SSSI for its rare shallow water habitats and fish such as Arctic Charr.

Experiences

- Removing boundaries
- Regenerating forest
- High Friction Landscape
- The Great Storm

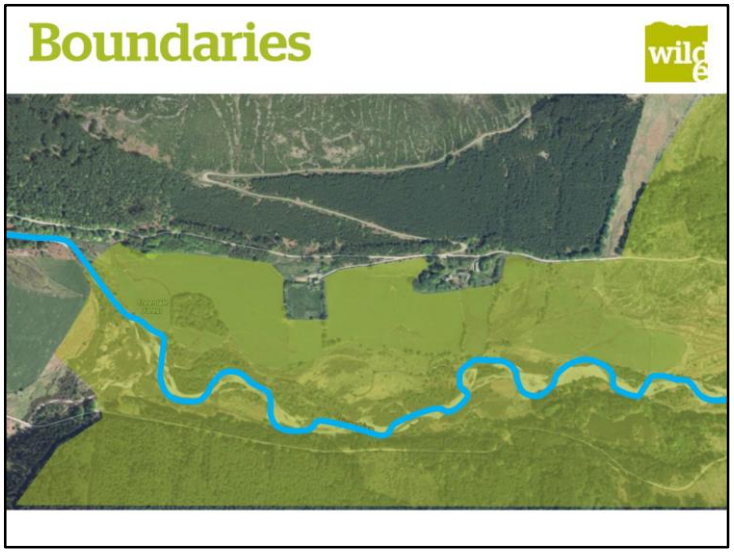
Over 15 years looking after this valley we are just staring to join up the dots of its dna and realise some of the connections between processes that shape the valley over more than our lifetimes.

Over the next few slides I hope to share 5 such experiences.



Early on in our wild quest we decided to reduce intensive sheep grazing and introduce extensive cattle as a dynamic natural disturbance factor. For this to be most effective we removed the valley bottom fence enclosed fields to give the cattle freedom to roam. Whilst not intentional we soon realised after that this removed the tension between farm tenant, river and landowner.

This animation illustrates the story. The grazed fields shown in green come under pressure from the River Liza as it flows down the valley. The red circle areas illustrate these points of stress and tension between the farmer, the river and us as landowner as the farmer sees his enclosed land, and his income source, eaten away by the rivers erosion as it meanders self willed across its valley bottom. His response was to ask for the rivers course to be controlled by shoring the banks up with stone gabions. A history of these structures can be seen along sections of the river, where they are now often left isolated and looking strange in the middle of the river.



Following the move to extensive cattle grazing the farmer's grazing boundary was moved to the forest edge which reduced the tension with the river as the tenant's payment boundary was no longer linked to the self will of the river's meandering.

The animation shows the extensive grazed boundary with the river now running freely without any points of tension. The extensive cattle herd are free to graze both side of the river and the river corridor, regardless of the rivers meanders the farmers income remains constant.

Regenerating Forest

So What Does it Provide

Tree fall = Sustainable food for the river

- **Large debris** = Stabilising gravel beds
- **Regeneration** = Colonising gravel beds

The regenerating forest is our next story which is divided into three elements

Regenerating Forest

•Sustainable food for the river

The story starts with the river eroding its way down the valley. As the front of the meander meets the forest trees of all sizes must yield and become food for the river.

The river may take a year or more to devour a tree or in storm events this process may last a matter of days or hours as the river jumps channels abandoning debris only half finished.

Large stumps, whole trees and stripped limbs are all food for the hungry river.

However the river struggles to carry the debris far as the energy required to erode the next meander, flow through large debris piles and the scrubby riparian landscape all encourage the river to drop its bedload.

Once left behind the debris catches more debris helping to stabilise gravel movement and stop large debris making it down to the mature river near the lake.

Depending on the rivers meandering the debris stabilised gravel beds become colonised by natures pioneers species including trees such as pine, larch and birch as well as spruce, cypress, gorse and more fragile flora such as harebells.

If Allowed enough time these once naked gravel beds can become woodland again ready to provide food for the river and the cycle to begin again. This last slide shows an island in the river only 5 to 10m wide with a dense thicket of mixed species trees 1 to 5m tall.

The regenerating forest soon becomes an important part of this high friction landscape.

Established forest slows the river down taking away its energy reducing its potential to erode.

This photo illustrates a section of the forest which has been in the middle of the rivers main channel for approaching two years.

This video further illustrates the river flowing through this area of forest.

This high friction landscape of established and regenerating woodland is a velcro landscape stripping from the river woody debris which itself then adds to the blockade further slowing down the river and reducing its energy.

Its undoubtedly a mess which sometimes visitors comment on negatively . But this mess is a natural water filter which thanks to the regenerating forest is self sustaining.

The Great Storm 2009

- The same level of rainfall fell on Ennerdale as on the Crummock and Derwent Catchments
- Massive movement of gravels and production of debris
- River created multiple new channels jumping from one to another

Our final story revolves around the Great Storm of 2009.

As a resident of Cockermouth was involved in the events of November 2009. Abandoning my work with the FC for a number of days I helped take food to the emergency services, direct rescue boats from the north of Scotland to go the wrong way up main street and wonder at how our town would repair its battered businesses , flooded homes and damaged infrastructure.

The Ennerdale Valley experience the same levels of rainfall leading up to and during that unforgettable event.

The river Liza moved massive volumes of stone and produced multiple debris piles the size of SUV's all the way along its middle section.

New river channels were driven through the forest and scrub and then abandoned hardly used as the river meandered wildly.

Trees were felled and left marooned and one of the valleys footpath bridges was torn off its foundations.

This image illustrates one such new channel a movement of 50 to 100m across the valley bottom.

In this case unfortunately a right of way designated in the valley bottom was lost as the river chose its new path. The river has the same respect for legal designations as its does established forest.

Subsequently the Wild Ennerdale Partners with the help of our passionate and enthusiastic volunteer group have established a new path higher up out of the rivers grasp.

The Great Storm 2009

- Very little debris made it to the lake
- The rare Arctic Charr spawning beds were undamaged.
- Whilst other water supplies were turned off Ennerdale kept supplying high quality water to West Cumbria.

But what of the outcome of all this volume of water. This is where we see the benefits of a regenerating forest supported high friction landscape .

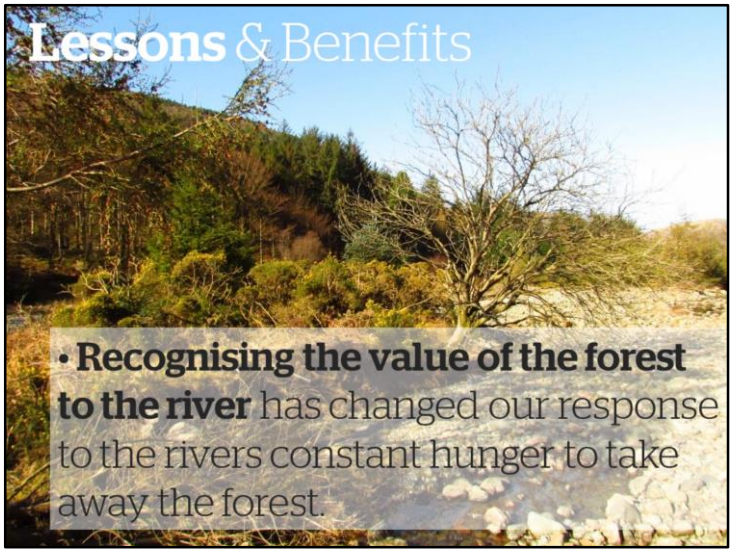
The lower sections of the river saw the great volume of waters sweep through but very little debris made it out of the middle section. Some was picked up at the Irish bridge but no more than is usual for many a winters storm.

The arctic charr spawning beds suffered no significant damage as damaging large woody debris was held up in the high friction landscape of the middle valley.

After the storm event Thirlmere and other North Cumbria reservoirs was unable to supply water as sediment and color taint exceeded acceptable levels. My colleague from United Utilities recollects driving around the northern reservoirs immediately after the event. He remembers the stark contrast between the clear waters of Ennerdale and the color of other lakes under the storms path. Throughout storm and after Ennerdale was clear and unaffected by the storm event continuing to supply water as normal.

Taking our experiences together we can identify three key lessons and benefits.

Disconnecting the administrative boundary from the dynamic river boundary has removed the pressure to control the river.



Recognising the value of the forest to the river has changed our response to the rivers constant hunger to take way the forest.

The regenerating forest is food for the self healing river helping it to recover from each flood event and be ready for the next.

Lastly in summary I would like to suggest that

Unconstrained, Self Healing and Self Regulating

the Liza's relationship with the Big Forest provides

- Reduced impact of extreme events.
- Protection for downstream features.
- New future natural habitats
- Uninterrupted public water supply

Perhaps the Liza can be an Inspiration and a model for others.

Thank you for listening, if you feel inspired to find out more please get in touch, we would love to take you on a journey up the River Liza .