

# What happens here?

## OUTDOOR LABORATORY

Glensaugh has provided facilities for agricultural and land use research since 1943.

The **Outdoor laboratory** comprises just over 1000 hectares (ha) - the area of two football pitches covers about 1ha if that helps!

- 865 ha of **semi-natural/moorland communities**,
- 88 ha of **permanent pasture**.
- 60 ha of **improved pasture/arable**

Glensaugh is typical of many hill farms in upland Scotland. Commercial farming is the background activity to the research. The farm lies between **120m and 450m above sea level**. The winter climate is poor for plant growth, and this restricts the number of animals the farm can support naturally.

To find out more:

[www.macaulay.ac.uk/aboutus/researchstations/glensaugh.html](http://www.macaulay.ac.uk/aboutus/researchstations/glensaugh.html)



## SUSTAINABLE FARMING

Glensaugh is a productive farm, even though on marginal land. Our Blackface sheep and red deer are hardy - adapted to the hill environment - needing less support from us.

On our improved ground we keep **topping up** the nutrient base of the soil; otherwise we work with nature. We grow grass mainly to feed livestock - making silage in summer for winter feed and bringing the ewes on to spring grass at lambing time. Our most profitable enterprise is producing sheep meat.



We are reducing stocking rates, while improving the meat quality of each animal, and keeping fewer animals over winter. You will see other ways we are making more sustainable use of our natural resources on the walk.

A concern today, that we are investigating, is the lack of young people carrying on with family farms.

## A sense of place

### MIND THE CRACK!

At Glensaugh you are standing on the southern edge of the eastern Grampian Highlands. As you walk the trail you will pass over a very significant, but invisible crack in Scotland's planetary crust. Don't worry you won't fall in!

It is called the **Highland Boundary Fault**, and it stretches across Scotland from Helensburgh (SW) to Stonehaven (NE).

## DIRT DOCTORS!

**Why is this fault significant?** Because it affects the underlying rocks that are here, and the soils that develop on the surface. Early Macaulay researchers were known as the **Dirt doctors**, because their job was surveying and analysing soils.

On either side of the fault are rocks of different character and age. The resulting soils are **less fertile** to the north, and **more fertile** to the south.

**Soils are fundamental to what a farm can support and produce.** Maintaining the level of nutrients in the soil is a constant challenge at Glensaugh and many farms like it. Applying

fertilisers incurs costs to the business and the environment.

## CHANGING CLIMATE AND LANDSCAPES



**Climate and landscape change are natural processes playing their part since life on the planet began.**

During the coldest periods of the last Ice Age a thick **cap of ice** covered this area, centred over the Cairngorms. As the ice cap finally melted, 13 000 years ago, glaciers and their melt water streams were confined to the valleys, etching their current profiles.

**What are we left with today?** The characteristic rounded profile to our hilltops, with steep sided valleys in between.

Glensaugh is part of an **international study** looking at the impacts of climate change today.



## Welcome to Glensaugh!

This self-guided trail leads you on a circular tour of the farm. Using the trail map we hope you find your way, enjoy your walk and the views, and take away some memorable moments from your visit.

Follow the trail markers from the car park. Each of the numbered markers along the route matches the numbered text around the map.

The marked route is about 4 kilometres (2.5 miles). **Allow 2 hours for a family walk.** The walk includes around 100m (330 feet) of ascent and some rough ground.

Please go prepared - **check out the back page of this leaflet** - the weather can change rapidly.

If you like to navigate - you will find us on the OS Explorer 1:25 000, Sheet 396.

## SAFE AND RESPONSIBLE ACCESS

Be careful where you walk - there's wildlife around!

We welcome responsible users to our trails. For your own comfort, we advise:

- stout footwear for the path and rough ground
- warm and waterproof clothing at any time of year,

## Know the Code before you go!

The **Scottish Outdoor Access Code** explains your access rights and responsibilities clearly. The key things to remember are:

**Take responsibility for your own actions** - care for your own safety by taking account of farm and natural hazards. Please be in close control of your dog/s and small children.

**Respect the interests of other people** - Leave gates as you find them. Please **lead lightly** and take your litter home.

**Care for the environment** - by caring for our natural and cultural heritage. Avoid disturbing domestic animals and wildlife - please watch from a distance.



If you enjoyed this trail, why not let us know?

- Call in at the farm office
- Send a card to Glensaugh Research Station, Laurencekirk, Kincardineshire AB30 1HB

Come walkabout at

# Glensaugh

RESEARCH STATION



... a self guided trail exploring the stories behind the scenes



The Macaulay Land Use Research Institute - an international leader in research on the sustainable use of land and its natural resources, for the benefit of people, their communities and the environment



# Welcome to Glensaugh (valley of the willows) Trail

Follow the arrows to the field gate - head out from the car park past the silage pit - beware any vehicles.

## 1 View from a gate

**Look at the view!** The flat hilltops are striking. How many different land uses can you see in the patchwork ahead of you? How will this view change over the next 50-100 years?



**Notice how the land is less improved away from the productive heart of the farm?**

From the steading, housing our Blue Grey suckler cows during winter, and crossbred ewes in lambing time, you progress across our improved fields. These are sown with a ryegrass and clover mix, and grazed mainly by crossbred ewes and their lambs. Further away the land is poorer, grazed by our Scottish Blackface ewes, with red deer often seen on the higher hill.

Without our extensive network of tracks, and all terrain vehicles we could not manage the farm commercially. Modern agriculture has been built on cheap fossil fuel based energy - can it last?

**Cross the field to the gate at the corner beside the public road. Turn left along the road to the next farm gate on the downhill side, and descend on the farm track.**

## 2 Unimaginable forces

**Here the panel explains about Glensaugh's agroforestry research; a short self guided trail through our woodland plots begins here.**

Planting a forest is good use of poor soils and/or steep slopes. The trees stand out here, but so does the valley of the Slack Burn.

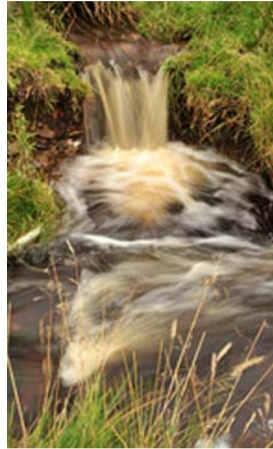
**Take time to look around... notice the steep sides and flat valley floor - clues to the action of natural forces now long gone.**

A glacier and its melt-water gouged a deep valley here, later filling the valley bottom with a thick covering of sand and gravel. As the climate and ground warmed a lake probably formed, later draining away and leaving today's stream - the Slack Burn.

**Carry on down to and across the Slack Burn, joining the track going upstream along the valley bottom.**

## 3 Down memory lane

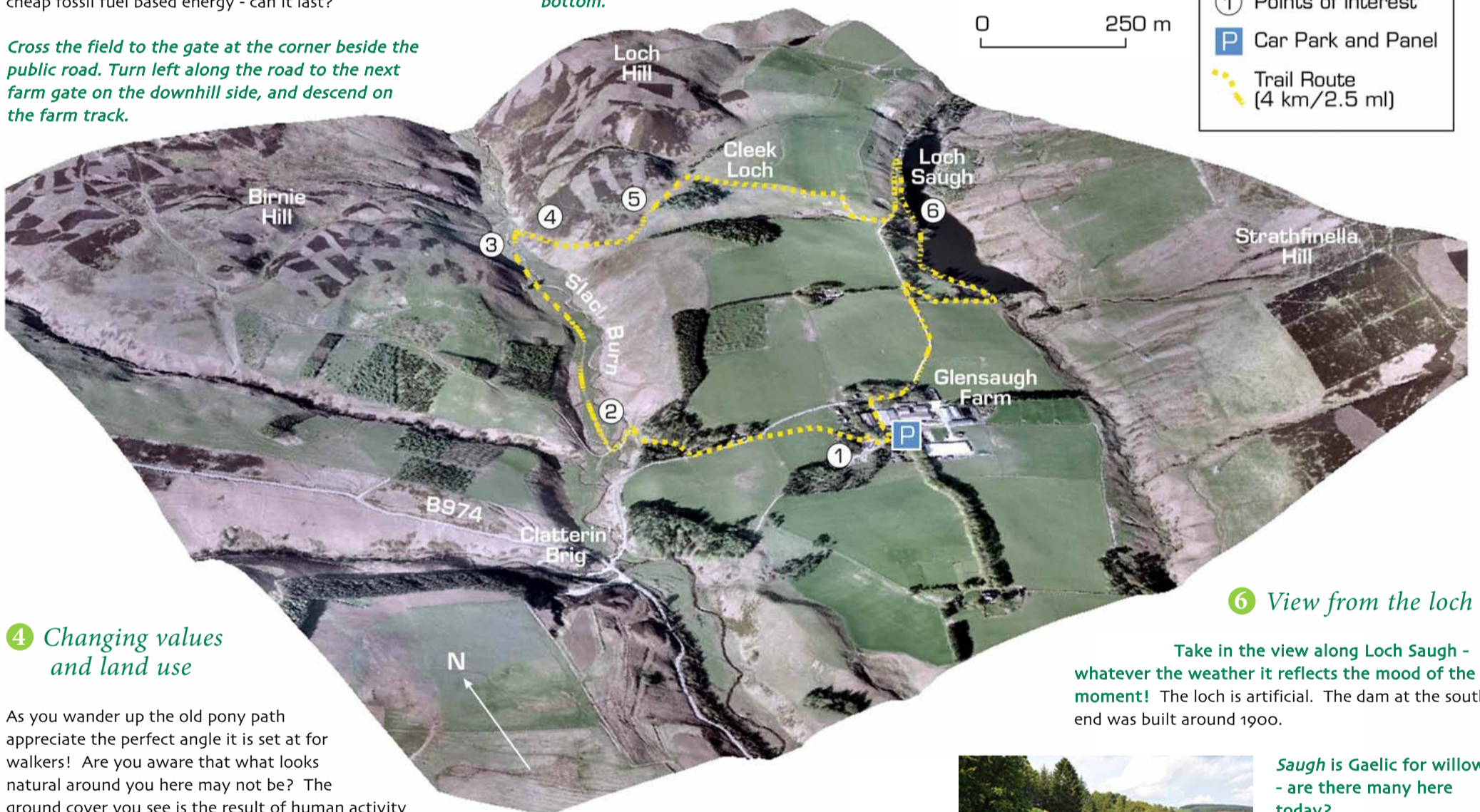
**How does it feel walking up this valley?** Strange that nature does the work of a bulldozer and roller so neatly! Notice the variety of rocks along the stream - plain, patterned, coloured or rounded - each tells a story.



When you reach the group of trees, leave the track and turn towards them, but watch out! You will find the overgrown footings of an old house and its garden. **Walk around and trace their shapes. Imagine how it might have been... why here, and did it have a name?**

**Who planted these trees and why?** Touch their bark and wonder how old they might be. These are Larch trees, first planted in Britain in 1738. **What can this tell us?**

Old estate records and maps, and the Old Statistical Account for the parish, are good ways to start unravelling the true story behind these questions.



## 4 Changing values and land use

As you wander up the old pony path appreciate the perfect angle it is set at for walkers! Are you aware that what looks natural around you here may not be? The ground cover you see is the result of human activity and land management over many centuries - wonder at the resilience of nature and people.

**Take time to enjoy the view, listen, and feel the space!**

Our values and attitudes towards nature, affecting how we manage the land, have changed rapidly recently; land is managed for many uses. Here the permanent pasture and grouse moor are still valuable habitats, conserving native plant and animal communities. We are also using the area for meat production, recreation, and education!



**Look out for some of the species illustrated...**

**At the top of the pony path make for the slope on the left. Follow the arrows, bearing right and pick up a well-defined path alongside the Cleek Loch.**



## 5 Climates and consequences

**What is going on here?** These small steep-sided valleys were probably ice overflow, or melt-water, channels now left high and dry. They provide useful shelter from sun, wind and rain for livestock.

**Cleek Loch** was originally open water. Over time material washed from the slopes above has filled it in. The rushes and reeds, adapted to living in shallow water, have been able to colonise; eventually it will dry out and grasses, shrubs, and trees will take their place.

Our scientists are investigating how the climate is changing at Glensaugh. **We need to know what we will be able to produce, and what new challenges farmers and rural communities may face?**

**Go right, across the [waist] of the Cleek Loch. Follow the arrows, and join a track down to the public road. Go left along the road to the marked entry point and drop down to a path by the side of Loch Saugh.**

## 6 View from the loch

**Take in the view along Loch Saugh - whatever the weather it reflects the mood of the moment!** The loch is artificial. The dam at the south end was built around 1900.



**Saugh is Gaelic for willow - are there many here today?**

How many different tree species can you find? Look at the leaves or buds and spot the differences.

Along the path you pass a small hut with an unusual, water driven pump inside. The Hydram raises water from a spring to a storage tank, an amazing 40 m (130 ft) higher up the hill. This supplies water to our fields and buildings. Making the farm more self-sufficient is an important foundation for Glensaugh's future.

**On your walk we have been able to share with you [snapshots] of Glensaugh through time, life here today, and our plans for a sustainable future.**

We hope you have enjoyed your time with us. Come again in a different season!



**From the fishing hut, walk up the track to join the public road. Turn left and walk back towards the farm entrance and car park.**