DISCOVERING BRITAIN

Royal Geographical Society with IBG

Natural beauty and human endeavour

A self-guided walk around Glen Cornaa on the Isle of Man

Explore a picturesque valley and hidden cove
Find out how the physical landscape was shaped over millennia
See how humans made use of natural resources
Discover some surprises and ruins hidden in the woodland

www.discoveringbritain.org

the stories of our landscapes discovered through walks

Contents

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Cover image: View up Glen Cornaa © Martin Haslett

Natural beauty and human endeavour

Explore the picturesque valley of Glen Cornaa on the Isle of Man

This walk is a tale of two halves that tells the story of how natural forces and human activity have shaped the landscape.

The first part of the route follows lanes and tracks down through the woods and pastures of Glen Cornaa. At the bottom is the beautiful cove and pebbly beach at Port Cornaa.

Discover the evidence that reveals how dramatic natural forces have shaped the physical landscape over millions of years and resulted in the beautiful scenery that we can enjoy today.

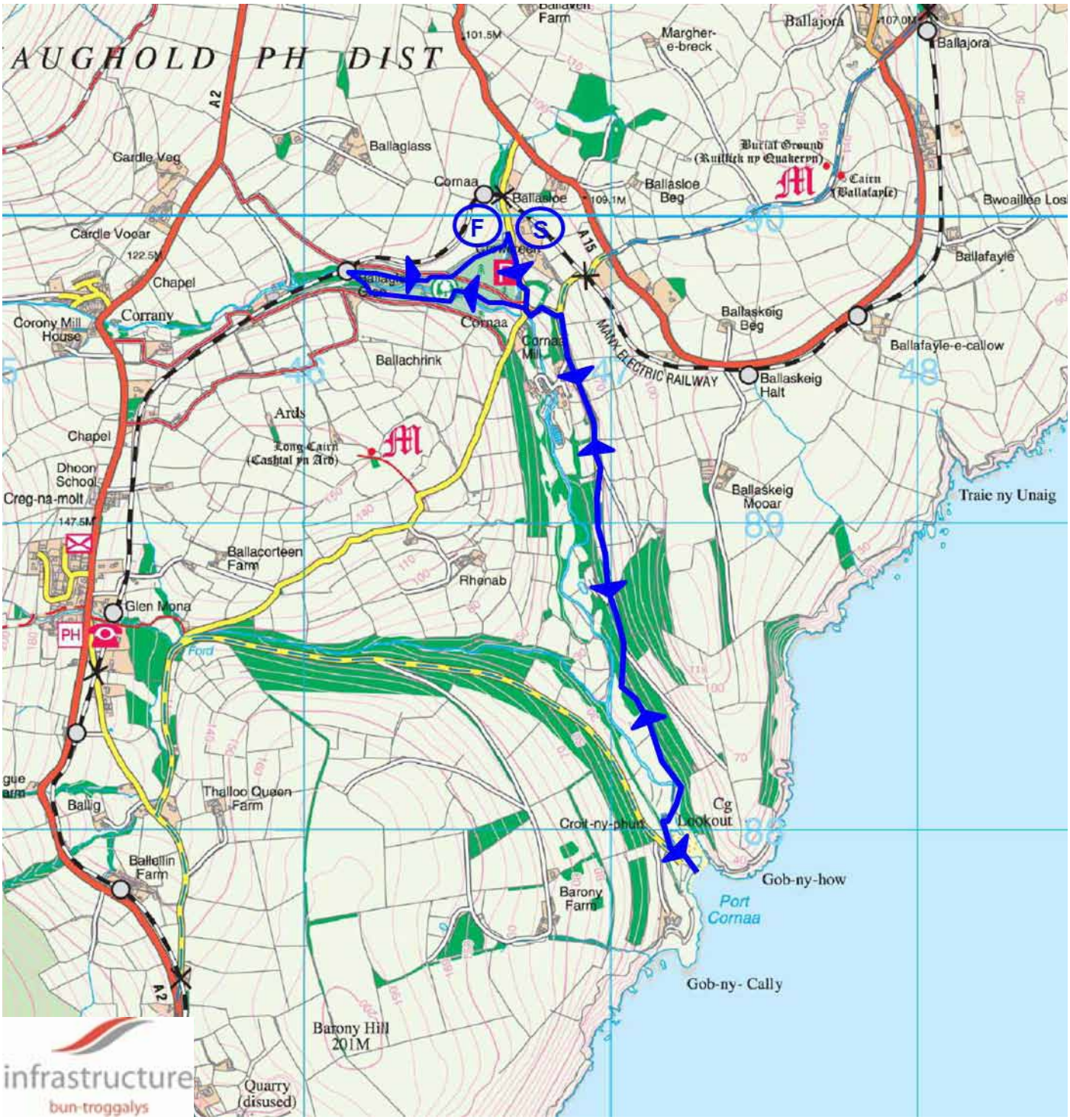
Enjoy views of mountains and glacial valleys, see a spectacular river cliff and a deep gorge, discover waterfalls, flood meadows and a pebbled beach.

The return journey back up the picturesque glen uncovers evidence of how humans have used this natural landscape and its resources from prehistoric times to the present day.

From fishing and farming to milling and mining; from trees and tourism to hatching and heritage. There are also some surprises in store hidden in the woods.

Image credits: Port Cornaa / Ballaglass Glen © Martin Haslett

Route overview



Start and finish point

Ballaglass Glen car park

Practical information

Location	Glen Cornaa, Isle of Man
Start & finish	Ballaglass Glen car park, Ballaglass Glen Road, Cornaa, IM7 1EH
Walk distance	3 ½ miles
Level	Moderate – A fairly easy walk with a couple of descents and ascents
Terrain	Narrow lanes, gravel tracks, woodland footpaths, pebbly beach
Conditions	Can be muddy underfoot in Ballaglass Glen and other sections
Suitable for	**Families** – A picturesque and fairly short walk with a beach at the half way point **Dogs** – Will enjoy the woodland walk and beach
Refreshments	There are no refreshments available on or near the route but the cove at Port Cornaa is an ideal spot for a picnic. There is also a picnic table in Ballaglass Glen car park and benches throughout the glen.
Toilets	There are no public toilets on or near the route
Places to visit	We recommend travelling by **Manx Electric Railway**. Check the timetable when planning the walk. **Cashtal yn Ard**, a well-preserved Neolithic chambered tomb, is on a hillside above Cornaa (see walk extension for directions) The **Great Laxey Wheel** about five miles away is the largest working waterwheel in the world The **Manx Museum** in Douglas tells the island's 10,000 year history
Tourist information	**Douglas** – The Welcome Centre, Sea Terminal. Open Monday to Saturday all year and Sundays in summer months. **Laxey** – Laxey Heritage Trust, Old Fire House, Mines Road. Open daily from Easter to September. **Ramsey** – Library, West Street, Ramsey. Open all year from Monday to Saturday.

Getting there

Car

Cornaa is off the **A2** between Laxey and Ramsey. On the A2 look for a small settlement called The Hibernian. Take the A15 signposted to Maghould village, Ballaglass Glen, Cornaa and Ballajora.

After ¾ mile turn right onto a narrow lane, signposted Cornaa and Ballaglass Glen. Cross the railway tracks and the **free car park** is on the right.

Train

Cornaa is a station on the **Manx Electric Railway** which runs between Douglas and Ramsey. Services run half-hourly in the summer months and hourly in the winter. Check website before travelling for details http://manxelectricrailway.co.uk/current-timetable/

Cornaa is a **request stop**. To alight, inform the conductor on boarding; to board, give a clear hand signal to the driver.

Go down the lane on the opposite side of the tracks to the shelter. The car park is approximately 150 metres on the right.

Bus

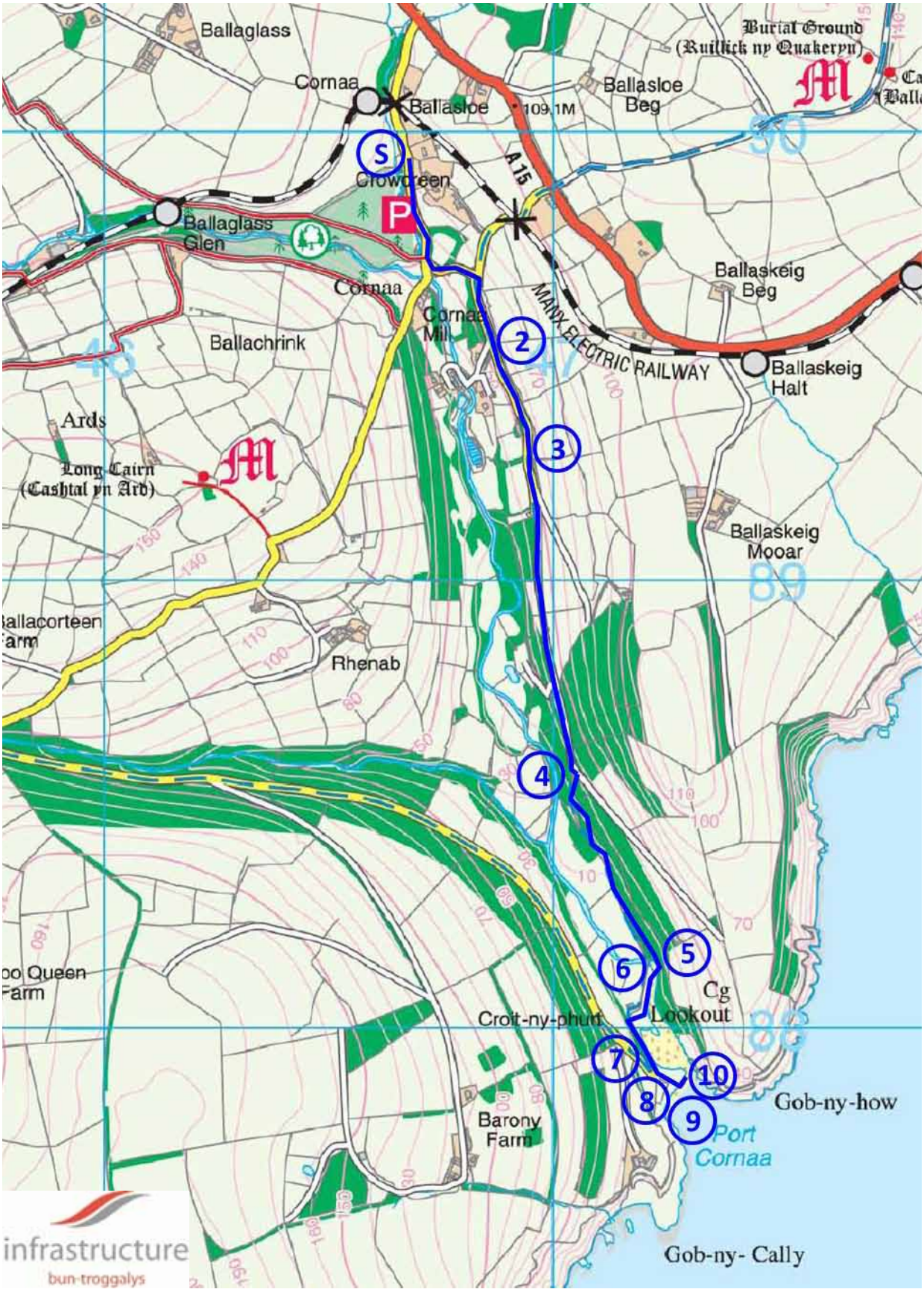
Buses **3** and **3A** (Douglas-Ramsey) and **3B** (Old Laxey-Ramsey) run along the A2. Services are half hourly during the day. Check website before travelling for details http://www.gov.im/publictransport/Bus/timetables.xml

Nearest stops are Corrany (1 mile) and The Hibernian (1 mile).

From The Hibernian – Turn from the main road onto the A15 signposted Ballaglass Glen, Cornaa and Ballajora. Take care as there are no pavements. After ¾ mile turn right onto a narrow lane signposted Cornaa and Ballaglass Glen. After about 150 metres cross the railway tracks. Continue down the lane for a further 150 metres to the car park on the right.

From Corrany – Walk along the main road in the direction of Laxey. Go over the stream and round a corner. About half way up the hill look for a footpath on the left. Follow the path round a house and alongside the railway tracks. Cross the railway tracks where indicated and continue with the tracks on your left. At Ballaglass Glen station take the steps down into the woodland. At the bottom, turn left over the bridge then follow the path down the glen with the river on your right. When you reach a ruined white painted building turn left for about 20 metres. At the top, take the second path on the right with a field to the left and the woodland to the right. Follow this path through the upper side of the glen until you reach the car park.

Detail of first half of route



Detail of second half of route

1. Welcome to Glen Cornaa
Ballaglass Glen car park

The Isle of Man is a very distinct part of the British Isles. Whilst it is administratively separate from the United Kingdom and proudly independent, it shares a common heritage in terms of its landscape formation and human history.

On this walk we will discover more about these separate and shared identities and find out how the forces of nature and people have shaped the landscape that we see today.

The walk starts and finishes in the hamlet of Cornaa on the eastern side of the island.

Cornaa Pool
© Andy Stephenson, Geograph (CCL)

The first part of the route follows Glen Cornaa down to the sea at Port Cornaa. From this beautiful cove you can see across the Irish Sea to the mountains of Cumbria (on a clear day!)

Along the way we will discover how natural forces have shaped the physical landscape over millions of years and resulted in the beautiful scenery that we can enjoy today. On our return journey back up the picturesque glen we will look for evidence of how people have used the physical landscape and its natural resources from the earliest times to the present day from fishing and farming to forestry and factories.

Towards the end of the walk we will explore Ballaglass Glen, one of the Isle of Man's National Glens, and find out how the approach to landscape conservation here is quite different to the UK.

This walk has been created by Martin Haslett who loves exploring the British Isles, particularly its islands and more remote corners.

Directions 1
From the car park walk about 250 metres down the lane. Pass a house on the right (Cornaa House) and just before a house on the left (Cornaa Mill) turn left onto a track signposted 'Public Footpath Port Cornaa'. The track bends round to the left by the garage and climbs steeply. At the junction with another track, turn right. Follow the lane as it goes gently downhill then levels off. Pass the gates to Meadowcroft on the right. About 25 metres further look for a break in the trees on the right which gives you a good view across and up the valley towards the mountains.

2. Ancient oceans and colliding continents

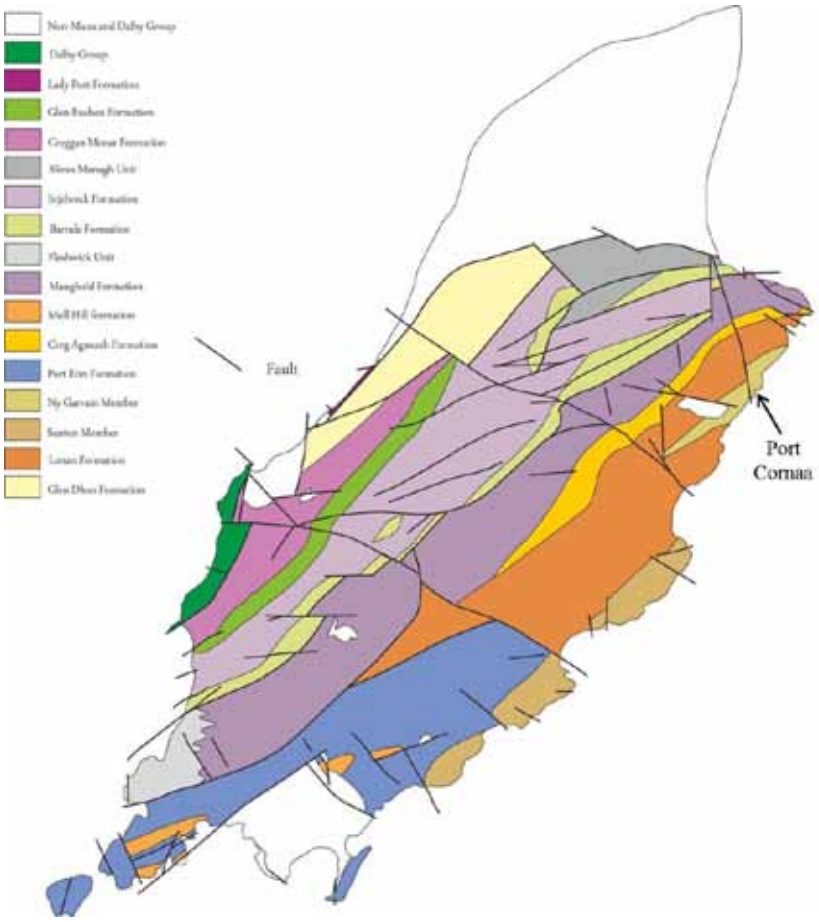
View of valley just past gate to Meadowcroft

Here's the first of many lovely views on this walk.

Even if you don't have a scientific background you can still find out a bit about the underlying geology and the processes that have shaped the landscape through time.

Look across the valley and to the right, up towards the peak of North Barrule.

View up Glen Cornaa to North Barrule
© Martin Haslett



Geological map of the Isle of Man
© Dave Quirk and Dave Burnett, Manx Geological Survey

The main rocks of the Isle of Man are known as the Manx Group.

They are mostly siltstones and mudstones which formed 490 to 470 million years ago (the Ordovician period, in geological time) when this area was under the sea.

The layers of sediment falling to the bottom of the sea gradually compressed and hardened, eventually becoming solid rock.

Geologists can date these rocks because preserved in them are the fossils of sea creatures.

These creatures existed in this precise period of time which was between the evolution of the first simple life in the oceans and the first primitive plants on land.

There is another amazing fact about these rocks that make up the Isle of Man. Not only were they once under the sea but, at that time, this area was located about 60 degrees south of the equator in the Southern Hemisphere.

The earth's crust, which is divided into large interlocking sections called 'plates', is continually moving and this is how land masses including the British Isles have moved over long periods of geological time, a process known as 'continental drift'.

But the journey wasn't smooth. Plates sometimes break apart; others collide. About 410 million years ago, movements of the plates caused the Manx Group of sediments to be squashed, heated and tilted as they were pushed against other masses of material.

Wherever you find outcrops of exposed rock on the Isle of Man you will find that the layers of sediment that were originally laid down horizontally are now anything but horizontal. We will see some examples of this in the cliffs when we reach Port Cornaa a little later in the walk.

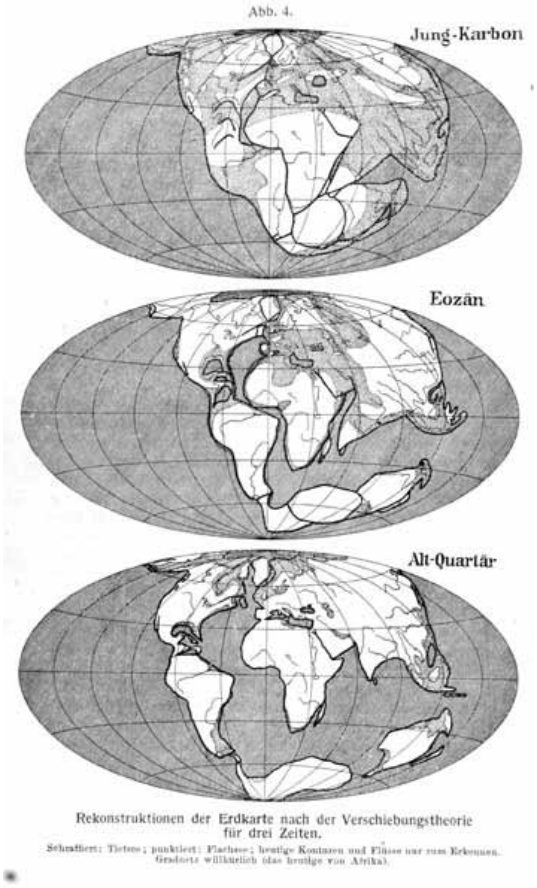


Diagram of continental drift by Alfred Wegener who developed the theory (1929)
Wikimedia Commons (CCL)

Tilted rock strata at Port Cornaa
© Martin Haslett

Another important moment in geological history on the Isle of Man was between 320 and 220 million years ago when mineral-rich material from deep within the earth moved towards the surface.

It penetrated into the existing rocks at the surface and these minerals – such as lead, zinc, copper and iron – were later mined as we shall discover later.

Directions 2
Continue along the track for about 100 metres. Stop where the next ungated track forks down steeply to the right to a farmhouse.

3. Icy transformation

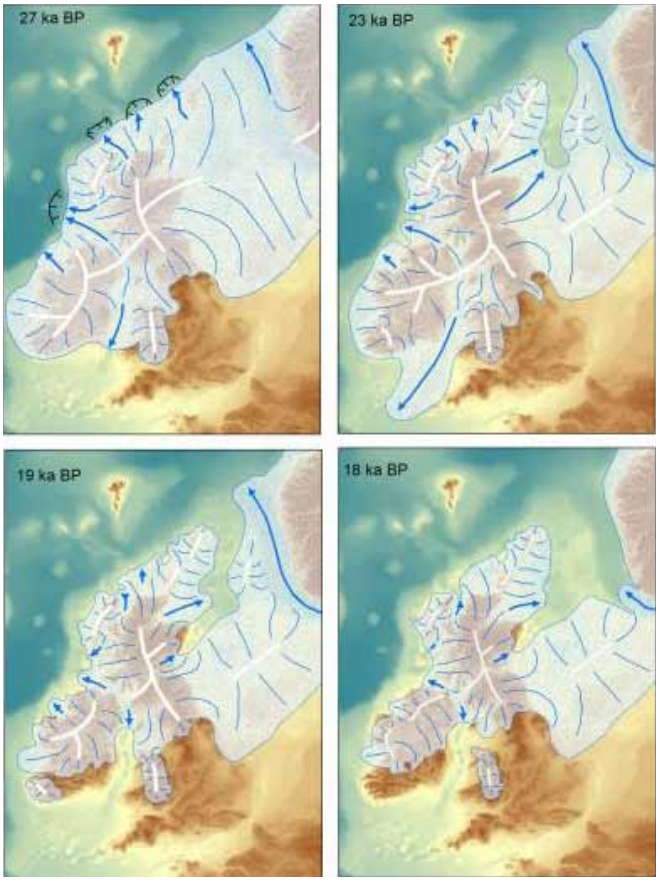
Top of track down to farm

We have found out how the rocks of the Isle of Man were originally formed and gradually moved to a different location on the earth's surface but other processes have shaped the rocks since then and created the landscape that we can see today. To understand this we need to move forward the geological clock many millions of years.

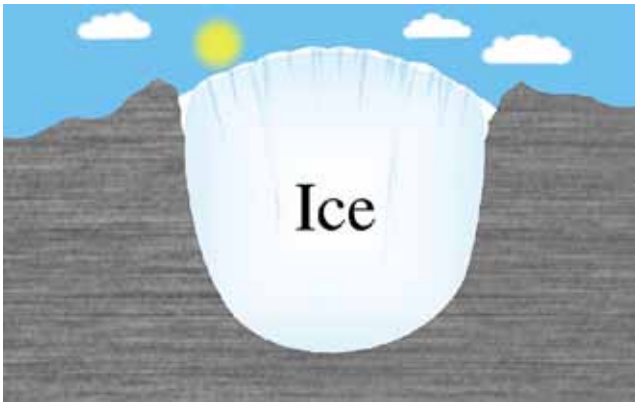
During the past 2½ million years when the earth's climate has been in a cooler phase, large parts of the British Isles have been covered by ice. This 'glaciation' was not just one event but rather the ice advanced and retreated several times.

We know that the Isle of Man was covered by an ice sheet that spread out from the mountains of Scotland. We know this because fragments of rock were scooped up by the moving glaciers and later dumped elsewhere when the ice melted.

Such rocks found far from their original position are known as 'erratics'. Erratics from Scotland are found all over the Isle of Man; in fact the low lying land to the north of the isle is largely made up of glacial deposits.



Melting of the ice sheet over the British Isles between 27,000 and 18,000 years before present



Formation of a U shaped valley

During the Ice Ages, the scene here would not have been so different from what we find in the high Alps today. A large ice cap, up to 1,000 metres thick in places, formed over the highest ground and then moved downhill under the force of gravity.

As the ice moved, it eroded the rocks underneath. Different types of rock have different properties – some are hard and some are soft – so this influenced how easily the ice could carve it away and how the landscape was reshaped.

Across the highland areas of Britain – in Scotland, northern England, Wales and Northern Ireland – we can see the results of the ice reshaping the landscape over thousands of years. In some places it left jagged mountain peaks, in other places deep valleys and lakes, and in other places smooth rounded hills.

Here in Glen Cornaa there are some clues as to how the ice shaped this landscape. A good way to recognise how a valley was formed is to look at its shape: a U shaped valley with steep sides and a flat bottom is evidence of a glacier eroding the rock, whereas a V shaped valley with sloping sides and a narrow bottom was generally formed by a river eroding the rock.

Look down the track here and see how this small valley is distinctly flat-bottomed. It was carved out by a glacier moving downwards from the high mountains in the centre of the island.

The legacy of ice on the landscape

Top left: the rounded mountain of North Barrule
© Andy Stephenson, Geograph (CCL)

Top right: Steep valley sides in Glen Cornaa
© Martin Haslett

Bottom left: Flat bottom of Glen Cornaa
© Martin Haslett

Directions 3

Continue straight along the track. Pass through the sets of gates marked Barony Estate and continue straight on the level. After a gated track down to the right marked 'Private' the main track starts to descend steadily. Where the next track forks off to the left there is a very steep cliff on the right. Continue straight down the main track until you reach a gate labelled Barony Estate. Take the smaller path to the right of the gate which doubles back and leads down to the riverside. Walk a short way along the flat area with the river on your left and the cliff on your right.

4. A raging torrent

Beside river below river cliff and near waterfall

At the last stop we discovered how the movement of a glacier carved out this valley but the shaping of the landscape did not end with the Ice Ages: natural processes are continually at work.

A stream now runs down Glen Cornaa and the constant flow of water continues to erode the underlying rock. Here the erosive power of water has formed a 'river cliff'.

You will be familiar with the term 'cliff' from the seaside – it is where a vertical or near vertical rock face meets the sea.

Similarly, a 'river cliff' is a steep-sided river bank that drops straight into the water.

So how was this huge river cliff formed? For this explanation we move to the end of the Ice Ages. As the climate warmed, the glaciers melted and the meltwater flowed down the ice-sculpted valleys towards the sea.

View from the top of the river cliff
© Martin Haslett

The tranquil River Cornaa today
© Martin Haslett

The river in this valley would not have been the gentle stream that you see today but rather a raging torrent carrying along with it large boulders and smaller pieces of rock.

The water and the materials carried by it eroded the rocks at the side of the valley, which were already weakened by frost, and created this cliff.

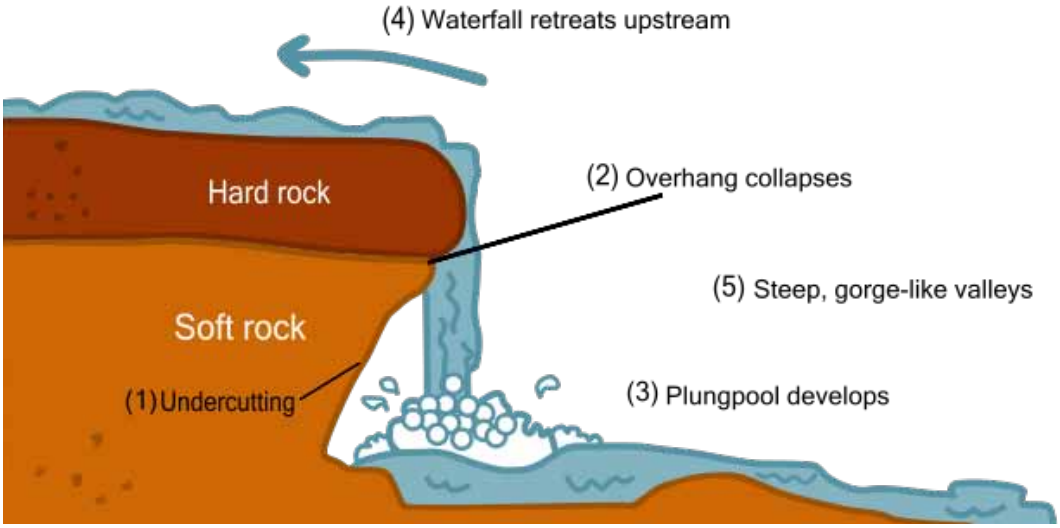
Now look at the small waterfall that emerges between two large boulders to see which processes of water erosion continue today.

The rock at the top of the waterfall is a line of harder rock, part of the ancient Manx Group of rocks that we heard about earlier and more resistant to erosion. The rock at the bottom of the waterfall is more easily eroded.

Here the stream passes through a narrow gap which makes the speed of the water increase.

Waterfall into Cornaa Pool
© Martin Haslett

Then the power of the water flowing over the waterfall, together with small stones carried by it at times of high rainfall, has carved out a 'plunge pool'. This plunge pool has a considerable depth, even for this small waterfall, so just think of what a really big waterfall can do!



Formation of a waterfall
© Jerry Crimson Mann, Wikimedia (CCL)

Directions 4
From the riverside, retrace your steps back up to the main track. Turn right through the gate marked Barony Estate. Follow the track downhill past some ruined buildings (which you find out more about later) and alongside some fields. Stop when you reach a foot-bridge over the river.

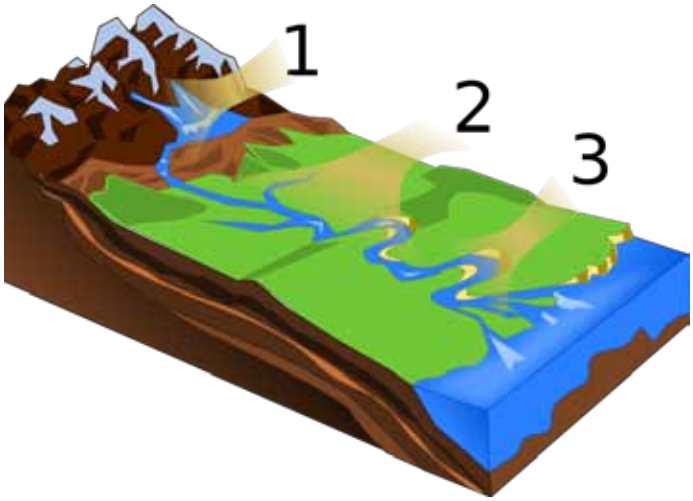
5. Three courses

Footbridge over river

We are nearly at the bottom of Glen Cornaa and here we can see that the valley has widened and the river snakes across this flat area of land towards the sea.

Even though this stream is relatively short – only about five miles from its source in the hills to the sea – it demonstrates the three main stages in a river's development. These are known as the upper, middle and lower course.

The upper course begins at the source in the hills. Here the river is smaller and usually has a rapid, tumbling flow that cuts a narrow channel through rocky hills or mountains.



Three courses of a river

In the middle course the gradient is less steep but the river has gathered a higher volume of water. The river starts to 'meander' across a broader valley floor. In the lower course where the river nears the sea the channel is deeper and wider. The meanders widen across the flatter land and the river also begins to deposit much of the material it has been carrying.

Moving into the lower course of the River Cornaa

Along this walk so far we have followed much of the middle course of this stream and seen some of the landforms associated with this including meanders, a river cliff and waterfall.

Here we are moving into the lower course and can see the valley bottom opening out and the water channel also widening.

This flat area has been created by sediment dumped by the stream over time. Later we will find out how this sediment deposited by the water was of use to humans.

Directions 5
Remain on the bridge.

6. Erosion and deposition
Footbridge over river

From this bridge we can find out more about how this stream – even though it is quite small and flowing comparatively slowly – is continually reshaping the landscape.

As we have already discovered, a river's bends are called 'meanders' and they form where the river starts to cross flatter land. Meanders have two complementary features: erosion and deposition.

The water flowing round the outside of the meander is flowing faster than that around the inner curve.

Erosion and deposition on a river bend
© Martin Haslett

The faster flow has more energy and will gradually erode the river bank. Meanwhile the slower flow has less energy and can no longer carry pebbles and sediments so will tend to deposit them.

Look downstream from the bridge. To the left you can see an outside bend and eroded river bank; to the right you can see the inside bend and deposited material including pebbles, rocks and much finer-grained material.

River bank protection
© Martin Haslett

If you turn around and look upstream you can see where stones have been put in place on the outside bend to strengthen the river bank and limit further erosion.

While human intervention like this serves to protect land and property it also interferes with natural processes and inevitably has a knock-on effect elsewhere in the river system.

Directions 6
Cross the bridge and follow the path. Cross the small bridge in front of the cottage (Croit ny Phurt) and turn left along the track. Stop after about 25 metres where a small stream channel comes close to the track.

7. Glacial debris

Stream channel in front of Croit ny Phurt cottage

As we have already discovered, as a river moves towards the sea its meanders tend to snake wider and deeper.

One of the reasons why this stream's meanders have cut their way across this landscape relatively easily is because the underlying rock is actually a relatively weak and unconsolidated substance that breaks up easily.

This part of the geological story relates to the last 10,000 years since the end of the last Ice Age.

Stream channel cut through glacial debris
© Martin Haslett

Earlier we heard about the glacial meltwater that cascaded down the valley and created features such as the river cliff. As the water reached this lower course it began to dump the material that it was carrying. So this valley floor is made up of the gravel and alluvium dumped by torrents of meltwater.

Unconsolidated sediments in the stream channel
© Martin Haslett

If this deposited material had then been left alone, it would have steadily condensed and compressed and over millions of years eventually become hard rock, as with the ancient sea floor sediments that we heard about earlier.

But here, the continuing flow of the stream does not allow the consolidation process to happen but rather gradually wears away this layer of relatively loose glacial debris.

Directions 7
Continue along the track. Just after the boat house on the right the track rises. Stop on the top of the rise where the grass ends and the beach pebbles begin.

8. The power of the waves

Top of beach

Along the walk so far we have discovered how water in the form of ice and rivers has shaped the landscape; here at the beach we can explore how the sea has shaped the landscape.

Beach berm
© Martin Haslett

I'm sure you will appreciate that while the natural landscape is shaped over millions of years it is not fixed; the processes are continual and the landscape is constantly changing. In fact, the precise shape of this beach will vary depending on when you visit and the recent tide and weather conditions.

While the daily ebb and flow of the tide and the movement of the waves constantly shift around the sand and pebbles on the beach, occasional storms can have much more of an impact on the coastal landscape. The pebbles on which we are standing have been thrown high up the beach in times of storm and left there. This is a common feature around coastlines and is known as a 'beach berm'. In this case it is made of pebbles but berms also occur on sandy beaches.

Usually the berm is a considerable distance from the sea. The materials are deposited by the waves during very high tides or storms. You should be able to see a series of berms here. In each case there is a flat area followed by a steep slope leading down to another plateau. The enormous size of this pile of pebbles is a tribute to the power of the waves.

River cutting through beach berm en route to the sea
© Martin Haslett

A berm is not a permanent landform; the next violent storm could reshape, reposition or even remove it. Successive storms can create berms in complicated shapes, especially on sandy beaches which can be remoulded more easily than pebbles.

Looking over towards the stream, it is also interesting to see how it has to cut its way through the berm on its way to the sea. A lake forms at some states of the tide as the water in the river is held back.

Directions 8
Go down to the lower part of the beach.

9. Every pebble tells a story

Bottom of beach

We've discovered how the pebbles were shaped into a series of berms on the beach but each individual pebble also has a story to tell.

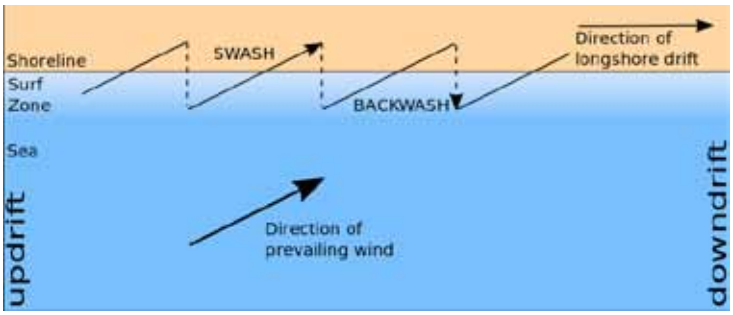
There are three ways in which the pebbles that we are standing on have arrived here.

First, as we have already discovered, rocks were plucked away from their original sites by moving ice sheets and glaciers, often carried long distances and then dumped when the ice melted.

Rounded pebbles on the beach
© Martin Haslett

Second, as we have also seen, fine-grained sediments, gravel and larger pebbles are continually being moved downstream by river water. This increases after heavy rain and in times of flood.

Third, pebbles are moved along the coast by the action of the tides and waves in a process called 'long shore drift' which is quite easy to explain.



Longshore drift
© Yefi, Wikimedia (CCL)

Material is moved up a beach by the wind and waves according to the direction of the prevailing wind, which in Britain is from the south west. It then moves back down the beach in the backwash of the waves, which is at right angles to the shoreline according to the influence of gravity. This process happens again and again, thereby moving material along the coast in a zig-zag pattern.

Have you noticed that the pebbles here on the beach are much smoother than the ones in the river? The continual motion of the waves grinds the pebbles against each other gradually wearing them smooth. Eventually, over thousands of years, these pebbles will be ground right down into sand. The shape, roundness and rock type of a pebble can tell us a lot about where it originated and how it has been transported.

Directions 9
Remain on the beach. Look at the vegetation on the headlands on either side of the cove.

10. A touch of salt

On beach looking at headlands

We have already discovered how the sea has shaped the beach but it also influences the vegetation of the surrounding land. Look at the headlands on either side of the cove. Immediately on the edge of the cliff there are only mosses, lichen, low grasses and bracken. It is not until several tens of metres inland that low bushes start to develop.

Vegetation on the headland beside the cove
© Martin Haslett

This is because the winds coming off the sea bring salty moisture in the air and only a few species are specially adapted to thrive in such a salty environment, buffeted by wind. Other species, which may attain their natural size elsewhere, are stunted in these positions.

Another interesting feature of the coastal landscape that you can see from here is the 'tidal range' which is the vertical difference between average high tide and average low tide. Tides vary depending on the position of the moon and sun and tidal ranges vary around the earth. Generally where water from the deep oceans meets shallow water on the continental margins, the tidal range is much greater. For these reasons, the second highest tidal range in the world is in the Bristol Channel. Here on the Isle of Man in the Irish Sea, the tidal range is only moderately high – around five metres.

Tide mark
© Martin Haslett

The best indicators of tidal range are the different colours of deposit on the rock at the bottom of the headland. The deposits are formed mainly of algae that are adapted to tolerate the constantly changing environment, spending part of their life under water.

The highest level reached by normal tides is the top of the dark deposit that you can see on the headland rocks. The lowest level is usually below the level of the water, unless you have come here at an exceptionally low tide.

Directions 10
Go back to the top of the beach and look back up the valley towards the hills.

11. The first settlers

Top of beach looking up valley

We are now going to return the way we came up Glen Cornaa and along the way discover how people through the centuries have made use of this natural landscape and its resources.

Cashtal yn Ard
© Martin Haslett

At the end of the Ice Ages the water that had been stored as ice melted and flowed into the sea. As a result global sea levels rose by about 125 metres.

It was about 8,000 years ago during this period of sea level rise that this area was cut off from the surrounding land and became an island. The first humans are thought to have come to the Isle of Man by sea sometime before 6,500 BC.

Port Cornaa from Cashtal yn Ard
© Martin Haslett

Up in the hills above this cove there is a series of burial chambers known as Cashtal yn Ard ('Castle of the Height') dating back to the Neolithic Period (2,000 to 3,000 BC).

They are one of the most important ancient sites of the Isle of Man and well worth a visit. You can see a well-preserved chambered tomb in a commanding position with excellent views of the local area as well as across the sea to Cumbria.

Although the stone cairn has been stripped away over the past centuries the largest, well-set stones have survived creating a dramatic burial site.

We know little about the people who built these burial chambers so long ago but we do know they were probably fishermen and made use of this little cove. They may have lived here near the beach where they made and launched their primitive boats.

Directions 11
Retrace your steps along the track to the little cottage (Croit ny Phurt) and over the small bridge in front. Go along the path to the corner where the fence of the cottage garden ends and fence of the field begins.

12. River meadows

Field behind Croit ny Phurt cottage

Earlier we discovered how the stream has deposited sediments in the lower parts of the valley forming this flat valley floor.

Such loose and unconsolidated sediments transported and deposited by water are known as 'alluvium' and generally contain fine particles of silt and clay as well as larger particles of sand and gravel. Alluvium tends to create very fertile soil which is ideal for use as pasture.

Although this is the only part of this walk where we will see a fenced agricultural meadow, about 75 per cent of the land on the Isle of Man is used for agriculture.

Cows grazing on the fertile meadows of Glen Cornaa
© Martin Haslett

In some areas soils are rich but much of the land is rough pasture used for raising livestock, principally sheep and cows, which are the mainstay of the agricultural economy.

Loaghtan sheep
© Martin Haslett

There are nearly 140 thousand sheep on the island – around two sheep for every person! Keep your eyes open for the native Loaghtan sheep with their distinctive long horns, of which there are about 8,000.

In past times, agriculture was the main employer on the Island, but now it accounts for just 2 per cent of the Island's economy. Even so, this is a higher proportion than in the UK. Many farms are still run as family affairs rather than large commercial operations and the small fields help to retain the character of the countryside.

Directions 12
Continue retracing your steps along the footpath and over the larger footbridge. Stop when you reach the large ruined concrete structure on the left. **Please note that this building is on private land and you must only view it from the path.**

13. Thwarted ambitions
Ruined building

This ruined building was once an ammunition factory established by a Scandinavian entrepreneur.

In 1885 a Swedish chemist, Carl Lamm, invented Bellite, a new form of explosive which was impossible to detonate without a specific detonator. This made it much safer than dynamite that could easily explode by impact, misuse or extreme heat.

Lamm wanted to manufacture his new product in the UK but there were very strict regulations in place on the layout of factories for the production of dynamite.

There had to be small numbers of men in each room and the rooms needed to be 20 yards apart. This would have necessitated the expense of multiple boilers so the production of Bellite could never be economic.

Carl Robert Lamm

So Lamm turned his attention to the Isle of Man, a Crown dependency, independent of the UK and with its own laws. No such rules on the production of dynamite applied here so he commenced the construction of his factory.

The walls were made from reinforced concrete – an extremely modern building material in those days. The factory had canals connecting it to the sea (not visible from here on the path) and a small port was planned for the cove.

Thick concrete walls of the Bellite factory

This was to be a major industrial site but the Isle of Man government began to have concerns about safety.

They sought advice from the UK government, who advised that the safety regulations used there should also be applied on the Isle of Man.

Furthermore, local suppliers of dynamite were concerned about competition from Bellite and encouraged landowners to object.

Meanwhile demonstrations of the safety of Bellite were carried out near Douglas, and Carl Lamm and a British expert gave evidence to Tynwald, the Isle of Man Parliament. There were concerns that the UK was trying to stifle a potentially profitable industry for the island but eventually the Isle of Man government passed the legislation.

By this time Carl Lamm and his company had despaired of ever making progress and had abandoned their factory. It was never roofed, and never produced anything!

Over the years Nature has reclaimed the space. Before long the area will have completely returned to woodland, despite all the concrete.

Nature reclaiming the concrete shell of the factory
© Martin Haslett

Directions 13
Continue up the track, through the gate and steeply upwards with the river cliff on your left. Where the track levels off and just before it goes through a gateway, stop beside the earthen bank to the right of the path.

14. Ancient boundaries

Track beside earth embankment

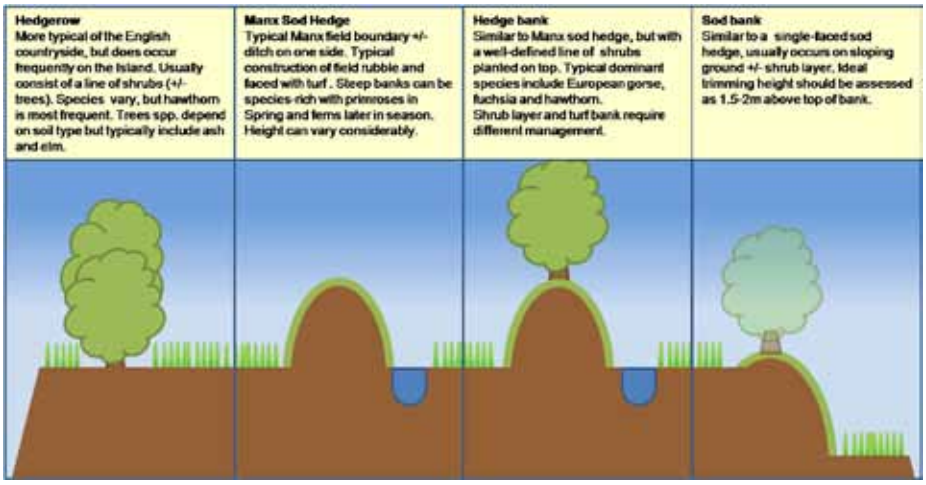
We have stopped here to look at the boundary of the track on the uphill side. What do you think is underneath the bracken, ivy, leaves, moss and other vegetation?

It is possible that this is a 'sod hedge'. Sod banks and sod hedges are a form of ancient boundary found on the Isle of Man but uncommon elsewhere.

'Sod' is another word for 'turf' and refers to grass and the soil beneath it held together by the roots.

Sod hedge
© Martin Haslett

Sods were cut using a 'Manx spade' and then piled up. They were often faced with stone and gorse was commonly planted on the top. They didn't form very secure boundaries but they often were the only form of boundary. Sod banks and sod hedges have played their part in shaping the Manx countryside.



Hedge types in the Isle of Man
Manx Hedge Management Code of Best Practice
Peter McEvoy © Isle of Man Government

The Isle of Man Government's Department of Environment, Food and Agriculture encourages farmers to retain their traditional sod hedges as part of the heritage of the island and as important wildlife corridors.

As with other hedges, farmers are encouraged to keep them free of insecticides and fertilizers and to ensure that they are not disturbed during the bird nesting season.

Directions 14
Go through the gateway and continue along the level track. Stop where the trees open up on the left and there are views across the valley to the plantation of trees on the other side.

15. Timber

View across to plantations on opposite valley side

From here you can see across the valley to the hillside opposite. Can you see that the tall, regularly-spaced trees on the other side of the valley are quite different to the trees on this side?

Plantation
© Martin Haslett

Trees like those on this hillside once covered much of the British Isles. Through the millennia forests were gradually cut down – for fuel, for building materials and to clear land for pasture. Tree cover reduced further as the population rocketed through the Industrial Revolution. But timber was still needed for a variety of uses.

In the 1860s the Crown purchased some land in the Isle of Man for forestry plantations similar to the one across the valley. Fast-growing trees such as conifers are usually planted as they can be harvested after just a few decades of growth.

Plantations
© Ordnance Survey

By the time of the First World War, the declining stocks of timber – needed to line the trenches among other things – were a threat to national security.

In the UK, the Forestry Commission was established in 1919 with the aim of increasing forestry reserves. Privately sponsored planting was also encouraged.

Today the Isle of Man has some significant areas of forest plantations. Look on a map of the island and you will see many of them, particularly on the higher ground.

These days, commercial forestry is balanced by public access to forests for recreation including walking, cycling and horse riding. There is also more attention paid to the visual impact of plantations on the landscape as well as their impact on wildlife.

Directions 15
Continue along the track for about 20 metres until you reach a section of high stone wall on the right which is clearly visible and not covered by vegetation.

16. Rock of ages

Track beside dry stone wall

We have already seen a 'sod hedge', a traditional form of boundary and here is another – a dry stone wall.

Dry stone walls serve to mark the boundary between fields and keep livestock under control.

They are found across the British Isles but the building style varies according to the locally-available rock and its properties.

Thus the dry stone walls of the Pennines, the Cotswolds and the Highlands are all very different.

Dry stone wall
© Martin Haslett

At the beginning of the walk we found out about the Manx Group of rocks which underlie this island, as well as the 'erratics' dumped by ice. This means that the stones available for building walls are very irregular in shape and size. Some are enormous, others are small. They are much less well-graded than you would commonly find in other areas but the wall is still two stones thick.

Dry stone wall
© Martin Haslett

It may look as though the stones here are randomly placed, particularly in contrast to walls found in other regions which have clear horizontal layers, but there is a method for building and dry stone walling was a skilled occupation.

Walls like this are difficult to build but when complete they can last for hundreds of years without maintenance as there is no mortar to deteriorate.

Directions 16
Continue straight along the track through three gateways by the garage labelled 'Dayll Mooar'. Look for a new building on the left of the track which is used as a stables. Stop above the concrete driveway to the building looking down the steep field. Try to spot some water ponds at the bottom of the valley among the trees.

17. Millions of eggs

View down to fish hatchery

At the bottom of the valley is a series of water tanks which contain millions of fish eggs. This is not a fish farm that raises fish for sale but rather a fish hatchery that produces fish eggs.

The hatchery has been owned by the Department of Agriculture, Fisheries and Forestry since 1972 and used to rear high-quality rainbow trout for stocking to Isle of Man reservoirs for recreational angling.

In 2010 the Manx Government leased this hatchery and one at Glen Wyllin on the western side of the island to the American company, Troutlodge.

Cornaa fish hatchery

They continue to produce stock for the island's reservoirs but also export rainbow trout eggs. These two facilities produce nearly 70 million eggs a year which are distributed throughout Europe, Central Asia, Africa, and the Middle East.

Rainbow trout

There are several attractions of having this business here on the Isle of Man. First, the isolated nature of the island and its pure spring water are contributing factors in the Isle of Man being one of just two disease-free zones in the world according to the World Organisation for Animal Health (OIE). This means that the eggs are high quality and meet the stringent export certification criteria.

Second, the Isle of Man's special trading privileges with the European Union means that this American company can trade across Europe without paying import duties.

Directions 17

Continue along the level track, past the entrance to Meadowcroft and then follow it steadily upwards. Where the gravel track becomes surfaced, turn left down the rough track that we came up earlier. Follow the track down past the garage and round the corner. Stop on the track by the back wall of the house (Cornaa Mill), look over the low wall to see the waterwheel below.

18. Water power

Back of Cornaa Mill

We followed the stream down the valley earlier in the walk and saw it tumbling down this short and fairly steep valley. It's no surprise, therefore, that this was an ideal spot for a waterwheel used to power a mill.

Cornaa Mill
© Martin Haslett

Every parish had at least one mill for producing flour which was used to make bread. There are records of a mill on this site as early as 1511 and it operated until 1956. The building is now used as a house but retains its wheel (unlike many other converted mills) and you can see it over the low wall at the side of the house.

There is another mill, now derelict, a little up the road from here. This was probably used for thrashing flax which used to be an important crop in the Isle of Man. The process separated the fibres and it could then be used to make linen.

The great wheel at Laxey mine
© Martin Haslett

The use of water as a means of power continued much later in the Isle of Man than it did in other parts of Britain – in fact, well into the twentieth century – because there were no sources of coal on the island. Although coal could have been imported it was not economical to transport it by ship.

Just a few miles south from here is the largest working water wheel in the world, the Laxey Wheel, which was used to pump water from the lead mines. It was built as late as 1854, by which time coal and steam power had long-surpassed water power in most parts of the British Isles.

Directions 18
Continue down to the bottom of the track. Go straight across the lane, through the gateway and across the bridge. After the bridge where the main path bears round to the right signposted 'Public Footpath Cordle Veg', take the three steps up to the left. Follow the path alongside the fence as it weaves gradually upwards through the woodland with the river on your left. After about 200 metres stop on a footbridge over the gorge.

19. Landscape conservation

Footbridge halfway up Ballaglass Glen

This is Ballaglass Glen, one of the Manx National Glens. There are 18 National Glens which are owned by the Manx Government and maintained by the Forestry Division of the Department of Environment, Food and Agriculture.

The National Glens are all small – Ballaglass Glen here is only 16 acres – but they are an important part of the landscape of the island.

They are kept in a semi-natural state and characterised by beautiful waterfalls, deep rock pools and lush vegetation.

Ballaglass Glen
© Martin Haslett

They are often used by people seeking peace and tranquillity, as well as walkers, and their natural beauty makes them popular places for artists and photographers.

Ballaglass Glen
© Martin Haslett

The government's approach to landscape and nature conservation lies somewhere between the UK's National Parks and Country Parks. National Parks are designated by the government but largely consist of private land and the countryside and character of the landscape is protected through the regulations of the planning system. Country Parks are usually owned and run by local authorities. Landscape conservation is usually not the main goal; instead they are places for the public to enjoy green spaces and usually have recreational facilities and marked trails.

The beauty of the natural landscape is a priceless resource but also has economic value in terms of attracting visitors and tourists. Thus the Isle of Man Government has chosen an approach that combines conservation and protection of a natural landscape with public access and recreation.

Directions 19
Cross the bridge and continue to follow the path up the glen now with the river on your right. At the top of the glen, take the steps up to the left. Stop at the top when you reach the railway tracks at Ballaglass Glen station.

20. A special railway

Ballaglass Glen station

The Manx Electric Railway runs 17 miles along the east coast of the island between Douglas and Ramsey. This narrow gauge railway, opened in the 1890s was one of the first railways in the world to be powered by overhead electric wires.

The Manx Electric Railway once owned Ballaglass Glen. This station at the Glen was, no doubt, intended to encourage use of the railway and increase visitors to the Glen.

Manx Electric Railway poster promoting Ballaglass Glen as the artists' paradise
© Martin Haslett

Top: Tramcar leaving Ballaglass Glen station
Bottom: Cornaa station
© Martin Haslett

By the 1950s the railway was suffering financial difficulties. The railway and Ballaglass Glen were sold to the Manx Government. Today the railway is thriving once more and much of the original Victorian rolling stock is still in use.

As well as being a means of transport for local people it is one of three special historic railways on the island that attract enthusiasts and tourists. This legacy means that many of the island's main tourist sights are accessible by public transport.

Directions 20
Go back down the steps into the glen. At the bottom, turn left over the bridge then follow the path back down the glen this time with the river on your right. Stop when you reach a ruined white painted building.

21. Mineral mining

Old mine buildings, Ballaglass Glen

At the beginning of the walk we discovered that during the geological history of the Isle of Man mineral-rich material from deep within the earth moved towards the surface. As a result the island has deposits of lead, zinc, copper and iron.

These have been extracted by humans since prehistoric times. We certainly know that copper seams were worked at Bradda Head in the south west of the island in the Bronze Age. You can see prehistoric mining tools found on the site at the Manx Museum in Douglas.

Old mine workings in the Upper Cornaa valley
© Jon Wornham, Geograph (CCL)

The peak period of mining was between about 1850 and 1890. Some Manx mines were very lucrative during their heyday producing 20 per cent of the zinc and 5 per cent of the lead mined in the whole of the British Isles. Other mines were small scale and less successful. In fact, the island is dotted with small mine workings including some on the headland above Port Cornaa where we were earlier.

Ruined mine building
© Martin Haslett

This derelict building was the office of the Great Mona Mining Company. Mining of lead and zinc ore began here in 1854. After several tons had been extracted the work ceased. Operations restarted in 1866 and reached a depth of 50 fathoms (91 metres). At the back of the building you can see the walls of the wheel casing – the wheel was used to drain the mine. However, the mineral deposit was only a few inches thick and was difficult to extract so work was abandoned. Ballaglass Glen would have been quite different today if the mine here had been successful!

The last attempts at mining were at Laxey in the 1930s. Today Laxey Mine and Laxey Wheel still make a contribution to the national economy but now as a popular tourist attraction.

Directions 21
With your back to the entrance door of the ruined building, go up the path straight ahead for about 20 metres. At the top, turn right with a field to the left and the woodland to the right. Follow this path through the upper side of the glen until you reach the car park.

22. The Way of the Gull
Ballaglass Glen car park

We have now come to the end of our walk and hope that you have enjoyed exploring the beautiful valley of Glen Cornaa and Ballaglass Glen.

Port Cornaa overlooked by North Barrule
© Chris Gunns, Geograph (CCL)

We have seen how the physical landscape has been changed by dramatic natural forces including the movement of the earth's plates, ice sheets, river water, storms, waves and tides. A common theme in each case was the twin actions of erosion and deposition.

While many landscape features such as glacial valleys and plunge pools have formed over a long period of time others can change more rapidly, such as the erosion of a river bank after heavy rainfall or the shifting of a beach berm. The physical environment is continually changing. Hopefully what you have found out on this walk will enable you to recognise similar processes and landforms elsewhere.

We have also seen how humans have recognised the potential of this landscape from prehistoric times to the present day. Early settlers launched boats from the cove and caught fish while Bronze Age people mined the minerals within the rocks to make tools and objects. The fast-flowing stream water could be harnessed to power a mill while the valley bottom with its rich alluvial soil was an ideal meadow pasture.

We have also seen less successful attempts to mine for lead and zinc and the thwarted attempts to establish an explosives factory. More recently the hillsides have been used for commercial forestry while the fresh springs in the valley bottom have fed an international fish hatchery.

Raad ny Foillan sign
© Martin Haslett

We have also seen that the beauty of the natural landscape, as well as heritage features such as the electric railway, are now significant tourist attractions.

Most of our route followed Raad ny Foillan, or 'Way of the Gull', the long-distance path around the coast of the Isle of Man. In many ways this captures the two themes of our walk – the natural processes that have created this unique island in the middle of the Irish Sea and the ways in which the physical landscape can become an economic and social resource for humans.

Walk extension to Cashtal yn Ard

Cashtal yn Ard ('The Castle of the Heights'), perched on a hill above Glen Cornaa is well worth a visit. It is about a mile from the Ballaglass Glen car park.

Directions

Please note that this route is mainly on a road. It is narrow and without pavements; although it is not usually busy, do take care and listen for traffic.

From Ballaglass Glen car park, walk downhill. Pass Cornaa Mill on the left and follow the lane over the bridge and then uphill past some cottages.

Continue along the lane still going uphill. As the land flattens, there is a cottage with a low roof on the left. At this point, where the lane bends to the left, look for a footpath sign to the right. Follow this footpath uphill for about 200 metres until you reach Cashtal yn Ard.

The monument dates back to around 2000 BC. It was originally a megalithic chambered cairn which was built as a landmark and could have been used as a communal burial place for Neolithic chieftans and their families.

It has a fairly simple design consisting of five main chambers and a large entrance area.

The structure would have originally been covered by a large earthwork and have measured 120 feet in length by 45 feet wide.

Cashtal yn Ard
© Andy Stephenson, Geograph (CCL)

Cashtal yn Ard
© Martin Haslett

As such it the largest neolithic 'long barrow' on the Isle of Man and one of the largest in the British Isles.

Although the stone cairn has been stripped away over the past centuries the largest, well-set stones have survived creating a dramatic burial site.

It is a very peaceful, tranquil and unspoilt location with panoramic views (on a clear day) across the coastal parish of Maughold and across the Irish Sea to Cumbria.

Further information

Visit Isle of Man
www.visitisleofman.com

Isle of Man Public Transport
www.gov.im/publictransport

Manx Electric Railway
manxelectricrailway.co.uk

Manx Museum
www.manxnationalheritage.im/attractions/manx-museum

Manx Geological Survey
www.manxgeology.com

National Glens
www.gov.im/categories/leisure-and-entertainment/walking/national-glens

Cashtal yn Ard
www.manxnationalheritage.im/explore-the-island/places-to-visit/ancient-monuments

Laxey Wheel
www.manxnationalheritage.im/attractions/laxey-wheel

Laxey Mines Research Group
www.manxmines.com

Credits

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