

The Countryside Code

Respect other people

- Consider the local community and other people enjoying the outdoors.
- Leave gates and property as you find them and follow paths unless wider access is available.

Protect the natural environment

- Leave no trace of your visit and take your litter home.
- Keep dogs under effective control.

Enjoy the outdoors

- Plan ahead and be prepared.
- Follow advice and local signs.



Follow our fossil waymarker that will lead you around the route?

Mae'r taflen yma ar gael yn y Gymraeg. This leaflet is available in Welsh.

Getting there

By car Take junction 24 off the M4 and head north on the A449. After several miles take the junction for Usk and the A472. Continue on this road into Usk until you reach the bridge crossing the river. Immediately after the bridge take the left turn. You will pass Usk rugby ground on your right and then reach Llanbadoc Church on your left. Immediately after the church take the left down to Llanbadoc Island.

By bus: You have options here of either the No. 60 bus from Newport to Monmouth or the No. 63 bus running from Cwmbran to Chepstow – both stop in the centre of Usk just along from Llanbadoc.

Supported by

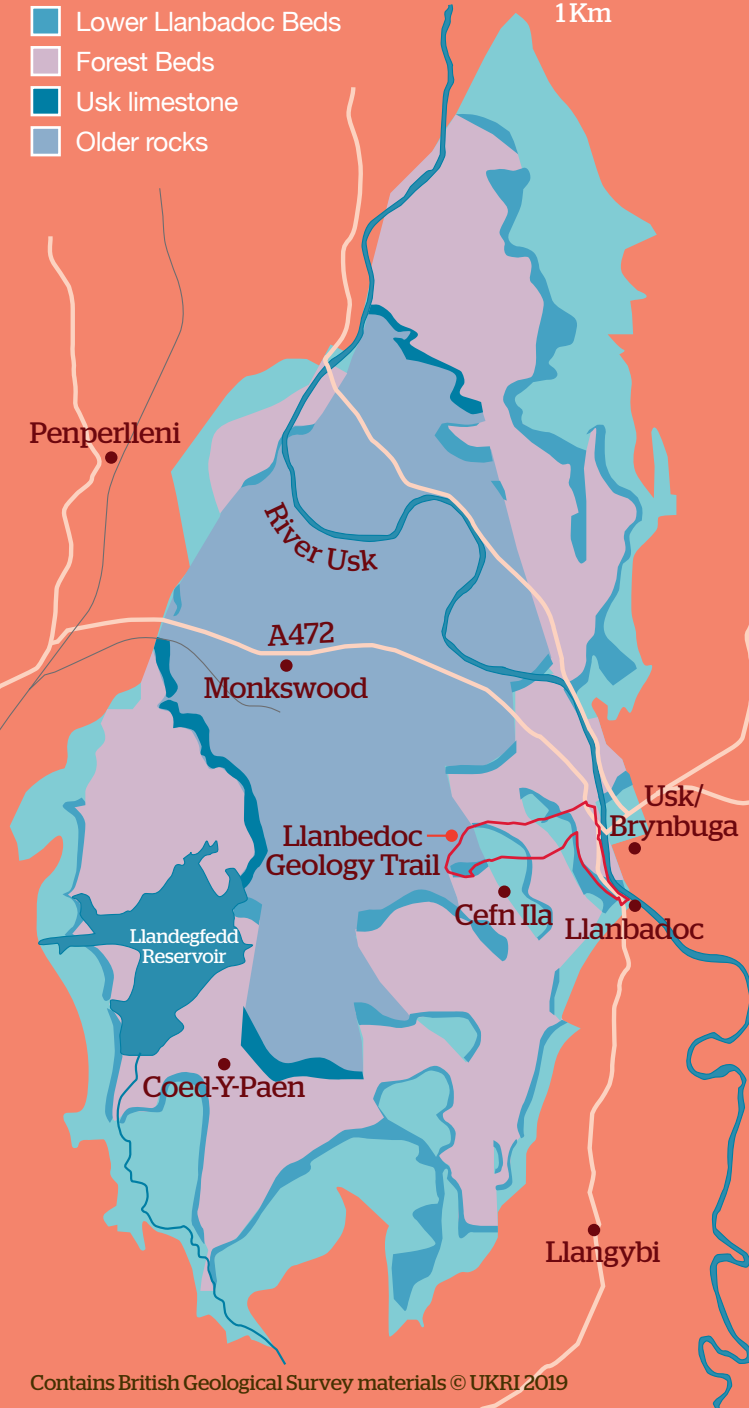
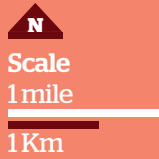


www.ramblers.org.uk/wales

The Ramblers' Association is a registered charity (England & Wales No. 1093577, Scotland No. SC039799)

Geological map

- Old Red Sanstone
- Upper Llanbadoc and Llangibby Beds
- Lower Llanbadoc Beds
- Forest Beds
- Usk limestone
- Older rocks



Contains British Geological Survey materials © UKRI 2019

The Usk Inlier



- These red muds and sands were laid down by rivers on land.
- Lime can dissolve from shelly fossils to form hard limestone. This forms in shallower water. Close to land sands form tough sandstones.
- These soft mudstones come from mud laid in deeper, quieter water and fossils are better preserved.

Over 130 different species of fossils have been found in the Usk Inlier. They are at least 150 million years older than dinosaur fossils!

430 million years ago the rocks you can see here were being formed in a warm sea. **How?**

Because the continents move around the globe on floating plates. Our plate, called Avalonia, was then south of the equator (about the latitude of Brisbane, Australia today) and was rushing northwards (at 2 centimetres a year) to collide with another plate called Laurentia. Rivers brought sands and muds into the sea for millions of years, burying early plants and animals which became fossils. As the continents collided, the sea filled in as the land rose and became desert. The layers of old

rocks underneath only pop up here because 300 Million years ago there was another collision with a continent to our South. The rocks were folded and pushed up into a dome. It was then worn down and cut by faults (where rocks slide past each other) when the Atlantic Ocean was opening 200 million years ago. This dome of old rocks is called **The Usk Inlier**, an area of old Silurian rocks surrounded by younger Old Red Sandstone desert rocks. On the map you will see we are on its South Eastern edge. The blue bands are the tougher rocks forming higher ground.

The cliff at Llanbadoc is made of tough limestone. It has been quarried since Roman times.



Llanbadoc Geology Trail

Suitable for all ages

Our Trail starts in...

Llanbadoc geology really owes a great debt to a man who was born in a house close by, Alfred Russell Wallace. We hope this trail gives you some idea of the geology of the Earth under your feet, and how geologists are like detectives who put together the evidence and clues to build a picture of the history of the whole planet.

Darwin noticed that small differences between species allowed some to survive better than others in different conditions. Wallace noticed that species varied even if the conditions were the same if they were separated from each other. So if a new barrier developed then the same species would evolve differently in the now separate areas. Geologists look at fossils to see how continents were connected in the past.



He became a famous naturalist and co-proposer (with Darwin) of the theory of Natural Selection, the mechanism of evolution.

Llanbadoc Geology Trail

Start:
Car parking at Llanbadoc Island (SO 37709 00017)
Map required:
OS Explorer 152

This route description leads you from the car park at Llanbadoc Island, but you can also pick up the trail from Maryport car park in Usk, and the Cefn Ila Woodland Trust car park. The trail is all on public rights of way or permissive paths so please follow the countryside code. The terrain under foot can be slippery in places so suitable footwear is required. There are also high quarry faces with possible unstable vegetation and rock, please be careful and take care where you walk.



E Do not go near the rock face but looking from a distance you can see a band of lumpier rock about a metre from the bottom. This is a more concentrated limestone band where the limestone has formed hard nodules. There are lots of loose fragments to look at. They are slightly younger than the rocks at A.

12 Return to the stile you've just crossed and head down hill to walk to your left parallel with the stream.

Cross 2 stiles ignoring footbridges on your right. Continue along to cross a footbridge into a field where you'll walk by a hedge and stream on your right.

Continue along to find a path near houses that leads you down to the main road. Cross this road carefully and turn right before taking the steps up and over to the playing fields. Walk along the river passing a children's playground.

Continue on this path where you will eventually be able to see the old red sandstone on the bridge ahead of you as you rise to meet the main road. At this point you can head into Usk for refreshments.

The route continues across the road – be careful to cross here – where you'll follow the road on your way back to Llanbadoc Island.

13 On your way back to the car park, once you've passed the rugby ground, look for the last house under the cliffs. This was Alfred Wallace's house.

There is a bench dedicated to him on the riverbank, and as you follow the road and bear left before the Church you will see a memorial stone. Walk past this memorial to reach the car park where you started. Wallace was fascinated by the natural world and we hope that our journey through the local geology of Llanbadoc is a fitting tribute!

1 Turn left out of the car park and walk up to the main road. Turn right to walk by the Church and cross the road by the Church Tower when it is safe to do so. Take the footpath signposted up the bank.

A Look at the rock face on your right, these are the Silurian rocks. These beds are mudstones with some lime cement. All the rocks of the dome contain fossils. The range of fossils found in these beds, called a fauna allowed geologists to work out the rock's age. Avalonia and Laurentia had different fossil faunas until they locked together. The beds were tipped up when the dome formed.

2 We are now walking on the rim of the inlier. Continue up the footpath passing a gate where the path turns sharply up and cross the next stile. We are now on a level set of long fields. Keep to the right side of the fields. Through the trees you can see the town of Usk on the riverbank far below.

3 Walk straight ahead through the fields crossing 2 more stiles. As you walk up to the second stile The Skirrid pops into view (old red sandstone), and a little further on The Sugar Loaf is visible which looks like a volcano.

4 For a shorter walk you can now carry on straight ahead. You will pass a stile heading down the cliff, but this is very steep so ignore this and continue until you come to the next stile. Cross this stile and you will pass an old limestone quarry on your right. Do not go near the faces. You then pick up the path down to the main road.



5 For the Main longer walk, having crossed the stile walk ahead about halfway along the field, then bear left to walk past the electricity post to continue up to a stile.

6 Cross the next stile but ignore the farmers track on the left and the path running by the hedge on your right. You need to walk up the middle of this field to pass through a gate into another field.



7 The path now goes straight ahead through this field to reach a stile. This field is used to grow crops seasonally, so depending on the time of year you may need to follow a path around the boundary of the field.

8 Having crossed the stile walk down the field to bear left on a track away from the farm buildings to reach another track. Cross this track to find entrance into the Cefn Ila Woodland Trust site. Head right here to find a rock face of mudstones.

B The layers here are less steeply dipping mudstones. They should be older than the rocks at Point A but the fossils show the rocks are younger. Their position has been changed by movement on faults.

9 Having looked at the mudstones head back down the track and take the path on your right heading down into the trees. Follow this past a small pond and up the other side. You arrive at a wide path, go left and then right. Walk down this track to reach the tubular bells and on your right is Usk Limestone. Having explored here continue ahead on the track to follow this up around to the right to reach a kissing of these and into the opposite field. Walk across to the treeline ignoring a stile up to your right. Our stile is hidden in the trees.

C This is Usk Limestone. The rocks are the remains of a coral reef full of fossil sea lily (crinoid) pieces. This is the oldest rock we have seen so far. Take a look.

10 Head into the woodland with the path taking you down and round to the right. You will reach a short path on your left to a stile into another field. Walk across the top of this field but take the time to stop halfway along to see The Sugar Loaf and Llanbawo Windmill.

D You are now looking north up the Usk Valley. The centre of the Usk Inlier is just to the left of the prominent line of trees. The Usk glacier flowed down the valley between the Bloreng and the Sugar loaf, and when it melted left a mound of sand and gravel (a moraine) forming a ridge across the valley.

11 Continue across the top of the field to reach a gate and stile. Turn right up the track and then left before a gate to walk along the fence until you reach a stile near an enormous beech tree. Cross this stile and walk to your right where you will find a quarry in the lower Llanbadoc beds.

