

What lies below the water beyond the sea wall?

IMAGES FROM TOP-LEFT TO BOTTOM-RIGHT: NATIONAL MUSEUM WALES, BLACK ROCK LAVE NET FISHERMEN'S ASSOCIATION (2 & 4); CHRIS HARRIS; ALEXANDER MALEEV/NATIONAL GEOGRAPHIC CREATIVE



SECTION ONE
**The Gwent Levels
7,000 years ago**

Discover the clues that tell past stories of people's lives on the Gwent Levels. **pp. 46 – 49**



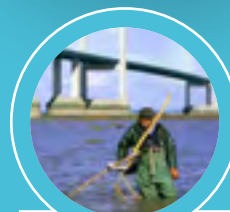
SECTION ONE
**Make a timeline of the
Gwent Levels' history**

What big changes and events have happened since the last ice age? **pp. 46 – 49**



SECTION TWO
What is treasure?

Explore treasure and important non-treasure finds around the Gwent Levels, including dinosaurs! **p. 51**

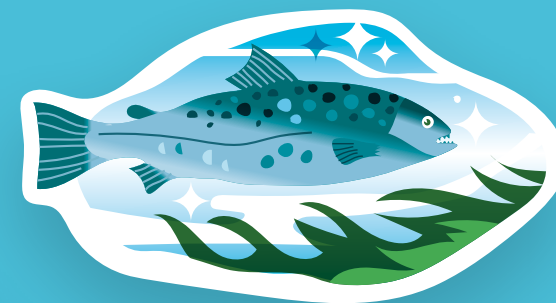


SECTION THREE AND FOUR
Lave fishing and putchers

Traditional ways of catching fish. **pp. 52 – 53**



THE BIG PICTURE
**Mesolithic life on the
Gwent Levels p. 54**



THESE FOOTPRINTS WERE TRODDEN BY A MESOLITHIC HUNTER GATHERER, SEARCHING FOR FOOD

Forgotten footprints

For more information on the area's archaeology visit livinglevels.org.uk/archaeology

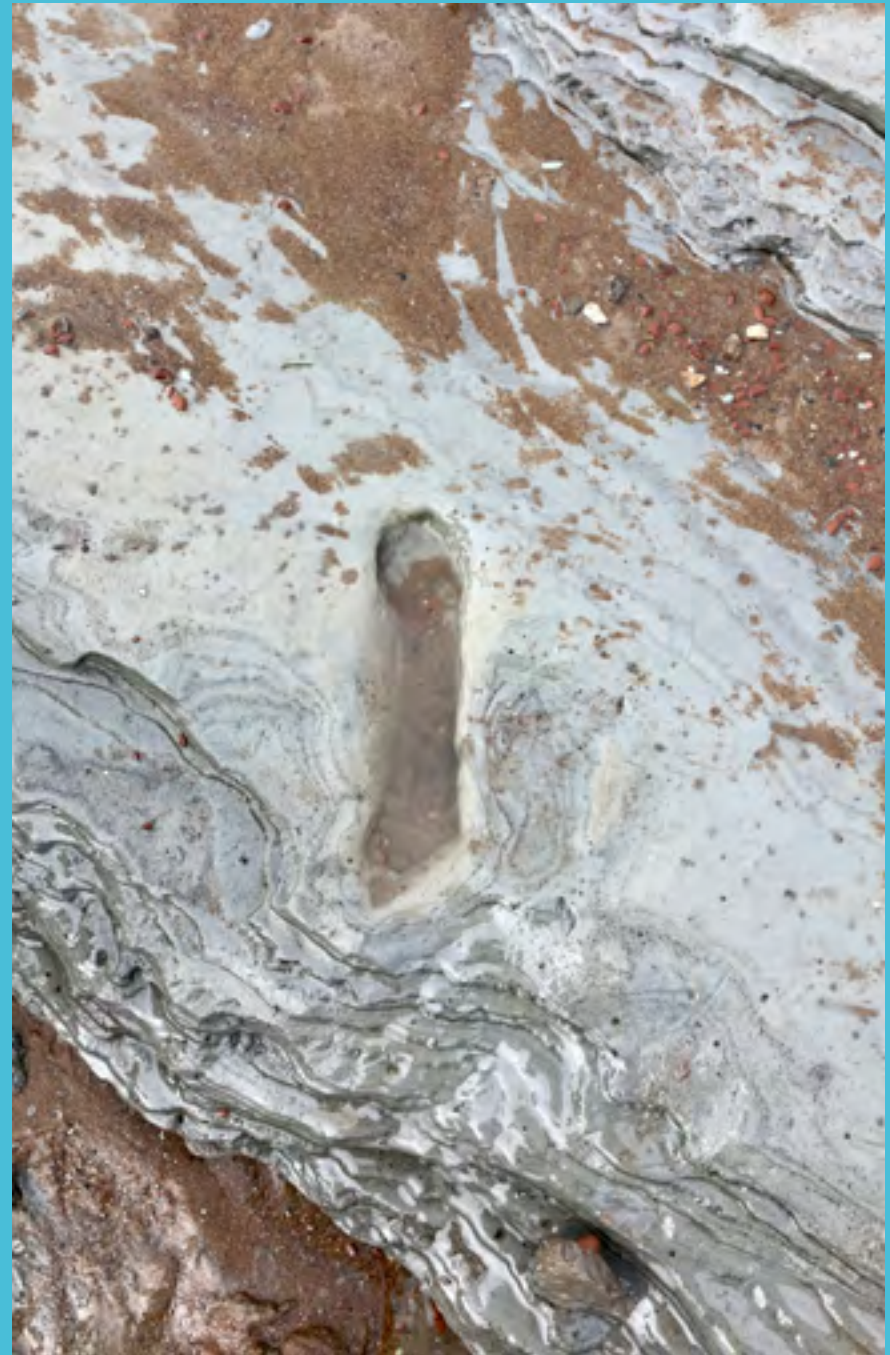


The Gwent Levels 7,000 years ago

7,000 years ago, children played on land on the Gwent Levels that today is covered by the sea. Sea levels were lower back then and roaming groups of people set up temporary homes on the Gwent Levels during the summer when wet areas dried out. Footprints in the mud are still being found at low tide at Goldcliff by people researching how people lived on the Gwent Levels. Their footprints dried and hardened, were later covered in sandy mud, and then preserved for thousands of years. Small families were setting up home for a short period, fishing, hunting and gathering plants and summer fruits. They were hunting wild boar, red deer and aurochs.

Looking inland these people would have seen oak woodland beyond the peaty, boggy wet grasslands. On the mud where children played, and adults hunted during the summer months, reed deer and aurochs – the original wild cow which is now extinct – roamed. They provided food for these people. Wading birds such as avocets that we see today on the Severn Estuary would have been walking through the mud, while cranes, tall, heron-like birds, which went extinct, were common. Today, they have been reintroduced into Somerset and are beginning to use the Gwent Levels once again.

Mesolithic footprint found in the mud at Goldcliff
CHRIS HARRIS



Crane footprint preserved in the mud at Goldcliff
CHRIS HARRIS



Martin Bell

Martin has been studying the footprints at Goldcliff for 28 years. He goes out each year with students to photograph, measure and uncover more footprints. Martin's work has revealed the stories we now know about the wildlife and people who were living here thousands of years ago.

ACTIVITY

Stories told by footprints

Give students a material that they can press different shapes into to make patterns. This could be sand, mud, plasticine or air-dry clay. Students could recreate some of the scenes from the Mesolithic times by making different sized footprints or animal marks in the mud.



- There could be places in the mud that are more disturbed, showing where people gathered or showing pathways that were often taken to find food.
- Alternatively, students could recreate marks that we might leave on our environment, possibly as locally as the school playing field.
- They could then think about what people in the future would be able to tell from those marks.

WORKING CREATIVELY

How have child and adult footprints been preserved?

The estuary has preserved footprints of both animals and people. 7,650–6,750 years ago the sea levels were lower and during the summer people were walking on mud which dried and baked in the sunshine. When the sea came in on higher tides during the winter, the footprints were covered in a layer of sandy mud. This happened year on year, until thousands of years later the footprints were preserved in the mud, almost fossilised. For a lot of this time the mud itself was covered in a protective layer of saltmarsh vegetation, plants that grow in the salty water and bind the mud together. Today, the saltmarsh has virtually gone and

changing tides are removing layers of ancient mud, revealing the footprints. There is little time to study the footprints and as each tide comes in and out those footprints disappear.

What do we know?

Human footprints have a particular shape; they show a pattern related to walking on two feet. The footprints from this time tell us that people were walking in a certain direction, along a pathway over the mud. They were perhaps heading out fishing or returning from a hunting trip. There are many child-size footprints too.

Alongside the human footprints, those of deer, aurochs, cranes, herons and wading birds, such as oystercatchers, have also been found, telling us what animals were feeding on the saltmarsh.

Are we able to visit the footprints with our class?

The footprints are only visible during very low tides, and sometimes for a short period. It is a slippery, muddy area and challenging for a class. At the moment there are not any arranged visits for schools due to the risks.



SECTION ONE

Timeline of events on the Gwent Levels



11,500 years ago – end of the Ice Age

- Severn Estuary didn't exist; the area where it is now was a huge gorge.
- Britain was connected to mainland Europe by an area called Doggerland, now covered by the North Sea and the English Channel.
- After the Ice Age, soil and land began to appear as a flat plain; large oak trees grew, and people started to live here.

10,000 years ago

Rising sea levels as ice in Canada melts, leading to the development of an estuary.

8,100 years ago

- A forest of oak trees grew by the Gwent Levels.
- Sea levels rose by over 5m.
- Reed swamp formed peat bog and then saltmarsh; salty seawater covered the forest floor and the trees died. For a while the skeletons of the trees projected through the saltmarsh.
- Goldcliff – a low-lying hill – became an island and was 6km from dry land as sea levels rose. Today, raised ground at Hill Farm is all that is left.

7,750 years ago

The estuary covered the current Gwent Levels and went inland by a further 6km to Magar and Llanwern.

7,650–6,750 years ago

- People lived in seasonal camps on the edge of the island.
- Children and adults walked on the mud – their footprints were covered in thin layers of mud that built up over hundreds of years, preserving them.



LIVING LEVELS LANDSCAPE PARTNERSHIP/DEXTRA VISUAL





Goldcliff Stone

This stone, found in the mud at Goldcliff Pill, dates back to the 2nd or 3rd century (1,900–1,800 years ago). Letters from the inscription found on it have been used on the front entrance of the Millennium Centre in Cardiff Bay. A legionary inscription by a person in command is found on the stone; it mentions a number of men and describes 33.5 paces. It names a centurion called Statorius Maximus from the First Cohort of the legion from Caerleon and commemorates work undertaken at Goldcliff by his century of men.

6,200 years ago

The rate of sea level rise slowed, peat built up and an oak woodland grew once again on the Gwent Levels. Then the trees died, and a great raised bog developed.

4,000 years ago

- Sea levels rose.
- The raised bog became swampy reedbeds followed by saltmarsh and estuarine silts.
- Magor Marsh, a peaty bog with reedbed and water-loving trees, gives an idea of how the area would have looked around 8,000 years ago and again about 6,000 years ago.
- The reedbeds at Newport Wetlands and Magor Marsh give an idea of what the landscape would have been like in the reed swamp phases.

2,000 years ago

The Romans drained the saltmarsh at Goldcliff by making banks and ditches. The Goldcliff Stone (displayed at the National Roman Legion Museum, Caerleon) records the Roman work. There were Roman farms at Nash (sewage works, Goldcliff Hill Farm and Llandeenny).

1,500 years ago

At the end of the Roman period saltmarsh again formed, covering the Roman-ditched landscape.

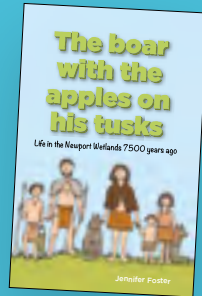
800 years ago

The Levels were again drained and seabanks built in part by monks at Goldcliff Priory (on the site of Hill farm), which was established in AD 1113 and dissolved in 1450.

Books to read

The Boar with Apples in his Tusks

Jennifer Foster
LIVING LEVELS LANDSCAPE PARTNERSHIP



It is a story about life on the Gwent Levels 7,500 years ago when people were starting to live there. To download a copy visit the webpage for this resource.

Goram & Ghyston: The Bristol Giants

Oliver Rigby
SELF-PUBLISHED



This is a story about the first Bristol Giants and how the landscape of the beautiful city of Bristol came to be formed.

Once upon a time there were two brothers called Goram and Ghyston. They were no ordinary brothers – they were GIANTS. One day, the brothers met and fell in love with a beautiful Princess called Avona who set them a task to decide who would win her hand in marriage. It was a task that only one of them could win!

Available on the Bristol Giants website: bristolgiants.co.uk/product/goram-ghyston-the-bristol-giants/

ACTIVITY

Stories told by footprints

(cont.)



As a follow-on to the 'stories told by footprints' activity (p. 47), students could add objects from the clues list (left) to give more ideas of what the landscape they have created would have been like. Alternatively, they could think about which objects people in the future would find from our lives.

WORKING CREATIVELY

Clues that help tell the timeline story

- Where the forests once grew, seeds, pollen and wooden objects have been found in the mud.
- Burnt hazelnuts and wild boar tusks are evidence of people stopping for short periods and moving on.
- Carved stones called microliths and scrapers used for butchering red deer, wild boar and occasionally roe deer.
- Bones of fish, including eels, mullet, salmon, sticklebacks, bib, goby and bass.
- Clues from the Gwent Levels tell us about life even further back, from Palaeolithic flints from 30,000 years ago, to the bones of extinct animals including wolves and bison.

Places to visit

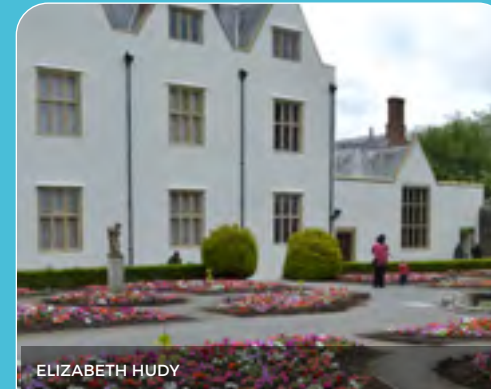


OTTER (WIKI COMMONS)

National Roman Legion Museum, Caerleon

Contact for information on current learning opportunities.

museum.wales/roman/learning

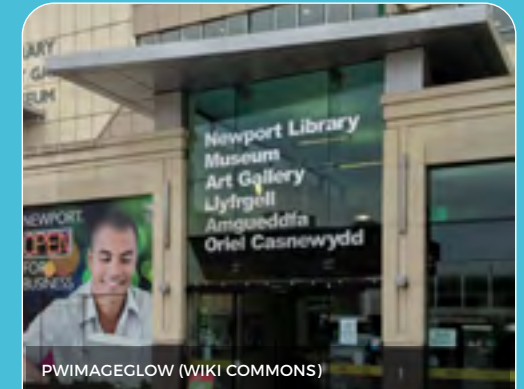


ELIZABETH HUDY

St Fagans – open-air museum

Discover how people lived and worked in Wales in the past by visiting original re-erected historical buildings. New galleries with contemporary learning ideas in mind have recently opened.

museum.wales/stfagans/learning



PWIMAGEGLOW (WIKI COMMONS)

Newport Museum

A range of galleries and learning opportunities focusing on maritime and urban heritage (and some agriculture).

newport.gov.uk/heritage

SECTION TWO

What is treasure?



Dracoraptor
BOB NICHOLLS

ACTIVITY

Dinosaur reporter



Write a magazine feature or produce a presentation about Dracoraptor for other children to learn about Wales' most recently discovered dinosaur.

- Include ideas on how the dinosaur may have hunted and lived, and what Wales would have looked like back then.
- Research how the dinosaur remains were found, what other fossils it was found with and what they tell us about how it probably died and became fossilised.
- Write about why the dinosaur has been called *Dracoraptor hanigani*, its scientific Latin name. Find out what each word means?
- Mention that dinosaur poo has been found on the beach at Goldcliff. Even today, dinosaur and marine reptile poo, known as coprolites, can be found on local beaches by the Gwent Levels. What do you need to be looking for?

nhm.ac.uk/discover/what-is-a-coprolite

APPLICATION OF KNOWLEDGE

People are often finding things from our past around the Gwent Levels and Severn Estuary. These finds all have their own story to tell and may be thousands of years old. People who find them may regard them as treasure.

What is real treasure?

Finding old items from the past is very exciting; local museums tell stories of our past using items that people have found. However, not all findings are treasure.

A treasure needs to be made of at least 10% precious metal such as gold or silver, unless it is a coin, and to be more than 300 years old. A single coin isn't enough to be treasure; there have to be at least two coins (or ten if they have less than 10% precious metals). Prehistoric items are also considered treasure if they have some precious metals, or if two or more are found made of any metal.

If someone finds what they believe is treasure they can report it to a local museum, regional archaeological trust or finds coordinator. It will then be checked by different independent experts, and if deemed to be treasure there may be a reward split between the finder and the landowner; it may also be bought by a museum.



Finding treasure beneath the Severn Estuary

Treasure and interesting items are often found by people working in the Severn Estuary. Fishing with nets and dredging material, such as sand, are the most common ways in which people find ancient objects beneath the sea. They are then reported and checked. Objects may include items from ship and plane wrecks, tools, bones, bottles, wood and ancient fish baskets.

Explore this map and see what treasure has been found near you in Wales, museum.wales/portable-antiquities-scheme-in-wales/map

More information on reporting objects and the types of things found: wessexarch.co.uk/sites/default/files/field_file/Protocol_handouts_english.pdf

For examples of treasure found in recent times see pages 68 (Rogiet treasure) and 60 (aurochs horn).

Myths and legends – Steepholm and Flatholm

Out in the Severn Estuary there are two islands. Legend says that there were two giant brothers, Goram and Vincent (or Ghyston), who constructed the Avon Gorge in Bristol.

One day, Goram threw himself into the Bristol Channel, turning to stone and leaving his head and shoulders above the water to make the islands of Steepholm and Flatholm.

Interesting finds – though non-treasure – discovered during lave fishing activities.
CHRIS HARRIS

SECTION THREE

Prehistoric life – dinosaurs

210–200 million years ago the Gwent Levels and the Vale of Glamorgan were part of a shallow, tropical sea – similar to today's Caribbean or Mediterranean. In the sea lived reptiles, large ichthyosaurs and plesiosaurs, feeding on fish, and ammonites with their spiral-shaped shells.

Islands dotted the landscape and on these lived an early, dog-size dinosaur that evolved into some the largest plant-eating dinosaurs in Europe. It was called Thecodontosaurus, the socket-toothed reptile, named due to the shape of its teeth. It has been found either side of the Severn Estuary, in South Wales and South Gloucestershire. It was first discovered in 1834 near Bristol Zoo and was only the fourth dinosaur to be discovered in the world.

New Welsh dinosaur

Another small dinosaur, Dracoraptor (dragon thief), was discovered in South Wales in 2014. This predatory dinosaur also lived 200 million years ago and was related to Tyrannosaurus which lived 130 million years later! Dracoraptor had many sharp, serrated teeth helping it to catch and feed on lizards, insects and other small animals.

Can we see the bones of these dinosaurs?

Yes. Fossilised bones of Dracoraptor are part of a special display in the Main Hall of the National Museum of Wales, Cardiff. The Evolution of Wales gallery has a spectacular display of dinosaur fossils, including dinosaur footprints, and a jaw bone from a larger carnivorous dinosaur, alongside fossils of other Jurassic and Triassic animals.

Lave fishing: discovering objects under the sea

For more information on lave fishing visit livinglevels.org.uk/lave-net-fishing

Here is a profile about one of the lave fisherman, Martin Morgan <https://www.livinglevels.org.uk/life-on-the-levels-posts/2019/8/8/martin-morgan>

A traditional way of fishing in the Severn Estuary, known as lave fishing, is where people take a large net fixed to a frame to catch fish, such as salmon, on a rising tide. While doing this a whole variety of things have been found including ancient fish baskets.

On the Gwent Levels, a small group of people, the Lave Net Fishermen, still keep the tradition of lave fishing going. They are based near Black Rock and come from the neighbouring villages of Sudbrook, Portskewett and Caldicot. They are the last lave net fishermen in Wales.

ACTIVITY

Lave fishing in action

It is easier to understand what lave fishing is by seeing it in action. On their website there are a number of videos and blogs revealing more about how lave fishing works blackrocklavenets.co.uk

To visit, contact the team at lavenets4wales@msn.com

Perhaps ask them where the local names for fishing areas such as Monkey Tump, Lighthouse Vear and The Grandstand come from.



EXPLORING THE ENVIRONMENT



Lave fishing close to the Prince of Wales Bridge
BLACK ROCK LAVE NET FISHERMEN'S ASSOCIATION



Open lave net

How lave fishing works

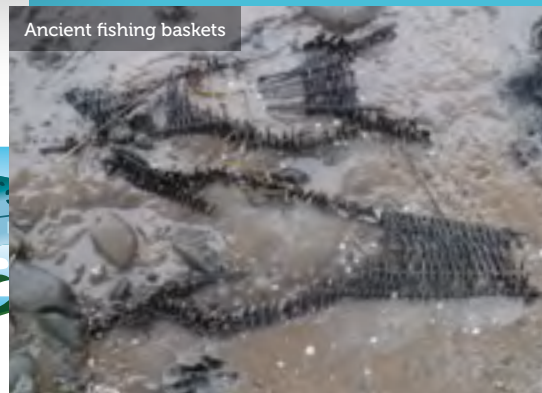
The lave net is still made in the traditional way and knitted by some of the fishermen using a strip of wood and a needle. The net has a Y-shaped structure consisting of two arms called rimes which are made from locally cut willow (withy), and this acts as a frame for the loosely hung net. The handle is called the rock staff and is made from ash; the rimes are hinged at the rock staff and are kept in position while fishing with a wooden spreader called the headboard.

The fishermen fish in two ways, either standing in a low water channel waiting for a fish to hit the net or by watching the water for the movement of a fish, then moving to intercept the fish before it reaches deep water.

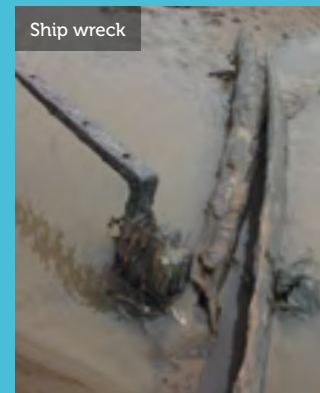
The Severn Estuary is a great place for finding out about the Gwent Levels' past. In the soft, sinking estuarine mud there are lots of different clues that reveal how people in the past used the area. And the building of the two Severn bridges has helped us find out even more, as changing water patterns (currents) allow more to be found. When the Lave Net Fishermen go fishing for salmon, they sometimes find some fascinating objects in the mud which often have prehistoric stories to tell.

The three most amazing objects they have found are:

1. Ancient fishing baskets.
2. A wooden boat in the sands west of the lave net fishing grounds.
3. A Roman vase west of the fishing grounds.



Ancient fishing baskets



Ship wreck

Salmon Putchers

A salmon putcher is a woven basket that tapers to a small hole at its base. Stacked in columns of four or five on top of each other along a framework of wooden struts, the putchers were used to catch salmon. As the salmon swam with the incoming tide, some would swim into the baskets head first and, unable to turn around and swim out, they would be trapped. When the tide had lowered they were then collected, killed and sold for food.

Salmon putching was a common way of catching salmon along the Severn Estuary over thousands of years, including along the Gwent Levels. Today, the framework used for putchers still stands in the mud at low tide at Goldcliff.

The baskets were originally made from willow branches grown on the Gwent Levels. In the 1940s metal wire was used instead, although the willow baskets still continued to be used by some people.



Salmon putcher
BLACK ROCK
LAVE NET
FISHERMEN'S
ASSOCIATION

ACTIVITY

Fishing in the Severn



- How was the willow grown to produce the branches and 'withy' for the putchers? (pollarding)
- Willow had many uses – find out what they were. (fencing, stabilising banks...)
- Why did catching salmon in this way stop?
- Where do salmon from the supermarkets come from today?
- Why is salmon good for you to eat?

CURIOS QUESTIONS TO EXPLORE

ACTIVITY

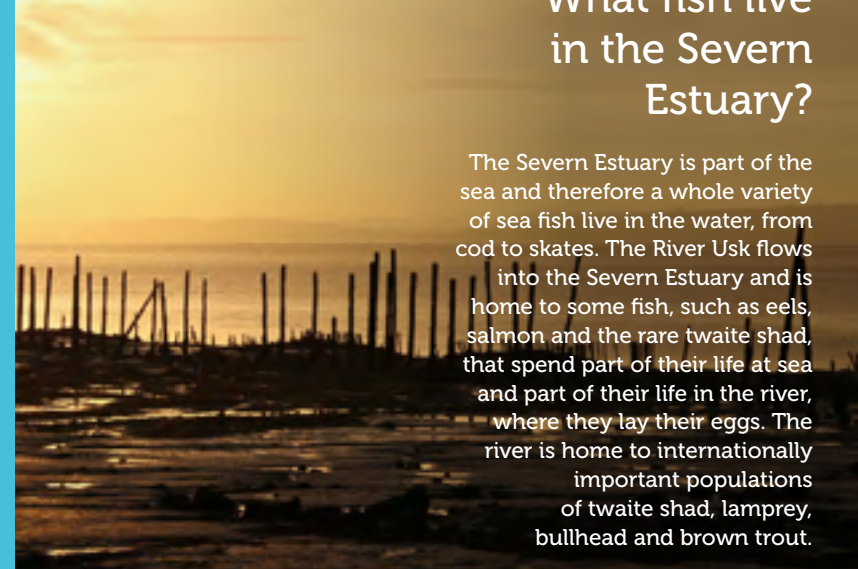
Life cycle of a fish



Find out more about the life cycles of the eel, salmon and twaite shad, and where they spend their lives at sea when they migrate away from the River Usk. Write a profile about each species. Discover why these fish are declining and what people are doing to help them in the Severn Estuary and Welsh rivers.

INTERPRETING DATA

Putcher rank at Goldcliff
CHRIS HARRIS



What fish live in the Severn Estuary?

The Severn Estuary is part of the sea and therefore a whole variety of sea fish live in the water, from cod to skates. The River Usk flows into the Severn Estuary and is home to some fish, such as eels, salmon and the rare twaite shad, that spend part of their life at sea and part of their life in the river, where they lay their eggs. The river is home to internationally important populations of twaite shad, lamprey, bullhead and brown trout.

THE BIG PICTURE

Mesolithic life on the Gwent Levels

This illustration is an artist's impression of life at Goldcliff 7,500 years ago. This is the period when footprints were made in the mud; today they are found by research archaeologists, preserved after all this time.

Use the image to discuss what life might have been like back then, how children may have played and what is happening in the picture.



ALEXANDER MALEEV/NATIONAL GEOGRAPHIC CREATIVE