



Canal & River
explorers

Waterways Today
Topic Pack



www.canalriverexplorers.org.uk



Canal &
River Trust

Working in partnership with:



The Inland
Waterways
Association

How can I use waterways?

Chapter 3

Waterways aren't all about work! There is a lot to do in your time off too. Canals and rivers are great places to keep fit, whether you're on or off the water, and there is plenty to keep you busy.

Before looking at the next few pages, see if you can come up with a list of things you could do at the canal. Here are a few to start you off...



Dragon Boat Racing

See the Chinese New Year in on the River Trent.

Shiverpool Ghost Hunt

A different sort of walk.

Pirate Club

A boat club for children in London.

Have a Bugworld Experience

Stories about creepy crawlies.

Find out about your local canal and the events that are going on at www.canalriverexplorers.org.uk



Children take part in WOW activities at the Etruria Festival



Face painting is great fun at lots of events



Going aboard a narrowboat can be really special.

Look out for special events where you can get creative, listen to stories or step aboard a working boat

Boating

Have you ever been on a boat on a canal or river? It is a gentle journey that lets you enjoy the world around you at a slower pace than travelling by car or train.

You might even have the opportunity to have a go at steering the boat yourself! A boat does not respond as quickly as a car or bike and so you might find yourself zigzagging down the canal if it's your first time.

Strange
but True



Although cars drive on the left side of the road, boats go on the right side of the canal. This can be confusing for the person steering if they are used to driving a car.

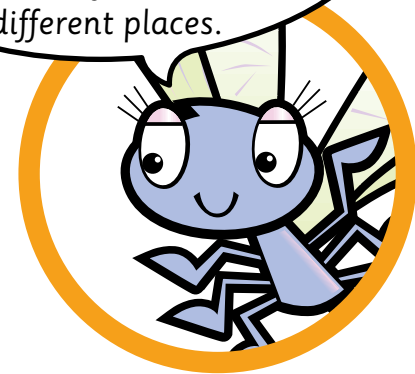


There are lots of different types of boats – narrowboats, barges, cruisers – and some are still pulled by horses

What is it like on a boat?

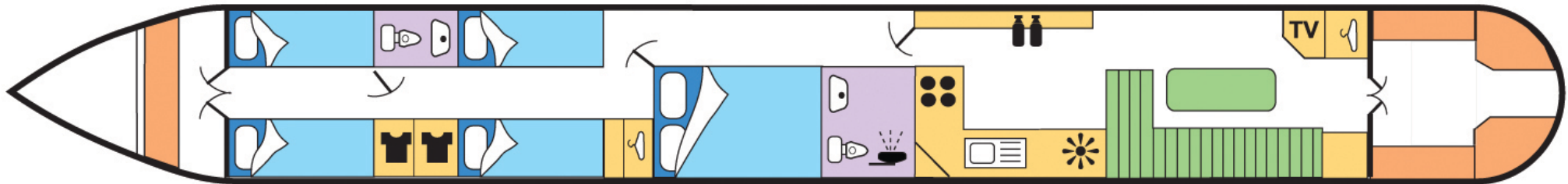
Today, boats are very different from the working boats used a hundred years ago. Living spaces for people are much bigger as no space is needed to carry cargo. There are bathrooms, kitchens and televisions. It is just like being in a floating house.

Have a look at our plan of a holiday hire boat – you could make a plan of your own with the features in different places.



- What do you think it would be like to go on a boat?
- What furniture do you think there is on boats?

This narrowboat has beds for 6 people and is 19 metres long and 2 metres wide.



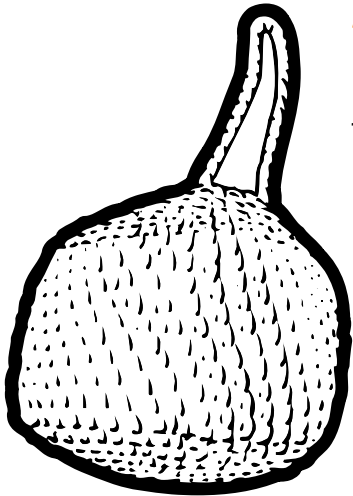
Facilities


	Sink		Larder		Shower
	Washbasin		Toilet		Table
	Cooker		Wardrobe		Berths/Settee
	Fridge		Drawers		Settee

Layout supplied courtesy of Anglo Welsh www.anglowelsh.co.uk

What is it like on a boat?

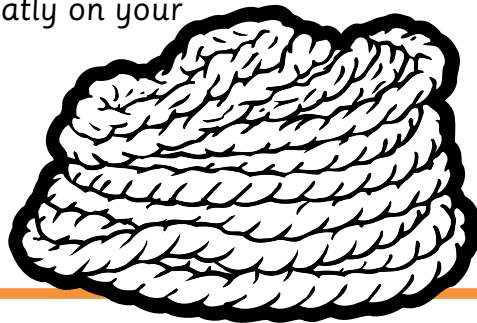
Here are some useful things you might need if you went on a boat:



 Does your boat have fenders?

These stop your boat from getting damaged if you bump into the edge of the canal or something else hard.

Rope is very important for tying up your boat. Make sure you leave it neatly on your boat so you don't trip over it.



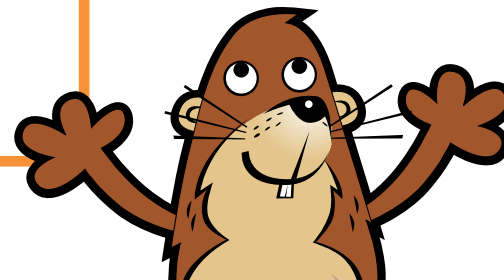
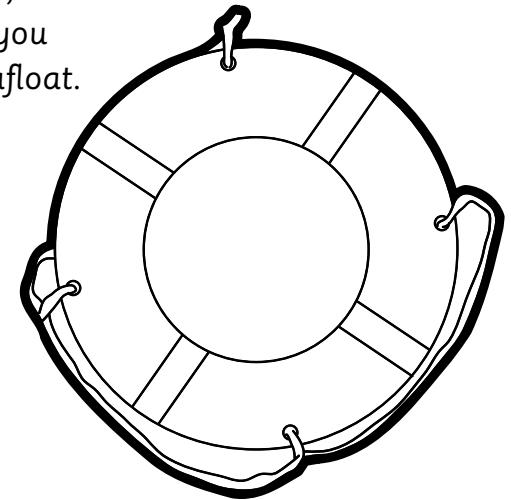
For a children's guide to cruising:

Go Inland! – A young person's guide to Inland Waterways by Claudia Myatt for the Royal Yachting Association. www.rya.org.uk/shop



You will find mooring rings alongside the canal so you can tie up your boat safely when you stop.

Life rings and life jackets are really important if you fall in the water, which can often be very cold and give you a shock. They help to keep you afloat.



Angling

Angling is catching fish with a baited hook at the end of a rod and line. It is a very popular sport on canals, rivers and reservoirs.

What do I need to go angling?

Licence

If you are over 12 years old you will need a fishing rod licence from the Environment Agency. www.environment-agency.gov.uk/homeandleisure/recreation/fishing

Rod and fishing line

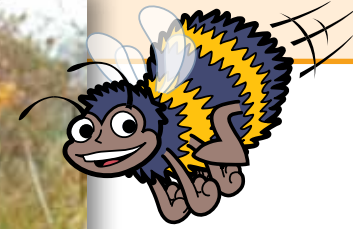
You're going to need a rod of course and there are loads to choose from. The best thing to do is to speak to someone at an angling club or go into a fishing shop to ask for advice.

Hook

The hook, usually with bait, is fastened to the end of the line and is under the water, below the float. Be careful with hooks, as they're sharp!

Bait

This could be maggots, redworm, sweetcorn, luncheon meat, tinned cat food or crushed hemp seed – things that fish like to eat.



Look out for taster events in your area where you can try out angling.



Here are an angler's trays of bait, kept in separate boxes so that they are easy to use

Float

The float, attached to the line, sits on the top of the water. When a fish 'bites' it will pull the float under the water, letting you know it's time to reel in the fish.

Reel

The line attached to the rod needs a reel. This is so that the line can be wound back in.

Where can I find out more?

You can find out more about angling from the Professional Anglers Association (PAA). They are trained to pass on their skills and tell you the best places to fish. Contact them at www.paauk.com

Walking

Canal & River Trust look after more than 1,500 miles of walking routes – that’s a lot of walking! Walking is good for your health and is free for all to enjoy.

Many people find water relaxing and there are plenty of things to see along the canal. Take your friends, family or even your dog to enjoy a stroll along the towpath. There are lots of planned routes, guided walks (when someone leads the walk) or you could try one of the WOW Trails at www.canalriverexplorers.org.uk

See www.canalrivertrust.org.uk for walk ideas and guided events.

5 Top Tips for going walking

1. Make sure you wear sturdy footwear. Leave the high heels at home!
2. Take someone with you to enjoy the walk – or the dog (if you have one).
3. Why not take a camera with you to capture pictures of the things you see?
4. Tell someone where you are going, especially if you’re not taking an adult.
5. Make sure you know what to do in an emergency.

Try our water safety challenge at www.canalriverexplorers.org.uk



Walking through cities and towns can be just as much fun as walking in the countryside



The best thing about walking along the canal is that it is flat!

Cycling

With miles of flat towpaths, waterways are popular places to go cycling.

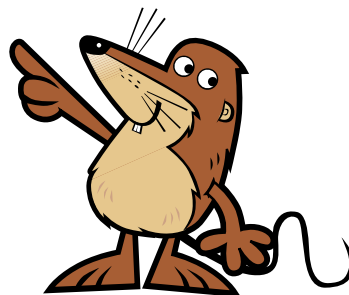
To cycle on Canal & River Trust towpaths you will need to download a free permit from www.canalrivertrust.org.uk except in London where there is a separate towpath code of conduct. Cycling is a great way to keep fit and see the country.

Where can I cycle?

There are many routes available for download from www.sustrans.org.uk The type of surface on the towpath varies from grass to gravel or tarmac, so it is worth doing a bit of research to check the area where you want to cycle has a suitable towpath for your type of bike.

6 Top Tips for going cycling

1. Make sure you slow down for other users.
2. Watch out for low bridges!
3. Use your bell if you need to alert other users, but remember to be polite.
4. Stay safe: wear a helmet and keep away from the edge.
5. Look out for ropes, mooring rings and fishing rods across the towpath.
6. Avoid cycling at night.



Cycling with other people is fun but remember, on a narrow towpath you should ride in single file.



Canoeing

Fascinating Facts

Canoes have been used for thousands of years as a way of getting around. If you fancy seeing the waterways using people power rather than on a motor boat, why not get paddling?

Membership of the British Canoe Union allows you access to the River Thames and most of the Canal & River Trust network. There are lots of canoeing clubs on the waterways; log on to the British Canoe Union website to find out more at www.bcu.org.uk

Canoeing is a great way to explore the waterways and is a good way to exercise. Boats can be hired, if you don't have your own, and they can be easily transported between different waterways. In some places there are even canoe trails and launches.

4 Top Tips for going canoeing

1. Make sure you canoe with someone experienced as water can be dangerous.
2. Do not stay in your canoe when a lock is filling or emptying.
3. Not all tunnels are safe to paddle through. If you are paddling through a tunnel, go in a group and ensure you use a light to make sure other boaters can see you.
4. Wear a life jacket in case you do end up in the water.

Did you know you can get awards for canoeing, such as the Paddle Power awards run by the British Canoe Union?



Canoeing is best done in pairs or groups

Places of interest

Chapter 4



There is so much to see on the thousands of miles of waterways it is hard to pick out specific places. Here are some you might want to visit.



Look at this view of the canal from the air. Big boats and little boats use this canal

Fort Augustus, Caledonian Canal

The Caledonian Canal runs straight through this popular tourist destination. There are locks leading down to Loch Ness, the supposed home of the mysterious Nessie. With several museums and a visitor centre in the area, it is worth a visit.

Neptune's Staircase, Fort William, Caledonian Canal

Neptune's Staircase is the UK's longest staircase lock flight. The enormous lock gates are now operated by hydraulics rather than by gangs of men, as each gate weighs 20 tonnes. There are some spectacular views from the locks of the surrounding landscape including Ben Nevis, the highest mountain in Britain.



Courtesy of Verity Walker, Interpretation.

Little and large – two fishing boats share a descent of Neptune's Staircase



The locks at Bingley are very close together to allow boats to go up and down a steep hill.

Bingley Five Rise Locks, Leeds & Liverpool Canal

A staircase of 5 locks (which is very close to the Bingley Three Rise Locks) is a spectacular feature of the Leeds & Liverpool Canal. At the opening in 1774 a boat took just 28 minutes to pass through the locks, watched by more than 30,000 people who had turned up for the occasion.

Places of interest

Standedge Tunnel, Huddersfield Narrow Canal

It is amazing to think that the tunnel was built without today's modern building and surveying equipment. There is a visitor centre and café as well as boat trips that allow people to see inside the tunnel.



At more than 3 miles, Standedge Tunnel is the longest tunnel in the country



Ellesmere Port Boat Museum

The National Waterways Museum, Ellesmere Port

The Waterways Trust looks after this fascinating museum, which gives an insight into the history of the waterways. There are lots of historic boats to see and buildings to visit. Look out for special events and demonstrations.

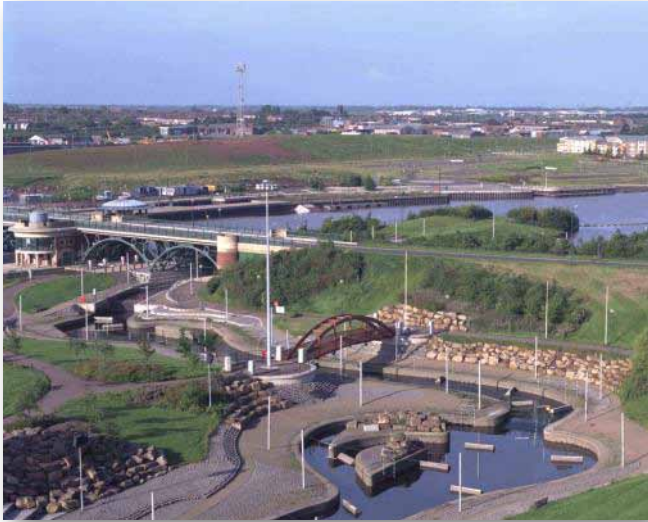
Anderton Boat Lift, Trent & Mersey Canal and the Weaver Navigation

Take a boat trip on the lift, and find out about its construction and the people who worked there in the visitor centre.



This ingenious piece of engineering was used as an alternative to locks to transport boats between the two waterways

Places of interest



You can see the barrage and the canoe slalom in this picture

Tees Barrage

The Tees Barrage, built in 1995, is a barrier that stops the tide from the River Tees estuary coming inland. The barrage made it possible to create an exciting new wetland sports and leisure area for Teeside.

The barrage itself is an impressive structure and includes a fish pass* (with viewing area), navigation lock and canoe slalom.

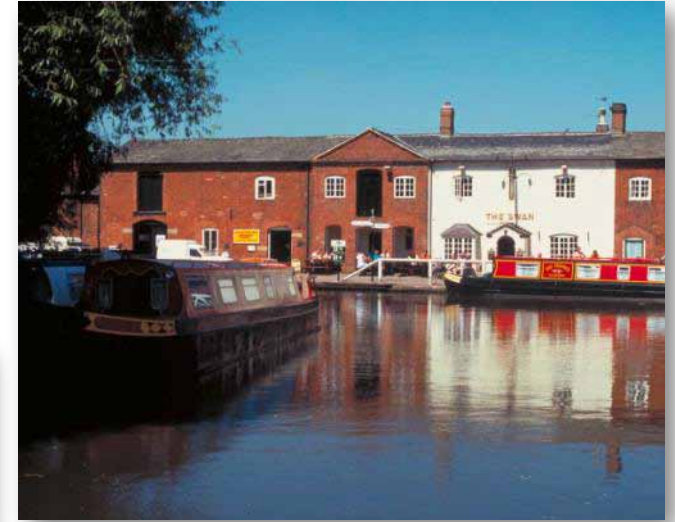
*A fish pass allows the fish to get past obstructions

Pontcysyllte Aqueduct, Llangollen Canal

This amazing structure is the highest and longest aqueduct in Britain and now forms part of the 11-mile stretch of canal that has become a World Heritage Site. A small visitor centre is located near the aqueduct, which can be crossed by foot or boat.



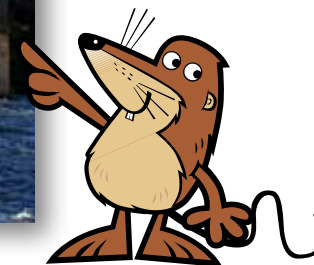
The aqueduct stands 38m above the River Dee.



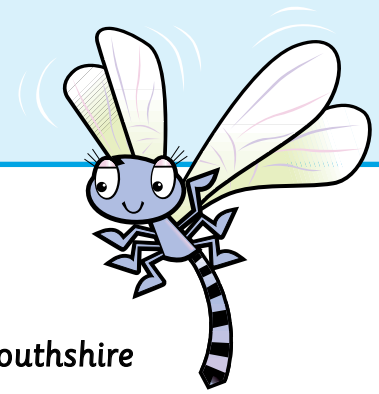
Old warehouses and a pub at the junction where two canals meet

Fradley Junction, Trent & Mersey Canal and Coventry Canal

Fradley Junction, popular with boat spotters, is a busy place where two canals meet. It also boasts a nature reserve with its own bird hide and fishing platforms.



Places of interest



Foxton Locks, Grand Union Canal

This site is particularly interesting as it is the site of an inclined plane – an alternative way of moving boats up and down hills. A café and museum make this a pleasant day out.



At Foxton Locks you will see a flight of 10 locks set in stunning countryside



Lots of boats at Stoke Bruerne

Stoke Bruerne, Grand Union Canal

Stoke Bruerne, home to Blisworth Tunnel and a flight of locks, provides an interesting location for the Canal Museum. The museum tells the stories of the people who worked on the waterways as well as displaying many artefacts from the waterways.

Fourteen Locks, Monmouthshire & Brecon Canal

Fourteen Locks Canal Centre is an interesting location as it is still being worked on. Enthusiasts continue to work towards restoration of the locks here. The visitor centre is a good place for wildlife spotting.



This trip boat is travelling through one of the locks

Places of interest

Gloucester Docks, Gloucester & Sharpness Canal

Gloucester Docks is an exciting place to visit as you can see a wide range of boats, including tall ships, alongside many of the original warehouses. The docks are also home to the Gloucester Waterways Museum.



Old warehouses here are often used for historic films. This picture was taken during the filming of 'Amazing Grace'



The London Canal Museum is right next to the busy Battlebridge Basin on the Regent's Canal

London Canal Museum, Regent's Canal

The London Canal Museum is in a former ice warehouse, which was built for a famous ice cream maker. In the 1820s, huge blocks of ice began to be imported by sea and canal from Norway. They were kept in ice wells and great big blocks of ice were cut for restaurants, hotels and fishmongers.

At the museum you can go inside a narrowboat cabin, learn about the ice trade as well as learning all about London's busy rivers, canals and docks.

Caen Hill and Devizes, Kennet & Avon Canal

Caen Hill is a flight of 29 locks in 3 groups over 2 miles between Rowde and Devizes. The hill is very steep. So that there is enough water for all the locks, there are side ponds at each lock and some of them are great places to watch birds and wildlife or do a quiet bit of fishing.



This man is enjoying taking his boat through Caen Hill Locks

Healthy living

Keeping fit and healthy is something we are all being encouraged to do. By making small changes to our lifestyle, we can often make a big change to our health – but how do waterways play a part?

Healthy walks

The 30 miles of the Erewash Valley Trail is a route where Canal & River Trust has linked up with partners, such as the local council and the health service, to encourage people to stay healthy. The walks run through beautiful countryside, using the Erewash Canal towpath, and are never far from the towns and villages on the borders of Derbyshire and Nottinghamshire.



These people are taking part in one of the regular healthy walks along the canal towpaths in Stoke-on-Trent

Chapter 6

Allotments are small plots of land where people can grow their own food or flowers.



How the new city of London hopper allotments could look

21st-century gardening

Space to grow your own food is limited in London, so British Waterways and the Wildlife Trust at Camley Street Nature Reserve have decided to make an allotment in a boat! The Heritage Lottery Fund is sponsoring local schools and volunteers to use a 20-metre hopper boat as their allotment.

Wildlife

People who love the waterways know what a great place they are to find wildlife. Every year, enthusiasts help The Canal & River Trust by recording creatures they have seen for the Wildlife Survey. Kingfishers, newts, toads and otters are being seen in record numbers on Britain's canals and rivers.

A waterside walk is a good way of seeing wildlife, but if you're lucky enough to travel by boat, you might catch sight of a heron flying just ahead of the boat. Anglers patiently waiting at the water's edge may encounter a water vole, moorhen or coot searching for food. To find out more about helping with the Wildlife Survey, go to www.canalrivertrust.org.uk/wildlifesurvey



These children are looking at very tiny water creatures with a magnifier.



Look out for posters telling you how to enter the Wildlife Survey

Waterway science

A Site of Special Scientific Interest (SSSI) is a place of special interest because of its wildlife, plant life, or geological features. The law protects SSSIs from development, from other damage and from neglect.

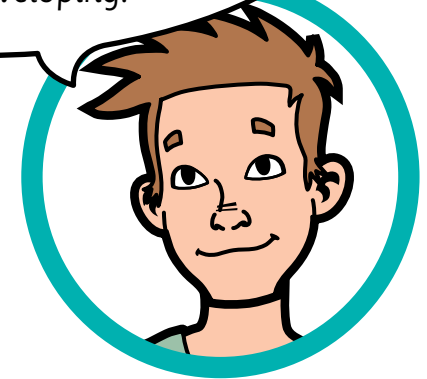
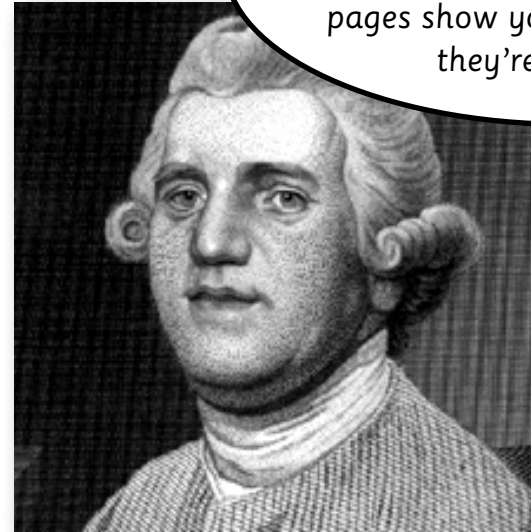
There are more than 50 SSSIs and 1,500 locally designated Wildlife Sites on our waterways. These sites are important because the waterways are 'green corridors' along which wildlife can travel.

Biodiversity is a word used to describe the number of living things within a place. Some waterway sites are important for their biodiversity and we have to look after the many different things living there.



It's amazing how many tiny creatures live on plants at the waterside

Today, waterway engineers are still thinking of ways that canals can help to solve problems. The next few pages show you just a few things they're developing.



Josiah Wedgwood was keen to transport his top quality pottery by canal

Scientific discovery

Canals have been important to scientific discovery for a very long time. A group of wealthy businessmen once met to discuss scientific ideas in Birmingham. Their group was called the Lunar Society. Men like Josiah Wedgwood supported the new idea of building man-made waterways so that they could transport materials and goods.

One of the first things they talked about was canal building, but the society still exists today and debates things from high-speed railways to new techniques in surgery.

Renewable energy

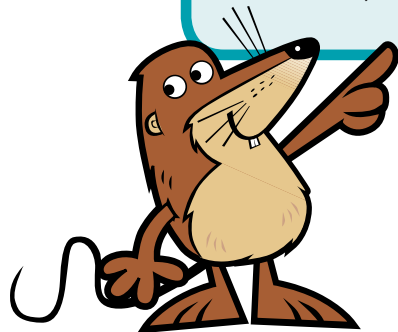
Climate change

Climate change is a change in weather patterns caused by global warming – or the earth heating up.

Global warming is increased through the burning of fossil fuels like coal and oil. This is because burning things changes the atmosphere around the Earth and makes it warm up. The Canal & River Trust is looking at ways to use wind and water for power instead of buying electricity made from fossil fuels.

Wind turbines

Some waterway places may be suitable for generating electricity from windmills. A 2 megawatt turbine generates enough electricity for 1,118 homes.



Is Britain warming up?

In the 1500s during Henry VIII's reign, the River Thames in London used to freeze over every winter and Frost Fairs were held on the ice! Can you imagine this happening now?

Fascinating Facts

In 2008 the government announced plans for up to **10,000 new wind turbines** to be put up across Britain. There are fewer than 2,000 turbines in Britain today, so this is a big increase. **Canal & River Trust hopes to install up to 40 wind turbines**, which will generate a lot of electricity.



Canal & River Trust is checking its land to see whether it could generate electricity with wind turbines.

Renewable energy

Hydro electric power – electricity made from water!

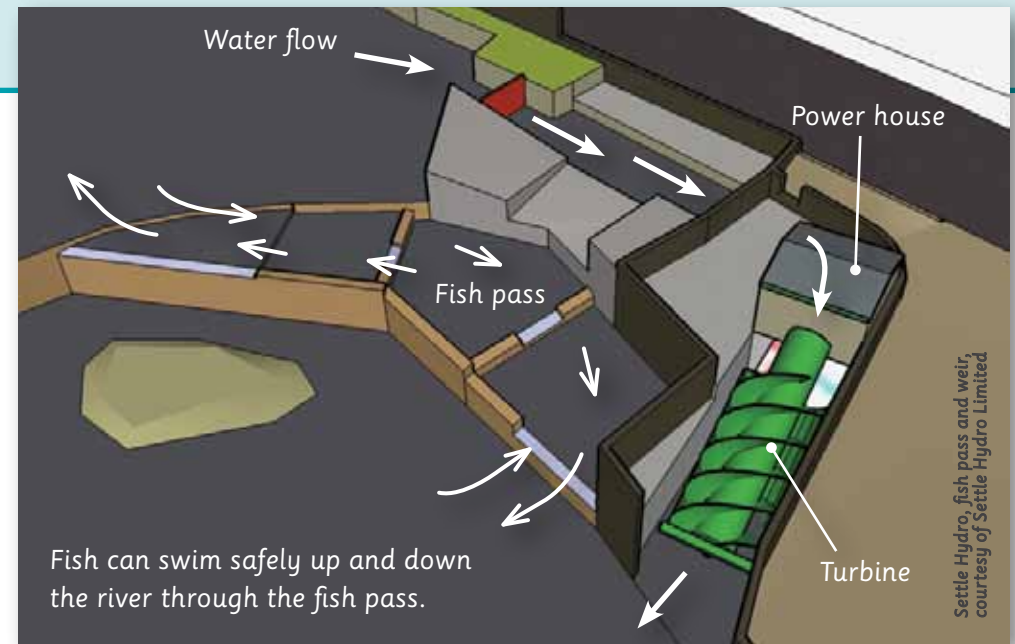
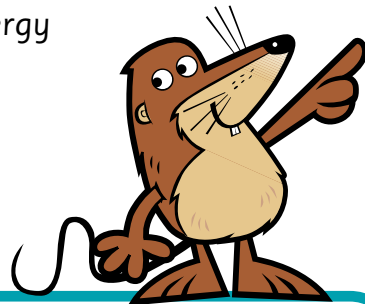
People have used water wheels and the wind to power machinery for hundreds of years. Today, we are concerned about climate change and the amount of resources we are using and are again looking at using renewable energy such as water and wind power.

Canal & River Trust has been considering how it could create energy from its waterways and land in a renewable way.

Here are 2 ways of making hydro electric power from rivers:

An **Archimedean Screw** makes electricity when water flowing downstream makes the screw turn. The energy is then converted into electrical energy by a generator on top of the screw.

A **Kaplan Turbine** has a propeller below the water level. Flowing water drives the propeller and this energy is converted into electricity in the power house above the turbine.



This diagram shows how a Archimedean Screw works



This picture shows the fish pass at low water. Fish can swim up or down these 'steps', which are underwater when the river is flowing fast

Fascinating Facts

A modern kaplan turbine generator can convert more than **90% of the energy** available in the water to electricity.

Maintenance

Every winter, Canal & River Trust carries out maintenance work on its 2,000 miles of canals and rivers.

Some work, such as repairing culverts (drainage channels) and repointing bridges and locks (repairing the mortar in between bricks), is done at regular intervals. Weeds have to be cleared and paths repaired.

Traditional materials are used so that structures look right. This means that if stonework is being repaired, the engineers have to find the right kind of stone so it is a good match. Sometimes big jobs need to be done, such as cleaning ironwork on bridges and repainting it, or making and fitting brand new lock gates. This is a very skilled job.



Engineers make sure that stonework matches original materials when doing repairs



This dredger is removing mud from the bottom of the canal and putting it into a boat, called a mud hopper, to be taken away

Dredging

All year round, rain washes mud into the waterways. This builds up on the bottom of the canal and makes it difficult for boats to move around. The mud is removed by digging it out, which is called dredging.

You can see dredging boats out on the waterways. They have a large digger on the boat and often have four legs, which can be put onto the canal bed so that the boat stays still while the digger is working.

The mud is dug out from the middle of the canal and put into empty boats. Later it has to be scooped back out and put somewhere to drain all the water off.



Maintenance

Erosion control

A flowing river, cattle coming down to the water to drink or boats passing up and down the waterways all create waves against the banks.

One of the ways of stopping this from happening is to ask boaters to slow down so that their boats don't create waves behind them.

Engineers have developed lots of ways of making the banks stronger. In towns or where there are lots of boats, the sides of canals are often made of brick, but in the countryside a softer edge is better for wildlife.



The edge of the canal can be washed away by the flow of water



This stretch of waterway in Kidderminster has been lined with steel piles to make the banks strong

Piling

One way of protecting canal banks is to knock in steel or concrete piles at the edge of the waterway. This method has been used for many years.

To put piles in, you need a pile driver. This is a really big hammer, usually mounted on a boat. The hammer drives the piles right into the canal bed at the sides of the waterway. More than half the pile has to be hammered down into the mud, so it's a very noisy thing to do!



Waterside plants growing at the canal edge act as a buffer and stop moving water from wearing the bank away

Bank protection

In some places, it is important to make sure that plants are growing at the water's edge. Reeds are good places for water birds to nest and water voles can still get to their burrows in the banks.

One way of protecting the bank, while still allowing wildlife to use the waterway is to use rolls of special coir matting, a kind of mat made out of coconut fibres. The rolls are fixed at the sides of the canal and water plants, such as reeds or iris, are planted behind them.