



This lesson is part of a series of 8 lesson plans based on the “Explore the Nore” poster and River Nore Heritage Audit. It is aimed at 4th, 5th & 6th classes in primary schools. The project is an action of the Kilkenny Heritage Plan, and is funded by the Heritage Office of Kilkenny County Council and the Heritage Council. For further information contact dearbhal.ledwidge@kilkennycoco.ie. Tel: 056-7794925. www.kilkennycoco.ie/eng/Services/Heritage/

■ Learning objectives

SCIENCE

Strand: Living things; Strand unit: Plant and animal life
Strand: Environmental awareness and care;
Strand unit: Environmental awareness

GEOGRAPHY

Strand: Natural environment; Strand unit: The local natural environment;
Strand unit: Land, rivers and seas of Ireland

Strand: Environmental awareness and care;
Strand unit: Environmental awareness;
Strand unit: Caring for the environment

Content objectives

- explore the environmental repercussions of human actions on physical, natural and human environments
- understand the interdependence of a wide variety of living things and their environments, recognise the importance of conserving habitats and environments, and begin to understand that all life now and in the future depends on the sustainable development of the planet

Skills and concepts to be developed

- questioning
- observing
- investigating and experimenting

■ Learning activities

Salmon life-cycle and biology

Atlantic Salmon (*Salmo salar*) are native to rivers of western Europe and eastern North America and Canada. They have an amazing life-cycle: the young salmon swim out of the freshwater of the river, to the salty sea of the north Atlantic to feed and grow, then return to the river when they are big enough and swim up the river to spawn. They travel thousands of miles and spend up to four years at sea. Every salmon knows its own home river – the salmon that grew up in the Nore come back from the ocean and find their home river again to spawn. It is thought that they do this by smell. Salmon need a healthy river ecosystem to survive, i.e. clean water, natural river banks with trees and swamps, natural river beds with water plants, and lots of tiny creepy-crawlies (invertebrates – animals with no backbone) such as insects, to feed on. The creepy-crawlies live in the natural vegetation and under

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stones.

Why are there less salmon than there used to be?

The number of salmon in our rivers has been declining and there are many reasons for this, e.g. pollution; interference with the natural river bank and the river bed such as cutting trees or putting in walls; and anything that reduces the amount of creepy-crawlies available for the salmon to eat. Salmon are also dying at sea before they can return to their home river and there is major research ongoing to try to find out what is causing this – e.g. it may be partly due to climate change, affecting their feeding grounds in the north Atlantic. It can also be due to too much salmon fishing, especially at sea where they are caught in larger numbers in nets, and interbreeding with farmed salmon which can also spread disease to wild salmon.

Because of the decline in salmon, they are strictly protected under Irish and EU wildlife law.

Salmon fishing on the Nore

The River Nore is the best salmon fishery in south-east Ireland. It is an important salmon angling (fishing with a rod and line) river. It has produced some fine specimen fish in the past. In order to help enough fish to survive to keep the population going, angling can only take place from March to September. The number of fish that one person can catch is restricted and in spring any fish that are caught must be put back.

■ Linkage and Integration

HISTORY

Strand: Story; Strand unit: Myths and legends Salmon of Knowledge

■ Differentiation

● Investigate local water quality on the internet

Go to www.epa.ie – EPA maps – the links for the Envision environmental maps. Zoom in on Kilkenny. In the Table of Contents beside the map, click on Water Bodies – Rivers group – then click the box for rivers. This will turn on the Rivers layer on the map. Zoom in on a river near where you live. Then find out how clean the water is by clicking on Surface Water Quality and turning on the River Water Quality layer. Links to Water and Biodiversity themes in Green Schools programme.

● Investigate local water quality on a field trip

See what creepy-crawlies are living in your river. Put some river water in a white bucket or tray. Using a pond net, scoop out some stones and mud and put them in the container. Use the bug dial (<http://www.ipcc.ie/bicbugdial.pdf>) to help identify what creepy-crawlies you have and find out what kind of river they like to live in (polluted or not). (Note: please observe appropriate health and safety precautions and only access land with permission).

● Get an overview of water quality in Ireland and what causes pollution

Go to <http://www.epa.ie/environmentinfocus/> and click on Water for background information. Use the Environmental indicators dashboard to see 'traffic light' indicators of how Ireland is doing on different aspects of water quality.

■ Resources

Nore Heritage Audit Vol. 1, pages 50-55, 68, 72-73

External references

www.scoilnet.ie – life cycle of salmon, legend of the salmon of knowledge

www.heritageinschools.ie – Kilkenny-water – in Teacher Investigations – downloadable resources.

www.somethingfishy.ie – animated life cycle of salmon, water cycle, what things affect salmon in the environment, e.g. pollution

www.noresuirrivertrust.org – includes videos of salmon jumping and spawning in the Nore.

<http://www.arkive.org/atlantic-salmon/salmo-salar/> – information on salmon in a global context; useful concise information on biology, habitat, threats and conservation. Photos and videos.

www.greenschoolsireland.org Links to “Water” and “Biodiversity” themes in Green Schools programme

Where to see

Salmon may be seen jumping in mid-winter at weirs along the river.

■ Evaluation