



Junior Cycle Geography Lesson Plan

Biodiversity and Wetlands

Curriculum link

Section A: Human habitat – processes and change. Unit A1- Earth's surface, shaping the crust. Section C: Patterns in Economic activity. Unit C1- Primary Economic activity e.g. farming, the Earth as a resource.

Key idea

Understanding the importance of biodiversity within the context of wetlands and the role of wetlands in human activity.

Learning outcomes

Students should be able to:

- Outline the importance of biodiversity within the context of wetlands
- Understand the role of natural processes e.g. The water cycle, rock formation i.e. limestone, Karst, the Burren (revise permeable rock, swallow holes, turloughs, water tables).
- Understand human impact on wetlands both positive and negative.
- Describe recent efforts made to improve the situation and changes needed to ensure long term solutions to conserve wetlands.

ECOEYE CLIPS

Biodiversity in our Wetlands: The clip looks at biodiversity in the context of wetlands. It becomes clear that the conservation of wetlands has a hugely positive role to play in water quality and cleansing, farming practices and flood relief. Wetlands such as bogs and fens are a unique resource and we see the benefits of wetlands for the economy and the work being done to protect them from the impacts of human activity like farming. **Watch the clip and complete the comprehension exercises.**





Comprehension

Look at the video once. Look, listen, concentrate and enjoy. Play the clip again (read through the question sheet and make sure you understand the questions and terms used before you start). Stop, start and rewind as you need to answer the questions below.

1. Some of the most important habitats are found in Irish farms and freshwater wetlands. Which county has the best examples?

2. Name two types of wetlands found in Ireland:

a. _____

b. _____

3. Are these wetlands protected?

4. Most fens are 'imbedded' in farmland. What do you think this means?

5. Describe some of the species found in fens

6. One of the biggest pressures on wetlands is 'over-enrichment by nutrients', where do these nutrients come from?

7. Why do you think farmers should protect wetlands?

8. Name two ways in which fens have been lost in Europe:

a. _____

b. _____

9. Describe the results of the Biochange biodiversity study undertaken by the EPA

10. Why were these results surprising?





Case Study 1: James Howard, Burren farmer (Starts 0.03.30)

Look at the video once. Look, listen, concentrate and enjoy. Play the clip again (read through the question sheet and make sure you understand the questions and terms used before you start). Stop, start and rewind as you need to answer the questions below.

11. He maintains a _____ on his land.

a. What is this?

b. How does it appear?

c. How long does this feature remain?

d. How does he manage grazing his animals on his land?

12. Describe the feed program devised as an alternative to silage feeding at round feeders:

13. What advantage does this new methods have over silage feeding?





Case Study 2: Wet Woodland, County Wexford (Starts 0.04.53)

14. What is special about this particular wetland?

15. What benefits do wetlands provide?

- a. _____
- b. _____
- c. _____
- d. _____

16. Describe what measures are being taken in Denmark to help re-establish wetlands there:

17. Why do you think this is not happening in Ireland?

18. Name two ways in which farmers could be encouraged here to re-establish/maintain existing wetlands:

a. _____

b. _____





Extension Exercises

Map work

Working in pairs:

- Log on to <https://maps.scoilnet.ie>
- Open the OSI 1:50,000 map and aerial photo
- Identify areas of the Burren showing distinctive features of Karst landscape e.g.
 - Swallow holes, Turloughs, Drainage patterns
- Write down reasons for distribution of settlement in these areas.
- Identify evidence of ancient settlement giving 6 figure grid references.
- Identify areas of existing or potential tourist development, e.g. the Aillwee Caves, giving grid references. Give reasons for this.

Your local area

- Look at O.S. maps of the area around the school and identify wetlands such as rivers and lakes. Identify any areas marked as 'liable to flood'.
- Look at patterns of river(s) and compare the historical maps with current ones AND with photographs in order to look at human impact on rivers and streams over time – e.g. straightening of channels, cutting off meanders.

Investigate Irish Ramsar Committee www.irishwetlands.ie

- Identify it's main aims for large and small wetlands. Is it possible to match any wetlands listed with OS maps and investigate further?
- Using <http://gis.epa.ie/Envision/#> (the help function will tell you how to use the maps and look for data) examine the wetland further detailing:
 - Water quality, Land use
 - Comparison with other neighbouring areas
- Investigate press coverage about wetlands e.g. harvesting Peat from bogs (see EPA wetlands press file).





Group Work/Field Trips

Ideas for investigating wetlands:

Physical Geography:

- Formation of limestone
- Features of a Karst region
- Evidence on maps and photos
- Effects on settlement, drainage, economic activity, transport, farming, ancient settlement.

Primary Economic activity, Farming practices:

- Distribution of farming
- Farming practices
- Existence/ maintenance/conservation of embedded wetlands in farms.

Biodiversity Study, linked to Junior Cert Science

- Survey of biodiversity in a wetland area, plants and animals

BE AWARE OF SAFETY ISSUES – STUDENTS SHOULD BE FULLY BRIEFED ON SAFE PRACTICE BEFORE UNDERTAKING FIELDWORK NEAR WATER!



2020 VISION PROTECTED SOIL & BIODIVERSITY



Use these links to find out more

- www.irishwetlands.ie
- www.epa.ie
- www.conservation.ie/Habitatcons
- www.npws.ie
- <http://www.npws.ie/publications/leaflets/>
- www.ipcc.ie
- <http://www.heritagecouncil.ie/wildlife/publications/>
- <http://www.antaisce.ie/naturalenvironment/NaturesWayBooklets.aspx>
- <http://gis.epa.ie/Envision/w>
- <http://water.epa.gov/type/wetlands/index.cfm>
- <http://www.fisheriesireland.ie/>

