

Amphibian crisis

Key Stage 5

Learning objectives

To describe how increasing temperatures can affect frogs and toads.

To identify 3 ways in which the loss of frogs and toads will affect other animal species including humans.

To recall what ZSL is doing to conserve frogs and toads.

Session content

This 40 minute session provides an interesting look at global warming by investigating how an increase in global temperatures could affect frogs and toads. Students will work in groups to investigate how the loss of such species could affect the environment. The session ends with a brief look into what organisations, like ZSL, are doing to conserve these species.

This session is not an introduction into climate change but builds on lessons students have completed at school on global warming and the greenhouse effect.

Learning outcomes

At the end of this session...

- Most students will be able to describe why species of frogs are declining and will be able to recall how the loss of amphibians might affect humans. They will also be able to give a brief account of the conservation efforts zoos are involved in to combat this problem.
- Some students may have progressed further and will be able to confidently describe why frogs are declining and link this with increased energy use. They will be able to describe and explain 3 ways in which the loss of frogs and toads might affect some animal species, including humans. Students will also be able to describe how ZSL is trying to conserve a named species of frog.
- Some students may not have progressed as far and will be able to briefly describe why frogs are declining and how zoos are trying to conserve them.

A-level specification links

- **AQA Environmental Science Unit 2** – The likely consequences of global climate change including species distribution and the extinction of species that cannot colonise new habitats.
- **AQA Applied Science Unit 16** – Consider the environmental damage caused by human activity e.g. the burning of fossil fuels and the contribution to the greenhouse effect.
- **Edexcel Biology Unit 4 Topic 5.15** – Describe the effects of global warming on plants and animals (distribution of species, development and life cycles)
- **Edexcel Biology Unit 3 part 2** – Visit or issue report
- **OCR Science Unit G642 Module 1 2.1.3** – Evidence for climate change and its causes and discuss the range of possible responses to the issue of climate change
- **OCR Biology Unit 2 2.3.4 b** – Discuss the consequences of global climate change on biodiversity of plants and animals, with reference to changing patterns of agriculture and the spread of disease.

Other links: A-level Geography, BTEC National in Applied Science.



Assessment opportunities

During the session students' can be assessed through questioning and listening to group discussions during activities.

Session suitability

Information in this session is presented verbally and supported with text and images projected onto a screen. In addition students are asked to work small in mixed ability groups during some activities using printed resources and are asked to present some of their findings to the rest of the class. It is possible to provide individual materials for any partially sighted students.

Additional information

We would like to know in advance if any members of your class have learning, physical or sensory difficulties, allergies or illness which might affect their enjoyment of the session. It is usually possible to tailor the session should your group have any special requirements. Please call 01582 871330 at least 2 weeks in advance of your visit to discuss the best way to do this.

Suggested activities:

Before the visit

- Students should know how the Earth's climate is changing due to the greenhouse effect and how this impacts on humans. They may also have looked at how rising temperatures or sea levels may affect ecosystems and animal species other than amphibians e.g. corals, polar bears, turtles etc.

During the visit

- Climate change is not the only way humans are affecting ecosystems and animals. Give students an opportunity to visit some of the endangered species at the Zoo to find out other ways in which humans are impacting the environment. The following animal species have particularly useful information on why they are endangered and what ZSL are doing to conserve them:
 - Chimpanzees
 - White rhino
 - Greater one-horned rhino
 - Lions

After the visit

- Please complete a feedback sheet (available at the session or from our website) to help improve the education provision at Whipsnade Zoo.
- Students could investigate how climate change is affecting other species.
- Students could write an article about climate change including how it is caused and the impacts it could have on humans and other animal species. This report could be written for a specific audience e.g. general public or KS3 and 4 pupils.

Useful websites

ZSL Whipsnade Zoo conservation programmes – www.zsl.org/conservation

Amphibian ark - www.amphibianark.org/index.htm

Oceanography in the 21st Century – An Online Textbook -

<http://oceanworld.tamu.edu/resources/oceanography-book/radiationbalance.htm>

The University Corporation for Atmospheric Research-<http://www.ucar.edu/learn/1.htm>

Waste online home page - www.wasteonline.org.uk/index.aspx

European Space Agency - http://www.esa.int/esaEO/ESA19NZ84UC_index_0.html

HM Treasury: the scientific case against global warming a draft - www.hm-treasury.gov.uk/d/Kyoto_-_PEGG_article_Dr.8d.pdf