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### **CLIL Science: Threats to biodiversity**

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TeachingEnglish

CLIL Science: Threats to biodiversity

Submitted by chrisbaldwin on 10 December, 2010 - 16:20

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This activity is a jigsaw reading based on a text by the UK Natural History Museum, available here.

Aims:

**Content** - Threats to biodiversity

Skills - Reading, speaking & writing

Lexis - Language related to biodiversity

### Preparation

Make enough copies of the text so that students have one paragraph each (not including the first introductory paragraph), following local copyright laws of course.

Copy and cut this worksheet so that you have one set of definitions for each group

### **Procedure**

- Introduce the subject of climate change and ask students what they know about it. Get groups of students to brainstorm a list of problems that climate change will cause.
- Ask if any groups had written biodiversity. Ask the class what they know about it. Tell them that they are going to read about threats to biodiversity in the UK.
- Put the class into 6 groups and give each group one of the sets of definitions and ask them to match the words to the definitions, using dictionaries if necessary. You could miss this stage and give the students the definitions straight away to save time.
- Give each group the paragraph related to their definitions and tell them to read it and make notes on the key ideas.
- Re-group the students so that there is one member of each original group in each new group. You can do this by giving each group member a number (e.g. 1 to 4) and telling the students to find the people with the same number.
- Students now tell their new group about the problem they read about. Tell students to make notes on what they heard.
- Students brainstorm ideas to solve these problems

### Extension

Possibly for homework students take the ideas they brainstormed and write possible solutions for the worst problems in their country.



### What is biodiversity: threats to biodiversity

### What have we ever done for biodiversity?





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### Climate change

Environmental groups have been warning of climate change for many years. Now most scientists agree the planet is warming, and that this is at least partly due to human activities such as the burning of fossil fuels. However, it is difficult to be sure to what extent the observed warming is a natural process.

It is thought that a relatively small increase in average temperature could have very significant effects on patterns of biodiversity. Changes in climate could affect the ability of species to survive and reproduce in areas they currently inhabit. It could also disrupt

agriculture worldwide.



#### Introduced species

Exotic organisms that have arrived from other parts of the world (often because humans have transported them) are known as introduced or alien species. Their impact on local ecosystems can be severe as they may prey on native species or compete for resources. There is also concern when introduced species interbreed with native organisms. Unnatural hybrids may differ greatly from well-adapted native plants and animals.



#### Industrial agriculture and forestry

Industrial agriculture has had an enormous impact on the UK landscape. Feeding such a large human population has inevitably led to many areas of land being cleared. This has considerably lowered its biodiversity value. Extensive stands of non-native trees may produce high timber yields, but they are virtual deserts in biodiversity terms as few native UK species can utilise them as suitable habitats.



### Habitat loss and fragmentation

The UK is a small country with a large human population. There are many demands upon the land. We have already removed or altered most of the natural habitats. Sadly, as a result, many UK species live in small isolated patches of suitable habitat, which can make populations less stable. Consequently, difficult decisions have to be made about selecting priority areas for conservation of wildlife, so as to ensure future survival of a wide variety of different species.



#### Genetically modified organisms

The potential impact of genetically modified organisms on biodiversity is controversial. Proponents of GMO technology say it will enable us to produce cheap drugs and food with which to alleviate starvation and poverty in developing nations. Opponents are worried this technology may have unwanted side effects, either directly on the people who use GM products or on the local ecology where GM crops are grown.



#### Pollution of soil, water and atmosphere

One consequence of industrialisation has been the release of chemicals into the environment. There are laws and regulations in place to safeguard against such polluting activities, but accidents and deliberate dumping continue to pose threats to wildlife.



Over-exploitation of plant and animal species

In modern times, humans have rarely been good at conserving the environments they inhabit or species they utilise. Many fish populations in waters around Britain have been reduced to critically low levels. Once a population has crashed it may take decades to recover, if it recovers at all. Such crashes may alter ecosystems irreparably and unpredictably.

More info: Endangered UK wildlife and habitats (http://www.environment-agency.gov.uk)

Global Invasive Species Database (http://www.issg.org/database)

Sea Empress oil spill (<a href="http://www.swan.ac.uk">http://www.swan.ac.uk</a>)
Threats to biodiversity (<a href="http://www.igc.org">http://www.igc.org</a>)
UK Rivers Network (<a href="http://www.ukrivers.net">http://www.ukrivers.net</a>)

Supplementary info: <u>Definitions of biodiversity</u>

<u>Home</u> > **What is biodiversity:** <u>Species-scape</u> | <u>Exploring UK biodiversity</u> | <u>Benefits of biodiversity</u> | <u>Threats to biodiversity</u>

| Saving biodiversity

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# Threats to biodiversity Key vocabulary worksheet

**Introduced species**Match the word to the meaning.

| Word          | Meaning   |
|---------------|---|
| 1. organism   | <b>a.</b> the interaction of all organisms in an area with each other and the environment |
| 2. species    | <b>b.</b> a living thing  |
| 3. ecosystem  | c. to reproduce in a limited group  |
| 4. prey       | <b>d.</b> a group of animals or plants that look similar and interbreed                   |
| 5. interbreed | <b>e.</b> the offspring (child) of two different types of organisms (sub-species)         |
| 6. hybrid     | f. an animal which is killed and eaten  |

# **Industrial agriculture and forestry** Match the word to the meaning.

| Word           | Meaning  |
|----------------|--|
| 1. agriculture | a. trees which have been cut down for use        |
| 2. forestry    | <b>b.</b> the area where animals and plants live |
| 3. timber      | c. farming of trees                              |
| 4. habitat     | d. the production of food                        |



# Threats to biodiversity Key vocabulary worksheet

# Habitat loss and fragmentation Match the word to the meaning.

| Word             | Meaning   |
|------------------|---|
| 1. habitat       | a. the area where animals and plants live                               |
| 2. fragmentation | <b>b.</b> dividing into small parts                                     |
| 3. species       | <b>c.</b> a group of animals or plants that look similar and interbreed |
| 4. conservation  | d. protection of nature   |
| 5. wildlife      | e. animals (and plants) that don't live with people                     |
|                  |   |
|                  |   |

# **Genetically modified organisms**Match the word to the meaning.

| Word  | Meaning   |
|---|---|
| genetically     modified     organism     (GMO) | a. make pain or problems less   |
| 2. proponent                                    | b. a second (usually bad) effect  |
| 3. alleviate                                    | c. a person who supports an idea  |
| 4. starvation                                   | <b>d.</b> a plant or animal whose genes have been changed by scientists |
| 5. side effect                                  | e. the science of the environment                                       |
| 6. ecology                                      | f. not having enough food   |



### Threats to biodiversity Key vocabulary worksheet

# **Pollution of soil, water and atmosphere** Match the word to the meaning.

| Word                 | Meaning   |
|----------------------|---|
| 1. pollution         | a. the development of industry  |
| 2. consequence       | <b>b.</b> throwing away rubbish, often illegally  |
| 3. industrialisation | <ul> <li>c. something that happens as a result of something<br/>else; effect</li> </ul> |
| 4. dumping           | d. animals (and plants) that don't live with people                                     |
| 5. wildlife          | e. putting dangerous materials into the environment                                     |
|                      |   |
|                      |   |

### Over-exploitation of plant and animal species

Match the word to the meaning.

| Word                  | Meaning   |
|-----------------------|---|
| over-<br>exploitation | a. protecting nature  |
| 2. species            | b. dangerously  |
| 3. conserving         | <ul> <li>a group of animals or plants that look similar and<br/>interbreed</li> </ul>     |
| 4. critically         | <b>d.</b> the interaction of all organisms in an area with each other and the environment |
| 5. ecosystem          | e. in a way that can't be fixed   |
| 6. irreparably        | f. using too many natural resources   |



### Threats to biodiversity Key vocabulary worksheet

# Threats to biodiversity Key vocabulary worksheet Answers

Note: These are not scientific definitions, but give a general idea of the meaning of the words.

**Introduced species** 

| min outdook opooloo |   |
|---------------------|---|
| Word                | Meaning   |
| organism            | a living thing  |
| species             | a group of animals or plants that look similar and interbreed                   |
| ecosystem           | the interaction of all organisms in an area with each other and the environment |
| prey                | an animal which is killed and eaten   |
| interbreed          | to reproduce in a limited group   |
| hybrid              | the offspring (child) of two different types of organisms (sub-species)         |

Industrial agriculture and forestry

| Word        | Meaning                                |
|-------------|--|
| agriculture | the production of food                 |
| forestry    | farming of trees                       |
| timber      | trees which have been cut down for use |
| habitat     | the area where animals and plants live |

**Habitat loss and fragmentation** 

| Word          | Meaning   |
|---------------|---|
| habitat       | the area where animals and plants live                        |
| fragmentation | dividing into small parts                                     |
| species       | a group of animals or plants that look similar and interbreed |
| conservation  | protection of nature  |
| wildlife      | animals (and plants) that don't live with people              |



### Threats to biodiversity Key vocabulary worksheet

**Genetically modified organisms** 

| Word                                      | Meaning   |
|---|---|
| genetically<br>modified<br>organism (GMO) | a plant or animal whose genes have been changed by scientists |
| proponent                                 | a person who supports an idea                                 |
| alleviate                                 | make pain or problems less                                    |
| starvation                                | not having enough food  |
| side effect                               | a second (usually bad) effect                                 |
| ecology                                   | the science of the environment                                |

Pollution of soil, water and atmosphere

| Word              | Meaning   |
|-------------------|---|
| pollution         | putting dangerous materials into the environment      |
| consequence       | something that happens as a result of something else; |
|                   | effect  |
| industrialisation | the development of industry                           |
| dumping           | throwing away rubbish, often illegally                |
| wildlife          | animals (and plants) that don't live with people      |

Over-exploitation of plant and animal species

| Word              | Meaning   |
|-------------------|---|
| Over-exploitation | using too many natural resources                            |
| species           | a group of animals or plants that look similar and          |
|                   | interbreed  |
| conserving        | protecting nature   |
| critically        | dangerously   |
| ecosystem         | the interaction of all organisms in an area with each other |
|                   | and the environment   |
| irreparably       | in a way that can't be fixed                                |