

Name: _____

Date: _____

Class: _____

IB Environmental Systems and Societies

3.3 Threats to Biodiversity

Significant ideas:

While global biodiversity is difficult to quantify, it is decreasing rapidly due to human activity.

Classification of species conservation status can provide a useful tool in conservation of biodiversity.



Species Number and species loss

1. State the number of species **known to science** (species that have been found and named).

2. One estimate for the total species number alive on Earth today is about 7 million. Explain why this number is much larger than your answer to question 1.

3. Evaluate the current estimates of total species number on Earth today.

Help: when you evaluate, you should give a balanced argument, weighing up the positives and negatives. One way to approach this particular questions is to give reasons for why current estimates of species number might be quite reliable, and reasons why the estimate may not be so reliable.

4. Discuss how current extinction rates compare with those through geological history.



5. Use the headings below to describe the ways in which humans are causing species loss

Habitat destruction and fragmentation

Introduction of invasive species

Pollution

Agricultural practices

Overharvesting (e.g. of fish)

Hunting/poaching



The Impact of Humans on Tropical Biomes

1.

a) What proportion of the Earth is covered by tropical rainforests?

b) What proportion of all species on Earth live in tropical rainforests?

2. With reference to biodiversity hotspots, describe the levels of species and habitat diversity in tropical rainforests.

3. Using the headings to guide you, describe the ecological **services** that tropical rainforests provide

Oxygen production

Nutrient cycling and soil formation

Sequestration of carbon dioxide



4. Complete the scatter diagram to list the income of **goods** that rainforests can provide



5. Outline the changes in percentage cover of rainforests over the Earth over the past 60 years. Use facts and statistics to support your answer if possible.

6. Give reasons for the changes outlined in question five.



7.

a) In tropical biomes (as with many) there is a conflict between exploitation, sustainable development and conservation. Outline this conflict.

b) Most tropical biomes cover Less Economically Developed Countries. Why might the conflict mentioned in part a) be more of a problem than it would in an MEDC?



Threatened species and the IUCN Red List

1. In the table below, outline the factors that influence how prone a species is to extinction.

Factor	Details
Geographical range	<hr/> <hr/> <hr/>
Genetic diversity	<hr/> <hr/> <hr/>
Population density	<hr/> <hr/> <hr/>
Number of populations	<hr/> <hr/> <hr/>
Body size	<hr/> <hr/> <hr/> <hr/>
Reproductive potential	<hr/> <hr/> <hr/> <hr/>




Migration	<hr/> <hr/> <hr/>
Dispersers	<hr/> <hr/> <hr/>
Ability to move/disperse	<hr/> <hr/> <hr/>
Specialized niche requirements	<hr/> <hr/> <hr/>
Usefulness to humans	<hr/> <hr/> <hr/>
Island organisms	<hr/> <hr/> <hr/>

2. What does the acronym "I.U.C.N." stand for?

3. What is the IUCN **red list**?



4. List the IUCN red list categories in the table below.

	Category	Shorthand
Increasing extinction risk 		

5. How do the IUCN describe their mission?

6. The IUCN is an international agency involving a large number of nations, and involves many government and non-government organisations.

Why is this level of cooperation necessary when creating and updating the red list?

