

Name \_\_\_\_\_ **TEACHER COPY** \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

## **ENVIRONMENTAL SCIENCE Chapter 10 Biodiversity STUDY SHEET**

**Define the following:**

**biodiversity (page 259):** - *short for biological diversity and usually refers to the number of different species in a given area. This includes plants and animals.*

**gene (page 260)** – *a gene is a piece of DNA that codes for a specific trait that can be inherited by an organism's offspring.*

**keystone species (page 260):** - *A species that is critical to the functioning of an ecosystem. Examples include sea otters, prairie dogs, and bears.*

### **BENEFITS OF BIODIVERSITY (pages 260-261):**

**Medical** – *About one quarter of the drugs prescribed in the United States come from plants. Almost all antibiotics are derived from chemicals found in fungi.*

**Industrial** - *Undiscovered and poorly studied species represent a source of potential products. New chemicals and industrial materials may be developed from chemicals discovered in all kinds of species.*

**Agricultural** – *Variations of all our foods come from nature.*

**Fill in the chart (page 261):**

#### **COMMON MEDICINES DERIVED FROM PLANTS**

<b>Medicine</b>	<b>Origin</b>	<b>Use</b>
<b>Neostigmine</b>	<b>Calabar bean (Africa)</b>	<b>Treatment of glaucoma and basis for synthetic insecticides</b>
<b>Turbocurarine</b>	<b>Curare vine (South America)</b>	<b>Surgical muscle relaxant; treatment of muscle disorders; and poison for arrow tips</b>
<b>Vincristine, vinblastine</b>	<b>Rosy periwinkle (Madagascar)</b>	<b>Treatment of pediatric leukemia and Hodgkin's disease</b>
<b>Bromelain</b>	<b>Pineapple (South America)</b>	<b>Treatment to control tissue inflammation</b>
<b>Taxol</b>	<b>Pacific yew (North America)</b>	<b>Anticancer agent</b>
<b>Novacaine, cocaine</b>	<b>Coca plant (South America)</b>	<b>Local anesthetic and basis for many other anesthetics</b>
<b>Cortisone</b>	<b>Wild yam (Central America)</b>	<b>Hormone used in many drugs</b>
<b>L-dopa (levodopa)</b>	<b>Velvet bean (tropical Asia)</b>	<b>Treatment for Parkinson's disease</b>
<b>Reserpine</b>	<b>Indian snakeroot (Malaysia)</b>	<b>Treatment to reduce high blood pressure</b>

**Ethical Concerns (page 262)** – *We need to honor the fact that some people believe that every living thing has a right to exist whether we can find a purpose for it or not.*

**Define the following:**

**endangered species** – *(from the C.10 Word Study/Glossary) A species that has been identified to be in danger of extinction throughout all or a significant part of its range, and that is thus under protection by regulations or conservation methods.*

**threatened species** – *(from the C.10 Word Study/Glossary) a species that has been identified to be likely to become endangered in the foreseeable future.*

**2008 Species Known to Be Threatened or Extinct Worldwide (page 264)**

Type of Species	Number Threatened (all categories of risk)	Number Extinct (since – 1800)	Percent of Species That May Be Threatened
Mammals	1,130	87	26
Birds	1,183	131	12
Reptiles	296	22	3.3
Amphibians	146	5	3.1
Fishes	751	92	3.7
Insects	555	73	0.054
Other crustaceans	555	73	1.03
Mollusks and worms	944	303	1.3
Plants	30,827	400	0.054

(pages 264-265)

List the six ways humans are negatively affecting other organisms? 1.) the destruction of habitats 2.) the introduction of nonnative species 3.) pollution 4.) the overharvesting of species 5.) legal hunting 6.) poaching

(pages 266-267)

Define endemic: Species that are native to and found only within a limited area. Ecologists use the number of endemic species of plants as an indicator of biodiversity.

What are the four areas of critical biodiversity? 1.) tropical rain forests 2.) coral reefs 3.) coastal ecosystems 4.) islands

What are hotspots? (page 268) The most threatened areas of high species diversity on Earth are hotspots. These hotspots include endemic species threatened by humans.

List the four ways that scientists are trying to save individual species:

- 1.) Captive-breeding programs
- 2.) Preserving genetic material such as germ plasm which contains the reproductive or germ cells of plants and animals.
- 3.) Zoos, Aquariums, Parks, and Gardens
- 4.) Studying and identifying as many plants and animals as possible.

List the 4 major provisions of the 1972 Endangered Species Act: (page 273)

- 1.) The U.S. Fish and Wildlife Service (USFWS) must compile a list of all endangered and threatened species.
- 2.) Endangered and threatened animal species may not be caught or killed. Endangered or threatened plants on federal land may not be uprooted. No part of an endangered and threatened species may be sold or traded.
- 3.) The federal government may not carry out any project that jeopardizes endangered species.
- 4.) The U.S. Fish and Wildlife Service must prepare a species recovery plan for each endangered and threatened species.