**Information Sheet: “THE LOSS OF BIODIVERSITY”**

**General Notes**

* Article came from the web site of the World Wildlife Fund
* Publisher/sponsoring organization: World Wildlife Fund
* Gives information about the diversity among and within plant and animal species in an environment

**SIMPLE OUTLINE**

**Thesis statement (implied):** Biodiversity contributes to the Earth’s ability to provide clean water, nutritiously varied and abundant foods, oxygen, climate stability, and cultural diversity.

**Major supporting point 1(implied):** Discussions about biodiversity have increased recently as the world has begun to lose species and habitats at an ever-increasing and alarming rate.

**Major supporting point 2 (implied):** Biodiversity decline and loss of ecosystem services pose a major global threat to future generations of humanity and even to the future of our planet.

**Major supporting point 3(implied):** In general terms, human population growth and our consumption habits are the reasons for this enormous loss.

**Major supporting point 4(implied):** Reduced biodiversity means millions of people face a future where food supplies are more vulnerable to pests and disease and where freshwater is in irregular of short supply.

**Major supporting point 5(implied):** Biodiversity refers to the existence of many millions of distinct biological species, the product of four billion years of evolution.

**BRIEF SUMMARY**

In the online study of “THE LOSS OF BIODIVERSITY”, studies show that the Earth is headed for destruction if we do not appreciate the importance of biodiversity. The Earth’s natural assets are made up of plants, animals, land, water, the atmosphere, and humans. One issue discussed in this article is the rapid loss of species being higher than the natural extinction rate. Also, between 0.01 and 0.1% of all species could become extinct. Another issue would be to shop smartly when it comes to purchasing seafood. Choosing fish that is not an endangered species can help keep our oceans alive. Ecosystem services will be reduced because biodiversity decreases threatens the way we live. Some ways to help reduce the threat to biodiversity is: not buying products made from the skin or body parts of an endangered species, and reducing paper consumption.

**CRITERIA**

* Effects on plant life
* Effects on endangered species
* Effects on fish and other ocean animals
* Climate effects
* Environmental effects
* Working towards a solution

**KEY WORDS**

* Extinction rate
* Species
* Habitat destruction
* Wildlife trade
* Ecological overshoot
* Ecosystem services
* Sustainable
* Overexploitation
* Biological diversity
* Biodiversity

**POTENTIAL QUOTES**

* “Scientists were startled in 1980 by the discovery of tremendous diversity of insects and tropical forests. In one study of just 19 trees in Panama, 80% of the 1,200 beetle species discovered were previously unknown to science. Surprisingly, scientists have a better understanding of how many stars there are in the galaxy than how many species there are on Earth (World Resources Institute).”
* “These experts calculate that between 0.01 and 0.1% of all species will become extinct each year. If the low estimate of the number of species out there is true—i.e., that there are around 2 million different species on our plants—then that means between 200 and 2,000 extinctions occur every year. But if the upper estimate of species numbers is true—that there are 100 million different species coexisting with us on our planet—then between 10,000 and 100,000 species are becoming extinct each year.”
* “In 2009, we used 40% more resources than nature can regenerate in a year. This problem—using resources faster than they can regenerate and creating waste such as CO2 faster than it can be absorbed—is called *ecological overshoot*.”
* “It is estimated that half of all plant, animal, and bird species on the planet will become extinct before 2100.”
* “According to IUCN, the World Conservation Union, the monetary value of goods and services provided by ecosystems is estimated to amount to some $33 trillion per year, a number that looks like this: $33,000,000,000,000.”
* “Some analysts estimate the international trade of illegally logged products at around $5 billion per year.”
* “Paper makes up 28% of municipal solid waste in the United States, more than any other material Americans throw away,
* “Reduce paper consumption. Using 100% recycled paper saves twenty-four trees per ton of paper. Americans recycled nearly 66% of the paper they used in 2011, but more can be done.”

BIODIVERSITY

|  |  |
| --- | --- |
| Effects on plant and animal life | * Half of all plant and animal species will become extinct before 2100. |
| Effects on humans | * The loss of access to fresh water * Limits overexploitation |
| Effects on ocean animals | * Polluted water * Becoming endangered |
| Climate effects | * Ecological overshoot |
| Effects on health | * Loss of plant species can affect the creation of drugs * Changing ecosystems can have health effects(example: more mosquitos, more malaria) |
| Solution | * Not buying products made from animals * Recycling paper * Buying sustainable seafood |
|  |  |

Information Sheet: “Population Growth”

General notes:

* Author: William P. Cunningham and Mary Ann Cunningham
* Was public in Environmental Science, 13th Ed.
* 2015
* Presents reason why the issue of population growth is so important.

Simple Outline:

Thesis statement: “Whether human populations will continue to grow at present rates and what that growth would imply for environmental quality and human ,life are  quality and human life are among the world central pressing questions in environmental science”( William P., Mary Ann).

Major supporting point 1: “population growth as well as population are measured and described” (William P., Mary Ann).

Major supporting point 2: “Root cause of environmental degradation in this view is inequitable distribution of wealth and power rather than population size”  (William P., Mary Ann).

Major supporting point 3:  “Some people believe that population growth is the ultimate cause of poverty and environmental degradation” (William P., Mary Ann).

Major supporting point 4: “More people mean larger markets, more workers, and efficiencies of scale in mass production of goods” (William P., Mary Ann).

Major supporting point 5: “Moreover, adding people boosts human ingenuity and intelligence that will create new resources by finding new materials and discovering new ways of doing things” (William P., Mary Ann).

Brief summary:

Population Growth has its positives and negatives from economic growth, to oppression, and unemployment. Everyone has different opinions regarding overpopulation; scientists think that it could affect the economy in a positive way, while others think that it could negatively affect the environment. Regardless of what each side says; population will keep on growing unless we have strict birth control and everyone plans ahead before starting a family.

Key word:

Overpopulation, depletion, environmental, birth control, population growth, growth, fertility rate, economy growth, oppression, greed, minorities,  human demographic, poverty, agriculture, hygiene, health care, resources, education, modern life, technology, family, middle class, benefits, crime, pollution, unemployment, crowding

Potential quotes: “Malthus marshaled evidence to show that population tended to increase at an exponential, or compound rate while food production either remained stable or increase only slowly.”  (William P., Mary Ann).

“Marx and Malthus developed their theories about human population growth when views about the world technology, and society were much different than they are today.”  (William P., Mary Ann).

“Whether the world can continue to feed it growing population remains to be seen, but technological advances have vastly increased human carrying capacity so far.”  (William P., Mary Ann).

Criteria:

* Potential starvation
* Malnutrition
* Effects on health
* Increase in Unemployment
* Effects on Resource depletion
* Environmental Degradation
* Effects on Human Population
* Effects on Economy
* Effects on Hygiene

|  |  |
| --- | --- |
| Effects on Health | * Potential Starvation and malnutrition * Pollution * Threat to the ecological life-support system * Social Ill * Insufficient Resources |
| Effects on Jobs | * Unemployment will probably increase * High Birth Rates * Resource Depletion * Oppression being eliminated from social arrangements |

Information Sheet: Sea change: Food for Millions at Risk

GENERAL NOTES

* Author: Craig Welch
* Published: The Seattle Times
* December 21, 2013
* Presents danger of sea life

SIMPLE OUTLINE

Thesis statement: Millions face the threat of food shortage due to the damages of the sea world.

Major supporting point: “rely on marine life susceptible to warming temperatures and ocean acidification, the souring of seas from carbon dioxide emitted by burning coal, oil and natural gas.”

Major supporting point: “facing poverty, marine pollution, overfishing and rising sea, the potential for calamity is high.”

Major supporting point: “A quarter of the CO2 spewed by cars and power plant winds up in the ocean.”

Major supporting point: “Acidification can directly harm animals throughout the food web, from microscopic plankton to some fish.”

Major supporting point: “it endangers corals, weakening their skeletons, inhibiting growth, and increasing the likelihood of bleaching.”

BRIEF SUMMARY

In “Sea change: Food for Millions at Risk,” Craig Welch presents the danger of sea life and how millions face the threat of food shortage due to the damages of the sea world. One of the major challenges the villagers face was less work and poorer food options. For example, poor vanilla farmers in Madagascar already worked several other jobs and in Haiti and Senegal, resident are struggling with malnutrition eat large volumes of wild shellfish, which are particularly threatened by acidification.

CRITERIA

* Effect of seafood shortages
* Effect of sea animals
* Endangered corals, bleaching reefs
* Warming temperatures
* Effects of starvation

KEY WORDS

* Hunger
* Carbon Dioxide
* Village
* Acidification
* Temperatures
* Pollution
* Community’s
* Marine life
* Fish market
* Fishing
* Ocean
* Corals
* Bajau
* Pacific

POTENCIAL QUOTES

* “I can't tell you how many people will be affected,” said Sarah Cooley, at Woods Hole Oceanographic Institution in Massachusetts, who studies links between acidification and food security. “But it's going to be a very big number.”
* “There's been a pretty substantial decrease in their catches per amount of effort since the 1990s,” said Paul Simonin, a Cornell University graduate student who has tracked Bajau fishing data.
* “Temperature has zapped a lot of reefs so far, but longer-term effects are likely to come from acidification,” said Charles Sheppard, a professor at England's University of Warwick who studies climate-change impacts on coral reefs.
* “A bit of temperature rise. A bit of acidification. A bit of overfishing. These things add up,” he said. “If someone has measles and influenza and chickenpox and malaria all at the same time, they're probably going to die.”
* “They do not see a cause-and-effect relationship the way we do,” said Julian Clifton, a University of Western Australia professor who has studied Tadi's village. “The Bajau get characterized as backward because they don't get this idea. But their relationship with time is different from ours. They live in a sort of constant present.”
* “Getting another job would mean starting a farm or setting up a bodega, both of which take a huge upfront investment they don't have,” said Joshua Cinner, a research fellow with James Cook University in Australia.