

Global Warming

WebQuest Description: Helping people to understand and know about the problem of Global Warming.

Grade Level: College / Adult

Curriculum: Science

Keywords: globalwarming, dot

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Introduction

Global warming is a process of increasing the average temperature of the atmosphere, sea, and land of the Earth. The global average temperature on the Earth's surface has increased $0.74 \pm 0.18 \text{ }^\circ\text{C}$ ($1.33 \pm 0.32 \text{ }^\circ\text{F}$) over the past hundred years. The Intergovernmental Panel on Climate Change (IPCC) concluded that "most of the increase in global average temperatures since the mid-20th century is most likely due to the increasing concentration of greenhouse gases due to human activities" [1] through the greenhouse effect. This basic conclusion has been made by at least 30 scientific and academic bodies, including all national science academies from the G8 countries. However, there are still some scientists who disagree with some of the conclusions expressed by the IPCC.

Tasks

1. What is Global Warming? 2. Where do greenhouse gas emissions come from? 3. What impacts will global warming have in the future? 4. How do we know humans are causing global warming? 5. What is sea-level rise? 6. How do we know global warming is real? 7. What is ocean acidification? 8. Is it "dangerous" to have more than 2°C of global warming? 9. Can we just adapt to global warming? 10. What else should I be reading about global warming?

Process

RPP

Evaluation

Global warming, a consequence of climate change, alters rice-paddy ecosystems, especially through the changes of both growth rate of plants and the occurrences of pests, and affects both rice crop production and biodiversity. In this study, factors related to the germination temperatures of 80 weed species in paddy fields were analyzed to elucidate the effect of warming on morphological (leaf size), phenological (germination time), and population (distribution) responses. A self-organizing map (SOM) was used to classify the weed species on the basis of 5 factors related to germination temperature: the minimum, maximum, and optimum temperatures and the minimum and maximum optimal range. Climate data for the Korean Peninsula during 4 different decades (1990s, 2020s, 2050s, and 2080s) were obtained from a regional climate change model following the A1B emission scenario of the Intergovernmental Panel on Climate Change. Changes in the germination time and range of potential habitable areas for the weed species were estimated on the basis of the patterns of the SOM. The species associated with relatively lower germination temperatures tended to have smaller leaves, shorter stems, and earlier flowering and germination times than the species associated with higher germination temperature. The potential germination area increased progressively with rising temperature. The degree of potential increase in germination area was the greatest in the 2080s when the weeds could germinate in most of the southern Korean Peninsula. These results suggest that studying the patterns of germination temperature through SOM could provide necessary information for characterizing the germination of weeds on the basis of various characteristics (e.g., morphology, phenology, and distribution) and would be useful for maintaining agricultural productivity and agroecosystem biodiversity under global warming.

Category and Score	A	B	C	D	Score
attitude	90	85	75	70	260
activity	85	90	90	80	345
understand material	90	80	80	85	335
evaluating material	85	85	75	75	320

Category and Score	A	B	C	D	Score
				Total Score	1260

Conclusion

Global warming or global warming as described by the Natural Resources Defense Council (NRDC) is the process of increasing air temperature because of the trapping of heat in the atmosphere by carbon dioxide gas which can threaten climate change and can cause disasters on the surface of the earth. NRDC says global warming is the biggest environmental and humanitarian crisis that is happening at this time. Discussion Global warming or global warming as described by the Natural Resources Defense Council (NRDC) is the process of increasing air temperature because of the trapping of heat in the atmosphere by carbon dioxide gas which can threaten climate change and can cause disasters on the surface of the earth. NRDC says global warming is the biggest environmental and humanitarian crisis that is happening at this time. Global warming or global warming can occur because it is influenced by factors as follows: 1. Logging and Combustion of Forests that are carried out wildly and uncontrollably so that there is no thing that can recycle carbon dioxide. 2. Pollution of Carbon Dioxide which is the biggest contributor to the causes of global warming that is currently occurring as a result of various processes of human activity, both from the combustion process on vehicle engines, factory machinery and industry, fossil fuel power plants, and so forth. 3. Effect of Greenhouses where high-rise buildings and houses with the concept of glass buildings cannot absorb the sun's heat and will reflect sunlight into the atmosphere so that reflected heat is retained or trapped in the atmosphere by air pollution from carbon dioxide, methane, sulfur dioxide, and steam water. This causes the unabsorbed heat to return to the earth's surface and be stored there. 4. Use of Chemicals where many human products and needs use chemicals, such as plant fertilizers, where most chemical fertilizers contain nitrogen oxide gas which is 300 times hotter than carbon dioxide. The effects of global warming or global warming are as follows: 1. Climate Change and Weather in various parts of the world because of the changing atmospheric conditions in various locations due to global warming. 2. Ecologically disturbed which is where global warming many animals migrate to other places. Plants in a place can be lost or die because the climate is not in accordance with its natural habitat. 3. Acid Rain as a result of the smoke from burning coal and oil will produce SO emissions and nitrogen oxides then react in the air it will produce nitric acid, sulfuric acid. Also, acid rain can cause damage to metal objects, damage plants, cause breathing difficulties, and so on. 4. Thinning Ozone Layer where the ozone layer is a layer that covers the earth so that it is not exposed to direct radiation from sunlight so that if there is damage to the ozone layer, direct sunlight will hit the human skin and can cause skin disease to skin cancer. North and South Pole Ice Melt as a result of reflection of sunlight. 5. Rising Sea Surface as a result of melting ice from the north and south poles will flow towards the sea. Change of Changing Season where the seasonal cycle in various regions of the earth will experience changes or become irregular so that it will cause many problems for humans.

Teacher Page

This discussion is very important for people who want to know the causes of global warming. This webquest really helps me to let everyone know about the issues to be discussed, and even outsiders can see them.

Standards

address: indonesia grade level: adult / college

Credits

Other