

Unit: Changes in Ecosystem and Human Impact

Purpose: The purpose of this assessment is to check if students have a strong understanding of causes and effects of various changes imposed on the environment. The teacher will analyze information gathered from the student's check sheet and reteach any material needing extra instruction. Students will be given ideas for additional activities to boost their current level of understanding. Students who are at the mastery level will work on an enrichment activity, which will help them take their learning even further. This assessment is formative, therefore results will not affect student grades. The main purpose for this assessment is to inform students, parents and teacher of what areas need further attention.

Michigan High School Content Expectations (HSCEs):

B3.4 Changes in Ecosystems

Although the interrelationships and interdependence of organisms may generate biological communities in ecosystems that are stable for hundreds or thousands of years, ecosystems always change when climate changes or when one or more new species appear as a result of migration or local evolution. The impact of the human species has major consequences for other species.

B3.4A Describe ecosystem stability. Understand that if a disaster such as flood or fire occurs, the damaged ecosystem is likely to recover in stages of succession that eventually result in a system similar to the original one.

B3.4B Recognize and describe that a great diversity of species increases the chance that at least some living organisms will survive in the face of cataclysmic changes in the environment.

B3.4C Examine the negative impact of human activities.

B3.4x Human Impact

Humans can have tremendous impact on the environment. Sometimes their impact is beneficial, and sometimes it is detrimental.

B3.4d Describe the greenhouse effect and list possible causes.

B3.4e List the possible causes and consequences of global warming.

Target: Knowledge

Learning Target	Test Items	Total Points
I can recognize the impacts of major events such as floods on ecosystem stability.	1, 7, 17	3
I can recognize and describe different stages of succession after major events in an ecosystem.	11, 12, 13, 14	4
I can identify the importance of biodiversity as it relates to major events that occur within an ecosystem.	18, 19, 20	3
I can identify possible human impacts on global warming	8, 9, 10	3
I can identify possible natural causes of global warming	2, 3, 4, 16	4
I can identify possible consequences of global warming	5, 6, 15	3
Total		20

General Directions:

The objective of this assessment is to see how much you know (at this point) about ecosystems. This will help me figure out what to emphasize in future lessons. This assessment includes six True/False questions, five Fill-in-the-blank questions, and nine Multiple-choice questions. Each question is worth one point, regardless of question type. You are also asked to indicate whether you are sure (S) or your answer or not sure (NS) next to the question. Answers are to be indicated by circling the correct letter. Write the answers for fill-in-the-blanks on the blanks. Before you begin the assessment, make sure to write your name, hour and today's date in the upper-right corner of the first page.

You will be given 45 minutes to complete this assessment. When are you finished, please place the assessment in the "Completed Bin" at the front of the room, and open pick up the reading materials on the pick-up counter. We will discuss this material when the 45 minutes is up. If you have any questions, please raise your hand and I will come to you. If I don't notice your hand up, a polite "cough" would be appreciated. I am certain you will all do well, and remember this is for my information and not a form of punishment! :)

Name: _____

Hour: _____

Date: _____

Directions: Select True or False for each of the following 6 questions. Next to the question number, write S (sure) or NS (not sure) to indicate how confident you are in your answer. Each question is worth 1 point.

1. Events such as floods or fires also have positive effects on ecosystems
 1. True
 2. False
2. The melting of Arctic Permafrost accelerates global warming by releasing carbon dioxide.
 1. True
 2. False
3. Algae and cytoplankton absorb significant amounts of carbon dioxide from the atmosphere. The effectiveness of algae and cytoplankton in this way can be negatively affected by decreasing ocean salinity, which results from melting ice caps.
 1. True
 2. False
4. Global warming may lead to the expanding of rainforests.
 1. True
 2. False
5. By 2050, Earth's surface temperature will likely increase by between 1.5 and 4 degrees Fahrenheit.
 1. True
 2. False
6. If global warming continues to occur, eventually the surface temperature around the globe will be uniform
 1. True
 2. False

Directions: Fill in the blank for each of the following 5 statements. Circle the letter. Next to the question number, write S (sure) or NS (not sure) to indicate how confident you are in your answer. Each question is worth 1 point.

7. Events such as floods, earthquakes and lightning storms are examples of density-_____ factors.
8. The largest emitter of greenhouse gasses is currently _____.
9. _____ burns much cleaner than other fossil fuels, meaning it causes less air pollution. However, drilling for this substance can be environmentally destructive.
10. Human activities dramatically increase global warming by creating and/or releasing _____.
11. The first species to colonize and reproduce in a recently interrupted ecosystem are known as _____ species.

Directions: Select the best response for each of the following questions. Circle the letter. If you are directed to circle more than one answer, do so. Next to the question

number, write S (sure) or NS (not sure) to indicate how confident you are in your answer. Each question is worth 1 point.

12. Why are shade-intolerant trees, shrubs and grasses rarely found in a mature community?
 1. there is not enough water beneath the soil to share with other mature community plants.
 2. they require higher amounts of light that are not available in mature communities.
 3. they are often eaten by consumers that live in a mature community.
 4. they do not reproduce quickly enough to compete with larger species for nutrients and water.
13. When species establish themselves in an area of exposed rock without topsoil, _____ succession has occurred.
 1. successful
 2. secondary
 3. primary
 4. origination
14. When new species occupy an ecosystem which was recently disturbed by a major event, _____ succession will occur, and the ecosystem will likely return to the previous mature community it was.
 1. successful
 2. secondary
 3. primary
 4. replacement
15. With the increase of greenhouse gases and global warming, oceans will become more...
 1. basic.
 2. acidic.
 3. nitric.
 4. oxygenic.
16. As the ice caps decrease in size and the surface of Earth covered by liquid water increases, global warming is accelerated by the decrease in heat/light reflection, called....
 1. reflectivity.
 2. albedo.
 3. conductivity.
 4. convection.
17. Effects from a river flooding into its flood plain may include (circle as many as you think are correct):
 1. spreading important nutrients to surrounding.
 2. eliminating all species living in the river that is flooded.
 3. damaging human establishments such as levies and buildings.
 4. providing hydration to surrounding plants.
18. Biodiversity is important in case of a major event that results in several extinctions, because there are more species to refill an extinct species' _____.
 1. community role
 2. niche
 3. habitat
 4. home
19. Biodiversity _____ towards the equator.
 1. increases
 2. decreases
20. Diversity of the gene pool within a species is important in the event of a catastrophe because:
 1. there are more niches filled with the one species.
 2. more genetic variation increases odds of species survival.
 3. they are more likely to breed with other species to increase reproduction.

Answer Key

1. **A**
2. **B**
3. **A**
4. **B**
5. **B**
6. **B**
7. **Independent**
8. **China**
9. **Natural Gas**
10. **Carbon Dioxide**
11. **Pioneer**
12. **B**
13. **C**
14. **B**
15. **B**
16. **B**
17. **ACD**
18. **B**
19. **A**
20. **B**

Student Check Sheet

Directions: For each question, mark whether you were correct or incorrect, as well as whether you were sure or not sure of your answer.

#	Target	Correct	Incorrect	Sure	Unsure
1	I can recognize the impacts of major events such as floods on ecosystem stability.				
2	I can identify possible natural causes of global warming				
3	I can identify possible natural causes of global warming				
4	I can identify possible natural causes of global warming				
5	I can identify possible consequences of global warming				
6	I can identify possible consequences of global warming				
7	I can recognize the impacts of major events such as floods on ecosystem stability.				
8	I can identify possible human impacts on global warming				
9	I can identify possible human impacts on global warming				
10	I can identify possible human impacts on global warming				
11	I can recognize and describe different stages of succession after major events in an ecosystem.				
12	I can recognize and describe different stages of succession after major events in				

	an ecosystem.				
13	I can recognize and describe different stages of succession after major events in an ecosystem.				
14	I can recognize and describe different stages of succession after major events in an ecosystem.				
15	I can identify possible consequences of global warming				
16	I can identify possible natural causes of global warming				
17	I can recognize the impacts of major events such as floods on ecosystem stability.				
18	I can identify the importance of biodiversity as it relates to major events that occur within an ecosystem.				
19	I can identify the importance of biodiversity as it relates to major events that occur within an ecosystem.				
20	I can identify the importance of biodiversity as it relates to major events that occur within an ecosystem.				