TREEVIA Trees & Biodiversity Quiz ANSWER KEY

1. How does the Convention on Biological Diversity (CBD) global agreement define biodiversity?

   a. The study of trees and plant life
   b. The variety of life on Earth and the natural patterns it forms
   c. The biology of trees

More info: To learn more about the CBD, a global agreement made at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil in 1992, check out the UN Environment Programme's guide.

Sources:
https://www.cbd.int/convention/guide
https://www.unep.org/unep-and-biodiversity

2. What commitments did Canada make when it signed the Convention on Biological Diversity (CBD) in 1992?

   a. The protection and conservation of the Great Lakes ecosystems
   b. The conservation and sustainable use of plant genetic resources for food and agriculture
   c. The conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits from the use of genetic resources

More info: Canada signed the CBD in 1992 along with more than 150 other governments. The other answers are also agreements Canada has signed: (a) The Great Lakes Water Quality Agreement (GLWQA) and (b) The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

Sources:
https://www.cbd.int/convention/guide
https://www.cbd.int/doc/publications/cbd-sustain-en.pdf

3. What percentage of the world's terrestrial biodiversity finds a home in forests?

   a. 20%
   b. 60%
   c. 80%
   d. 90%

More info: Forests support many land-based species, which in turn help contribute to the health of the forest. For example, elephants, through their "poop", help spread seeds for a wide variety of plants and studies have shown that declines in elephant populations can have a catastrophic effect on some forest tree species that rely on this mechanism of seed distribution.

Sources:
https://bmcecol.biomedcentral.com/articles/10.1186/1472-6785-11-29
https://www.scientificamerican.com/blog/extinction-countdown/asian-elephants-seed-forest/
https://www.wwf.org.uk/learn/fascinating-facts/forests

4. What percentage of the world's boreal zone is in Canada?

   a. 11%
   b. 28%
   c. 40%

More info: Canada's boreal zone holds the second biggest expanse of continuous intact forests on Earth, stretching from coast to coast. It contains 75% (307 million hectares) of the country's forests and woodlands, along with

thousands of lakes, rivers, wetlands, and some treeless areas and is home to much of Canada's terrestrial biodiversity, supporting an extensive range of mammals, insects, fungi and microorganisms.

Sources:
https://natural-resources.canada.ca/our-natural-resources/forests/sustainable-forest-management/boreal-forest/8-facts-about-canadas-boreal-forest/17394
https://natural-resources.canada.ca/our-natural-resources/forests/sustainable-forest-management/boreal-forest/13071

5. As of 2022, what percentage of Canada's Carolinian forest (forest unique to Southwestern Ontario) has been lost?

a. 25
b. 35
c. 50
d. 80

More info: Carolinian forests support some of the highest biological diversity in Ontario and contain the largest number of native tree species in Canada.

Source:
https://www.canada.ca/en/environment-climate-change/corporate/transparency/briefing-materials/appearance-before-standing-committee-may-3-2022/nature-wildlife-conserved-areas.html#toc0

6. The Canadian National Tree Seed Center (NTSC) maintains seed collections to protect and sustain the genetic diversity of forests. How many unique seed collections does it have?

a. 750
b. 2,000
c. 5,000
d. 13,000

More info: The National Tree Seed Center (NTSC), located in Fredericton, New Brunswick, is the most diverse library of its kind in the country.

Source:
https://natural-resources.canada.ca/science-and-data/research-centres-and-labs/forestry-research-centres/atlantic-forestry-centre/national-tree-seed-centre/13449

7. True or false: the loss of biodiversity can lead to an increase in the spread of infectious disease. **True**

More info: Biodiversity acts as a barrier between animals and humans, and when biodiversity loss occurs from human activities the species that tend to survive these activities often happen to also be species that carry diseases that can be passed on to humans, for example mosquitos, ticks and mice.

Source:
https://unfoundation.org/blog/post/biodiversity-explained-facts-myths-and-the-race-to-protect-it

8. Dead trees support biodiversity and the health of other terrestrial species in their environment by providing what?

a. Nutrients, shelter and materials for habitat-building
b. A nice view
c. Material for logging purposes

More info: Even when a tree has died and fallen, it still plays a key role in maintaining healthy, diverse ecosystems by providing nutrients for fungi and mosses, shelter for creatures such as foxes, and can be a source of materials for habitat-building. Dead trees also provide food for termites and wood-boring insects, and can also reduce flooding!

Sources:
https://www.umdsmartgrowth.org/wp-content/uploads/2018/09/plsc.480.12_ecological_functions_and_management_of_dead_wood.pdf

To provide feedback on this resource please fill out our online feedback form

https://blog.nwf.org/2014/07/dead-logs-are-anything-but-dead

9. True or False: Forests are important for global pollinator diversity. **True**

More info: Forests play a vital role in supporting and sustaining global pollinator diversity, diversity that is critical for both healthy ecosystems and the pollination of nearby crops. Forests provide both floral and non-floral food resources, nesting and overwintering sites, and physical protection. Read more on this topic in this recent literature review.

Sources:
https://people-facstaff.forestry.oregonstate.edu/jim-rivers/sites/people.forestry.oregonstate.edu.jim-rivers/files/2023_Ulyshen%20et%20al._Biological%20Reviews.pdf
https://www.unep.org/news-and-stories/story/why-bees-are-essential-people-and-planet

10. According to the Food and Agriculture Organization of the UN, what is the leading cause of deforestation/forest degradation and associated biodiversity loss across the globe?

a. Wildfires
b. Urban development
c. Agriculture
d. Global warming and associated climate change
e. Invasive species (non-native insect pests, pathogens, vertebrates and plants)

More info: While the other factors also contribute to global deforestation/forest degradation and associated biodiversity loss, agriculture continues to be the leading cause with large-scale activities such as cattle ranching and the cultivation of soya bean and palm oil being the most significant culprits. For more information, check out the FAO's 2020 report on the state of the world's forests.

Sources:
https://www.fao.org/state-of-forests/en
https://openknowledge.fao.org/server/api/core/bitstreams/8f8f2820-6df4-4746-9295-e9356148f8a2/content/CA8642EN.html

11. Which province/territory in Canada has the most at-risk native tree species?

a. British Columbia
b. Northwest Territories
c. Ontario
d. Quebec

More info: Almost one in four of Canada's 234 native tree species are considered to be at-risk with the greatest threats being habitat loss, invasive species, and climate change. Ontario's at-risk tree species include the Butternut, the Kentucky Coffeetree, many species of Ash and Hawthorn, and the Eastern Flowering Dogwood, to name just a few.

Sources:
https://wcscanada.org/resources/shape-of-nature-state-of-canadas-trees/?it=s6-state-of-canadas-trees
https://wcscanada.org/site/assets/files/4705/s6_state-of-canadas-trees_v1_0.pdf
https://www.ontario.ca/page/species-risk-ontario#section-7

12. True or False: Reforesting with diverse types of tree species decreases the likelihood of planting success. **False**

More info: When it comes to the success of planned reforestation, planting a diverse range of tree species improves ecosystem function and reduces planting failure, especially for trees with higher mortality rates, according to a recent study by the Smithsonian Institute.

Sources:
https://serc.si.edu/media/press-release/tree-species-diversity-increases-likelihood-planting-success
https://onlinelibrary.wiley.com/doi/full/10.1111/rec.13927

13. How does tree diversity impact carbon and nitrogen storage in the soil?

a. Decreases stores
b. Increases stores
c. Has no known impact

More info: A recent study conducted by the University of Alberta found that tree diversity is associated with higher stores of soil carbon and nitrogen that can help mitigate the impacts of climate change and sustain soil fertility.

Source:
https://www.nature.com/articles/s41586-023-05941-9

14. Globally, how many trees are estimated to live in urban forests?

a. 10 billion
b. 50 billion
c. 100 billion

More info: The world's urban forests are home to 100 genera of trees which equates to approximately one-sixth of the world's tree diversity.

Source:
https://unece.org/sites/default/files/2024-05/Biodiversity_infographic_final.pdf

15. True or false: Urban biodiversity can improve mental health. **True**

More info: Research from around the world, including a recent study by the Institute of Environmental Science at Carleton University, is discovering that living in urban areas with higher bird and or tree diversity can increase happiness! And, did you know that the world's urban forests are home to one-sixth of the world's avian diversity?

Sources:
https://unece.org/sites/default/files/2024-05/Biodiversity_infographic_final.pdf
https://www.nature.com/articles/s43247-024-01482-9#:~:text=We%20linked%20data%20across%2036,good%20self%2Dreported%20mental%20health

Bonus Question: How can we as individuals help protect and restore biodiversity?

a. Plant native trees, shrubs and flowers in your yard or your community
b. Instead of using chemical pesticides, use natural or "mechanical" alternatives
c. Attract pollinators to your garden by installing a bird feeder or bee "hotel"
d. Live sustainably and reduce your carbon footprint
e. Learn about nature conservation efforts in your area and participate/volunteer or donate!
f. All of the above