

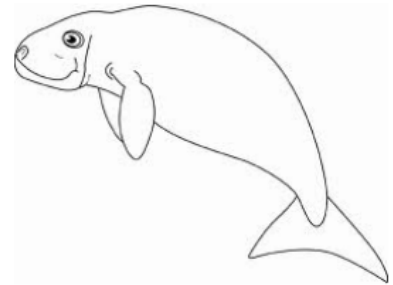
Science and Technology
Pretest 3.2

1. What **word** describes an event that damages an ecosystem, possibly killing organisms or changes the availability of food and water?
2. Here are some examples of recent disturbances. **Identify the disturbance** from the damage done to the ecosystem.

Possible answers: hurricane, flood, volcanic eruption, pollution, nuclear accident, introduction of species from abroad, wildfires

- a) 2013 Australia:

In Moreton Bay, seagrass beds are expected to endure greater damage than from the 2011 disturbance, when in some places 80% of the seafloor vegetation was lost. Sediment flows from the Brisbane River were expected to be much higher in this disturbance placing the bay's dugong (see picture to the right) population at risk.



- b) New Jersey 2012 :

The powerful winds from this disturbance have blown many sea birds inland and this will cause them to end up in unusual places sometimes hundreds of miles away from their home habitat. Species of birds such as gannets, gulls and petrels are often picked up by extremely strong winds and are pushed far distances with little ability to resist.

- c) Alberta 2012:

This disturbance killed trees in 950,000 hectares of forest, more than 12 times the five-year average amount of 78,097 hectares. It released a large amount of carbon dioxide.

3. a) What term is used to describe the step-by-step recovery of an ecosystem after a disturbance?
b) What role do lichen and moss play after a glacier exposes bare rock?
c) In the early stages of succession, what happens to biodiversity? (Increases? Decreases? Stays the same?)
4. Where is 97.5% of the hydrosphere's water found?
(A) Great Lakes (B) In the cryosphere (C) lakes, rivers, groundwater (D) oceans
5. If the concentration of NaCl at a certain point in the St. Lawrence River is 0.01%, what is the equivalent concentration in ppm?
(A) 1×10^{-7} (B) 0.001 (C) 1 (D) 100

6. Which of the following affects water flow within a watershed (catchment area)?

1. Development
2. Topography
3. Geology
4. Climate
5. Vegetation

(A) 1,2,3 (B) 2,3,4 (C) 3,4,5 (D) 1,2,3,4,5

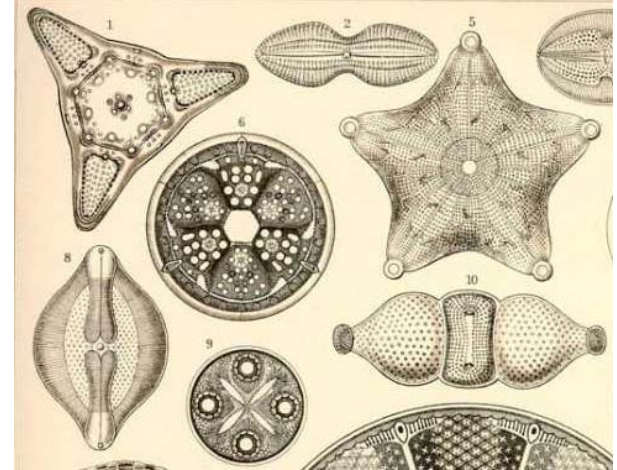
7. What watershed is entirely within Quebec's borders?

(A) St. Lawrence Hudson Bay (B) Lake Champlain (C)
(D) Ungava Bay

8. What organisms in the ocean supply the Earth with oxygen and how?

9. What part of the carbon cycle introduces hydrogen carbonate ion into the oceans?

- (A) Volcanic action
- (B) decomposition
- (C) erosion of rocks
- (D) photosynthesis



10. What does water's high specific heat have to do with the ocean's ability to affect climate?

11. What two factors affect mixing of ocean waters below the surface?

- (A) Wind and salt concentration
- (B) Wind and temperature
- (C) Temperature and salt concentration
- (D) Eutrophication and salt concentration



12. An ice floe is a small version of _____ . A small ice cap is known as a(n) _____ while a broken glacier that floats in the sea is a(n) _____

- (A) pack ice, iceberg, glacier
- (B) glacier, pack ice, iceberg
- (C) pack ice, glacier, iceberg
- (D) ice cream sandwich, blizzard, lost ice cream cone

13. When does melting ice cause sea level to rise?

14. How could climate change lead to the production of large amounts of methane?