

8 Water pollution and biomagnification – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
eutrophication	富营养化	_____
Thermal pollution	热污染	_____
Bioaccumulation	生物累积	_____
Biomagnification	生物放大	_____

Recall

You already know water can be polluted:

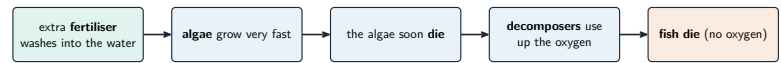
- Sewage, fertilizer, and factory waste can enter rivers and seas.
- Too much fertilizer can cause a green bloom of algae in a pond.
- Some poisons build up in animals over time.

This sheet lines up water pollution. Each idea has a short worked example.

New ideas

■ 1 Eutrophication

When extra nutrients (from fertilizer or sewage) enter water, they cause **eutrophication** 富营养化: algae bloom, then die and rot, using up the oxygen, which suffocates fish.



■ 2 Thermal pollution

Thermal pollution 热污染 is warm water released by power plants; warm water holds less oxygen, stressing aquatic life.

■ 3 Bioaccumulation and biomagnification

Bioaccumulation 生物累积 is the build-up of a toxin **inside one organism** over its life. **Biomagnification** 生物放大 is the increase in concentration **up the food chain**, so top predators end up with the most.

■ 4 Biomagnification in numbers

Worked example. If water holds a toxin at 0.01 ppm, plankton might reach 0.5 ppm, small fish 2 ppm, and a top predator 25 ppm – about 2500 times the level in the water.

Watch out: because toxins **biomagnify**, a top predator (like an eagle or a large fish) can be poisoned even when the water itself is only lightly polluted.

Practice

Try these in order. The methods are all above.

2.1 Explain the steps of eutrophication, from fertilizer runoff to dead fish. [3]

2.2 State why warm water from power plants harms aquatic life. [2]

2.3 State the difference between bioaccumulation and biomagnification. [2]

2.4 A toxin is 0.02 ppm in water and 40 ppm in a top predator. Find how many times more concentrated it is in the predator. [2]

2.5 Explain why top predators are most affected by biomagnification. [2]