Exercise walk-through

Impacts of Overfishing ▪ 5.8

eXercise

You must be able to

- explain how **overfishing** 过度捕捞 collapses fish stocks
- describe **bycatch** 兼捕 and destructive methods
- suggest management (quotas, protected areas)

Method — How overfishing works

Fish are a **common resource**; catching them faster than they **reproduce** collapses the stock. Once a population falls too low, it may not recover.

Method — Destructive methods

- **Bycatch** — non-target species (dolphins, turtles) caught and killed in nets.
- **Bottom trawling** — dragging nets over the seafloor destroys habitat.

Method — Consequences

Collapsed fisheries harm the marine food web and the people who depend on fishing for food and income.

Method — Management solutions

- **Catch quotas/limits** on how much can be taken.
- **Marine protected areas** where fishing is banned so stocks recover.
- **Selective gear** to reduce bycatch, and seasonal closures.

Practice 2.1 ▪ 1 mark

Why does overfishing collapse a fish stock?

Solution 2.1

Method: How overfishing works

Worked steps

Fish are caught faster than they can reproduce, so the population shrinks and may not recover B1.

Practice 2.2 ▪ 1 mark

What is bycatch?

Solution 2.2

Worked steps

Non-target species caught (and often killed) while fishing B1.

Practice 2.3 ▪ 1 mark

State one method to manage a fishery sustainably.

Solution 2.3

Worked steps

Any one: catch quotas, marine protected areas, selective gear, seasonal closures B1.

Exam-style 3.1 ▪ 1 mark

A marine protected area helps fish stocks by

A allowing unlimited fishing

B banning fishing so populations recover

C removing all fish

D adding pollutants

Solution 3.1

Method: Management solutions

A allowing unlimited fishing

B banning fishing so populations recover ✓

C removing all fish

D adding pollutants

Worked steps

B — banning fishing so populations recover.

Exam-style 3.2 ▪ 1 mark

A commercial fishery catches fish faster than they reproduce.
(a) Predict what happens to the fish population.
(b) Explain two ways this could be prevented.

Solution 3.2

Method: How overfishing works

Worked steps

(a) It declines and may collapse **B1**. (b) Any two: catch quotas, marine protected areas, selective gear, seasonal closures **M1** **A1**.

Exam-style 3.3 ▪ 2 marks

Explain why bottom trawling is especially damaging to marine ecosystems.

Solution 3.3

Worked steps

Dragging nets over the seafloor destroys the habitat and organisms living there, not just the target fish, damaging the whole ecosystem M1 A1.