AP ENVIRONMENTAL SCIENCE • EXERCISE SHEET

5.16 Aquaculture

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

Objective

Build the skills to answer exam questions on **aquaculture**.

You must be able to:

- describe **aquaculture** 水产养殖 and its benefits
- explain its environmental impacts (waste, disease, escapees)
- weigh it against wild-caught fishing

1 Worked examples

Study these first. Each one shows the method for a question type used later —follow the steps and you can do the Practice and Exam-style questions yourself.

What aquaculture is

Aquaculture is farming aquatic organisms (fish, shrimp, shellfish). It can take pressure off **wild** stocks and provide protein efficiently.

Benefits

- Relieves **overfishing** of wild populations.
- High yield of protein in a small area.

Impacts

- **Waste and excess feed** pollute nearby water (nutrients → eutrophication).
- **Disease and parasites** spread in crowded pens and can infect wild fish.
- **Escapees** can become invasive or interbreed with wild fish.
- Coastal habitat (mangroves) may be cleared for ponds.

A worked judgement

A shrimp farm built by clearing mangroves relieves wild fishing pressure but destroys valuable coastal habitat and pollutes local water —a trade-off.

2 Practice

Now apply the methods above.

2.1 What is aquaculture? [1]

2.2 State one benefit of aquaculture. [1]

2.3 State one environmental impact of aquaculture. [1]

3 Exam-style questions

3.1 One environmental problem with fish farming is [1]

- **A** it eliminates all pollution
- **B** waste and disease can affect nearby waters
- **C** it increases wild fish stocks directly
- **D** it uses no feed

3.2 A coastal region builds fish farms.

(a) Explain one benefit and one drawback. [2]

(b) Explain how escaped farmed fish could harm wild populations. [2]

3.3 Explain why crowding in fish pens increases disease risk. [2]

4 Go further

You are now ready for the real exam questions on this subtopic:

- work through the **5.16 Aquaculture** lesson on the **Learn** page;
- read the **Aquaculture** section of the AP Environmental Science handout on the **Know** page.

Solutions

2.1 Farming aquatic organisms (fish, shellfish).

2.2 Any one: relieves overfishing, high protein yield.

2.3 Any one: waste pollution, disease spread, escapees, habitat loss.

3.1 B —waste and disease can affect nearby waters.

3.2 (a) Benefit: relieves pressure on wild stocks / efficient protein; drawback: waste pollution, disease, or habitat loss. (b) Escapees can spread disease, compete with, or interbreed with wild fish, weakening wild populations.

3.3 Crowding lets pathogens and parasites spread quickly between the closely packed fish, so disease outbreaks are more likely.