

Exercise walk-through

Ecological Footprints ■ 5.11

eXercise

You must be able to

- define an **ecological footprint** 生态足迹
- explain what raises or lowers it
- compare footprints between countries

Method — The ecological footprint

An **ecological footprint** is the area of land and water needed to supply a person's (or population's) resources and absorb their waste.

Method — What raises it

A larger footprint comes from **high consumption**: more meat, energy, driving, and goods. Wealthy, developed countries tend to have **large** footprints per person.

Method — What lowers it

Using less energy, eating lower on the food chain, recycling, and using renewable energy **lower** the footprint.

Method — Overshoot

If humanity's total footprint exceeds Earth's **biocapacity** (what it can regenerate), we are in **overshoot** — using resources faster than they renew.

Practice 2.1 ■ 1 mark

Define an ecological footprint.

Solution 2.1

Method: The ecological footprint

Worked steps

The area of land and water needed to supply a person's resources and absorb their waste **B1**.

Practice 2.2 ■ 1 mark

State one factor that increases a person's footprint.

Solution 2.2

Worked steps

Any one: high energy use, meat-heavy diet, driving, buying many goods **B1**.

Practice 2.3 ■ 1 mark

State one way to lower your footprint.

Solution 2.3

Method: What lowers it

Worked steps

Any one: use less energy, eat lower on the food chain, recycle, use renewables **B1**.

Exam-style 3.1 ■ 1 mark

A person with a large ecological footprint most likely has

- A** low resource consumption
- B** high resource consumption
- C** no impact
- D** a plant-based diet only

Solution 3.1

- A low resource consumption
- B high resource consumption**
- C no impact
- D a plant-based diet only



Worked steps

B — high resource consumption.

Exam-style 3.2 ■ 1 mark

Two countries: one wealthy and high-consuming, one lower-income.

- (a) Which likely has the larger per-person footprint?
- (b) Explain why.

Solution 3.2

Method: What raises it

Worked steps

(a) The wealthy, high-consuming country **B1**. (b) Its people consume more energy, food, and goods and produce more waste, requiring more land and water per person

M1 **A1**.

Exam-style 3.3 ■ 2 marks

Explain what it means for humanity to be in ecological “overshoot”.

Solution 3.3

Method: Overshoot

Worked steps

Overshoot means humanity's total footprint exceeds Earth's biocapacity, so resources are being used faster than the planet can regenerate them **M1** **A1**.