Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

it is shared and owned by no one, so access is open to all; each fisher gains by catching more, while the loss of stock is shared, so overfishing results

2.2

(i) about half the carrying capacity, $K/2$; (ii) catch above MSY is larger than the yearly growth, so the stock falls; a smaller stock produces fewer young, so the growth and the possible catch fall further

3.1

(a) catches rose to a peak in the late 1960s, fell, then collapsed to almost zero by the early 1990s

(b) the remaining population was very small, with few large breeding adults; the ecosystem changed: other species and predators took cod's place, and bycatch and cold water also slowed recovery

3.2

(a) any two, each explained: quotas keep the catch below the yearly growth; a larger mesh size lets young fish escape and breed; a closed season or area protects spawning fish

(b) loss of income or jobs / weak enforcement at sea / other countries keep fishing

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