AP ENVIRONMENTAL SCIENCE • EXERCISE SHEET

3.2 K-Selected and r-Selected Species

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

KEY WORDS k-selected 策略 • carrying capacity 环境容纳量

Objective

Build the skills to answer exam questions on **K-selected and r-selected species**.

You must be able to:

- distinguish **r-selected** and **K-selected** 策略 species
- link each to a reproductive strategy
- predict which recovers faster from disturbance

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.

Two reproductive strategies

- **r-selected** — many small offspring, little parental care, fast maturity, short life (insects, weeds). Population grows fast (high r).
- **K-selected** — few large offspring, much parental care, slow maturity, long life (elephants, humans). Population stays near carrying capacity (K).

Recovery from disturbance

r-selected species reproduce rapidly and recolonize quickly after a disturbance. **K-selected** species recover slowly, so they are more vulnerable to overharvesting or habitat loss.

A worked classification

A mouse (many young, short life) is **r-selected**; a whale (few young, long life, much care) is **K-selected**.

Extinction risk

K-selected species with low reproduction are at **higher extinction risk** when their populations fall, because they cannot rebuild quickly.

2 Practice

Now apply the methods above.

2.1 Do r-selected species have many or few offspring? [1]

2.2 Give one example of a K-selected species. [1]

2.3 Which type recovers faster after a disturbance? [1]

3 Exam-style questions

3.1 A K-selected species typically has [1]

A	B
C	D

A many offspring and little care
B few offspring and much parental care
C a very short life
D rapid population growth

3.2 An insect species and an elephant species live in the same area.

(a) Classify each as r- or K-selected. [2]

(b) Explain which is more vulnerable to overharvesting. [2]

3.3 Explain why r-selected species are often the first to recolonize a disturbed area. [2]