

Exercise walk-through

3.3

Survivorship Curves

AP Environmental Science

Survivorship curves

A **survivorship curve** shows the fraction alive at each age:

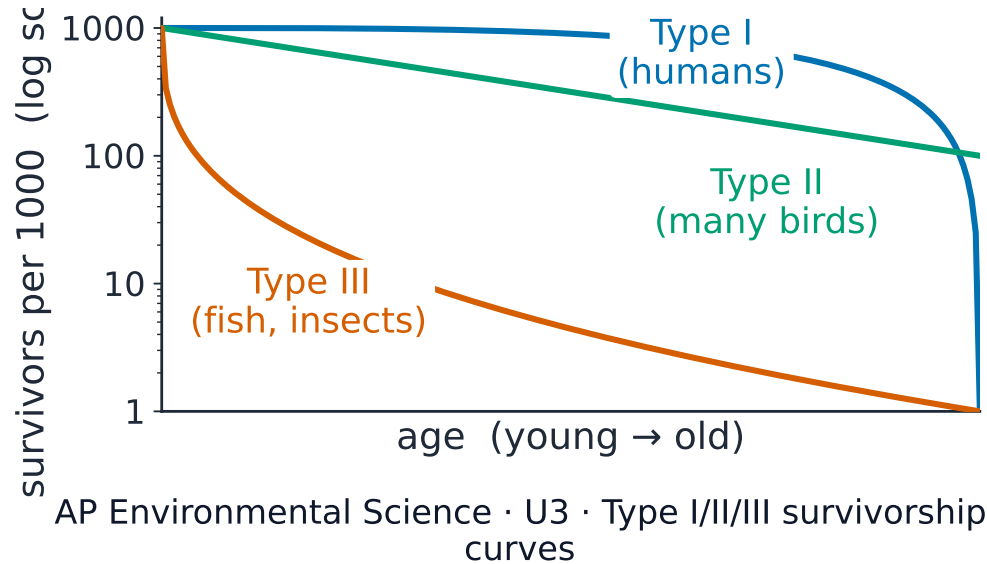
- **Type I:** die old (humans)
- **Type II:** steady rate (birds)
- **Type III:** die young (oysters)

Type III goes with r -selection;
Type I with K -selection.



Human pop density

Type I, II, and III survivorship curves



Type I, II, and III survivorship curves on a log scale

Exercises 2.1-2.3

2.1 Which survivorship type has most deaths in old age? [1]

2.2 Which type has a constant death rate at all ages? [1]

2.3 Which type matches r-selected species? [1]

Exercises 2.1-2.3

2.1 Which survivorship type has most deaths in old age? [1]

2.1

- Type I
-

2.2 Which type has a constant death rate at all ages? [1]

2.2

- Type II
-

2.3 Which type matches r-selected species? [1]

2.3

- Type III

Exercise 3.1

3.1 A Type III survivorship curve shows

[1]

☐

A most deaths in old age

B a constant death rate

C very high death rates when young

D no deaths

Exercise 3.1

3.1 A Type III survivorship curve shows

[1]

☐

A most deaths in old age

B a constant death rate

C very high death rates when young

D no deaths

3.1 C

- very high death rates when young

Exercise 3.2 (a)

3.2 A fish species lays thousands of eggs, and very few survive to adulthood.

(a) State the survivorship curve type.

[1]

Exercise 3.2 (a)

3.2 A fish species lays thousands of eggs, and very few survive to adulthood.

(a) State the survivorship curve type.

[1]

(a)

- Type III

Exercise 3.2 (b)

3.2 A fish species lays thousands of eggs, and very few survive to adulthood.

(b) Explain how this matches its reproductive strategy.

[2]

Exercise 3.2 (b)

3.2 A fish species lays thousands of eggs, and very few survive to adulthood.

(b) Explain how this matches its reproductive strategy. [2]

(b)

- It is r-selected – producing many offspring with little care, so most die young, giving a steep early drop

Exercise 3.3

3.3 Explain why humans show a Type I survivorship curve.

[2]

Exercise 3.3

3.3 Explain why humans show a Type I survivorship curve.

[2]

3.3

- Humans (K-selected) produce few offspring with much care, so most survive to old age and deaths cluster late in life, giving a Type I curve