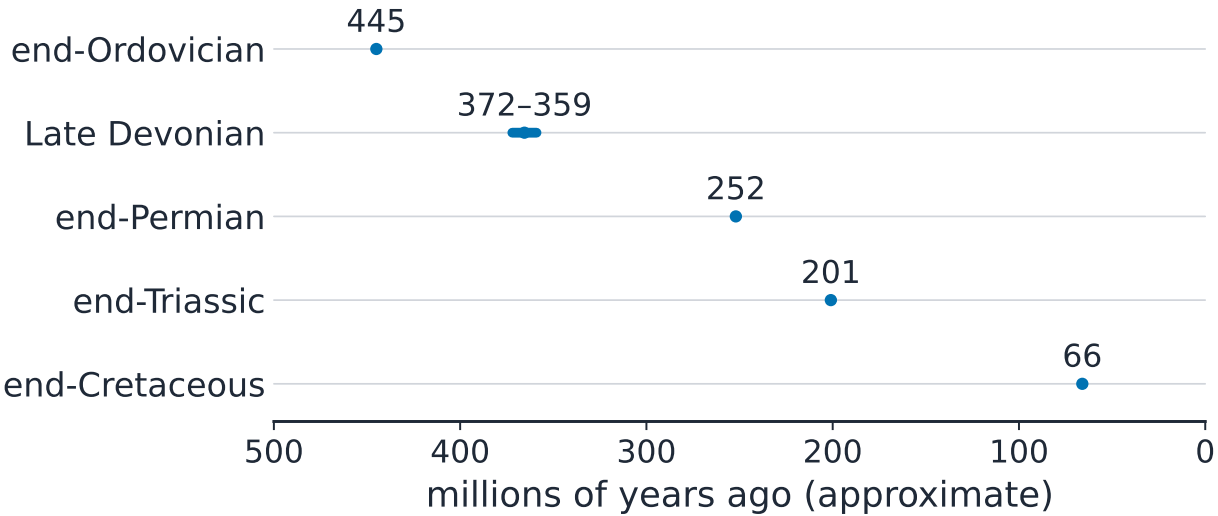
Exercise walk-through

3.2
Human impact on biodiversity

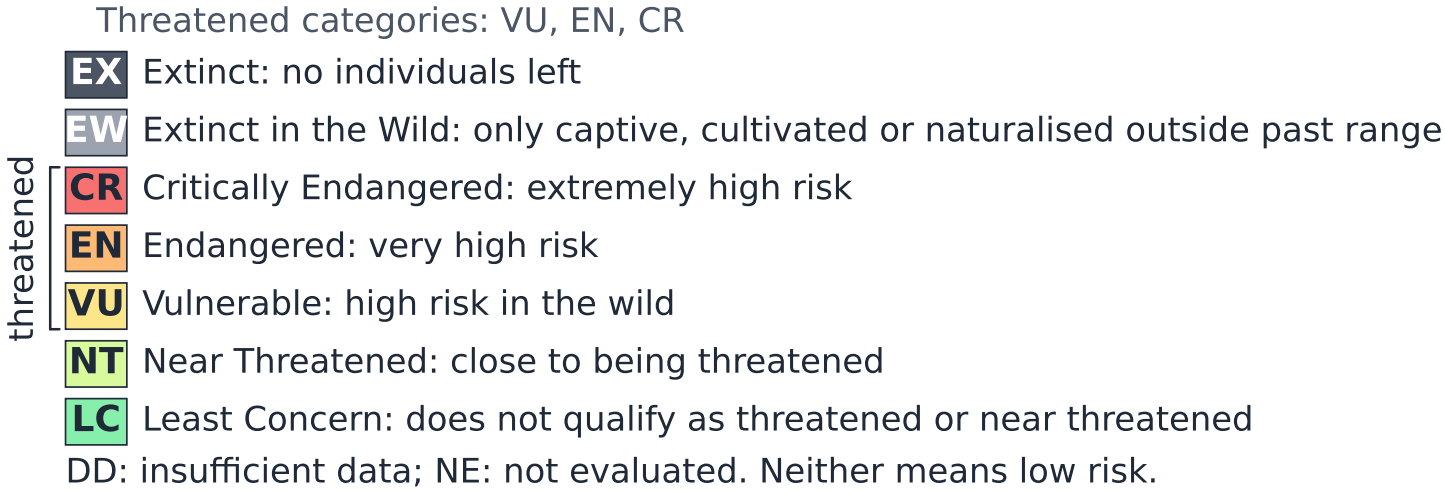
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AHL: Extinction intervals



> Different events and fossil records do not justify one uniform percentage-loss census.

The IUCN Red List



> DD and Not Evaluated do not establish low risk; listing alone does not protect habitat.

Designing protected areas

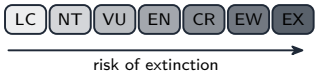


Size/shape pairs have equal total area; corridor adds area.
Dark green: interior under an assigned edge-depth model; trade-offs vary.

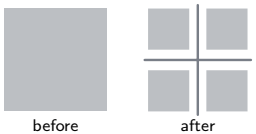
> Compare equal areas and stated threats: no geometry is universally best.

Exercises 2.1·2.2

2.1 State **two** criteria used by the IUCN to decide a species' Red List category. [2]

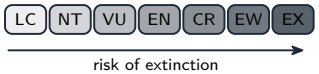


2.2 A forest of 100 km^2 is cut into four patches of 5 km^2 by roads and farms. Explain **three** effects on the species living there. [3]



Exercises 2.1·2.2

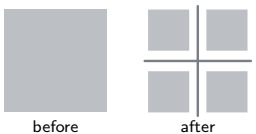
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2.1

any two: population size; rate of population decline; geographic range; degree of fragmentation; quantitative probability of extinction

2.2 A forest of 100 km^2 is cut into four patches of 5 km^2 by roads and farms. Explain **three** effects on the species living there. [3]



2.2

populations in each patch are small, so inbreeding and chance events make local extinction likely; a larger share of each patch is edge, with more light, wind, predators and invasive species; animals cannot move between patches to find food or mates, and species needing a large area are lost

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Exercise 2.3

2.3 Explain why large, slow-breeding species such as rhinos are more vulnerable to extinction than small, fast-breeding species. [3]



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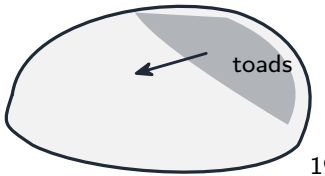


2.3

they have few young, with long gaps, so populations recover slowly from losses; they need large areas of habitat, which are easily lost or split; they are valuable to hunters (horn), so they are targeted

Exercise 2.4

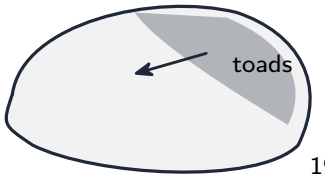
2.4 Cane toads were brought to Australia in 1935 to control beetles in sugar-cane fields. Explain why they became a problem. [3]



1935: north-east

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1935: north-east

2.4

they have few natural predators or diseases there, and breed fast; they spread over a large area and compete with native animals for food; their skin is toxic, so native predators such as quolls and snakes that eat them die

Exercise 3.1 (a)

3.1 Coral reefs cover less than 1% of the ocean floor but hold about a quarter of marine species.

(a) Explain how rising sea temperatures cause coral bleaching. [2]



Exercise 3.1 (a)

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(a) Explain how rising sea temperatures cause coral bleaching. [2]



(a) corals live in mutualism with algae that give them food and colour; high temperature makes the coral expel the algae, so it turns white and may starve

Exercise 3.1 (b)

3.1 Coral reefs cover less than 1% of the ocean floor but hold about a quarter of marine species.

(b) Describe **two** other human threats to coral reefs. [2]

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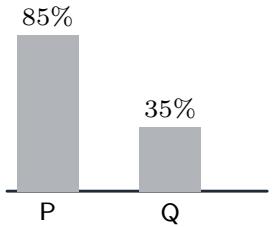
(b) any two: ocean acidification makes skeletons harder to build; overfishing removes grazers that keep algae down; nutrient and sediment runoff; destructive fishing with dynamite or poison; tourism damage

Exercise 3.2 (a)

3.2 The table shows Red List data for two species.

	species P	**species Q**
decline over 10 years	85%	35%
range	one island, 40 km^2	three countries

(a) Suggest which species would be placed in the higher category, with **two** reasons. [3]

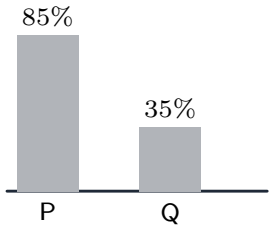


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(a) species P: its population fell much faster, 85% against 35%; its range is tiny and in one place, so one event could wipe it out

Exercise 3.2 (b)

3.2 The table shows Red List data for two species.

	species P	**species Q**
decline over 10 years	85%	35%
range	one island, 40 km^2	three countries

(b) Suggest **two** human causes that could explain species P's decline. [2]

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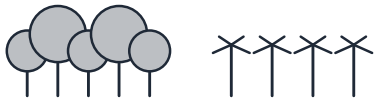
(b) Suggest **two** human causes that could explain species P's decline. [2]

(b) any two linked to an island: habitat cleared for farming or tourism; an invasive predator such as rats or cats; hunting or collection; pollution

Exercise 3.3 (a)

3.3 An area of tropical rainforest is to be cleared for an oil-palm plantation.

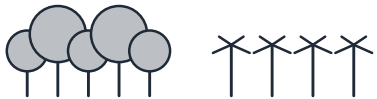
(a) Explain **two** ways the plantation reduces biodiversity. [4]



Exercise 3.3 (a)

3.3 An area of tropical rainforest is to be cleared for an oil-palm plantation.

(a) Explain **two** ways the plantation reduces biodiversity. [4]



(a) a forest with many layers and species is replaced by one crop: habitat loss and lower habitat diversity; remaining forest is fragmented, and pesticides, fires and roads harm species nearby

Exercise 3.3 (b)

3.3 An area of tropical rainforest is to be cleared for an oil-palm plantation.

(b) Discuss whether certification schemes for “sustainable palm oil” can protect rainforest biodiversity. [4]

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(b) Discuss whether certification schemes for "sustainable palm oil" can protect rainforest biodiversity. [4]

(b) award up to [4]: for: certified growers must not clear primary forest or peat, and must protect high-conservation-value areas; buyers can choose certified oil, giving a market reward; against: checking is weak in some places, and certified farms may still have been cleared in the past; demand pushes clearing elsewhere; conclusion: helps, but needs strong law, monitoring and lower demand too