

Part 1

Questions in this part refer to the fact sheet, *Species re-introduction*.

1. Why do scientists carry out re-introductions?

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2. Why do you think it's important to monitor re-introduced organisms after their release?

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3. Suggest why scientists may decide not to carry out a re-introduction, even if a species is threatened with extinction in the wild?

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4. Why do you think islands off the coast of Australia are often the last place native species survive?

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Part 2

Locate and open the learning object, *Animal release*. Select **Start** to display the screen titled 'Honey possums'. Read this screen, then select **Next** to display the screen titled 'Reintroducing honey possums' and answer the questions below.

5. All four possible release sites are inside the honey possum's former range. If honey possums are released into an area outside their native range, it is called an introduction (instead of a re-introduction). Why do you think introductions are rarely carried out?

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6. How do you think scientists work out the former range of a species?

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- Select **Next** to display the screen titled 'Release sites'. Explore the four possible release sites, noting any interesting features of sites that you think might be important in the results table at the end of this worksheet. Then answer the questions below.

7. Many plants regenerate quickly after wildfires. Why might scientists not consider burnt areas as possible honey possum habitat for the first 10 years after a fire?

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8. Why would a scientist consider surrounding land use and ownership when assessing potential re-introduction sites?

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- Select **Next** to display the screen titled 'Threats'. Explore threats relating to your four release sites and record your findings in the results table at the end of this worksheet. Then answer the questions below.

9. If a species disappeared from a part of its range a long time ago, how do you think scientists can work out the cause for its decline?

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10. Why might a fox baiting program lead to an increase in the feral cat population?

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- Select **Next** to display the screen titled 'Vegetation surveys'. Explore the flowering times for each of your sites and record findings in the results table at the end of the worksheet. Review your results and discount any sites you think may be unsuitable for honey possums. Then answer the questions below.

11. In some months a site might only have only one plant species in flower. What might this mean for a honey possum population?

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- Select **Next** to display the screen titled 'Calculating available energy'. Practice the calculations and answer the question below.

12. Why do you think a single banksia inflorescence can be such a good energy source?

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- Select **Next** to display the screen titled 'Available energy'. Calculate how much energy is available, every month, in kJ per hectare per day for your shortlisted sites.
- The field metabolic rate (FMR) of a honey possum is 34.32 kJ per day. This means that a free-living honey possum uses 34.32 kJ of energy during normal daily activity. In the month when energy availability is at its lowest, calculate how many honey possums (per ha) each site supports. Record your results in the summary table.

13. Name some factors this calculation doesn't take into account?

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14. Why do you think honey possum population density is so closely linked to nectar availability?

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15. What will happen to a site's honey possum population if the amount of available nectar falls because of a change of plant species in flower?

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16. If a site that you have chosen appears to be suitable for a honey possum population, why do you think there may be no honey possums there at the moment?

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Summary table

	SITE 1	SITE 2	SITE 3	SITE 4
site name				
features relating to honey possum habitat requirements				
THREATS				
dieback present in site (yes/no)				
approximate area infected (%)				
dieback present outside site (yes/no)				
predator-proof fencing (yes/no)				
aerial baiting program (yes/no)				
chance feral predators present (high/low)				
VEGETATION SURVEY				
year-round flowers? (yes/no)				
REVIEW RESULTS				
shortlist this site? (yes/no)				
AVAILABLE ENERGY				
month with lowest available energy				
number of honey possums per hectare this site can support				
FINAL SELECTION				
yes / no				