

Use the iPad app, *Food webs*, or paper-based food webs created with the procedure sheet, *Making food webs*, to answer the following questions. The app and procedure contain food webs for three environments: Kimberley, Herdsman Lake and Cottesloe Reef. Any of these environments may be used to answer questions in Part 1.

Part 1: Creating a food web

1. What do we do with energy we get from food?

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2. Which animals in your food web (Kimberley Herdsman Lake Cottesloe Reef) are:

a. carnivores?

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b. herbivores?

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c. omnivores?

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3. Why are all animals called consumers?

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4. Why are plants called producers?

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5. Why do arrows in food chains and food webs point towards the animal that is eating?

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6. What order consumer is each of these animals in your food web?

Kimberley	Herdsmen Lake	Cottesloe Reef
cicada:	water flea:	brown-lipped abalone:
rainbow bee-eater:	motorbike frog:	weedy seadragon:
northern quoll:	tiger snake:	Australian sea lion:
freshwater crocodile:	swamp harrier:	Australian pelican:

7. Explain why some animals can be more than one order of consumer (e.g. meat ants, black duck and blue swimmer crabs can be first order or second order consumers, or higher).

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Part 2: Predicting effects of cane toads

Use the food web for Kimberley or Herdsman Lake environments to answer these questions.

8. What do cane toads eat?

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9. What effect would introduction of cane toads have on native organisms?

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10. What eats cane toads?

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11. Cane toads contain poisons (bufotoxins) that kill most animals that try to eat them. What effect would introduction of cane toads have on the number of predators living in an area? Why?

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12. Some animals (e.g. meat ants and many birds) are not affected by bufotoxins. What effect would cane toads have on the number of these animals in an area?

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13. How do you think introduction of cane toads might affect plants? Explain why.

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14. Cane toads and green tree frogs don't often eat each other, but arrival of cane toads in the Kimberley seems to have impacted on the number of green tree frogs. Why is this?

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Part 3: Predicting effects of a marine invader

Use the food web you created for Cottesloe Reef to answer questions in Part 3.

- The Asian date mussel is a small saltwater mussel that inhabits coastal areas. It is originally from Singapore. Date mussels eat phytoplankton, just like local mussels and clams.
- Date mussels can form dense mats, that contain up to 150 000 individuals per square meter, on both soft and hard surfaces. Although it contains no poison, date mussels are dangerous in ecosystems where they have been introduced. Dense mats of mussels compete with native seagrass, algae and invertebrates for food and space. However, consumers (such as the striped stingaree) that eat local clams and mussels may benefit from the increased amount of available food.

15. What do Asian date mussels eat?

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16. What effect could introduction of Asian date mussels have on native herbivores?

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17. What eats Asian date mussels?

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18. How do you think introduction of Asian date mussel might affect sea grass meadows? Explain why.

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19. Asian date mussels and scallops don't eat each other, but arrival of Asian date mussels seems to have reduced the number of scallops. Why is this?

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