Return to 1616 **Construct a Food Web**



Department of **Biodiversity, Conservation** and Attractions

DIRK HARTOG ISLAND NATIONAL PARK

Dirk Hartog Island Food Web

A food web is used to show how organisms interact with each other, and the flow of energy through an ecosystem. Research some examples of food chains and food webs (Eq. using a Google image search). Using the Wild Challenge card set, see if you can create your own food web for Dirk Hartog Island. Use arrows to show the flow of energy from one organism to another.

Use the following clues to help:

Discussion Questions:

1.Western Grasswren (Insectivore and Seed Eater) - How does the Western Grasswren's dual diet of invertebrates and seeds contribute to its survival? What role does it play in nutrient cycling? Can you think of specific invertebrates that the Western Grasswren might prey upon, and how this interaction affects both the grasswren and its prey?

2.Greater Stick-nest Rat (Herbivore) - How does the Greater Stick-nest Rat shape the island's vegetation by feeding on succulent and semisucculent shrubs? What impact does this have on the ecosystem? What other animals might benefit from the habitat created by the stick-nest rat's nest-building behavior?



Western Grasswren (Insectivore and Seed Eater):

- · Consumes a variety of invertebrates (termites, bugs, beetles, ants, centipedes, grasshoppers, caterpillars, spiders).
- Also feeds on seeds of grasses and various dicotyledons, as well as small berries.

Banded Hare-wallaby (Browsing Herbivore): · Broad and varied diet, including grasses, shrubs,



Shark Bay Mouse (Vegetarian / Omnivore):

A. sclerosperma, and A. tetragonophylla.

• Prefers species like Acacia ligulata, A. ramulosa,

and other dicotyledonous plants.

- Stomach and scat content includes plant materials (petals, flowers, leaf fragments) and invertebrate fragments (spiders).
- Plays a role in nutrient cycling.



- Greater Stick-nest Rat (Herbivore):
- · Feeds on leaves and shoots of succulent and semi-succulent shrubs.
- Plays a role in the ecosystem by shaping vegetation and creating habitat.



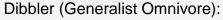
Rufous Hare-wallaby (Flexible Herbivore):

- · Consumes perennial grasses, grass seeds, and seeds of sedges.
- May also eat insects during dry periods.
- · Adapts to available food sources.



Mulgara (Generalist Predator):

- · Eats a wide range of prey items that fit in its mouth.
- Includes invertebrates and small vertebrate animals.
- Influences prey populations.



- Consumes arthropods (75%) and plant matter
- · Eats flowers, invertebrates, berries, and



(25%).

succulents.



Return to 1616 Construct a more complex Food Web



Biodiversity, Conservation and Attractions RETURN TO 1616 Dirk Hartog Island National Park

Dirk Hartog Island Food Web

A food web is used to show how organisms interact with each other, and the flow of energy throughout the system in an ecosystem. Using the Wild Challenge card set, see if you can create your own food web for Dirk Hartog Island. Use arrows to show the flow of energy from one organism to another.

Use the following clues to help!



Return to 1616 Food Web Clues - Existing Species

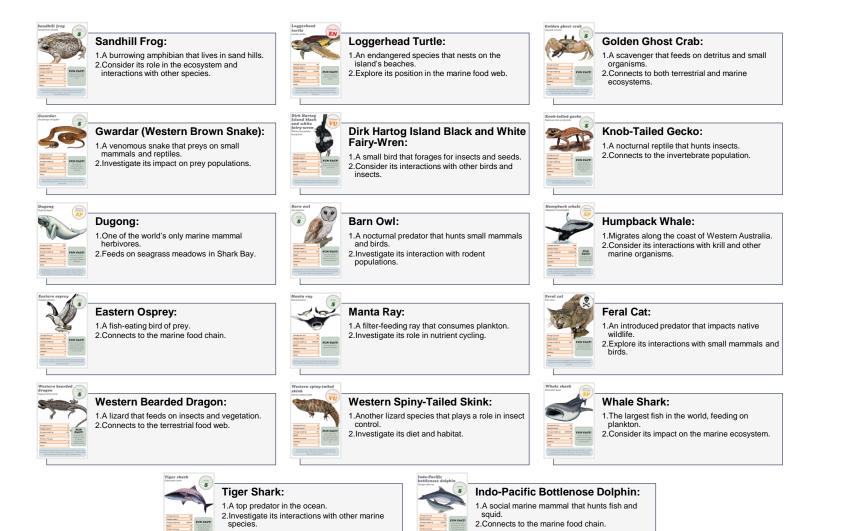


and Attractions

RETURN TO 1610 Dirk Hartog island National park

Dirk Hartog Island Food Web

A food web is used to show how organisms interact with each other, and the flow of energy throughout the system in an ecosystem. Using the Wild Challenge card set, see if you can create your own food web for Dirk Hartog Island using the animals that were already on the island. Use arrows to show the flow of energy from one organism to another. Use the following clues to help:



Discussion Questions:

- Why were feral cats removed from Dirk Hartog Island National Park as part of the Return to 1616 Ecological Restoration Project? How does this change your food web?
- 2. How might the presence of loggerhead turtles nesting on the island's beaches impact the terrestrial ecosystem?
- The dugong is a herbivorous marine mammal that feeds on seagrass meadows. How does its diet influence the health of seagrass ecosystems, and what other species might benefit or be affected by its presence?

Feel free to explore these questions further during your food web discussions!

Return to 1616 **Food Web Clues - Translocated Species**



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DIRK HARTOG ISLAND NATIONAL PARK

Dirk Hartog Island Food Web

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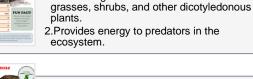
Brush-tailed Mulgara:

1.A nocturnal predator that feeds on small invertebrates (like insects) and occasionally small vertebrates.

2.Connects to other species as both predator and prey.

Chuditch (Western Quoll):

1.A carnivorous marsupial that preys on small mammals, birds, and insects. 2. Plays a role in controlling prey populations.



Desert Mouse:

Heath Mouse:

other vegetation.

1.An omnivorous species that consumes seeds, insects, and plant matter. 2.Connects to both plant-based and animal-

Banded Hare-wallaby:

.A browsing herbivore that consumes

based food sources.

1.A herbivore that feeds on grasses and

Woylie (Brush-tailed Bettong):

1.A nocturnal herbivore that eats grasses,

2.Forms part of the primary consumer level.





Western Grasswren:

- 1.An insectivorous bird that gleans food from litter and sand.
- 2.Consumes invertebrates (like ants, beetles, spiders) and seeds.

Boodie (Burrowing Bettong):

1.A herbivorous marsupial that feeds on

grasses, seeds, and plant material.

2. Interacts with other herbivores and

influences vegetation dynamics.

Shark Bay Mouse:

1.A vegetarian omnivore that includes plant materials (petals, leaves) and invertebrate fragments (spiders) in its diet. 2. Plays a role in nutrient cycling.

Discussion Questions:

Disease Impact:

- 1. What might happen if a species in this food web gets a disease? How would it affect other organisms?
- 2. Consider the cascading effects on energy flow and population dynamics.

Chuditch Translocation:

- 1. Why is the Chuditch (Western Quoll) the last animal to be translocated to Dirk Hartog Island National Park as part of the Return to 1616 **Ecological Restoration** Project?
- 2. Explore factors related to habitat suitability, ecological niches, and conservation priorities.

Shark Bay Bandicoot:

1.A small marsupial that forages for insects. seeds, and plant material. 2. Influences vegetation structure and nutrient cvclina.



Greater Stick-nest Rat:

1.Herbivorous, feeding on leaves and shoots of succulent and semi-succulent shrubs. 2. Shapes vegetation and provides habitat.



Rufous Hare-wallaby:

seeds, and plant material.

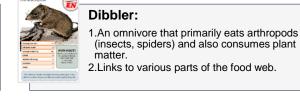
2.Connects to other herbivores and

influences plant communities.

1.A flexible herbivore that consumes perennial grasses, grass seeds, and seeds of sedges.

2.Adapts to available food sources.





Return to 1616 **Food Web Clues - Supplementary Cards**



Biodiversity, Conservation and Attractions

DIRK HARTOG ISLAND NATIONAL PARK

Dirk Hartog Island Food Web

A food web is used to show how organisms interact with each other, and the flow of energy throughout the system in an ecosystem. Using the original Wild Challenge card set to construct a food web for Dirk Hartog Island and then try adding the supplementary cards. Use arrows to show the flow of energy from one organism to another.

Use the following clues for the supplementary cards!



1. These juicy fruits are an essential food source for various animals on the island. 2.Consider which species might rely on berries for energy.



Bushes:

1. Bushes provide shelter, nesting sites, and food for both herbivores and insectivores. 2. Think about which animals interact with the bushy vegetation.



Flowers:

- 1.Blooming flowers attract pollinators like bees, butterflies, and birds. 2.Explore the connections between flowering
- plants and their visitors.



Fungi:

Seeds:

survival

- 1.Decomposers play a crucial role in nutrient cycling.
- 2.Consider how fungi break down organic matter and impact other organisms.

1.Seeds from various plants contribute to the

2. Investigate which species rely on seeds for

diet of seed-eating animals.



Grasses:

birds.

1. Grasses serve as primary producers, forming the base of the food web. 2.Connect herbivores (like kangaroos or wallabies) to grass consumption.



Invertebrates:

- 1.Insects, spiders, and other invertebrates are abundant on the island. 2.Explore predator-prey relationships
- involving these small creatures.

Succulent Shrubs:

1.Succulents store water and provide sustenance for herbivores. 2. Consider which animals feed on succulent leaves and stems.

Discussion Questions:

- 1. How do berries. flowers, and grasses interact with invertebrates? Consider pollination, seed dispersal, and herbivory.
- 2. What role do fungi play in the ecosystem? Think about decomposition, nutrient cycling, and symbiotic relationships.
- 3. How are small vertebrate animals connected to succulent shrubs and gould's goanna? Explore predator-prev dynamics and habitat dependencies.



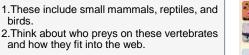
Gould's goann

Gould's Goanna:

1.A large monitor lizard that hunts smaller animals.

2.Explore its role as a predator in the ecosystem.

Small Vertebrate Animals:







Many food chains make up a food web. Conduct some research to learn more about food webs and how they represent energy flow. Can you use the *Return to 1616* playing cards to create a food web such as the example below? Can you create some different examples? Share and discuss your food webs with others. As an extension, you may like to find a way to represent other aspects such as now many individual plants and invertebrates are required to support a herbivore or carnivore.Cards can be printed from <u>here</u>.

