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Pacific Islands Climate Education Partnership (PCEP)

Author: **Danko Taboroši**

Editors: **Marylin Low** and **Art Sussman**

Vector illustrations: **Sevuloni Tora**

Photography: please see page 34 for image credits

Design, layout, and image processing: **Jyrgalism Design**

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OUR LOW ISLAND HOME

Place-based resources for Pacific Island schools



DEDICATION

*For students, teachers and communities
living in tropical Pacific island environments.*

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INTRODUCTION

There are low and high islands in the Pacific Ocean. All islands have some of the same **environments** (kinds of places such as coral reef, open ocean, and forest). Some islands have places not found on the other islands.

This book describes different environments on Pacific low islands. Pictures show these environments, and the plants and animals that live there.

These islands are in the Pacific Ocean near the equator. Because of this location, the islands have a warm **climate**. It is warm for the whole year. It is warm during the day and during the night. The ocean is warm all year.

Many of the plants and animals live in this warm climate. They are different from the plants and animals that live in colder parts of the planet.

The words that are in blue might be new words for you to know. Check out the Glossary near the back of the book. You can learn what each of these words mean. We write these words in blue the first time they are in the book.

This book has pictures of plants and animals that live on low islands. Which ones do you know? Talk with your friends, family and teachers to find out what they know about the environments, plants and animals on your island home.

WHO LIVES WHERE ON OUR ISLAND?

People live on our island. Plants and animals do, too. They live where there is food and water. Plants grow and produce new plants there. Animals raise their young there. Different plants and animals live in different places on our island.

Coconut palms live near the shore. Fish live in the ocean. People live in villages. We call a home for a plant or animal a **habitat**.



In this book, we explore different habitats on low islands. We learn about the plants and animals that live there.

WHERE DO PEOPLE LIVE?



People live in a village.
Where is the village on the island to the left?

Where do plants and animals live?
Turn the page to find out.

TREE GARDEN

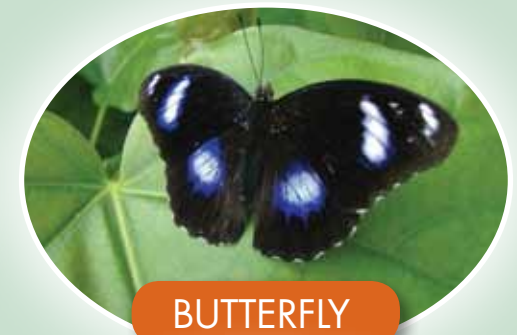
Many people brought breadfruit, coconut, taro, and pandanus plants to the islands. Today, these trees and plants grow in gardens in our villages. Tree gardens are habitats for plants. They give us fruit, **root crops** and other vegetables to eat. Tree gardens are also home to insects, lizards, wild birds, chickens and pigs.



THE TREE GARDEN IS OUR HOME



TAPIOCA



BUTTERFLY



BANANA



SKINK



COCONUT



CHICKEN



BREADFRUIT



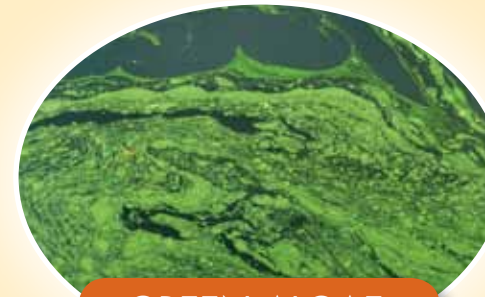
PIG

TARO PATCH

Taro is an important food on low islands. Taro grows in wet areas. People make wet places to grow taro. These places are called taro patches. They are habitats for different kinds of taro, and other plants. Shrimp, crabs, fish, and animals also live there. Many insects live underwater in the taro patch when they are young.



THE TARO PATCH IS OUR HOME



GREEN ALGAE



MOSQUITO



DUCKWEED



WATER STRIDER



TARO



DRAGONFLY



SWAMP TARO



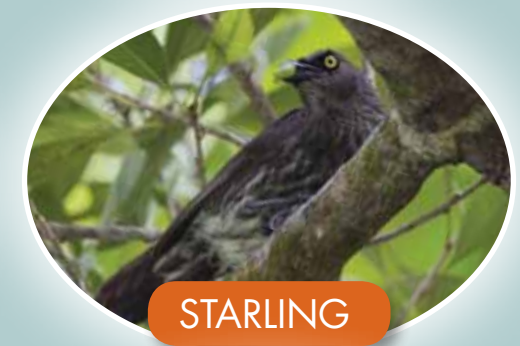
FRESHWATER SNAIL

FOREST

Wild forests habitats have trees, bushes, and herbs. They came to the islands on their own. They grow without the help of people. Some seeds floated across the ocean. Some seeds were blown by wind. Some arrived in the **guts** of birds and bats. The forest has many different trees and other plants. Many animals also live in the forest habitat.



THE FOREST IS OUR HOME



BEACH

Low islands have sandy or rocky beaches. Sand and rocks are pieces of broken coral and shells of other sea animals. The beach is home to plants that grow in sand. Salty water often blows on them. Beaches are also home to worms and other small animals that live in the sand. Crabs and seabirds feed on these small animals.



THE BEACH IS OUR HOME



BEACH MORNING GLORY



GHOST CRAB



OCTOPUS BUSH



HERMIT CRAB



NAUPAKA



WHIMBREL



COCONUT



TURNSTONE

LAGOON

Coral reefs and islands surround a lagoon. They protect it from the open ocean. The lagoon has many different types of habitats: muddy areas, sandy areas, seagrass, and coral. It is home to sea plants and animals: **algae**, sponges, corals, sea anemones, jellyfish, worms, clams, snails, sea urchins, sea stars, sea cucumbers, shrimp, crabs, and many kinds of fish. The lagoon has many living things.



THE LAGOON IS OUR HOME



REEF FLAT

Some parts of the reef are flat and **shallow**. They are called “reef flats.” The shallow reef is dry in some places at very low tide. Sand, algae, seagrasses, and corals cover the reef flat. The reef flat is habitat to those who like warm, shallow water. Worms, snails, clams, shrimp, crabs, sea cucumbers, sea stars, sea urchins, and many colorful fish live in the reef flats.



THE REEF FLAT IS OUR HOME



BROWN ALGAE



SHRIMP



SEAGRASS



SEA STAR



BOULDER CORAL



BUTTERFLYFISH



MUSHROOM CORAL



TRIGGERFISH

REEF FRONT

The reef front is where the reef meets the open ocean. The reef front is a giant underwater wall. It comes up from the deep ocean to the sea surface. The low parts of the reef front are hit by strong waves. You have to be strong to live there. Others live in deeper parts of the reef front. Some of them, especially sponges, sea whips, and sea fans, like the flow of ocean currents. They grab bits of food from the water. Large fish swim nearby.



THE REEF FRONT IS OUR HOME



SEA WHIP



RUDDERFISH



SEA FAN



UNICORNFISH



VELVET CORAL



HUMPHEAD WRASSE



ANTLER CORAL



REEF SHARK

ISLAND WITHOUT PEOPLE

Some small islands have animals living there, but no people. Animals that people hunt and eat find **refuge** there. They live without being caught by people. Sea turtles come to beaches on these islands. They make their nests. Seabirds lay eggs and raise their young there. It is important not to bother animals on their island refuges.



SMALL ISLAND IS OUR HOME



COCONUT CRAB



TROPICBIRD



GREEN TURTLE



NODDY



HAWKSBILL TURTLE



BOOBY



TERN



FRIGATEBIRD

OPEN OCEAN

Many animals live in the open ocean beyond the reef. Some of them are so small they are hard to see. Jellyfish, squid, tuna, sharks, and rays also live in the open ocean. Dolphins and whales, which are not fish but are **mammals** like us, live there, too. Hidden in the cold and deep ocean are many more animals.



THE OCEAN IS OUR HOME



GLOSSARY

Algae – plants that live in water and do not have roots. Some algae have skeletons and help build very strong reefs.

Climate – the kind of weather that a place usually has at different times of the year.

Environment – a kind of place and its land, air and water.

Guts – stomach, belly.

Habitat – a natural home for a plant or animal.

Herb – a small plant that is used to give flavor to food or used as a medicine.

Mammal – an animal that the mother makes milk for its babies.

Refuge – a safe place to live.

Root crop – a kind of plant that people grow because the root is a good vegetable to eat.

Shallow – not deep.



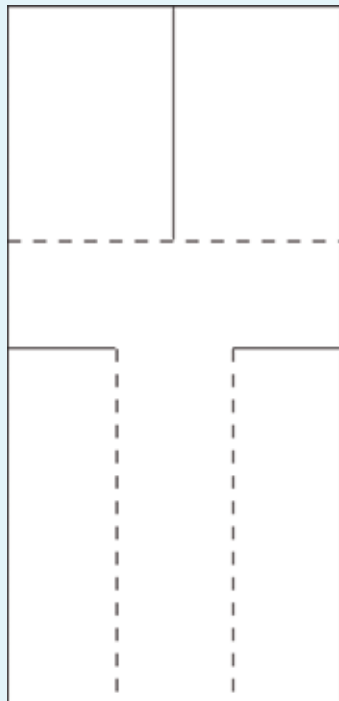
TEACHING TIPS

TRAVELLING SEEDS

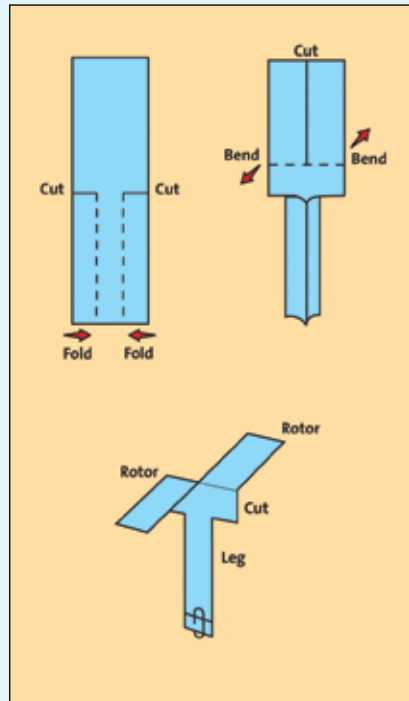
Create seed models and collect real seeds and other materials to explore how seeds travel to populate the islands. Learn the characteristics and conditions under which seeds travel to the islands. This activity allows students to develop experimental design skills and manipulate different sizes and materials.

- A.** Fold and cut a model of a flying seed (see patterns below). Color the models and name them by specific island plants that have 'wings' to travel. Compare different sizes and see how far they travel under "wind" and "no wind" conditions. Record and discuss findings as they relate to island plant seeds and how they help plants grow in new locations.

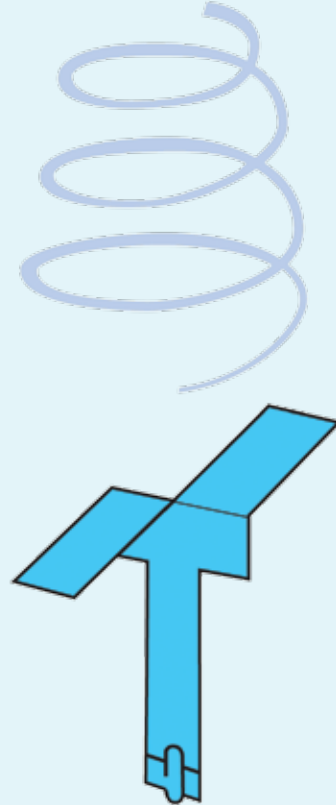
Pattern for "flying seeds"



Cut & folding instructions



Flying "seed model"



- B.** Use real seeds and other materials (e.g., wood, rock pebble, plastic) to explore floating and sinking objects and compare their behaviors both in fresh and salty water. Use a matrix chart (see example below) to organize and compare ideas about seed dispersal under different water conditions.

OBJECT (type and shape)	SALTY WATER			FRESH WATER		
	Sink	Float	Partly float	Sink	Float	Partly float
Coconut (seed, round)		√				√
Rock (natural material, round)	√			√		

Afterwards, model and guide students to use academic vocabulary to illustrate and discuss their understanding of what floating means, which seeds came to the island, and the properties that objects have to float or sink (e.g., air inside & shape).



WORD WALL

Word walls reinforce learning and vocabulary building. Here are some ways to use a word wall with students:

Sort words on word wall according to their meaning
Sort words alphabetically or phonetically (based on sounds such as vowels)
Match local language words/phrases with English words/phrases
Match words with pictures
Create sentences with words from word wall
Pick a word from word wall, have students guess it by asking yes or no questions

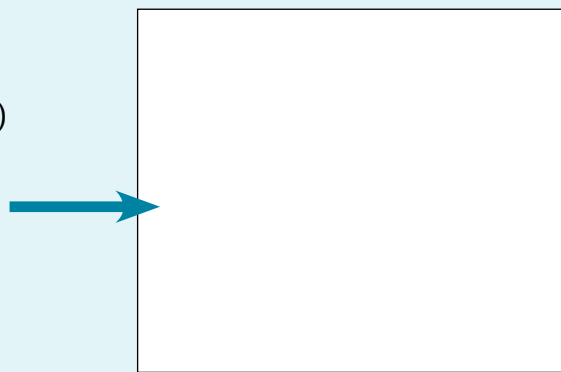


VISUALIZING MEANING

Students demonstrate understanding of a concept/word visually. (For example, illustrate the meaning of habitat or algae.)

Make a drawing to show your understanding of the word(s).

Label the drawing in the local language and English.

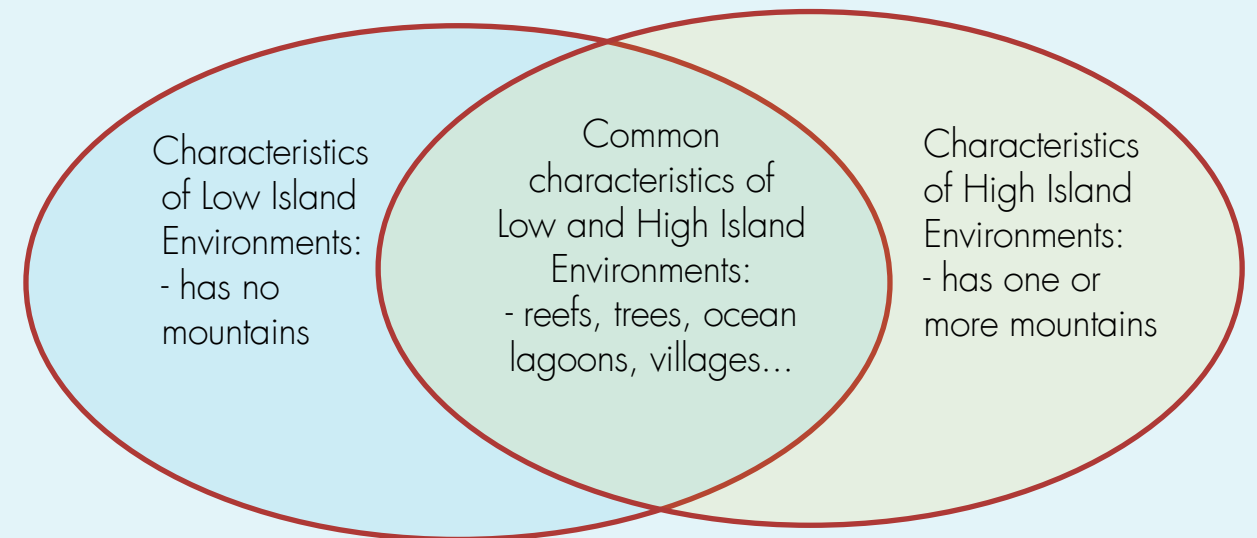


COMPARING ISLAND HABITATS AND ORGANISMS

This activity uses the pages titled “Where Is Our Home?” from both the High Island and the Low Island books.

- A.** Using illustrations from the pages, ask students to compare what they see in common and what they see is different about each of the islands. Organize ideas in a Venn diagram.

Venn Diagram Example:



Introduce/review key vocabulary and create word wall with students (see p. 30).

Read aloud the text from each book once. Do a “think aloud” to share how you are making sense of the text and identifying different information.

Write the name of an organism (e.g., “coconut palms”) and a home (e.g., “near the shore”) from the text each on a 3x5 card. Have students work in pairs to search through texts to find names of other organisms and their homes (e.g., “fish”/“ocean” and “people”/“villages”). Write down the organisms, one on each card. Explain to students these cards will be used later. Connect “home” with “habitat”.

Guide students to use the tables of contents and identify habitats common in both types of islands. Add them to the ‘common bubble’ chart (Tree garden, forest, lagoon, different parts of the reef). Identify which habitats are described for each type of island and add to the corresponding bubbles. Model how to use compare/contrast signal words (e.g., “both” for similarities; “but” for differences) to describe common and different characteristics of the two islands.

COMPARING ISLAND HABITATS AND ORGANISMS

(continued)

Model how to find information about the Tree Garden habitat: create “information cards” (using 3x5 cards) about each organism (e.g., what the organism eats) from texts, create a grid (see example), place organism cards found in the habitat under the correct column, and place corresponding information cards onto the grid.

Example grid organization for 3x5 cards and information cards for Tree Garden:

Type of Island: (high/ low)		
Island Habitat (where they live): <u>Tree Garden</u>		
PLANTS	ANIMALS	
Breadfruit		People brought it, grow it, and eat it.
	Chicken	People raise chickens for eggs and meat. Chickens eat worms, seeds, grass, and grains.

B. Divide students into groups and assign a habitat to each group. Just as modeled, students find information on living organisms and where they live on the assigned habitat pages for high and low island habitats. Monitor and assist as needed. Do a “gallery walk” and have students use compare/contrast signal words to describe similarities and differences between the habitats.

C. Have students identify an organism based on information about that organism. Provide cards (see examples below) to play a “Who Am I: Identify the Organism” game. More cards can be made getting information locally or from the computer. Tape a card onto each students’ back. Have students get together in pairs and guess which organism they are.

Example cards for “Who Am I?” Activity (name of animal should be on other side of the card)

<ul style="list-style-type: none"> • I am a spiny and ball shaped body. • I eat algae from the reef and ocean floor. • Queen triggerfish eat me. • I live on the reef. <p>(sea urchin)</p>	<ul style="list-style-type: none"> • I am a plant. I make my own food with energy from the sun. • I have long leaves where young fish, shellfish hide. • Turtles eat me. <p>(sea grass)</p>	<ul style="list-style-type: none"> • I am a plant. • I can be tiny or larger. • I live in the water and use energy from sunlight to make food. • Snails, parrotfish, crabs, snails, and many other sea creatures eat me. <p>(algae)</p>
<ul style="list-style-type: none"> • I have fins, scales and backbone. • My mouth is like the beak of a bird. • I eat coral polyp that grows on dead coral. • Larger fish (barracuda) eat me. <p>(parrotfish)</p>	<ul style="list-style-type: none"> • I am one individual of many like me. I live with others in a colony. • I have tentacles to catch and eat tiny sea animals called zooplankton. • Parrotfish eat me. <p>(coral polyp)</p>	<ul style="list-style-type: none"> • I have a backbone, breathe air and live on land. • I eat fish, turtle eggs, squids, lobsters, and many other sea animals. • I like watching the sunrise and sunset. <p>(human being)</p>
<ul style="list-style-type: none"> • I have a hard outer shell and 10 limbs. • Two limbs are claws to catch and crush sea urchins and snails. • Humans catch me and eat me. <p>(crab)</p>	<ul style="list-style-type: none"> • I have a star-shaped body. I can be large, spiny and of many colors. • I can grow a new body arm if I loose one. • I eat algae and bits of dead plants and animals. • Crabs and lobsters eat me. <p>(sea star, also called starfish)</p>	<ul style="list-style-type: none"> • I have backbone, 4-flipper legs and a hard shell to protect me. • I breathe air, I eat sea grasses and sponges. • I can get caught in fishing nets. • Humans dig up my eggs to eat. • I am in danger of extinction. <p>(sea turtle)</p>

PHOTO CREDITS

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OTHER BOOKS IN THIS SERIES

This book is a part of the series, Pacific Islands Climate Education Partnership (PCEP), Place-based resources for Pacific Island schools. The series also includes the following titles published thus far.



Our High Island Home is a book about natural island environments that Pacific children and their families will enjoy reading together. Highly visual images make familiar high island land- and seascapes come to life. Children living on high islands will recognize their everyday world and yet be amazed at the hidden treasures found within.



Pacific High Island Environments is a book for those wanting to learn more about the places, plants, and animals on tropical high islands in the Pacific. The reader learns how high islands are formed and the various environments that create habitats for many species of plants and animals. From agroforests to mangrove swamps and lagoons, the reader is connected to island life and how important these environments are for the communities that live there.



Pacific Low Island Environments is a book for those wanting to learn more about the places, plants, and animals on tropical low islands in the Pacific. The reader learns how low islands are formed and the various environments that create habitats for many species of plants and animals. From atoll forests to patch reefs and the open ocean, the reader is connected to island life and how important these environments are for the communities that live there.



Mangroves—Living on the Edge in a Changing Climate offers readers of all ages a fascinating journey through the inner worlds of the mangroves. Intricate adaptations and unexpected habitats emerge from the pages of the swamp, unsettling the reader into realizing the incredible value of this island ecosystem. Mangroves provide many resources for local communities, and help reduce global warming by storing more carbon in the soil and its trees than other comparable ecosystems. This book also explains climate change, and how communities can help protect mangroves from climate change impacts such as rising sea levels.



Adaptations—Finding a Fit in the Changing World is a book that children and their families will love. It is full of colorful pictures about how living things are adapted to meet their basic needs in the places they live. Children will be fascinated to learn that some plants have developed chemicals so that animals that share their environment will not eat them. Children will also learn that there are many different types of birds' beaks, all adapted to meet their need for getting food in different places. As children turn these pages, they quickly realize that all living things adapt to get what they need. It is this unique ability to adapt that help all living things survive.



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