



Over  
70  
flaps

Lara Hawthorne

# SMALL WORLDS WATER

Explore small habitats  
in nature

**B**  
**I**  
**G**  
**P**  
**I**  
**C**  
**T**  
**U**  
**R**  
**E**  
**P**  
**R**  
**E**  
**S**



# ROCK POOL

As the tide goes out, it leaves behind pools of sea water trapped in gaps between the rocks. Each rock pool has its own unique treasure trove of plants and animals.

A rock pool may look safe, but it's a harsh world – battered by waves and heated by the sun.

**Barnacles** stick to the surface of rocks. Their strong shells protect them from predators.

Most of these small fishes will stay in the same rock pool all their lives.

This is **sea lettuce**, a type of seaweed. Its ruffled fronds look just like lettuce leaves.

**Seaweed** is vital for the web of life in a rock pool. Many creatures depend on it for food and shelter.

This **sea star** is on the hunt for **limpet** prey.

**Sea anemones** are sometimes called 'flowers of the sea' but they are animals, closely related to jellyfish and corals.

A **candy-striped flatworm** creeps across the rock pool using thousands of tiny hairs on its underside.

By day, the **brown shrimp** lies buried under the sand.

**Hermit crabs** have soft body parts. They use the empty shells of other sea creatures for protection.



# MANGROVE TREE

Mangrove trees and shrubs are found along tropical coasts. The warm, salty water they live in would quickly kill most plants, but mangroves are tough survivors. They also create incredible habitats. In Florida, USA, the mangrove swamps are home to more than 1,300 animal species, including birds, fishes and amphibians.

Mangroves store fresh water in their thick, succulent leaves.

These are green anole lizards.

The mangrove tree crab lives in the canopy, feeding mostly on red mangrove leaves.

Leaves drop from the mangrove trees and are broken down by fungi and bacteria, which turn them into detritus.

By day, the mangrove water snake basks on a low-hanging branch.

Oxygen enters a mangrove through lenticels—thousands of tiny breathing holes in the bark and roots.

This mangrove seed has fallen into the water. It can survive, floating, for up to a year.

The trees protect the coastline from stormy seas and stop soil being washed away.

A roseate spoonbill probes the mud for molluscs. It roosts in the mangrove branches. Where is its nest?

Mangroves line the coast, so their roots are flooded every day as the tide comes in.

Barnacles

Shrimp

Oysters

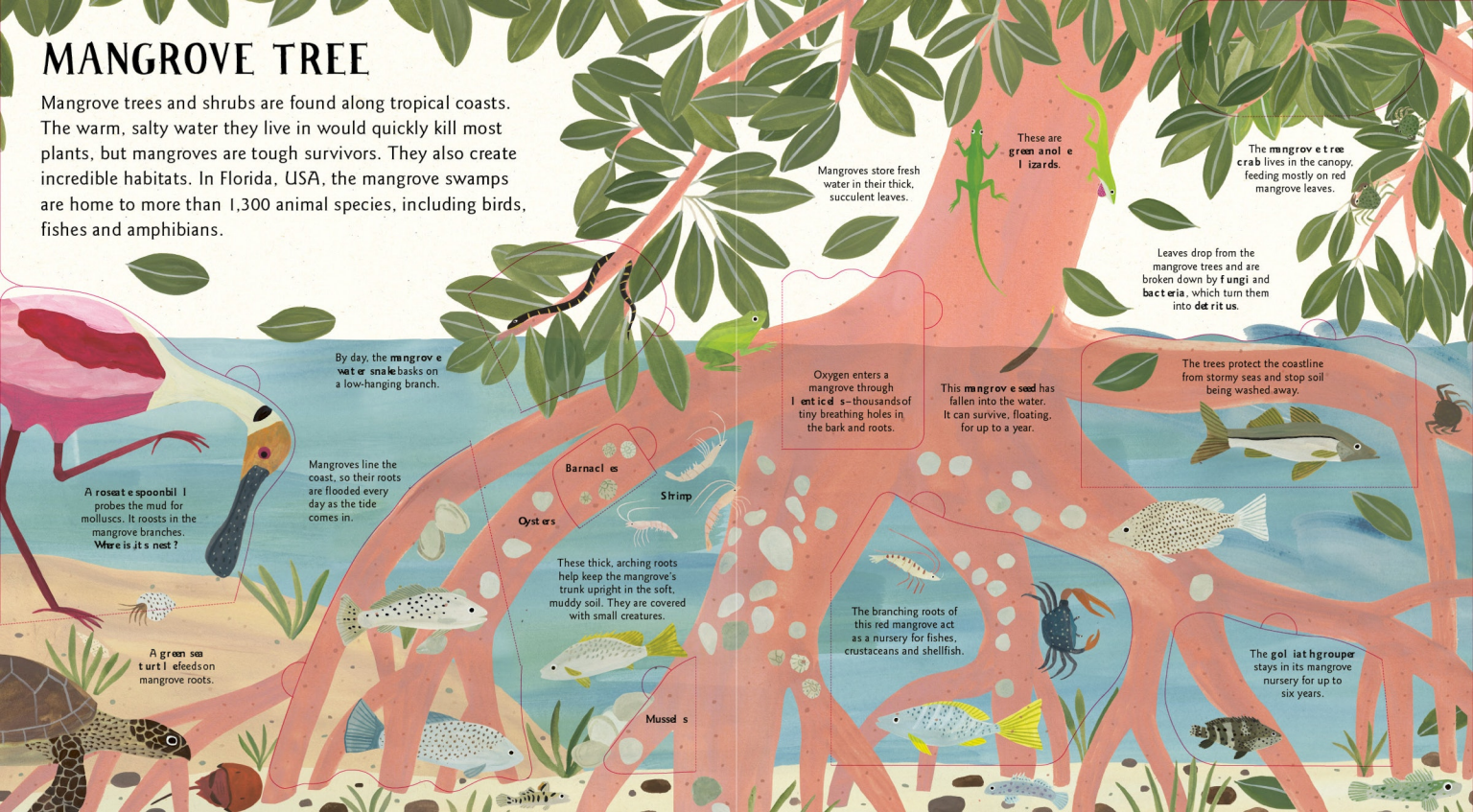
These thick, arching roots help keep the mangrove's trunk upright in the soft, muddy soil. They are covered with small creatures.

The branching roots of this red mangrove act as a nursery for fishes, crustaceans and shellfish.

A green sea turtle feeds on mangrove roots.

Mussels

The goatfish group stays in its mangrove nursery for up to six years.





# WATERHOLE

In the centre of Australia, lies a vast desert. But along an ancient, dried-out riverbed in the Finke Gorge are small spring-fed pools; home to amazing desert fishes and frogs. And when the rare rains come the valley floods, bringing an explosion of life.

A **yell** **ow** **fac**ed **wip** **sn**ake  
hunts for frogs at the  
water's edge.

A **pr**aying **mnt** **is**  
hunts for insects  
among the reeds.

A **kn**g **is**hr  
waits beside  
the pool.

A **sn**ow-y **wh**ite  
**gr**eat **gr**et  
stands  
at the water's edge.

The **go**anna  
spends most of its  
time on land . . .

These **dr**agon **fl**ies are mating.  
The blue male grips the  
female's neck, while the female  
bends her body forwards.

A **des**ert **rain**bow **is**h  
is looking for mosquito  
larvae to eat.

The **h**ardy **bo**ny **br**eac**m** survive  
in water that's nearly as salty as the  
ocean, and temperatures that range  
from 9–38° Celsius.

When the rains fall, huge  
numbers of **Ma**in's **f**rogs  
emerge to lay their eggs  
in the water. **h**ow **m**any  
can you see?

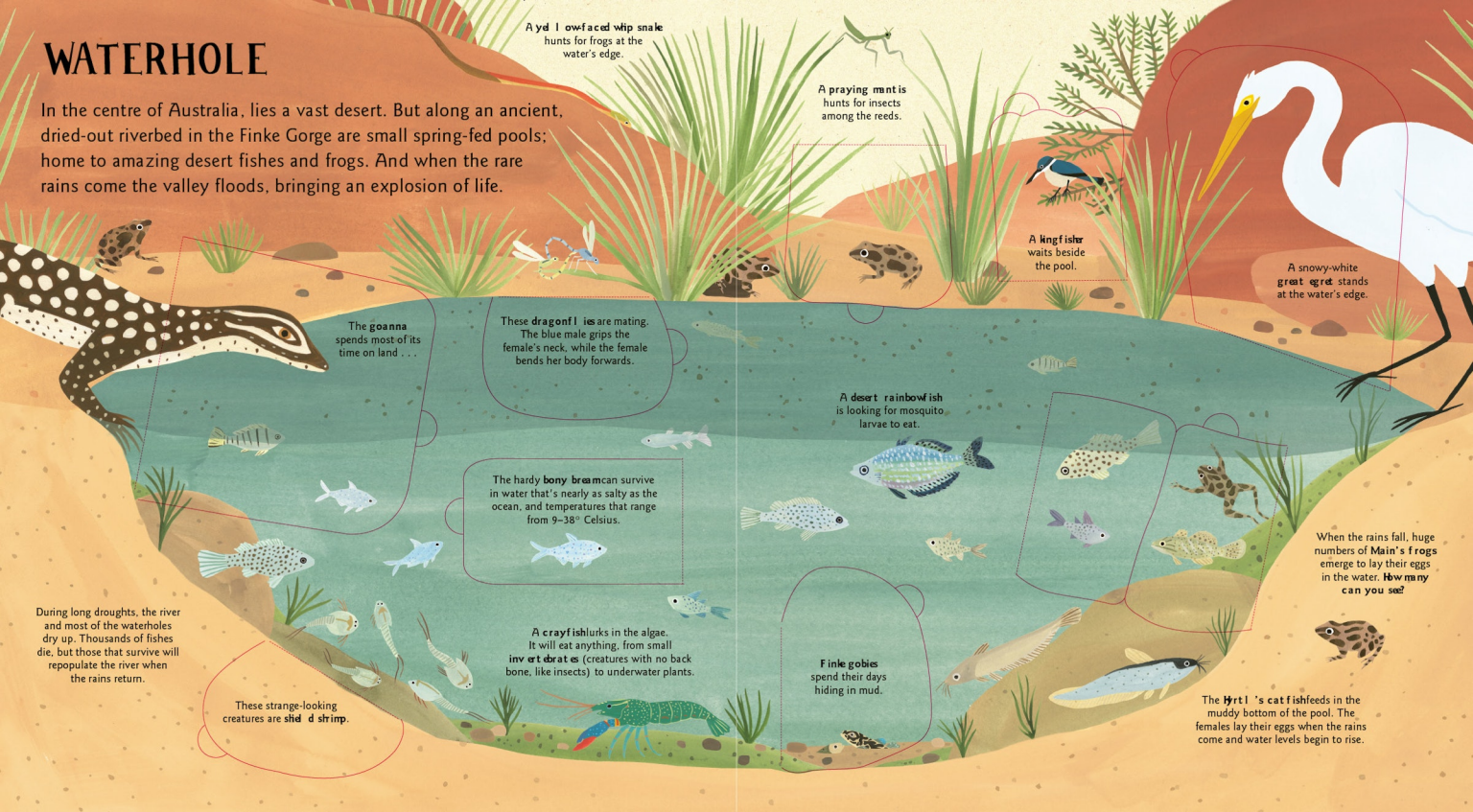
During long droughts, the river  
and most of the waterholes  
dry up. Thousands of fishes  
die, but those that survive will  
repopulate the river when  
the rains return.

These strange-looking  
creatures are **sh**id **d** **sh**rimp.

A **cr**ay **f**ish lurks in the algae.  
It will eat anything, from small  
**inv**ert **br**at **is** (creatures with no back  
bone, like insects) to underwater plants.

**F**inke **g**obies  
spend their days  
hiding in mud.

The **h**rt **l**'s **cat** fish feeds in the  
muddy bottom of the pool. The  
females lay their eggs when the rains  
come and water levels begin to rise.



# CORAL REEF CLEANING STATION

Each morning, at an eye-catching spot on a reef in the Red Sea, special cleaner fishes and shrimp gather at a place known as a cleaning station. Their customers come from all over the reef, and range from fishes and eels to turtles and rays.

Most cleaner fishes are only small, growing to around 5 centimetres long, but they often have bright stripes, which attract other fishes so they can clean them.

The top part of a coral reef is covered in tiny, soft bodied animals called coral polyps.

This cleaner blenny is performing a short dance to attract other sea creatures for cleaning.

Many creatures come to coral reefs to lay their eggs. The reefs are also nurseries for young fishes.

Cleaner fishes get their food by eating bacteria, harmful parasites and dead skin from other creatures. This keeps the other creatures clean and healthy.

Every day, a single cleaner fish inspects over two thousand creatures.

A fish allows a cleaner blenny to approach it, but . . .

The thresher shark lives in deeper waters, but comes to the reef to feed and visit the cleaning stations.

A green sea turtle has just arrived at the cleaning station from its breeding ground – a beach over 800km away.

A cleaner shrimp waves its long antennae to show it is ready to clean other sea creatures.

A surgeonfish swims up to a cleaner shrimp.

These batfish are queuing to have their teeth cleaned. They feed on small fishes, algae, and invertebrates.

This grouper would normally eat a creature the size of a cleaner fish . . .

There are many different types of coral. This is a hard coral called **Acropora**. Coral reefs help the planet, as they recycle **carbon dioxide**, a gas that leads to global warming. But coral reefs are in danger.

