



**INCREDIBLE**  
**POP-UP**

**FROG**

AND OTHER WETLAND CREATURES

WITH 20 FLAPS TO LIFT  
AND GIANT POP-UPS!

**BEN HOARE**

**JASMINE FLOYD**

# DIVE INTO A WATER WORLD

Swamps, bogs, lakes and ponds are all freshwater habitats – and are home to a fabulous variety of plants and animals. Some creatures spend their whole lives in the water, some spend part of their life there then move onto land, and others just visit watery places to feed, drink, rest or rest. Wetlands such as these are precious habitats that store water and help prevent flooding, and they're wonderful places to visit and enjoy.

**SPOTTED SALAMANDER**  
Amphibians breathe through their skin underwater. They also have lungs, so can breathe at the surface and on land too.



**BLUEFIN NOTHO**  
Fish breathe underwater through gills, which look like bits in the side of their body.

## BREATHING UNDERWATER

All animals need oxygen to survive, and the animals that live in fresh water have many different ways of breathing.

**OTTER**  
Like all mammals, otters breathe air using their lungs. After every dive, they must return to the surface to breathe.



**WATER SPIDER**  
Spiders and other arachnids breathe air. Some water spiders take a large bubble of air underwater to live in.



**SOUTHERN BELL FROG**  
*Rhinophrynus dorsalis*



## FANTASTIC FOOD CHAINS

Wetlands are home to living things of all shapes and sizes. We draw what each species eats with a diagram called a food chain. The links in the chain show the order in which species depend on one another for food.

## DEPTH ZONES

Different animals and plants are found in each part of a wetland. Some live at the water surface or in shallow water. Others prefer to be in deep water or stay on the bottom.

LAZIBANGA NATIONAL PARK, INDIA

## DISAPPEARING WETLANDS

Some wetlands exist for only part of the year. They dry out when there is little or no rain, then fill up again with water in the rainy season. Wetlands like these are known as seasonal wetlands.

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**SOUTHERN BELL FROG**  
*Ranoidea raniformis*

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# DANUBE DELTA

Flowing through Romania and Ukraine, the magnificent Danube Delta is one of the largest and wildest natural landscapes in Europe. The water here comes from the mighty Danube River, which spreads out to make a vast area of lakes and marshes. There are frogs everywhere, and thousands of water birds use the thick forests of reed plants to nest. Many other rare animals also find a safe refuge in the wetland.

## MARSH FROG

*Pelophylax ridibundus*

## MARSH FROGS

In spring, the wetland is full of marsh frogs that have woken up from their winter sleep. Male frogs head to the water and start calling to attract females. There are two special pouches on each side of their mouths, which inflate like balloons to boost the sound they make. Their calls sound a bit like someone laughing!

## GREAT WHITE PELICAN

*Pelecanus onocrotalus*



## WHITE WATER LILY

*Nymphaea alba*

## WELS CATFISH

Giant fish lurk at the bottom of the Danube lakes. Wels catfish have slimy bodies and strange tentacles around their mouths, which they use like fingers to feel for prey. The catfish will eat just about anything. Some of them can weigh as much as three adult humans!

## GRASS SNAKE

*Natrix natrix*

## EUROPEAN POND TURTLE

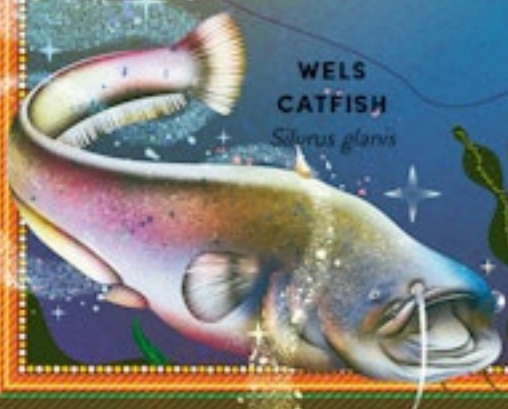
*Emys orbicularis*

## EUROPEAN POND TURTLE

Often, all you will see of these turtles is a little head peeping out of the water as they come to the surface to breathe. But they also love to sunbathe on the lake shore and on the floating leaves of plants such as water lilies. The turtles hunt fish, frogs and all kinds of water insects under the water.

## WELS CATFISH

*Silurus glanis*



# AT THE SURFACE

In any wetland, the water is always buzzing with life. The surface itself has a kind of thin skin that forms a layer between the air and the underwater world below. Amazingly, this "skin" is strong enough to support a wide variety of animals, but they need clever adaptations to be able to walk, run or slide across it. Some plants, such as water lilies and lotus flowers, can also float on the water. Many of the creatures that live in wetlands, including mammals, amphibians and some insects, can't breathe underwater. So these species must return to the surface regularly to breathe air.

## WALKING

Pond skaters have long legs with water-repellent hairs that enable them to skate on ponds without sinking. These insects are fierce predators. They race across the water to grab struggling prey, such as flies, that have fallen in.



**COMMON POND SKATER**  
*Gerris lacustris*

## HOME BUILDING

Beavers fell trees using their gnawing teeth and dam rivers with the branches. A wetland forms behind their dam, where the beavers build a dome-shaped home from branches and mud, called a lodge. It is half above and half below the water line.

*Beaver lodge*

**EUROPEAN BEAVER**  
*Castor fiber*



**RAFT SPIDER**  
*Dolomedes fimbriatus*



## BREATHING

The giant water bug has two breathing tubes on the end of its body. To breathe, it hangs upside-down at the surface and pokes these snorkel-like tubes through the film of water. Then it swims back down again with its new air supply!

## FLOWERING

Asia's spectacular lotus flower has special roots that tie it to the mud at the bottom of lakes and ponds, like a ship's anchor. As the plant grows, it sends tall stems towards the water surface, where they bud to produce floating leaves and beautiful blooms.

**GIANT WATER BUG**  
*Lethocerus grandis*

# IN THE SWIM

Beneath the surface, wetlands are home to all sorts of animals, including many tiny creatures that we need a microscope to see properly. Unlike us, these water animals don't need to learn to swim, but can do it the moment they are born. Some of them prefer living in open water, while others hide among tangles of weeds and other plants.



**EURASIAN KINGFISHER**  
*Alcedo atthis*

## SWIMMING

Fish such as minnows swim by rippling from side to side to make S-shape curves with their body. They also flap their fins. Their tail fin helps them steer, like a boat's rudder.



**COMMON MINNOW**  
*Phoxinus phoxinus*

**COMMON BACKSWIMMER** *Notonecta glauca*



## ROWING

The backswimmer actually swims upside-down! It uses its powerful back legs like oars to row itself along underwater. Tadpoles are this bug's main prey.



**WATER FLEA** *Daphnia*

## LIFE CYCLE OF A FROG

In spring, female common frogs lay masses of jelly-like eggs, called frogspawn, in shallow water.



**COMMON FROG**  
*Rana temporaria*

Three weeks later, tadpoles hatch from the eggs. Over the next three months, the tadpoles change into baby froglets.

**EASTERN NEWT**  
*Triturus cristatus*



## AMBUSHING

Can you guess how the snapping turtle catches its dinner? The turtle sneaks among some water weed and waits there patiently. If a frog or fish swims past its hiding place, it suddenly attacks and its massive jaws snap shut around its prey. To tempt its prey to come closer, the turtle wriggles its pink tongue like a tasty worm. But it's a trick!



**COMMON SNAPPING TURTLE**  
*Chelydra serpentina*

# AUSTRALIAN BILLABONG

Flowing through Romania and Ukraine, the magnificent Danube Delta is one of the largest and wildest natural landscapes in Europe. The water here comes from the mighty Danube River, which spreads out to make a vast area of lakes and marshes. There are frogs everywhere, and thousands of water birds use the thick forests of reed plants to nest. Many other rare animals also find a safe refuge in the wetland.

## ARAFURA FILE SNAKE

Giant fish lurk at the bottom of the Danube lakes. Wels catfish have slimy bodies and strange tentacles around their mouths, which they use like fingers to feel for prey. The catfish will eat just about anything. Some of them can weigh as much as three adult humans!

## FRESHWATER CROCODILE

*Pontederia crassipes*

## BLACK NECKED STORK

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## RED-WINGED PARROT

*Pontederia crassipes*

## MERTEN'S WATER MONITOR

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## WATER-HOLDING FROG

*Pontederia crassipes*

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## PLATYPUS

*Ornithorhynchus anatinus*



# AT THE BOTTOM

Among all the mud and stones, the bottom of a wetland teems with living things. This is where dragonflies and many other insects begin their lives. Creatures such as crayfish find plenty of places to hide and escape from their predators at the surface. And there is a lot of food down here too, including dead plants and leaves. When these sink to the bottom, they decay, which creates an all-you-can-eat buffet for wetland animals.

## RED-EARED TERRAPIN

As it gets colder at the end of the year, red-eared terrapins swim to the bottom of ponds, where they look for somewhere to hide. These reptiles now spend the winter in a sleepy state called brumation.

## COMMON YABBY

With their powerful claws and armoured shell, crayfish may remind you of little lobsters. They live as scavengers, which means they eat everything, alive or dead. They don't enjoy company. If two crayfish meet... a fight may break out!

## HORSE LEECH

*Haemopsis sanguisuga*

## DRAGONFLY LARVAE

Dragonflies are aerial acrobats that zoom through the air to catch their prey. But they start life as larvae that crawl around underwater in the weeds and mud.

## AMERICAN BULLFROG

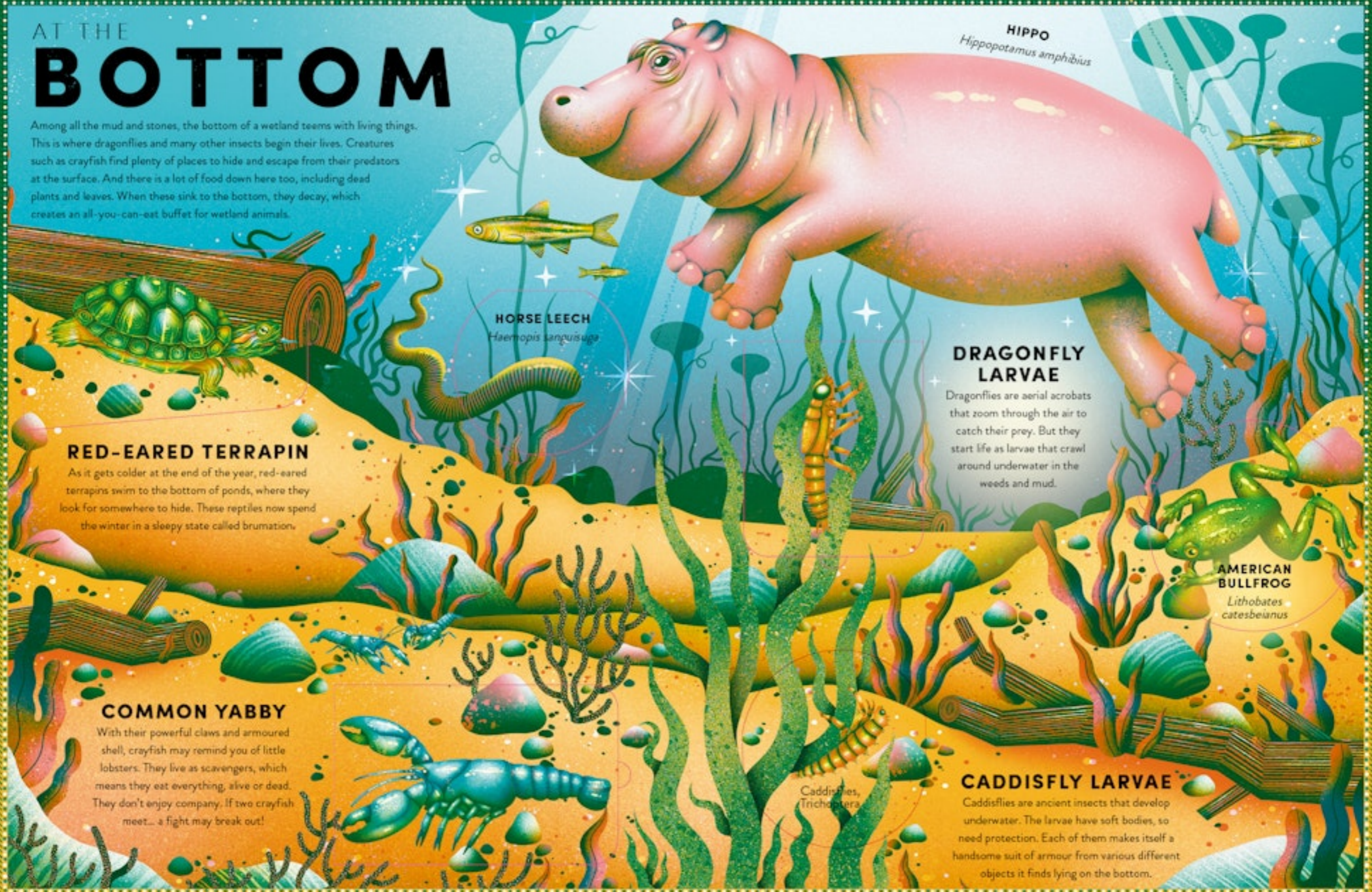
*Lithobates catesbeianus*

## CADDISFLY LARVAE

Caddisflies are ancient insects that develop underwater. The larvae have soft bodies, so need protection. Each of them makes itself a handsome suit of armour from various different objects it finds lying on the bottom.

Caddisflies,  
*Trichoptera*

HIPPO  
*Hippopotamus amphibius*



# MAKING WETLANDS

Wetlands are WONDERFUL for nature – and you can create a miniature wetland of your own, called a container pond. It's really easy and you don't need much space, any corner in a garden or back yard will do. You can even put one of these brilliant little wetlands on a balcony.

## GETTING STARTED

Find a tough container, such as a bucket, washing-up bowl or plastic tub. Place it on the ground in the shade, where the pond won't overheat and dry out. Pile rocks or sticks next to the container and pop a few more in the bottom. These will be a ladder for frogs and other animals to climb in and out.

## INSTANT WETLANDS

Finally, add a few pond plants – you can buy them from a garden centre. It won't take long for wildlife to discover your pond. Often, the first bugs and dragonflies arrive within days!

## JUST ADD WATER

Pour some clean gravel in the bottom of the container. Now you're ready to fill your pond. If you can, use rainwater, which you can collect beforehand. Avoid tap water, as it is often treated with chlorine and has too many nutrients, so might encourage too much green algae to grow.

## A TEMPLAR BOOK

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