



A GREEN
NOTE
A MESSAGE TO CHILDREN FOR
PRESERVING BIODIVERSITY ON
EARTH BY
RAZAN KHALIFA AL MUBARAK



ENDANGERED

Life in the AMPHIBIAN WORLD

— STRUGGLING TO SURVIVE



هيئة البيئة - أبوظبي
Environment Agency - ABU DHABI

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First published in 2014 by
The Energy and Resources Institute
TERI Press
Email: teripress@teri.res.in ▪ Website: <http://bookstore.teriin.org>

For
Environment Agency – Abu Dhabi (EAD), United Arab Emirates
© Environment Agency - Abu Dhabi
PO Box 45553, Abu Dhabi, UAE
Website: www.ead.ae

ISBN 978-9948-20-722-1

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Printed and bound in India

This book is printed on recycled paper.



STRUGGLING TO SURVIVE

Life in the AMPHIBIAN WORLD

Dear Students,

I am sure, by now, you are familiar with the definition of biodiversity - it is all about the variety of life that exists on this Earth. But did you know that scientists estimate that around 5 to 100 million species of organisms call it home? From these, we have only identified 2 million species so far!

The United Arab Emirates is located in a hot arid desert - one of the most fragile ecosystems in the world. Here, the plants and animals are heroes. They are trying to survive against all odds. However, despite the harshest of conditions, the country still manages to support an impressive 800 species of plants, 64 species of terrestrial and marine mammals, 67 species of reptiles and 430 varieties of bird species.

However, as tough as these species are, they still face severe threats. Species extinction around the world is on the rise – 1 out of every 8 birds, 1 out of 4 mammals, 1 out of 3 amphibians, and 75 per cent of the world's fish are under threat. With 31 per cent of the world's forests gone, there is a scarcity of resources provided by forests, such as food and medicine. This also means that animals are losing a safe habitat.

Biodiversity is closely linked to what we breathe, eat, drink and even wear. It is so important to our existence that in fact that we cannot afford to sit around and watch as these species and habitats are being lost. They are vanishing because of many reasons such as pollution, contamination, introduction of alien species and climate change. WE humans played and continue to play a large part in the reasons behind these problems and so WE need to come up with the solution, without further delay.

Protecting our natural heritage and conserving biodiversity is one of our priorities at the Environment Agency - Abu Dhabi. We strongly believe in raising environmental awareness and promoting environmental education. We have already reached out to hundreds of thousands of students, just like you, through our educational programmes. However, this series, developed jointly with TERI – The Energy and Resources Institute, will help us reach even more students to raise their awareness about species around the world, including in the UAE, whose lives are in danger.

I hope that you enjoy reading this series and it helps you to better understand what plants and animals are facing on Earth. Help spread the message far and wide, so that others can also start protecting and conserving our precious biodiversity.

Razan Khalifa Al Mubarak
Secretary General
Environment Agency - Abu Dhabi



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Introduction

Amphibians and their characteristics: We amphibians find the roots of our name “Amphibian” in the Greek word *amphibios*. It means “living a double life”. We can live on both land and water! Also, there are two stages in our life: larval and adult. But, then how do we describe ourselves, is what you might ask. We are members of the class *Amphibia*, which includes frogs, toads, newts, salamanders, and caecilians. All of us share some things in common. We are vertebrates, our skin is moist, most of us lay eggs in fresh water, and we can breathe through our skin. You can find us everywhere on Earth, except in Antarctica and extremely dry deserts. Members of our family have different choices of food. Some of us like frogs, toads, and salamanders feed on insects, while caecilians love earthworms, and some large salamanders, frogs, and toads eat small birds and mammals!

Why we are important: Our skin contains substances that have medicinal value. These can work as antibiotics, anaesthetics, and painkillers. In China, Korea, and Mexico, people use us to treat conditions like athlete’s foot and bronchitis. Some of us like frogs and toads also help farmers by feeding on insects that harm crops.

Threats to our community: Not many of you might be aware that of all the vertebrates, we amphibians are most likely to soon become extinct! Humans are destroying our homes to build roads, buildings, dams, and so on. Many of us are captured and sold either to be eaten or to be kept as pets. We are especially worried about climate change and the rise in global temperature. This is because we are highly sensitive to even small changes in temperature and moisture. Acid rain, water pollution, fungal infections, and insecticides harm us.

Amphibians in the United Arab Emirates (UAE):

Only two of us are found in the UAE – the Arabian toad (*Bufo arabicus*) and the Dhofar toad (*Bufo dhufarensis*). Both of us have found a clever way to survive the harsh climate of UAE. For up to three years or more, we can lie dormant in mud, gravel, or holes in rocks! While insects become our food, we, in turn, are preyed upon by the carpet viper, the Brandt's hedgehog, and the wadi racer.



Did you know?

- The world's smallest vertebrate is the frog *Paedophryne amanuensis*. It is as tiny as a housefly.
- The shrinking frog of South America gets smaller as it grows older.
- The northern slimy salamander produces one of the strongest adhesives known to man.
- The bullfrog never sleeps.
- Most caecilians have no limbs and move by flexing their muscles.

Dhofar toad

One of the only two!

The UAE is home to only two species of amphibians, and I am proud to be one of them. Let me tell you that I am the only toad species found within the mountains of the Ru'us al-Jibal, which is a region of Oman, falling on the Musandam Peninsula south of the Strait of Hormuz. Water is extremely scarce in the Dhofar region. I am an opportunist, as I am present in or around water sources like oases, springs, canals, and small rivers.

My place in the food chain

I like to eat a variety of insects. With my long, sticky tongue, I can easily catch them. I sometimes like to eat the wadi fish trapped in drying puddles. I would like to point out here that we don't have teeth, so we swallow our food. I love to come out of my home when it rains. And this is when other, bigger animals catch me for food. Some snakes in the wadi region – carpet viper and wadi racer – love to prey on us and our tadpoles.





The long, sticky tongue of a Dhofar toad helps it catch its prey, mostly insects, with ease.

grow up to attain grey-white colour with green markings on our body. We have a somewhat flatter body shape. And our most significant feature is our large eardrums. And we call out our friends with a loud, distinct "kra-kra-kra".

Some interesting tidbits

Like my relatives elsewhere in the world, I have the ability to remain underground during periods of drought. And you will be shocked to know that I can remain in this state of dormancy for as long as three years at a time. While I am known to be nocturnal, there is evidence to suggest that sometimes I remain active during both day and night.

Identification marks

We exhibit considerable variation in colour and pattern. The colour of our bodies can range from green to tan to brown, and our skin may appear spotted or uniform. People often confuse us with the Arabian toads, as we resemble each other quite a lot. However, there are a few indicators to identify us. We

Did you know?

Our skin saves us from several predators, as it contains deadly chemicals.



Threats and conservation

Although our community generally faces a decline in its numbers worldwide, the Arabian toad and I do not currently face any major threats. However, it is important to take measures to conserve us too, so that our numbers do not decline in future.



Kihansi spray toad

I climb walls like Spiderman

I am a very small toad growing up to only three quarters of an inch. I live on the rocks below and near waterfalls. The constant spray of water from the waterfall above makes the rocks slippery. That is why I have friction pads on my feet and palms so I can climb these rocks easily.

Blast from the past

Discovered around 1996, the Kihansi spray toad population was noticeably affected within six months of the construction of the Kihansi Gorge dam.

I live near the waterfalls in the Kihansi Gorge in Tanzania. Sometime back, a dam built on these waterfalls destroyed my home. Now, only 50–200 members of my family live here.

Bio

Length: 20mm; Up to 28mm; Lifespan: 3 years and above



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Mr Unusual

I spend most of my life around the plants or the rocks near the waterfalls. I eat insects, their babies, and tiny mites. An interesting thing about my family is that, unlike other frogs and toads, we do not lay eggs. We just produce young tiny toads.



Officials at the Bronx Zoo believe that they will be able to increase the Kihansi spray toad's population to five hundred.

Let's bring my home back to me

Some people have taken a few of my family members to the Bronx Zoo, where they are being cared for. They would like to come back to Tanzania but our home is unfit to live in. Scientists tell me that they can live in an artificially created area near my home. I think that might be nice.



Kihansi spray toads relish tiny mites.

I can't live in my home anymore

I chose to live under the waterfalls because the constant spray of water and lack of wind suits me. Now, because of the dam, my home has lost its water and the water spray as well. In addition, recently we were stuck by a deadly disease in my area, which killed a lot of my family members.



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Did you know?

Toads have one of the smallest geographic ranges (the area within which the toads are found) of any four-legged vertebrate species in the world.

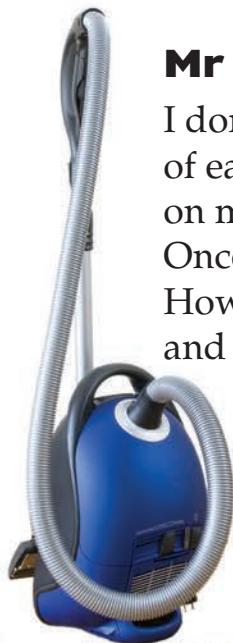
Myers' Surinam toad

They call me strange!

I am the only toad that carries its babies on its body like a kangaroo. Babies in eggs live on the mommy's back until they turn into tadpoles. When they do, they start living in water. Unlike other frogs that stand on their legs with their arms lifting their bodies, I stand with my legs and arms splayed outwards.

Mr Vacuum Cleaner

I don't have a tongue so I have a curious way of eating. I have long fingers, with special lobes on my hands and feet, that help me detect prey. Once I find it, I suck it in like a vacuum cleaner. However, like other toads, I feed on tiny fish and invertebrates.



Myers' Surinam toads suck in the prey like a vacuum cleaner.



The water in which the Myers' Surinam toad lives is also being polluted.

Did you know?

Myers' Surinam and other Surinam toads are very enthusiastic feeders.

Even young toads eat the amount of fish that weighs as much as they do, in one sitting.



My life is in danger

Since I live in murky water, humans don't know how many of my family live in the wild. I'll tell you though; our number is small and growing even smaller. The forest, which is our home, is being destroyed.

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The need to protect me

I am on the International Union for Conservation of Nature Red List of Threatened Species, but there aren't any efforts being made to protect me. Moreover, I am food to some native Amazonian people. Steps need to be taken immediately to protect my home so that my family and I can be saved.

Bio

Length: 1–2.5 in (male), 1–3 in (female); Lifespan: up to 15 years



Blast from the past

The extended family of the Myers' Surinam toad, called Pipidae, has excellent fossil records. Twelve species of this family are already extinct.

Have you heard of a strange toad that looks unwell even when it's completely healthy? Well, I am that toad and my name is Myers' Surinam. I live in shallow waters in the forested areas of Panama and Columbia.

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Mexican axolotl

Mexican walking fish?

Some people call me the Mexican walking fish, and some others mistake me for a lizard because of my flattened body, tiny limbs, and tail. I am neither fish nor lizard, but an amphibian, which means, I can live both under water and on land. However, I prefer to live under water.



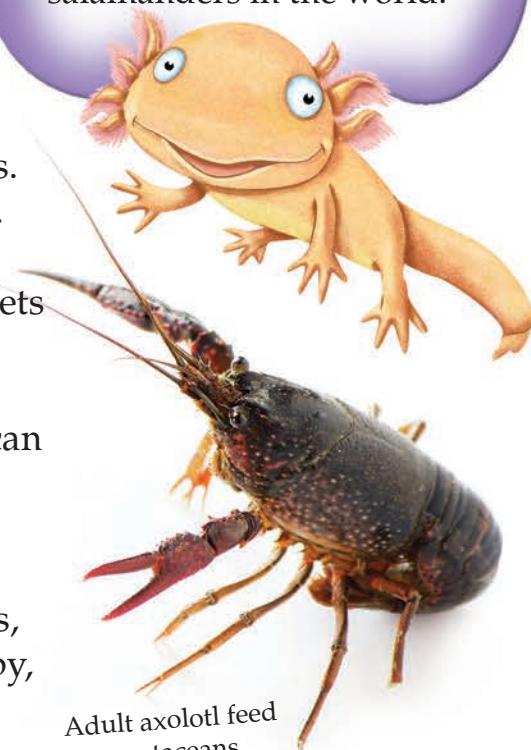
Young axolotl feed on algae.

Mr Unique!

Unlike other salamanders, in my family, the adults look the same as the babies. Scientists call that neoteny. I'm special for another reason. If my tail or limb gets cut off or damaged, I can grow it back very quickly. Because of this, medicine can be made from some parts of my body. As an adult, I eat water insects and their babies, worms, crustaceans, and some fish, but as a baby, I preferred eating algae.

Did you know?

Since they have the ability to regenerate lost body parts, axolotls are probably one of the most scientifically studied salamanders in the world.



Adult axolotl feed on crustaceans.

My small home, becoming smaller!

My family is dying because Mexican people eat me as a delicacy. In addition, my home, which is only around Mexico City, is becoming smaller as the city grows bigger.

My home has less water now, and it has new, other fish, which love to eat my kind, and bacteria, which make me sick.

Axolotl are considered a delicacy in Mexico!

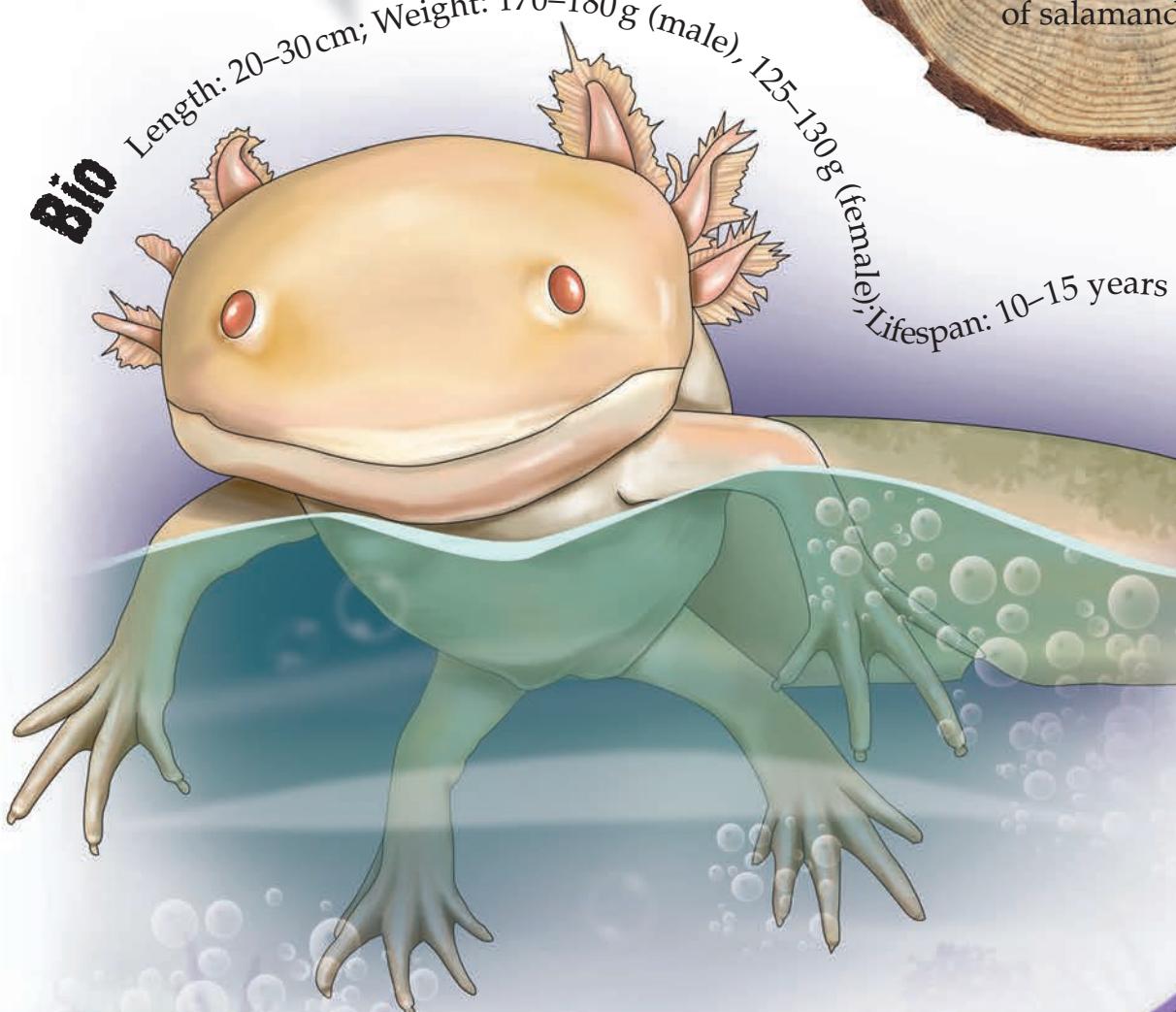


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Save the Mexican axolotl

I am under the Special Protection category of the Mexican government. Critically Endangered on the IUCN Red List, I am also on the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) list. But this doesn't ensure my protection. Although people are finding ways to save me, a lot more needs to be done quickly. Otherwise my family and I will be gone forever.

I live in the canals and lakes near Mexico City, and some say that less than a 100 of my brothers and sisters survive in the wild. I am the Mexican axolotl, a salamander, and my name means water dog.



Blast from the past

The Mexican axolotl belongs to the first four earliest families of salamanders.

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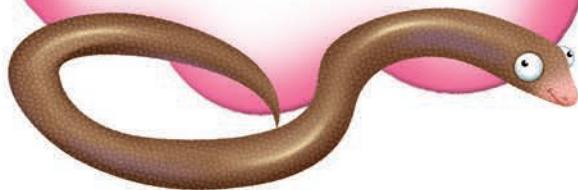
Cooper's black caecilian (si-si-li-an)



The Cooper's black caecilian lives in forested areas, and makes its burrow in damp soil and leaf litter.

Did you know?

The Cooper's black caecilian doesn't have any immediate relatives. Its closest relatives, the forest caecilians, live in India.



Who am I?

I am very much a caecilian, though people tend to mistake me for an earthworm, because we caecilians superficially resemble snakes and earthworks. I have an elongated, limbless, and flattened body and small but distinct eyes. I have a bony head, and I use it to make the burrow I live in.

My navigation device

I have two tentacles on the sides of my head, which help me find my way or my food underground. I also have a strong sense of smell, so I follow any chemical signals given by prey and catch them.

Unlike other caecilians, I am very shy and don't like living near humans.



My home is being invaded

Large areas of my home are sometimes destroyed by fire. Worse than that, other animals are coming to live in my home. They either compete with me for food or eat me. Since my home is small, there is always a risk of an ecological factor, like a heatwave or heavy rainfall, wiping out my whole family.

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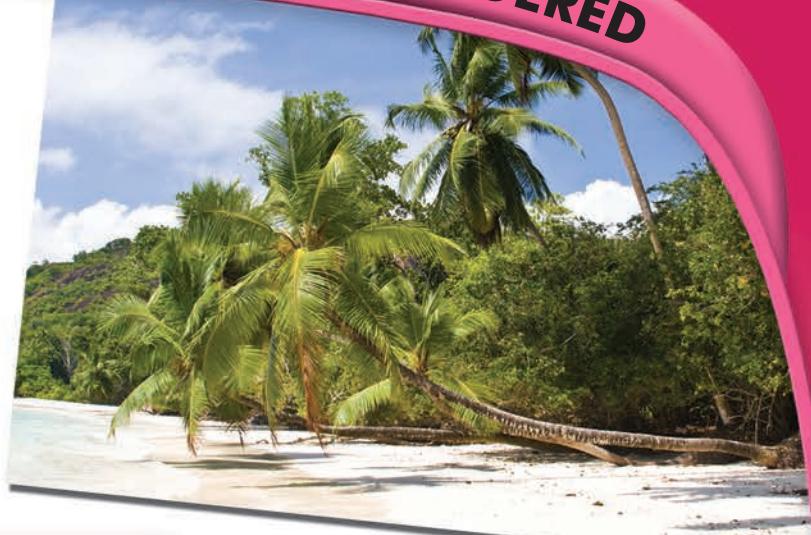
I can survive

The World Conservation Union thinks my family's and my life is in danger. It is crucial that humans do more research about me and the factors killing my family so we can be saved before its too late.

I live in the exotic islands Mahé and Silhouette in the Seychelles and my name is Cooper's black caecilian. I am very shy and reclusive and humans don't know much about me.

Bio

Length: 250mm; Lifespan: not known



Part of Cooper black's home in Mahé falls under the Morne Seychellois National Park, where fortunately some of its family is protected.

Blast from the past

Carl Linnaeus described the first species of caecilians in 1758 and initially thought they were related to snakes.

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VULNERABLE

Chinese giant salamander

**Bio**

Length: 1.15m (male), 1m (female); Lifespan: Over 50 years

Giant me!

I have a broad head, a flattened body, and a compressed tail. My tail is more than half the length of my body! I can't see very well, so I find food by smell and touch. I eat fish, worms, insects, and molluscs. Occasionally, I even eat toads, frogs, and small mammals.

Blast from the past

The Chinese giant salamander's family, including two cousin families, have existed for about 170 million years, which makes them the longest unbroken amphibian family living today.

My name is Chinese giant salamander and I am the largest amphibian in the world. My size, unfortunately, makes it easy for others to hunt me. I have been hunted so much that 80 per cent of my family has been wiped out since the 1960s.

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Life in the fast lane

I like to live in fast-flowing rivers in forests. During the day, I hide in dark rock crevices and at night, I come to surface. Although I have lungs, they aren't very strong. So I breathe mainly through my skin.



Molluscs form part of the giant salamander's diet.

Threatened existence

I am a delicacy in China. The Chinese also use my body to make traditional medicines. As if that were not enough, my home is being destroyed by human construction. The water in which I live is also being polluted, which makes it difficult for me to breathe in it.



The Chinese use the giant salamander to make a medicine to cure diabetes.

The giant salamander is also considered a speciality in China!

You need to save me!

I am on the Convention on International Trade in Endangered Species List and International Union for Conservation of Nature Red List, which helps me internationally, but back home in China, I am still not safe. Some scientists suggest that I be made a flagship conservation species like the tiger, so that the Chinese can be proud of me and stop killing me. I think that is a great idea.

Did you know?

Chinese giant salamanders have been known to grow up to 1.8 m in length, and can weigh up to 65 kg!



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Critically Endangered

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Texas blind salamander

As blind as a...

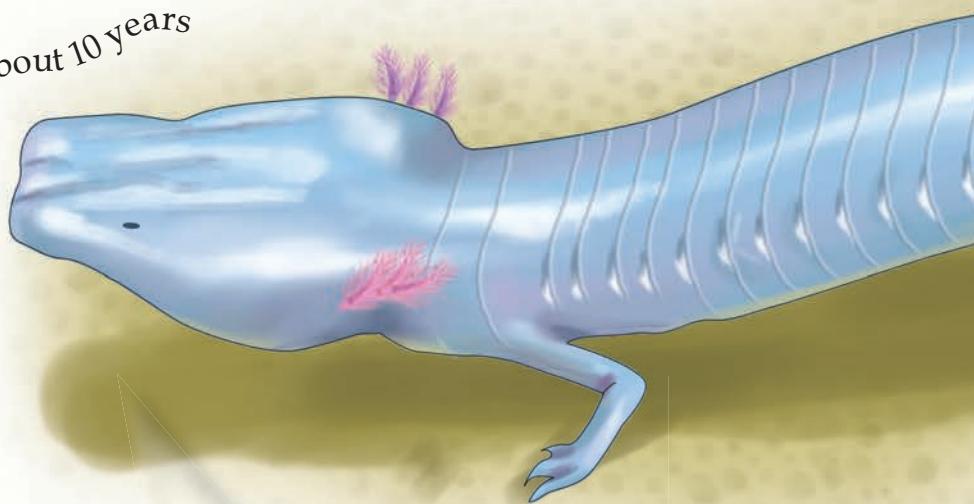
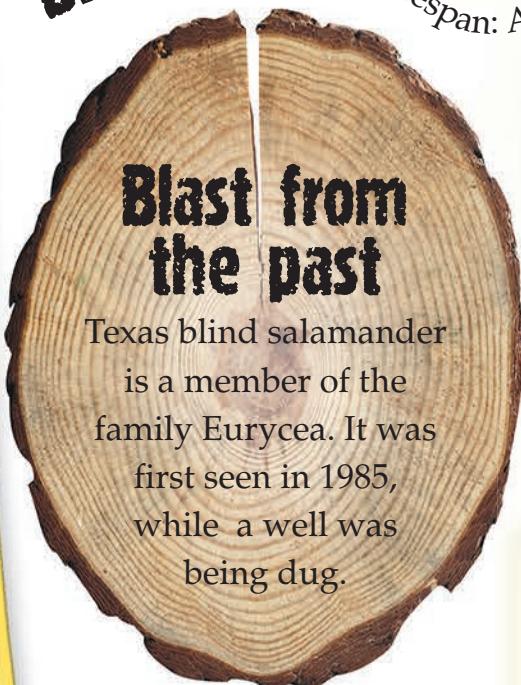
People call me the Texas blind salamander for two simple reasons – I can't see and I live in Texas! Though I have eyes, they are completely hidden under the skin. But in dark, underground water caves where I live, I do not need sight to hunt or find my way. I am white and translucent – you can actually see my inner organs through my skin. I have red gills on the sides of my head through which I breathe.

BIO

Length: 3–5 in; Lifespan: About 10 years

Blast from the past

Texas blind salamander is a member of the family Eurycea. It was first seen in 1985, while a well was being dug.



I am one of the most introvert amphibians and like to spend all my time in the underground caves and springs of the Edwards Aquifer in Texas. My name is Texas blind salamander.

The Texas blind salamander also feeds on water fleas.



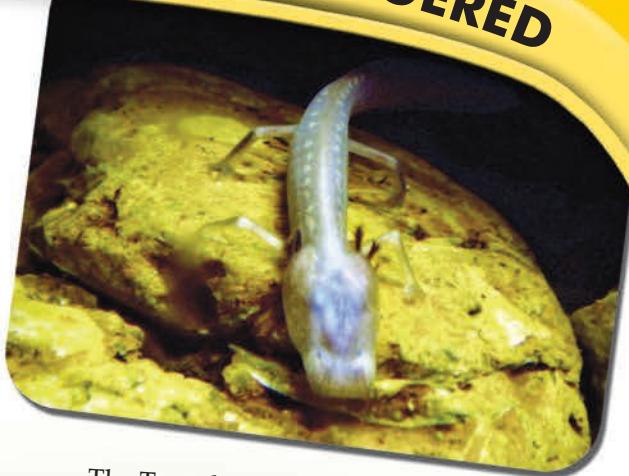
My underground life

Although I can't see, I am the top predator in my area, where I live with about 40 other species of animals. When looking for food, I move my head from side to side and sense a prey by the waves it creates in the water. I eat tiny snails, shrimps, and other small water animals.

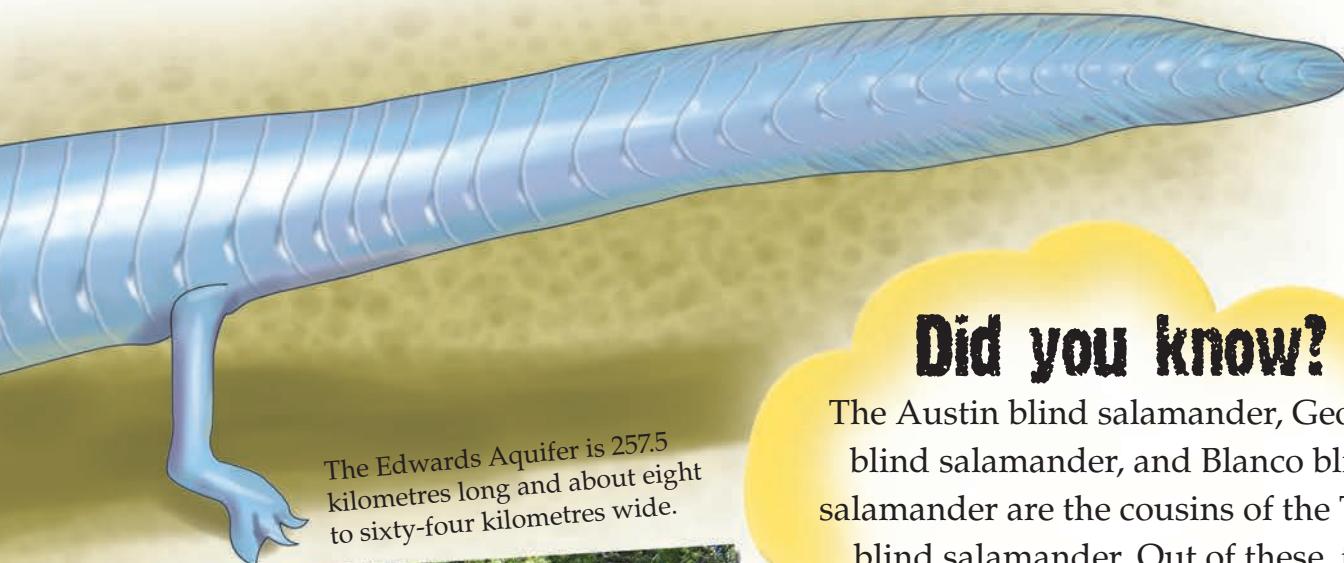
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My fading home

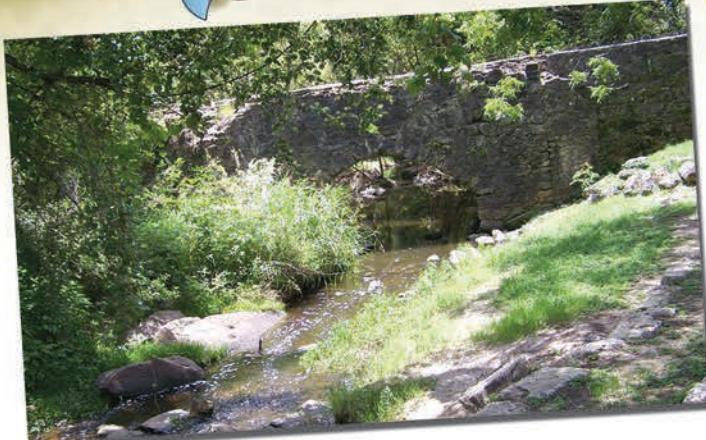
I have been destroyed in large numbers. Humans sometimes take away the cool, clear water that I live in. Also, whatever water is left is affected by pollution from industries and sewages. To top it all, I live in such a small area, which if destroyed in a natural event can wipe out my family altogether.



The Texas blind salamander lives in underground caves.



The Edwards Aquifer is 257.5 kilometres long and about eight to sixty-four kilometres wide.

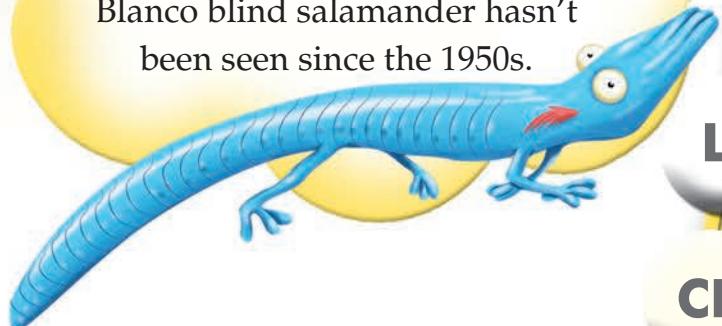


I need saving

I was one of the first species named the United States federal endangered species list. The US Fish and Wildlife Service have been raising some of my family in a captive breeding scheme. But, to save me in the wild, we need to conserve the aquifer's water and prevent water pollution.

Did you know?

The Austin blind salamander, Georgia blind salamander, and Blanco blind salamander are the cousins of the Texas blind salamander. Out of these, the Blanco blind salamander hasn't been seen since the 1950s.



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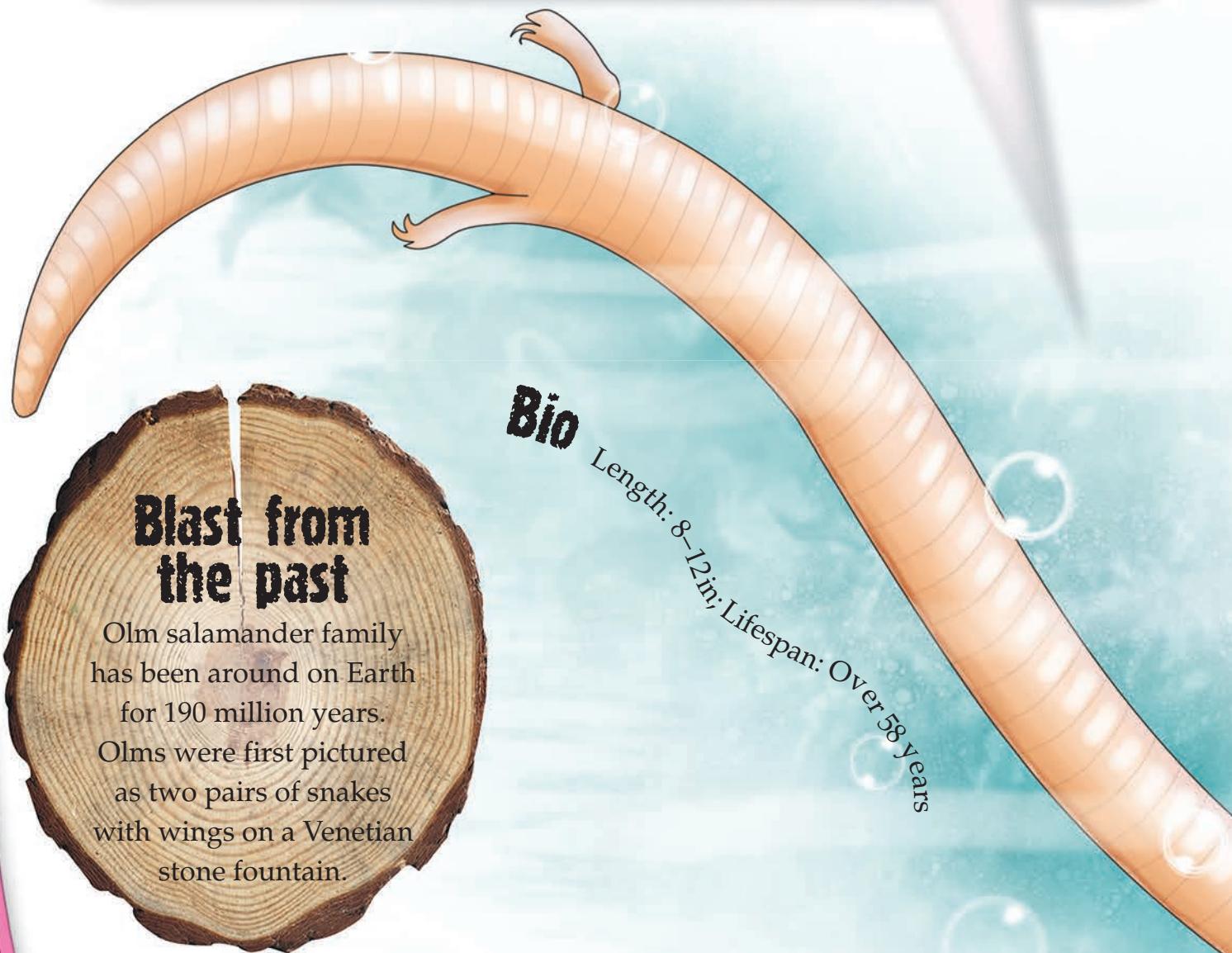
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Olm salamander

I am Europe's only cave-dwelling amphibian. I live in fresh water reserves in dark underground caves in Serbia, Bosnia, Herzegovina, and Croatia. I am the Olm salamander. My brother black olm lives in Slovenia.



Blast from the past

Olm salamander family has been around on Earth for 190 million years. Olms were first pictured as two pairs of snakes with wings on a Venetian stone fountain.

Bio

Length: 8–12 in; Lifespan: Over 50 years

“Human fish”

It's a funny name locals have given me because my skin resembles theirs. It is white with yellow and pink tinges. I have a slender body and pink gills on the sides of my head. Even as an adult, I look the same as I did when I was a baby.

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Life in caves

I use my sense of smell, taste, and hearing to hunt food. I also have a sixth sense – electrosensitivity – which helps me detect the prey by the electric charges that its body gives out!

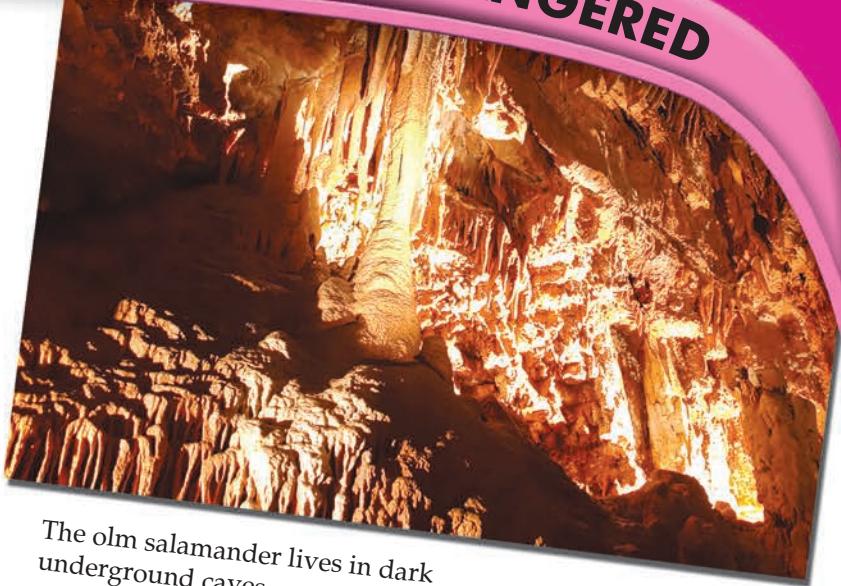
When there is lots of food around, I eat more than I need to and store it in my liver. During shortage of food, I use this stored food and can go without eating for up to 10 years.

Vanishing family

The areas my family and I occupy are very small. Our homes are vanishing because of changes in the vegetation on ground level, which directly affects our underground caves. We are used to clean, fresh water and water pollution is harming us.

Need for change

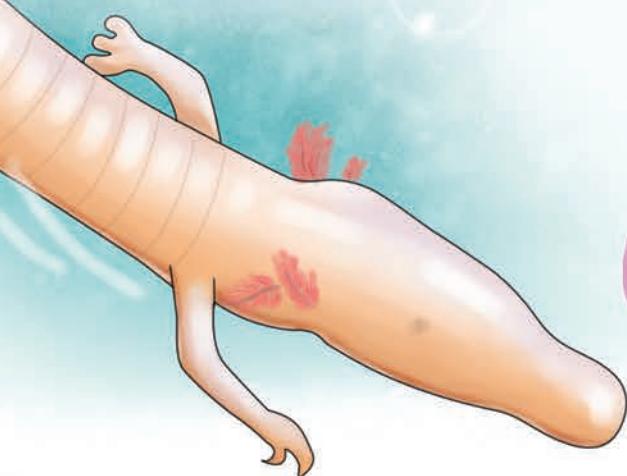
The International Union for Conservation of Nature and the European Union Habitat Directive feature me on their lists of threatened species. Some of my family is being raised in the Centre National de la Recherche Scientifique in France since 1995. Conservation of my home and prevention of pollution are crucial for my survival.



The olm salamander lives in dark underground caves.



Sometimes, locals use olm salamanders as food for pigs!



Did you know?

Olm salamanders have perhaps the best sense of smell among amphibians.



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Purple frog

Mr Secretive

I like to spend most of time underground, in burrows, and come out only in the monsoon to meet my family and to breed. I like to make my burrows in areas where termites live as they improve the quality of my habitat. I feed on ants and worms.



Termites serve as the purple frog's food.

Blast from the past

The purple frog was discovered in 2003 – the first frog to be discovered since the year 1926!

I live in the forested areas of Kerala, which is located in the southern coast of India, and I was discovered recently. Since then, some have called me the strangest frog ever discovered. I am the purple frog.

Bio

Length: 7 cm (females slightly larger). Lifespan: Not known



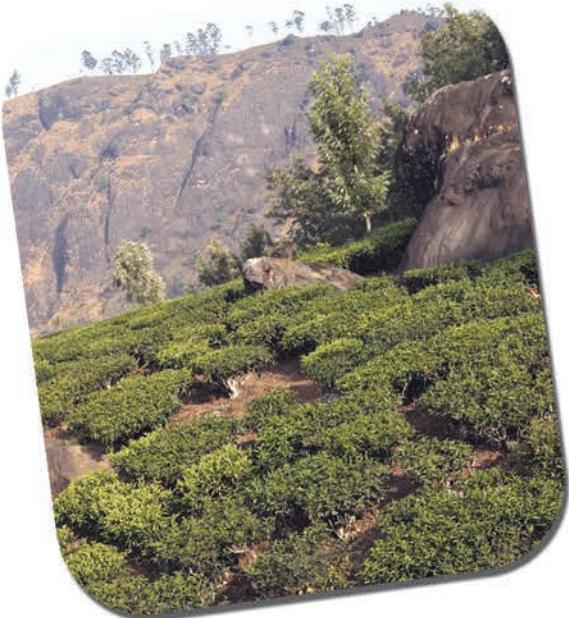
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Burrow expert

I have short limbs and webbed feet. On each of my hind feet, I have a wart-like growth that helps me dig burrows. I burrow downwards using my hind limbs like spades, throwing the soil over my back. I can make my burrow in just three to five minutes if the soil is damp and loose.

Diminishing purple

Since my discovery, only 135 of my family members have been observed, out of which only three were females. My home is very small, and as of now, I am found in only two locations in Kerala. The little portions of land, where my family lives, are being destroyed due to deforestation for the cultivation of coffee, cardamom, and ginger.



Did you know?

The closest relatives of the purple frog are four tiny frog species found more than 2,900 km away in the Seychelles.



People are chopping trees to plant coffee and cardamom, destroying the purple frog's habitat.

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Colour my home purple

No measures have been taken yet to protect me, although the World Conservation Union lists me as "endangered". The locals should be made aware of my plight so that they can help protect me. My home should be given a reserve status and more research should be done about ways to protect my family and me.

Luristan newt

I live in shallow mountain streams of Zagros Mountains in Iran. Some say I am very attractive because of my striking, colourful skin. My name is Luristan newt.



Blast from the past

The Luristan newt's family tree dates back to almost 200 million years. Its first ancestors were born 30 million years after the dinosaurs.

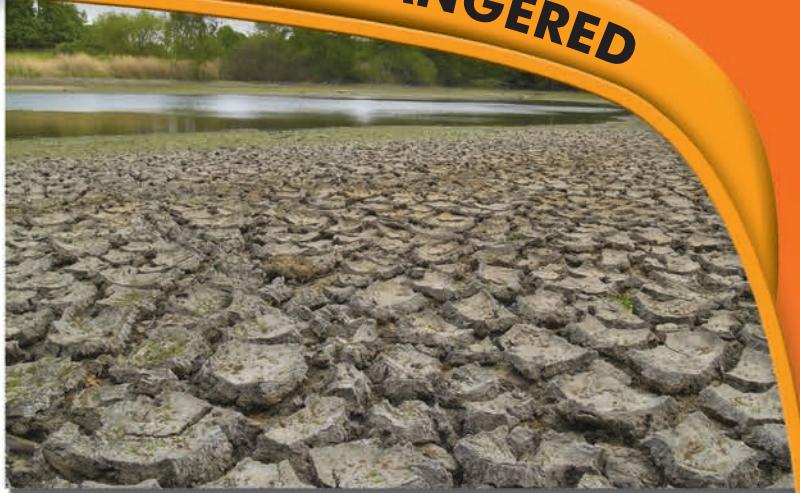
Mr Colourful

I have black and white patches on my body, with an orange stripe. My belly is fiery orange. This colouration warns predators that I may be poisonous – which I am – and that they should not eat me. I give out a bitter smell when I am disturbed. This also keeps predators away.

ENDANGERED

My life in the mountains

I live in shallow, cool, clear water mountain streams and spend most of my time in water. I am more active at night. I am usually shy around strangers but with family, I am very social and playful. I hibernate in winter. During that time, I live under stones in dry shrublands and do not eat much.



The Luristan newt's habitat is being destroyed due to droughts.



The name "Zagros" comes from the Zagartian people, probably of European ancestry.

My disappearing family

My family and I live in an extremely small area, in three streams. I hear that all the members of my family from one of the streams have died. That means we are only 1,000 in number. Pollution, cutting of trees, and droughts are destroying my home. Moreover, there is a high demand for me in the international pet trade.

Let's bring me back

The International Union for Conservation of Nature lists me as "critically endangered" and the Iranian National Legislation protects me, but there are no concrete action plans underway. Some suggest that my family be raised in captivity. Then, people might stop hunting those of us in the wild for pet trade.

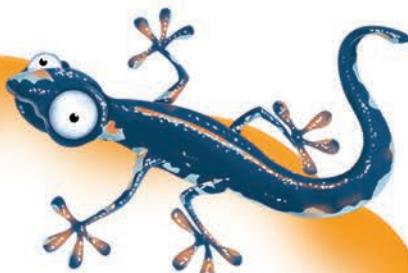
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Did you know?



The Luristan newt has three brothers who live in Turkey and Iran. The Luristan is the smallest and has a different body colouration than the rest.

Chinhai spiny newt

Secret life

I am inactive during the day, but I am very slow even when I am active! I live in forests in low hills, near fresh water marshes and ponds. When I am a baby, I live in a pond, but when I grow up, I live on land. In winter, I hibernate for about five months.

Blast from the past

Chinhai spiny newt belongs to the family Salamandridae. Yet, it is as different from its cousins, just as a chinchilla is different from a porcupine while both come from the Rodents family!



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My middle name is Spiny

If a predator tries to eat me, I project my spiny ribs through my skin and emit a secretion, which is painful and makes it throw me out of its mouth. Sometimes, I flatten and curl up my body and display my hands and tail, which have red spots. These markings warn and scare the predator away.

Fighting for a chance

My home is a 100 square kilometre area. My family and I live in three groups in different localities. One of the groups might have become extinct. There are only 300 of us left now. Our numbers have gone down because we have become specimens for scientific research.

Human activities, construction, and agriculture are destroying the home of the Chinhai spiny newt.



Did you know?

Chinhai spiny newt has a brother called the Anderson's crocodile newt or Japanese warty newt who lives in Japan.



A chance to live

I am on the International Union for Conservation of Nature list. Some of my family is being raised in the Chengdu Institute of Biology, so one day more of my family members will come back home. Some suggest that a nature reserve should be built in the area where I live. I think that might help.

The Chinhai spiny newt is only found in the Beilun area, east of Ningbo City in Zhejiang Province, China.

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Arabian toad

Water, water everywhere!

I belong to the Bufonidae family and you can find me wherever there are water sources available. This includes garden, oasis, springs, irrigation canals, and small rivers. However, I breed in stagnant and slow-moving water.

My whereabouts

I am one of the nine species of amphibians found on the Arabian Peninsula, and one of the two amphibians found in the UAE. Indeed, I am, by far, the most commonly seen toad in the mountain wadis of the UAE. I love rains and I come out of my hiding place when it pours, without realizing that my predators are out as well.

Blast from the past

Unlike the Arabian toads that belong to the UAE, Cane toads – a species of toads – were introduced into the Australian ecology in 1935.



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Mostly during such occasions, I end up becoming the food of snakes like carpet viper and wadi racer, and other animals like hedgehogs.



Rains are a good time for snakes like carpet viper to feast upon toads, as toads usually come out in the rains.

IUCN status

I am listed as "Least Concern" in the IUCN Red list. I am unlikely to be declining fast enough to qualify for listing in a more threatened category. This is because we are there in a good number and I have the ability to live in different habitats across the country.

Know more about us

We are active by day as well as night, although we often seek shelter from direct sunlight in the heat of the day. Close inspection of mountain pools frequently reveals us well-camouflaged, often clustered in damp or shady crannies. When we do not find other shelter, we may excavate small hollows in damp wadi gravel, resembling donkey hoof prints, perhaps to take advantage of a slightly cooler or more humid microclimate. We are absent, nevertheless, from the Ru'us al-Jibal in the north of the Hajar Mountains and also from Dhofar in southern Oman. However, you can find my friend Dhofar toad in these locations.



Did you know?

The "Krrraaaa" of the Arabian toad sounds similar to the creaking of a hinge.

Food for us

Like other frogs and toads, we prey on insects. I easily catch them with my sticky and prehensile tongue. Feasting on a termite swarm, for example, is all that we need to live in a dormant state for a year or more.

LEAST CONCERN

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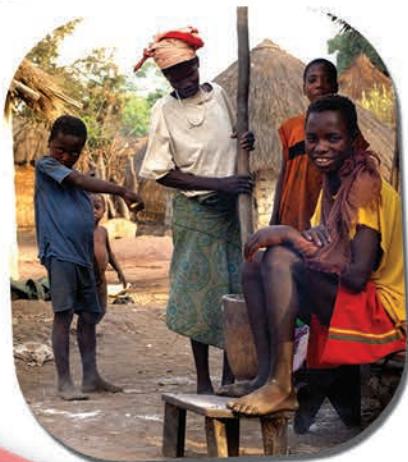
Goliath frog

Mr Big

In my family, we can weigh more than three kilograms. Our legs are as long as our bodies so when we leap we become double our length! When I am born, I am as big as any other baby frog, but then I grow and grow and grow, though no one knows why.



The goliath frog is found in Guinea and the Republic of Cameroon, in West Africa.



Did you know?

Goliath frogs can leap three metres high! In the past, they were imported into the United States for jumping contests.



Unusual is my middle name

At birth, my mother and father put me in a rock crib and leave me. Since then, I am on my own. I come out of the egg, go into the water, and eat only one type of water plant. Now, I eat all kinds of small animals. By the way, I am mute.

Goliath fried

My family is vanishing because locals eat me as a delicacy. I am also collected for international pet trade and for displays in zoos. There has been a 50 per cent decrease in my population in the last 15 years. Moreover, humans are destroying my home and taking it over.

Fried goliath frog is a delicacy in Africa.

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You need to save me!

Some parts of the area where I live are protected. The Monte Alan National Park is one such area, where people are not allowed to hunt me. It is important to protect me in my home itself, as I do not live in zoos and laboratories.

BIO

Length: 17–32 cm; Lifespan: up to 15 years



Blast from the past

Goliaths are one of the very few amphibians who lived before the dinosaurs. They came on Earth 250 million years ago.

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I am the biggest frog in the world and my name is goliath. I live in forest areas, near fast flowing rivers and waterfalls.

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Panamanian golden frog



Golden frog

You can call me that since my skin is golden yellow, with black spots. Those of my family who live in the wet forests are taller than those who live in dry ones. I can't leap very well, so I walk clumsily from rock to rock.

Bio

Length: 1.8in (male), 2in (female); Lifespan: About 5 years

I am a small, brightly coloured frog. I live in the Republic of Panama, where I am the national animal. My name is Panamanian golden frog. I live in both wet and dry forests.



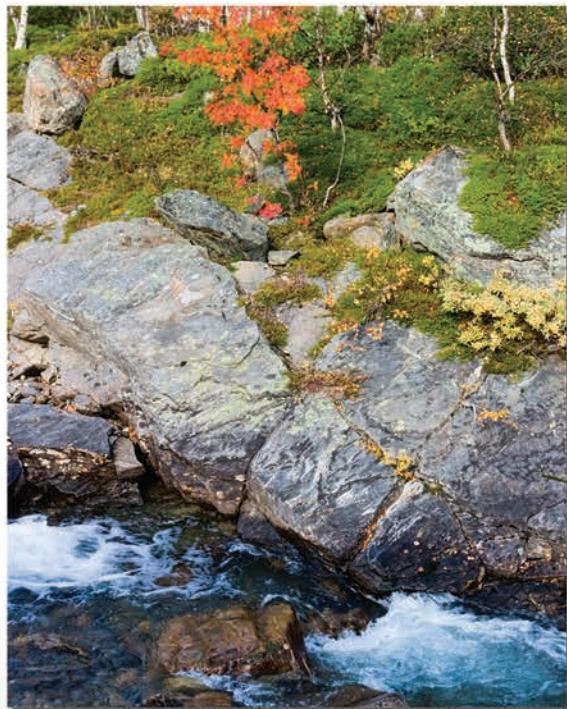
Blast from the past

Panamanian golden frogs live near noisy mountain streams. So, the male frogs developed a gentle hand-waving action, called semaphore, to communicate better with their rivals or mates!

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Frog wave

I usually wave my hand in greetings when I see others of my kind. It means a "hi", if I'm waving out to a girl. But if it turns out to be a male instead, I get angry, wrestle him, and tell him to find his own rock to sit on. I produce a poison from my skin to protect myself when a predator attacks me.

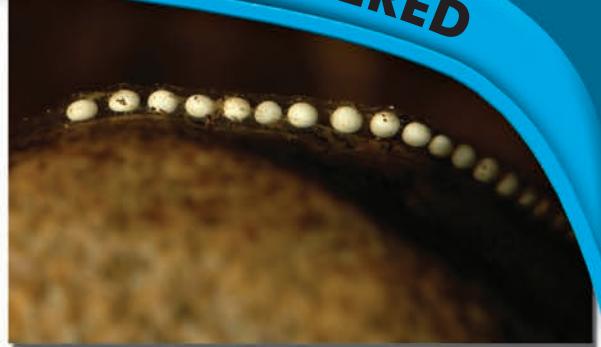


Panamanian golden frogs like to climb and sit on high rocks.

I want to go home

The Panamanian National Legislation protects me. The Republic of Panama and the United States have joined hands in the Project Golden Frog to save my family and me. I have a safe residence in the El Cope National Park, but I am aching to go back home to the wilderness, if only something could be done to save my home.

Created in 1986, the El Cope National Park not only provides protection to the Panamanian golden frog, but also to the puma, jaguar, tapir, trogan, and many other endangered species.



The female Panamanian golden frog chooses a shallow stream, where she lays a string of thirty to seventy eggs.

No longer wild

Sometime back, a very dangerous fungal disease killed many in my family. And my status as the national animal, and a unique one at that, hasn't helped much either. I am collected for display in zoos, hotels, and illegal pet trade. Also, my home is being destroyed by deforestation and farming.

Did you know?

The skin of each Panamanian golden frog contains enough poison to kill 1,200 small mice.



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Great crested newt

Mini godzilla

My father was so happy when I was born that he developed a crest, a sort of a crown, on his back! When I have babies, I will be happy too and have my own crest.

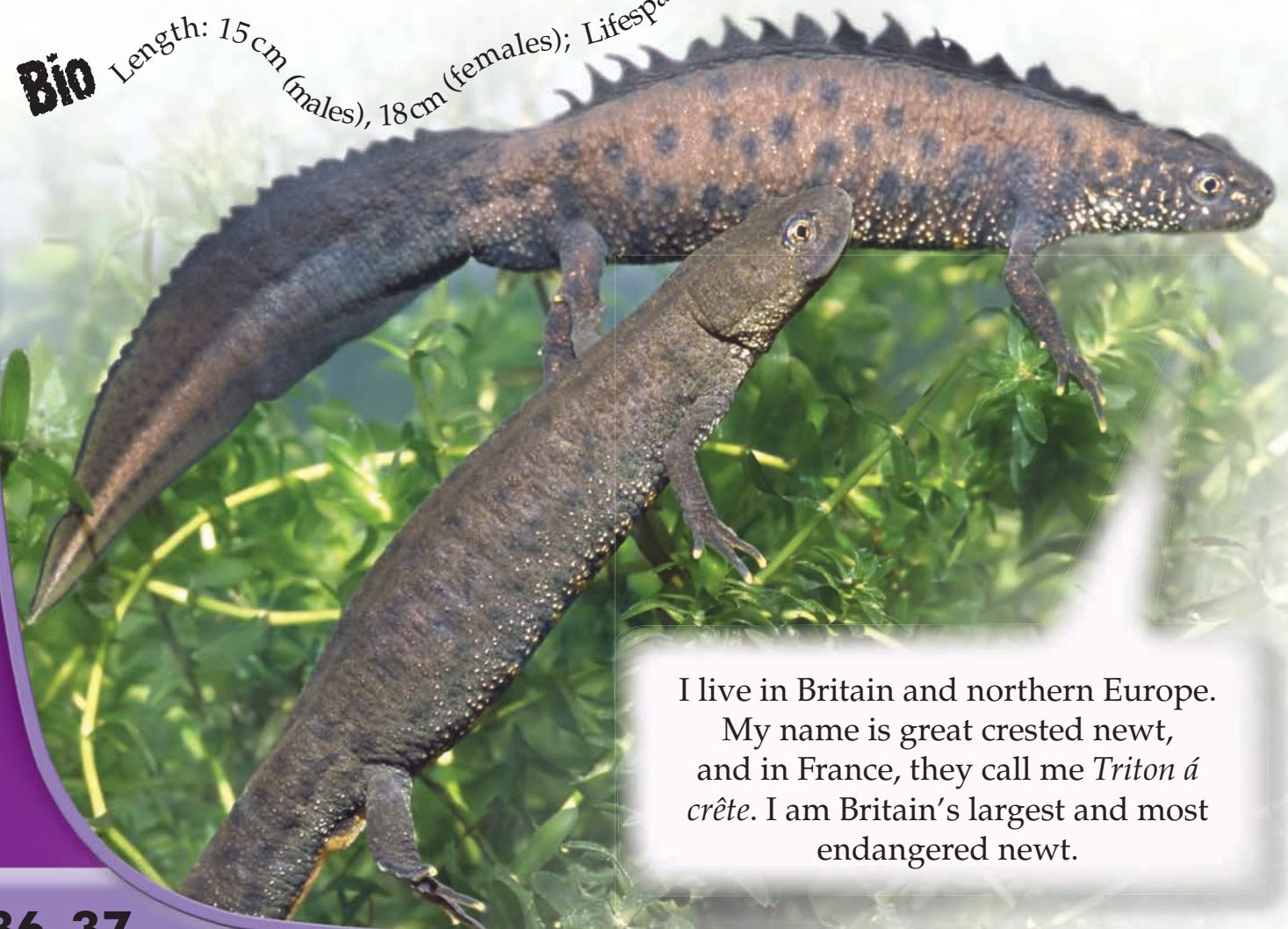
I live in deep, weedy ponds, which have lots of land around them. In summer, though, I wander into gardens, ditches, and woodlands.

Bio

Length: 15 cm (males), 18cm (females); Lifespan: up to 27 years

Blast from the past

The great crested newt belongs to the large family Salamandridae, which includes 74 families of salamanders and newts.



I live in Britain and northern Europe.

My name is great crested newt, and in France, they call me *Triton à crête*. I am Britain's largest and most endangered newt.

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I can protect myself

I am dark on top but my belly is bright orange or yellow, which scares away predators like water birds and hedgehogs. In case they do, I produce a milky poisonous substance to avoid being eaten by them. I don't like winter so much, so I hibernate under leaves or in mud.

I might be gone soon

In the last 50 years, there has been a 90 per cent decrease in the number of ponds in the United Kingdom, leaving very little space for me. Water pollution is another one of my major concerns.



Give me my pond back

I am protected in the United Kingdom, thanks to the Habitats Directive, the Berne Convention, and the Wildlife and Countryside Act (1981). Newt fences are also becoming popular. They prevent us from entering construction sites. But unless I am given my clean pond back, I have a thin chance of surviving.



The crested newt's bright belly warns hedgehogs against attacking it!



There are only 3,000 great crested newts left in the 18,000 ponds in the United Kingdom.

Did you know?

The great crested newt, along with its cousins Italian crested newt, Danube crested newt, and southern crested newt are collectively called tritons.



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Malagasy rainbow frog

Bio

Length: Up to 30 cm (male), 40 cm (female); Lifespan: 4–7 years



Blast from the past

The Malagasy rainbow frog is from one of the most recently evolved families of frogs called Microhylidae.

This is also one of the largest families with over 400 species.

I live in open rocky areas, canyons, and dry forests in Vallée des Singes in Madagascar. My name is Malagasy rainbow, and I am the most good-looking frog of my family.

My second name is Rainbow

I am a stout frog with white, red, green, and black patterns on my smooth back. I live in burrows in rock canyons. Sometimes, when the burrows are filled with rainwater, I climb the vertical rocks. In my family, babies grow quickly – in one or two months – because they are scared of being washed away by the water.

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My rare qualities

I have special pads on my hands and warts on my feet, which help me climb the rocks in canyons. I am very shy by nature. But when I am threatened, I inflate myself and don't hesitate at all to attack my assailant.

Fading frog

Destruction of forests by humans and overgrazing is destroying the area I live in. Sapphire mining activities are another reason for my home getting rapidly depleted. To add to my plight, members of my family are being sold as pets.

Wild fires are destroying the habitat of the Malagasy rainbow frog.



The Malagasy rainbow frog is being protected in the Isalo National Park.

Did you know?

The Malagasy rainbow frog is often found dead on the beach. It is very prone to injury.



Let's save the rainbow frog

The Convention on International Trade in Endangered Species of Wild Fauna and Flora protects me. The Zoological Society of London is carrying out research on how to raise my family in laboratories, so that we aren't completely wiped out from this planet.

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Baw Baw frog



Wonder baby

My mother, with her special fingers, spun a protective nest around the egg that I was born in. When I came out of the egg, I didn't even have to look for food for a few months, because I had a yolk sac attached to my body that gave me nutrition.

What's happening to me?

Eighty per cent of my family has disappeared. Our numbers have gone down from 10,000 to a mere 250 in the last 20 years and no one knows why. Scientists say that it is probably due to climate change, pollution, and bigger animals coming to stay on my plateau. I am also being killed by the deadly fungal disease chytridiomycosis that is affecting amphibians the world over.

Mr Picky

I remain inactive when it is cold, and even otherwise, I prefer to hide beneath vegetation, roots, logs, and rocks. The females are taller in our family, and when males call them, they go, "Aaaaark kruk kruk kruk"!

Although there are many areas around its home where the Baw Baw frog can live, it prefers the Baw Baw plateau.

Did you know?

The Baw Baw frog can leap up to 1.5 m forward and can eat about 4.5 kg of food each week.



Deforestation is robbing the Baw Baw frog of its home.

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I have little time left

I am protected in Australia by acts like the Wildlife Act 1975, the Endangered Species Protection Act 1992, and part of my home falls within the Baw Baw National Park, where I am protected. There are some plans underway to protect me, but it is extremely crucial to find out as to why my family is disappearing to be able to save us.

BIO

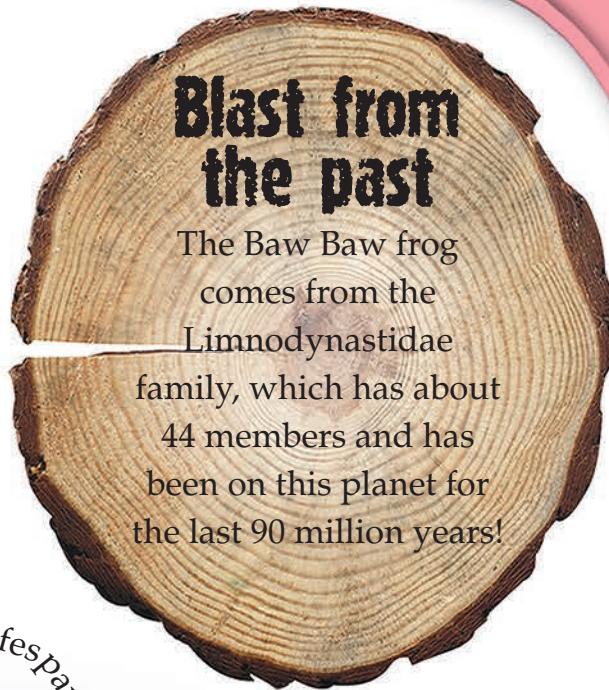
Length: 44.5mm (male), 51.6mm (female); Lifespan: not known



I live on the Baw Baw plateau in Victoria, Australia, and my name is Baw Baw frog. I live in tunnels or wetlands, alongside streams.

Blast from the past

The Baw Baw frog comes from the Limnodynastidae family, which has about 44 members and has been on this planet for the last 90 million years!



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Sagalla caecilian

Worm versus caecilian

I have an elongated, segmented body but no limbs. And, I live in burrows. All these factors make me seem like an earthworm, which I am not. I am a bony skulled, tough-skinned caecilian. Outer layer of my skin is strengthened with keratin so that I can dig burrow without harming myself.

Mr Spy

When I was in the egg, my mother guarded me. After I was born, she fed me – sometimes, on her own skin! I have special tentacles on the sides of my head, which help me find my way. They also help me sense the location of my prey.



The Sagalla caecilian eats earthworms and termites.

Did you know?

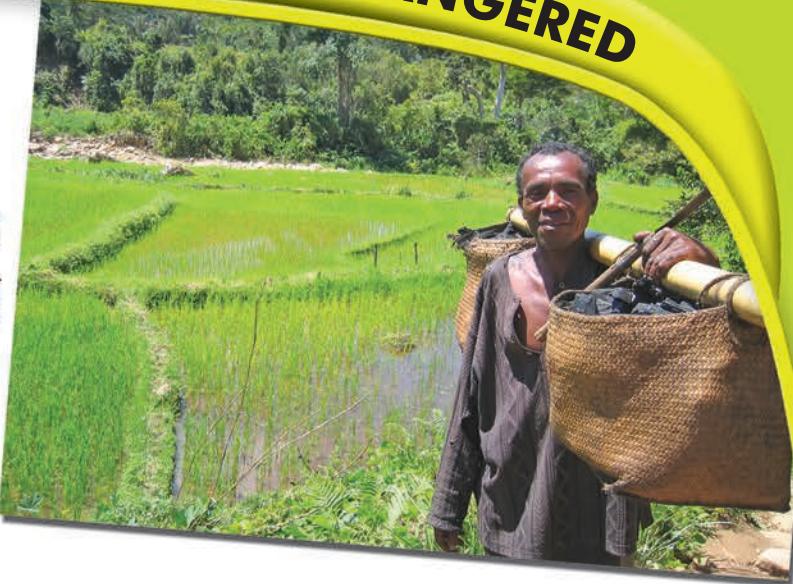
The Sagalla caecilian and its six brothers come from the family Boulengerula. They are also called Boulenger's caecilians and live in Africa.



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Blast from the past

Some say that the earliest caecilian existed in the early Jurassic period in Arizona, United States, 190 million years ago.



Sagalla's disappearing home

My home is disappearing; it is being taken over by farmers for farming. Although I am able to live there, I prefer to live near streams. There are some eucalyptus plantations on my hill, which make parts of it uninhabitable. Where am I to live?

Humans are also taking away the vegetation that the Sagalla caecilian prefers from its home.

I can survive

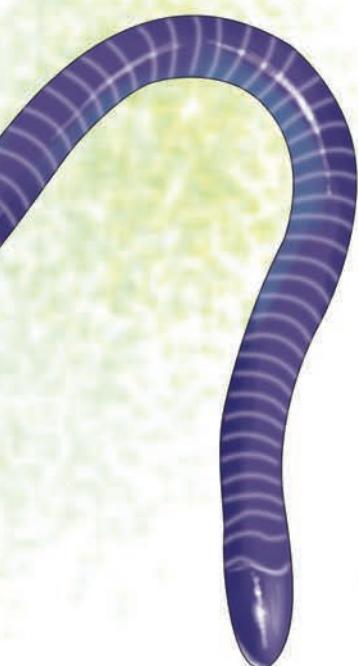
The International Union for Conservation of Nature claims I am critically endangered. Since humans don't know much about me, it is crucial that immediate steps are taken to study me, so that I may be saved. I feel that generating awareness about me amongst the locals has helped.



Eucalyptus plantations are destroying the habitat of the Sagalla caecilian.

Bio

Length: 300 mm; Lifespan: not known



Caecilians are very unusual amphibians, and I am one of them. My name is Sagalla, and I live on the Sagalla Hill in Africa. Locals have recently given me a new name, Kisagalla.

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Fighting for the crawlers!!

The World Conservation Union, or the IUCN as it is popularly known, is the world's largest organization that works for the protection of nature and natural resources. The headquarters of the IUCN are in Switzerland. The IUCN prepares lists of threatened plants and animals every year. Scientists at the IUCN study the current population of the species as well as where it is found. The organization then tries to help countries develop ways and means to conserve these dying creatures. The IUCN categorizes species as follows.

Extinct: If the last individual of a species is believed to have died, the species is considered extinct. The Yangtze River dolphin, or Baiji, was officially declared extinct in 2007.

Extinct in the Wild: A species is thought to be extinct in the wild if it can no longer reproduce on its own. Cuttings of such plant species have to be used to produce them, and animals have to be bred in zoos or sanctuaries.

Critically Endangered: Any species is thought to be critically endangered if data suggests that it might become extinct in the wild in the next ten years. This means that its population has reduced significantly, and it will no longer be found in the regions where it used to be. Animals like the gorilla, gharial, rattlesnake, shark, flying fox bat, fox, a large number of trees, and a few species of fish, frogs, parrots, toads as well as corals have been declared as critically endangered.

Endangered: Animals like the gazelle, Egyptian vulture, parakeet, blunt-nosed leopard lizard, the Hawaiian finch, green sphinx

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moth, sawfish, a few species of owls, frogs like the African reed frog, and the Slender Loris are listed as endangered. The survival of these animals is in extreme threat in the next ten years.

Vulnerable: The IUCN groups the animals that face a threat but can be conserved in the near future as vulnerable. This group includes the white-headed vulture, the alligator lizard, the lemur, the shark ray, the butterflyfish, the common hippopotamus, the giant gecko, and a few crocodile species. These animals might soon be included in the endangered or critically endangered categories if steps are not taken immediately to protect them.

Near Threatened: Species that are not vulnerable, endangered or critically endangered but might fall into any of those categories soon are classified as near threatened.

Least Concern: Species that are widely found in plentiful numbers are classified under least concern.

Note: *The conservation status provided in this book are not solely based on the IUCN Red List. For some creatures, national and local data have been used.*



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Glossary

amphibian: an animal capable of living both on land and in water

caecilian: amphibian resembling earthworms or snakes

crevice: a narrow crack or opening caused by splitting and rupture

flagship conservation species: a species chosen to represent an environmental cause

friction: a force that resists motion when the surface of one object comes into contact with the surface of another

fungal disease - diseases of humans or other vertebrates caused by fungi

gorge: a deep narrow passage with steep rocky sides

invertebrate: creature without a backbone

legislation: a proposed or enacted law or group of laws

predator: an organism that lives by preying on or hunting other organisms

splayed: spread or turned out

tadpole: the limbless larvae or baby of a frog or toad, having gills and a long, flat tail

translucent: permitting the passage of light, making things clear but not altogether transparent

salamander: lizard-like amphibian

wart: a hard rough lump growing on the skin

yolk sac: a bag-like structure filled with yolk

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THIS IS A GREEN BOOK



About the Environment Agency – Abu Dhabi (EAD)

Established in 1996, the Environment Agency – Abu Dhabi (EAD) is committed to protecting and enhancing air quality, groundwater as well as the biodiversity of our desert and marine ecosystem. By partnering with other government entities, the private sector, NGOs and global environmental agencies, we embrace international best practice, innovation and hard work to institute effective policy measures. We seek to raise environmental awareness, facilitate sustainable development and ensure environmental issues remain one of the top priorities of our national agenda.

For more details, please visit:

<http://www.ead.ae>

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Life in the AMPHIBIAN WORLD

Today, one out of three amphibians are endangered. Over half of Europe's amphibians are likely to be wiped out by 2050 if steps for their preservation are not taken. Learn about some of the most endangered frogs, toads, salamanders, newts, and caecilians of our world and what is being done to save them.

Other titles in this series

- Life on Land
- Life in the Water
- Life in the Sky
- Life in the Reptilian Realm
- Life in the Plant Kingdom



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ISBN 978-9948-20-722-1



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