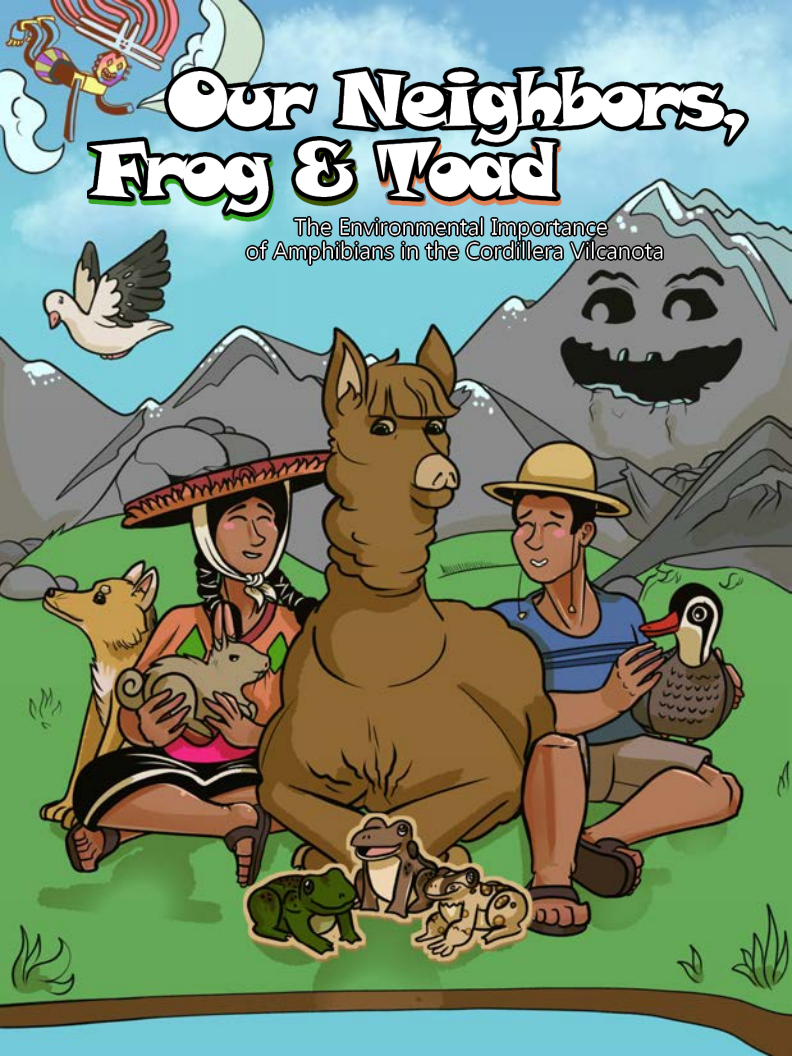


Our Neighbors, Frog & Toad

The Environmental Importance
of Amphibians in the Cordillera Vilcanota



This comic book project is the product of a collaborative effort among many volunteers:

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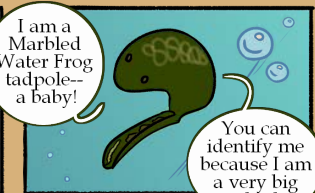
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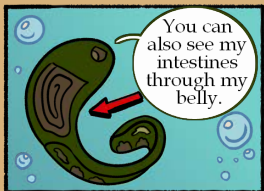
Emma Steigerwald

Delfin Lozano

Meet the Marbled Water Frog



You can identify me because I am a very big tadpole.



Our mother leaves us to grow up by ourselves. But she keeps living in the same spring as us.



Amphibians: Disgusting?



Stories in the Stars

Beautiful, isn't it?

I wish I could read the stories written in the stars...

I am the Mayu, the celestial river! Rivers on Earth are just mirrors reflecting my glory.

We stars were important to your ancestors. They used us to tell when the planting season would come.

We are the Yana phuyu, or the dark cloud constellations!

I am the llama, and this is my new-born unallamacha!

I am Atoq, the fox! I chase the animals throughout the sky.

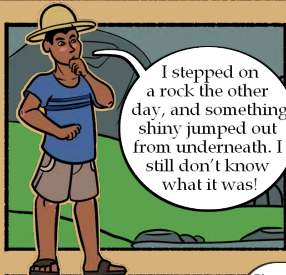
I am yutu, the tinamou! I chase Hanp'atu because I want to eat him.

I am Hanp'atu, the Toad. I peek over the horizon in October, during the first rains, then through the year, I follow Mach'acuay.

I am Mach'acuay, the serpent! Right now, in March, I am going to dive into the horizon.

These animals must have been important to the Inca since they saw them in the sky.

Meet the Marbled Four-Eyed Frog



I stepped on a rock the other day, and something shiny jumped out from underneath. I still don't know what it was!



"It" was me!



I'm not the Andean Toad. I'm the Marbled Four-Eyed Frog! It's not that hard to tell us apart. I'm not even a toad!



Hello, Andean Toad!



First of all, I have smooth, pretty, marble-patterned skin.



Sorry! How do I tell who's who?



I also live under rocks.



As an adult, I don't go to the water except to have babies.



My species only lives high up in the Andes in Peru, Bolivia, and a bit of Argentina.



Huh, I haven't seen that many Marbled Four-Eyed Frogs besides you.




That's because, well... there aren't as many of us left.




I'm glad I can identify my frog and toad neighbors. I hope there will be more of them soon!


Frog Broth




My grandmother always told me of the frogs that used to live in our stream...




... she said they used to protect the water... But where are they now?




What's happening?! Where are they taking us?




They bring us from all over the Andes to the big cities.




Some of us get sick and die on the journey.



Frog soup and juice! Prevents and cures mental problems, anemia, prostate problems, asthma, and menopausal disorders!




The maca and honey in frog juice are natural medicines, but frogs themselves don't actually cure any diseases. Why do city people with access to good medicines eat me and my friends?




If we want frogs to continue to be an important part of tradition, their uncontrolled harvesting must stop!


Meet the Andean Toad




What's this creature? It looks different from the other frogs.




Yes, that's because I'm the Andean Toad! You can tell by my dry, bumpy skin




I have bumps on my neck that are poisonous to predators.




I can survive far from water and not dry out because of my special skin.



But I still need to go back to pools of water to reproduce.



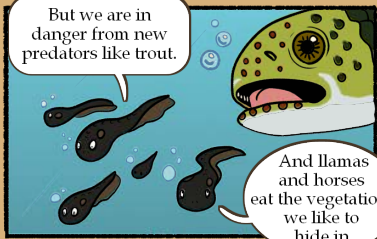
We lay eggs here, and once they hatch, the tadpoles live in the water.



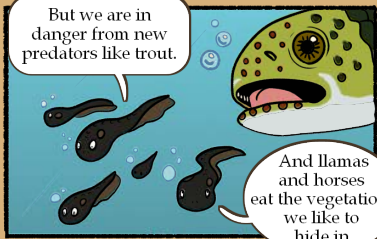
Now they're toadlets, so they're leaving the water. Look at their cute orange feet!




We live high in the Andes from Peru to Argentina.



But we are in danger from new predators like trout.



And llamas and horses eat the vegetation we like to hide in.



I didn't know I had such interesting neighbors. I hope that they stay safe here!

Vampire Toads

My mother tells me that toads suck blood. No wonder they come into my house... they are looking for their next meal!



What's that?!

It's a frog!

The frog's throat is moving! What's it doing?

That means it's sucking your blood!



Look out!

THUD



Kill it!



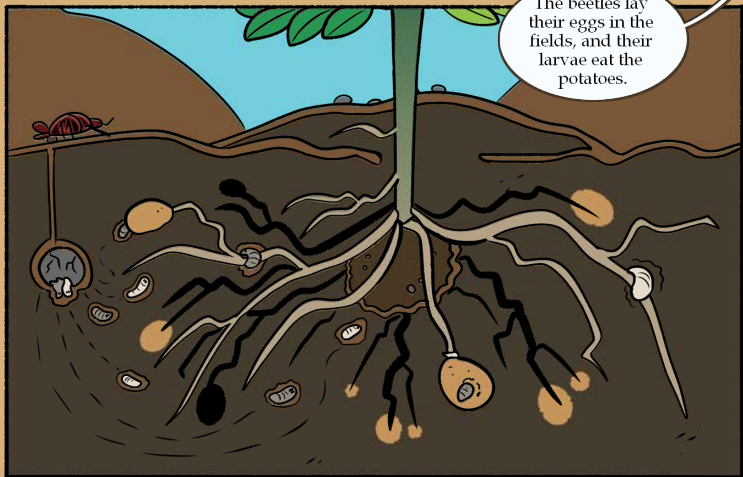
Why would they think I'm sucking blood? I don't even like blood! When my throat moves, it just means I'm breathing!

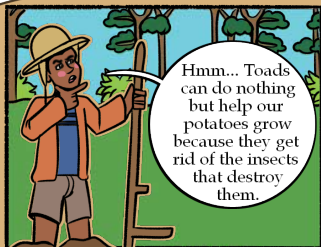
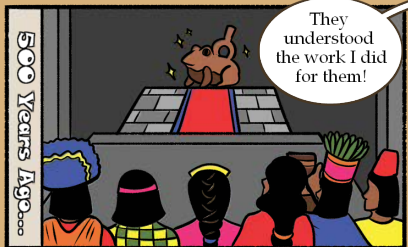
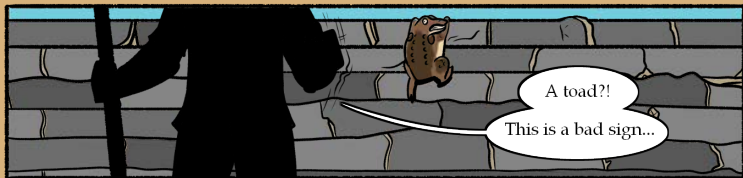


Poor guy! You did nothing wrong, but they're still scared of you.

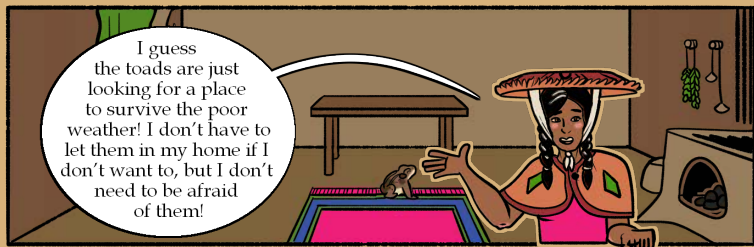
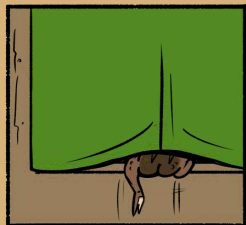


Helping Potatoes Grow

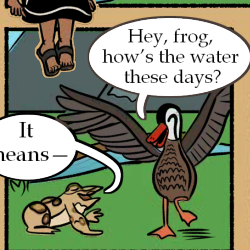
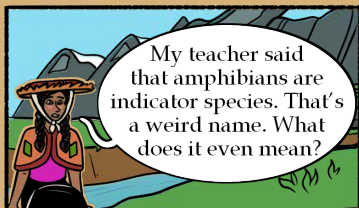




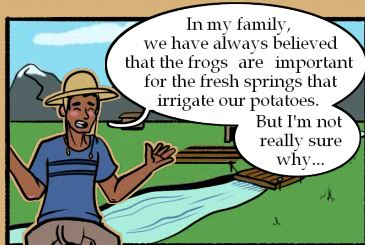
Intruder Alert!

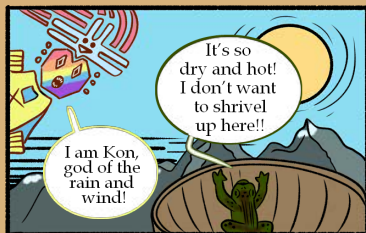


Indicator Species



Calling the Rain





Frog or Toad?

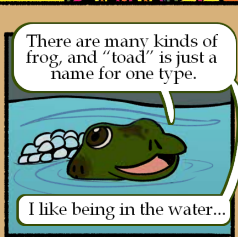


Frogs, toads... we use two different words for these animals. But is there a difference between them?



You and I are related...

...but I am special and different from you in many ways!



There are many kinds of frog, and "toad" is just a name for one type.

I like being in the water...



...and I like being on land!



I lay my eggs in chains, and you leave them loose.



I have special teeth that you don't!

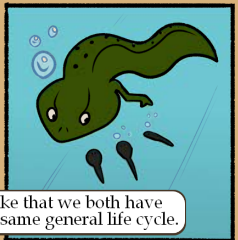


And I have lovely smooth skin, while yours is drier and bumpy.

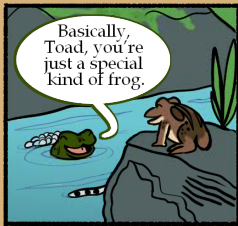


Well, I have this paratoid gland, and you don't! It releases a liquid that fends off predators!

We have many things in common, too.



Like that we both have the same general life cycle.



Basically, Toad, you're just a special kind of frog.

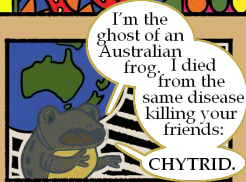


I'm glad we're family, frog!

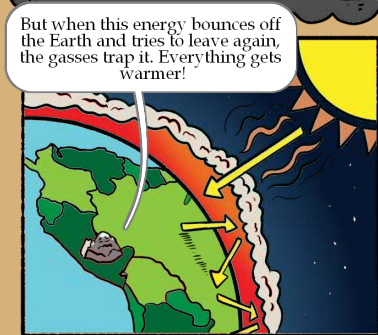
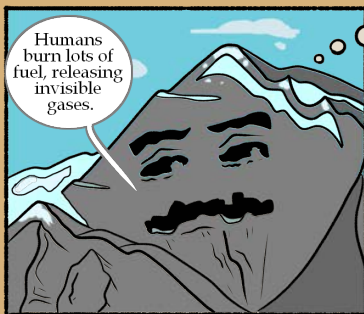


It's so fun to look at these animals more closely! Now I can finally tell the difference.

Chytridiomycosis



Climate Change





Apu, this is also making less rain and snow fall. It's getting drier here.



During the summer, the water in the streams is mostly melted glacier. What happens when the glacier is gone?



Many streams will dry up.

But we need the water!

And farmers need water for their potatoes and alpaca.



There will be less water in the future, and we must plan for this!



Animals and plants can live and grow where glaciers used to be.



Yes. The Andean Toad, Marbled Four-Eyed Frog, and I have found new homes there!



Fox, mountain passes that were filled with glaciers are now open.

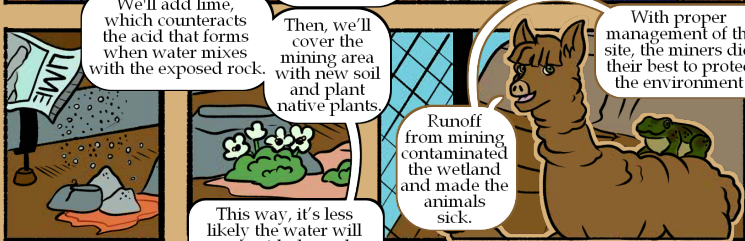
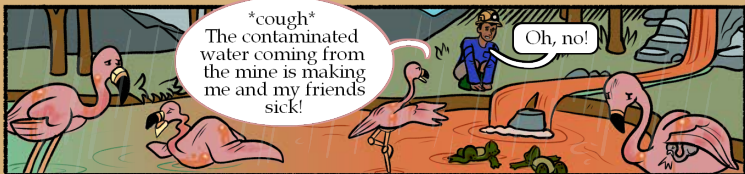


I can use those passes to cross the mountains...

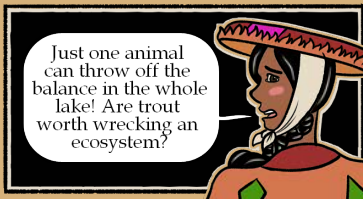
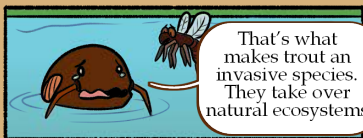
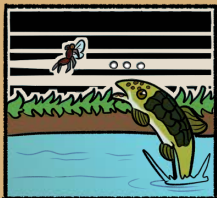
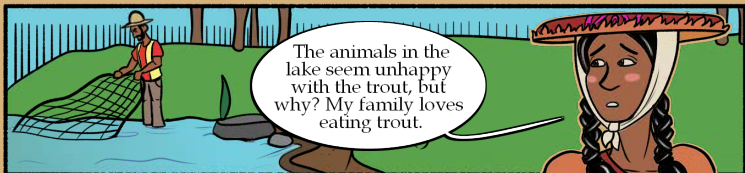


As the climate changes, so do many other parts of the environment. As Apu says, we should get ready for a future with less water.

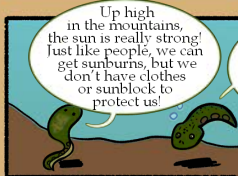
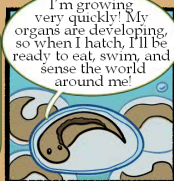
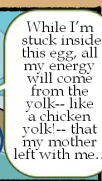
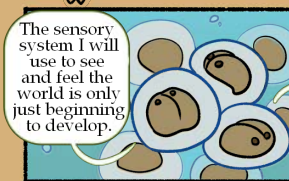
Mining



Trout: An Invasive Species



Metamorphosis



The Cordillera Vilcanota is a beautiful, glacier-blanketed mountain chain in Southern Peru. It supports endangered animals, breathtaking scenery, and rich cultural traditions. Join with the residents of Cordillera Vilcanota to explore their world!

Contained in this book are colorful adventures that will help you discover the hidden depths of a wondrous environment. They will show you the animals who live here, particularly the amphibians--the highest elevation frogs in the entire world! You will also learn about some of the challenges these animals face in a changing world and the role they have held in ancient local culture.

Everyone can pitch in to save this extraordinary place, and here is a great place to start.

