

Arizona Wildlife Podcast

Transcript: Episode 9 – Desert Tortoise Survey

(Please note: this podcast was recorded live from a public presentation. It was not a rehearsed speech. This transcript attempts to capture the dialogue as it was spoken. At times when the speech was difficult to hear or understand, a good effort was made. These rare cases are noted in the text.)

The content for this episode came from the desert tortoise survey that took place at Cave Creek Regional Park on April 17, 2008. It was part of the Arizona Game and Fish Department's Nature's Classroom Homeschool Program. Department staff took members of the homeschool community along as they surveyed tortoise populations in the area.

Listen as Audrey Owens, a wildlife specialist for the Department, discusses with homeschool participants tortoise biology and survey techniques. Following the live recording, the audio was edited and Eric Proctor, a Department educator, interjected appropriate questions to link the content.

ERIC:

Let's start pretty simple. Can you first just tell us a little bit about desert tortoises?

AUDREY:

They're actually really fascinating animals and most people don't even know that we have them in Arizona. They are reptiles, um, which means they are ectothermic. Uh, do you guys know what that means? Can you explain it to me?

PARTICIPANT:

They, um, they regulate their body heat by...by the outside temperature.

AUDREY:

Exactly. So they have no internal mechanism to regulate their body temperature. Which means that they need to regulate it by, um, behavioral changes. So they go outside to bask. They go and sit in the sun or to, uh, cool down they actually go into a burrow. So they spend...because it's so hot here, they spend 90, 95% of their time in burrows. So, that's why they're rarely seen.

But they have a lot of neat adaptations to life in the desert. You can see they've got really stumpy legs and they also have pretty strong claws. And they use these to dig their burrows.

They can go for long periods of time without drinking and actually they get a lot of their water from the vegetation that they eat. They're completely herbivorous and they can get nutritional value out of some pretty rough plants. I mean they eat cactus. They eat things that a lot of animals can't digest.

They've got, obviously, they've got a really hard shell and it's, um, really difficult for animals to penetrate this shell once they're adults. Actually, the only animals that can eat an adult desert tortoise are mountain lions and a really determined coyote. They can actually chew on the limbs and the outside of the shell. And if they're really determined they can kill a tortoise, but for the most part it's just a mountain lion.

ERIC:

Is it possible to tell the difference between male and female tortoises?

AUDREY:

You can tell that because this is the plastron, which is the underside of the shell, they've got a dip on the underside of the shell towards the rear and that's for a...for mating purposes. The female's going to be completely flat here.

ERIC:

But you can't tell that for...after...until a few years, right?

AUDREY:

Right. You can only tell that in an adult animal, which as I was talking about earlier, in the wild an adult animal is about 10-15 years old. But it really has more to do with size. So once they're 6-8 inches is when they're adults.

ERIC:

I also heard that the males have some kind of extension of their shell just underneath their head. Is that true? If so, what's that used for?

AUDREY:

Yeah, it's actually for combat, yeah.

PARTICIPANT:

They flip each other.

AUDREY:

Yeah, the females will fight also, but it's mostly males. They're really territorial.

PARTICIPANT:

And it's usually over breeding season.

AUDREY:

Yeah, exactly.

STUDENT:

That would be a long fight.

AUDREY:

(Laughs.) Yeah.

PARTICIPANT:

Wouldn't it though?

(LAUGHTING.)

(INAUDIBLE COMMENTS FROM PARTICIPANTS.)

PARTICIPANT:

Ah, I'm done.

PARTICIPANT:

Okay, truce. She's yours.

AUDREY:

Yeah, I mean they'll actually flip each other over, and they can generally flip themselves back over but if they can't, I mean...

PARTICIPANT:

And it's hot.

AUDREY:

It...it doesn't take long for them to fry in the sun so...

PARTICIPANT:

Oh, so but they can flip themselves over?

AUDREY:

Yeah, yeah.

(INAUDIBLE COMMENTS FROM PARTICIPANTS.)

AUDREY:

They use their legs. But look at how stumpy the back legs are especially.

PARTICIPANT:

Is there a difference in, um, tail size or length in males...

AUDREY:

Yeah, generally the males have a longer tail and also this part of the shell right here...

PARTICIPANT:

Rounds...

AUDREY:

...is...is like flat like vertically up and down in the male whereas the female it's a little more out...

PARTICIPANT:

Okay.

AUDREY:

...so that she can lay eggs. And they mate before the monsoon season so, like May, June, July, and they lay their eggs and the eggs hatch out in about a year so...

PARTICIPANT:

They winter over.

AUDREY:

Yeah, and um, and they emerge at the time of the next monsoon. So they emerge when there's a lot of the vegetation out. Which is really important because they're completely herbivorous and, you know...

PARTICIPANT:

And are they on their own when they...

AUDREY:

Yeah.

PARTICIPANT:

They're just...

AUDREY:

They're completely on their own.

PARTICIPANT:

On their own.

AUDREY:

I have heard that the female will actually guard her nest against like Gila monsters because Gila monsters are very big egg predators.

ERIC:

Let's say we don't actually find any tortoises today. Are there other things we can look for that would actually indicate that there were tortoises here?

AUDREY:

So if we find scat that's a good sign because you know that tortoises have been in that area actively foraging.

PARTICIPANT:

And you'd know that's different because, from any other scat...

AUDREY:

The shape...it's oblong.

PARTICIPANT:

Okay.

AUDREY:

And also if you take a close look at it, um...

PARTICIPANT:

The fibers.

AUDREY:

You'd need a magnifying glass. Yeah. It almost looks like horse manure or cow manure.

PARTICIPANT:

Okay.

AUDREY:

Because it's completely full of vegetation. If there's any hair in it you know it's not a tortoise because they're vegetarian; they're herbivorous.

ERIC:

And their burrows...what are some indicators of a tortoise burrow?

AUDREY:

If you can imagine the cross-section of a tortoise, they're flat on the bottom and round on top, so it's going to be like a hamburger shape, um, and they also build their burrows under rocks, so we'll be...

PARTICIPANT:

Hunker down in there.

AUDREY:

...looking for those.

ERIC:

So we were walking along this wash, this desert wash. Did you choose this location on purpose? Was there a reason that we were in this particular area?

AUDREY:

Some of them, for whatever reason, live in the washes and it seems really risky to me because...

PARTICIPANT:

Well, floods.

AUDREY:

...it floods periodically.

PARTICIPANT:

Exactly, well they're not quick. I mean quick.

PARTICIPANT:

So maybe they're not the brightest animals.

AUDREY:

The tortoises that...that uh, we found here in 2004 may not be here anymore because a flood may have happened...

(LAUGHING.)

AUDREY:

And they decided this is probably not real good habitat for me.

PARTICIPANT:

Or they're not around anymore.

PARTICIPANT:

Yeah.

AUDREY:

But the park ranger has seen tortoises in this wash this spring.

ERIC:

Unfortunately, we didn't find any tortoises today. But if we had, what type of data would we have collected?

AUDREY:

We want to take like weather data. We note whether it was out in the open or if it was in a burrow. And if it was in a burrow, what kind of burrow it was.

A lot of times the tortoises that we find have green beaks because they've been eating. So that's something that we mark down too. And also some of them will have like the grass or the plant, whatever they were eating...

PARTICIPANT:

Still hanging out of their mouth.

AUDREY:

...sticking out of their mouth, yeah. Yeah. And, uh, we want to assess their general health. We listen for their breathing. If you can hear like raspiness or like a whistle it means that they might have an upper respiratory infection, yeah.

PARTICIPANT:

Would you treat that or just let it go?

AUDREY:

No we just let it go.

PARTICIPANT:

Okay.

AUDREY:

And we don't want to spread anything from tortoise to tortoise so we use a, um, disinfectant to, um, clean off our equipment that touches the tortoise. We look at the eyes, whether they're bright or cloudy, whether the eyelids are swollen, whether the nares, which are the nostrils, are occluded, if they've got dirt or like some kind of exudate. And then, uh, we take a look at the shell and see if there are any anomalies or scars.

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Thank you.