

ENQUIRING MINDS

EQM EP 6 SEG 2

BEC: Now it's time for Lockie and Annie to find out where bats live and what they eat.

LOCKIE: It's very important for us to think about all the animals on the planet and how we can help them survive. That's exactly what third grader Annie wants to do when she grows up. Oh, cool horses.

ANNIE: Thanks.

LOCKIE: What do you love most about animals?

ANNIE: Well they're cute, cuddly, friendly, yeah, that's why I love animals.

LOCKIE: Do you have a favourite animal?

ANNIE: Yeah, elephants, I like ducks, dogs, cats, giraffes.

LOCKIE: Do you have any pets?

ANNIE: Yeah, I've got guinea pigs.

LOCKIE: Can we go look at your guinea pigs?

ANNIE: Yeah, sure.

LOCKIE: So these are the guinea pigs?

ANNIE: Yeah.

LOCKIE: What are their names?

ANNIE: Fluffy and Giggles.

LOCKIE: Can I have a hold?

ANNIE: Yeah, sure.

LOCKIE: So which one's this?

ANNIE: Giggles.

LOCKIE: Giggles.

ANNIE: This one's Fluffy.

LOCKIE: Annie, your mum told me you saw some animals on a recent walk through the botanic gardens?

ANNIE: Yeah.

LOCKIE: What sort of animals did you see?

ANNIE: Bats.

LOCKIE: What did you think of the bats?

ANNIE: They're cool, they hang from trees, they're interesting and exciting.

LOCKIE: Would you like to meet someone who works with bats?

ANNIE: Yeah.

LOCKIE: Yeah?

LEROY: In primary school I was really interested in the things we tended to do outdoors. So we'd go out, check out the bush and in high school that developed further when I did geography and biology in high school. So that's kind of where my love for science grew.

Yeah, the study of microbats is really important because we really don't know a lot about microbats. Because they are out at night it's very difficult to study them so I've radio tracked bats and looked to see which habitats they're using and looked to see if that was related with how many insects were around and how many mosquitoes were around and that's where things like radio tracking really do help.

LOCKIE: So we're going to meet Leroy and he's the expert as far as bats go. It's pretty wet out here.

ANNIE: Yeah.

LOCKIE: Hey, Leroy.

LEROY: Hi, mate, how are going?

LOCKIE: Good, good to see you again.

LEROY: Likewise.

LOCKIE: Leroy, this is Annie, she loves animal and so I thought I'd take her to meet the bat expert.

ANNIE: So what do microbats do out here?

LEROY: Well the microbats out here actually come out to eat a lot of food at night, mosquitos, moths, beetles, some microbats actually roost. So over there you see some mangroves, they actually roost in the mangroves and what I'm doing right now during the day is we're tracking where the bats have gone during the night, so now they're not moving, it's a good time for us to go around the salt marsh and find out where these bats are living.

LOCKIE: So what's this big antenna you're holding up?

LEROY: This thing actually picks up the signal from the bats that we've put a little radio transmitter on and we can detect where the bats are or a direction of where the bats are and then as we get closer to it the signal gets stronger and we can find where the bats are.

ANNIE: What size are they?

LEROY: They're actually very small, so microbats can be the size of a matchbox. Some actually get a little bit larger, so, you know, around the size of a 30cm ruler. So they vary in size but you can get really small ones so they actually fit into a matchbox.

LOCKIE: And Annie and I aren't at risk of getting attacked by bats out here today, are we?

LEROY: Not, not at all. People tend to think that bats will start landing on your hair and start sucking your blood but that's just what you see in movies. They're out feeding on insects. They don't really get attracted to humans unless we go out to disturb them, try to pick them up if they've fallen on to the floor.

ANNIE: Leroy, have you ever seen these little bats up close?

LEROY: Yes, I have actually. I've seen a fair few and I've been very fortunate to see them. They're amazing creatures. Do you want to see some?

ANNIE: Yeah, sure.

LEROY: Alright, let's head out and we'll have a look at some.

When I first started I had no idea what a microbat was. It was more just the questions. I was looking at mosquitoes and salt marsh, I was really interested in salt marsh as a habitat, it's a very dynamic habitat and I was really keen to look to see this whole food web, food chain with the bats and the mosquitoes. It really didn't matter which animal I was studying as long as I got to study that whole relationship between a predator and a prey.

And microbats there are many species. So in Australia we have close to 100 species which is one tenth of the world's total bat population.

LEROY: So what sort of bats do you have in here at the moment?

MAN: We have one *Vespadelus*, one *Epticus*, one *Mormopterus* and two *Nyctos* or *Nyctophilus*.

LEROY: Excellent. Do you mind if we have a look at some of them?

MAN: Yep, get the Nyctos out first.

ANNIE: What happened to this particular bat?

MAN: These guys are cat attacks. They were found on the ground in backyards. They can both fly now. They're very healthy.

LOCKIE: So are they going to fly at us?

MAN: Well, we'll try and stop that.

LOCKIE: And is that a common thing to happen to bats?

MAN: Yes, very common here.

LOCKIE: So what can you tell us about what you do here to help them recover from those injuries?

MAN: So we treat them with medication and antibiotics and we make sure that they don't get any infections. We'll feed them up and release them when they're ready.

LEROY: It's got some sharp teeth, hey.

ANNIE: Yeah.

LEROY: Do you want to have a pat? Soft right?

ANNIE: Yeah.

LOCKIE: Apart from the forests around here, where do bats like to sleep?

LEROY: Yes, so they like to sleep in a lot of different places. So if they're not sleeping in tree hollows or under bark of trees they tend to roost in storm water tunnels and railway tunnels, caves. There are actually some tunnels in Sydney where there are large colonies of bats roosting in there. So we might go and check that out a little bit later if that's alright?

LOCKIE: Yeah?

ANNIE: Yep.

LEROY: So microbats are unique. They're mammals so most people don't think of them as mammals but they are actually mammals. They're the only mammals capable of self-powered flight which is quite amazing. They're so small. To think that you can have a microbat sitting in the palm of your hand is quite amazing to know and to know that they fly such great distances.

LOCKIE: Cool. Leroy, this is one of the places bats come to sleep.

LEROY: Yeah, that's right. So when they're not flying around at night they tend to spend their days here just in a nice cool environment where the temperature is pretty stable.

LOCKIE: Is that why we have to use infra-red light in here?

LEROY: Well yeah, just so that we don't disturb the bat, some bats are sensitive to light, it's just a precaution really.

LOCKIE: And what's this device that you've got here beeping away?

LEROY: This device actually records any calls that the bats may be making.

LOCKIE: So you're saying if they make sounds that we wouldn't normally be able to hear this will pick it up?

LEROY: Yes, this will pick it up. We can't actually hear their calls without one of these machines which converts it to our hearing range.

LOCKIE: I'll stay with you so you don't get scared. Is that something there?

ANNIE: Wait, I think I saw a head or something.

LEROY: So Annie, there you see a couple, there's maybe two, three bats. You can see they only need a small space to roost in and there's lots of areas like that in this tunnel. So there might be a fair few more. Check this out, there's like a big cluster of them on this side.

ANNIE: Really?

LEROY: Yeah, it's cool.

ANNIE: So Leroy, how do they see at night?

LEROY: Yeah, so bats actually do - they do use their eyes to see but at night when it's really dark it's a lot easier for them to use another system that they have. They use something called echo location and that's just a big technical term meaning they send soundwaves as they fly through the night and those soundwaves bounce off objects, that creates an echo and these bats are so intelligent that they can convert that echo to, you know,

a picture of their environment and also insects that they're trying to catch.

LOCKIE: We've had a pretty interesting day chasing bats. I've kind of overcome my fear of the little creatures, they're pretty cute, and I think Annie like them so much we might see her at her zoo's nocturnal house some time in the future.

BEC: On the next episode – Sacha discovers what it takes to become a real artist and Holly takes a trip to the dentist. See you next time.

VOICE-OVER: If these stories have inspired you then check out our website for activities and loads of information on all of our experts. Plus don't forget to challenge yourself with our Enquiring Minds game.

END OF TRANSCRIPT