

## **GIRL SCOUTS: Night Owls!**

### **Overnight Outcomes:**

1. Scouts enjoy spending time at the Zoo (Measure –post survey, “We had fun.”)
2. Scouts are connected to nature (Measure –informal assessment).
3. Scouts are empathetic for wildlife (Measure –post survey, “We want to help save animals in the wild.”)
4. Scouts are motivated to “take action” to reduce threats to wildlife (Measure –post survey).

### **Good to Know Terms:**

Nocturnal animal—appearing or active mainly during the night

Diurnal animal –appearing or active mainly during hours of daylight

Crepuscular –appearing or active in twilight

Echolocation: also called bio sonar, is the biological sonar used by several kinds of animals.

Echolocating animals emit calls out to the environment and listen to the echoes of those calls that return from various objects near them. They use these echoes to locate and identify the objects.

### **Key Conservation Messages:**

**Paper** – Tree habitats where many animals live are being cut down to make paper and other products. 27,000 trees are cut down each day to provide toilet paper to the world. Solution – Houston Zoo uses toilet paper made from recycled paper. They can help by recycling their paper in school and at home and using both sides of a piece of paper before throwing it away.

### **Materials:**

Night vision goggles

Echometer & iPad

Paper and drawing materials

Night Owl interview questions (optional sheet, but good to help guide discussion)

### **Welcome & Introductions**

- Guests will be entering at Gate 1, dropping gear off at the stroller gate, and parking in the employee gravel lot. Volunteers and staff will help guide guests to the BEC.
- Encourage restroom use and anything they might need on tour (i.e. jackets and bug spray)
- Kahoot in Auditorium until 7:15pm
- Assess prior knowledge of your group while grouping up in the BEC or heading out on tour and be sure to introduce/review nocturnal, diurnal, and crepuscular terms

### **Night Hike I – Silent Night Hike (portion of hike I)**

Elephants, giant anteater, bears, jaguar, cougar, tiger

- Have participants walk silently without flashlights on and try to identify 10 unique sounds. What else do they notice about their surroundings as their eyes adjust?
- Allow guests to make observations at each exhibit and search for the animal without turning on a flashlight. Ask them to describe the environment using their senses. What do they see, hear, smell, taste (nothing), and feel? Give them a few moments to observe with each sense. Ask them whether they believe our senses are well adapted for a nocturnal environment. Why or why not?

- Engage participants in conversation about each of the animal's nocturnal senses and compare them to how we utilize ours. What senses do we primarily use? How does that differ from the animals we have been learning about?
- Bring a pair of night vision goggles out to discuss how nocturnal animals have better vision at night than humans do. Participants can take turns trying out the goggles and discussing what they notice differently about their surroundings when using them.

#### **Ambassador Animals** – tenrec/armadillo, ball python, tarantula/other

- Have guests make observations about the animal and discuss whether they think the animal is diurnal or nocturnal. How are adapted to their habitat and low-light conditions? How might they look or behave differently if they were diurnal? For an animal that they find is not nocturnal, why not? How is it better adapted for daylight conditions?

#### **Night Hike II** –Natural Encounters: Bats, mole rats & bat detectors to CZ nectar bats

- Explain that some animals have unique ways of listening to or sensing their environment. Have participants explore Natural Encounters and search for examples of animals with unique senses. Have the group share out their ideas and then supplement discussion with some additional animal information.
- When visiting the fruit bats, explain that the species we have in our collection are fruit and nectar bats; however, many of the bats native to Texas, such as the Mexican free-tailed bats living under Waugh Bridge, are microbats and go out to hunt every night using a special sense, echolocation. Discuss some of the similarities and differences between micro- and mega-bats. *Transition over to the porch area.*
- Ask if anyone can explain how echolocation works. Demonstrate for the group by selecting a few people to act as bugs flying around the space and one person to be a bat, sending out calls to their environment and listening for the echo to locate the bug. Then, introduce the Ecometer to the group and explain how it can pick up bat calls that we cannot hear. For the next portion of the walk, your group will be searching for bats by listening for their calls. Path: Natural Encounters → Nectar bats
  - Discuss factors that may affect bats being in the area (i.e. adequate food, temperature, human light and noise, etc.).
- If your group does pick up bat calls, you can show them how the iPad software is able to identify which species it is. Be sure to share your results with other groups during wrap up!

#### **Snack, Break & Interviews**– BEC

- Once back from tours, have scouts in your group sit together for snack and their break. During this time, allow them to interview you about what it's like to work a nighttime job. Answer the questions on the handout for them.

#### **Indoor Activity**– Create a nocturnal animal

- After having been out on zoo grounds, discuss with the participants, several adaptations that nocturnal animals possess. Some specialized reflective retinas to see with low levels of light, better hearing (bigger ear and/or ability to hear a wider range of sound), better senses of smell because of a larger number of scent receptors, some have specialized whiskers for “feeling” and some “taste” the air to pick up scent particles.
- After the discussion pass out three index cards (or squares of paper) to every scout. Tell them they will create their own nocturnal animal. They can include real world adaptations or make up new ones. On the first card they must draw the head of an animal, the second card the body, and the third card the legs/tail/etc. with a brief description of the adaptations drawn. They will then keep one of their cards, the head,

but exchange the others with someone else in their group. Place the cards together to form a new animal. Working in pairs, or independently, they can name their animal, create a story about its natural history and some of its nocturnal adaptations to share with the entire group.

**Evening Wrap- Up –**

- Pull the kids and adults in, recap what they've experienced. Go over sleeping expectations and explain sleeping arrangements to adults. Lights out by 11pm.

**Morning Activities:**

- Breakfast at Macaw! Please be wrapped up by no later than 8:15am
- Tour stop options: Bird garden/BoW, CZ, giraffe, cheetah/lion, red panda, sea lion
- Discuss differences between nocturnal and diurnal animals and their adaptations