



Arizona's Raptor Experience, LLC

July 2018

~Newsletter~

Greetings from Chino Valley!

We hope you are well and getting some rain! The monsoon season has finally arrived – here's hoping it's a good one this year.

We've been noting the differences in our backyard wildlife as a result of the lack of rain to this point. The number of hummingbirds is down from last year, although the Rufus Hummingbirds have finally made an appearance! We have NO baby Gambel's Quail, which is likely due to the lack of insect prey. Butterflies have been a rare sighting so far – only two Swallowtails have been seen. Not good!

As noted in last month's newsletter, many animals are using the bird baths – keep them full even if it rains! One special visitor to our yard's baths have been the local nesting Western Screech Owls!

In this issue Screech Owls are highlighted in a few ways. We hope you enjoy it.



Baby Western Screech Owl just prior to banding.

Banding 2018's Western Screech Owl Chicks

In March 2017 we banded an adult female Western Screech Owl in our neighbor's yard – she was using a nesting box. On the 1st of June 2017, we banded her four chicks hatched in a nest box in *our* yard! This year, the same female (we know from her band number) chose a different box in our yard to raise three chicks. We banded them on the 18th of June.



Each chick is banded with an aluminum band that has a unique 9-digit number.

They are also weighed, as pictured here. The weight of the box on the scale is subtracted to obtain the chick's weight. This little one weighed in at 112 grams. His/her siblings weighed in at 100 grams and 80 grams.

Other data collected includes species, age (hatch year), sex (unknown) and the banding date.

This photo illustrates asynchronous hatching – the female begins incubation on the first egg, resulting in different hatch dates and thus different aged chicks. This is a strategy to ensure that some chicks will survive if there is not enough food for all of them. The first to hatch has been fed longer, and is larger and stronger than its siblings as illustrated by their different sizes/weights.



While we are sleeping...

Something was off. I wasn't sure exactly what, but I knew something was going on with Marlee (Barn Owl). Every evening I give Marlee her food, say good-night and head to the front of the mews with my lantern to check on her neighbors, Andromeda and Goliath (Eurasian Eagle Owls) before going back in the house. This nightly ritual is mirrored by my morning trip out to see the birds. My first inkling that something was amiss was that Marlee had started asking for food every morning for several mornings in a row. I found this odd, but remembered that during the molt, the birds use extra energy to grow new feathers. So, I figured this was the case and increased her food. Then something else happened.

Marlee shares her mew with Bronson (Lanner Falcon) who uses it during the day while Marlee "sleeps" in another enclosure, and then comes in at night when Marlee goes out (Barn Owls are very nocturnal). Bronson left part of his meal in the mew when I brought him in for the night. Not ten minutes later when I took Marlee out, the food was GONE. Now I was really confused. What could possibly get into the mew and take the food? Paul had no more ideas about this than I did. I do love a mystery...

Two nights later, I had the beginnings of an answer. I was out with my trusty lantern saying good-night to the owls when I saw movement from the corner of my eye. Something was trying to get **out** of Marlee's mew! Startled, I held my lantern up and tried to see what it was. Then, to my surprise, I recognized a Western Screech Owl squeezing out of the fencing on the mew with mouse in mouth. Paul could not believe it either!

My next step was to obtain more information. I figured my best bet was a trail camera. The next night, my main suspect was identified – again.



There she was – on camera - examining Marlee’s dinner and preparing to help herself. How do I know this bird is a she? The band on her leg – had to be the female we banded last year that was now nesting in the box near the mews. Paul and I believe she must have visited the captive Screech Owl living next to Marlee and noticed the food on the platform. Once she figured out how to get in, the food was hers for the taking. The following image illustrates Marlee’s lack of concern about her visitor, and vice versa.



Now this looks a little more interesting – both birds unsure of the other.



Now a little more of a showdown...not to worry, the Screech Owl left safely with more food! You see, Barn Owls are primarily mousers and Marlee was more fascinated than anything else. Now if the little owl went next door into Andromeda's mew, she'd have a BIG problem...



Despite the fact that the Screech Owl chicks have fledged (we are sure the adult was feeding Marlee's food to her growing chicks), the little owl does still visit Marlee to "share" her food. Rest assured, I provide enough each night for both birds now that I know what is going on out there while we are asleep.



Speaking of Sleep...

When people wonder about birds and their sleeping habits, the most common question they ask is “where do birds sleep”? I think there is a more intriguing question we should consider: “how do they sleep”? Think about it. The vast majority of birds are prey for more than one type of predator, many of which are active at night. Even diurnal raptors are taken off the nest or a perch at night by large owls. That vulnerability has likely lead to the adaptations that birds have for sleep.

For many birds, sleep is an indulgence that only lasts for a few minutes at a time. Like mammals, they do go through sleep cycles with non-rapid eye movement (light sleep) and rapid eye movement (REM or deep sleep). However, birds differ in that these cycles last a considerably shorter period of time than in mammals. In fact, light sleep only last a few minutes, and REM sleep only a few seconds at a time. Incredibly, birds also employ another strategy called unihemispheric sleep. One hemisphere of the brain remains active, while the other rests. During this type of sleep (unihemispheric slow wave sleep), some birds actually keep one eye open to detect potential predators or avoid collisions if they are in flight.

Yes! Some birds who migrate long distances or soar for weeks at a time hunting over the ocean can actually sleep while in flight. In fact, recent research by Niels Rattenborg et al. (2016) published in *Nature Communications* shows that Frigatebirds that can fly more than 1,850 miles (3,000 kilometers) without stopping and sleep while they are in flight. This study showed that these birds use unihemispheric slow wave sleep and shut down one side of the brain, or they can actually shut down both hemispheres at the same time for a few minutes. They apparently do not need lose control of flight during this time. Amazingly, they can also enter REM sleep for a few seconds, and do not change their flight patterns.

Cool fact:

Even though Frigatebirds can sleep while in flight, they only sleep about 42 minutes per day! On land, they sleep an average of 12 hours per day. Therefore, when hunting, they are very sleep deprived!

While sleep is not understood in all birds, scientists have shown that some song birds and waterfowl use unihemispheric sleep to rest. Waterfowl sleeping in groups on the water can not only detect approaching predators by the vibrations in the water, but those birds sleeping on the edges of the group use unihemispheric slow wave sleep to rest and keep one eye open for predators. Unihemispheric sleep has not been scientifically demonstrated in raptors as far as I can tell, except in the Peregrine Falcon.

Cool fact:

Dolphins use unihemispheric sleep to prevent drowning. They use this technique to rest, but also remain aware of their surroundings AND come to the surface of the water to breathe.

A Sleep Journal for Mesa (Ferruginous Hawk)

It was so much fun getting trail camera photos of Marlee and the Screech Owl, I thought “why not a diurnal bird”? Not much is known about sleep in raptors. Here is what one night looks like for Mesa:

9:13 p.m. perching	2:43 a.m. perching
9:14 p.m. turned around	2:59 a.m. changed position
9:19 p.m. perching	3:06 a.m. changed position
9:23 p.m. changed position	3:33 a.m. pooping
9:24 p.m. changed position	3:57 a.m. stretching
10:15 p.m. preening	3:58 a.m. perching
10:20 p.m. preening her other side	4:17 a.m. stretching
10:23 p.m. resting	4:18 a.m. perching
10:45 p.m. looking around	4:31 a.m. looking around
10:46 p.m. changed position	4:33 a.m. looking around
11:22 p.m. stretching	4:34 a.m. looking around
11:40 p.m. stretching	4:52 a.m. SLEEPING!
12:25 a.m. stretching	4:59 a.m. moving around
12:36 a.m. pooping	5:00 a.m. perching
1:03 a.m. rousing	5:14 a.m. looking around
1:28 a.m. scratching an itch	6:18 a.m. stretching
2:02 a.m. scratching an itch	6:19 a.m. stretching
2:12 a.m. preening	6:19 a.m. looking around
2:29 a.m. perching	6:32 a.m. changed position
2:42 a.m. pooping	6:33 a.m. up for the day!

Mesa with her eyes closed:



The trail camera was set to take a photo with a 20 second delay, and was triggered each time Mesa moved. She certainly does not stay still for long periods of time! The longest interval between movement that would trigger the camera was about 45 minutes.



Baby Goliath with one eye open...