Technological Advances And The Future Of Wild Songbird Research At Zoos

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Disney's ANIMALS, SCIENCE and ENVIRONMENT

speaker notes in italics

The purple martin garden will be a highlighted area again this year at the EPCOT Flower & Garden festival!

PURPLE MARTINS AT WALT DISNEY WORLD

Movement Ecology

So, how do we track them?

Geolocators- Migration Research

Purple Martin Conservation Association®

What did we find out about their migration route?

Here is a map from a female purple martin that was tracked for an entire year from 2013-2014. We found that most of our martins took a very similar route. The red line represents her fall migration path (FL to S. America) and the black line represents her spring migration path (S. America to FL).

This little bird had quite the journey, she started her migration at a roost just east of Orlando, then went on to Cuba and Honduras, and Colombia! From there she headed towards the Amazon basin. If you look at her return route from South America to Florida, you will see that she started her migration on January 12th and was back in Orlando by January 30th! That means that this 2 oz. bird traveled over 3,000 miles to Florida in only 18 days! What an incredible journey!

That also means that we are getting ready to welcome back our purple martins now starting in January.

GPS- Roost Research

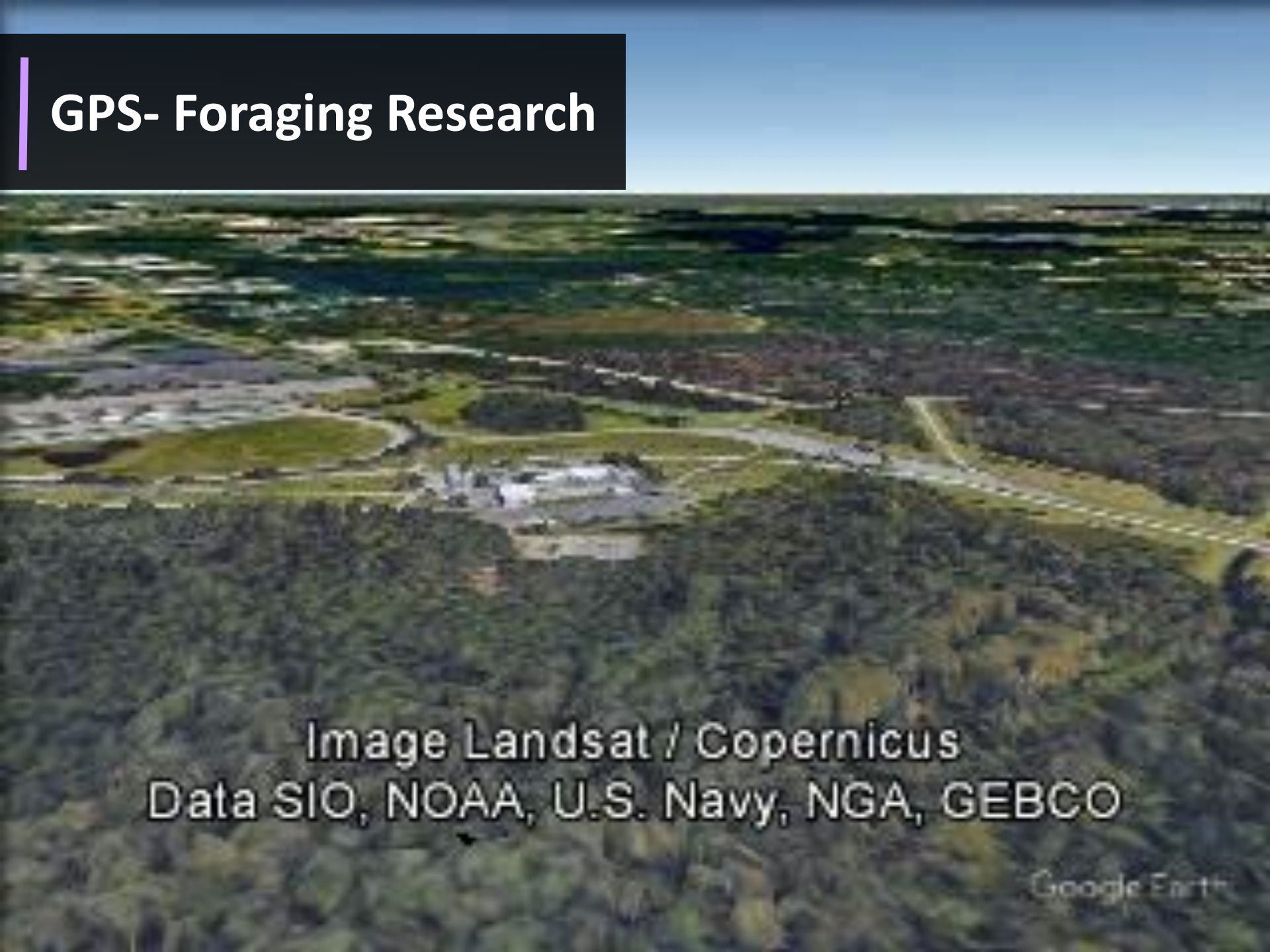
Bogotá
Cali
Quito
Guayaquil
Manaus
Fortaleza
Lima
Salvador
Brasília
Belo Horizonte

Fraser et al. 2016, Journal of Avian Biology

As you know, we've been working with collaborators from all over North America to track purple martins on their long distance migrations to South America using GPS tracking devices and geolocators. And we've learned amazing things!

You might expect birds that breed in the same area to stay together on migration and through the winter, but that's not the case. Even pairs that raised a family together don't travel with each other. Instead, birds from all over North America mingle in the Amazon. It's one big party! And some habitats appear to be particularly important, like these small islands in Amazonian Rivers.

GPS- Foraging Research



Nesting Ecology

Radio Frequency Identification

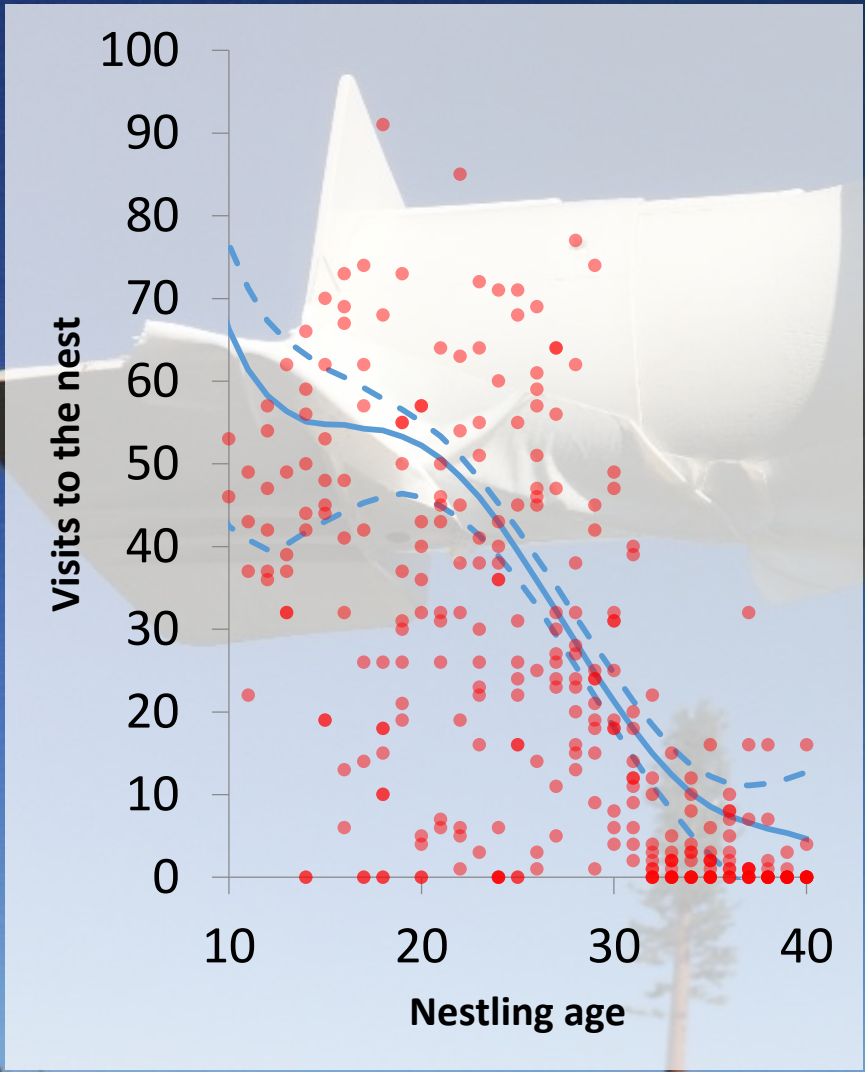
We also introduced brand new research projects this year including radio frequency identification. This technology has been around since the 1970s, but it has only been applied to bird research in the last decade.

We attach an RFID tag to our bird bands and attach an RFID reader to the underside of our gourds, then the reader records every time a bird with a tag visits the nest compartment. Some of the things we learned confirmed what our observations of our birds had suggested, like purple martins visit their nests to feed their young mostly in the morning and afternoon. But there were some surprises too. We used this to technology to find out how often our birds are feeding their nestlings as they grow up.

What do you think we found? Do you think the number of feedings went up, stayed the same, or went down as nestlings got older?

They went down! It appears that as nestlings get bigger, their parents bring them larger insects with lots more calories, so they don't have to visit as often.

Radio Frequency Identification



Nest Cameras

Questions?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