



# SĀTBA I SIHEK

Saving the Sihek: Preparing for the Translocation

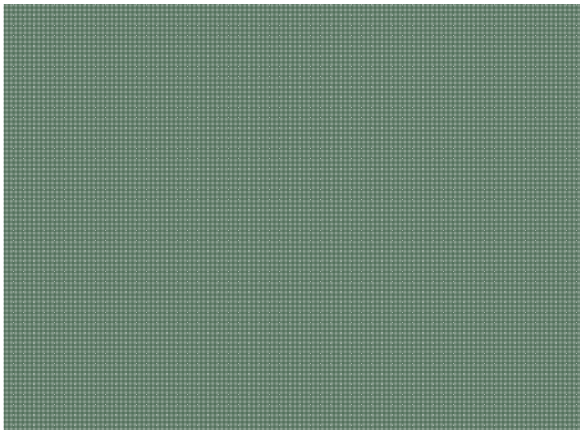
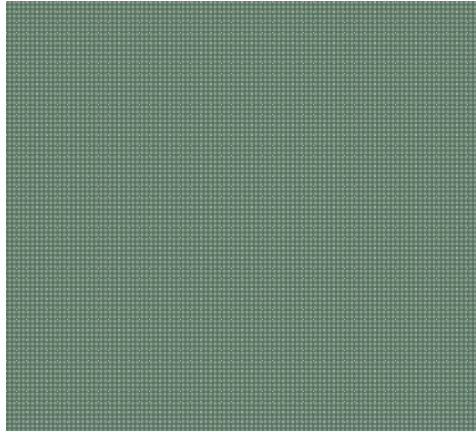
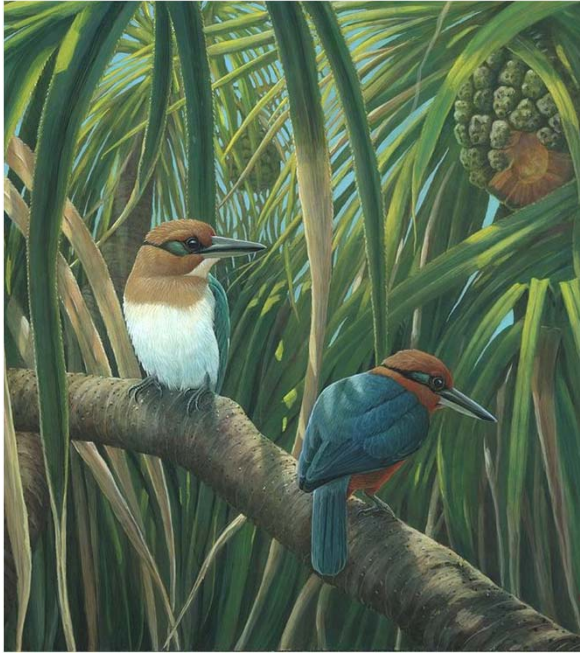
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*speaker notes in italics*



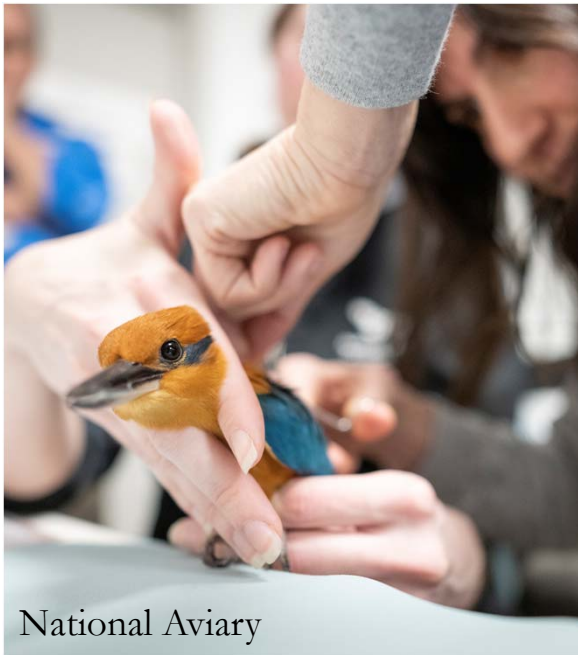
# Translocation Preparation



TRANSMITTER  
ATTACHMENT TRIAL



SITE ASSESSMENT  
OF PALMYRA ATOLL



National Aviary



SCBI

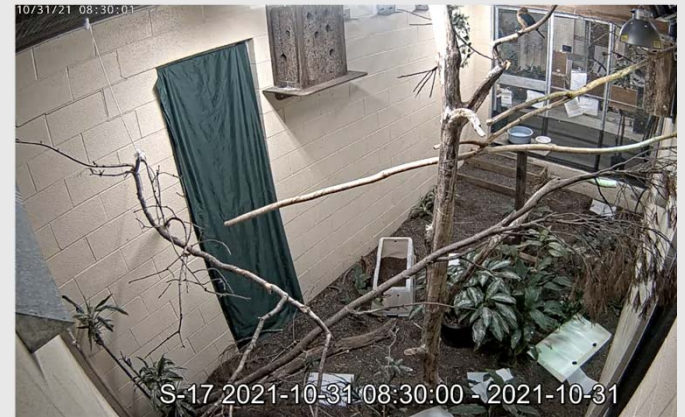
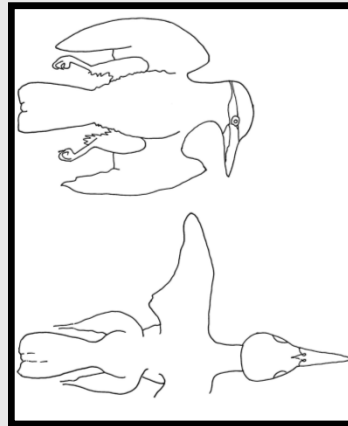
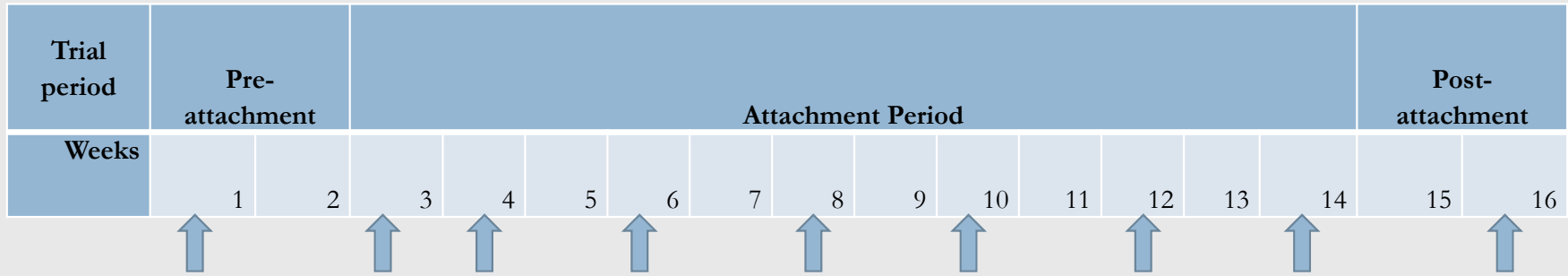


Saint Louis Zoo

## Transmitter Attachment Trial

- Attached non-operational models of Lotek Pip Ag392 radio-transmitters
- Only unpaired male Sihek
- How long are devices retained?
- Examine effects on feather quality/skin, behavior, and weight
- Fecal glucocorticoid metabolite monitoring at SCBI
- National Aviary, Saint Louis Zoo, Smithsonian Conservation Biology Institute

*Working with the migratory bird center, we would like to fit several of our birds with transmitters using two different attachment methods to assess efficacy of different methods and make necessary improvements to design. This cross pollination between units will also allow us to have more individuals trained who may be able to assist with releases.*



# Attachment Types and Materials

- Phase 1: Tail mounts and Leg Loop polypropylene fabric cord (w. weak link)

## Tail Mount



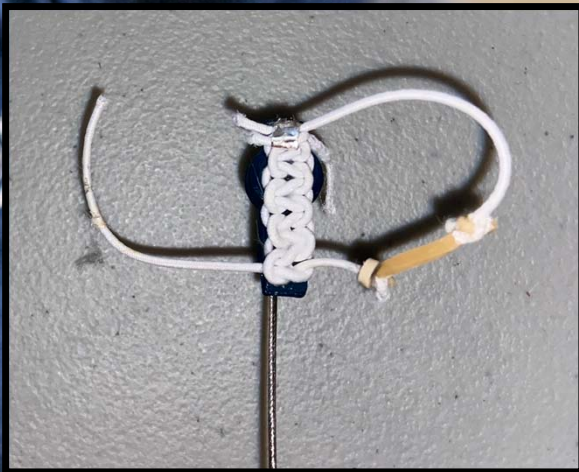
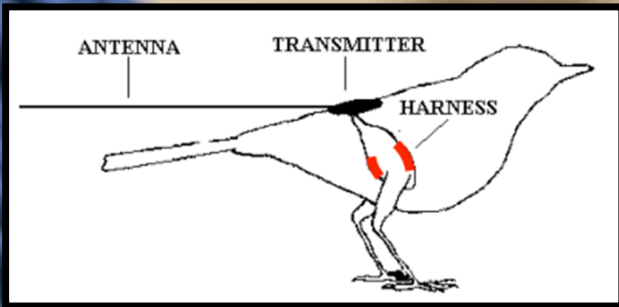
*No crimp beads-preconstructed braid harness superglued to tag with 1 crimp at top. Knots to secure.*

*(video of sibek removing tail mount & smacking it against the perch)*



# Attachment Types and Materials

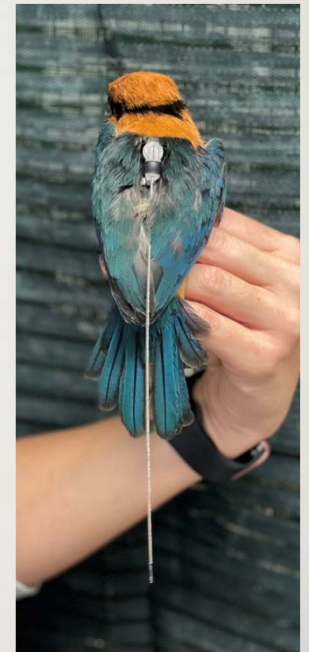
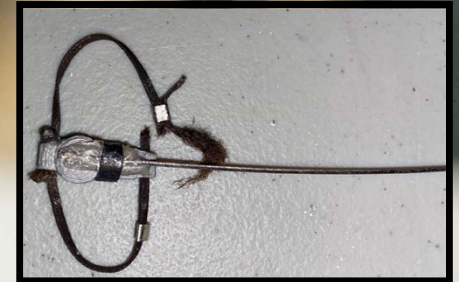
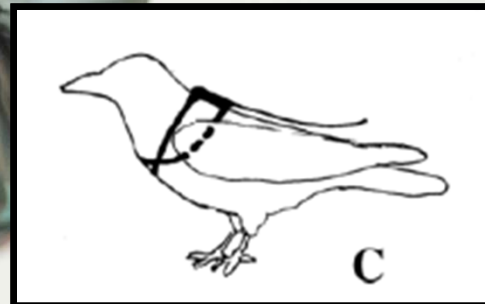
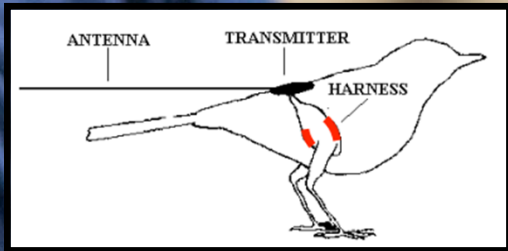
- Phase 1: Tail mounts and Leg Loop polypropylene fabric cord (w. weak link)



*No crimp beads-preconstructed braid harness superglued to tag with 1 crimp at top. Knots to secure.*

# Attachment Types and Materials

◦ Phase 2: Teflon Leg Loops & Teflon Backpacks (both w. aluminum crimps)

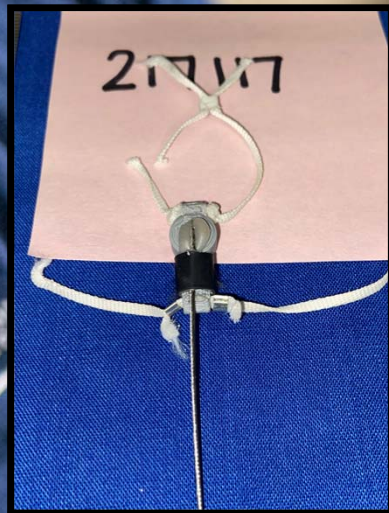




# Attachment Types and Materials

- Phase 3: Spectra Backpack & Stretch Magic Backpack

## Spectra

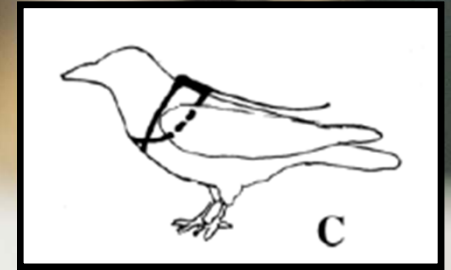


*Why spectra? Does not absorb water and does not fray like Teflon and is more flexible. Resistant to UV light. Also weighs less than Teflon. More resistant to abrasion.*

## Stretch Magic



*Stretch magic is a bead cord is strong but somewhat flexible and would fall off within a year or so and wouldn't fray. Used on other small to medium birds with strong bills.*





<i>Name</i>	<i>Affiliation</i>
John Ewen	Zoological Society of London
Stefan Kropidlowski	US Fish & Wildlife Service
Suzanne Medina	Guam DAWR
Scott Newland	Sedgwick County Zoo
Erica Royer	Smithsonian Conservation Biology Institute
Carl Jones	Durrell Wildlife Conservation Trust
Kevin Parker	Parker Conservation
Caitlin Andrews	Zoological Society of London



## Site Assessment of Palmyra Atoll: July 2022

- Evaluate quality of the site (prey, habitat, nesting opportunities)
- Become familiar with logistics of the of conducting fieldwork on the atoll
- Refine our draft management plan



# PALMYRA ATOLL

- Halfway between Hawai'i and American Samoa
- Purchased by The Nature Conservancy in 2000
- Circular string of 26 islets, 235 hectares
- Wildlife refuge protected out to 50 nautical miles
- Most local threats managed = positioned for adaptation & resilience research
- Sihek “learning site”

Visitor Access Map



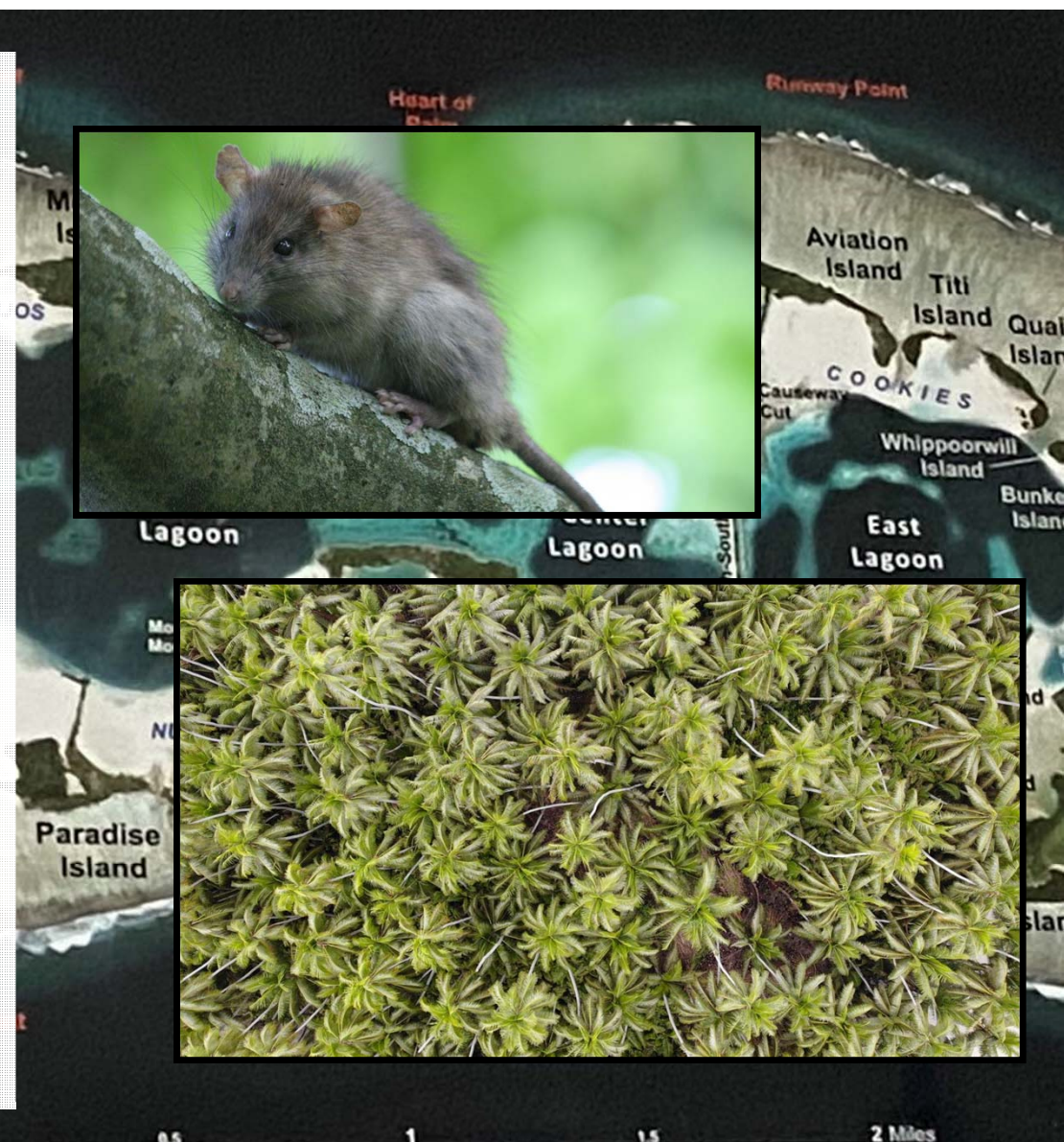
*Palmyra was purchased by TNC in 2000 with parts of it owned by TNC and USFWS.*

*Uninhabited circular string of 26 islets most of which are part of a protected wildlife refuge out to 50 nautical miles. This area can only be accessed by TNC and USFWS and those with a permit to access it. Given that most local threats are managed it is a place that is well positioned for researchers to look at adaptation and resilience in response to climate change as well as how the ecosystem responds to restoration and eradication of invasive species.*

# Biosecurity

- Arrival onto Cooper Island. All other islets considered quarantine
- Clothing for quarantine islets
- Quarantine equipment
- Freeze all items (luggage, clothing etc.)
- Station dedicated dry bags

## Why??



*In 2011 rats were eradicated from Palmyra. They had caused the disappearance of several species of seabirds from the island that used to nest there which has cascading effects on the local sealife and surround reefs. There were also several species of land crabs that disappeared as well as native species of trees because they were destroying the seedlings.*

*Once the rats disappeared, the coconut palms flourished because they were no longer feeding on them. The coconut palms were introduced centuries ago and aggressively cultivated in the 19<sup>th</sup> century for copra. USFWS and TNC are currently working on a forest restoration project to remove the coconut palms have seen an increase in native trees where they have been eradicated.*



	AVG.	20
Jan.	15.9	1
Feb.	13.5	1
March	13.9	1
April	12.2	0
May	15.3	1
June	16.5	1
July	16.3	1
Aug.	13.8	1
Sept.	10.1	1
Oct.	11.9	1
Nov.	15.4	1
Dec.	18.2	1
Total	171.3	1
AVG.	14.4	

# Station Logistics

- Only accessible by charter jet
- Solar powered station with back up (but limited) diesel generators.
- Main station & aviaries located on Cooper island.  
Other islets accessed by lagoon boat
- Weather considerations

*-Helpful to see how island is accessed and understand the process*  
*-Considerations for charging capabilities for equipment. Will bring some of our own solar powered equipment*  
*-Other islets we explored were access by lagoon boat which are operated by TNC/FWS staff.*  
*-All of those areas are quarantine-need to purchase new clothes and equipment for these areas (freezer, new items, change before going and when coming back).*  
*-Made adjustments to how cameras used after seeing weather patterns there. Rained 9 in while we were there.*



## AVIARY SITES

- Visited multiple areas looking for aviary sites
- 3 aviary sites staked out on Cooper Island
- Walking or bike distance from field station
- 3.5 x 3.5 x 2.5 meters each
  - 3 enclosures per aviary

# Aviary Sites: Cooper Island





# Food Availability

- Most promising islets were Sand, Cooper/Strawn, Eastern, and Whippoowill
- Abundant invertebrate prey (crickets, grasshoppers, cockroaches, spiders)
- Geckos (multiple species)
- Land crabs
- Large hermit crab colony on Paradise/Kaula
- Even those with less prey contained small resource-rich patches



# Habitat Structure

- USFWS and TNC continue habitat restoration → eliminating non-native coconut palm (*Cocos nucifera*) monocultures
- Most suitable = mid-density forested areas with native vegetation
- Range of habitats
  - Intact monocultures
  - Recently treated coconut groves (small patches)
  - Regenerating native vegetation
  - Native forest
- Nest opportunities vs. nest boxes



# Visitor Access Map



POTENTIAL FOR DISPERSAL



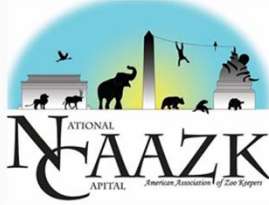
Edition 3: May 2021

### SÁTBA I SIHEK Save the Guam kingfisher

News from zoos, local community and the field

#### Hafa adal / Hello!

Welcome to our third sihek newsletter. As always there is a lot going on. The fantastic efforts of our zoo partners are on display - this time through advancing techniques which will improve captive care but also help sihek and sihek field teams as we move to wild releases. **Wild releases!** That sounds exciting right. We are getting there and will continue to provide updates in these newsletters. For now though, you can catch some nice overviews on release plans, along with the management of the precious captive population, in the presentations highlighted below. **Melanie Blas (Simon Sanchez High School, Guam), Erica Royer (Smithsonian Conservation Biology Institute, USA) & John Ewen (Zoological Society of London, UK).** Any newsletter enquiries please email [john.ewen@oz.ac.uk](mailto:john.ewen@oz.ac.uk)



NCAAZK is proud to support conservation efforts from around the world. This year members voted to support the sihek recovery project and have raised \$500! **Thank you so much for supporting sihek recovery!!** You can find out more about NCAAZK [here](#).

**Guam students, and brothers, Shuntaro and Ryotaro Suzuki** have been supplying the Guam sihek project with freshly caught geckos and skinks since 2019. They started catching geckos after learning that sihek need them for food and realized they had a lot around the house. What they didn't realize, though, was that DAWR would pay \$.50/gram. A win-win as they make some pocket money while at the same time contributing to the success of the sihek recovery program. **Si yu'us ma'ase Shuntaro and Ryotaro!**

If anyone is interested in helping supply DAWR with geckos and skinks, please contact Suzanne Medina or Laura Duenas at 671-735-3998/7. Please do not capture lizards without speaking to them first. We hope to find more hunters!



**Whitney Gilliland** who is working on a project to see if weights can be easily obtained on sihek without having to handle any birds. Sihek can sometimes be neophobic and will also often eat on the wing. Both of these factors could potentially make it difficult to introduce a voluntary weight protocol. Whitney is trying a few different methods to entice birds to sit on the scale long enough to acquire an accurate weight. Voluntary weights would be very useful for breeding season when we rarely handle birds. In addition, this method could be adapted for use on released birds on Palmyra to be able to monitor their health. We look forward to your findings Whitney!



# SÁTBA I SIHEK Newsletter

- Quarterly newsletter combining news from AZA, USFWS, Sihek Recovery Team, and CHamoru community partners
- To sign up, email me: [RoyerE@si.edu](mailto:RoyerE@si.edu)