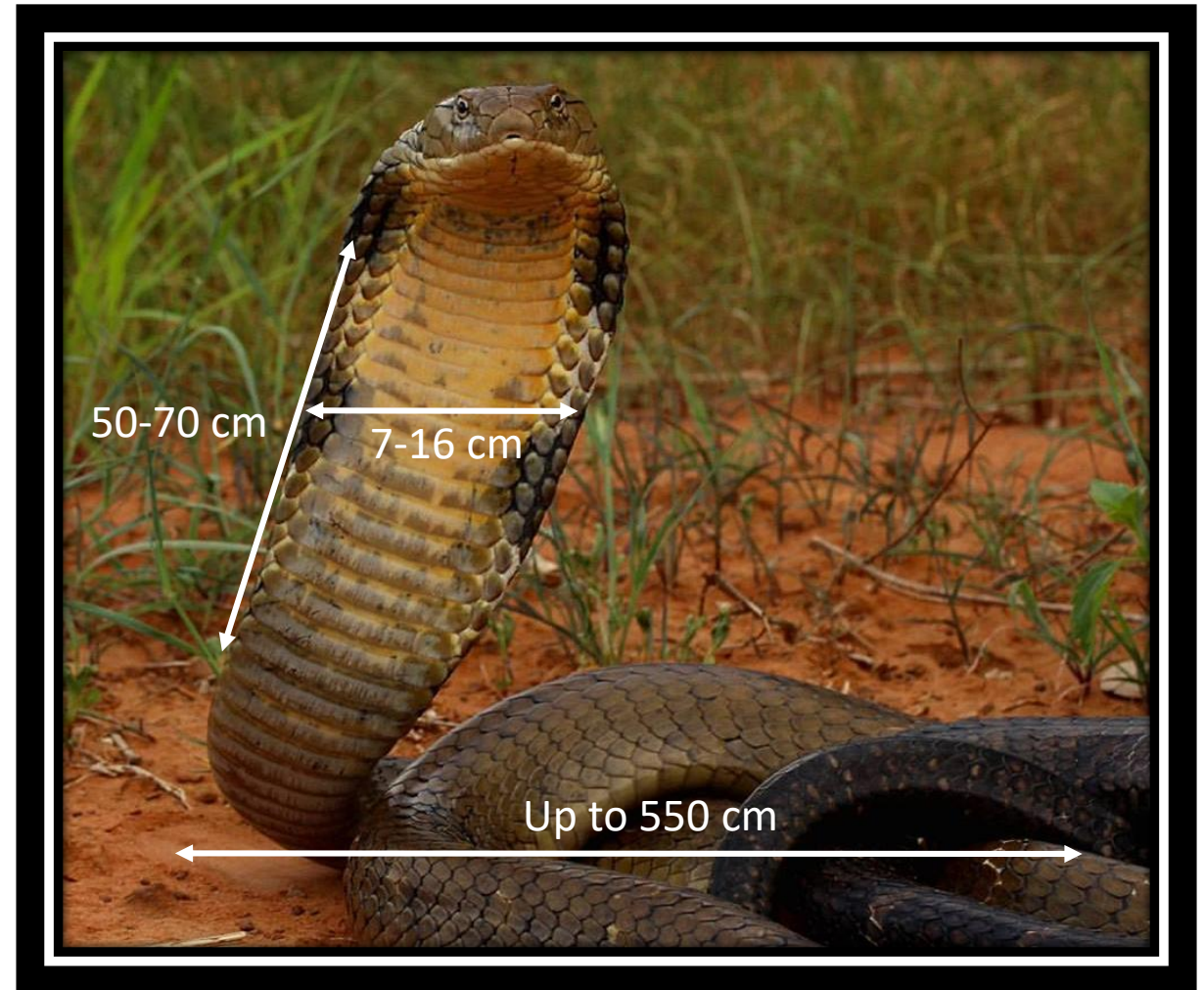


# A brief overview on King Cobras in Thailand

Colin T Strine, Ben Marshall, Pongthep Suwanwaree Surachit Waengsothorn, Matt Goode





*(Ophiophagus hannah)* Apex predators preying upon other snakes

**VU: IUCN**

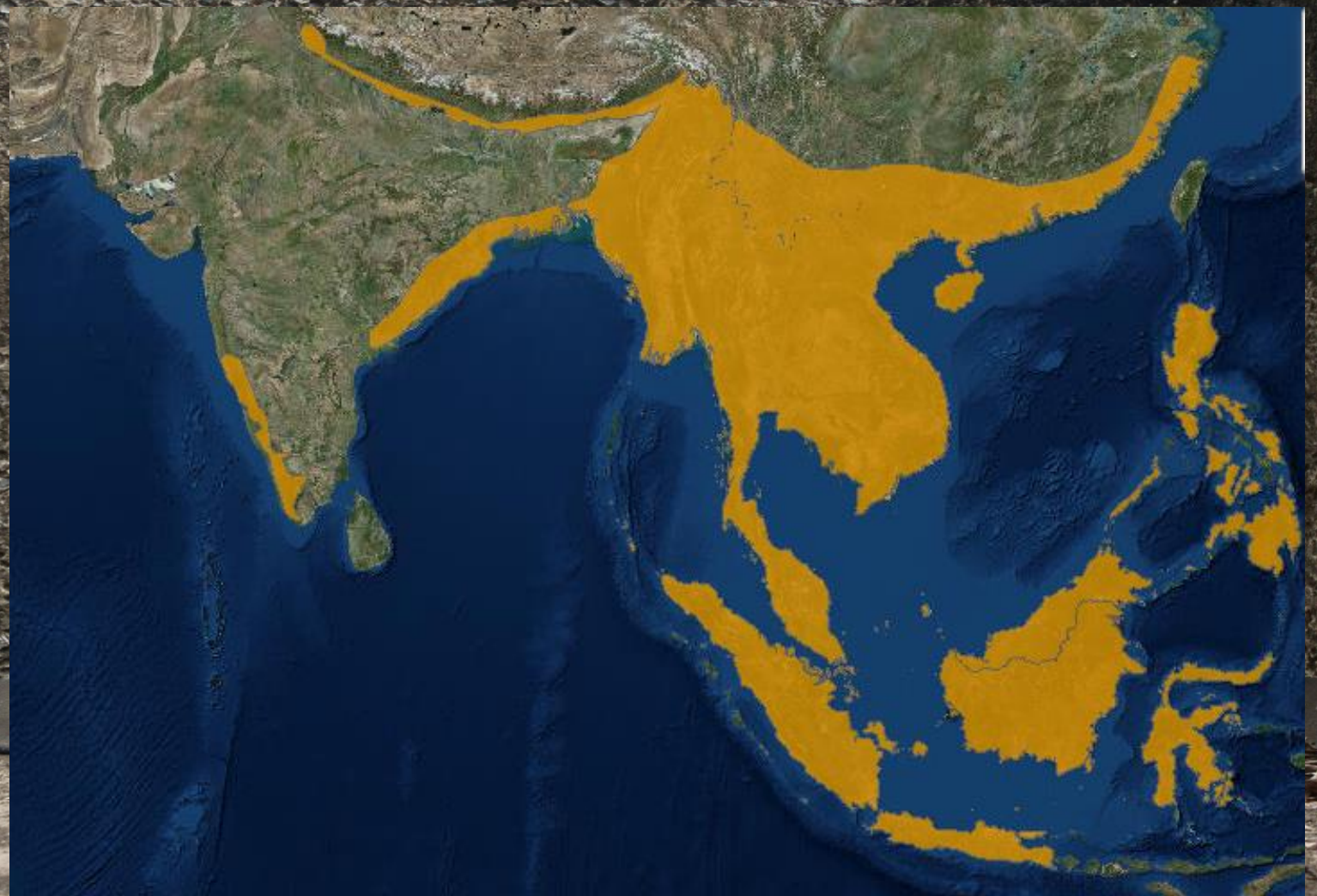




King Cobras are the only **nest building** snake



# King Cobra Distribution: IUCN?

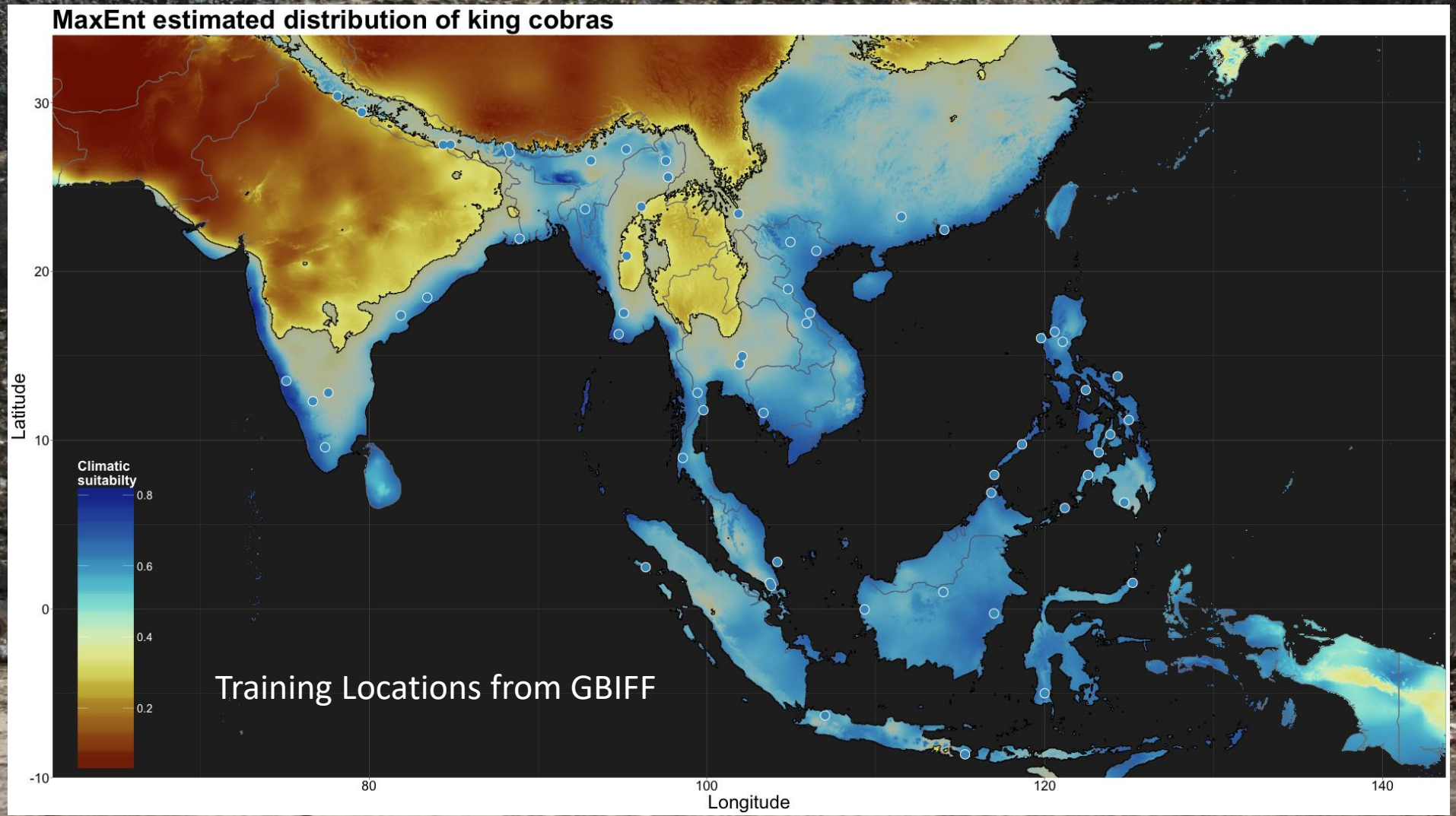


IUCN DATABASE: <http://maps.iucnredlist.org/map.html?id=177540>

# King Cobra Distribution: Reptile Database?



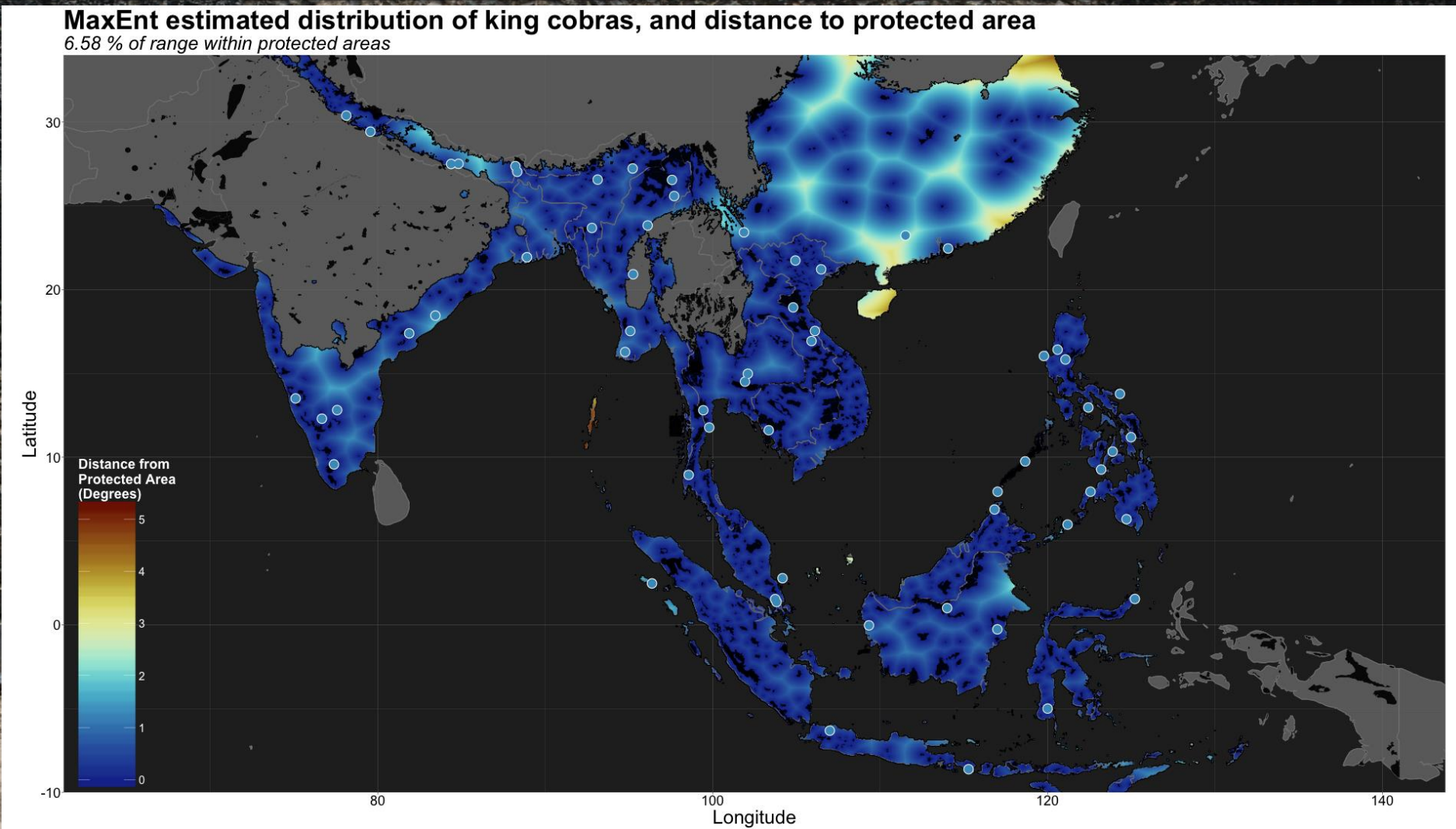
# King Cobra Distribution: MaxEnt modeling?



Shankar pers. Comm.

Reptile Database: [http://reptiledatabase.reptarium.cz/species?genus=Ophiophagus&species=hannah&search\\_param=%28%28search%3D%27Ophiophagus+hannah%27%29%29](http://reptiledatabase.reptarium.cz/species?genus=Ophiophagus&species=hannah&search_param=%28%28search%3D%27Ophiophagus+hannah%27%29%29)

# King Cobra Distribution: MaxEnt and protection

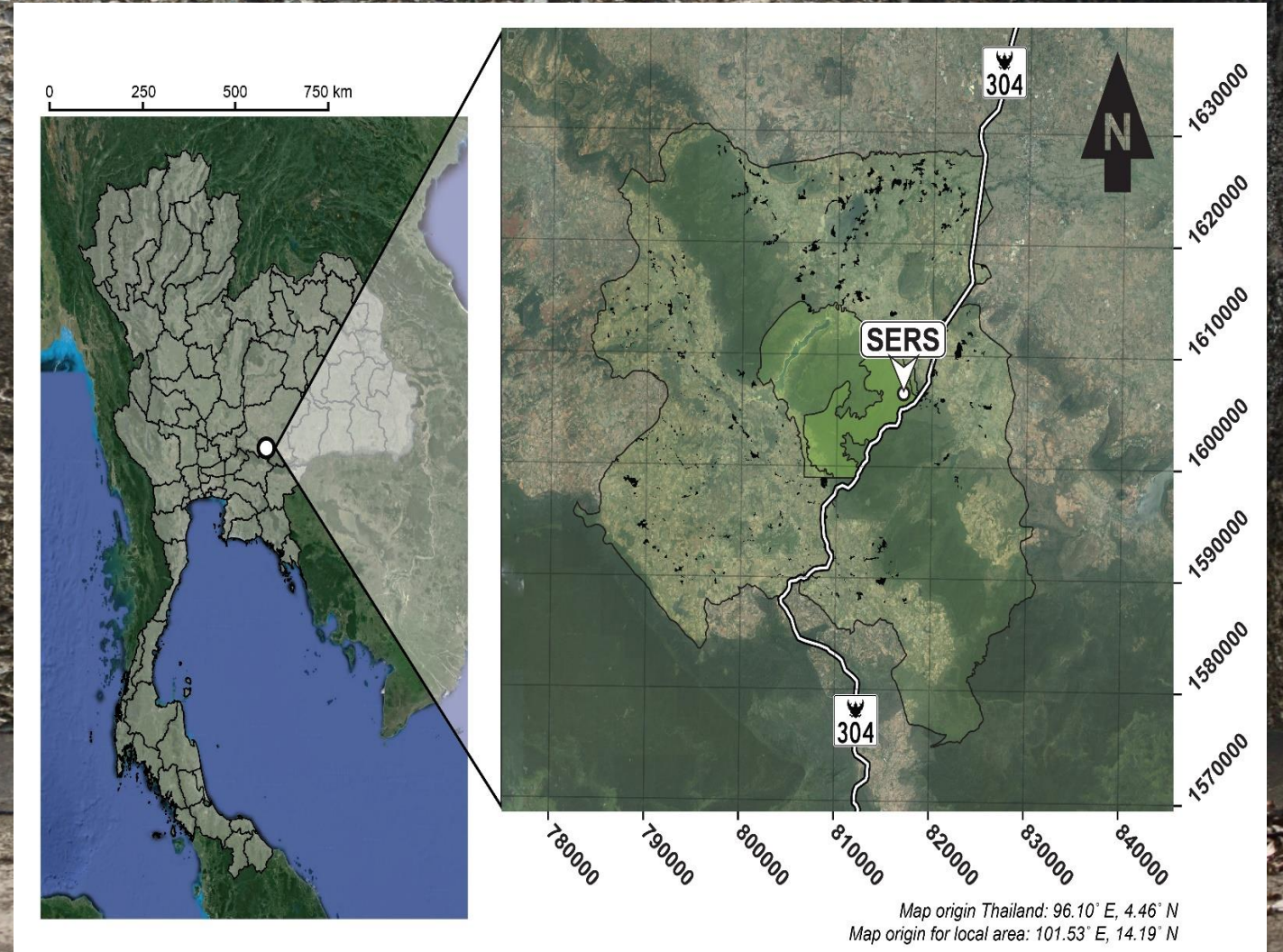


Shankar pers. Comm.

Reptile Database: [http://reptiledatabase.reptarium.cz/species?genus=Ophiophagus&species=hannah&search\\_param=%28%28search%3D%27Ophiophagus+hannah%27%29%29](http://reptiledatabase.reptarium.cz/species?genus=Ophiophagus&species=hannah&search_param=%28%28search%3D%27Ophiophagus+hannah%27%29%29)



# 6.58% of climatically suitable area protected



A photograph of a snake in a dark, confined space, likely a tunnel or under a structure. The snake is positioned on the left side of the frame, with its head near the top and its body extending downwards. The background is a dark, textured wall. A black text box is overlaid in the center of the image, containing three questions in white text. The top of the image shows a strip of green grass.

# Main Questions

How Much Space?

Preferred Habitats?

Areas of Conflict?



# Main Questions

**How Much Space?**

Preferred Habitats?

Areas of Conflict?

# Confirmed King Cobra Detections 2013-18

Notations (RESCUE)

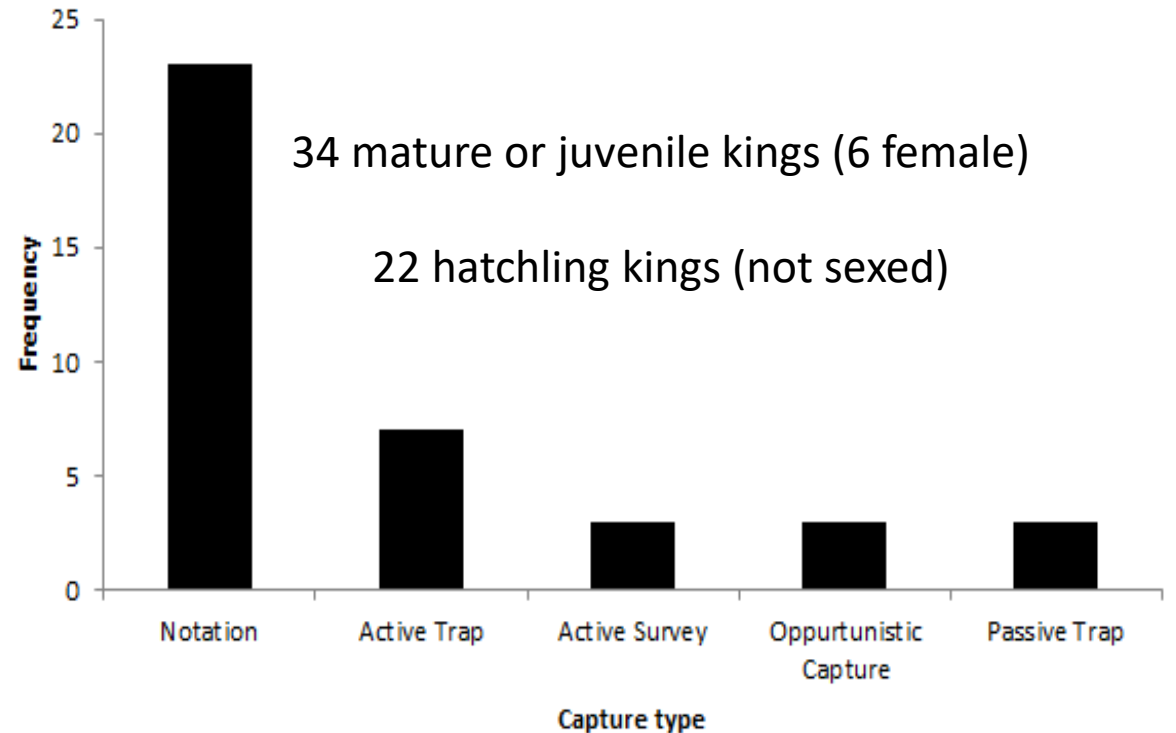
Actively Tracked

Active Surveys

Opportunistic

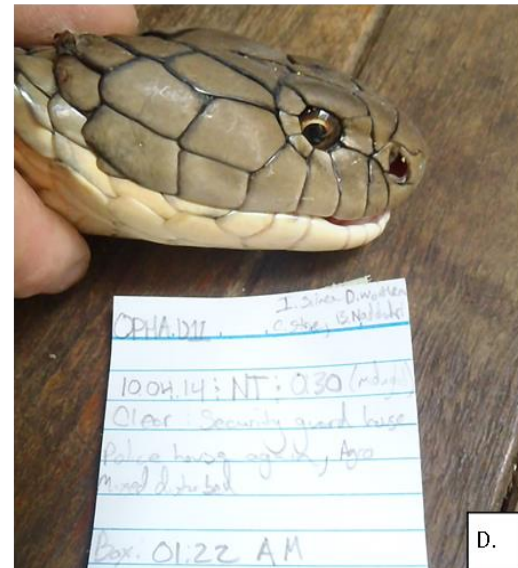
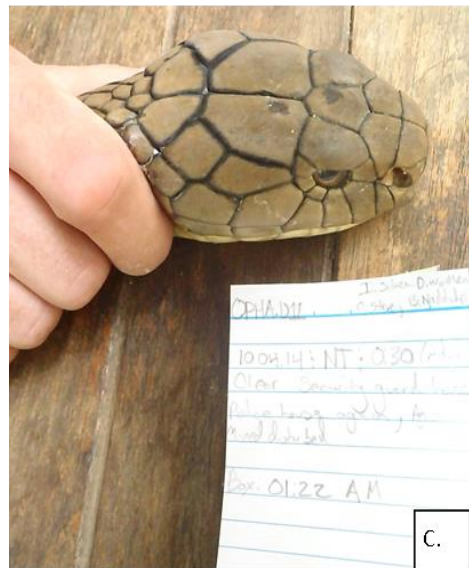
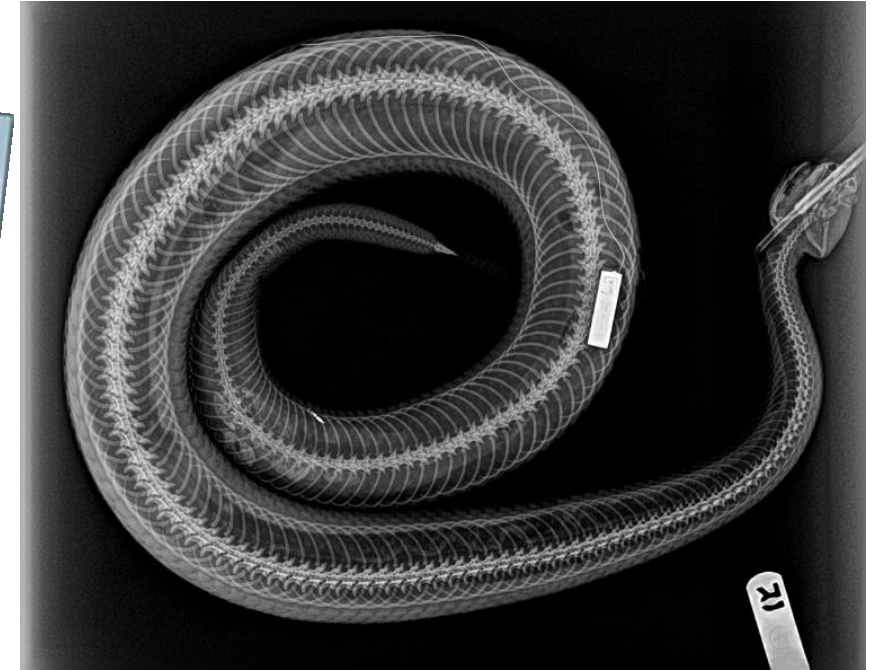
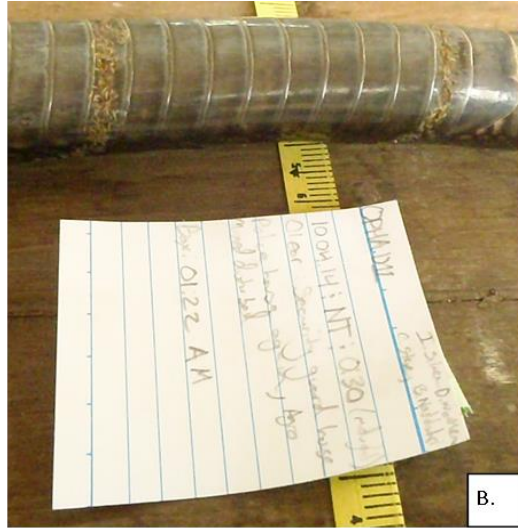
2013-2018

Frequency of Capture Methods





# Methods: Processing and Transmitter Implants





## Methods: Radio tracking

**4 daily** pinpoints  
> 10 m from animal

Schedule 06:30, 11:00,  
16:00, 20:00

Photo Documentation

Camera Setup (when  
appropriate)





## Methods: After Tracking?

**Making Maps**

**Estimating the  
Home Range Sizes**





# Results: Sizes of Home Ranges compared to Surat Thani City Area

Adult Males (N = 14)

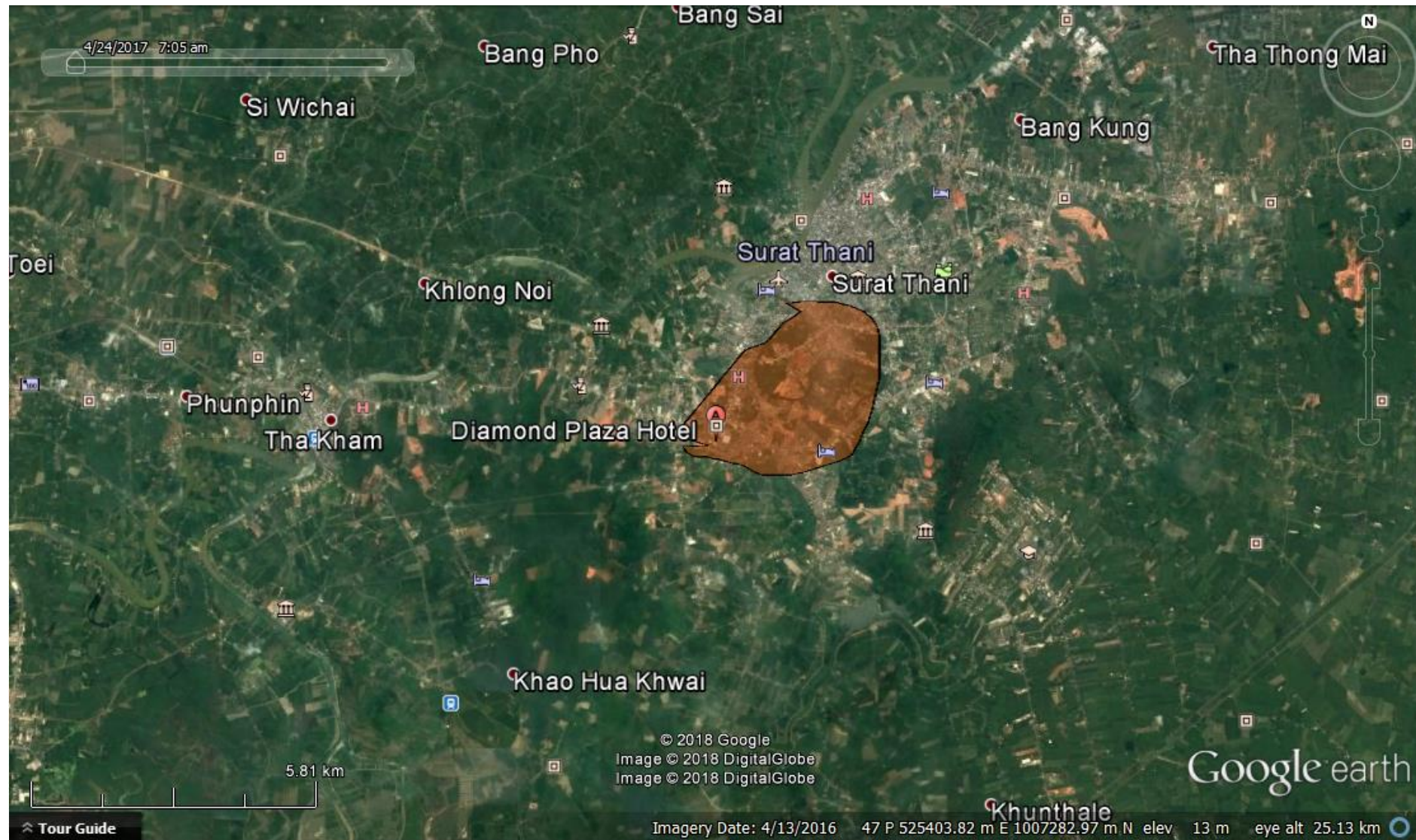
Mean = 24.86 km<sup>2</sup>  
Approx: 16700 Rai

Adult Females (N = 5)

Mean = 1.81 km<sup>2</sup>  
Approx: 1135 Rai

Juvenile Males (N = 4)

Mean = 9.32 km<sup>2</sup>  
Approx: 5900 Rai



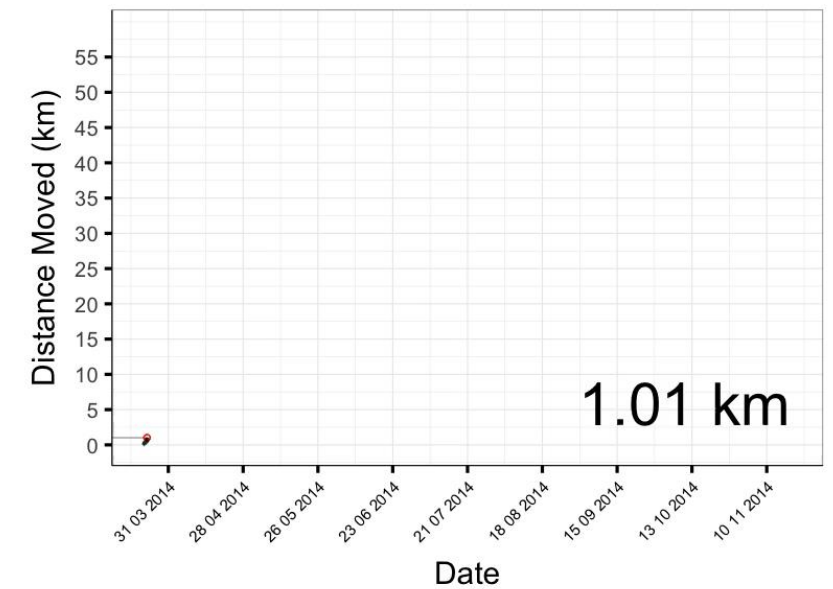
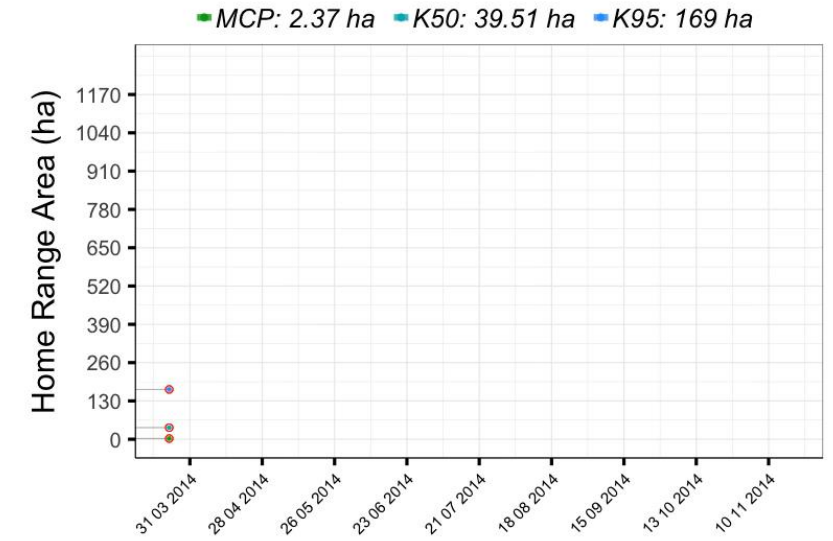
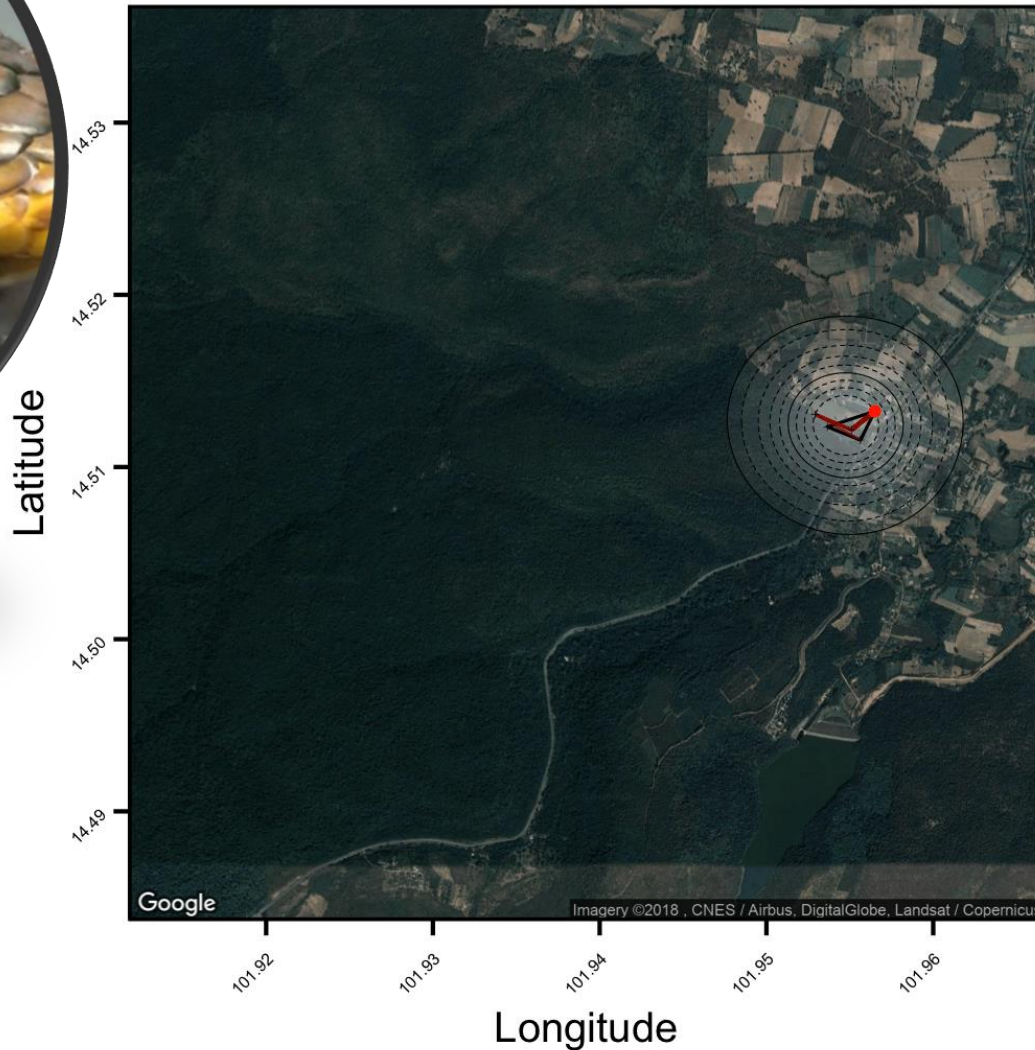




# Results: AM006 – Movement patterns (Breeding-Active Season)

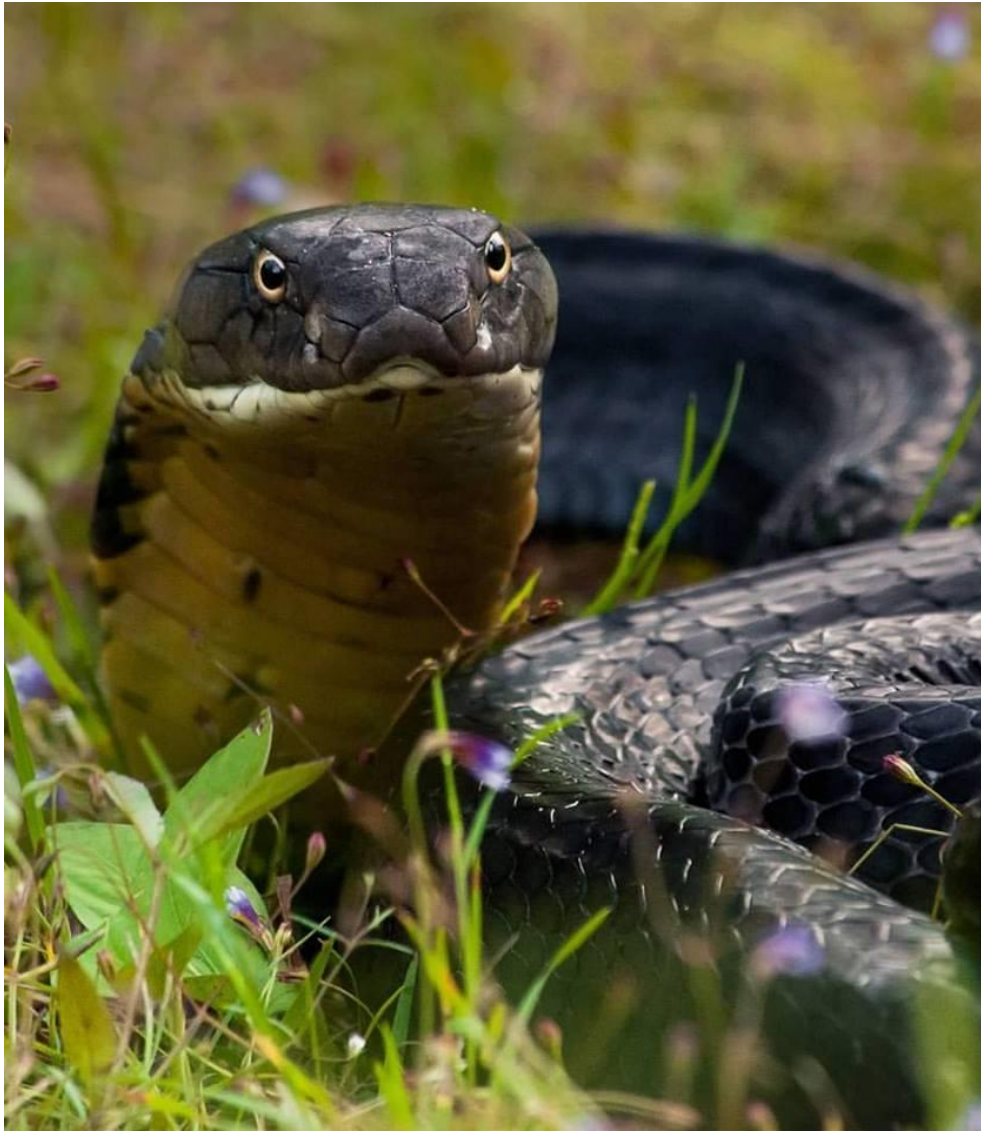
## OPHA006

2014-03-23 16:55:19

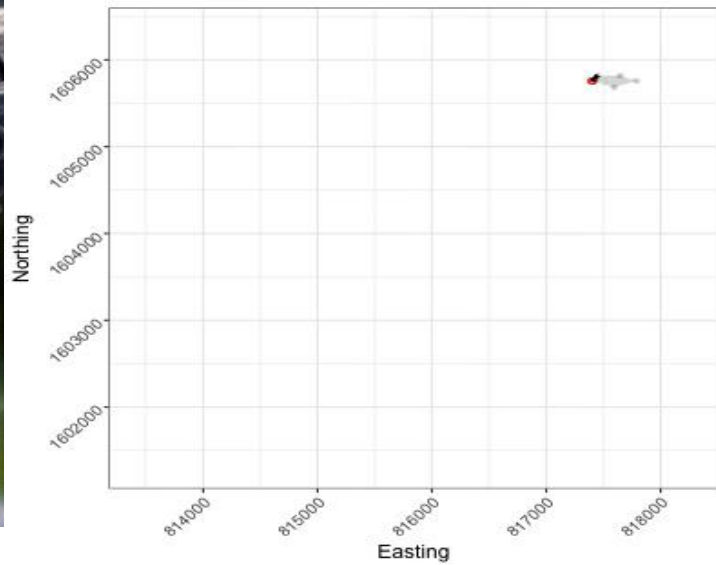
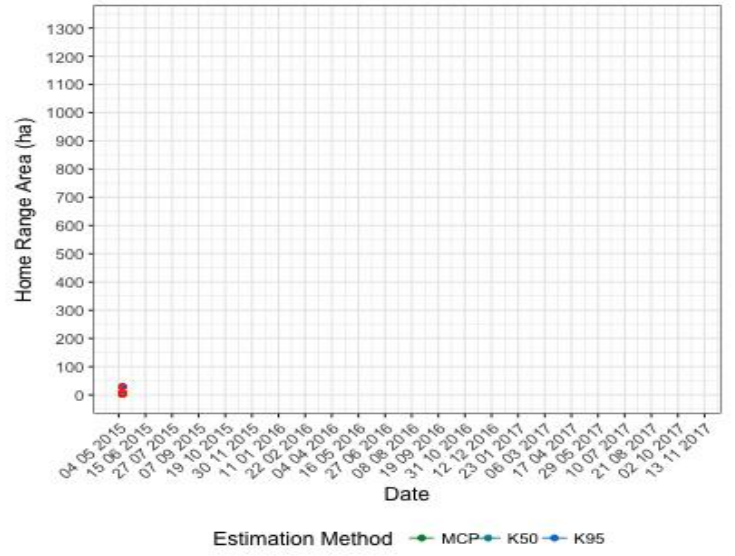
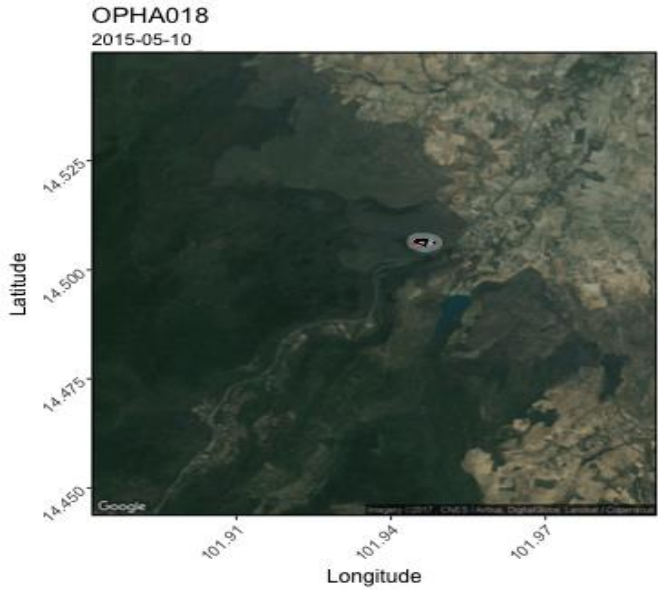




# Results: AM018 – More than one year needed?

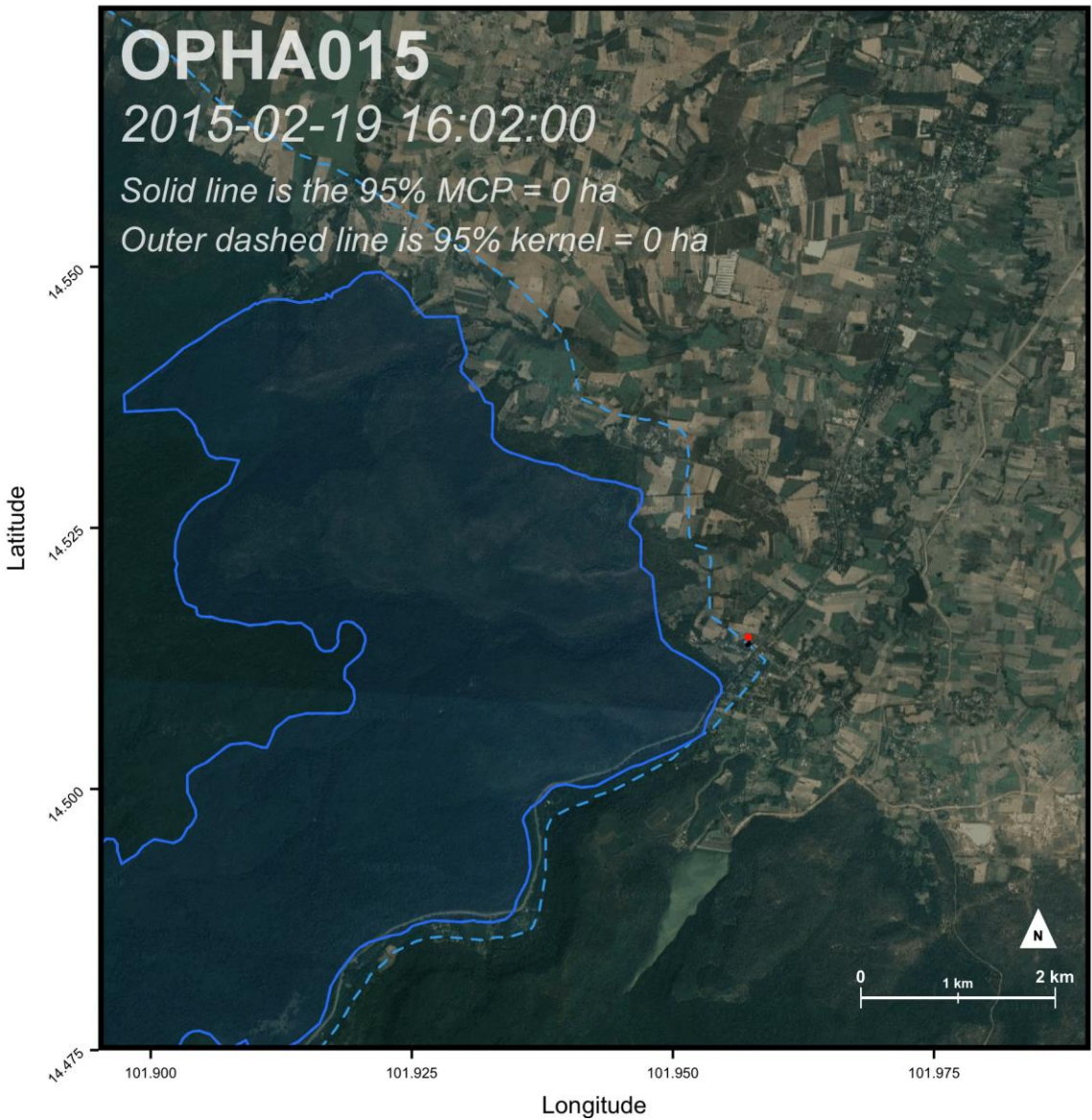


Ben Marshall – AM018





# Results: AM015 – Permeability of protected area?



2015-05-09 16:00:00



Results: OPHA017 Why come back to the protected area?



# Main Questions

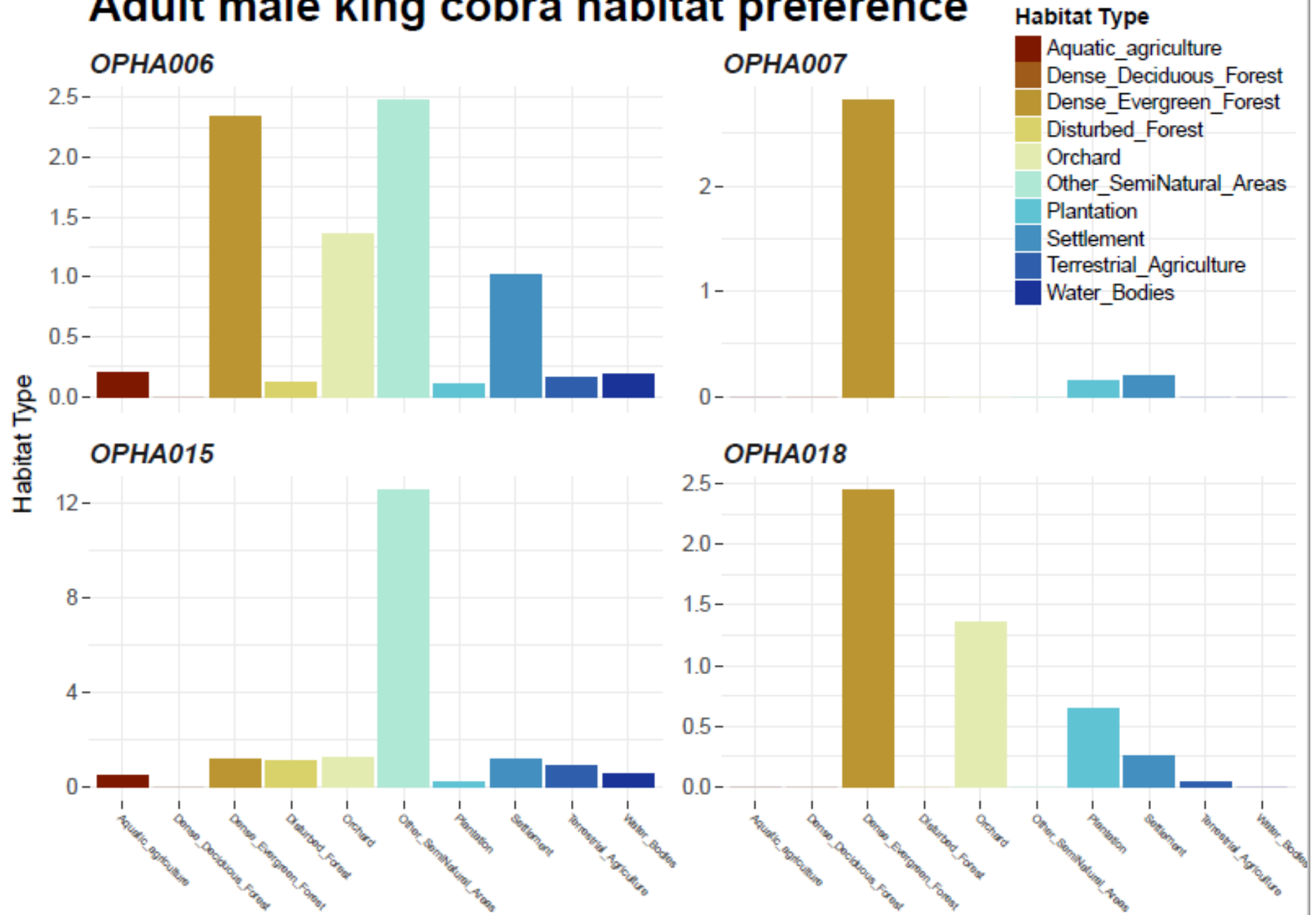
How Much Space?

**Preferred Habitats?**

Areas of Conflict?

# Preferred Habitats?

## Adult male king cobra habitat preference





# Main Questions

How Much Space?

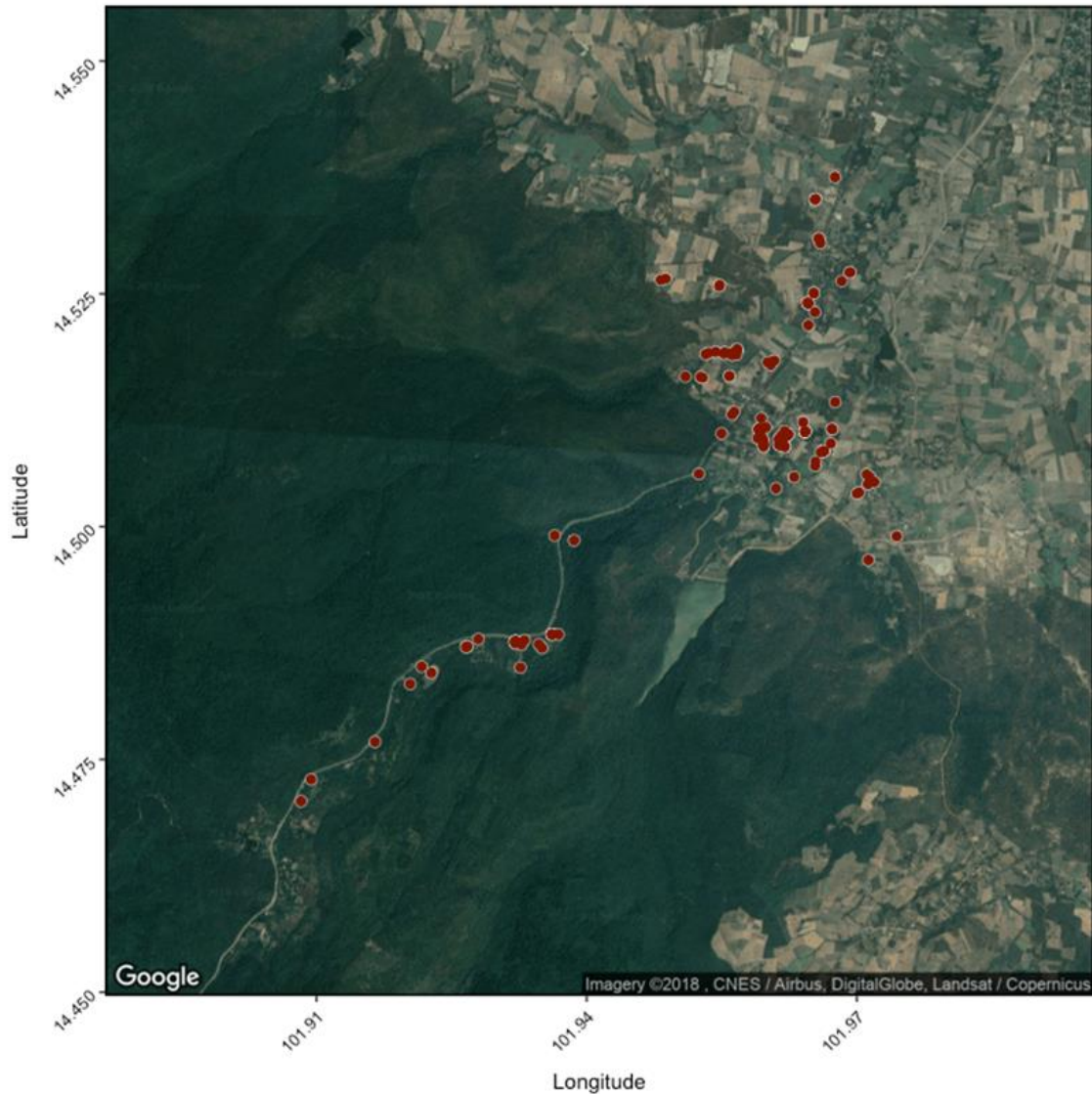
Preferred Habitats?

**Areas of Conflict?**

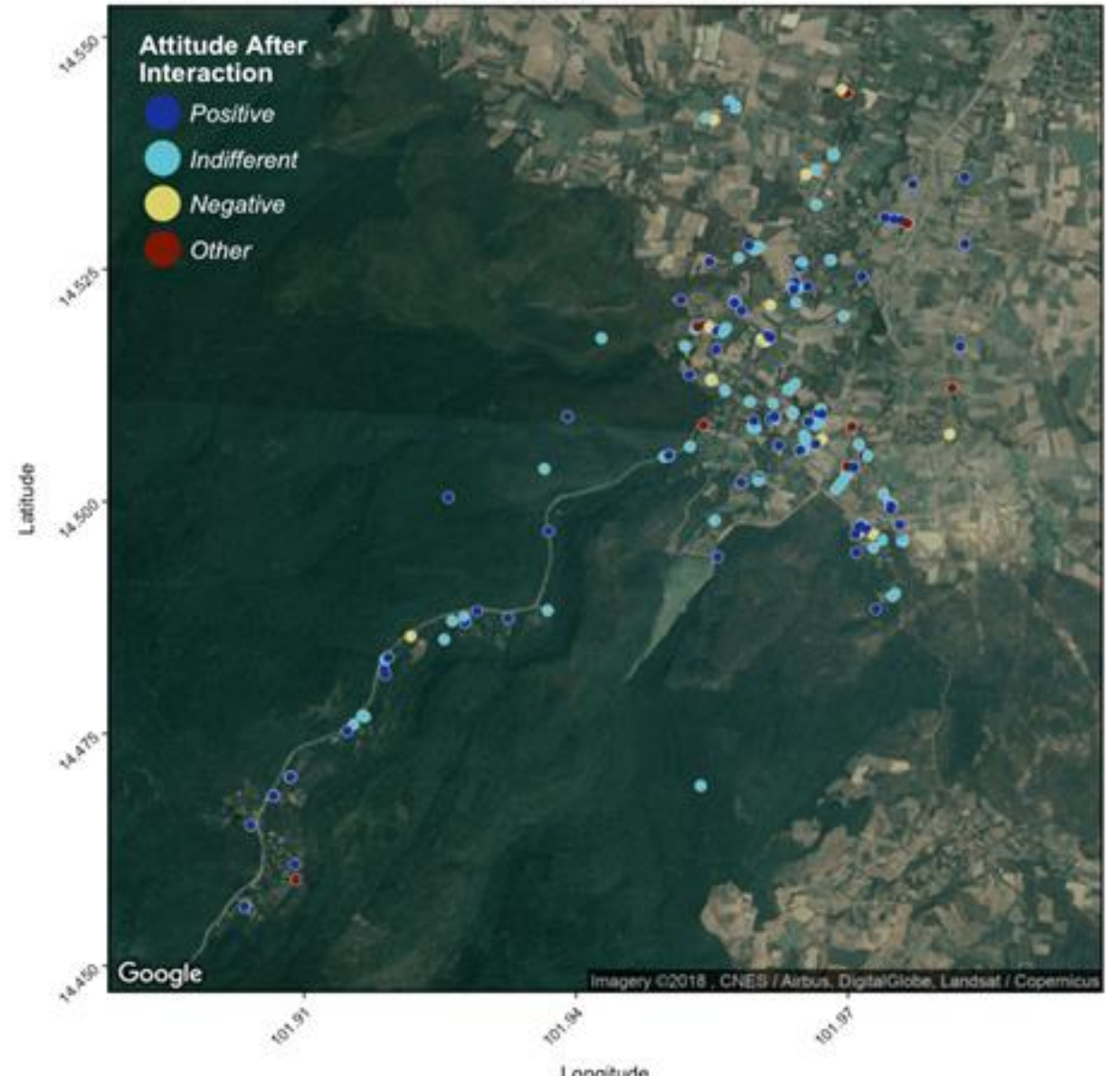


# Conflict: Regular Use of Human Dominated Landscapes

## Locations where king cobras are near human settlement



## Location of outreach efforts







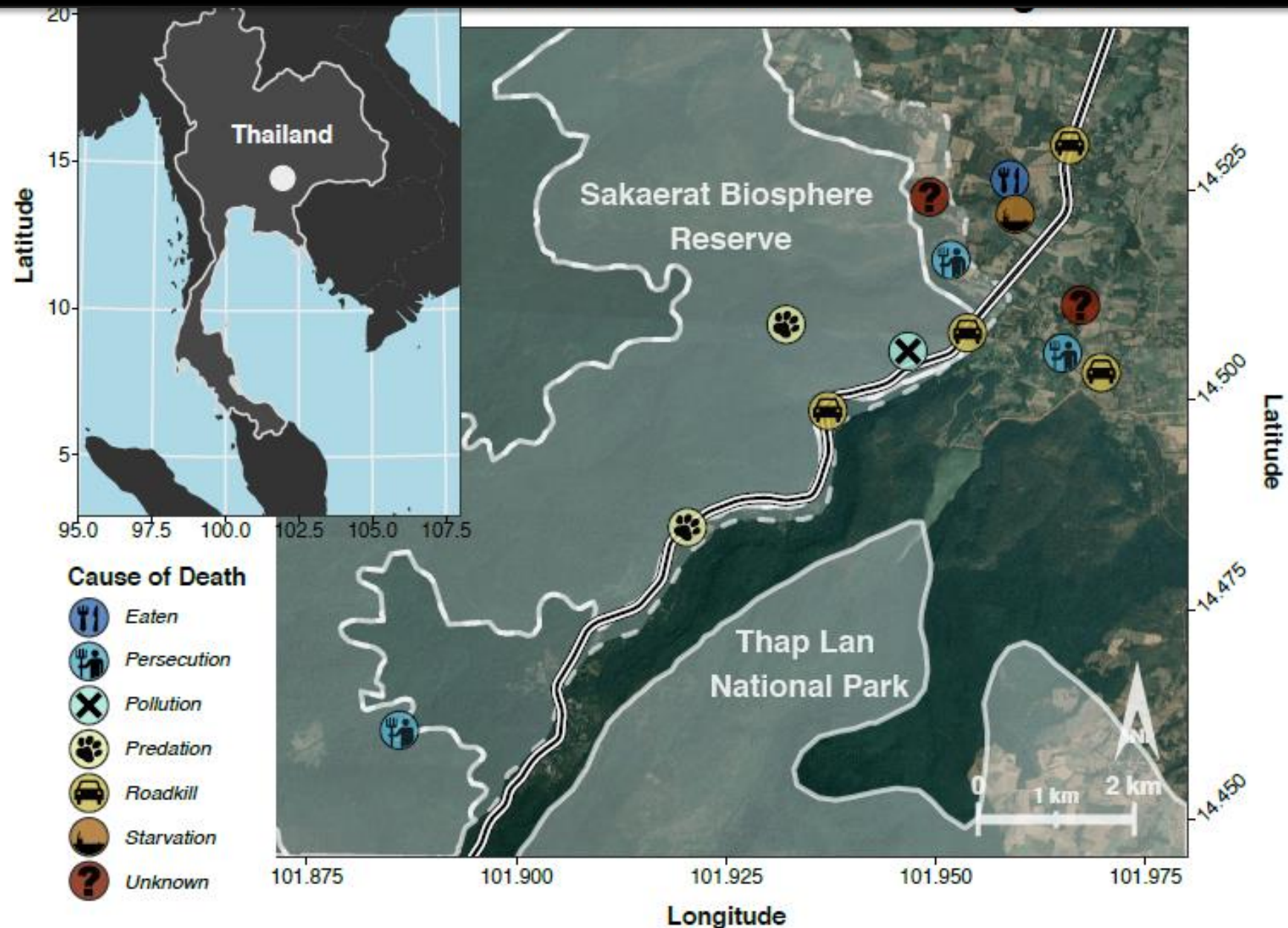
# Threats: Sources of Mortality

23 king cobras studied through radiotelemetry 2012-18

14 mortalities through the study period.

10 of 14 are directly from humans

*2 are likely human induced (cannot be sure)*





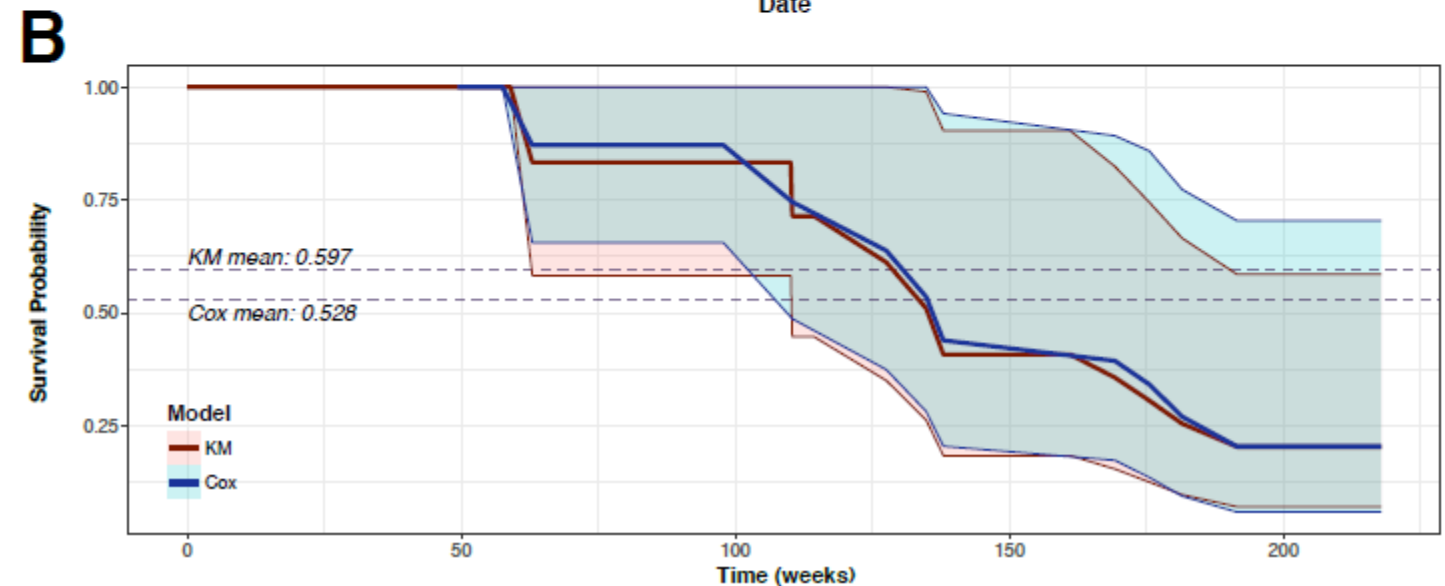
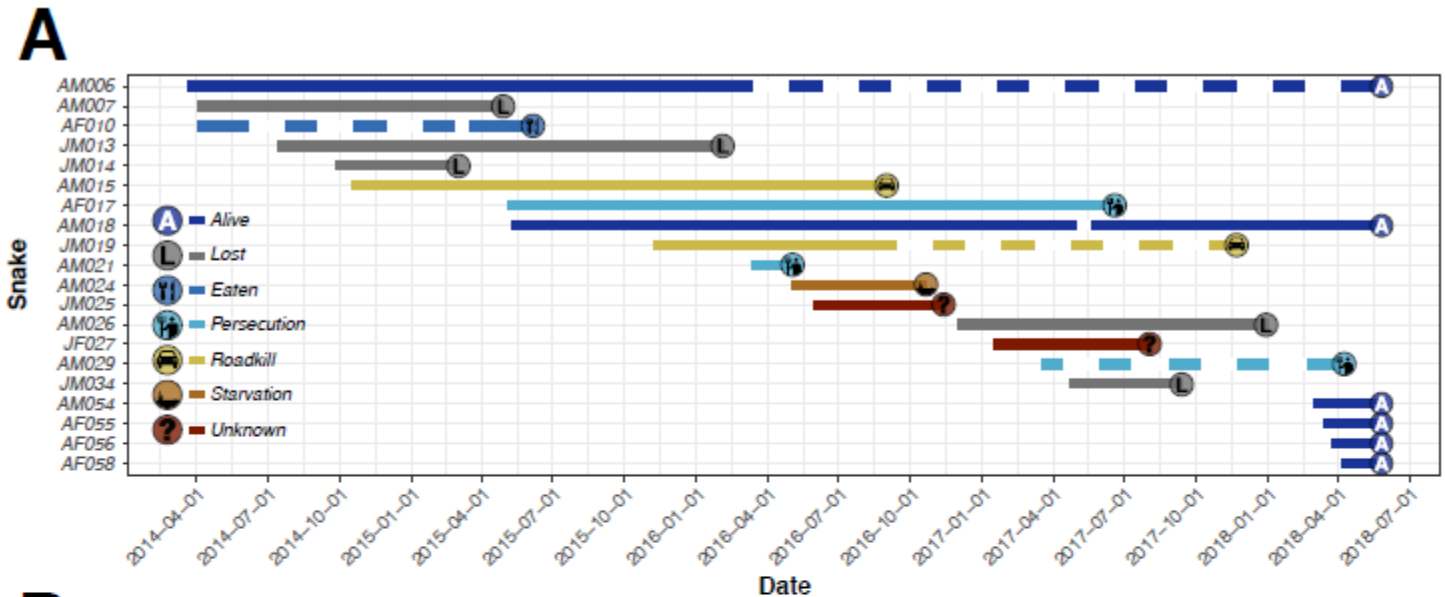
# Threats: Sources of Mortality

Survivorship over study period is low

Almost all mortality is attributable to human activities.

Direct persecution (spite killings/defensive killings)

Staggered entry models predict a mean survivorship of the study period of 0.59-0.52 chance of surviving.



# Take home messages:

1. King Cobras have **large home ranges** and regularly use **unprotected areas** in Sakaerat.
2. **Humans** are a major source of **adult king cobra mortality** resulting in **low adult survivorship**.
3. **Capacity building and education** may be the only way to **help king cobras coexist** with humans.
4. Help us **conserve king cobras** by spreading the word!

**KCC** KING  
COBRA  
CONSERVANCY



<https://www.thekingcobra.org/>

<https://www.facebook.com/thekingcobrareport/>

# Thanking All Participants



Wildlife Reserves Singapore Group



King cobras are watching, waiting for us to choose.

