

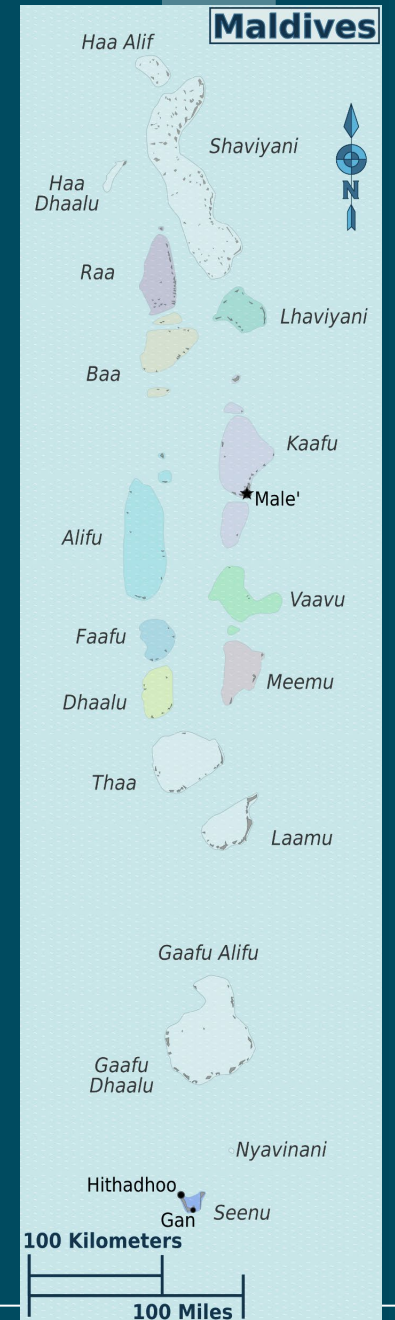


CITIZEN SCIENCE AND TURTLE ID

Dr Katrina Himpson- MDC Manager/ Turtle Veterinarian

BACKGROUND- MALDIVES

- Foraging and nesting ground for green and hawksbill turtles
- Inter-atoll variation in species composition
- Mid-century population decline



CONSERVATION CHALLENGES

- Remoteness of islands
- Development priorities
- Engagement of communities
- Cultural heritage



SOLUTION= CITIZEN SCIENCE

WHAT IS CITIZEN SCIENCE?

“Scientific research conducted
with participation from the
public”

OVERCOMING CONSERVATION CHALLENGES WITH CITIZEN SCIENCE

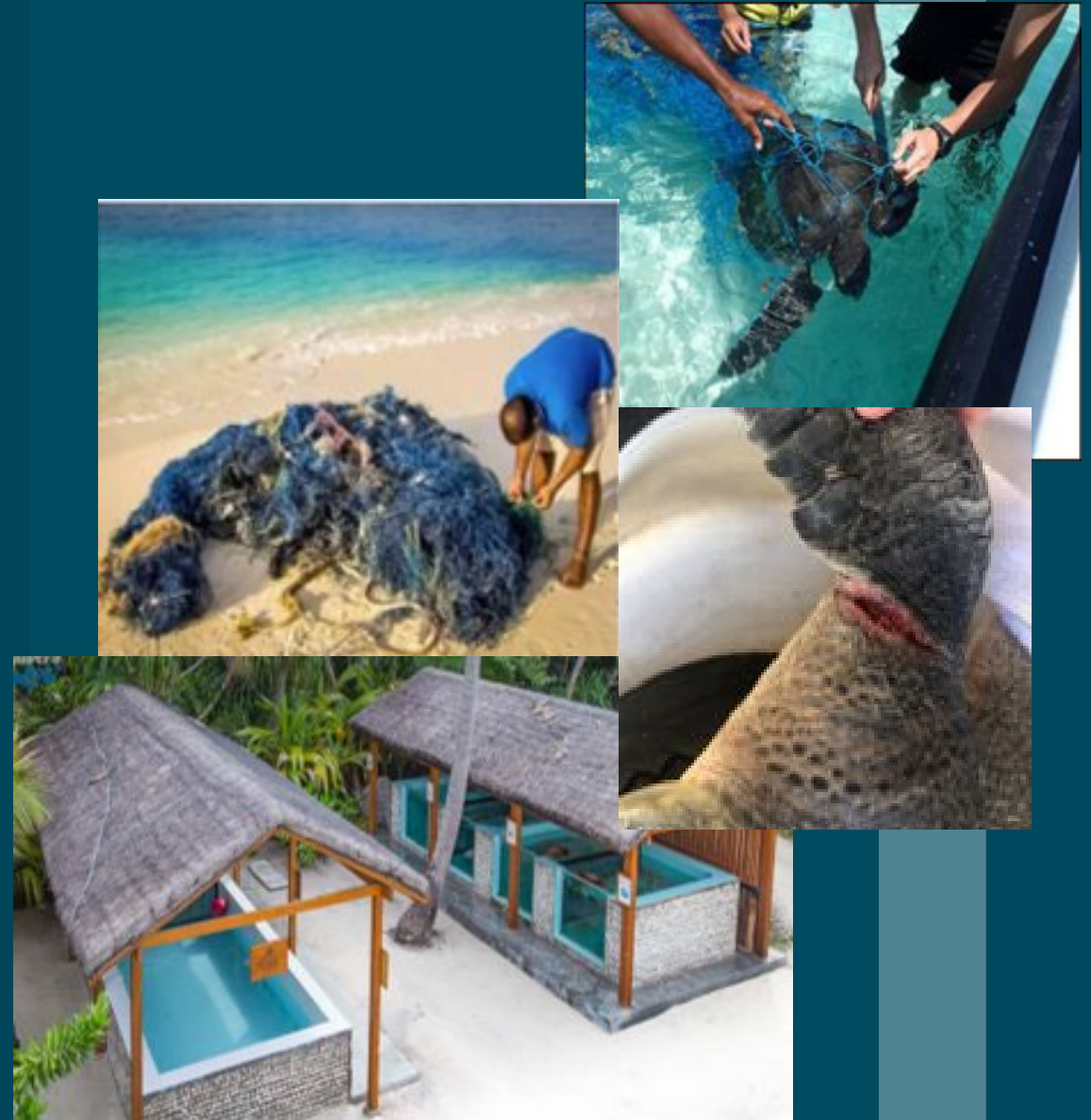
- Encourages community engagement
- Produces a meaningful outcome
- Facilitates data collection
- Utilises local knowledge



MALDIVES SEA TURTLE CONSERVATION PROGRAM (MSTCP)

MSTCP- BACKGROUND

- Established 2010 to help sick and injured turtles
- 75% of cases associated with ghost net entanglement
- Aim to rehabilitate and release
- Program development (research and outreach)



MSTCP- REHABILITATION

- On-site veterinarian
 - Medication
 - Surgery
 - Wound care
- Physiotherapy (manual manipulation, sea swims, sea pen)
- Environmental enrichment (physical and mental stimulation)
- 'Flying Turtles'



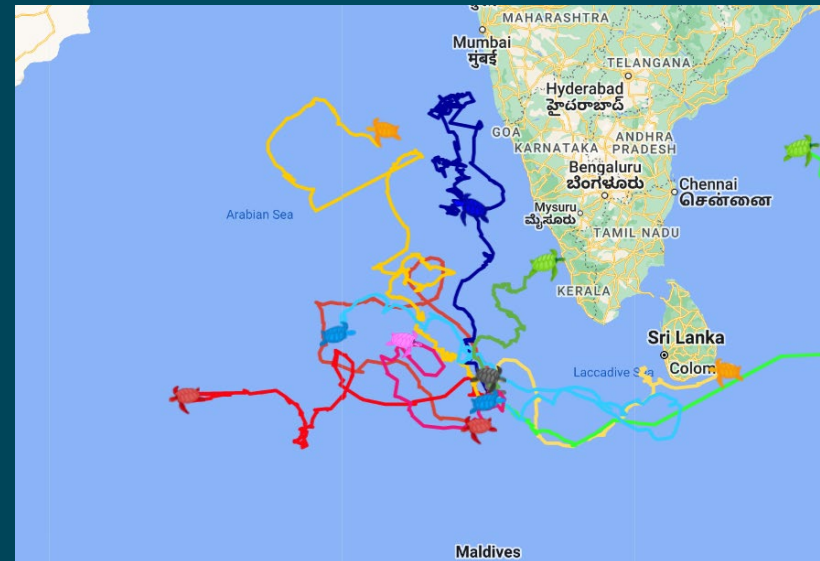
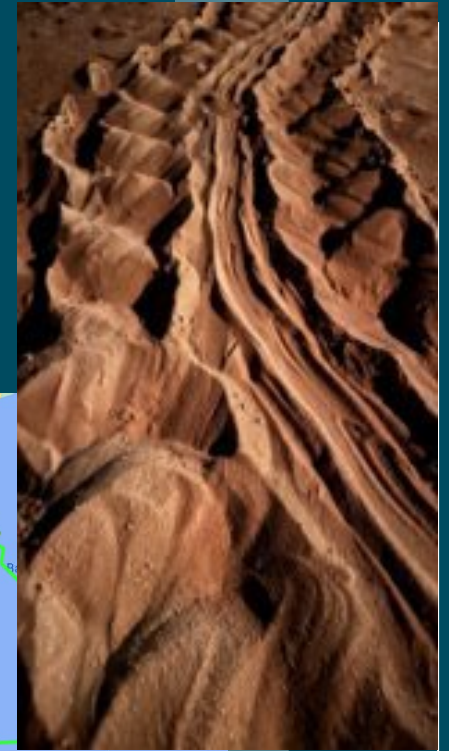
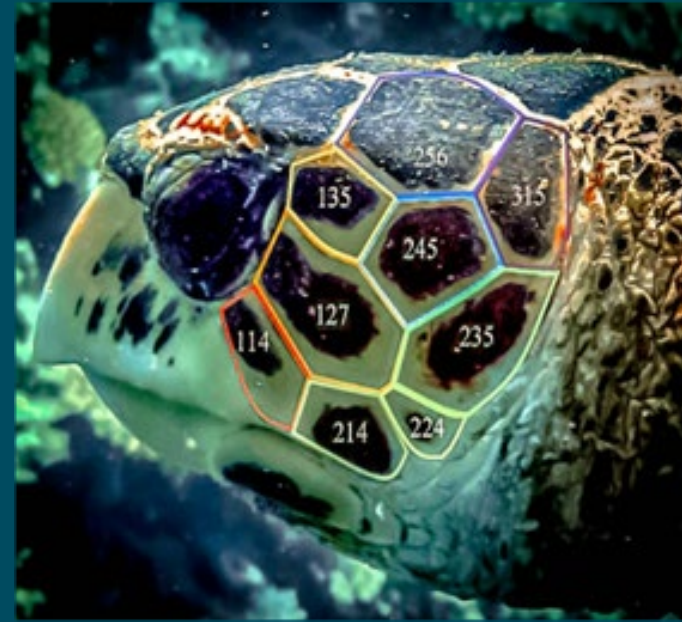
MSTCP- OUTREACH

- School visits
- Trainee biologist program
- Coral propagation program
- Baa atoll outreach program



MSTCP- RESEARCH

- Satellite tracking
- Behaviour
- Nest protection and monitoring
- Rehabilitation / stranding data
- Photo ID (Maldives wide citizen science project)





CS AT MARINE SAVERS- TURTLE ID PROJECT



KNOWLEDGE GAPS

- Population numbers?
- Population trends?
- Distribution?
- Habitat use?
- Migration routes?
- Address using capture-mark-recapture methods

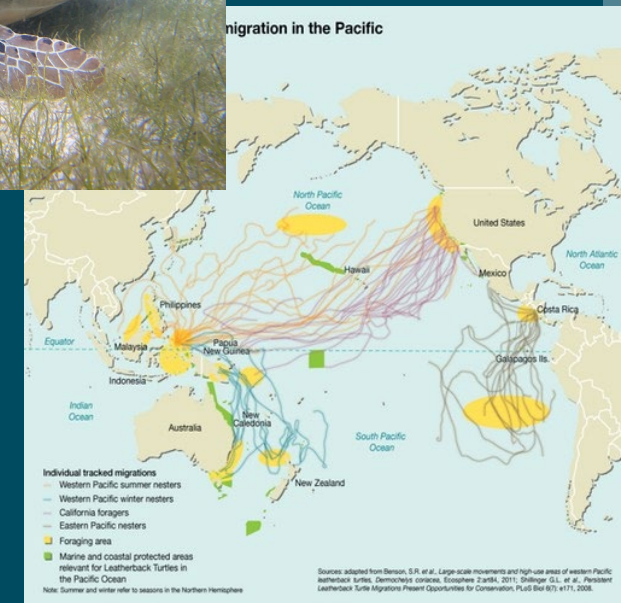
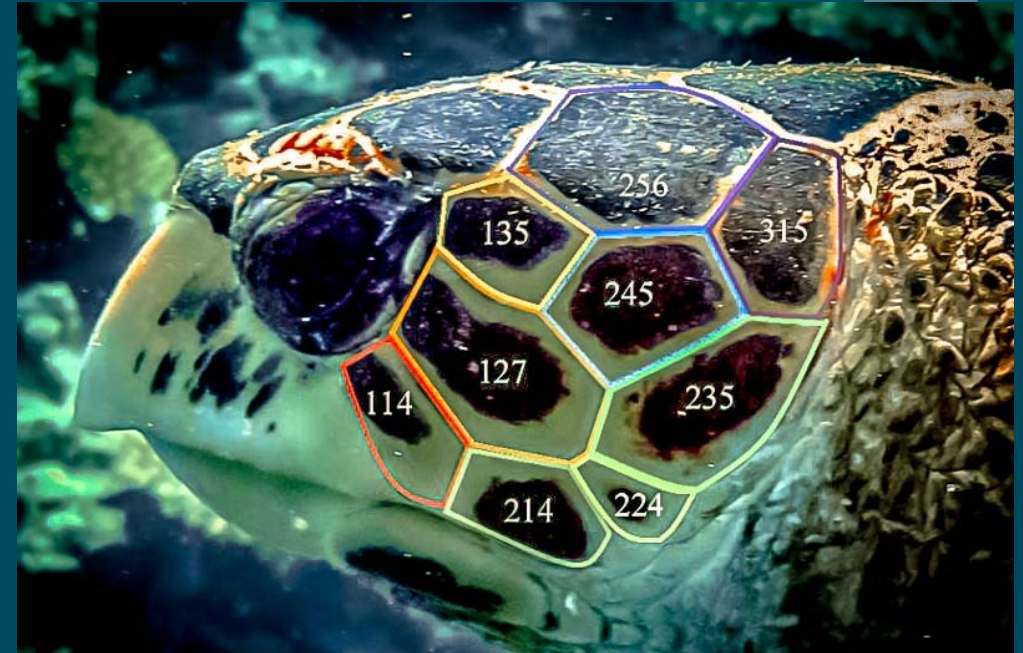


PHOTO ID

- Utilises unique facial scale patterns
- Non-invasive
- Simple
- Cost-effective
- Effective



METHOD

- Photos taken during nesting/ recreational activities
- Submitted via website/Facebook
- Processed
- Results fed back to submitter

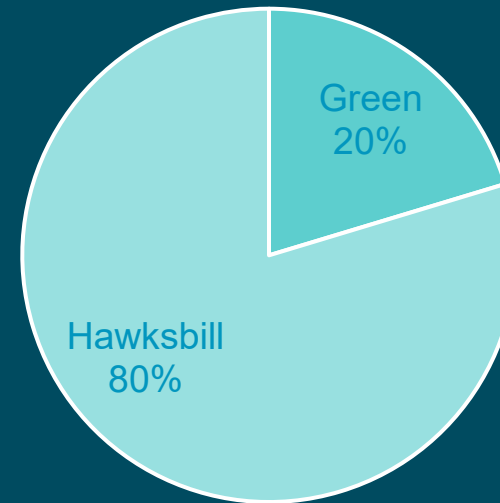


PRELIMINARY RESULTS

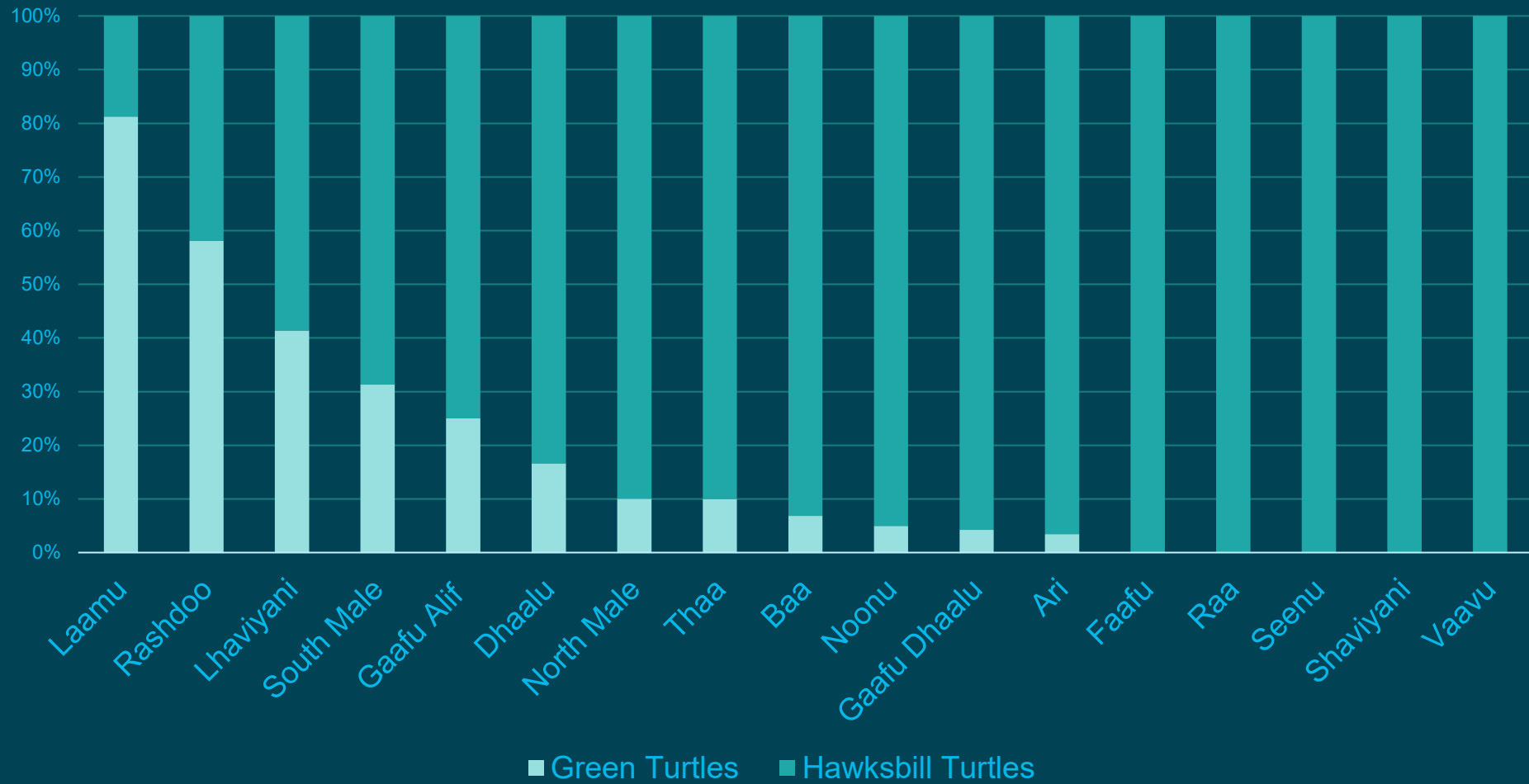
- Records from 19 atolls
- 1687 individuals identified
- Extended residency

MRD (days)	
Green Turtles	
Mean	379
Min - Max	4 - 1851
Hawksbill Turtles	
Mean	610
Min - Max	1 - 3949

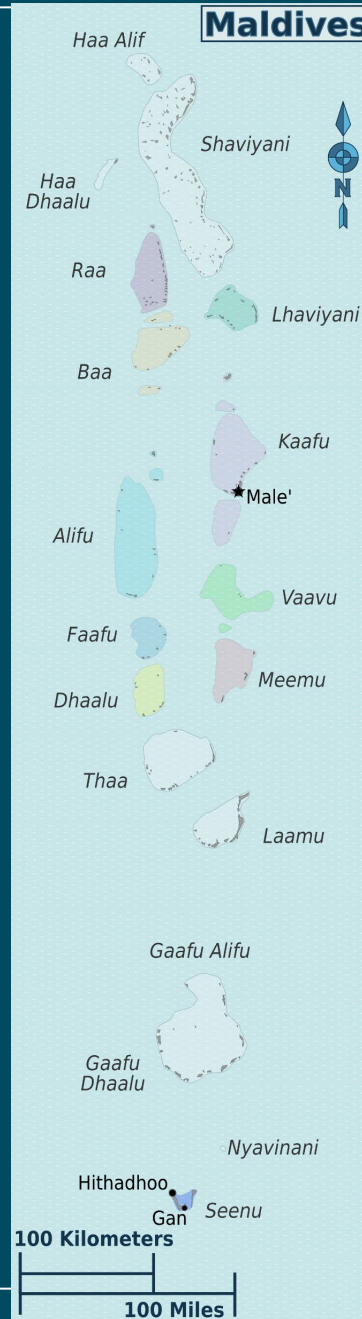
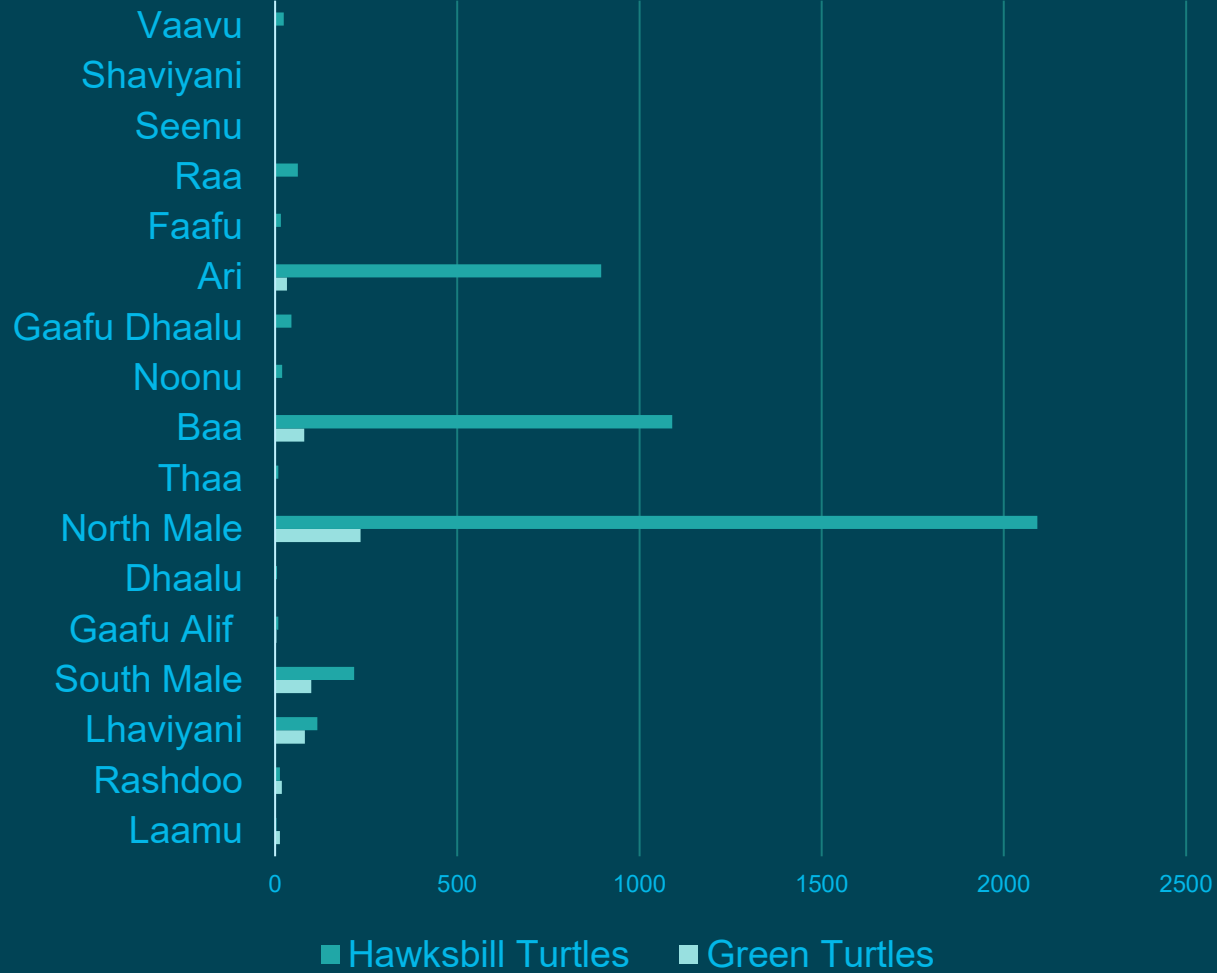
Number of Individuals ID'd

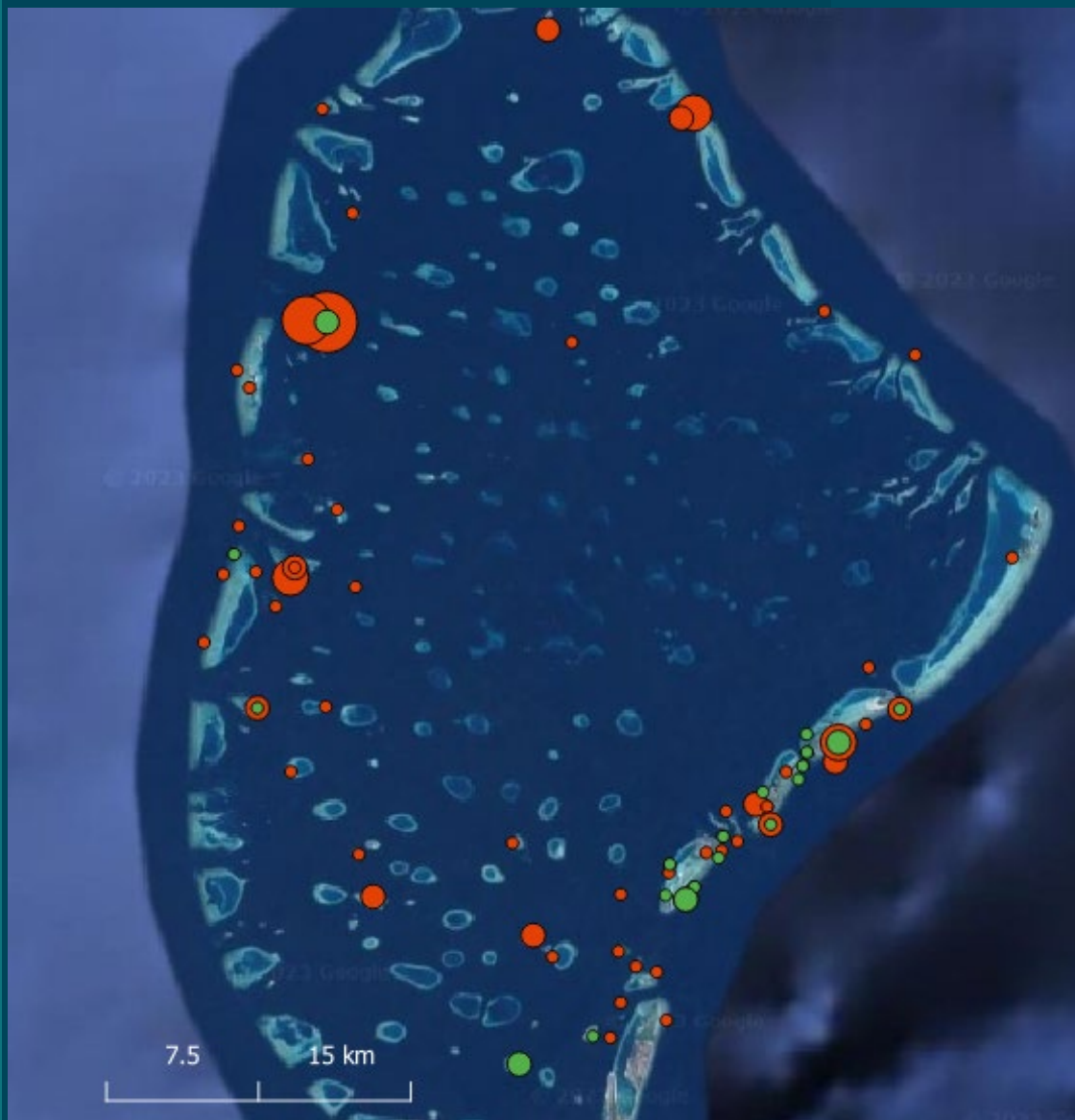


Species Proportions by Atoll



Number of Sightings by Atoll





Sightings per location

- 1 - 10
- 10 - 50
- 50 - 100

Sightings per location

- 1 - 10
- 10 - 50
- 50 - 100
- 100 - 500
- 500 - 1200

Sightings per location

● 1 - 10

● 10 - 50

● 50 - 100

Sightings per location

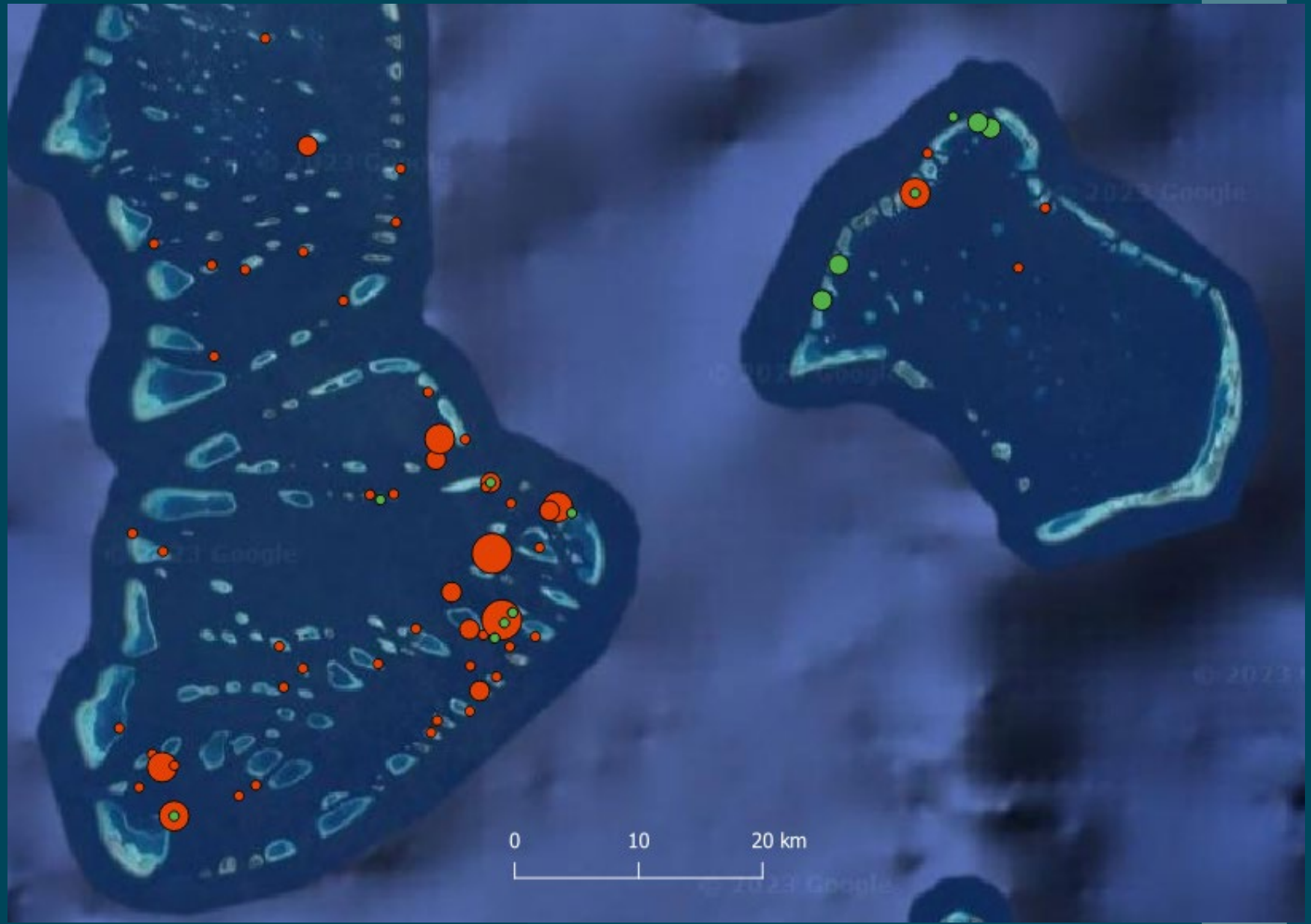
● 1 - 10

● 10 - 50

● 50 - 100

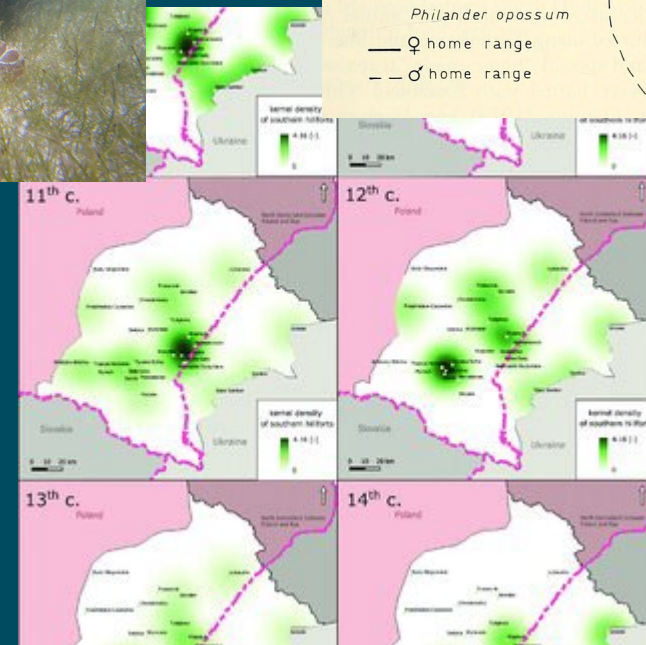
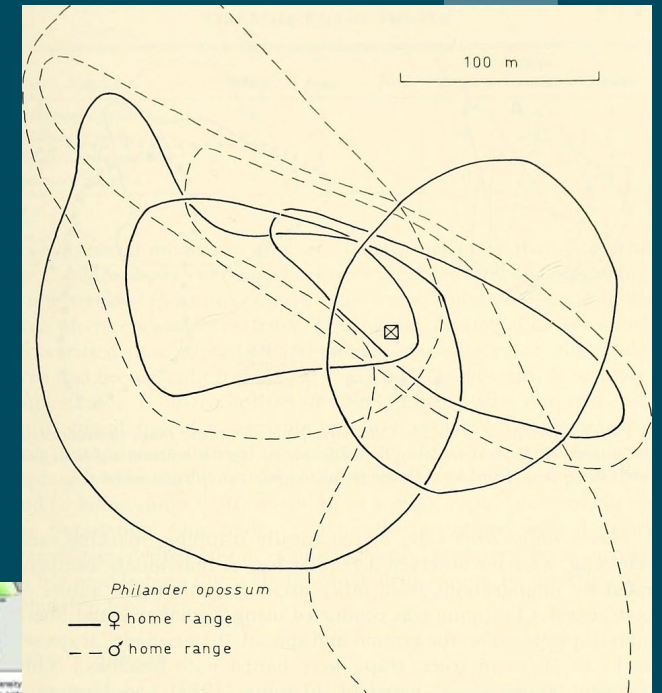
● 100 - 500

● 500 - 1200



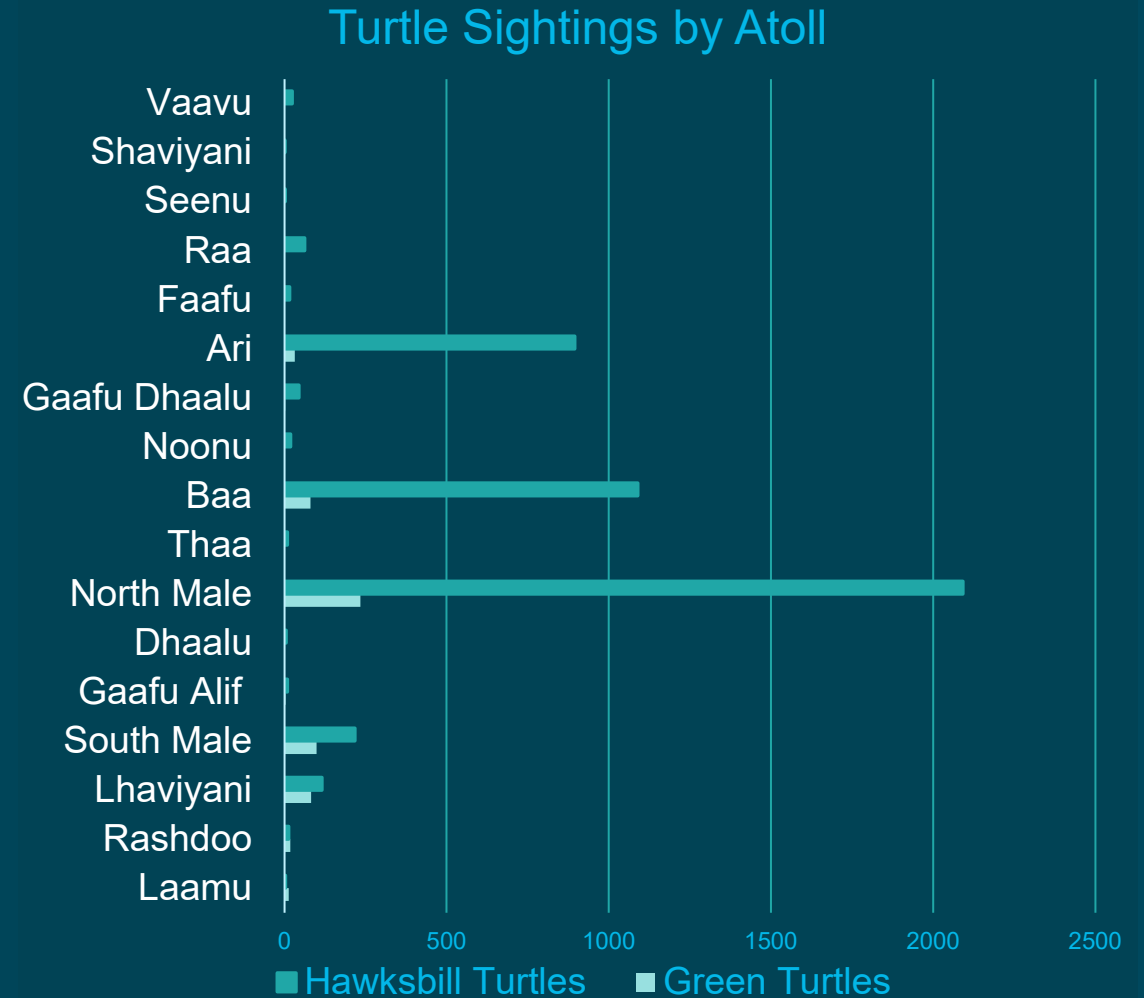
APPLICATIONS / FUTURE DIRECTIONS

- Observational study
- Distribution
- Site carrying capacity
- Population stability



LIMITATIONS

- Geographic / temporal bias
- Decrease in reporting over time
- Data limitations
 - Coarse scale
 - Bias
 - Reliability





THANK YOU

DO YOU HAVE ANY QUESTIONS?

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