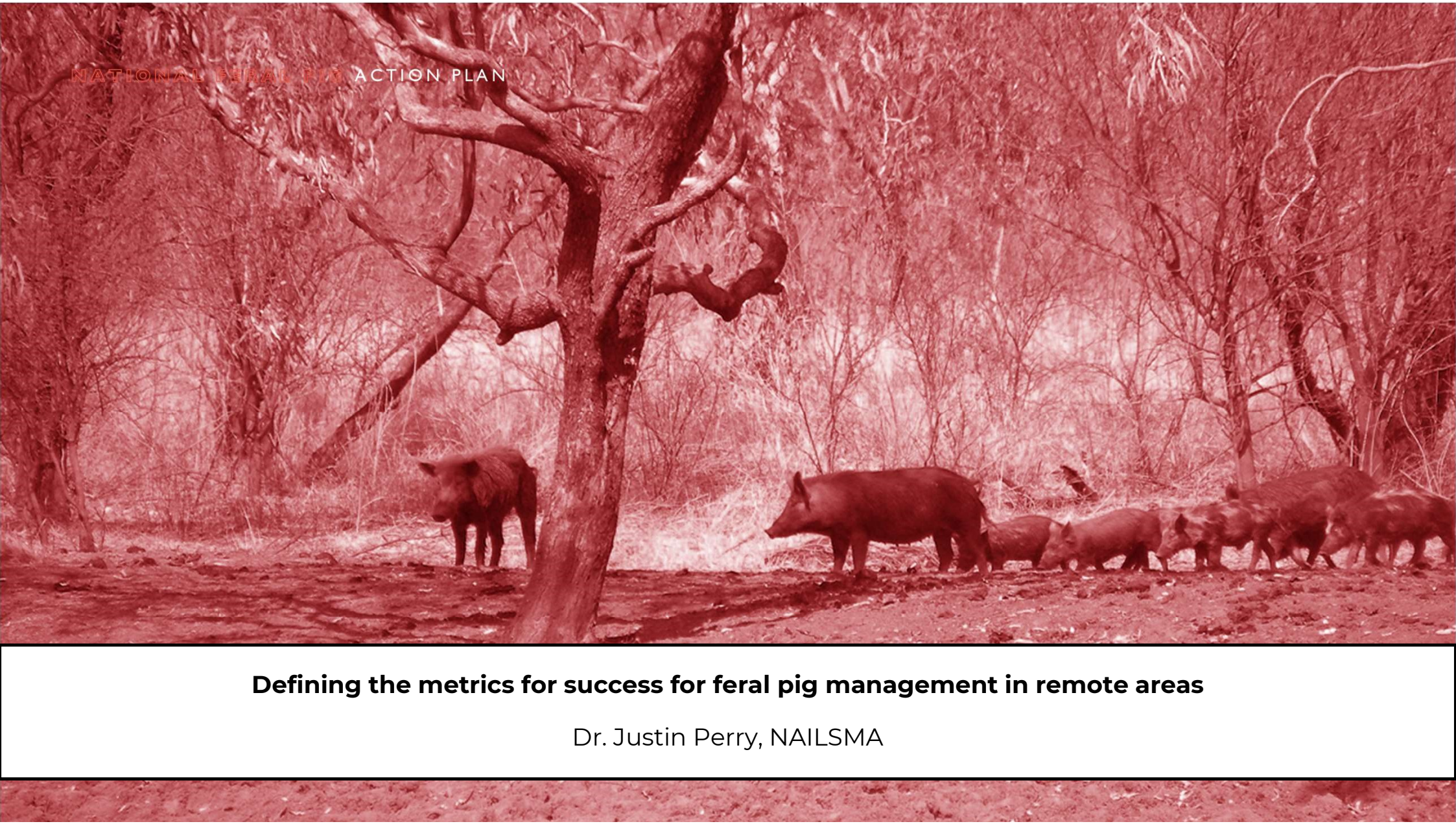
NATIONAL FERAL PIG

ACTION PLAN

NATIONAL STAKEHOLDER FORUM

MONDAY 5 JULY 2021



Defining the metrics for success for feral pig management in remote areas

Dr. Justin Perry, NAILSMA

Defining metrics of success for feral animal management.

In partnership with APN Cape York and Kalan Enterprises

CSIRO

JAMES COOK UNIVERSITY AUSTRALIA

Queensland Government

APN Cape York

KALAN ENTERPRISES COEN · CAPE YORK

Northern Australia Environmental Resources Hub

National Environmental Science Programme

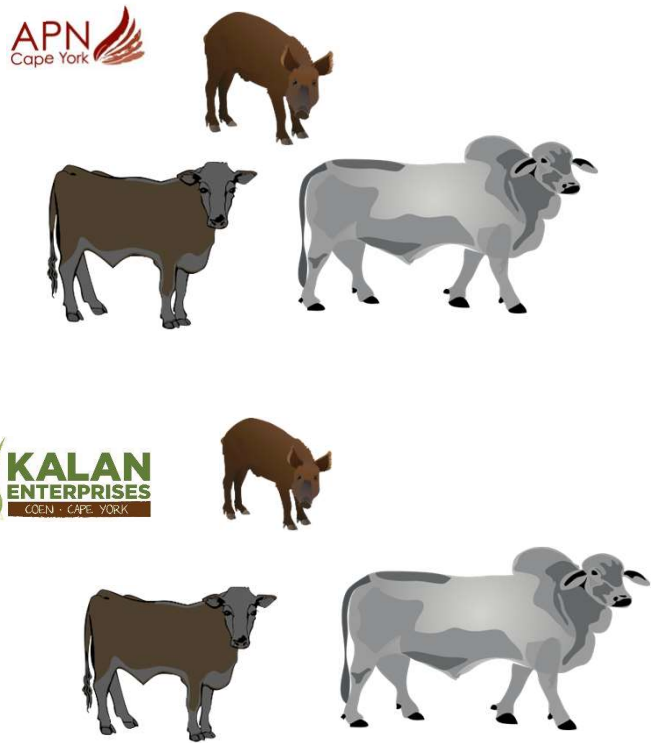
Research

Project lead, CSIRO Land and Water

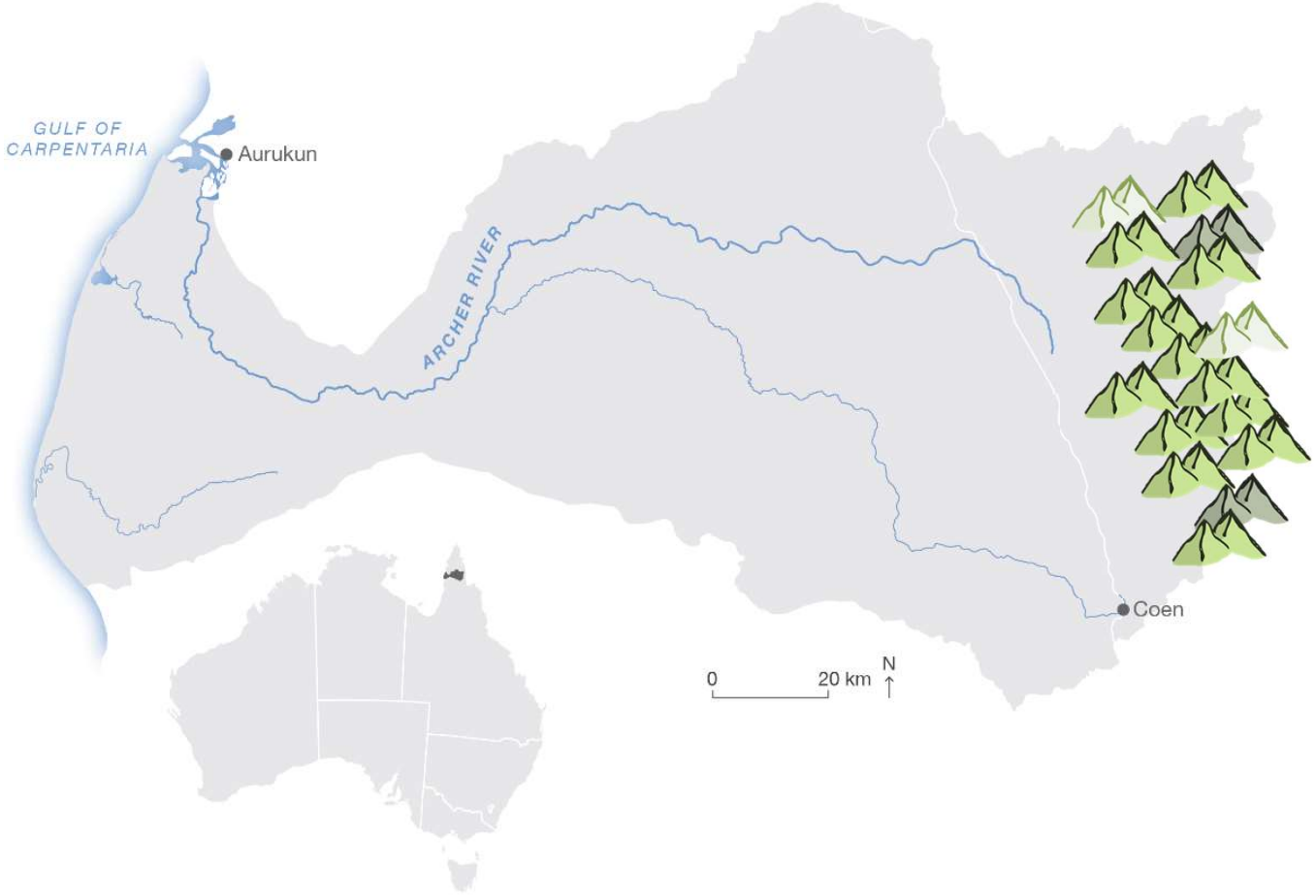
Department of Environment and Science

JCU Tropwater.

Management



Archer River Basin



Work we have done

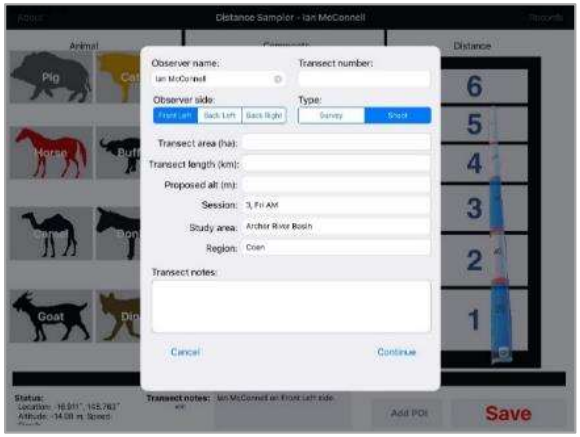
- Worked with Kalan Enterprises and APN Cape York since 2011 to develop robust metrics for measuring the impact of feral animal management.
- Describing the costs and benefits of various management methods.
- Defining the social and cultural values associated with feral animal impacts.
- Developing robust and repeatable reporting and monitoring tools.

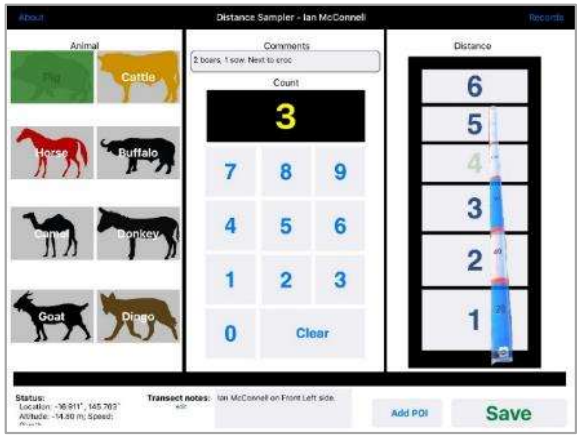
Desired impact: More effective feral animal management for protecting cultural and environmental values.

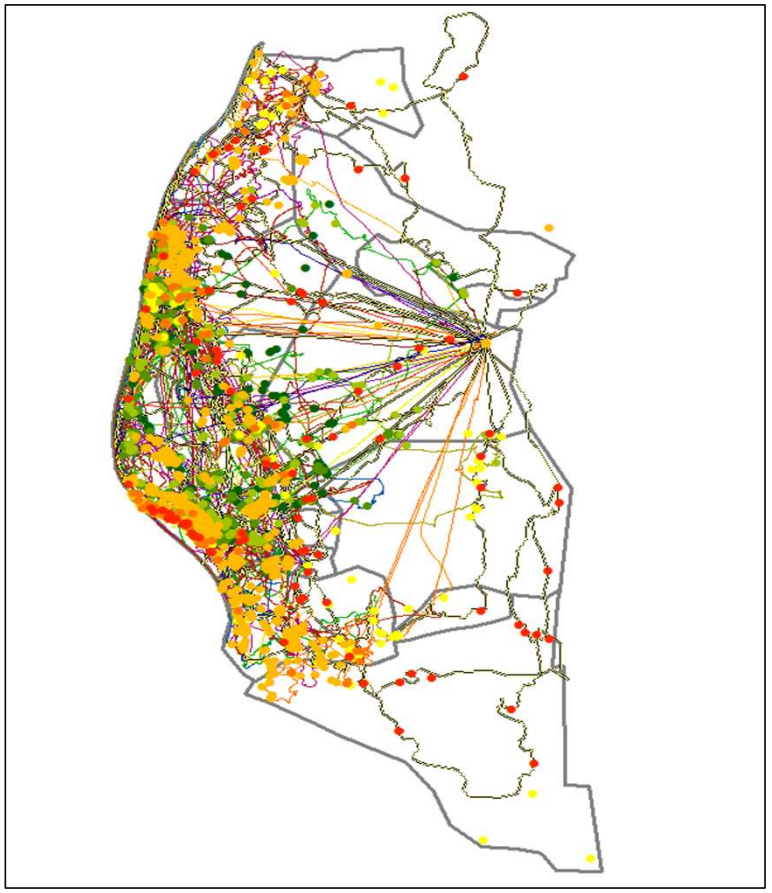
Defining success

helping to define success, measure change, develop interventions

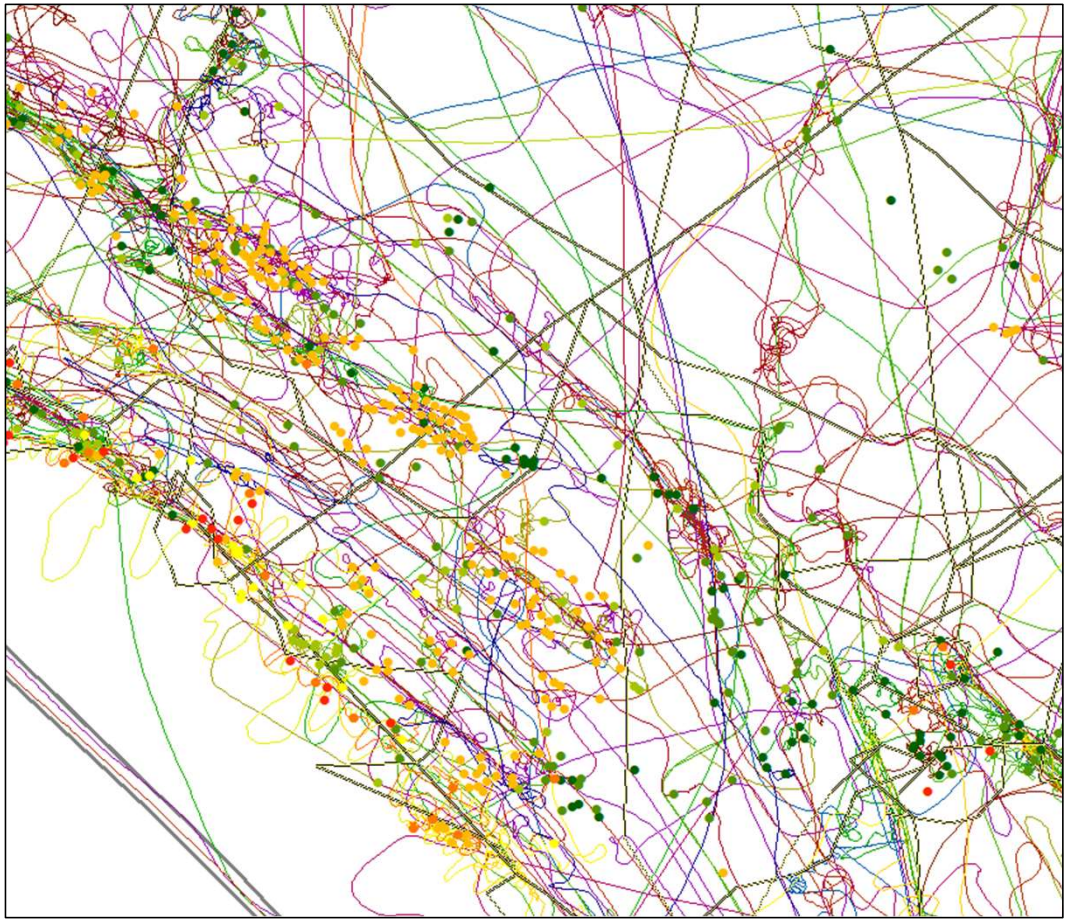
Feral pig distribution and density



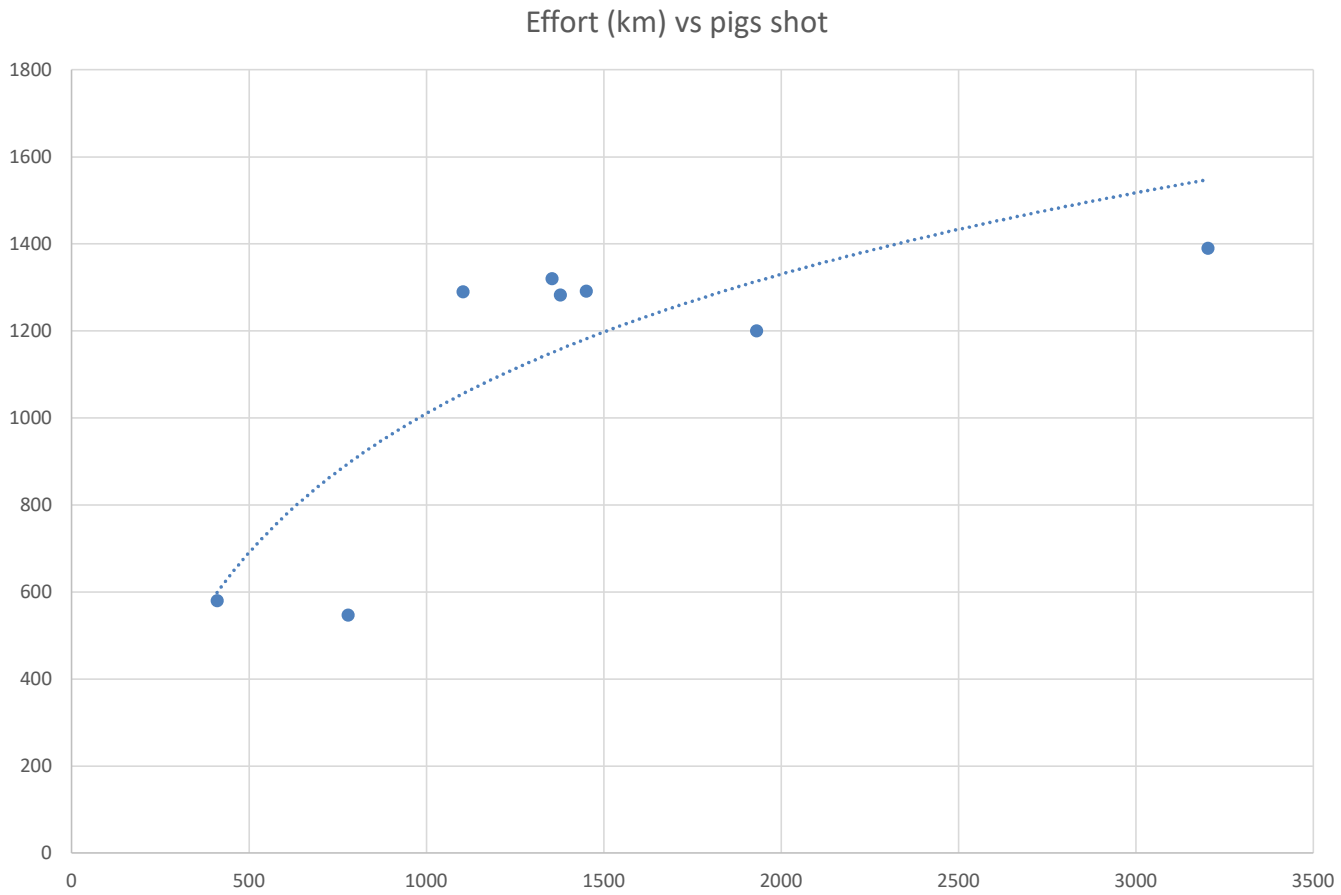




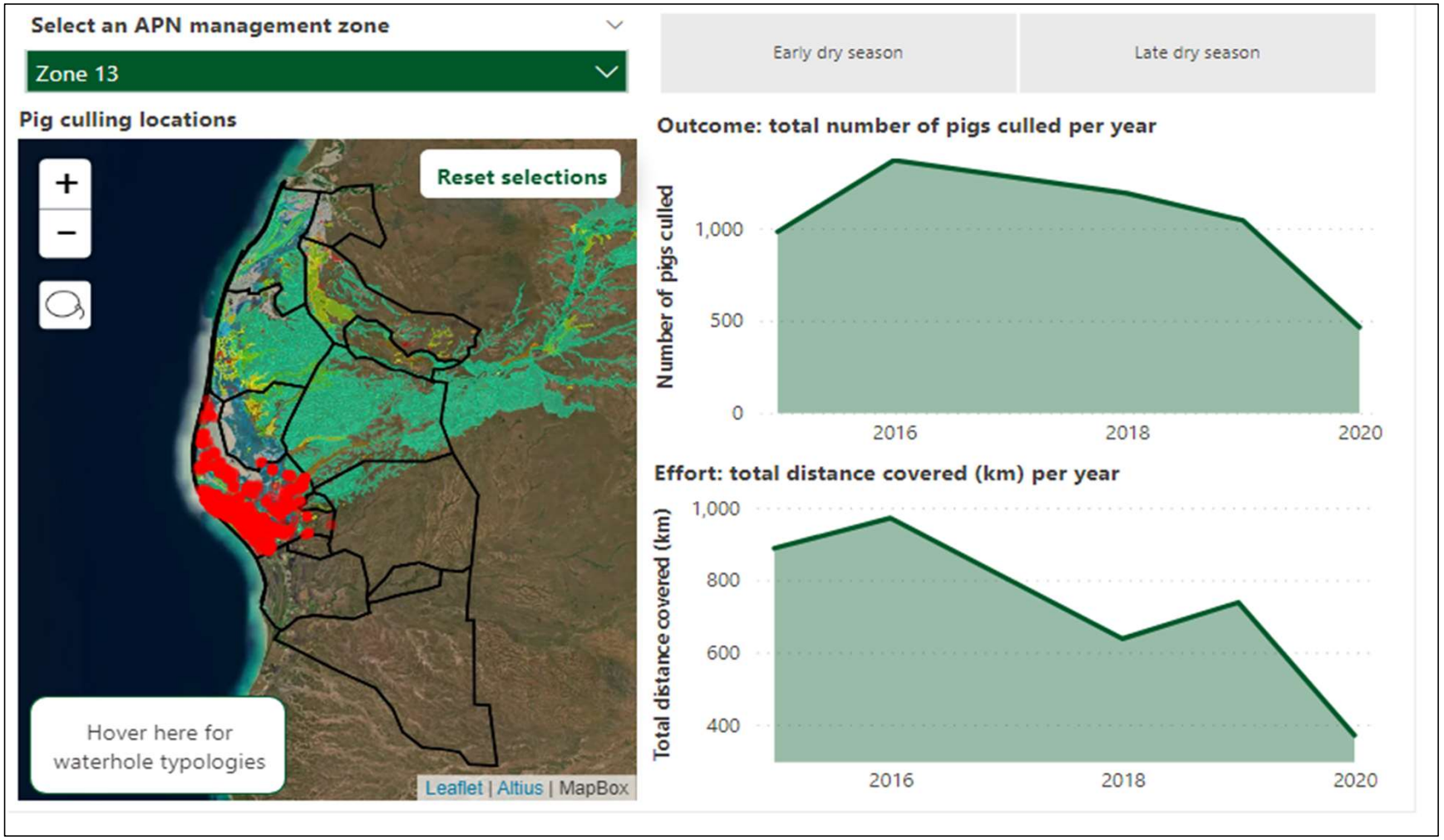
Close up of helicopter tracks



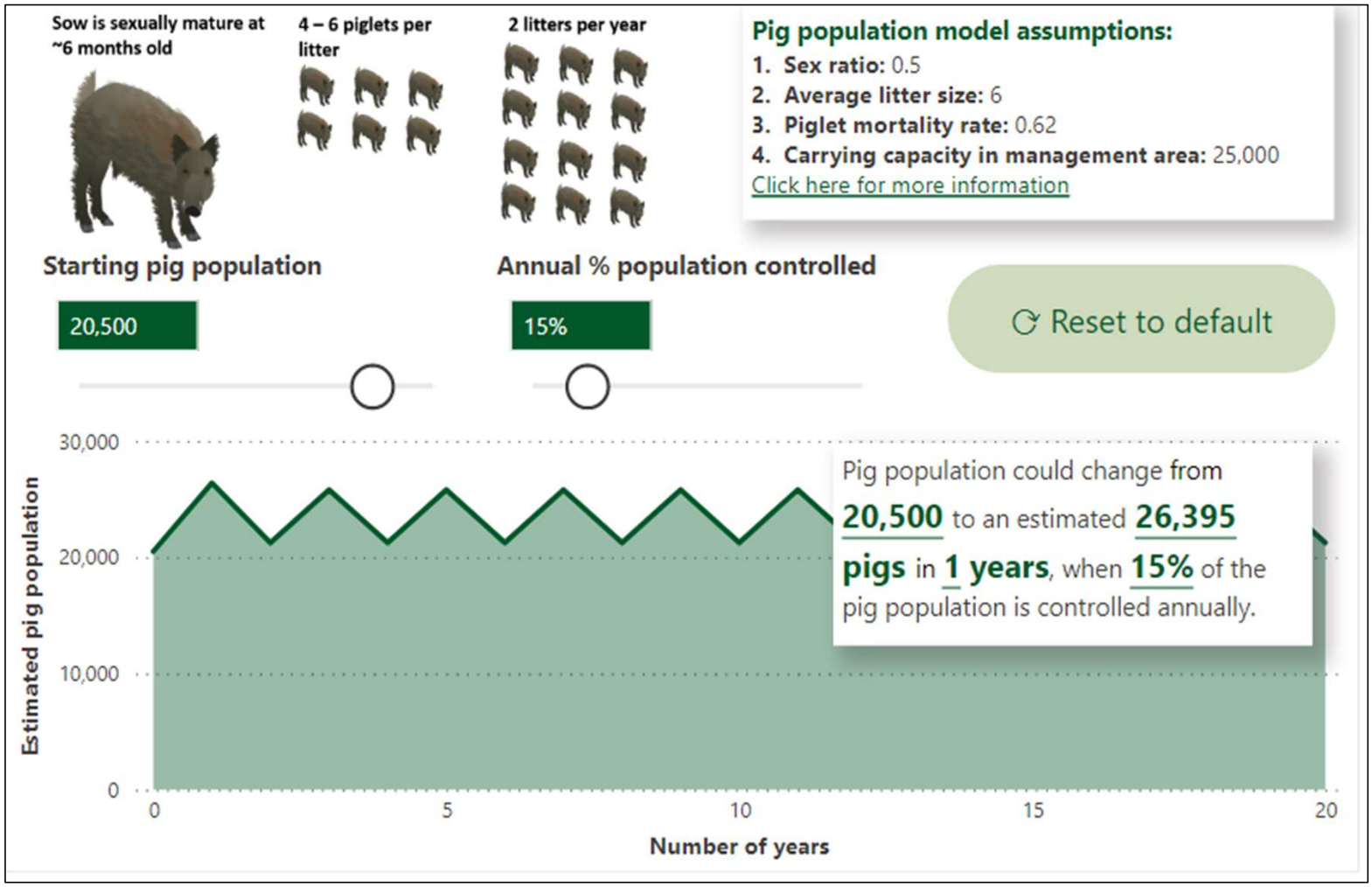
Effort vs pigs shot



Pig culling by management zone



Pig killing calculator

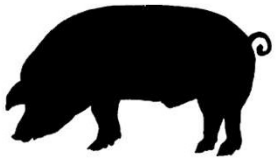


Metric 1. Changes in distribution and abundance of feral animals.

Method:

- Put some effort into collecting some simple data.
- Identify feral pig density zones (scaled by environment)
- Put some effort into planning control. Equal effort aerial control in different zones to see if you are making any difference.

Metric 2. Marine turtle predation

NESTS DEPREDATED				
2012 D+	**98%**	**1%**	**0%**	**1%**
2017 A+	**2.5%**	**2.5%**	**19%**	**0%**

APN Cape York

Nest to Ocean Turtle Protection Program
New Queensland Marine Turtle Field Guide available now

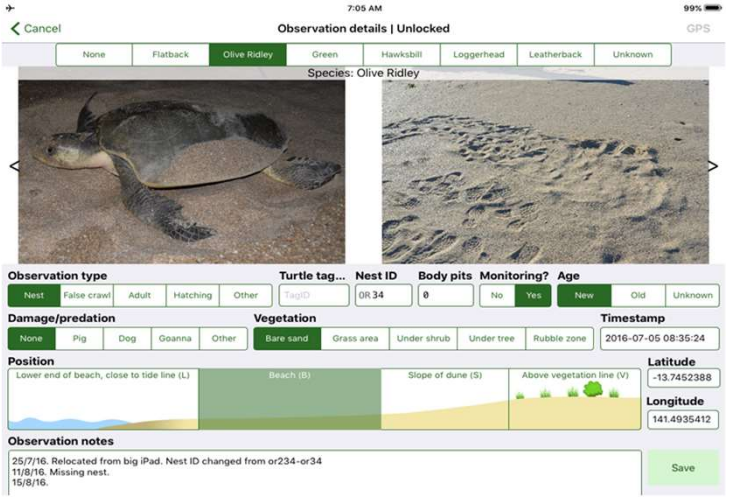
CSIRO

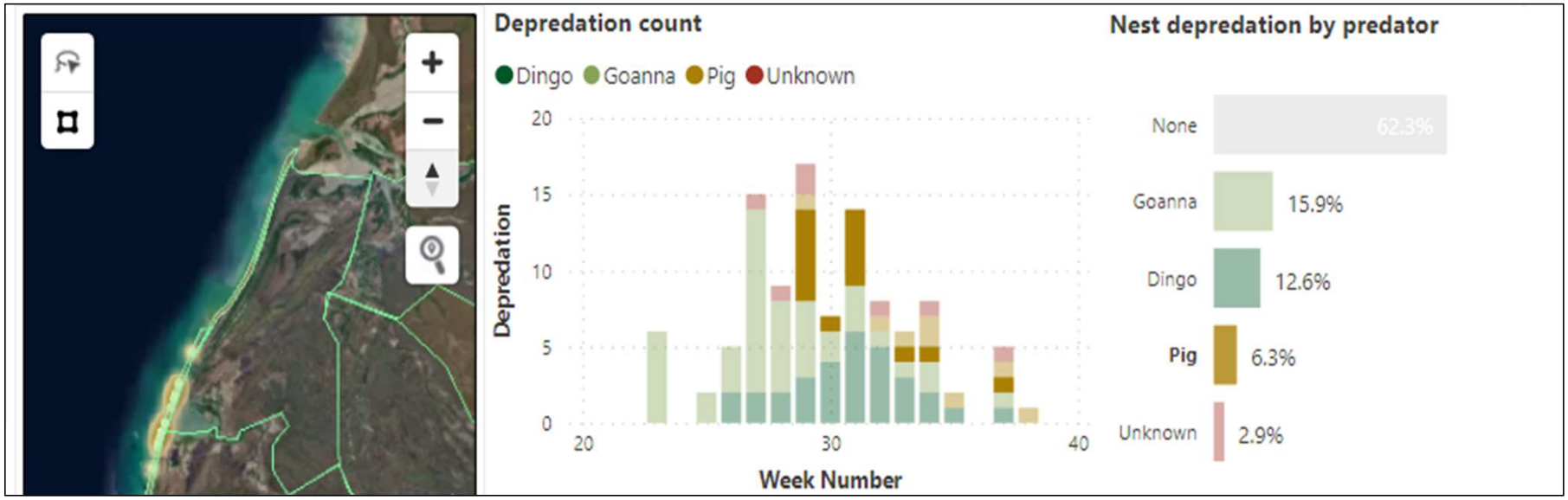
Northern Australia Environmental Resources Hub
National Environmental Science Programme

Primary threat (pigs) under control

2012		96%
2013		11%
2014		0%
2015		31%
2016		12%
2017		2%

Strategic nest protection





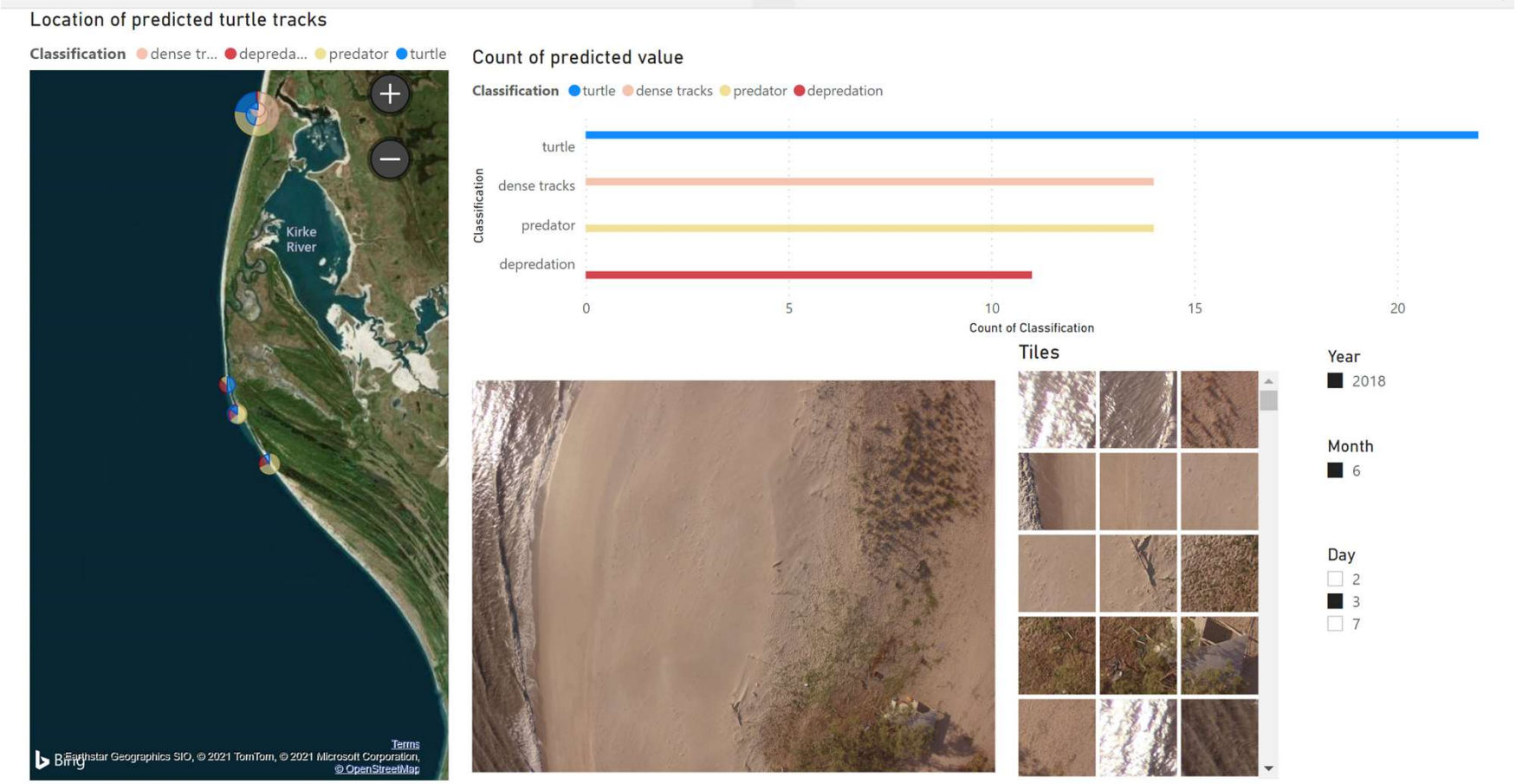
Aerial survey of nests (>100km)

5 days of survey

14142 geocoded photos

27.8 GB of data

Using AI to automate analysis



Simple monitoring methods.

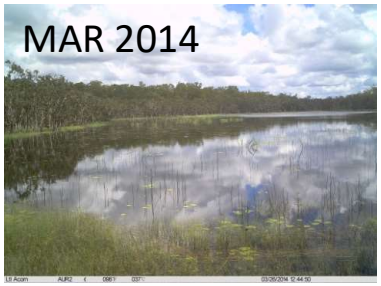
Time lapse cameras and drones

NOV 2013

DEC 2013

JAN 2014

FEB 2014


MAR 2014

APR 2014

MAY 2014

JUN 2014

JUL 2014

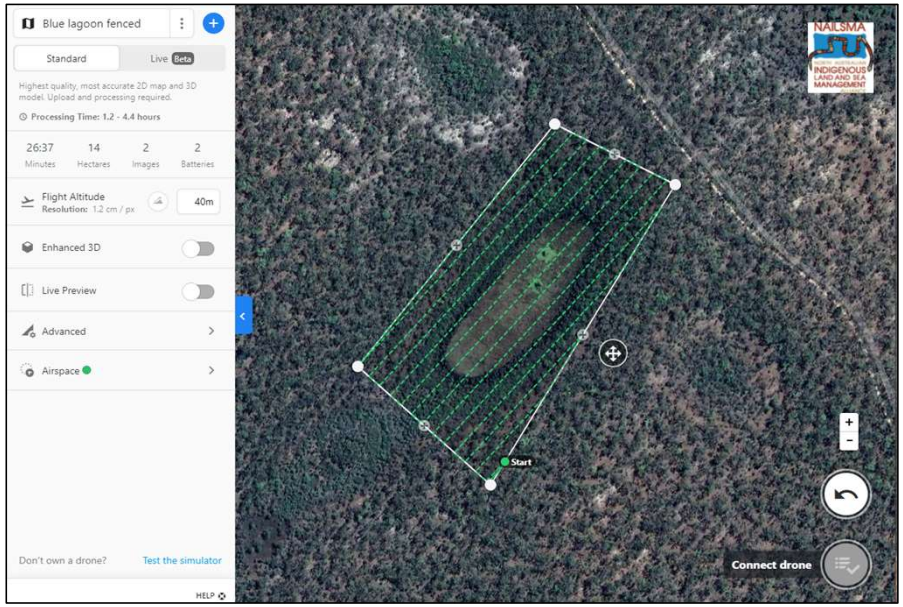
AUG 2014

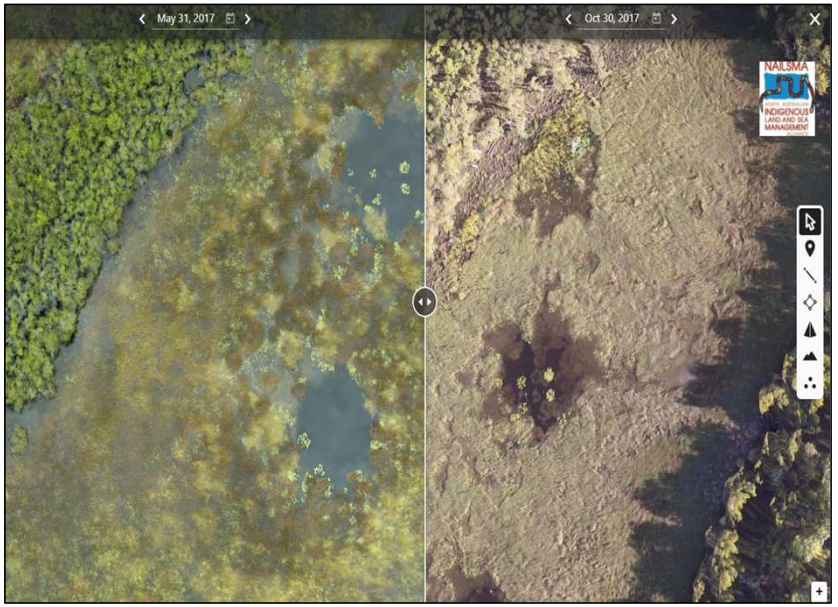
SEP 2014

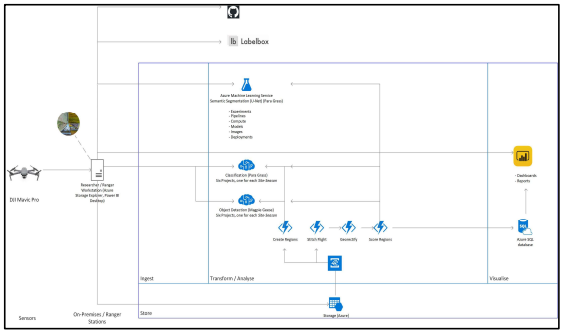
OCT 2014

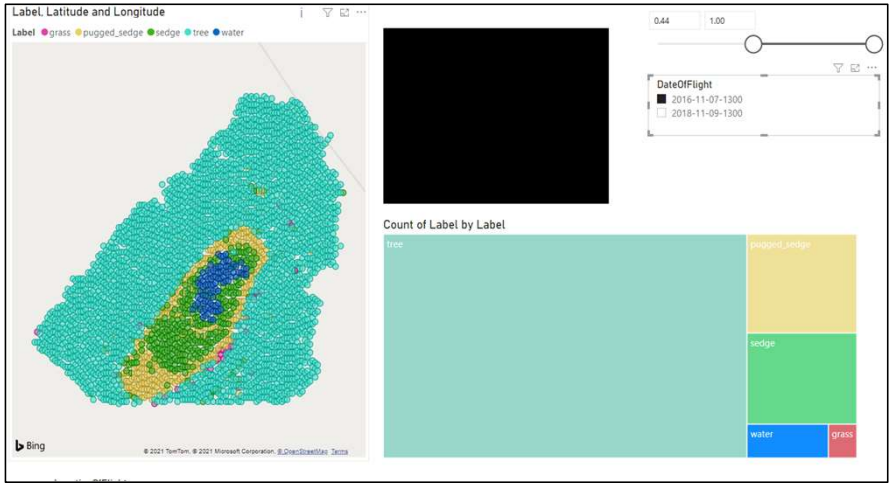
NOV 2014

DEC 2014

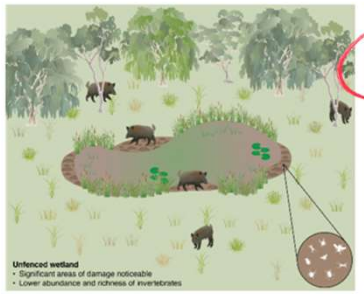

Blue lagoon fenced
Standard
Live Beta
Highest quality, most accurate 2D map and 3D model. Upload and processing required.
Processing Time: 1.2 - 4.4 hours
26:37 Minutes
14 Hectares
2 Images
2 Batteries
Flight Altitude
Resolution: 1.2 cm / px
40m
Enhanced 3D
Live Preview
Advanced
Airspace
Don't own a drone?
Test the simulator
HELP
NAILSMA
INDIGENOUS LAND AND SEA MANAGEMENT
Start
Connect drone


May 31, 2017
Oct 30, 2017
NAILSMA
INDIGENOUS LAND AND SEA MANAGEMENT


Labelbox
DJI Mavic Pro
Ingest
Transform / Analyse
Visualise
Sensors
On-Premises / Ranger Stations
Store


Label, Latitude and Longitude
Label grass pugged_sedge sedge tree water
Bing
0.44
1.00
DateOfFlight
2016-11-07-1300
2018-11-09-1300
Count of Label by Label
tree
pugged_sedge
sedge
water
grass

Fencing??????

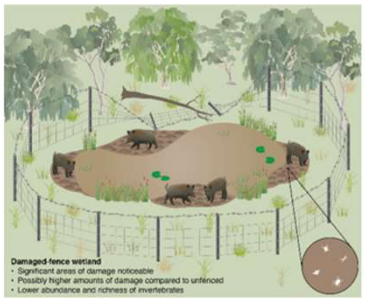


D+

Unfenced

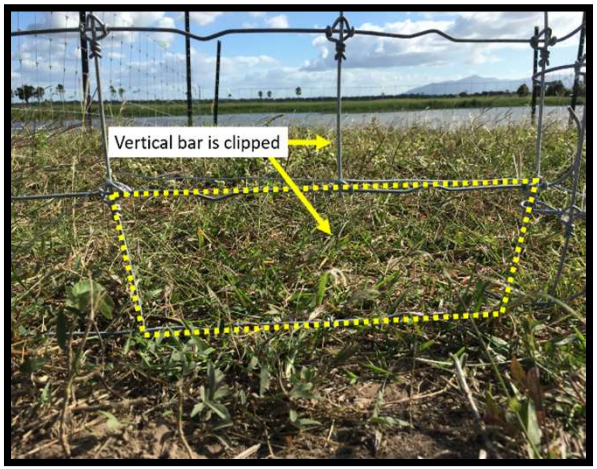
A+

Well maintained and built fence

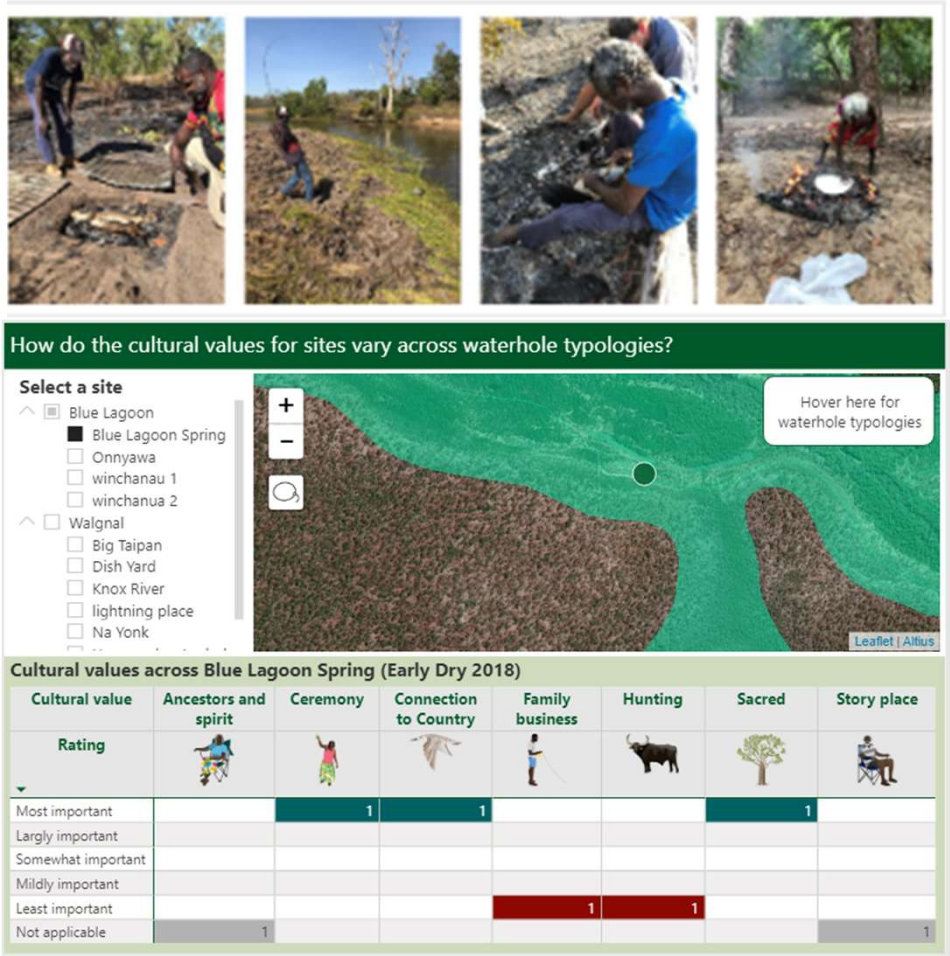


D+

Poorly maintained and built fence



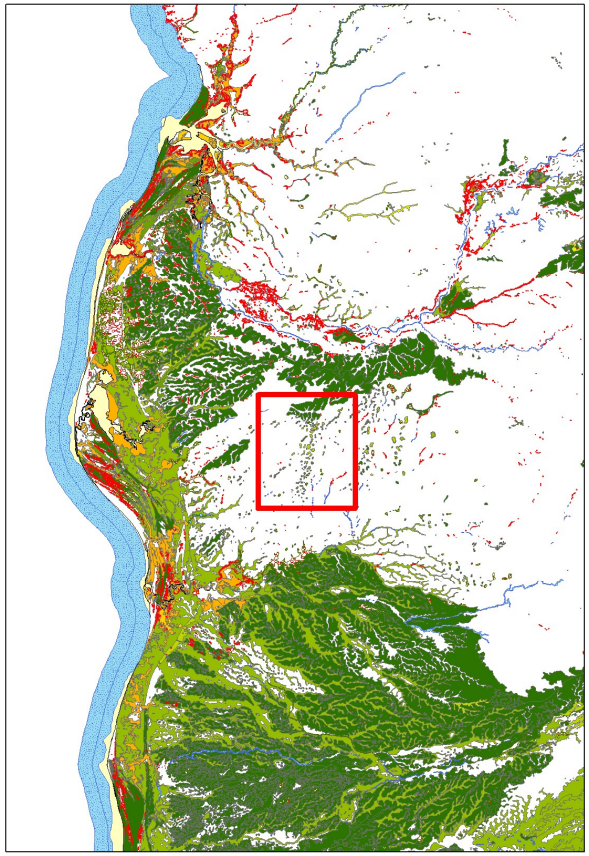
Understanding local values is critical

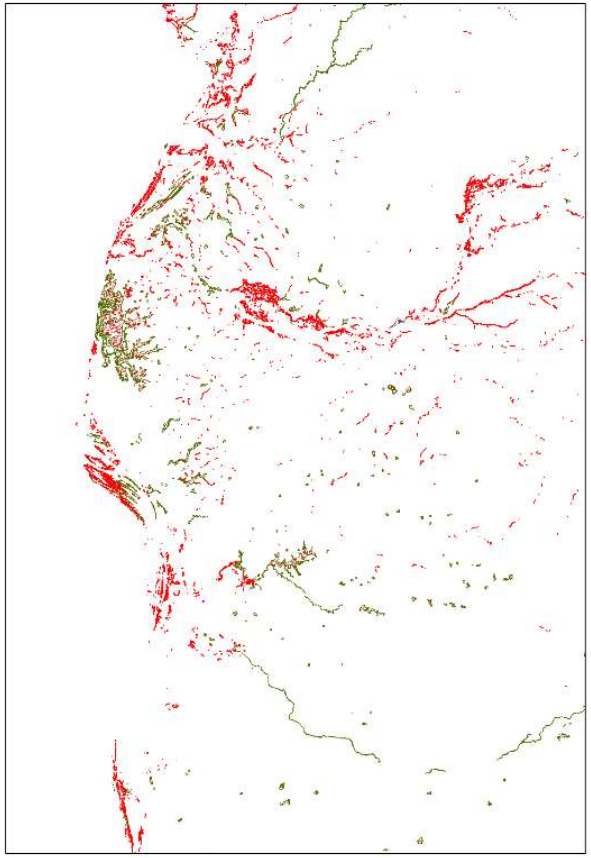


Cultural value	Ancestors and spirit	Ceremony	Connection to Country	Family business	Hunting	Sacred	Story place
Rating							
Most important		1	1			1	
Largly important							
Somewhat important							
Mildly important							
Least important				1	1		
Not applicable	1						1

Water hole Typology

Identifying late dry season pig refuges.





Training and implementation in partnership

Take away messages

- Its important to ensure activities don’t stop when projects finish
- We spent just as much time on planning and monitoring for land managers (dashboards, methods, typology).
- Tools need to be built for multiple skill levels, with explanatory material so that people can use them without pre-knowledge.
- Consistency of monitoring data and methods to allow cumulative and cross regional assessment to occur between years.
- Partnerships are critical to success.
- Social and cultural context cannot be ignored for national, regional and local planning.

Northern Australia Environmental Resources Hub

National Environmental Science Programme

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Australian Government's National Environmental Science Program

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Queensland Government

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