



National Environmental
Research Program

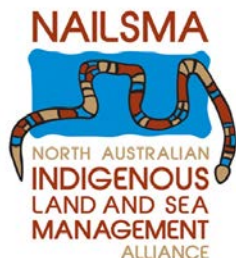
NORTHERN AUSTRALIA *hub*

Knowledge sharing partnerships to explore and protect freshwater places

World Indigenous Network Conference
Darwin

Monday 27 May 2013

C. Davies, Y. Akune and N. Walsham



Kimberley
Land Council

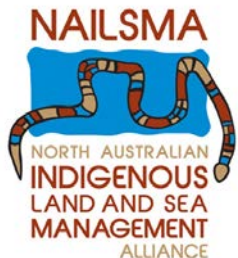




National Environmental
Research Program

NORTHERN AUSTRALIA *hub*

PROJECT PARTNERS
Nyul Nyul Rangers
Kimberley Land Council
University of Western Australia
Griffith University
NAILSMA



Kimberley
Land Council



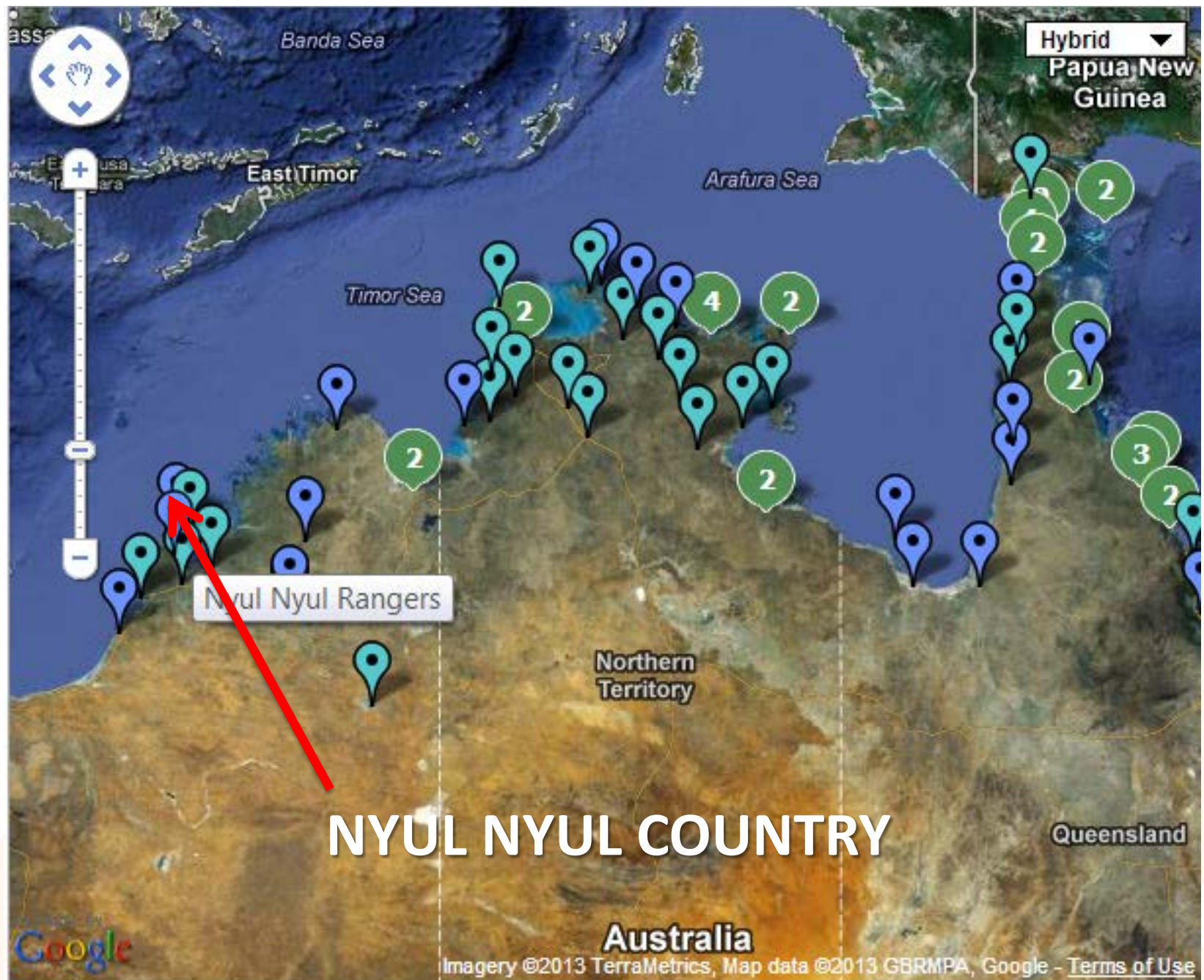


THE NYUL NYUL RANGERS SUPPORTED BY THE KIMBERLEY LAND COUNCIL



Kimberley
Land Council





SPRINGS



BEACH SAND
DUNES



WEEDONG



BUNGADUK

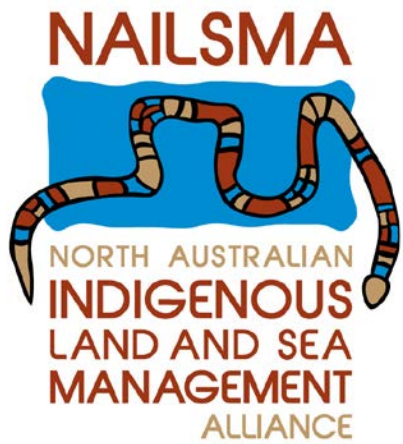


YARP





LAKE LOUISA



North Australian Indigenous Land and Sea Management Alliance Ltd

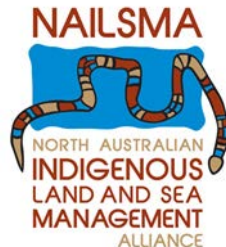
NAILSMA is an Indigenous led organisation that empowers Indigenous people across north Australia to care for country and future generations of Australians.



Looking after Our Country... Our Way

NAILSMA's approach

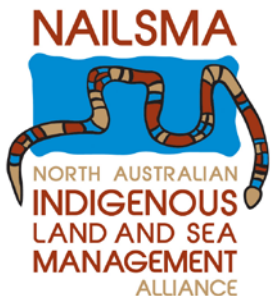
- Providing practical solutions that support Indigenous people and the management of their lands.
- Assist Indigenous people through livelihoods and employment on their country.
- Culturally appropriate programs focusing on Indigenous knowledge and contemporary science.
- Supporting Traditional Owners to contribute to healthy country and healthy people on traditional lands.



Looking after our country... our way

Programs

- I-Tracker
- Saltwater People Network
- Carbon Program
- Water Resource Management
- The North Australian Indigenous Experts Forum on Sustainable Economic Development



Looking after Our Country... Our Way

WHAT IS

I-Tracker



CyberTracker



- I-Tracker, is short for Indigenous Tracker;
- It gives Indigenous communities the power to record, analyse and map land and sea management data locally;
- Provides a network across north Australia of ranger groups collecting and managing information;
- Partnering with scientists and researchers; and
- Provides training, development and technical support for Indigenous rangers.

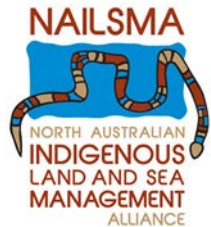


I-TRACKER DATA COLLECTION TOOL

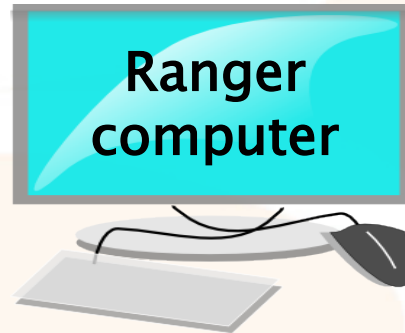
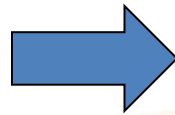


CyberTracker

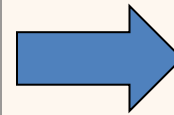
CyberTracker and applications installed onto ranger computer and customised



I-Tracker applications created in consultation with Traditional Owners, scientists, data other users



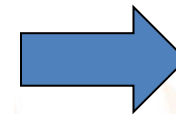
Ranger computer



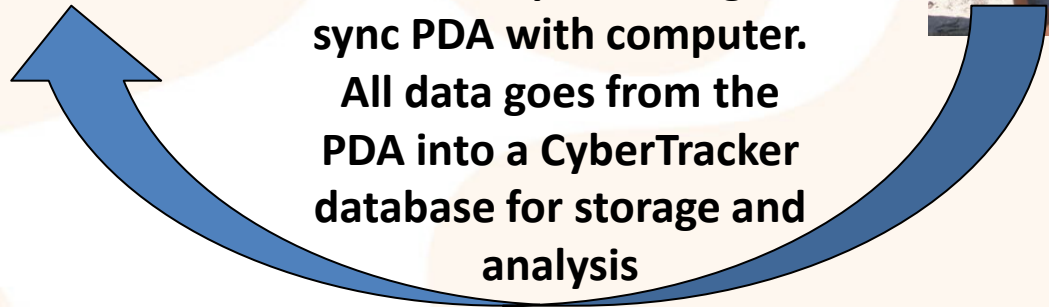
Application installed onto the PDA



PDA's accompany rangers on all patrols



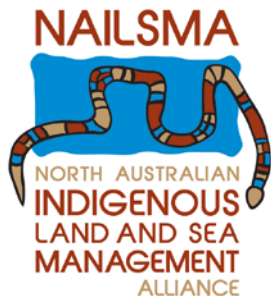
Patrol complete, rangers sync PDA with computer. All data goes from the PDA into a CyberTracker database for storage and analysis



Nyul Nyul Rangers and I-Tracker



- Nyul Nyul Rangers part of the NAILSMA I-Tracker network
- Already using I-Tracker applications for patrols
- Raised issue of freshwater management with NAILSMA and UWA staff during training visits



Looking after Our Country... Our Way



**Management
issues**





THE PROJECT

- Collect baseline data to monitor change
- Building local capacity for freshwater research and monitoring (training and data collection tools)
- Develop a plan for ongoing freshwater monitoring
- Create a customised I-Tracker tool to collect the data



THE RESEARCHERS

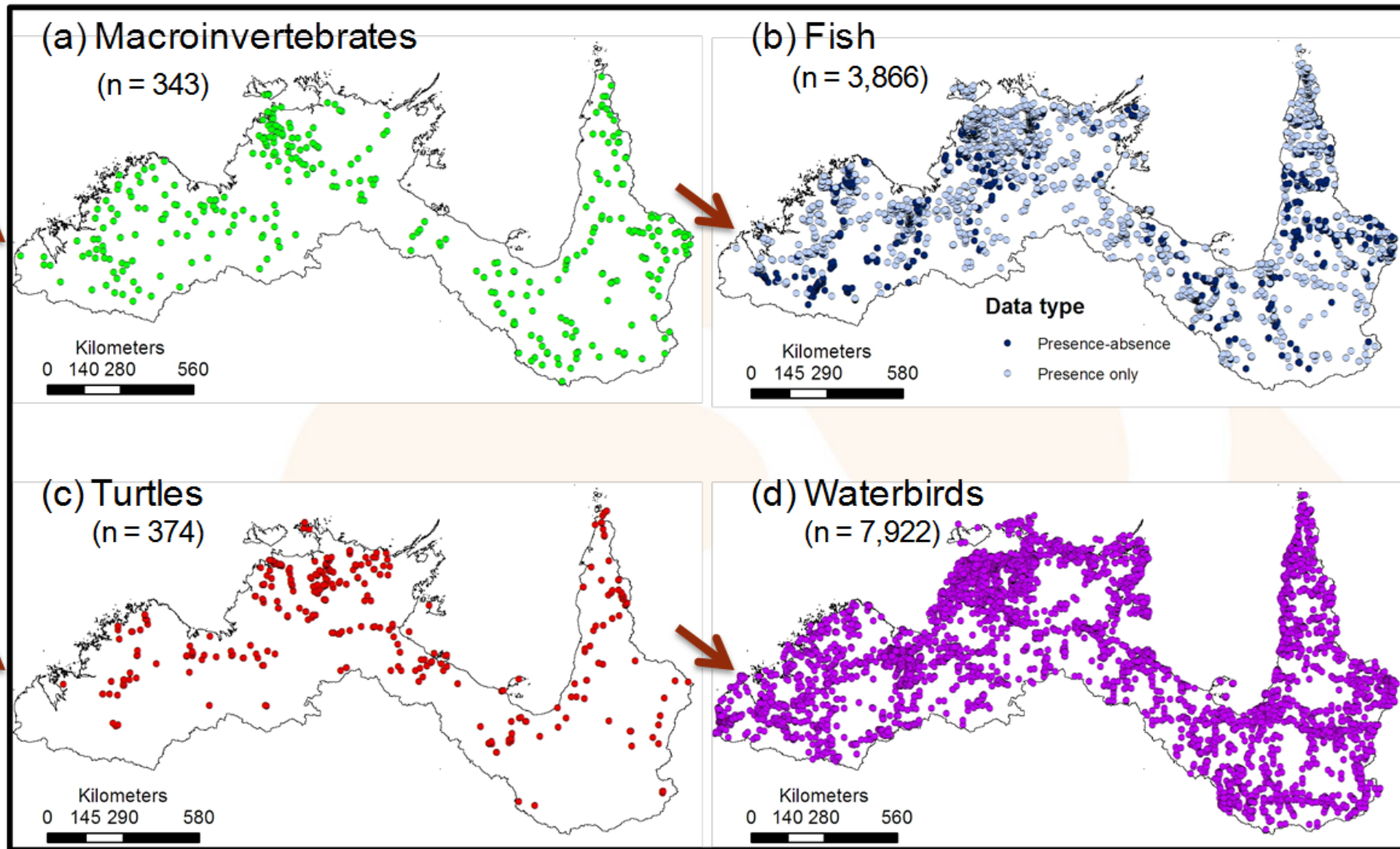
Doug Ward and Dominic Valdez:
Australian Rivers Institute, Griffith Uni



Rebecca Dobbs, Neil Pettit and Brad
Pusey: Centre for Excellence in Natural
Resource Management, Uni of Western
Australia



SURVEYING FRESHWATER LIFE



Each dot is a place (sample site) where someone has collected information about what types of animal are found there



FRESHWATER FISH: BRAD PUSEY

EMPIRE GUDGEON

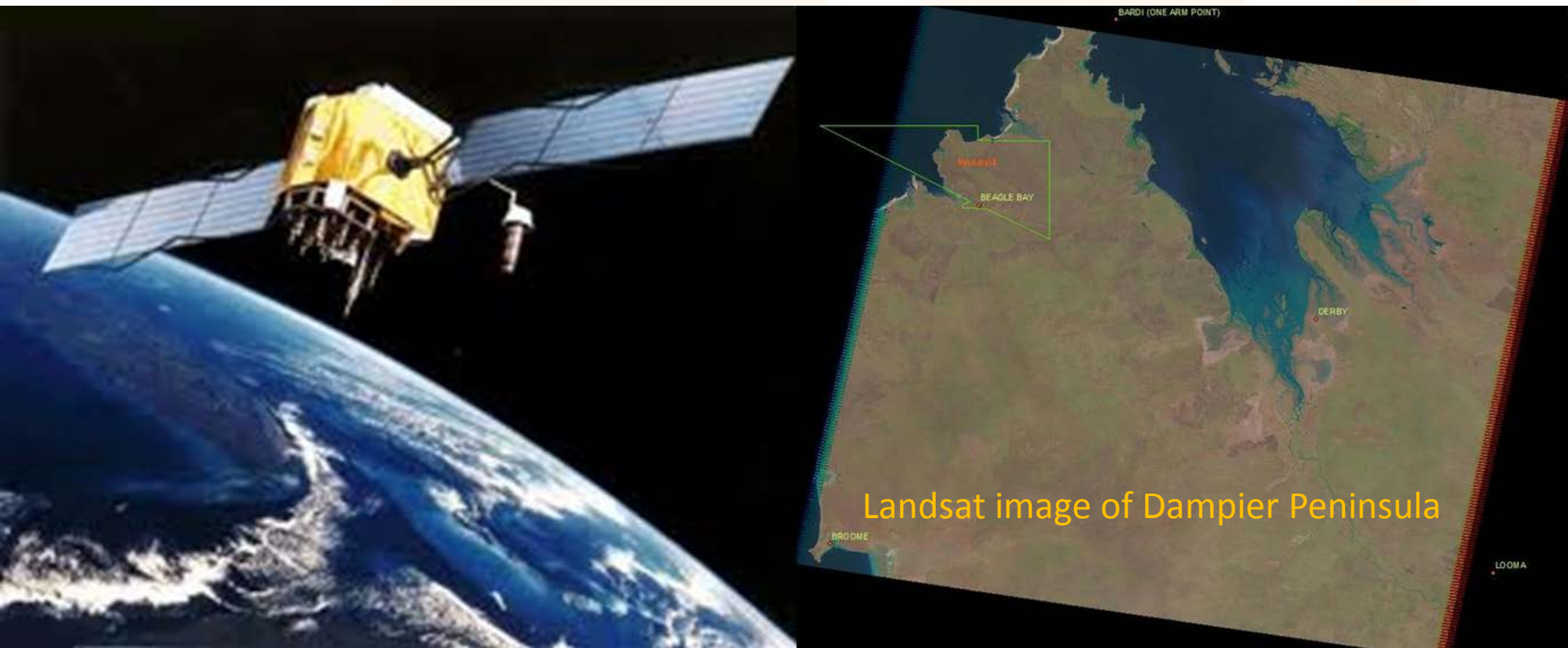
OXEYE HERRING

A VERY SPECIAL FISH



MONITORING WATERHOLES USING SATELLITE IMAGERY: DOUG WARD

- Landsat data is FREE and easy to get
- Takes a image (like a photograph) of the same place every 16 days
- Has a 20 + yr image archive that is easy to access



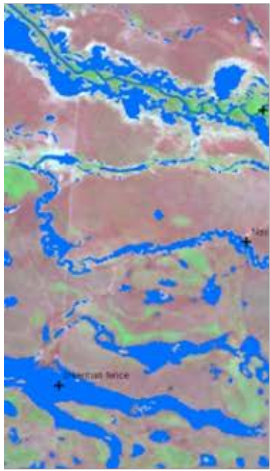
Landsat image of Dampier Peninsula

Landsat data can help identify

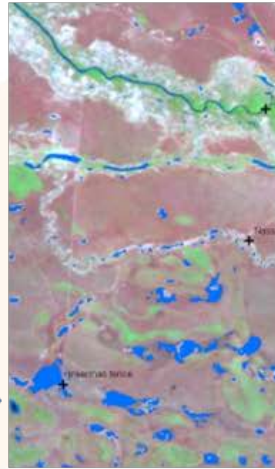
- How much water is in the waterholes

Wet season flooding

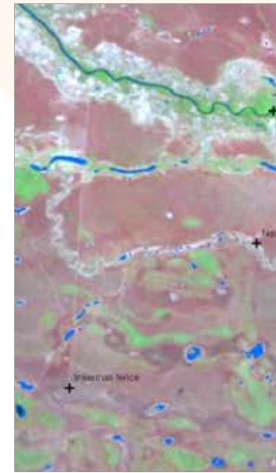
Dry season waterholes



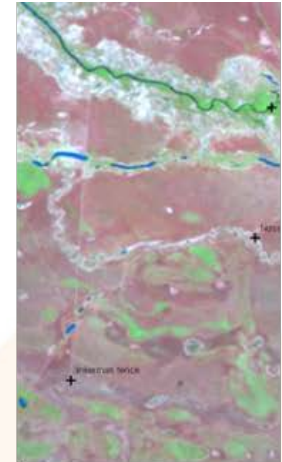
March



April



May



August

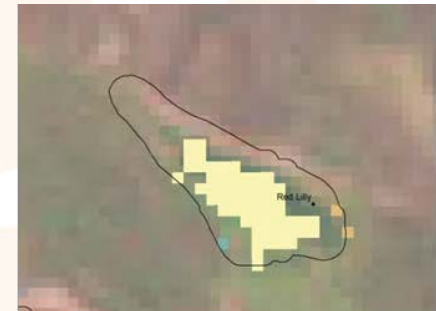


Landsat data can help identify

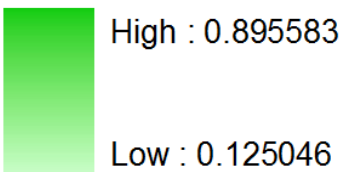
- How waterhole turbidity changes over time
- How many water plants are growing in the water



Turbidity (NTU) Value



NDVI Vegetation Cover Value



June 2010

August 2009

October 2009

WATERWAYS EDUCATION: REBECCA DOBBS AND NEIL PETTIT



Training



Awareness



Research

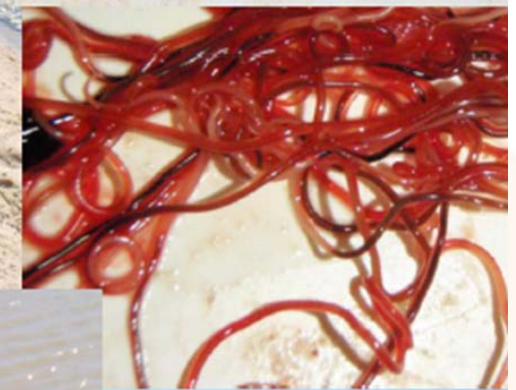
MANAGEMENT



Monitoring

REBECCA DOBBS AND NEIL PETTIT

- Collection of lots of baseline data i.e. water quality, water plants
- Adapting existing sampling techniques





- Fish and macroinvertebrate surveys
- Measuring water quality
- Vegetation assessments

Field activity



*THANKS,
QUESTIONS?*

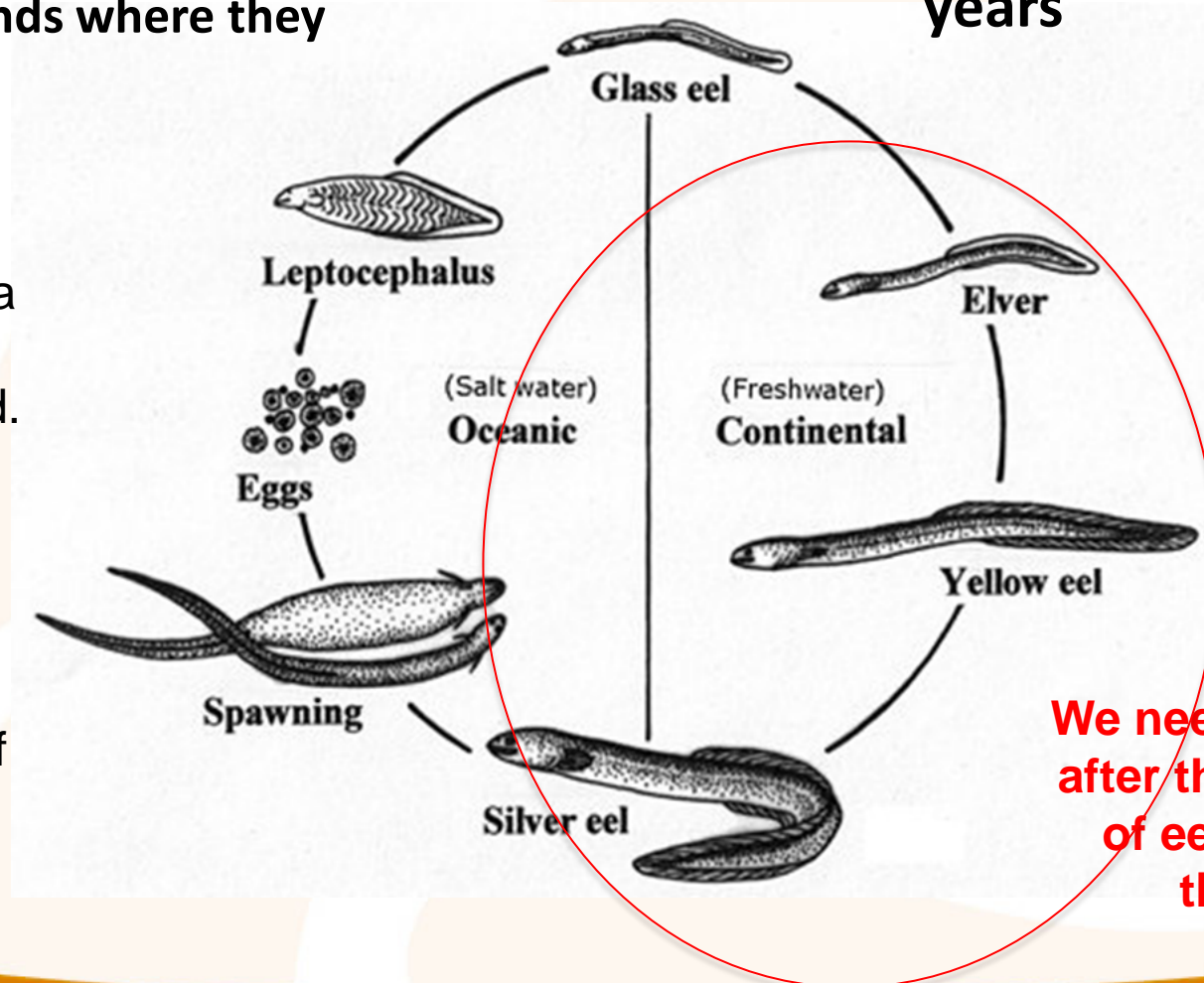
Fieldwork starts this weekend!

FRESHWATER EEL: A VERY IMPORTANT FISH!

Larvae float around at sea for up to 200 days, make it back to Kimberley coast where they move back into creeks and wetlands where they grow into adults

Move out to sea and then move a long way to breeding ground. Eel found on Dampier Peninsula believed to spawn in deep water (300m) off Sumatra in Indonesia

Adults live in freshwater and live to be very old – more than 20 years





FRESHWATER RESEARCH AND MONITORING

Freshwater places are culturally important and are coming under increasing pressure from threats including feral animals, sedimentation, waste water discharge and surface or groundwater extraction for mining, agriculture etc

Standard freshwater monitoring techniques often require complex or expensive equipment, processing of samples off site and high level interpretation of results



PROGRESS

- Initial community consultation completed and resolution to support project passed
- UWA Animal Ethics permit in place
- UWA Human Ethics application approval in progress
- Project proposal approved by Kimberley Land Council Research Ethics and Access Committee
- Research agreement developed by NAILSMA and KLC currently with research partners for signoff
- Scoping trips to identify possible sampling sites completed
- First major sampling trip starts this Saturday

