



SEQUEST report

November 2023



Where it started

- popular undergraduate class at UQ + Marine Society of UQ -> MSUQ member activities
- MSUQ SEQUEST (funding from the Goodman Foundation)

Activity: deploying and retrieving ARMS structures and cataloguing invertebrate recruitment

Data: invertebrate species counts at 2 points in the Bay, 3-6 months

Data quality: student IDs with tutelage of in-person academic experts

Data use: none so far



TMBF & SEQUEST- 2022

Championed by Ian Tibbetts -> other TMBF member universities interested

Co-operative inter-uni framework **"Censusing the Aliens"** funded by TMBF (student effort)

Funding from **Kofi Foundation**, based on descriptions of SEQUEST (untied funding) \$5,000

Funding from **Wettenhall Environment Trust**, for SEQUEST (tied funding) ~\$10,000

Decision to facilitate a "collaborative SEQUEST" across our member universities

Initial conversations with MSUQ, other universities + testing SEQUEST public engagement

- identified capacity and interest (unis, management applications, community groups)
- established potential (data needs and application, possible pathways for sector-wide engagement)



TMBF members and the originals of SEQUEST

Ian Tibbetts (TMBF/UQ)

Sheridan Rabbitt (UQ)

Bernie and Sandie Degnan (UQ)

Mel Staines (MSUQ SEQUEST officer)

Chris Frid (GU)

Kylie Pitt (GU)

Ben Gilby (UniSC)

Chris Henderson (UniSC)

Jacky Croke (QUT)

Network discussions

Dan Ware (Gold Coast Waterways Authority)

Bob Westerman (Gold Coast Shorebirds)

Dave Brewer (Independent Consultant)

Ken Mewburn (Take Action for Pumicestone Passage)

Narelle McCarthy (Sunshine Coast Environment Council)

Bob Crudgington (Redcliffe Environmental Forum)

James Udy (Science Under Sail)

Conversations at events and a trial of public interest...

Karragarra SeaMarket

Outcomes 2022

What we learned

- **multiple streams of existing or prior activity** in 'grey' (unrecognised observations) in Moreton Bay
- multiple examples of how effort could be directional, and the **data have real application** (not only for 'management' but for community environmental orgs) eg:
 - Curlew Banks rare shorebirds, no protection because no data
 - GCWA compare high/low traffic
 - QYAC interest in Quampie recruitment and growth locations
- **widespread support / excitement at potential** uses for data
- many suggestions for additional data streams

Challenges for TMBF:

- manage expectations!
- build a scalable / modular framework (sustainable growth)
- overcome logistics
- build awareness of the name
- STUDENT ENGAGEMENT



SEQUEST planning weekend

MBRS January 2023 - Outcomes

MISSION

Make it Matter for Moreton Bay (not official!)

PURPOSE

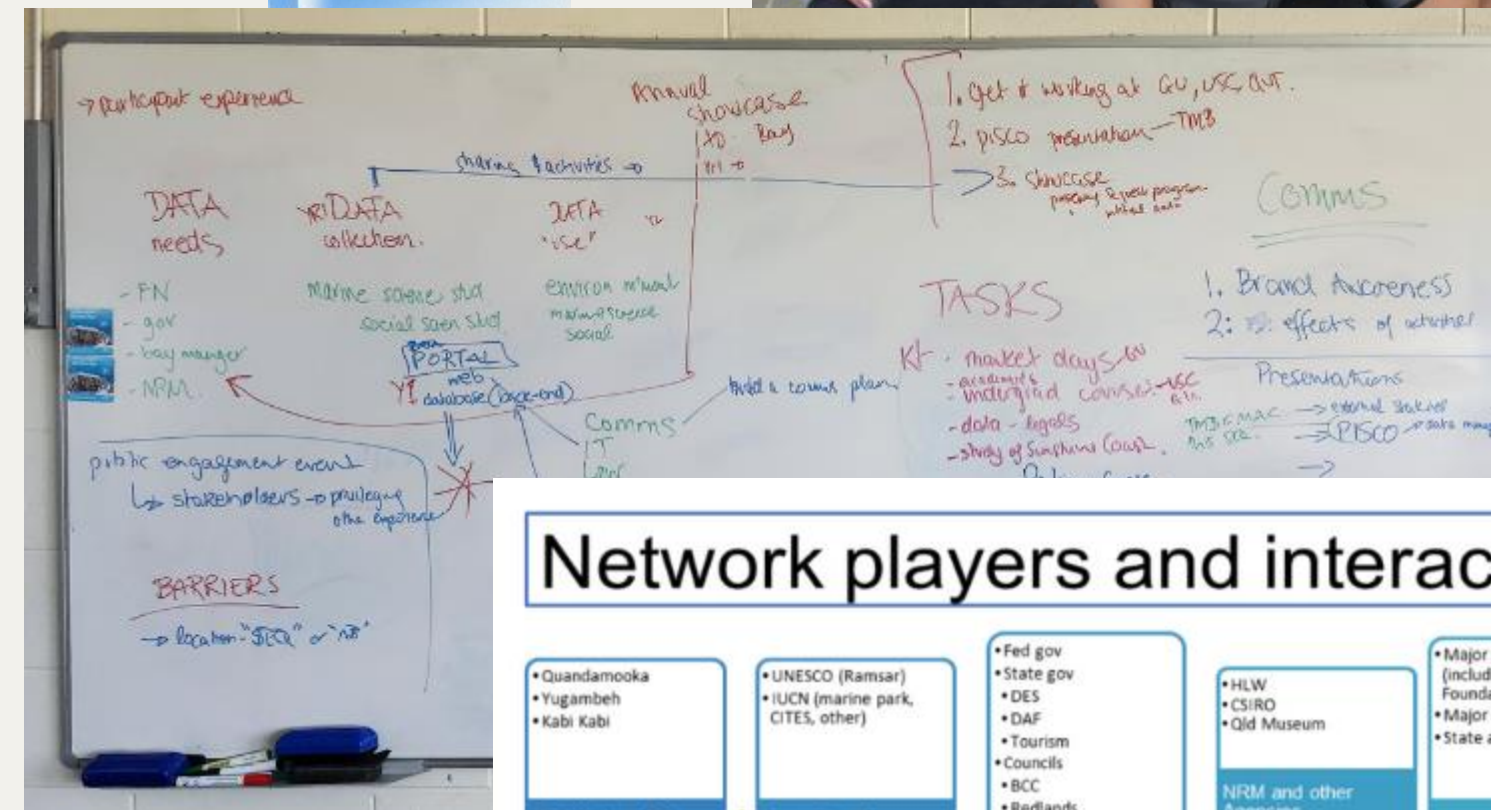
"SEQUEST activities are intended to...."

Ecological

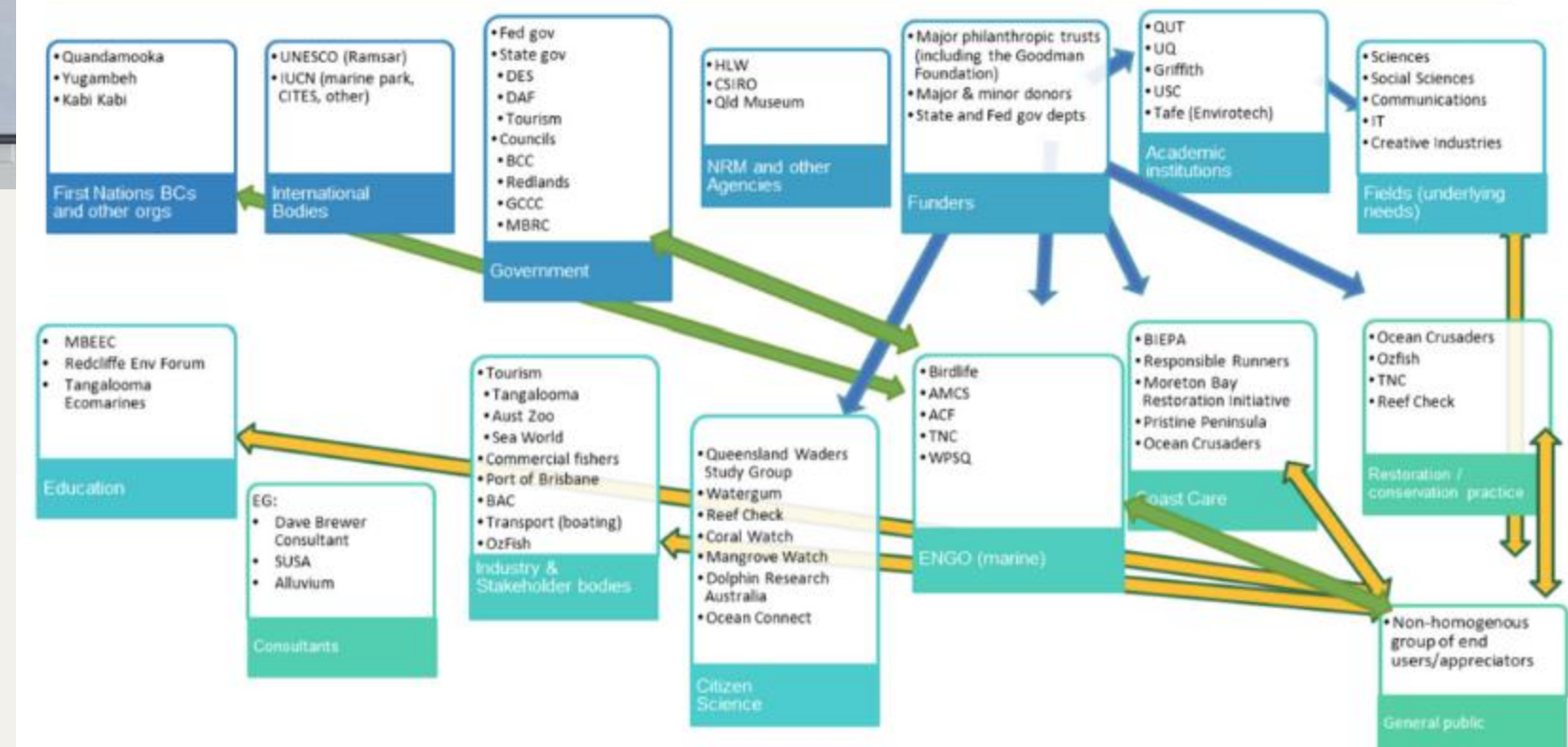
- Identify data gaps
- Collect data to fill gaps
- Facilitate use of data for adaptive management of Moreton Bay

Societal

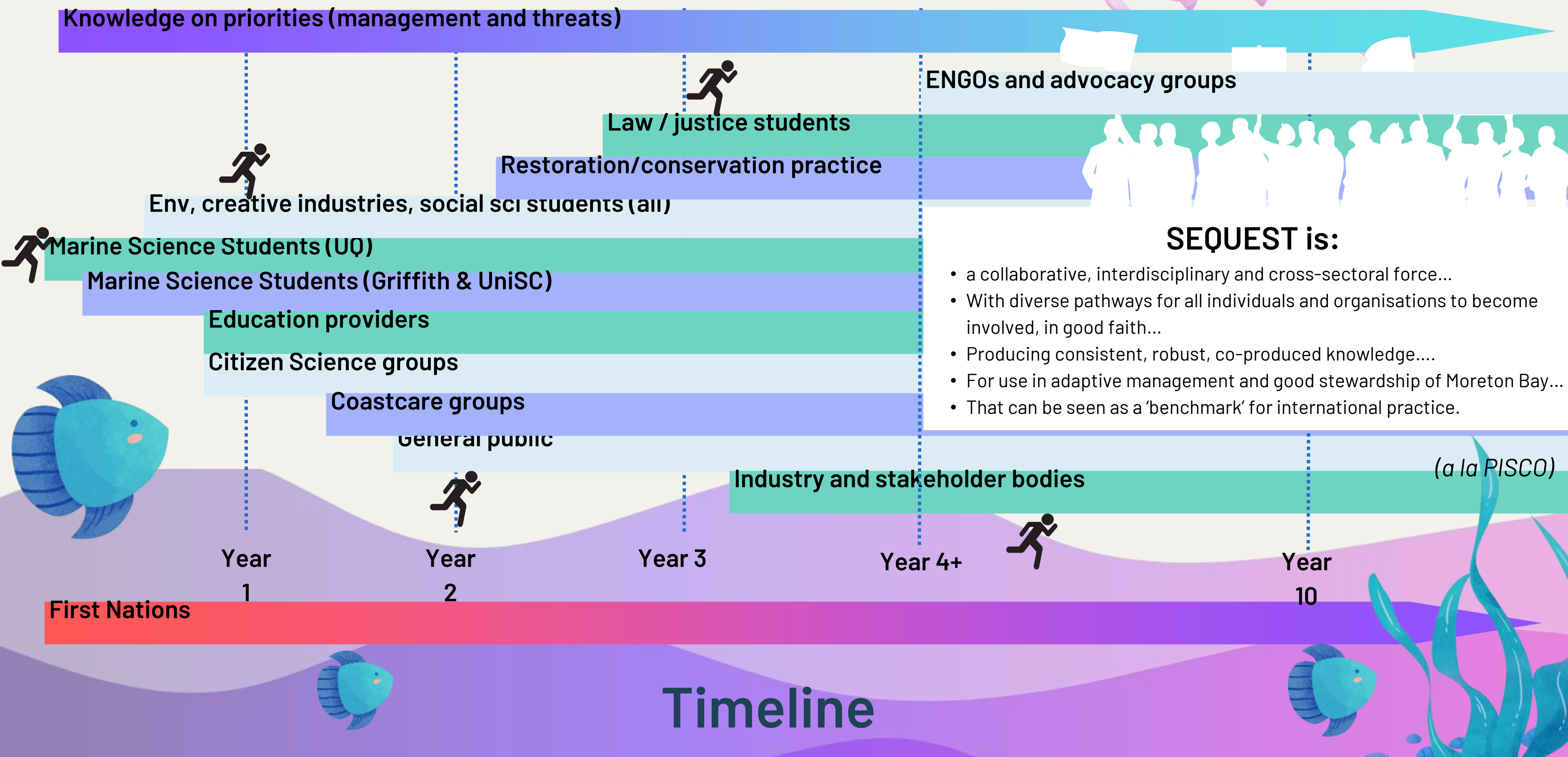
- Build community stewardship
- Foster collaborative and collegial effort
- Build bonding, bridging and linking capacity for marine outcomes in SEQ.



Network players and interactions



SEQUEST planning weekend MBRS January 2023 - Outcomes



2023

CHALLENGES & RESPONSES

Big Ideas / false paths

- due diligence and
- managing expectations

Long time-frames for permits for UniSC + Griffith

- Ian's permit for UQ SEQUEST

No First Nations connections

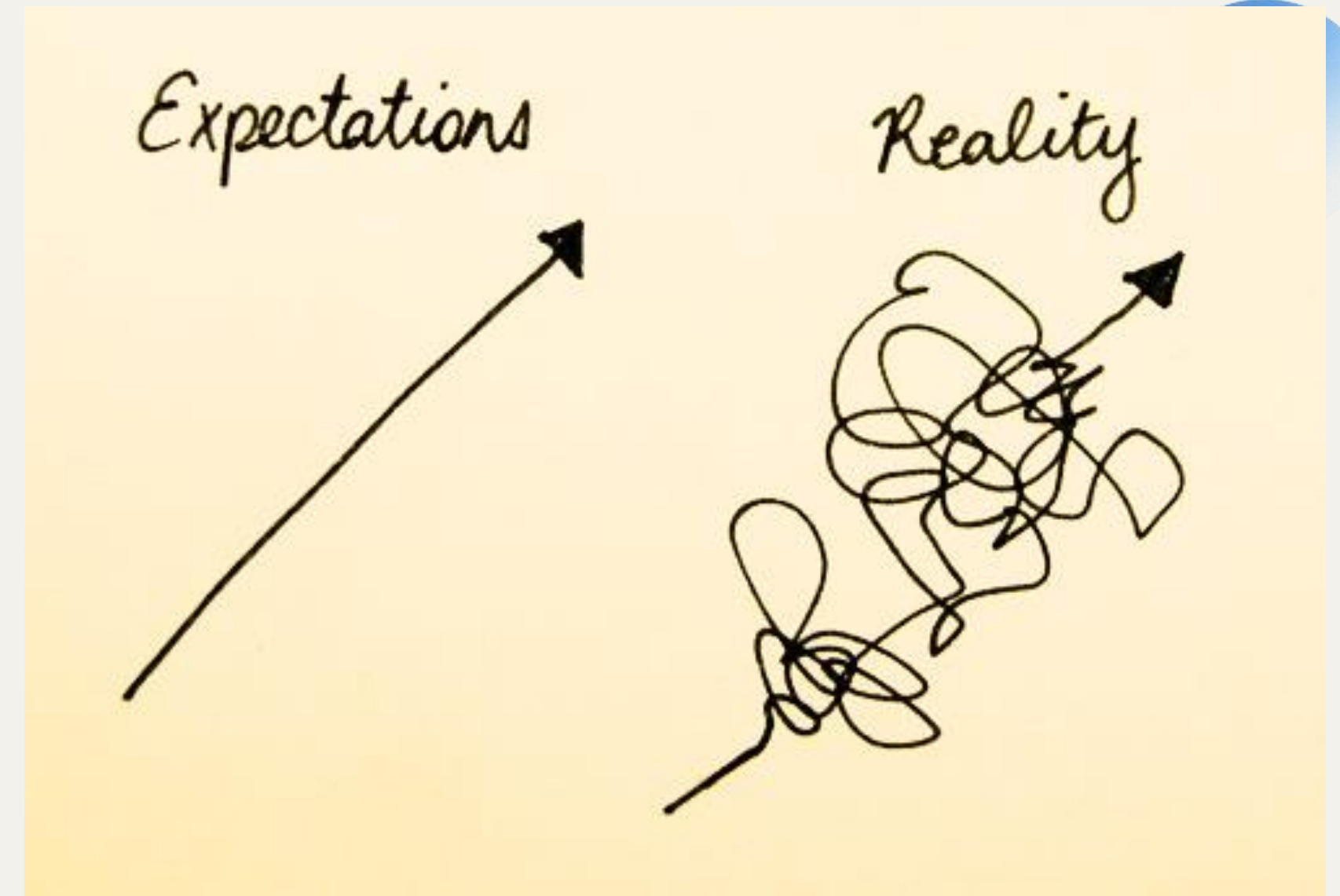
- outreach and some interest but it didn't eventuate

Different capacity at different unis (UQ already resourced)

Different logistical requirements at different unis

Collaborative model -> Capacity-building model (each uni)

- TMBF pay time for 2 x UQ SEQUEST officers to build resources for other unis
- TMBF provide capacity-building 'kickstarter' grants to UniSC and Griffith (equipment and HDR wage)
- Look for collaborative opportunities



SEQUEST activities will

- Take place in the marine environment of South East Queensland
- Use accepted, standardised, methods for collection of ecological data
- Contribute observations (data) to the SEQUEST open access data community for better understanding of Moreton Bay
- Be accessible free of charge to Griffith University students
- Be conducted in a spirit of open learning and peer exchange, in tandem with student-driven initiatives at [other universities]

Capacity-building model

- 2 x UQ casuals to build resources for a new, collective SEQUEST

Series of “how to” documents for anyone to deliver SEQUEST



SEQUEST data collection

community@moretonbayfoundation.org [Switch accounts](#)

Not shared

Data Collection activity

☒ Settlement plates

☐ Seagrass

Clear selection

SEQUEST1 Dashboard

Settlement Plates Page 1 of 3

Institution

remove this

Next

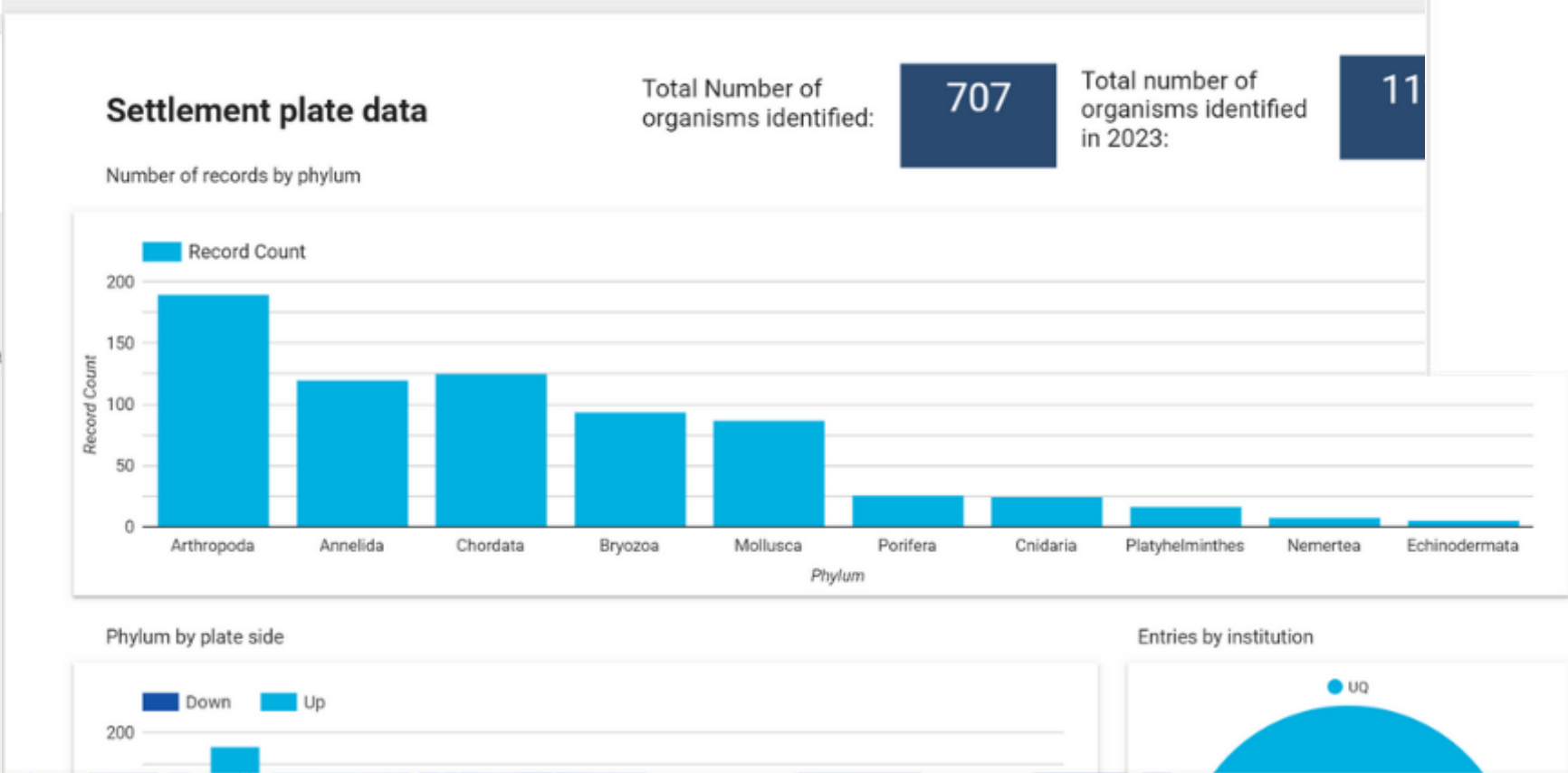
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Data Entry Portal

Public Dashboard (data visualisation)





SEQUEST

ARMS Day/Weekend Event Protocol & Checklists

This document is split into 3 parts, in the same way that an ARMS analysis day/weekend will have 3 phases. These phases include:

1. before/preparation - page #
2. during/analysis - page #
3. after/clean-up - page #

Following the steps within each phase will ensure that you and your SEQUEST team have a successful and enjoyable event, with valuable data being collected.

A SEQUEST “day” can be hosted in any appropriate university wet lab that is able to facilitate seawater drainage.

An example of a “SEQUEST weekend”

Building Resources

2. 'Kickstarter' grants for UniSC and Griffith

2 x ARMS structures in northern Pumicestone Passage

- Coast Guard support
- Jetty apartments (Golden Beach)



UniSC



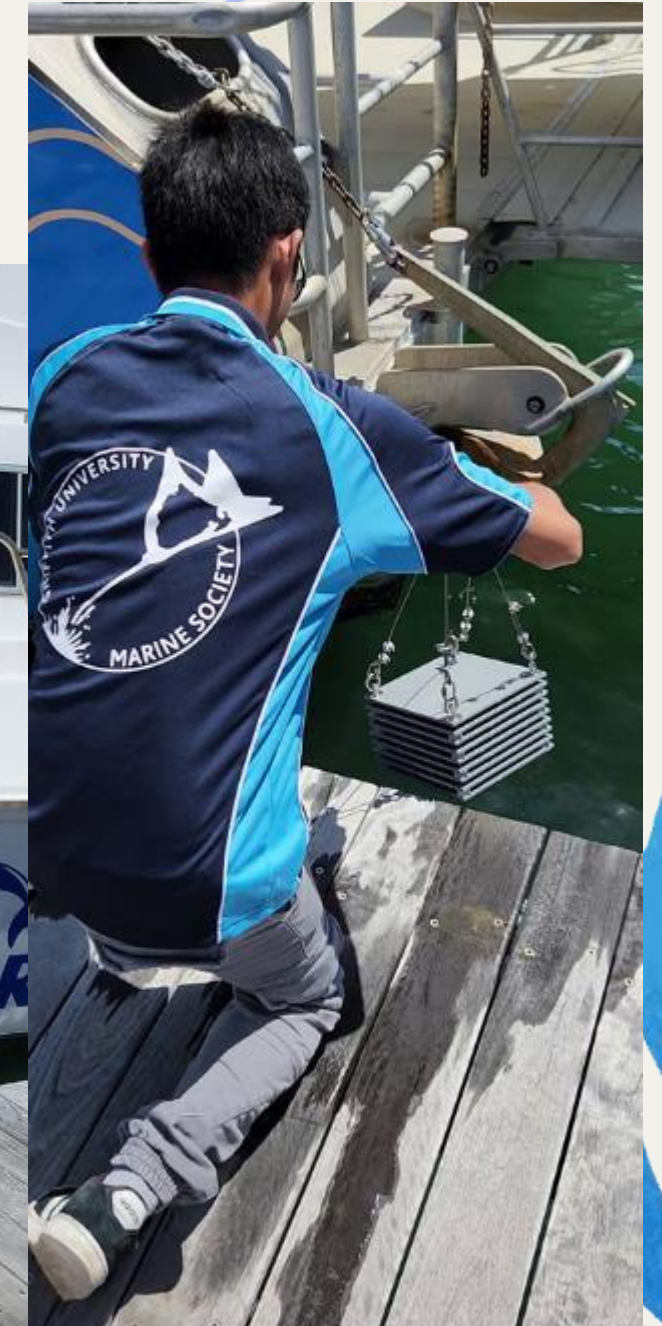
1 x ARMS structure in Broadwater

- Seaworld

1 x going in soon

- Jabiru Island

Griffith Uni



Deployments

3. Collaborative opportunities

Recent collaborators

Jacobs Well Environmental Education Centre - ARMS data

Moreton Bay Environmental Education Centre - ARMS data + BRUVs and a lot of other spatially explicit data

Want to contribute / collaborate

Dave Brewer Consulting - ARMS or shore surveys for QYAC

Bribie Island Environmental Protection Association (Darren Jew) - ARMS, marine mammal sightings

Running Wild, Russel Island (Terry McParlane) - workplace training seagrass surveys

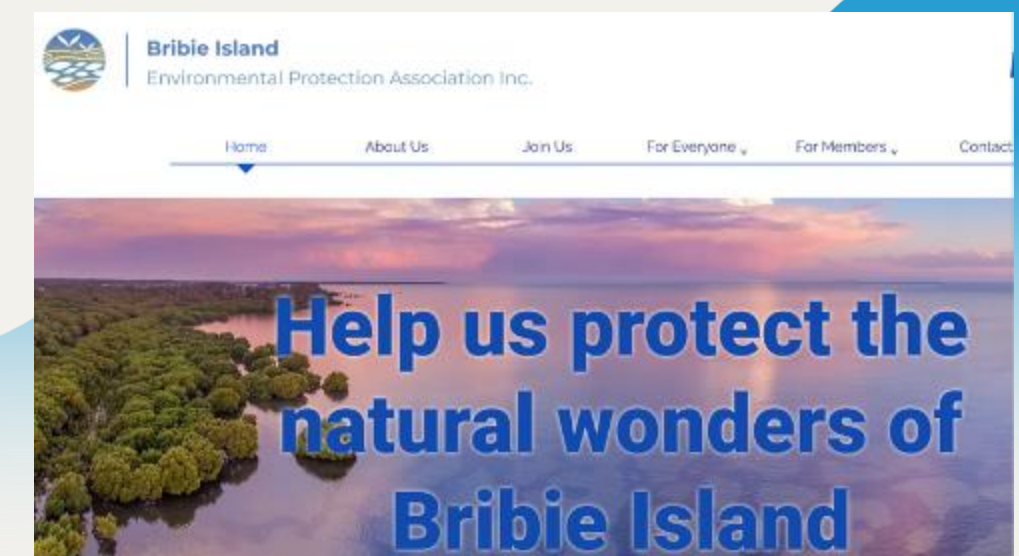
Diana Kleine & MSUQ CoralWatch - coral observations

Redcliffe Environmental Forum - community data gathering days / secondary students

General public - report sightings of 'alien' species



Ticking other boxes.... SEQ council of mayors
"healthy kids" activity over the next decade.... ???



Capacity-building model

JWEEC knowledge exchange



SEQUEST KNOWLEGE EXCHANGE

- comparison of methods
 - data confidence levels
 - existing data and compatibility
 - data repository and entry
 - Next steps
-
- **energy and momentum**
 - **connections, friendships, ideas, invitations**



2023

OUTCOMES FOR THIS 'PILOT'

- Shift to capacity building model worked well and the shift to collaboration is promising
- Didn't get to creative industries or social science students but...
- Education providers (JWEEC & MBEEC) on board - data already collected
- *pathways* to QYAC and Kabi Kabi identified

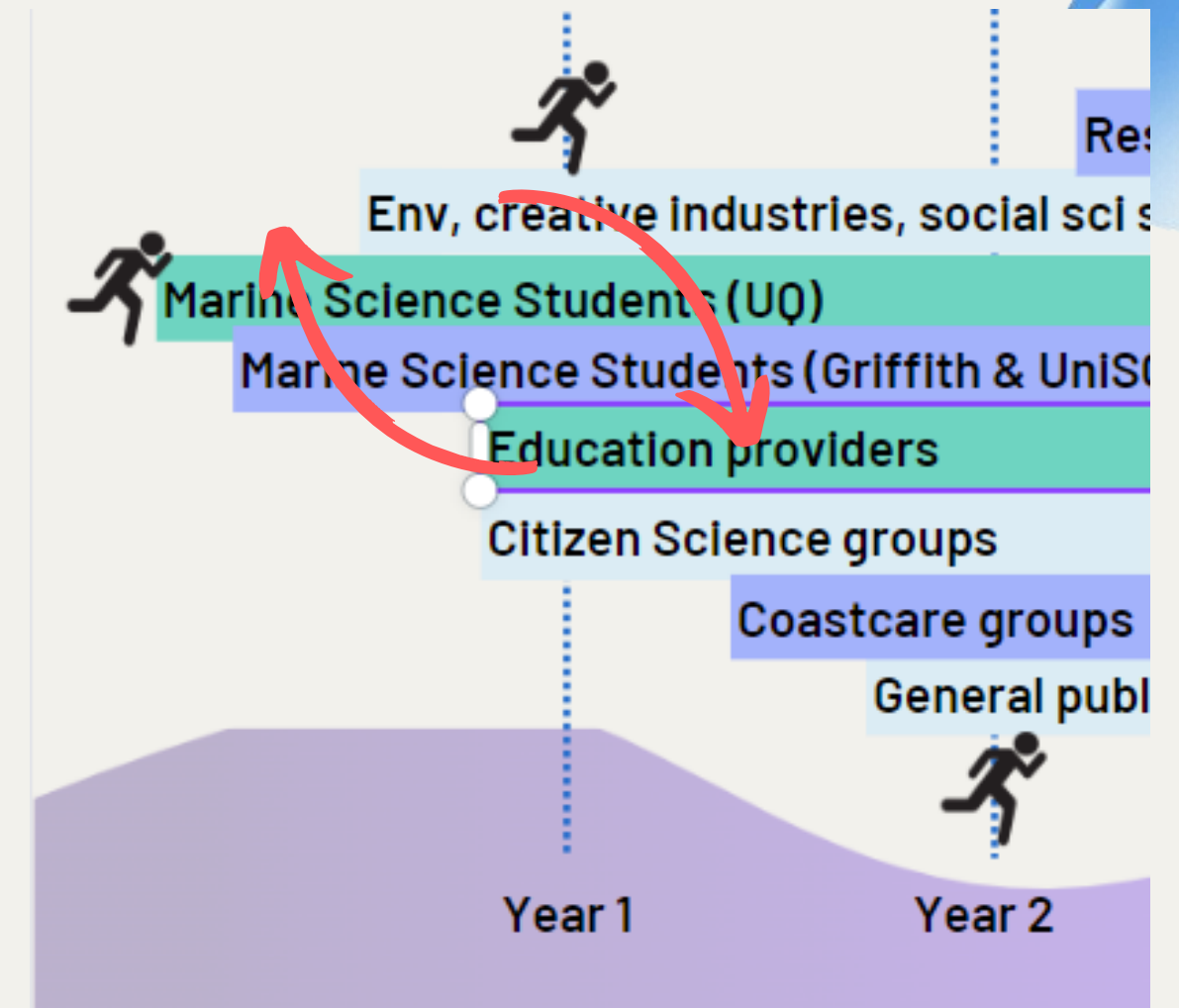
**3 unis and 2 Qld State Education centres,
QUT eager to be involved**

6 SEQUEST data collection points (2 north, 2 central, 2 south)

**Thousands of ARMS / species data records (central and south MB)
over ~5 years**

**SEQUEST leadership team across 3 unis
Community partners & collaborators**

**Opportunity for new types of data
Interest in use of the data***



HOME ABOUT CHANGING OCEAN PROGRAM DOWNLOAD DATA BLOG COP SUPPORT VIDEOS

COURAN COVE 02.11.2022 (LIVINGSTONE CHRISTIAN COLLEGE)

Biotic and abiotic data recorded at Couran Cove Marina, South East Queensland, Australia.

ARMS Plate 1 Topside Couran 02.11.2022 (JPEG)	Download
ARMS Plate 2 Topside Couran 02.11.2022 (JPEG)	Download
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ARMS Plate 5 Topside Couran 02.11.2022 (JPEG)	Download
ARMS Plate 6 Topside Couran 02.11.2022 (JPEG)	Download

Unis

Griffith University

- first lab day next week
- second deployment next month
- **UniSC**
- first lab day in 2 weeks
- second lab day will be in the new year

Wrapping up this Pilot (2023)

TMBF

- attend 2 lab days
- social media and newsletter
- acquit to Wettenhall and courtesy report to Kofi
- work with 2 UQ casuals (final hours) on a few changes to resources - to finish end Nov
- provide requested resources for Di (MBEEC) and Iain and meet again re paths for non-ARMS data

data quality and data repository opportunities via Knowledge Hub?

Where to next?

RESOURCING

Immense external support and interest (politicians <-> public)

but.... Stewardship (volunteer) effort is changeable and must be fostered to long-term value

Build a vibe, social momentum

Build awareness and engagement of students & public
Create **additional benefits** (eg course credit, SEQUEST certificates)

Create opportunities for **interaction**

Comms - build external awareness and excitement from polities to organisations to public

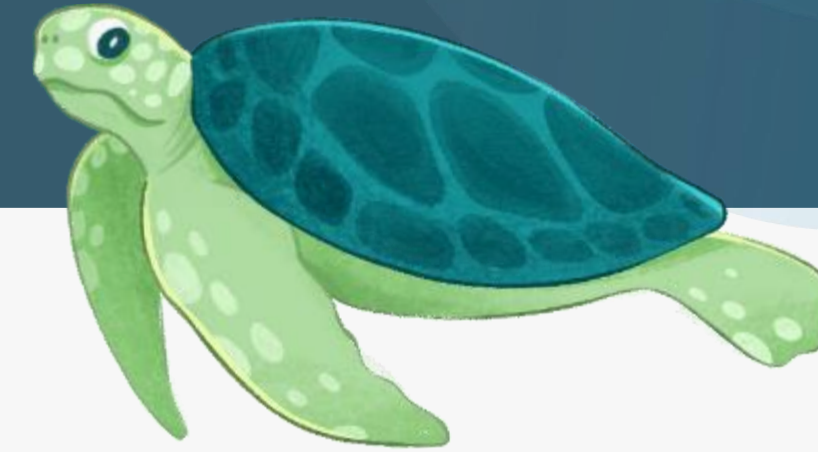
Infrastructure / logistics

Appropriately hosted and enabling future effort

Resolve ownership and data use questions (open source effort / commercial use)

More capacity building - permits, operational model, embedding methods in international practice, IT

Where to next?



FIRST NATIONS

First Nations involvement and mutual benefit must underpin the program

DATA and HOSTING needs

All parties (and others!) need long-term solution for

- data entry methods
- data entry portals
- hosting and administering the data

Engage organisations & add new data types

- supplement student effort with public effort
- existing networks of volunteers
- data useful to the organisations as well

Data quality

Decide and meet data confidence levels. Options:

- \$ for expert guidance at lab days
- \$ for scholarship / bursary PhD / honours student to train AI (like Josh & shorebirds)
- \$ to corporate AI solutions (eg ReefCloud or FishID)
- crowdsource to review photographs (eg Zooniverse)



Unquestionable support ('market') for SEQUEST

Investment needed:

2-3 days/week project management
consultants - First Nations engagement
\$ for additional equipment for additional groups
\$ for data quality (expert guidance or HDR scholarships)
Events and comms
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.
IT - data connection, infrastructure
\$ for SEQUEST entity setup

Thanks to

Kofi Foundation
Wettenhall Environment Trust

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Thank you!

