

SPREP

Pacific Environment Forum 2017

Citizen science and data collection

Tanoa Tusitala Hotel

Apia, Samoa

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Using citizen science to collect data

Talk outline:

- Why do we need data?
- What does citizen science have to offer?
- How can it be used in the Pacific Region?
- Citizen science in action



The importance of information

Management decisions are constrained by available resources so actions need to be prioritised – information enables good decisions

Evidence-based decision making

- What to address – prioritise actions based on need/risk (e.g. human health, infectious disease and waste management)
- Where – hotspots (spatial patterns – Pacific Garbage Patch)
- When – temporal patterns (e.g. Disaster Management for cyclones, usually seasonal)
- Why – impacts (e.g. food security – collapse of fishing industry due to IUU, plastic pollution)
- Performance evaluation – leads to improvements/not repeating mistakes; guides next steps

Current barriers to data collection

Current status of environmental knowledge is incomplete – many, many gaps

Traditional methods for information gathering are expensive and labour intensive

- Some types of data collection may not provide accurate information (e.g. self-reporters from surveys may tell you what they think you want to hear)
- May require equipment and facilities that are expensive and require experts to operate and maintain and therefore not suitable for the Pacific Region

Citizen science offers an additional way to collect information

Role of citizen science

Advantages:

- Broad coverage
- Cost effective c/- traditional methods
- Collect information on a range of variables
- Inclusive - active community engagement and awareness raising

Caveats:

- Good design
- Easy and convenient to use
- Quality assurance process
- Critical mass of citizens to collect information

Applications:

- Biodiversity* (e.g. whale sightings, weeds and pests)
- Climate Change* (e.g. seasonal shifts in flowering; fish movements)
- Human Behaviours* (e.g. waste disposal practices)

Citizen science in action - RedMap

Aims to monitor the massive, hidden, shift in distribution migrations of underwater animals as our waters warm

Australian based and connects research science experts with citizen marine nature experts, fishers and divers



Amberjack and yellowtail sightings in science journal

Redmap's southernmost reports of amberjack (*Seriola dumerili*) and yellowtail kingfish (*S. lalandi*) were published in the science journal *Marine Biodiversity*. Lead author and IMAS scientist Dr Jemina Stuart-Smith says *Seriola* species may be starting to move into new areas; and may represent an early warning of climate-driven changes in the distribution of marine species.



The sea slug *Thecacera pacifica* was spotted by diver Sarah Williamson off the coast of Kingscliff in northern NSW, Australia.

According to marine biologist David Harasti, from the NSW Government, this sighting is noteworthy because this sea slug is not often spotted in Australia. It is more at home in warm waters in places like Indonesia.

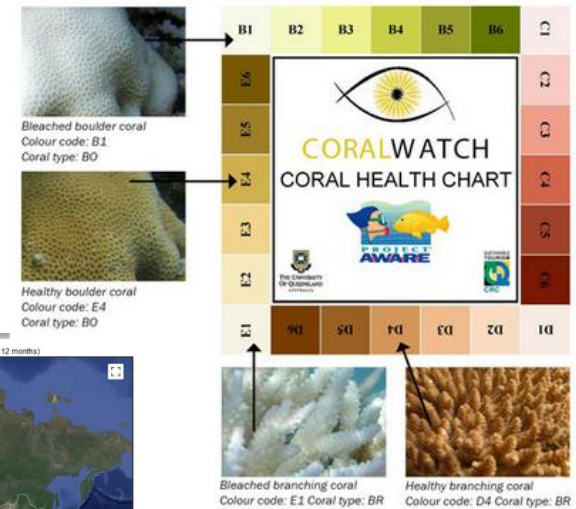
Citizen science in action - CoralWatch

Aim: Provide hands-on monitoring and education tools to increase awareness of reef threats and encourage behaviour change towards a sustainable, low-carbon future.

Coral Health Chart

The main research tool used to monitor coral health. It consists of a series of sample colours, with variation in brightness representing different stages of bleaching/recovery.

In the field, users simply compare colours of corals with colours on the chart and record matching codes.



Video: <https://www.youtube.com/watch?v=KK0UETMImGw>

Source: <http://www.coralwatch.org>