

Chair Report on ISP Meeting 23

23rd of August 2017

Membership: Dr Britta Schaffelke (AIMS) is stepping down from the ISP due to her work commitments. Britta's contribution has been particularly valuable in the area of water quality impacts. Dr Jane Waterhouse (JCU) has agreed to join the ISP to replace Britta. Jane has been coordinating the recent Science Consensus Statement for the Great Barrier Reef, so has a very good understanding of the issues around water quality and marine impacts.

Budget: The Chair noted that the GHHP would have lower income in the coming year as a result of reduced contributions from the Australian and Queensland Governments, and lower contributions from the remaining partners.

Publications: There has been three recent publications in peer reviewed journals from GHHP projects:

- Kroon, F., Streten, C. and Harries, S. 2017 A protocol for identifying suitable biomarkers to assess fish health: A systematic review, *PLoS ONE* 12, Article number e0174762
- Windle, J., Rolfe, J. and Pascoe, S. 2017 Assessing recreational benefits as an economic indicator for an industrial harbour report card, *Ecological Indicators*, in press.

There was a discussion on opportunities to better recognise publications and conference papers arising from GHHP projects and the ISP, with the following recommendations:

- Publications and refereed conference papers should be listed/available on the GHHP website; other conference papers can be included on a case-by-case basis if they do not overlap with published journal articles.
- Contractors should be required to notify GHHP if any publications or conference papers are generated; this requirement can be added to contracts.
- A standard acknowledgements template can be sent to current contractors and ISP members with a request to update the list of current publications.

Projects

A number of projects and issues were discussed in the meeting, as well as a demonstration of the completed Gladstone Harbour Model.

Project ISP005: Social, Cultural and Economic indicators. This project is on-track, and the community survey has been run.

Project ISP006: Gladstone Harbour Model. Dr Beth Fulton has provided the updated model and final report. A proposal for ongoing maintenance of the model is in progress.

Project ISP007: Connectivity. New proposal currently being reviewed.

Project ISP008: Statistical support. This is being rolled into the DIMS contract as the need for independent statistical support is reducing.

Project ISP009: DIMS maintenance and upgrade. The quote for maintaining the DIMS system and adding remaining elements of the report card at approximately \$100K are higher than budgeted.

ISP members suggested that it should be easier and cheaper to add new elements if modules of code can be repeated – this will be explored with DIMS before the new contract is finalised.

Project ISP011: Seagrass. This project is on track, and a draft report for 2016-17 has been provided.

Project ISP012: Cultural Heritage. The Chair reported that several issues had emerged with this project:

- The MC has approved funding for the 2017 project, a contract has been signed with Terra Rosa and a project inception meeting was held on the 2 March.
- Site assessments, including Hummock Hill Island, and reference group meetings are planned from the end of May until mid-June
- There has been a breakdown in relations between Gidarjil and both Terra Rosa and Peter Brockhurst over the conduct of the project in the previous year. This raises the risk that the cultural heritage indicator in the current year may not be supported by the indigenous people.
- A core focus of the project for 2017 is to engage with community elders – this is currently proceeding with other traditional owner groups in the community. An issue is that Terra Rosa did not budget for travel costs for traditional owner people to attend meetings.
- An important component is to include indigenous rangers in the field work. Rangers from Gidarjil are not available, but other people may be sourced. An issue is that Terra Rosa did not budget for salary costs for indigenous rangers to be involved in site assessments.
- Terra Rosa have proposed substantial changes to the methodology, including simplification of many measures and use of spiritual and scientific values to set weightings. It was noted that many indicators, particularly relating to site assessments, would not vary much from year to year.

The ISP recommended that:

- The Chair of the Partnership and/or ISP discuss the conduct of the project and ongoing assessment for the report card with Gidarjil.
- Minor budget support for travel costs for traditional owners and salary costs for indigenous rangers be made available.
- No changes in methodology be made for the 2016-17 report card, but Terra Rosa be asked to provide scores for both the existing methodology and the proposed new methodology to allow evaluation by the ISP. This will be augmented by an external review of the methodology.
- Consideration be given to reporting Indigenous Cultural Heritage on an intermittent basis, e.g. every three or five years, either for the full indicator group or the cultural health indicator only (the site assessments).

Project ISP013: Fish Recruitment Indicators Using Bream Species

This project is on-track, sampling has been completed, and an initial draft of the statistical analysis has been provided. There has been one small change in the way the statistical analysis has been performed – for the 2016-17 data it is more accurate to estimate measures for each site within a zone than simply by zone. It is proposed to use the individual site scores and average them up into zones, as is currently done with seagrass.

Project ISP014: Coral Indicators

This project is on-track, coral surveys will occur in late May and a draft report is due in July.

Project ISP015: Development of Mud Crab Indicators

The project has recently commenced, with CQU (Nicole Flint and group) being awarded the tender in May. The project team are working towards doing surveys in the second half of June (10 zones), as well as trialling the additional mark-recapture surveys (6 zones) and the baited recording underwater videos (BRUVs) (6 zones).

The ISP noted that:

- The sampling window was very late, so the results may have limited value for the 2016-17 report card. It should be viewed as a pilot so that the sampling and analysis in the following year is streamlined.
- Where possible the survey locations should on previous reference sites (e.g. Queensland Fisheries, Leonie Andersen sites)
- Sampling of the initial survey, mark-recapture and BRUVs should be done systematically so that their usefulness can be evaluated.
- Bill Venables (and possibly Sean Pascoe) would be suitable to provide additional expert statistical input into program design and data analysis. This will help to align analysis and coding with other components of the report card.

Project ISP016: Fish Health Case Study

The project has been designed, following a 2015 planning workshop and two review projects in 2016, as a joint project with FRDC to (a) design a monitoring program suitable for estuaries in Australia and (b) conduct a case study assessment in Gladstone. GHHP would contribute \$300K and FRDC \$100K, FRDC would issue the call and administer the project, and a joint steering committee would manage the project. A scope of works has been developed, with approvals to be sought from both GHHP and FRDC. Some initial comments have already been made by the GHHP MC.

The ISP noted that:

- The proposal does involve some risk of loss of control by GHHP. This could be managed by
 - Having a very clear and detailed arrangement with FRDC to ensure that deliverables, responsibilities and messaging are clearly articulated, or
 - Splitting the project into two components: a joint component with FRDC (\$100K each) to design a monitoring program suitable for estuaries in Australia administered by FRDC and (b) a GHHP only component (\$200K) to conduct a case study assessment in Gladstone.
- The Scope of Works could be simplified. Some background information is important to identify the core aims of the project, but this can be reduced to a few paragraphs.
- Coincidence of fish sampling with water quality sampling was not essential.
- It was not necessary to specify four sampling periods per year, only to specify that there should be sampling in wet and dry seasons.
- The proponent should be asked to specify how variability across time (seasons, stress times) and space (zones) could be handled in the research design.
- Proponents should be asked what the costs of recurrent monitoring will be as well as the costs of the initial proposal.

Project ISP018: Development of Mangrove Indicators

Dr Norm Duke (JCU) and Anjana Singh (GPC) attended the meeting to explain progress in the current ERMP project and the potential for mangroves to be added to the report card. Although the current ERMP program is not due to finish until 2020 some initial mangrove data would be available after June 2017. The data could be suitable as a baseline for a report card mangrove monitoring program that included annual analysis of satellite imagery (NDVI) with some ground truthing and supplementary information such as boat based videography or aerial photography.

The ISP noted:

- Potential indicators could be mangrove health (NDVI), aerial coverage (foliage projection), changes in distribution, and species composition
- It is not really clear how much data will be available after June and whether it will cover all of the harbor.
- Only one more data assessment will occur before the project is completed in 2020.
- Many of the ERMP measures relate more to a 'state of the regions' report, i.e. a stock assessment, than to annual indicators that capture variations in condition.
- The time scales for some changes in mangroves is very long (e.g. shore line changes), so may not suit annual reporting.
- It may be more appropriate to assess mangroves intermittently (e.g. every five years).

The ISP recommended:

- Review the data for suitability when it is released
- Review possible indicators for mangrove health
- Identify the purpose and relevant time scales of a mangrove indicator
- Make decision about proceeding before preparing a Scope of Works.

Project ISP019: Coral Coring

This project is on-track, stage 1 is completed, and most cores in stage 2 have been collected. A draft report is due in July.

Stewardship.

The Office of the Great Barrier Reef are organizing a review of the Stewardship indicator. John Rolfe is participating in that review for the GHHP.

Report Card Review.

The Fitzroy Partnership for River Health (Nathan Johnston, Nicole Flint and Luke Ukkola) have been commissioned to perform the review, and presented an initial discussion document and summary. This included three key aims:

- A review of the ways in which the Report Card has met the original GHHP Vision and any missing elements.
- A comparison of indicators and methods used in the Gladstone Harbour Report Card to new advancements and other report cards for Queensland's reef catchments.
- An assessment of consistency in methods used to score and grade the components, indicator groups and indicators within the Report Card (and explanation of reasoning associated with any differences).

The ISP noted that:

- While the key aims were appropriate, the additional detail provided by the team seemed haphazard, so a more focused workplan was required.
- The review would be streamlined if it focused on the report card, and limited any coverage of communication, DIMS, the CONNIE model, or the Gladstone Harbour Model.
- There needs to be more emphasis on simplification and cost effectiveness.
- The review should largely be about 'managing up' to the Management Committee by providing good summaries about the current status and structure of the Report Card, the extent to which it has met the charter, and potential improvements.
- It would be useful to bring in some extra expertise, perhaps at a review stage.

Other priorities

The ISP discussed a number of areas where additional work in 2017-18 could be undertaken to improve the report card. Potential initiatives are listed in approximate order of ISP priority.

1. Produce a separate project report on water and sediment quality.
 - This would provide a better focus on the issue
 - Material could be collated from the Technical report and PCIMP reports
 - Additional statistical analysis on trends could also be included.
2. Weightings for Social, Cultural and Economic indicators
 - Weightings were originally developed as part of the visioning exercise in 2013, and are due for updating in 2018
 - Workshops can be run with community and experts to revisit aims and weightings for report card
 - The work could be done in either the 2017-18 or 2018-19 year.
3. Temporal water quality Synthesis and review
 - Need to predict variability in water quality over time
 - Collate existing Western Basin and industry data involving repeated water quality samples, analysis of temporal trends, gap analysis
 - Compare averages of PCIMP data to outputs of CONNIE model
 - Statistical analysis of PCIMP data / other data to estimate influence of key factors
4. Economic valuation component
 - Community values for environmental health could be added to the Economic Value component (currently only recreation is included).
 - This would include an addition to the community survey, and would be easiest to collect with an internet panel.
5. Gladstone Harbour Model
 - Additional improvements can be made to the model to improve useability
6. Statistical analysis
 - Results across multiple report cards could be analysed to identify trends
7. Temporal water quality – sampling.
 - Intensive water quality monitoring with data logger/regular sampling at 1-3 locations, test relationships with tide type and time, wind & other factors
 - Would only consider this if results of desktop review were not satisfactory
8. Sediment and nutrient tracking
 - Could be used to identify sediment and nutrient sources in the catchments and augment the Connie model
9. Web-based data mapping
 - Review of web-based data mapping tools and potential application to GHHP