DPLUS094
Developing Marine Spatial Planning (MSP) Tools for the Turks and Caicos Islands

---

Setting the Scene
South Caicos January 27th 2020
Workshop report

This report was prepared as part of the Darwin PLUS 094 project 'Developing Marine Spatial Planning (MSP) Tools for the Turks and Caicos Islands' for all stakeholders and interested parties in the Turks and Caicos Islands and overseas.

Acknowledgements

We would like to thank all the workshop participants Bibo Jayne & Marian Jayne (Beyond the Blue), Mr Rigdet Cox (Environmental Health Dept), Heidi Hertler (School for Field Studies), Neil Oculi (School for Field Studies), Ewa Krzyszczyk (School for Field Studies), Kenric Hall (Harbour Adventures), Alden C. Durham (Diamond D.), Larry Taylor (Claw Tours), Velma Cox (Caicos Seafood/Caicos Marina), Yvette Cox (District Commissioner), A. Minott (Pastor), Oswald (Fisherman), D. Fulford (Fisherman), Y. Fulford (Captain), Tommy Phillips (DECR), Kathy Lockhart (DECR), Melinda Seymour (DECR), Randy Duncanson (DECR), Thanks to Lormeka Williams (DECR), Dr Eric Salamanca (DECR) and Luc Clerveaux (DECR) for help in identifying and contacting the stakeholders. Thanks to Dr Paul Brickle (SAER) for presenting the Falkland Islands MSP project and to Tara Pelembe (SAERI) for valuable help in workshop design and facilitation. Thanks to Marcin Gorny (SAERI) for taking pictures during the workshop and to the Department of Environment and Coastal Resources on South Caicos for allowing us to use their offices for the workshops.

To cite this report:

Tyne, J. A., Gorny, M., Clerveaux, L., Brickle, P. and Pelembe, T. (2020). Developing Marine Spatial Planning (MSP) Tools for the Turks and Caicos Islands. 'Setting the Scene', Workshop Report, South Caicos January 27th. South Atlantic Environmental Research Institute, Stanley, Falkland Islands.

Contents

Introduction

Marine Spatial Planning (MSP) background

Like the rest of the world, human use of coastal and marine resources in the Turks and Caicos Islands (TCI) is placing growing and often conflicting demands on natural resources. Consequently, important marine areas are under increasing pressure that threatens the health of coral reefs, mangroves, and seagrass beds and the environmental services they provide, such as coastal protection from storms, fishing grounds (Ulman *et al.*, 2016) , and tourism-based economies (Baldwin *et al.*, 2015).

Spatial data and MSP

The spatial component of MSP involves the collection and collation of multi-disciplinary data, in an accessible format and at multiple scales, from a number of sources (Shucksmith *et al.*, 2014) and stakeholder engagement is central to the process (Ehler and Douvere, 2009). This process can serve to improve stakeholder understanding and involvement in decision-making and governance (Baldwin *et al.*, 2015), which helps in the success of MSP projects (Kelly *et al.*, 2014).

TCI general background

The TCI is one of 14 United Kingdom Overseas Territories (UKOT), a small island in the Caribbean that lies south-east of the Bahamas chain, 145 km north of Hispaniola (Haiti and the Dominican Republic) and 925 km south-east of Miami (Figure 1). The easterly occurring Turks Islands are separated from the Caicos Islands by a deep-water channel approximately 35km wide. TCI is relatively flat. Providenciales rises to a high point of 50 m above sea level and Flamingo Hill on the North Western point of East Caicos has an altitude of also approximately 50 m. Sinkholes, caves and ridge formations are common. The islands consist largely of Pleistocene oolitic limestone and unconsolidated Holocene sands. The TCI population is 42,953 (2019), and the total area of the EEZ is 154,058 km^2. Tourism is the main contributor to the TCI economy, followed by the offshore financial sector, fishing for export to the US (mainly lobster and conch) is the third most important economic sector in the islands.

An overview of existing MSP in TCI

The Turks and Caicos Island Government (TCIG) has a number of departments e.g. DECR, Tourism, Ports, Police, that work in the Marine environment – some of whom have management and/or enforcement functions. In addition, non-governmental organisations and the private sector also undertake activities in the marine space However currently no overall strategic approach to the spatial planning of the marine environment.

It is to their credit that TCIG have well-established Marine Protected Areas that were originally designated in the 1980;'s (Mitchell and Barborak, 1991; Zuidema, Plate and Dikou, 2011). Marine parks were created to provide protection for the natural resources of the TCI and to provide management of marine areas for the benefit of tourism, fishing and boating (Logan and Sealey, 2013). The TCI now has 35 protected areas consisting 11 National Parks, 11 Nature Reserves, four Sanctuaries and nine Areas of Historical Interest, all declared under the TCI National Parks Ordinance, 28 of which have a marine component.

DPLUS094 project background

The aim of the DPLUS094 MSP project is twofold:

1) develop an island wide metadata catalogue with a GIS database so that existing spatial and temporal data can be mapped and analysed to identify areas used by humans and wildlife, most important ecological areas, zones of conflict and any data gaps; and

2) create the framework and tools that will facilitate the implementation of MSP in TCI and legislation, which will feed into the long-term planning and decision-making.

Workshop series background

Stakeholders play a key role in any MSP process, and therefore the DPLUS094 project has a series of workshops built into the project delivery to ensure that there in regular stakeholder consultation and input.

In January and February 2020, a series of 4 workshops (South Caicos 27th January 2020, Grand Turk 31st January 2020 and Providenciales 4th and 5th February 2020) were held across the TCI to initiate stakeholder dialogue.

The aim of these workshops was to:

- to inform the stakeholders of the existence of project, give them background on the MSP process
- to share MSP examples from other overseas territories, to provide context for MSP in the TCI
- to discuss and identify what the stakeholders consider to be the important marine values of the TCI.
- for stakeholders to share their overview, expertise, thoughts and vision for the MSP process in the TCI.
- to discover what data was currently available for the marine environment on TCI.

Once identified data for the marine values will be collected, collated and loaded into central island wide metadata catalogue and GIS database. Using WebGIS, a GIS database interface that works through a web browser, the spatial and temporal information will be available online. Data will be overlaid and used to identify overlaps between marine values and human uses and gaps in the data that need to be filled. This report focusses on the South Caicos workshop.

General background to South Caicos

South Caicos (Figure 1) has a land area of 21.2 km^2 with a population of approximately 1,139 (2012) and used to be the major salt exporter for the TCI. Salt pans remain as a reminder of this past history. Today the island's main income comes from small scale commercial fisheries (lobster, conch and bonefish) and the island is the fishing capital of the TCI. South Caicos also boasts pristine diving with breath taking coral walls, a vast diversity of corals, and large marine vertebrates, including sharks, rays, whales and turtles.

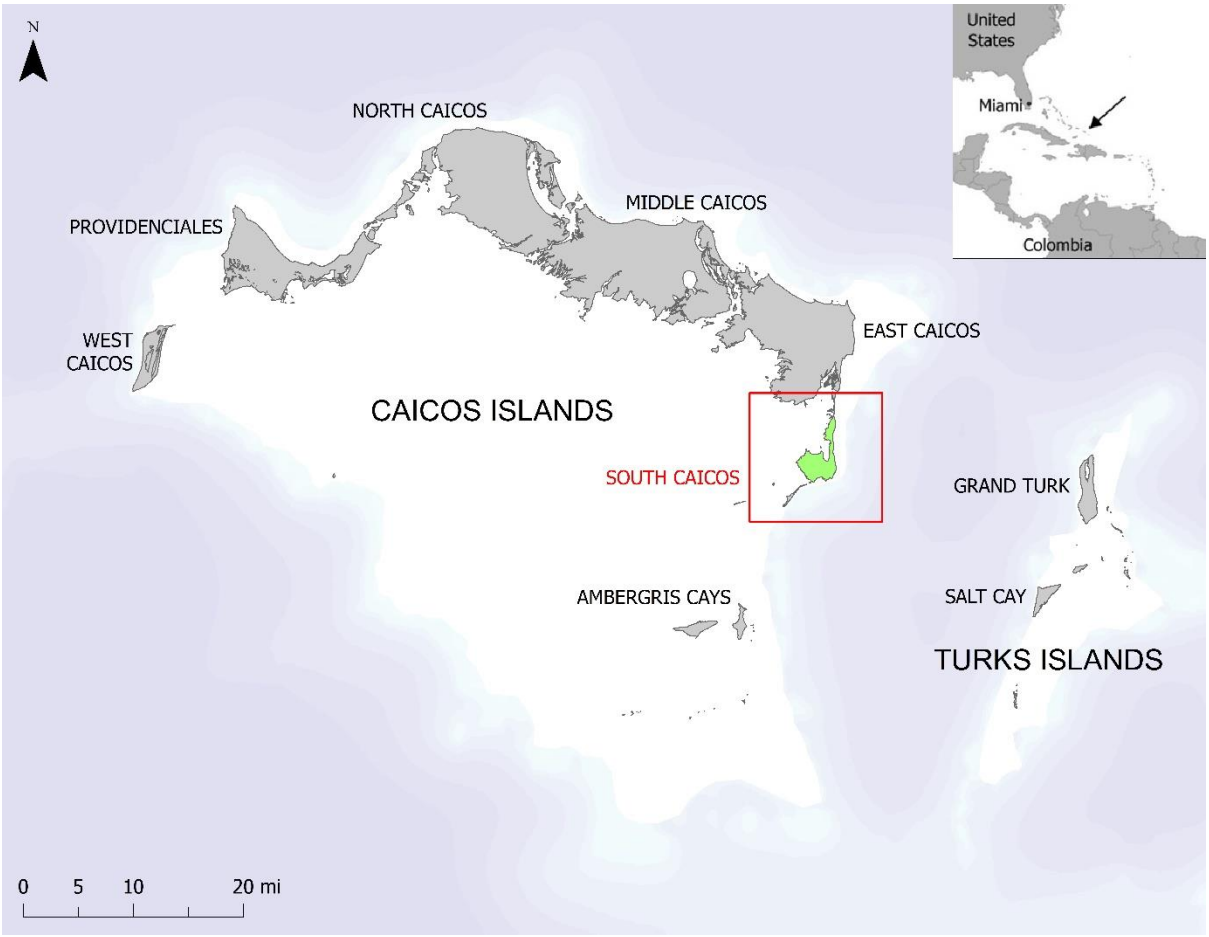

Figure 1 South Caicos and the Turks and Caicos Islands

Workshop programme and participants

Participation

On the 27th January 2020, 20 representatives of marine stakeholder groups from South Caicos gathered in the Department of Environment and Coastal Resources (DECR) to discuss marine activities and marine values of South Caicos, potential conflicts and how MSP can help mitigate these in the future (Figure 2). (See annex 1 for list of participants)

Figure 2 South Caicos workshop participants

Workshop programme

After the presentations, the participants were divided into two groups based on birth month. Group 1 was given a map of South Caicos (Figure 3) to focus on the local marine environment and Group 2 was given a map of the TCI (Figure 4) to focus on the national marine environment. (See annex 2 for full workshop programme)

Figure 3 South Caicos

Figure 4 Turks and Caicos Islands

The session was chaired by Luc Clerveaux (DECR).

The groups were then asked to complete each of the following tasks by marking them on the map with different coloured pens and labels. The groups were given 5 minutes for each task.

1. On your map draw, using a coloured pen, what marine habitats exist in and around South Caicos
    a. Coral Reefs – Brown Pen
    b. Mangroves – Red Pen
    c. Seagrass – Green Pen
    d. Other (describe) – Yellow Pen
2. What three marine areas do you consider to be most vulnerable, and why?
    a. Write one word on a pink coloured label for each of your three marine areas, why you consider it to be vulnerable and then stick your label on the map to identify your vulnerable marine area.
3. What do you think are the three marine species that occur around South Caicos that you consider to be most important and where are the main places they occur?
    a. Write each species on a max of 5 green coloured labels for each species and then stick the labels on the map to identify the main places where the species occur
4. What are your top three favourite marine places in South Caicos, where and why?
    a. Write one word to describe why this is one of your top three favourite places on an orange label and then stick the labels on the map
5. What current human marine activities are taking place in South Caicos and where?
    a. Write a list of marine activities

b. Code each marine activity
c. Write marine activity code in yellow label and stick label on the map

Once these five tasks were complete the maps were swap between groups and the five tasks were repeated by each group on the swapped maps.

Finally, a discussion and brain storming session involving the whole group to answer the following three questions.

6. What are your suggestions for other information we should include and where could/should we get it from?

7. What keywords should be included in the stakeholder vision for MSP TCI in South Caicos?

Figure 5 Stakeholder vision example from the Falkland Islands

8. What top three things would it be useful for you to have mapped?

Workshop outcomes.

A key activity in the workshop was for the participants to go through process of thinking through the multiple activities it the marine environment, and visually experiencing the overlap of multiple activities within the same space (Figures 4 & 5). It did not follow any formal participatory mapping methodology, as the exercise did not aim to formally 'place' activities within the marine space for planning purposes.

The maps below show the final outputs from the exercise described in the workshop programme. These maps have also been uploaded into the project WebGIS and will be available as a spatial layer online (Figures 5 and 6). A summary of each of the exercises undertaken by participants is provided in the following sections.

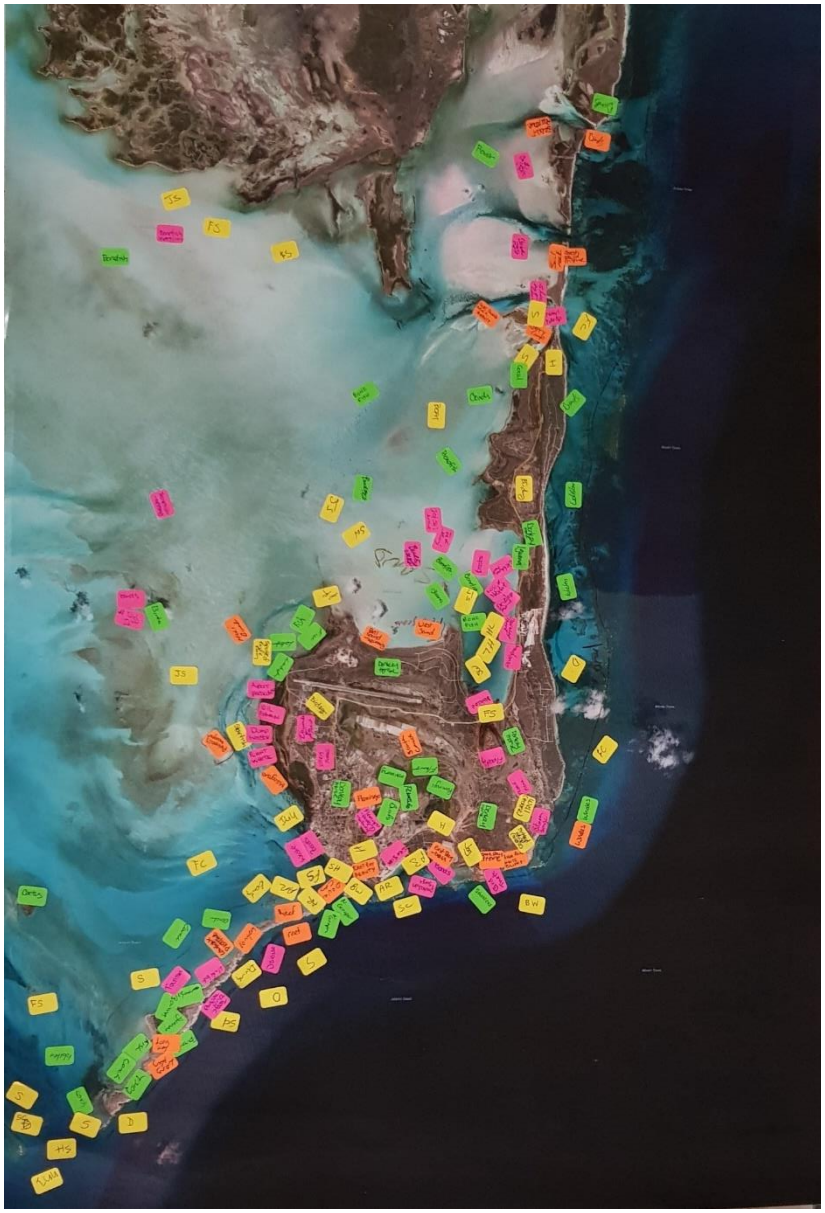

Figure 6 Morning participant mapping of marine activities in South Caicos: Habitats (coral – brown pen, seagrass – green pen, mangroves – red pen, other – yellow pen), vulnerable marine areas (pink labels), marine species (green labels), favourite marine places (orange labels), human activities (yellow labels).

Figure 7 Morning participant mapping of marine activities in the Turks and Caicos Islands: Habitats (coral – brown pen, seagrass – green pen, mangroves – red pen, other – yellow pen), vulnerable marine areas (pink labels), marine species (green labels), favourite marine places (orange labels), human activities (yellow labels).

Although the purpose of the exercise, as described above, was not to formally place activity within the marine environment, there were some interesting points that emerged as a result of undertaking this activity. Some of these points are outlined below:

Marine habitats in and around South Caicos

In Task 1, workshop participants noted that coral reefs, seagrass and mangrove habitats exist in and around South Caicos. The coral reefs are predominately to the east and south of South Caicos fringing with the deeper waters, while the seagrass is found mainly in the shallower sandy environment west of the island and in the Caicos Bank. Mangroves were also mainly in the shallower waters of the Caicos Bank side of the island (Figures 4 and 5).

Vulnerable marine areas

In Task 2, participants considered the following marine areas to be vulnerable (Figures 4 and 5)

Marine Area	Vulnerability
Bell Sound	Development, Jet Skis, Loss of Habitat, Boats
East Bay	Erosion, Storm Surge, Bird Theft
Highlands Bay	Storm Surge, Flooding

Cockburn Harbour (East Harbour) Area	Waste, Oil Seepage, Storm Surge, Boats, Airport Particulates
Long Cay	Tourism, Disease
Middle Creek Cut	Sargassum
Plandon Cay Cut	Sargassum

Important marine species that occur around South Caicos

In Task 3, workshop participants identified the following marine species to be important around South Caicos (Figures 4 and 5)

Lobster, Conch, Bonefish, Birds, Iguana, Fish, Flamingos, Grouper, Donkeys/Horses, Whales, Corals, Turtles

Favourite marine places in South Caicos

In Task 4, workshop participants coarsely identified the following places to their favourites in South Caicos (Figures 4 and 5)

Favourite Place	**Why?**
Bell Sound	Swimming
Dove Key	Beautiful
West Sound	Swimming
Highlands Bay	Whales
East Bay	Beautiful, Beach
Cockburn Harbour (East Harbour) Area	Mangroves, Animals
West Sound	Swimming
Middle Creek Cut	Pristine, Birds
Plandon Cay Cut	Beautiful, Jerry Camp
Long Cay	Pristine, Coral Reefs
Boiling Hole	Flamingos
Shark Bay	Pristine
High Point	White Cliffs

Human marine activities taking place in South Caicos

In Task 5, the workshop participants created a list of the human activities taking place in and around the marine environment of South Caicos (also see annex 3 – outputs from the workshop figures 7, 8 and 9). There was no weighting or prioritisation of these activities – the full list from South Caicos is outlined below:

Human Activities	
Commercial Fishing (Lobster, Conch and Bonefish)	Cycling Tours
Recreational Fishing (Lobster, Conch and Bonefish)	Boating (Regatta)
Sports Fishing	Ferry Service
Illegal Fishing	Marine Fuelling
Diving (diving for conch)	Shipping

Scuba Diving	Ballast Water
Snorkelling	Hotels
Swimming	Loss of Habitat
Kayak Tours	Artificial Reefs
Iguana Tours	Sponge Fishing
Stand-up Paddle Boarding (SUP)	Importing/Transport
Bird Watching (Flamingos)	Fish Plants
Whale Watching	Pollution from Dump
Salina (Salt Mine) Tours	Old Boat Wreck
Jet Skiing	

Additional Information

The workshop participants suggested that the following data be included in the development of the MSP tool (also see annex 3 – outputs from the workshop figures 9 & 10).

Scale Fish distribution (DECR), Water Quality, Donkeys and Horses, Distribution of Birds, Beach Profiles, Shark Observations

Priority Mapping

The workshop participants thought that it would be important to map the following as priorities (also see annex 3 – outputs from the workshop figures 9 & 10)

Lobster, Conch, Sargassum, Beaching Coral Reefs, Introduction of new Habitats for Lobster and Fish, Damaged Habitats, Sensitive Areas for Hurricanes in South Caicos, Nesting Sites, Spawning Areas, Impacts from Dumps

Vision and Objectives for MSP

One of the project aims is to develop a vision for MSP in TCI. It was therefore suggested that the stakeholders make a list of keywords or statements they would like to be included in the vision statement.

The words that the stakeholders from South Caicos would like to see included in the MSP vision for Turks and Caicos are outlined below (Figure 8).

Equality Between islands, Clean green and pristine, Similar to the Falkland Islands, Sustainable Development, Protect Biodiversity, Balance Amongst Stakeholders, Beaches Belong to the People, Historical Context, Sustainable Fishing, Cultural Heritage, Education. Using these keywords, the MSP project officers will continue to work with the South Caicos stakeholders to draft a vision for the MSP project in TCI.

Figure 8 South Caicos word cloud showing keywords to include in the vision statement

Conclusion

This was the first of four workshops to be held in the TCI for the MSP project and it was a great place to start. The MSP process was introduced and with important input from the stakeholders, marine habitats, vulnerable areas, important species, favourite places and current marine activities were identified.

The process of sticking labels on maps provided the stakeholders with a visual representation of the potential overlap in marine activities and marine values around South Caicos.

This South Caicos workshop was attended by range of stakeholders from a variety of sectors, local fishermen, tour operators, hoteliers, plant operators, school for field studies and government.

Next steps

The information gathered during this workshop will be used in the development of the MSP GIS database and data portal, and to help develop a framework for MSP in the TCI.

It was agreed that feedback/consultation meetings happen every two months and that the MSP TCI project team will work on the vision with the South Caicos stakeholders.

Workshop report will be circulated to the project stakeholders. Other workshop reports can be found here

Maps from the stakeholder workshops uploaded to the WebGIS. We will provide a link to the WebGIS once it is available.

The MSP TCI project team to return to South Caicos so that the fishermen who could not attend the workshop get the opportunity to air their views on the MSP TCI project.

Annex 1 – Workshop invitees and attendees

The following were invited to the workshop

District Commissioner
Fishery Advisory Committee
School for Field Studies
East Bay Resort
Sail Rock Resort
Ocean and Beach Resort
Claws Tours
Harbour Adventures
Caicos Seafood
Caicos Fisheries
Local Fishermen
Department of Environment and Coastal Resources (DECR)
Diamond D.
Local Pastor

The following people participated in the workshop

Yvette Cox (District Commissioner)
Kathy Lockhart (DECR)
Heidi Hertler (School for Field Studies)
Ewa Krzyszczyk (School for Field Studies)
Neil Oculi (School for Field Studies)
Bibo Jayne (Beyond the Blue)
Marian Jayne (Beyond the Blue)
Kenric Hall (Harbour Adventures)
Larry Taylor (Claw Tours)
Velma Cox (Caicos Seafood / Caicos Marina)
Mr Rigdet Cox (Environmental Health Dept)
Alden C. Durham (Diamond D.)
Tommy Phillips (DECR)
Melinda Seymour (DECR)
Randy Duncanson (DECR)
A. Minott (Calvary Baptist Church)
Oswald
D. Fulford
Y. Fulford (Captain)

Annex 2 – Workshop Programme

The workshops were organised and facilitated by Luc Clerveaux (DECR), Dr Julian Tyne (SAERI) and Tara Pelembe. A prayer was given at the start of the workshop given by Luc Clerveaux followed by a presentation on the TCI process in the Falkland Islands by Dr Paul Brickle and an overview of the project in the TCI by Dr Julian Tyne, a demonstration of WebGIS by Marcin Gorny, discussions, group sessions and brain storming. Participants were provided with an overview of the workshop and how it was part of the initial step to inform and consult with stakeholders to help define the needs and contexts of MSP in the TCI. This is an important process as it sets the scene for stakeholders to understand and be involved in assessing the needs and benefits of MSP in the TCI, from a South Caicos perspective.

Developing Marine Spatial Planning (MSP) Tools for the Turks and Caicos Islands – Stakeholder Workshop.

South Caicos: 27th January 2020

Time	Topic	Presenter
9:00 -9:05	Prayer	Selected participant
9:05 – 9:20	Opening remarks, introductions and setting the scene	Luc Clerveaux
9:20 – 9:40	Introduction to SAERI and the Falkland Island MSP example	Dr Paul Brickle
9:40 – 10:00	Developing (MSP) Tools for the TCI	Dr Julian Tyne
10:00 – 10:05	Introduction to the breakout session	Tara Pelembe
10:05-10:10	What marine habitats exist in and around South Caicos/TCI (Coral Reef, Mangroves, Seagrass and other)	Facilitated session (Tara Pelembe)
10:10 – 10:20	What 3 marine areas do you consider to be most vulnerable? To what and why?	Facilitated session (Tara Pelembe)
10:20 – 10:30	What three (3) marine species occur around South Caicos, do you consider most important. Where are the main places that they occur?	Facilitated session (Tara Pelembe)
10:30 – 10:45	**Break**	

10:45 – 10:50	What are your top 3 favourite marine related places in South Caicos – why, where.	Facilitated session (Tara Pelembe)
10:50 – 10:55	What current marine activities are taking place in South Caicos and where (human).	Facilitated session (Tara Pelembe)
10:55 – 11:25	Repeat the exercise on different map	Facilitated session (Tara Pelembe)
11:25 – 11:30 -	WebGIS demonstration to show marine spatial data for TCI	Marcin Gorny
11:30 – 11:40	What are your suggestions for other information that should we include and where could/should we get it from?	Facilitated session (Tara Pelembe)
11:40 – 11:50	Stakeholder vision for TCI MSP (South Caicos context)	
11:50 – 12:00	What top 3 things would it be useful for you to have mapped?	Facilitated session (Tara Pelembe)
12:00 – 12:05	Wrap up and next steps	Luc Clerveaux

Annex 3 – Outputs from the workshop

Lists and maps from the MSP TCI workshop on South Caicos

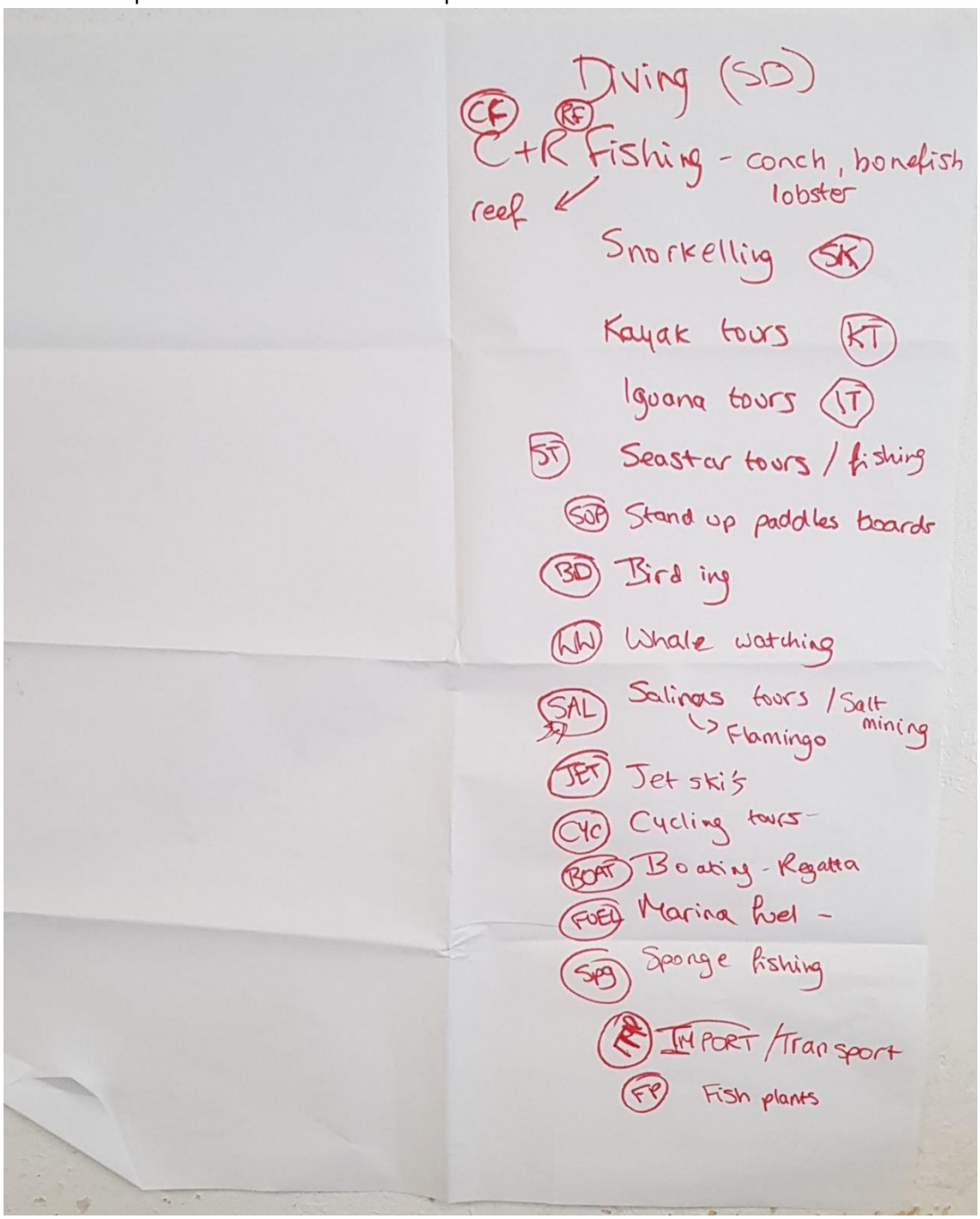

Figure 9 Morning group 1 list of marine activities around South Caicos

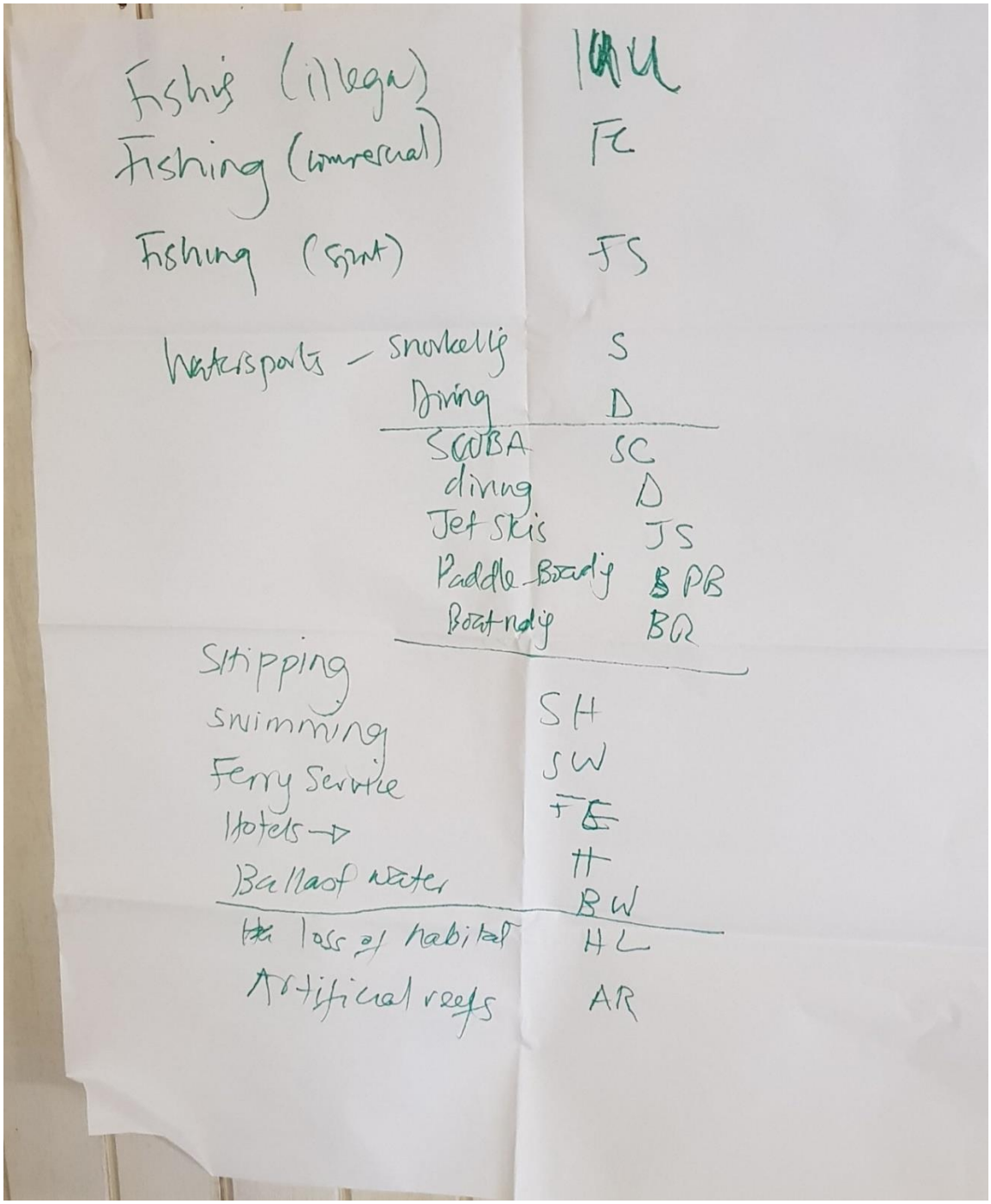

Figure 10 Morning group 2 list of marine activities around South Caicos

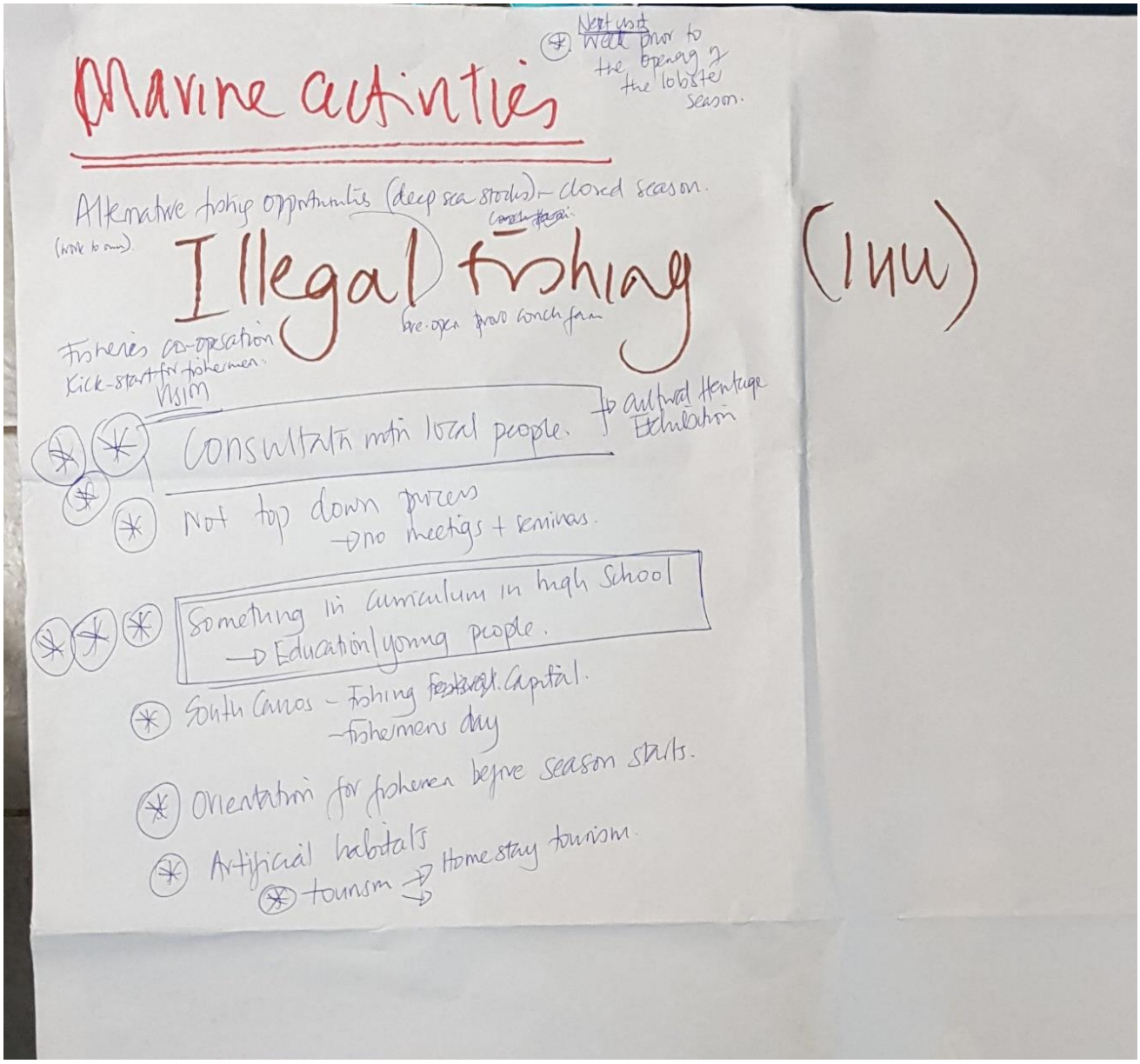

Figure 11 Afternoon group marine activities and keywords for vision statement

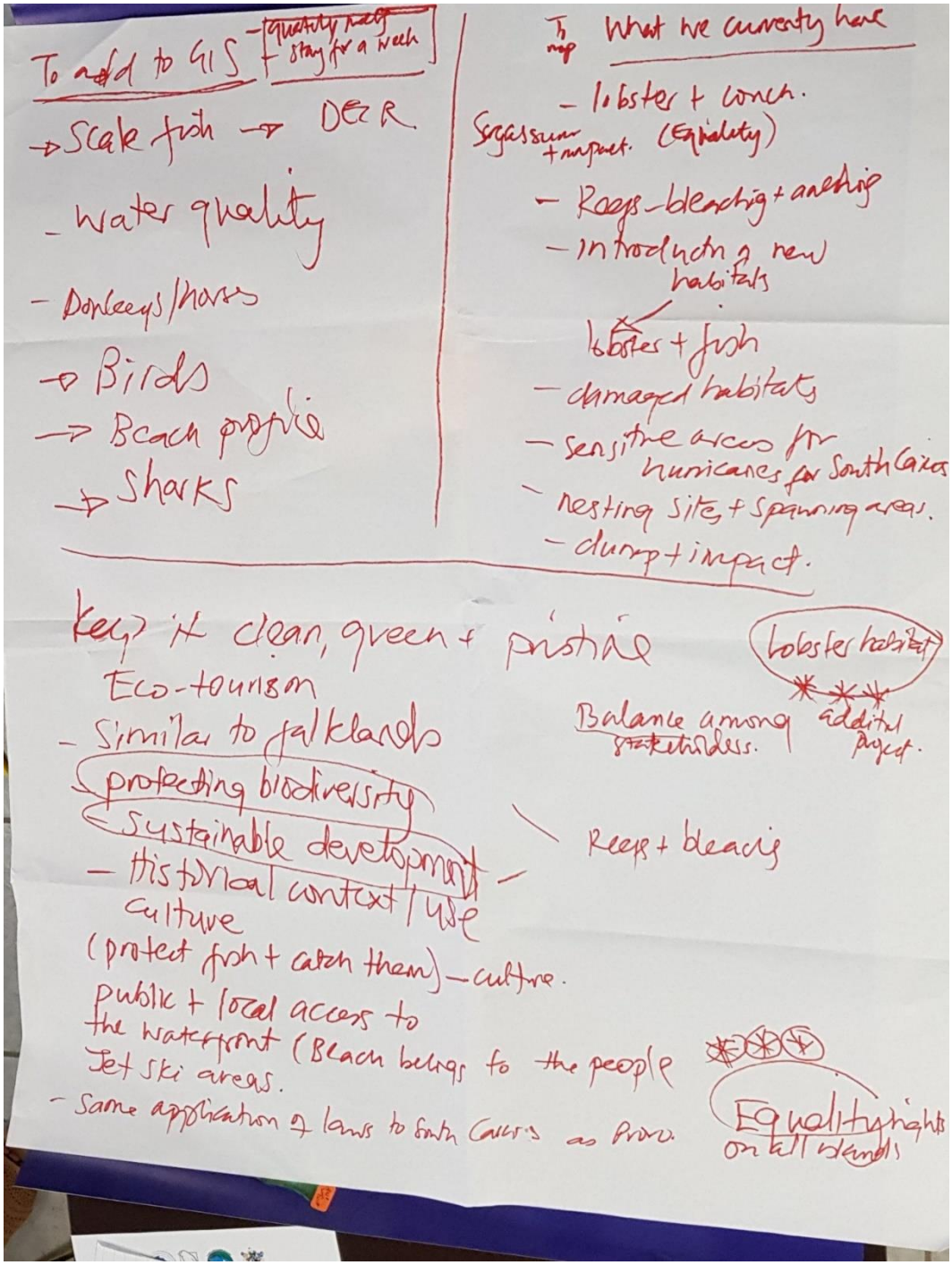

Figure 12 Morning groups additional information suggested by the stakeholders to be included in the development of the MSP tool (top left), priority mapping suggestions by the stakeholders (top right) and list of words suggested by the stakeholders to be included in the MSP vision.

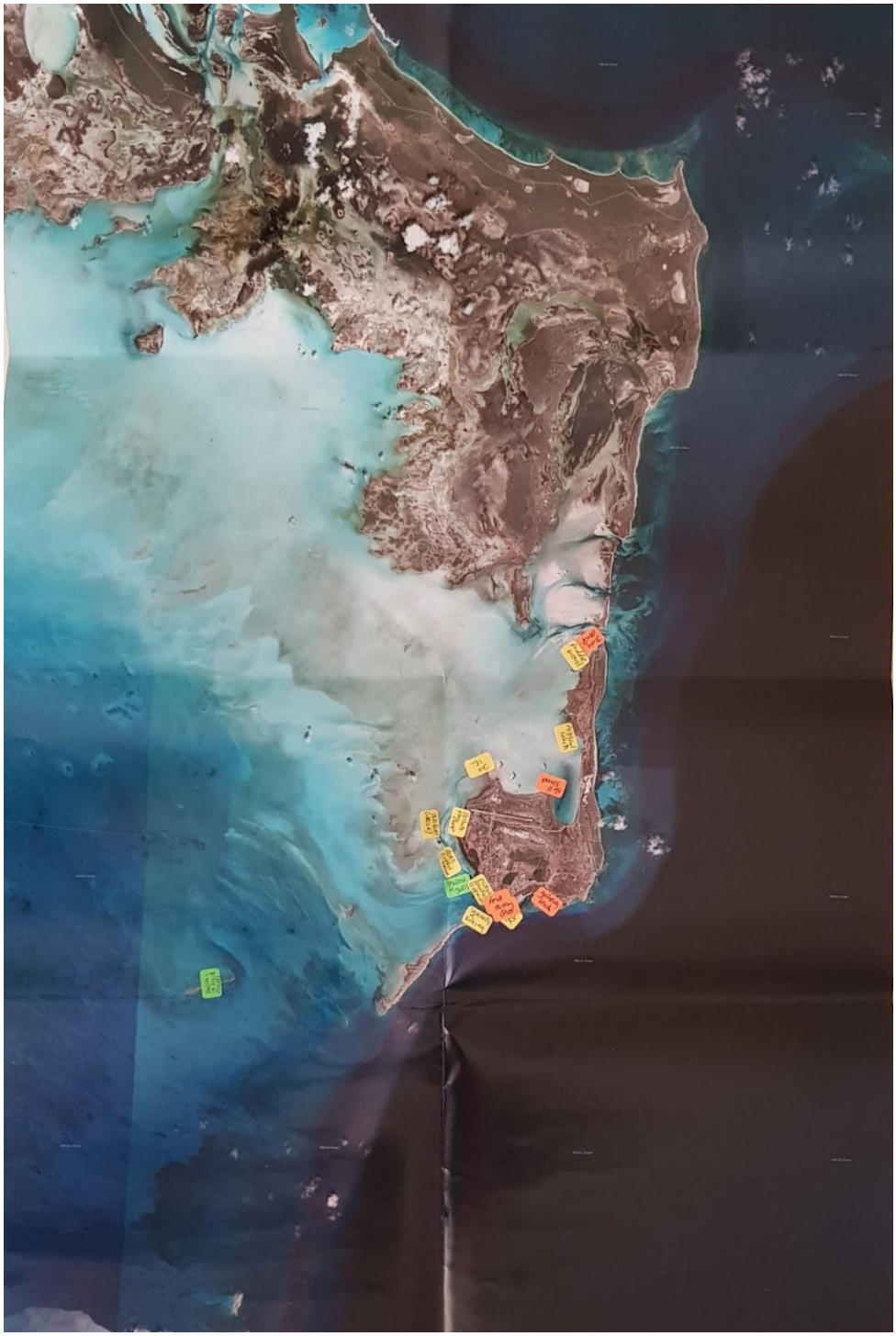

Figure 13 Afternoon participant mapping of marine activities in South Caicos: Habitats (coral – brown pen, seagrass – green pen, mangroves – red pen, other – yellow pen), vulnerable marine areas (pink labels), marine species (green labels), favourite marine places (orange labels), human activities (yellow labels).

References

Baldwin, K. *et al.* (2015) 'Developing Ecosystem-Based Information for Marine Spatial Planning on the Pedro Bank, Jamaica', *67th Gulf and Caribbean Fisheries Institute*.

Ehler, C. and Douvere, F. (2009) 'Marine spatial planning: a step-by-step approach toward ecosystem-based management'. Paris, France: Unesco, p. 99. doi: http://dx.doi.org/10.25607/OBP-43.

Kelly, C. *et al.* (2014) 'Review and evaluation of marine spatial planning in the Shetland Islands', *Marine Policy*, 46, pp. 152–160. doi: https://doi.org/10.1016/j.marpol.2014.01.017.

Logan, A. and Sealey, K. S. (2013) 'The Reefs of the Turks and Caicos Islands BT - Coral Reefs of the United Kingdom Overseas Territories', in Sheppard, C. R. C. (ed.). Dordrecht: Springer Netherlands, pp. 97–114. doi: 10.1007/978-94-007-5965-7_9.

Mitchell, B. A. and Barborak, J. R. (1991) 'Developing coastal park systems in the tropics: Planning in the Turks and Caicos islands', *Coastal Management*. Taylor & Francis, 19(1), pp. 113–134. doi: 10.1080/08920759109362134.

Shucksmith, R. *et al.* (2014) 'Regional marine spatial planning – The data collection and mapping process', *Marine Policy*, 50, pp. 1–9. doi: https://doi.org/10.1016/j.marpol.2014.05.012.

Ulman, A. *et al.* (2016) 'Conched Out: Total Reconstructed Fisheries Catches for the Turks and Caicos Islands Uncover Unsustainable Resource Usage ', *Frontiers in Marine Science* , p. 71. Available at: https://www.frontiersin.org/article/10.3389/fmars.2016.00071.

Zuidema, C., Plate, R. and Dikou, A. (2011) 'To preserve or to develop? East Bay dredging project, South Caicos, Turks and Caicos Islands', *Journal of Coastal Conservation*, 15(4), pp. 555–563. doi: 10.1007/s11852-011-0144-5.