Seagrass-Watch Refresher Workshops: Hervey Bay & Great Sandy Strait.

February 2001

Presented by
Len McKenzie & Stuart Campbell
Marine Plant Ecology Group
Northern Fisheries Centre
Department of Primary Industries, Queensland
PO Box 5396 Cairns Qld 4870

Objectives of Refresher workshops

After discussions with the community volunteers, it was considered that holding refresher workshops were the most appropriate way to present the results of ongoing monitoring at Key Sites and give the community volunteers an opportunity to contribute to the final interpretation of the data. The workshops also provided an opportunity to

- review any data collection problems (common errors filling in data sheets, how to take a good photo, etc).
- address any concerns volunteers are having in terms of recording information (eg. confusion with % epiphyte and % algae), and
- conduct a brief lab session to cover seagrass identification.

Analysis of the data in greater detail (taking any issues raised in the workshop into consideration) and present in the draft final report is due in May 2001.

Results & outcomes of Refresher workshops

Location of workshops

Workshops were held at:

1. QPWS Offices, Maryborough, Monday 5th February 2001, 6:00-8:00pm

   Attended by 15 participants (including Hervey Bay Dugong & Seagrass Monitoring Program Great Sandy Strait – volunteers, and QPWS rangers)

2. University of Southern Queensland, Tuesday 6th February 2001, 7:00-9:00pm.

   Attended by 25 participants (including Hervey Bay Dugong & Seagrass Monitoring Program volunteers, QPWS rangers, EPA and DNR personel).

Workshop agenda

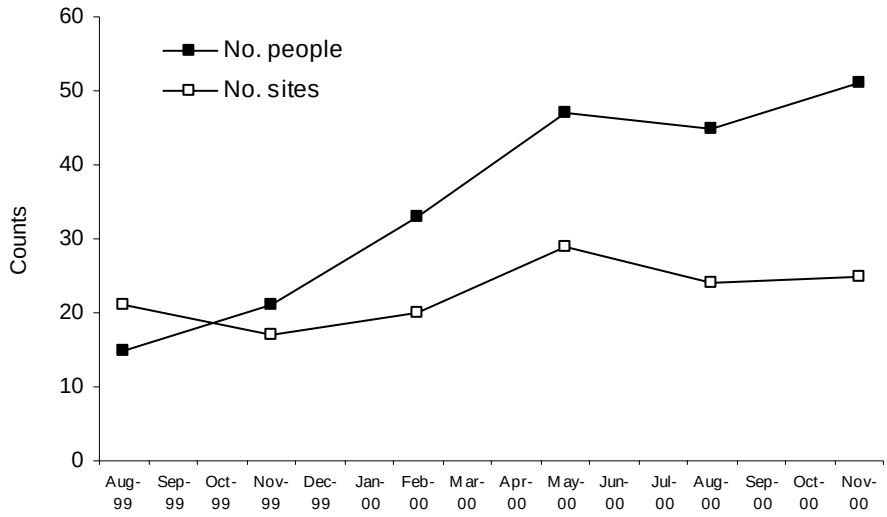
1 Status of program to date

- Len McKenzie outlined the Seagrass-Watch project in both the Hervey Bay and Great Sandy Strait regions and how the program is now in the 3rd and final year of Coasts & Clean Seas funding. CCS support finishes in November 2001.
- Community volunteers supported the continuation of the Seagrass –Watch program and expressed their concern that CCS funding will cease.
- Options were discussed for Seagrass-Watch post CCS funding and there was a general consensus for continued scientific support.
- Volunteers agreed to rally together and examine options for funding (both for the volunteer and scientific support) post CCS.

- Len discussed how results of the program were being directly used to assist coastal management by government agencies such as the DPI sand QPWS. Maps of seagrass meadows have been used in the development of coastal management plans. Data on the trends in seagrass abundance has provided the only scientifically reliable baseline against which impacts associated with dredging and coastal development have been assessed (eg. *Poona dredging proposal, Burrum Heads dredging proposal, Urangan dredging proposal, etc*).
- Len suggested that one approach for continued funding was to lobby the government departments/agencies that are using the results of the monitoring to assist coastal management.
- Len discussed the International Seagrass-Watch Volunteer Forum in October 2001 and how participants should register early if they wish to attend.

2 Community participation

- Len discussed how the rates of community volunteer participation have continued to increase, although the number of established monitoring sites is currently enough to adequately cover the region. There are currently 19 long-term seagrass monitoirng sites in the Great Sandy Strait and 13 sites in Hervey Bay.



Numbers of volunteers and sites monitored as part of Seagrass-Watch from August 1999-November 2000.

- Community volunteers asked if there were any additional localities that would be worthy of monitoring if the volunteers were to increase their resources.
- Len and Stuart identified only 2 additional localities that would be useful to include to aid in interpreting the status of intertidal seagrass resources in the region – Moon Point (Hervey Bay) and Tinnanbar (Great Sandy Strait).

3 Measures of observer bias

- Len discussed the accuracy of the monitoring techniques and how the results of a trial on 19 volunteers showed that observer error declined with increasing seagrass abundance. This means that volunteers estimates of seagrass abundance have; **a)** a higher error (~30%) at low seagrass abundance (0.1-2% cover), **b)** an intermediate error (20%) at medium seagrass abundance (20% cover) and **c)** a low error (10%) at high seagrass cover (40-50%).
- Methods for further reducing observer bias were discussed and one method identified by the participants would be to produce standard cover photos more specific to localities, and also increase the number of quadrats photographed.

4 The Monitoring process

a) Site directory

- The new site directories for Hervey Bay and the Great Sandy Straits were demonstrated to the participants and a copy has been included in every monitoring kit.

b) Data sheets

- Common errors in completing data sheets were discussed and participants were asked to help identify errors in presented examples.
- The recording of anecdotal observations (eg. changes in seagrass abundance, dugong sightings, seagrass and algal deposition on beaches, rainfall events) on the Seagrass-Watch calendar was discussed. Participants were encouraged to use the calendar or other means to record these.
- Participants asked if additional anecdotal observations such as daily rainfall figures would be of use, and it was decided that such information if made available could be easily accepted onto the Seagrass-Watch database.

c) Algae vs epiphytes

- Volunteers required clarification on measuring algal epiphytes versus unattached algal abundance.

d) Taking a photo

- The importance of taking a photograph of a monitoring quadrat and how this information is used was discussed.
- Techniques for taking a good photograph of a monitoring quadrat were discussed and participants were presented examples of good and bad photographs.

e) Seed sampling

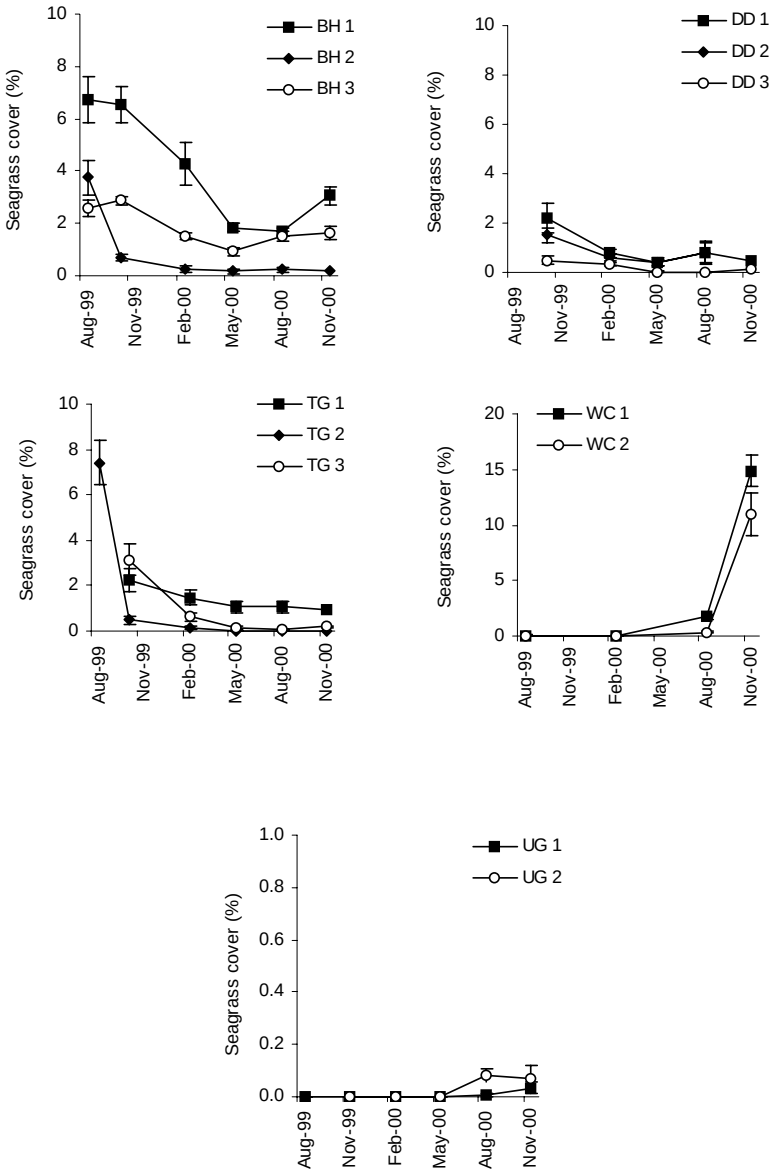
- Methods of seed collecting were discussed.

5 Analysis of the data (*Report card*)

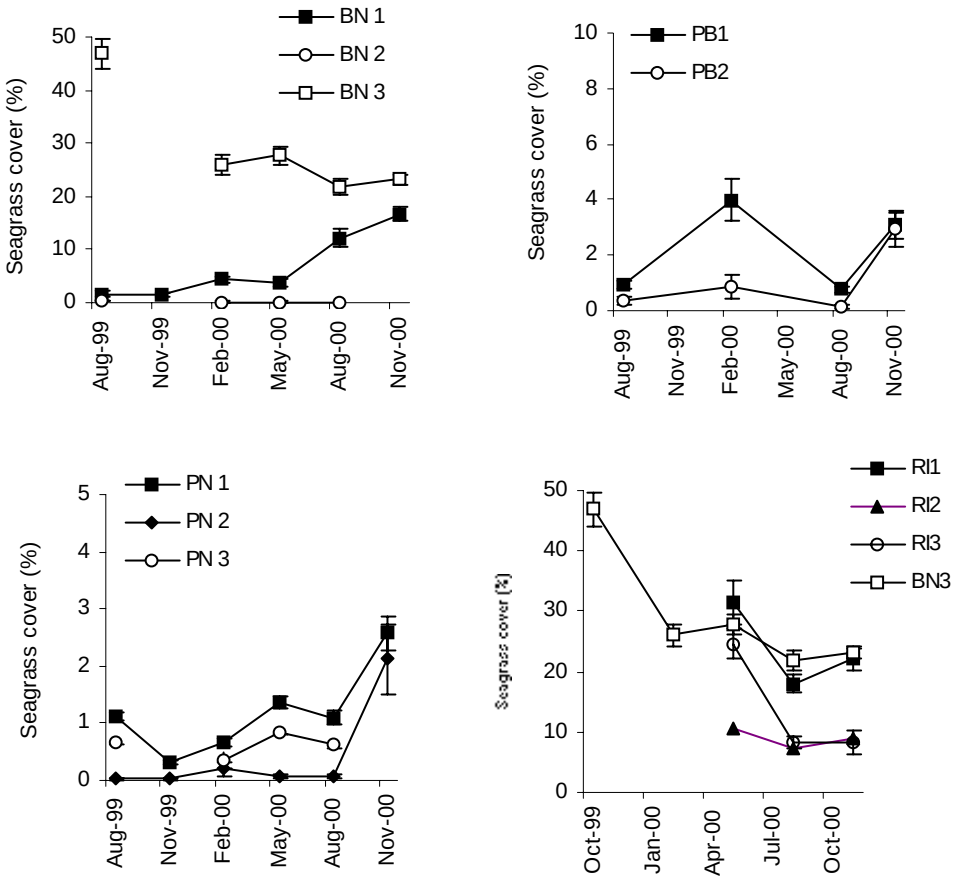
- Len discussed how the scientists will use the information collected from the ongoing long-term monitoring, to give a qualitative report card (evaluation or state) on each locality monitored.
- Len discussed the categories used (eg trend in seagrass abundance, species composition, physical disturbance, *etc*) to develop the report card.
- Participants discussed indicators of seagrass decline, such as floods, impacts from pine plantations, dugong over grazing, sediment movement, low salinity exposure and high temperatures.

6 Results to date (*Locality by locality feedback*)

- Stuart presented the preliminary results of trends in monitoring seagrass abundance for each of the monitoring localities, and participants contributed to interpretation of the results.



Percentage seagrass cover at all sites in Hervey Bay from August 1999 – November 2000
(BH = Burrum Heads, DD = Dundowran, TG = Toogoom, WC = Wanggoolba Creek (Fraser Island), UG = Urangan)



Percentage seagrass cover at all sites in the Great Sandy Strait, from August 1999 – November 2000. (BN = Boonooroo, PB = Pelican Bay, PN = Poona, RI = Reef Islands)

- Participants discussed trends in seagrass abundance and composition at all sites.
- Participants discussed impacts such as dugong feeding, sediment movement, low salinity exposure and high temperatures in relation to observed seagrass trends.
- Possible impacts of Burnett River on Burrum Heads sites were discussed, however scientific opinion suggests sediment movement was likely to have a greater impact.
- Volunteers suggested that persistent movement and transport of sediment may be responsible for general decline in seagrass abundance at Toogoom and Dundowran.
- Recovery of seagrasses at Wanggoolba Creek (Fraser Island) monitoring sites was discussed. An issue was the lack of recovery at Urangan monitoring sites and the differences in the two habitats were discussed. Urangan was less likely to recover as fast as sites on Fraser Island because of its proximity to the Mary River and associated catchment and urban inputs.
- The low abundance at Poona and Boonooroo sites in Great Sandy Strait was likely to be influenced by catchment inputs. Also sewage overflow from a local Caravan Park in Boonooroo may contribute to the measured seagrass decline. The importance of sites for dugongs feeding was emphasised.
- High abundance of seagrass at Reef Island sites likely to be a result of its distance from catchment inputs and lack of exposure to discoloured waters low in salinity and high in nutrients.
- The group discussed the impacts associated with modified agricultural lands (cane and pine plantations) and the management actions necessary to allow recovery of

seagrass meadows (measurement of sediment health/contamination in the region, vegetation buffer zones on water courses, well designed monitoring of inputs to identify catchment hot spots.

- Stuart also highlighted the importance of regular monitoring and how missing data can make interpretation of results difficult.

7 Gear inventory

- An inventory of all equipment used by volunteers was conducted.
- Missing items were noted and replacement items ordered.

8 Seagrass ID

- Specimens of several seagrass species (both common and rarer to the region) were provided for participants to examine with a dissector microscope to assist with their field identifications