Seagrass-Watch news

ISSUE 23,
August 2005

A new region for Queensland

The latest region to establish Seagrass-Watch monitoring is Mission Beach, approximately 165 km south of Cairns in far north Queensland. Mission Beach is a 12 kilometre stretch of golden sand shoreline, surrounded by the waters of the Great Barrier Reef Marine Park and the rainforests of the Wet Tropics World Heritage Area. Mission Beach encompasses a number of beach-side communities including Bingil Bay, Wongaling Beach, South Mission Beach and Garners Beach.

Tourism is the main industry in and around the Mission Beach area. The region also has quite a lot of farming of tropical fruits and vegetables, aquaculture and sugar cane.

Directly offshore from Mission Beach is Dunk Island, a large continental Island and well known international tourist destination. The island is part of the Family Group of Islands which includes Bedarra Island (*a well known hideaway for the rich and famous*).

In the Mission Beach region, the only inter-tidal seagrass meadows suitable for Seagrass-Watch are in Lugger Bay, South Mission Beach. These meadows are only exposed at very low tides (<0.4m) and are composed of *Halodule uninervis*. This location was also one of Jane Mellors' PhD field study sites, where she examined seagrass abundance and sediment/plant nutrients in the early 90's.

Access to Lugger Bay is via a path through pandanus and eucalypt forest, with beautiful views of the sea, Dunk Island and Tam O'Shanter Point. After a little more than a kilometre there is a set of steps down to the long curved beach and monitoring sites of Lugger Bay.

The monitoring site was established in May 2005. In late July, students from Mission Beach State Primary School were joined by Seagrass-Watch HQ scientists Len McKenzie, Jane Mellors and Rudi Yoshida to conduct the schools first monitoring event. Although the weather was miserable, the students picked up the monitoring techniques quickly and an enjoyable afternoon was had by all. Information from the long-term monitoring will be incorporated into the seagrass monitoring component of the Great Barrier Reef Water Quality Protection Plan (see issue 22).

In the Philippines, dried seagrass leaves are found to cure diarrhea. Also, Halophila ovalis is pickled and used as salad vegetable.

For more information about Seagrass-Watch, visit
http://www.seagrasswatch.org

Farewell Jerry

It is with great sadness that we announce the passing of Jerry Comans. His was affectionately referred to as the "grandfather" of Seagrass-Watch. Jerry passed away at his home in Scarness on Tuesday 19th April.

A former commercial fisherman and charter boat operator with more than 30 years experience in the region, Jerry started the Hervey Bay Dugong & Seagrass Monitoring Program in 1997 in response to concerns that the seagrass meadows were not recovering from the 1992 floods that killed off over 1000 square kilometres of seagrass meadows.

Jerry was integral in establishing the Seagrass-Watch program. With his assistance, funding was secured in 1998 to develop the program and sampling protocols. The HBDSMP was an integral partner in the Seagrass-Watch program in the early days. Jerry was the Local Seagrass-Watch Coordinator in Hervey Bay for several years and much of the success of the program in the local area was due to Jerry's passion and dedication. With the help of many volunteers and local school children, they mapped much of the inter-tidal area between Burrum Heads and Point Vernon and parts of the Great Sandy Strait. The work has been invaluable to understanding dugong habitat.

Jerry retired from the Local Coordinator position in 2004 and moved on to enjoy retirement. Jerry is survived by his wife Lynne, four children, 10 grandchildren and 2 great grandchildren.

Right: Jerry with Rob Coles (DPI&F), accepting Environment Award from Prime Minister John Howard.

Below: Jerry with Wendy Jones and students from Yarrilee State School.

ISSN 1441-4236

Seagrass-Watch helps ensure sustainable fisheries in Queensland & the western Pacific

Horn Island

Jane Mellors (Seagrass-Watch HQ) reports

In May, Torres Class, Horn Island State School adopted a seagrass site near the Horn Island Jetty (HI1) to monitor. We started our monitoring day off with a lesson on Seagrass-Watch techniques and then a quick session on seagrass identification. Even though we learnt how to identify six species of seagrass, we only had two species Hu and Ho in our Seagrass-Watch plot. We didn't manage to finish monitoring the three transects in the time we had allocated to this task, possibly because the site was really muddy so walking along the transects was hard going. We still had a great time, learnt heaps and laughed lots particularly when Jane got stuck in the mud and fell over.

Carla (DPI&F) with some keen seagrass-watchers from Torres Class, Horn Island State School

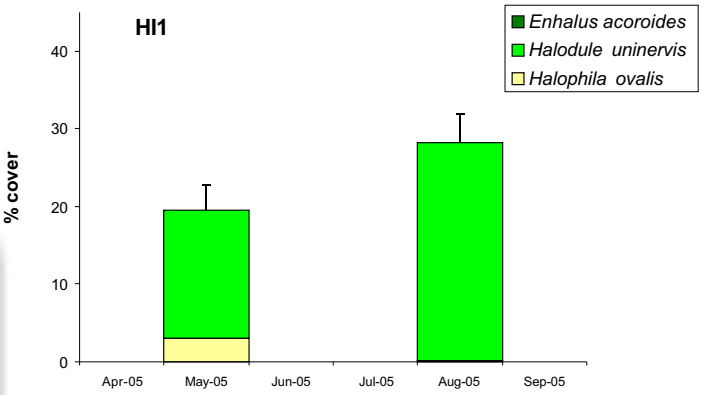
Who would have thought identifying seagrass could generate this much excitement??

The highlight of the August trip was the efficiency of which the Horn Island site was monitored. Becky Bowie and Shakira Weston (Thursday Island High School students; Back Beach Seagrass-Watchers) assisted James Stuart and Torres Class, Horn Island State School to monitor this very muddy site. This was the second time this class had monitored the seagrass meadow, and it was poetry in motion to see 17, ten year olds take to the task in an extremely focused and enthusiastic manner. We finished in record time so even had time to go back to the class room for some badge making. Well done Torres Class.

Torres Class Seagrass- Watch

You're supposed to be looking at the quadrat!!!

Now we've got it!!!



Careers Market CrocFest

Croc Fest is an alcohol and drug free festival that celebrates Indigenous and Non-Indigenous Youth culture in rural and remote Australia. The mission of the Croc Festival is to foster improvement in health, education and well-being of Indigenous and non-Indigenous youth in rural and remote areas of Australia and to assist in the development of their employability and interpersonal relationships. As part of The Thursday Island CrocFest a careers market was held. With the concept of education leads to employment Jane Mellors went north and talked up a storm about how volunteering in projects such as Seagrass-Watch is a great way to gain experience if you are thinking of a career in environmental planning, resource management and research. She was more than ably assisted by Stan Lui (DPI&F) and Dr. Gilianne Brodie (JCU).

Above left: Koeygab talks with Stan Lui and Gilianne Brodie about career and University options. NB: Seagrass-Watch poster in background!!

Above right: Jayda and Becky take notes on how to become a Fisheries Biologist so that they can Seagrass-Watch all the time!!!

Seagrass-Watch Update.

Paul Finn (QPWS) reports

March/April 2005 was the latest completed period of seagrass monitoring in Moreton Bay. We currently have 57 sites established within 16 different locations. One of the most recent sites to be established is at Blakesleys Anchorage on the western side on North Stradbroke Island. The number of sites that have been adopted by trained volunteers is 46 and of these, 32 sites were surveyed during the March/April monitoring period (Figure 1). At the moment we are busy with the July/August monitoring period.

Left to right: David Holliday, Jeanette Watson, Murray Watson and Simon Baltais at North Stradbroke Island site 5 (Blakesleys Anchorage).

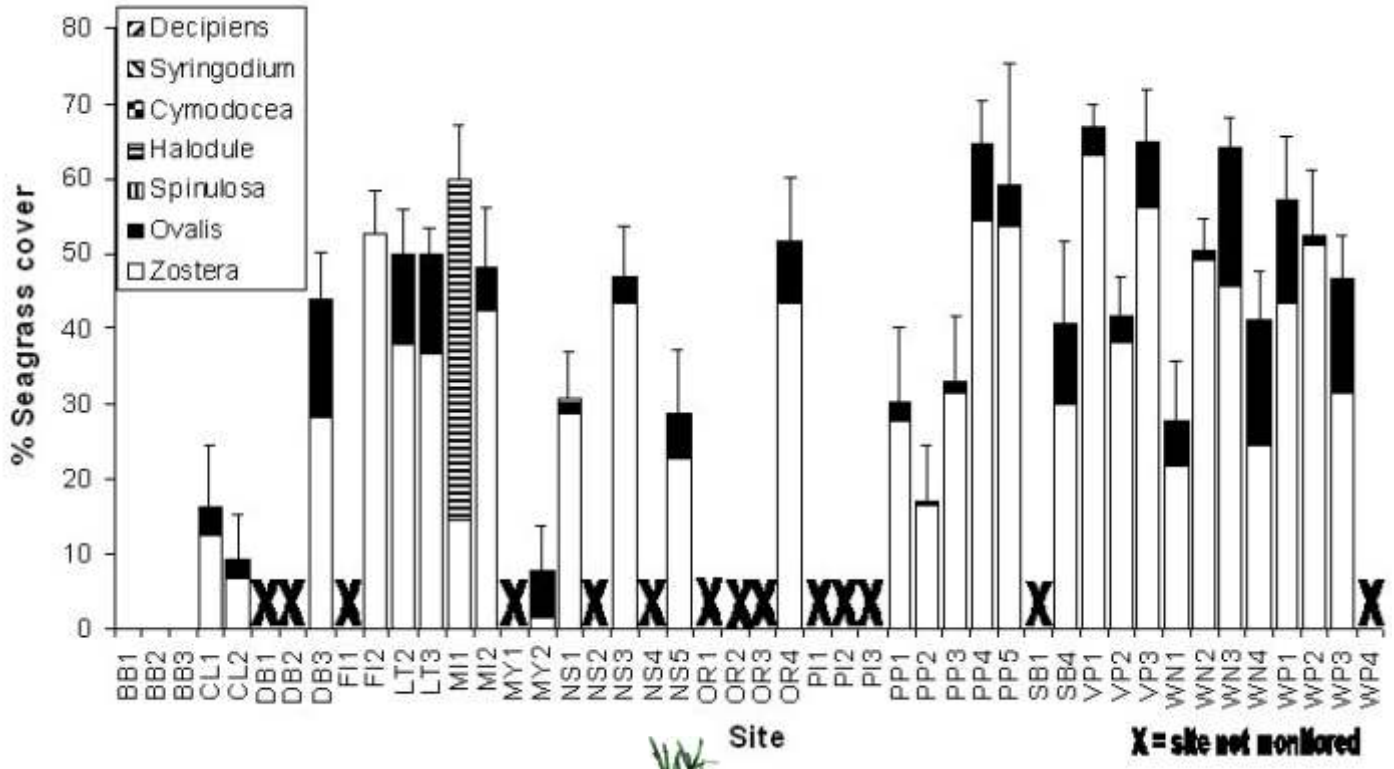
Figure 1. The percent seagrass cover (means and standard errors shown) and species composition for all sites monitored during the March/April 2005 period (n=32). Depicts all sites that have been monitored at least once since the program began in May 2001 (n=46) and shows those that were not monitored during the March/April 2005 period (n=14).

Left to right, top: Jodie Smith and Peg Walsh, and bottom: Rae Frawley and Lana Morgan at Deception Bay site 3, just south of Sandstone Point.

Left to right: Amanda White, Stephen and Jenelle Cox at Victoria Point site 3.

In terms of our volunteer database, we have approximately 200 members with 158 trained in the methods. Of these trained volunteers, 104 have adopted sites and are thus currently monitoring. Just over 40 members have nominated to receive newsletters and updates only.

We are in the preliminary stages of planning a seagrass rehabilitation experiment in Moreton Bay. Target areas will be those that historically supported extensive seagrass beds but are presently devoid of seagrass, for example, Bramble and Deception Bays.



Reef Guardians do their bit to monitor and protect seagrass

By Jane McAuliffe, Communications Officer at the Great Barrier Reef Marine Park Authority

Schools involved in the Reef Guardian Schools Program, an education initiative of the Great Barrier Reef Marine Park Authority, have been achieving amazing results in monitoring their local seagrass areas and helping to protect them for the future.

As part of the program, schools are encouraged to protect the environment, especially the Reef, and a large number have taken on the responsibility of reporting to Seagrass-Watch on their local seagrass areas.

With many Reef Guardian Schools located along the Great Barrier Reef Catchment, many have the opportunity to experience these unique ecosystems first hand and do their bit to protect seagrass.

These include Magnetic Island State School and Belgian Gardens State School in Townsville, Bwgcolman Education Centre on Palm Island and Thursday Island State School, Cooktown State High School and Horn Island State School.

The 'Rowes Bay Junior Ranges' at Belgian Gardens State School, play a vital role in protecting the local marine environments by monitoring the size and health of seagrass meadows at Rowes Bay, a site close to the school.

Dr. Jane Mellors from Seagrass-Watch HQ (Department of Primary Industries & Fisheries) introduced the Seagrass-Watch monitoring program to the grade six teachers and students during a talk on the benefits of seagrass to the marine environment and teachers Gayle Joyce and Brett Murphy were keen to take on the project.

"The students had already formed the 'Rowes Bay Junior Rangers' as part of our involvement in the Reef Guardian School programme and were doing regular beach clean-ups along Rowes Bay, so it seemed a wonderful extension to our program to learn how to monitor seagrass and be involved in Seagrass-Watch," Gayle said.

"We started our monitoring in 2004 with both teachers and students involved in learning the skills involved for monitoring with the expert help of Jane, we then increased the monitoring schedule in 2005 and became fully fledged members of Seagrass Watch."

"Groups of students monitor the seagrass on days designated by Jane and spend a couple of hours measuring and recording the necessary information, students then put the data into the Seagrass-Watch database for their compilation process."

Gayle and Brett have been attending workshops to increase their knowledge of seagrass monitoring so that eventually they will be able to conduct the monitoring program without the assistance of Jane.

Another Reef Guardian School involved in Seagrass-Watch is Cooktown P-12 School in Far North Queensland. Year 11 and 12 Multistrand Science, Marine Studies and Biology students travel to Archers Point, south of Cooktown, every term to continue with their involvement in the Seagrass-Watch monitoring programme. Cooktown School student, Hannah Lyon regularly participates in Seagrass-Watch monitoring and thoroughly enjoys the day.

"It's great to know that we are helping our dugongs and monitoring the health of our catchments at the same time," Hannah said.

The Cooktown School monitoring programme is co-ordinated by Christina Howley, and teachers Jason Carroll and Sophia Ramke. According to Sophia, the programme raises awareness and provides the students with opportunities to understand and interact with the seagrass ecosystems.

"The students collect information on the meadows so that any changes over time can be identified, with the help of Christina the group has set up a second site to mirror the first and allow for more data collection and Jason has aided the students in identifying the seagrass."

"As more students get involved in the program the level of awareness that the students demonstrate also increases, many of these students are now considering conservation and management as a career," she said.

Overall, thousands of students involved in the Reef Guardian School programme around Queensland are monitoring and protecting their seagrass areas and are leading by example to contribute to a more healthy and sustainable environment for the future.

Belgian Gardens State School students join with Dr. Jane Mellors from the Department of Primary Industries and Fisheries, Simon Fleming a local spray paint artist and Steve McGuire from the Townsville Marine Advisory Committee to unveil the schools mural which prominently features seagrass and a dugong.

L-R: Masao Yoshida with Charlene and Shaun Ashley.

Seagrass-Watch Cawaci

Shaun & Charlene Ashley report

In May of this year we took over the Seagrass-Watch monitoring at Cawaci, from Saint Johns College. As it was our first time we found the scenario very interesting and educational.

With two sites at Cawaci, and a low tide at 1154am of 0.2m, we started out at 10am. Luckily for us, the pegs laid out at the last sampling event were still in place so that made things a little easier. We noticed that Cawaci has all four species of seagrass which are prevalent in Fiji. It was only during this exercise that we realised the importance of seagrass to the environment and it is also one of the major source of food for most marine organisms. We went about identifying the different types of seagrass situated in the marked area. Then we measured the height of the seagrass and also managed to identify some small marine organisms breeding and feeding in that area. With all the time we took doing the exercise the tide started to come up so we had to do the final reading quickly and call it a day. That evening, we logged onto the Seagrass-Watch website and downloaded the data entry excel file, and entered the data, which we then emailed to Seagrass-Watch HQ.

In August, when we conducted Seagrass-Watch, we found the exercise much easier as compared to the last time. We noticed that quite a lot of changes have occurred as compared to the last scenario three months ago. It was observed that most of the seagrass in that area has decreased significantly with regards to two species, mainly the HP and HU species of seagrass located in Cawaci. Could this fact have been attributed to the climate change as we are now in our cooler months? We are looking forward to our next visit where we can monitor any further changes that may occur.

We feel that Seagrass-Watch is a very worthy exercise and that more people in Fiji should be aware of seagrass, Seagrass-Watch and participate in it, since it will in the long run benefit everybody.

VINAKA VAKA LEVU (Thank you very much)

Seagrass-Watch Lau

Monifa Fiu (WWF Fiji) reports

WWF Fiji Country Program has initiated a Seagrass-Watch monitoring program in the primary schools at one of its community project sites located in Kabara Island in the Lau group. Under the climate change program and community-based monitoring for coral bleaching, the schools have an awareness education program which complements the community outreach program.

The islands and atolls of the Lau (Eastern) group are scattered over an area of 114,000 sq km to the south-east of Viti Levu. In fact, southern Lau is closer to Tonga than it is to Suva.

Like many other coastal Pacific Island communities, the people of Kabara Island in Fiji, are heavily dependent upon marine resources for their livelihoods. The communities in Kabara are however concerned at how much longer it now takes to catch fish or gather food. They also speak of areas in their coral reefs which are 'white' and where fish are noticeably absent.

Considering that the reefs are far from major human influences such as farming land run-off, it is assumed that these 'white' patches of reef are a result of changes in water temperature.

Kabara has now become a focal point for raising awareness within the community on the impacts of Climate Change and WWF is now assisting the communities in trying to identify ways to adapt to these changes in their marine environment.

The communities have developed an action plan which outlines activities to help build the resilience of their reefs and wider marine environment to the impacts of Climate Change. Examples include banning the use of traditional poisons (duva) to catch fish or the implementation of village rules which forbid the dumping of village wastes into the sea.

Considering the nature of the monitoring and the existence of seagrass meadows at such a location, it was an opportunity to involve two of the primary schools in our monitoring program for seagrass in Kabara. The first seagrass monitoring was done in October 2004 and was carried out by the WWF Fiji marine team for a marine baseline biological assessment. For more information on this project please visit www.wwfpacific.org.fj

Shaun, Charlene and Masao monitoring at Cawaci site CW1 in May 2005.

Rich seagrass meadows of Kabara being surveyed by a member of the WWF Fiji research team.

Palawan

Bella Sheila L. Albasin (WWF Philippines) reports

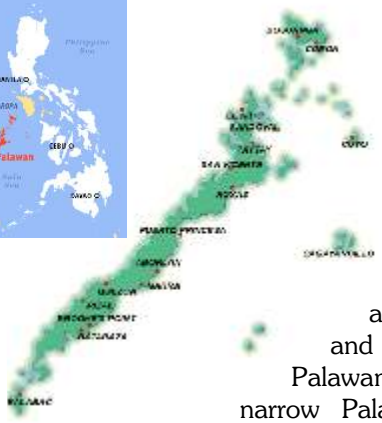
Last year we conducted a baseline survey in Roxas (northern Palawan) and recommended 7 areas with good seagrass cover, high species diversity and noted by fishermen to be sites frequented by dugongs (2 of these sites had dugong feeding trails). Three (3) of the sites are intertidal however the others (4) are quite deep (more than 3 meters) so we have to dive (SCUBA).

In June this year, WWF began monitoring these sites and we are currently in the process of analyzing the data with help from Hildie Nacorda, Marine Studies Institute, University of the Philippines.

In September or October, WWF will train the local community and some local government people how to monitor these sites. We are hoping that next year and the following years thereafter, the municipal government of Roxas together with these concerned community people will be able to do the monitoring since they have included monitoring of these areas in their Municipal Fisheries Code as Seagrass Protected Areas (drawn March 2005).

We presented the results of our seagrass survey to the community leaders (barangays) where these seagrass protected areas are located. They have yet to draft the ordinances delineating these areas.

As our project here in Roxas will end toward the middle of next year, I am hoping that somebody (within the local government of Roxas or among concerned people in the community) will continue monitoring these seagrass areas. It is possible that the Palawan Council for Sustainable Development (PCSD) will continue monitoring upon request by the municipal government. Our target this year is to have the barangays draw up an ordinance delineating the area itself and come to a decision on activities that will be allowed or not allowed inside the area.



Palawan is an island province of the Philippines located 600 km southwest of Manila and is flanked by the South China Sea on the west and the Sulu Sea on the east. It is the largest province of the Philippines. It has a land area of 1.5 million hectares and a coastline of 1,959 km. Palawan consists of the long and narrow Palawan Island, plus over 1,700 other smaller islands surrounding the main island.

Palawan is considered to be the Philippines' "last frontier". The province boasts of many splendid beaches and has two World Heritage Sites: Tubbataha Reef National Marine Park and the Puerto Princesa Subterranean River National Park. In 1990, UNESCO declared the entire Palawan area as a Biosphere Reserve.

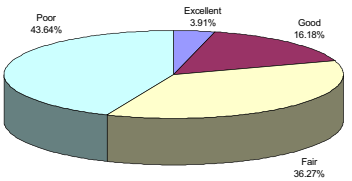
At least 10 species of seagrass are known from Palawan. *Enhalus acroides* is to be the most common seagrass occurring in Palawan.

Since 1997, staff from the Palawan Council for Sustainable Development have conducted coastal resource assessments to generate information on the general condition of Palawan's Coastal resources. Seagrasses were surveys at a number of sites using a transect/quadrat technique.

They reported that nearly half of Palawan's seagrass resources or in a "poor" condition (see graph & table below).

Data generated from surveys of coral reefs and seagrasses across Palawan is input to coastal resource management planning, Environmentally Critical Areas Network (ECAN) zoning and environmental monitoring.

Under ECAN zoning, identify potential core zones which may include habitat of rare and endangered marine species, fish sanctuaries (*declaring certain areas as fish sanctuaries to enhance sustainable fisheries*).



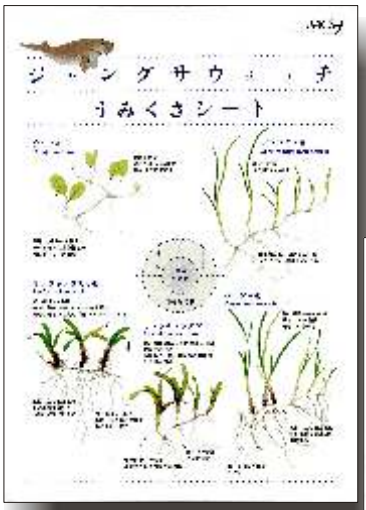
Site	Total No. of Survey Sites	Excellent	Good	Fair	Poor	Year
Bataraza	12	1	1	4	6	2003
Narra	12	0	1	8	3	2003
El Nido	14	0	4	3	7	2002
Agutaya	10	1	4	3	2	202
Magsaysay	10	1	2	4	3	2002
Dumaran	16	1	3	7	5	2001
Taytay	16	1	0	11	4	2001
Quezon	13	0	2	2	9	2001
Brooke's Point	6	0	3	2	1	2001
S. Espanola	6	0	2	2	2	2001
San Vicente	10	1	2	1	6	2000
Busuanga	15	0	1	5	9	1999
Culion	21	0	0	3	18	1999
Coron	2	0	1	1	0	1999
Roxas	13	1	3	7	2	1999
Aborlan	3	0	0	2	1	1997
Total	***179***	***7***	***29***	***65***	***78***	
PERCENTAGE	**100**	**3.91**	**16.2**	**36.31**	**43.58**	

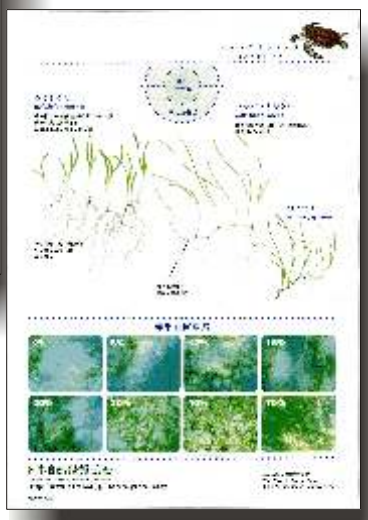
Okinawa Jangusa Watch

By Masahito Yoshida, Nature Conservation Society of Japan

The Nature Conservation Society of Japan has published a water-proof Seagrass-Watch field sheet in preparation for the first official Jangusa (seagrass) Watch Training Course to be held in Okinawa, Japan, on August 21, 2005.

The sheet includes a Seagrass-Watch and seagrass identification guide. Both guides include beautiful drawings of the eight seagrass species which occur in Okinawa, that were contributed by Mr Taro Hosokawa, a well known designer of Kaiso Original Ltd. The seagrass identification guide provides brief knowledge on seagrass biology written by Dr Masahiro Nakaoka of Chiba University and Ms Naoko Kochi of Hokkaido University, while the Seagrass-Watch sheet mainly focus on identification and percentage cover estimation.





This field guide is the first ever seagrass educational materials available in Japanese. The training will be held at Kayo on 21 August, and is particularly tailored to divers in Okinawa.

Study area at Kayo.

Karimunjawa, Indonesia

Stuart Campbell (WCS Indonesia Program) reports

WCS Marine are continuing the collaboration with Karimunjawa National Park (KNP) staff in monitoring seagrass habitats in the marine park. The new zoning for the management of marine resources in the KNP, agreed by all stakeholders early this year incorporates different types of coastal habitat management all within the one national park and community framework.

In the first phase, this project will focus on comparing seagrass habitat parameters between management sites and using these findings within an adaptive management framework to promote the continued improvement of seagrass habitat and function in Karimunjawa. The second phase will then focus on assessing the functional role of seagrass habitat as nursery ground for reef fishes.

Baseline surveys of seagrass coverage have been conducted prior to the implementation of new zoning regulations and will provide a comparison to evaluate the new management regulations in protecting seagrass habitat in KNP. The research and monitoring will provide information for management to answer a set of key questions such as; Is there a difference in seagrass cover between the different management zones? Do reef fish in KNP depend on seagrasses for nursery habitat? Implementation of these management approaches is likely to improve the success of conservation activities in the region.

Above: Karimunjawa National Park rangers monitor seagrasses.

Left: Stuart Campbell training park rangers and WCS staff in Seagrass-Watch monitoring techniques.

Seagrass 3M workshop

From the 9th to 12th May 2005, a workshop "Seagrass 3M workshop: Mapping, monitoring & management of seagrass resources in the Indo-Pacific" was held at The Nature Conservancy, Southeast Asia Center for Marine Protected Areas (TNC SACMPA), Sanur, Bali.

The workshop was primarily an opportunity to train Indonesian seagrass scientists in the Global Seagrass Research Methods for SeagrassNet and Seagrass-Watch. It also provided an opportunity to review knowledge of tropical seagrass systems, the threats to those systems, and to share experiences with management and protection of seagrass systems. The workshop was also an opportunity for Indonesian scientists to discuss issues specific to Indonesia.

The workshop lectures were conducted at the TNC offices and the afternoon sessions were spent on the reef flat of Sanur, Bali.

Participants attended from all over Indonesia, including from Government (Ministry of Marine Affairs and Fisheries), non-government organisations (The Nature Conservancy, Wildlife Conservation Society & BKSDA, Bali), national parks (Karimunjawa, Wakatobi & Komodo), universities (University of Indonesia, Hasanuddin University, Sam Ratulangi University, Universitas Udayana) and research institutions (Indonesian Institute of Sciences).

Participants learned the basic principal of mapping seagrasses (use of a GPS, using a map, using a GIS and the issues of scale and site location), and then practiced techniques in the field by mapping the distribution of seagrasses across Sanur beach adjacent to a boat channel that cuts through the Sanur reef.

Participants were also taught Seagrass-Watch monitoring techniques and established a site on the seagrass meadow at Sanur.

Rob Coles and Len McKenzie demonstrate Seagrass-Watch monitoring techniques to workshop participants, Sanur Beach, Bali.

Pollen released from male Enhalus acorides flowers floats on the surface above dense meadows at Sanur Beach, Bali

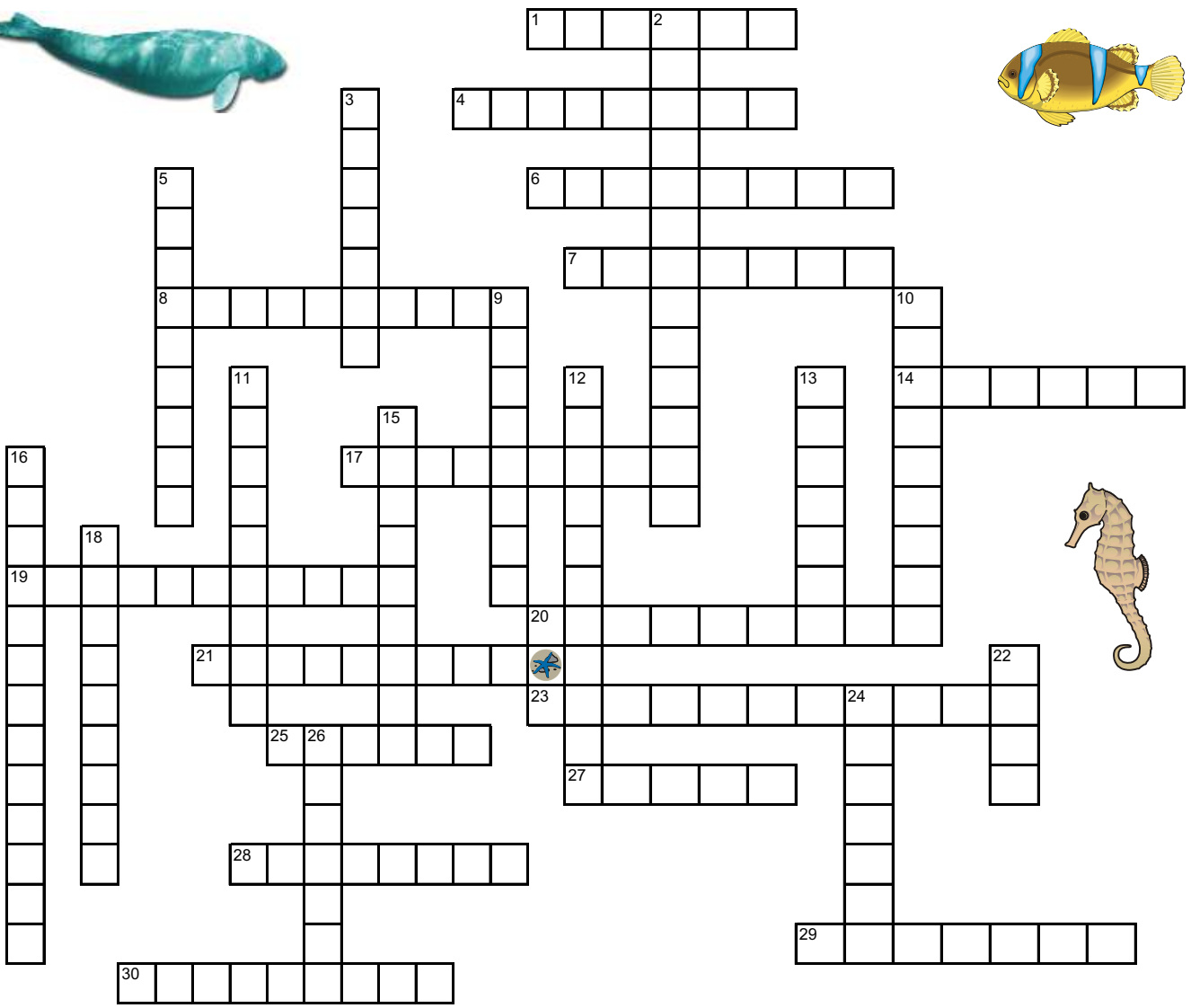
The final morning of the workshop was dedicated to seagrass and coastal management. Participants identified the threats to seagrasses and solutions to Indonesian issues. The issues identified for Indonesia are generic to the western pacific with physical destruction, reclamation, dredging, demersal fishing, sandmining, waste disposal, land based runoff, eutrophication, water clarity and hotel building all seen as having a high potential for damaging seagrasses. Specific to Indonesia was a priority given by the workshop to more effective legislation over education and planning.

One of the significant outcomes of the workshop was the establishment of the Indonesian Seagrass Association. It was regonised that there is in big need for a communication tool for those interested in seagrasses (the scientists, coastal resource managers, and so on) in order to share ideas and knowledge for the sake of seagrass resources in Indonesia which are undervalued. Therefore, a discussion group was established as an appropriate start in developing mass communication amongst seagrass researchers or those interested in protecting and managing seagrasses of Indonesia. Moderated by Ms Yayu La Nafie (Hasanuddin University, Makassar, South Sulawesi), interested persons can subscribe by emailing id_seagrass-owner@yahoogroups.com

Right: Practicing Seagrass-Watch methods at Sanur Beach.
Below: Ms Yayu La Nafie shows her support of Seagrass-Watch
Bottom: Some of the workshop participants after a successful afternoon in the field.

PUZZLES

How close did you read this issue of the newsletter?? *Answer in issue 24.*



Across

1. Location revisited for the first time since April 2004
4. Youth cultural festival
6. Mobs reported munching on seagrass at St Helen's Bch
7. Bay targeted for seagrass rehabilitation experiment in Moreton Bay
8. Number of sites established in Moreton Bay
14. Location of CW1 and CW2
17. Location where no seeds have been found Hervey Bay
19. Special School from which town assists to monitor PN2.
20. Direction of strong winds which deposited sand onto TG1 earlier this year
21. Type of tags used to track dugongs near Burrum Heads
23. National park in Indonesia
25. Point in Central Qld where dugongs were caught for meat and oil at the turn of the century
27. Location of seagrass workshop field activities in Bali
28. Dried seagrass leaves are found to cure this ailment
29. Considered to be the Philippines' last frontier
30. The degree of agreement among repeated measurements

Down

2. An education initiative of the Great Barrier Reef Marine Park Authority
3. What was Gilianne often watching rather than seagrass in the Torres Strait?
5. Event in Townsville where Seagrass-Watch was displayed
9. Isotope of which element in seagrass determines the influence of human use
10. New seagrass monitoring site at Magnetic Island
11. Location of one of Jane Mellors' PhD field study sites
12. "Grandfather" of Seagrass-Watch
13. Family who conducts monitoring at Midge Point
15. The traditional owners of Fraser Island & Hervey Bay
16. Environmental issue of high importance to Kabara Island
18. Animal recently sighted at Back Beach, Thursday Island
22. Location of training site in Okinawa in August
24. Known as seagrass in Japan
26. Seagrass genus that has increased in occurrence at Front Beach, Thursday Island

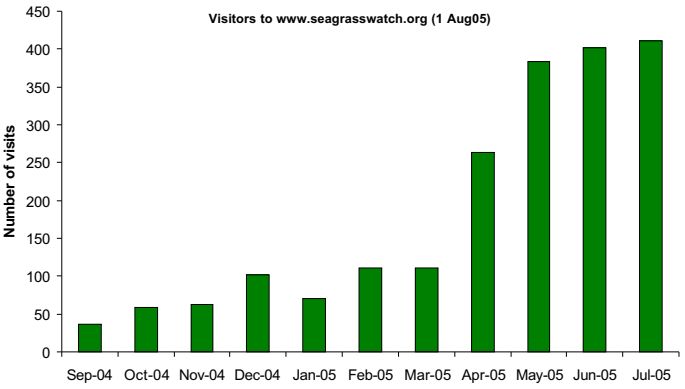
Seagrass-Watch on the web

The Seagrass-Watch website is becoming more popular with web surfers. The website is providing a useful resource for people wanting information on seagrasses in this part of the globe and on seagrass generally. More visitors are downloading the newsletters and publications, and many volunteers have downloaded the data entry files and submitted their data online.

From it's humble beginnings nearly 12 months ago, the number of people visiting the site increased significantly from March 2005 after a major overhaul and the inclusion of the long-term monitoring reports.

Seagrass-Watch HQ is currently working on a new "magazine style" look for the site, which should be completed before the end of the year.

If you haven't visited the site, we recommend that you take a look. You'll find it a valuable resource and a good starting point for all your seagrass questions.



SAFETY FIRST
THE SAFE WAY IS THE BEST WAY

Risk Assessment

Risk is a part of living in our society and volunteer organizations are natural risk takers. Nevertheless, everyone wants to work and volunteer in a safe environment and safety is everyone's responsibility.

Risk management is the process of managing exposure to potential injury and liability. It does this by identifying risks in order to prevent them or reduce them. Risk management:

- Minimises the effect of a loss that could not be prevented
- Gives volunteers the confidence to pursue their mission without the fear of legal action or harm
- Approaches risk in a structural and calculated manner, rather than being haphazard

The National Standards for involving Volunteers in Non-Profit Organisations are a generic set of guidelines produced by Volunteering Australia to represent best practice in the management of volunteers. Risk management is part of that best practice.

Whether you know it or not, Seagrass-Watch has a number of risk management strategies in place. They may be known as "common sense," or "safety measures" or simply "good management." Whatever the label, these decisions and strategies put Seagrass-Watch on a solid footing and in many respects enable the program to stride confidently toward its mission.

SAFETY FIRST
DON'T TAKE CHANCES

These risk management strategies, include:

- Assess the risks before monitoring - check weather, tides, time of day, etc.
- Use your instincts - if you do not feel safe then abandon sampling.
- Let someone else know where and for how long you will be sampling
- Do not put yourself or others at risk.
- Adult supervision is required if children are involved

Effective volunteer programs can't operate without taking risks, but they can protect their mission-critical interests by applying a five-step risk management process.

1. Establish the context
2. Acknowledge and identify risks
3. Evaluate and prioritize risks
4. Implement risk management techniques
5. Monitor and update the program

The process enables volunteers to systematically identify and prioritize risks and take action to prevent or reduce the risks facing people, property, finances and goodwill. Risk management involves taking small steps, as soon as practically possible. Remember that your risk management program should reflect the resources available to your group.

All volunteers should make a risk assessment before proceeding with any field activity. All participants need to read the risk assessment, agree to adhere to the stated controls and provide a signature of confirmation. We suggest you integrate this into your sign-on sheet for the day. We have provided a basic risk assessment below.

For more information on risk management, visit http://www.volunteeringaustralia.org/index1.html

Hazard	Risk	Control
Sun	Sunburn	· wear hat with good cover · use sunscreen (preferably 40+).
	Eye strain	· sunglasses (preferably polarised lenses)
	Dehydration	· Take a drink (water)
	Exposure	· Wear proper clothing and footwear depending on the weather
Beware of holes, oysters, broken glass, etc.	Cuts & twisted ankles	· Use common sense when walking to and from a site · Wear proper footwear e.g., diving booties or old shoes with tough sole and good grip. · Have a first aid kit on site or nearby and re-acquaint yourself with the treatment of marine stings (e.g., jellyfish, stonefish)
Be aware of dangerous marine animals.	Marine stings	· Wear proper footwear depending e.g., diving booties or old shoes with tough sole and good grip.
	Bites	· Have a first aid kit on site or nearby and re-acquaint yourself with the treatment of marine stings (e.g., jellyfish, stonefish) If crocodiles occur in your area, check with QPWS.
Deep mud	Standed/stuck	· Communication device (ie mobile phone working in area or marine radio)
	Exhaustion	· Do not over exert yourself - move at your own pace
	Bacterial infection	· Wash hands and feet carefully upon return
Tide	Standed/stuck	· check weather, tides, time of day, etc. Communication device (ie mobile phone working in area or marine radio)

Seagrass-Watch QAQC

Have you received a Data Error Notification recently??? It's just the programs way of letting you know how we are dealing with your data and how we can work together to improve the program.

Seagrass-Watch HQ ensures the QAQC protocols for the program are followed and that the program is producing data of high quality, ensuring volunteers are not wasting their time and resources.

Quality assurance (QA) refers to the management system by which data is collected, organised, documented and evaluated. Quality control (QC) refers to the technical means by which error is controlled by both volunteers and scientists for Seagrass -Watch.

DPI&F has systems in place to manage the way Seagrass-Watch data is collected, organised, documented, evaluated and secured. The Seagrass-Watch program collects and collates all data in a standard format. DPI&F has implemented a quality assurance management system to ensure that data collected by volunteers is organised and stored and able to be used easily.

All data (datasheets & photographs) received are entered onto a relational database on a secure server in Cairns at the Northern Fisheries Centre. Receipt of all original data hardcopies is documented and filed within the DPI&F Registered Management System (RMS), a formally organised and secure system. Seagrass-Watch HQ (DPI&F) operates as custodian of data collected from other participants and provides an evaluation and analysis of the data for reporting purposes. Access to the IT system and databases is restricted to only authorised personnel. Provision of data to a third party is only on consent of the data owner/principal.

Seagrass-Watch HQ (DPI&F) performs a quality check on long-term monitoring data submitted as part of Seagrass-Watch Quality Assurance Quality Control (QAQC). Seagrass-Watch HQ provides validation of data and attempts to correct incidental/understandable errors where possible. Validation is provided by checking observations against photographic records to ensure consistency of observers and by identification of voucher specimens submitted.

In accordance with QAQC protocols, Seagrass-Watch HQ advises observers via an official data error notification of any errors encountered/identified and provides an opportunity for correction/clarification (this may include additional training). Any data considered unsuitable is removed from the database.

The collection of data by Seagrass-Watch volunteers necessitates a high level of training to ensure that the data is of a standard that can be used by management agencies. Technical issues concerning quality control of data are important especially when the collection of data is by people not previously educated in scientific methodologies. By using simple and easy method, Seagrass Watch ensures the issue of completeness (the comparison between the amount of valid, or useable, data originally planned to collect, versus how much was collected.). Calibration sheets are used to ensure prescision (the degree of agreement among repeated measurements of the same characteristic at the same place and the same time) and consistency between observers and across sites at monitoring times. Repeated scientific training has allowed volunteers to become familiar and cognisant with scientific techniques. Training of volunteers by scientists and use of field calibration sheets also allows comparability of data between between sample locations or periods of time. Issues concerning representativeness are addressed within Seagrass-Watch before monitoring begins. This is achieved by the careful selection of localities based on their capacity to represent the composition of seagrass meadows throughout a chosen region. Replicate sites within localities are chosen to accurately describe the broader location and scientific techniques (eg power analysis) are used to ensure sufficient sampling effort (ie quadrats) is used to describe a seagrass meadow. Finally, accuracy (measures how close results are to a true or expected value) is achieved by using voucher specimens to check species identifications, refresher scientific training and by photographing 27% of quadrats assessed.

Do you want to get involved?

Contact your local Seagrass-Watch representatives:

Cooktown:
Christina Howley *Ph. (07) 40695229*

Great Sandy Strait:
Gordon Cottle (The Great Sandy Strait Fauna & Flora Watch)
Ph. (07) 4129 8531
Steve Winderlich (QPWS Maryborough) *Ph. (07) 4121 1933*

Hervey Bay:
Trischelle Lowry (Hervey Bay Dugong and Seagrass Monitoring Program)
Ph. (07) 4124 4192

Mackay:
Jon Woodworth (Mackay Whitsunday Coastcare Facilitator)
Ph: (07) 4967 0722

Moreton Bay:
Paul Finn (QPWS Moreton Bay Marine Park) *Ph. (07)3821 9029*

Torres Strait:
Jane Mellors (DPI&F Townsville) *Ph: (07) 4722 2655*

Townsville:
We are currently looking for a coordinator in Townsville. Please contact Seagrass-Watch HQ if you would like more information.

Whitsundays:
Margaret Parr (QPWS Volunteer Rangers) Airlie Beach *Ph: (07) 4946 1872*
Tony Fontes (O.U.C.H) Airlie Beach *Ph. (07) 4946 7435*

International
Len McKenzie (QDPI&F, Cairns, Australia) *Ph.(+61) 7 4035 0131*
or
visit www.seagrasswatch.org

Queensland Government, Department of Primary Industries and Fisheries

Text: Len McKenzie & Rudi Yoshida
Layout & graphic design: Len McKenzie & Rudi Yoshida

Any comments or suggestions about the Seagrass-Watch program or contributions to the newsletters would be greatly appreciated.

NEXT ISSUE OUT DECEMBER 2005

Contact: Seagrass-Watch HQ
Northern Fisheries Centre
PO Box 5396, Cairns. Qld. 4870
Email: Seagrass@dpi.qld.gov.au
Phone(07) 4035 0100

Hervey Bay Dugong & Seagrass Monitoring Program

Burrum Heads

When Wendy Jones monitored BH1 in April, she reported dugong feeding trails in the near vicinity. Dave and Rhonda Kohler recently reported that they had seen larger numbers of adult and juvenile dugongs just south of Burrum Heads.

Toogoom

In March, Maree Cliff reported that the extreme high tides (over 4m) and strong northerly winds had eroded a lot of sand at the back of Toogoom beach - which was deposited over the intertidal banks and site TG1.

Dundowran

In May, David and Rhonda Kohler reported "good" seagrass coverage at DD3. The sites generally have less than 3% cover, however they reported 4% in places. Of particular note, was a greater mud component in the sediment. Sandra and Lloyd McKay similarly reported a slightly higher component of mud in the sediment at DD1. Seagrass cover at DD1 has remained low at approximately 1% for the last 6 years. No seeds were collected at the site in August and no seeds have been reported at any other Dundowran site. This absence of a seed bank indicates that seagrass abundance and distribution will remain relatively low across Dundowran for some time.

Urangan

Matt and Trischelle Lowry when monitoring UG2 in May noticed that at least half of the *Zostera* was reddish/brown in colour. This is often a consequence of high light and desiccation. They also reported dugong feeding trails across the site.

In August, Len McKenzie and Rudi Yoshida (Seagrass-Watch HQ) revisted the Booral site UG3 with Trichelle. The seagrass abundance recorded was the highest on record for the site since monitoring began in late 2001.

Peter Stratford from University of Central Queensland also assisted at Urangan, learning the Seagrass-Watch methods as he will be establishing sites in Gladstone in October 2005. Both Trischelle and Peter were also shown the additional Reef Water Quality Protection Plan collection methods, so in October they can collect samples for seagrass tissue nutrients, sediment nutrients, seagrass reproductive health and also conduct edge mapping.

Great Sandy Strait Fauna & Flora Watch

Gordon Cottle reports

Poona

At Poona in April, Steve, Nicole and Robin Bailey reported *Zostera* meadows inshore of the monitoring site, not previously seen at PN1. They also noticed dugong feeding trails in the vicinity and across the site. In August Len and Rudi (Seagrass-Watch HQ) assisted monitoring at PN1, similarly observed abundant dugong feeding trails. Severe beach erosion near PN1 has meant that access to the site is now from the northern side of the point. Seagrass cover at PN1 has recovered to the higher abundances of 2003, which were significantly higher than when monitoring started in 1999. Species composition remains relatively unchanged and the number of *H. uninervis* seeds counted was low indicating a relatively small seed bank. On the 18 August, students from the Maryborough Special School assisted to monitor PN2.

Tinnanbar

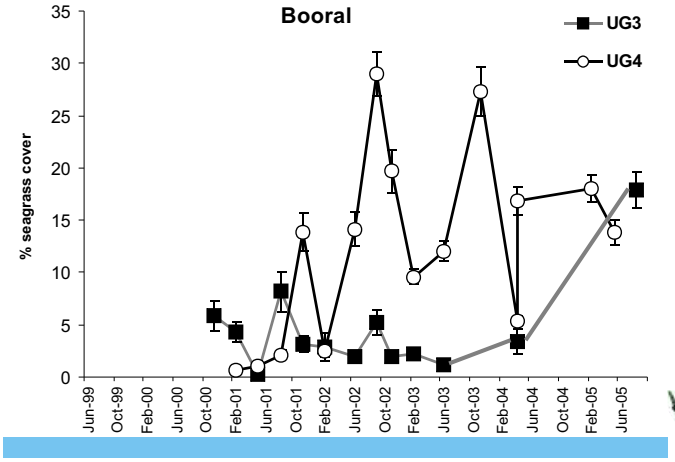
In May when monitoring TN1, Robyn Bailey and I found a very healthy increase in seagrass abundance since April. However at TN3 in July, we noticed a significant reduction in *H. ovalis*.

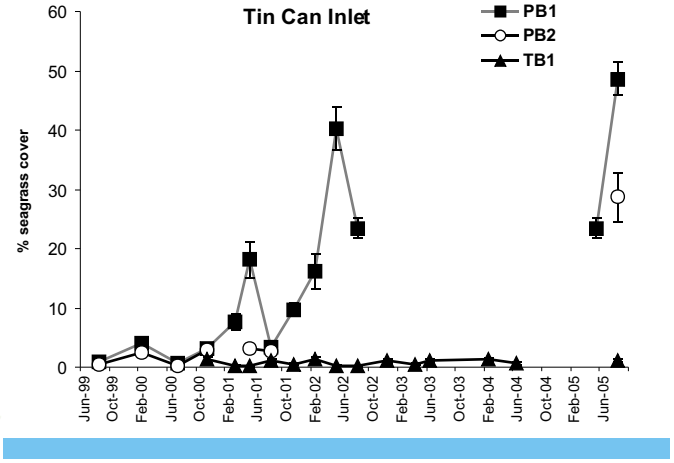
Boonooro

In early June, Anne O'Dae, Mitch, Gordon and Kathy reported a noticeable resurgence of *H. uninervis* at *BN1 since November 2004*.

Tin Can Bay

After a monitoring hiatus of a couple of years, sites in Pelican Bay have been resurveyed. Seagrass meadows at Inskip Point have continued to recover. Extensive *Zostera* meadows cover the intertidal banks of Pelican Bay, at Inskip Point. The site PB2 which was last examined in July 2001, was also re-examined in August 2005. Seagrass cover at PB2 has increased by a factor of 10 times. The amount of macroalage has also double from approximately 10% in 2001 to 25% in 2005. The site TB1 at the Tin Can Bay township has remained relatively unchanged. At TB1 only *Halodule uninervis* is present and the cover is approximately 1%.





QPWS Volunteer Rangers

Margaret Parr (QPWS Volunteers) reports

Slimy, slippery silty mud was again a feature of monitoring our 4 sites in Pioneer Bay.

Three sites are largely unchanged on the mud scale but on the site (PI4) nearest to the Able Point Marina (where dredging has recommenced), four of the six site marker pegs are now buried under a new wave of mud.

The twelve volunteers who valiantly contended with the mud also worked in winds up to 30 knots and at times driving rain.

The seagrass itself looked in good condition. We found little epiphyte [cover], less algae than previously, no seeds, no feeding trails, but a fair amount of dugong poo.

Of great interest to us is a different species found on site three, we will let the scientists put a name to it!

We were delighted to have Hugh Kirkman working with us for one day. He certainly pulled his weight and monitored more quadrats than the rest of us! His history of the discovery of the importance of seagrasses is amazing and it is all very recent history.

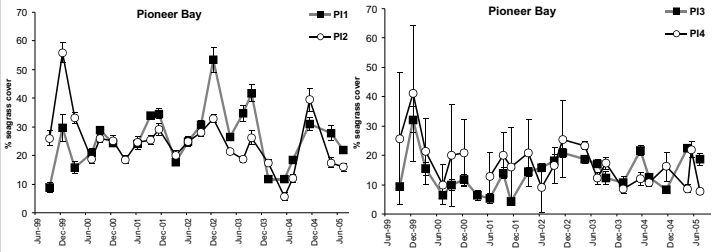
Monitoring at PI July 2005

Margaret & John Parr monitoring - July 2005

Regional roundup

Pioneer Bay

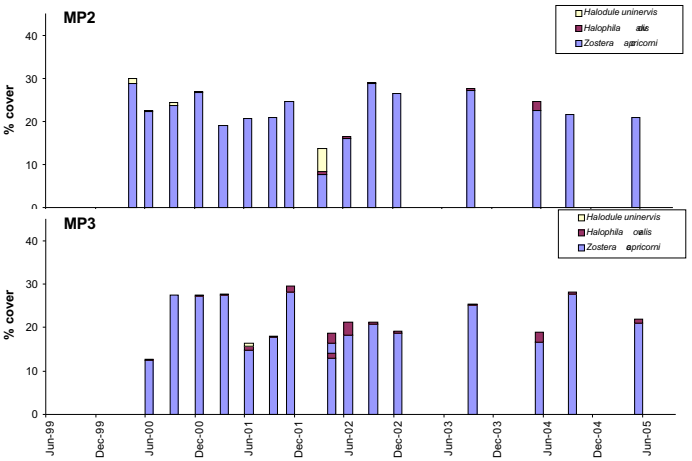
Seagrass abundance at all Pioneer Bay (PI) sites appear to be following a typical seasonal trend, with lower abundance in the colder, slow growth, winter months. Reports of high deposition of mud across site PI4 are a concern, however this appears to have had limited impact on the seagrass as abundances are within expected ranges and species composition is unchanged. Impacts on associated faunal abundance however are unknown and will be examined in the near future.



Midge Point

In late May 2005, the Wenzler family (Paul, Jennifer, Tara and Andrew) conducted monitoring at Midge Point (MP2 and MP3). Seagrass abundance and species composition were well within ranges normally expected at these sites for this time of year, Seagrass abundance was generally 20-25%. The site also had a lot of associated fauna with abundant crab holes and lots of gastropods. Epiphyte levels were high in places, but this is not a concern due to the high number of grazers (e.g., gastropods).

L-R: Andrew & Jennifer Wenzler.



Laguna Quays & Midgeton

In early May, Margaret Parr, Dell Williams and a few assistants revisited sites at Laguna Quays and Midgeton. At both locations, the seagrass abundance was low, but within the ranges expected for that time of year, The sites examined all had significant amounts of mangrove detritus and showed some evidence of wind and wave activity with erosion and exposure of rhizomes. The sites also had significant abundance associated fauna with many crab holes and hermit crabs. A good sign of a relatively productive seagrass meadow.

L-R: Margaret Parr, Kerry Harrison, Dell Wiliams & Eileen Lewis at Midgeton.

Dell Williams gets some QPWS assistance at Laguna Quays MP4

Research

Burrum Heads dugong & seagrass research

James Sheppard, a PhD student at James Cook University and the CRC Reef has been conducting a satellite tracking study of the dugongs in Hervey Bay over the last three years. Twenty-two wild dugongs were caught and tagged with the latest in GPS satellite tags, which allowed his research team to monitor the movements of the animals 24 hours a day for up to three months at a time. His results have opened a remarkable window into the behaviors of this elusive and threatened marine mammal.

What became apparent as soon as the tracking data starting coming in was that the dugongs in Hervey Bay were using specific areas of core seagrass habitat intensely. The extensive intertidal and subtidal seagrass meadows of Burrum Heads is one of these core habitats. Many of the animals spent a large proportion of the tracking period moving in small home ranges of 0.5 to 10 km^2 across this roughly 25 km^2 area.

Recognising the importance of the site to the dugongs in the Bay, James used a marine video camera and geographic software to survey and map the entire intertidal and subtidal Burrum seagrass resource. Samples were also taken for laboratory chemical analysis to gain an understanding of the specific nutrients in the seagrasses the dugongs were targeting. A high resolution map of species type and abundance across Burrum Heads has been drafted. The next step will involve matching the dugong movements to the seagrass distribution to build a detailed picture of how and why the dugongs use the area as habitat. James has been aided in his research by the local Seagrass-Watch team, who have kindly supplied their monitoring data for Burrum Heads. This has provided an invaluable means of incorporating seasonal biomass fluctuations into the final estimates of just how many dugongs the area can support and for how long. Given the rapid development occurring around the area, this research provides further justification for continued monitoring and safeguarding of this valuable seagrass resource.

James Sheppard (front centre) and his elite dugong wrangling team with a 2.8m male (named Bunda) captured in front of Burrum Heads July 2004. Bunda was named after the Butchulla (the traditional owners of Fraser Island & Hervey Bay) word for Clever, because it hung around Burrum in the area of the choicest seagrass meadows. Bunda is about to be released and you can see the satellite tag attached to its tail.

Influence of human use of catchment areas adjacent to the GBR

Kellie Lobb (James Cook University)

I'm hoping to conduct quite an ambitious Honours Research Project with the help of the Seagrass-Watch over the coming 18 months. I plan to analyse plant tissue and sediment material to assess nutrient levels at 12 locations along the length of the Great Barrier Reef.

By analyzing sediment and plant material for nitrogen stable isotopes it is possible to determine the influence of human use of catchment areas adjacent to the GBR, for example urban sewage outfalls, aquaculture or agricultural activities. This technique has been successfully used to determine the influence of sewage outfalls in Moreton Bay.

With the help of Seagrass-Watch volunteers, I am aiming to collect seagrass, macroalgae, sediment and mangrove leaves in both dry and wet seasons, to account for any seasonal variations in nutrient availability and uptake. I'm planning my first sampling for September/October to capture the dry season and aim to repeat this sampling in March 2006 to capture the wet season.

If all goes to plan my results will return a picture of nutrient influence across the length of the coastline adjacent to the Great Barrier Reef, and in particular identify parts of the coast that experience higher nitrogen (nutrient) levels than other regions.

I hope my project will be of interest to passionate seagrass watchers and will enthuse those interested in becoming involved in sample collections in September/October 2005 and March 2006.

Thanks and I hope to see you in the field!!

Natural and human impacts at Urangan

Chris Ashcroft (Australian Maritime College)

I am currently undertaking my final semester research project for the Bachelor of Administration (Marine Resources). I am a member of Hervey Bay Seagrass-Watch since mid 2002 and first participated as part of Urangan State High School Marine Studies program.

I am now in my final semester of University (Maritime College and University of Southern Queensland), which requires that I undertake a research project relating to the marine ecosystem. I have chosen to study the growth patterns of seagrass over time in the Hervey Bay area (particularly sites UG1 and UG2), and hope to identify possible causes (both natural and human) of fluctuations in growth and biomass.

As I only have one semester to complete the research, the project will be brief. However, I hope to identify and correlate major trends in seagrass growth to natural and human impacts (such as flooding and the extension of the Urangan Marina). I will hopefully have some results for everyone in the next newsletter.

I would also like to thank the seagrass monitoring team responsible for UG1 & UG2, Trischelle Lowry and Len McKenzie for all of their assistance with this project.

The Poo Report: In search of seeds!

By Dr Michelle Waycott, School of Tropical Biology, James Cook University

Since 2000, my students and I have been trying to establish if the dugong might be dispersing seeds of some seagrass species, helping to ensure our seagrass meadows can recover and ensuring genetic exchange. As most Seagrass-Watch participants know, dugongs live on a diet of seagrasses and their feeding activities can often be seen as a furrow in the seagrass meadow. Over the past 4 years we have been accumulating dugong poo, many of which have been collected by Seagrass-Watch groups when they are out and about. Collecting poo is not a fun thing to do, it is usually fairly smelly and often looks remarkably like human poo (see photo)! However, it is very useful for us as it is the only way we can work out if seagrass seeds are making it through the gut if the dugong.

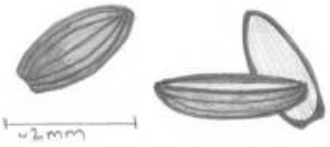
A recently completed student project finished sorting all the dugong poo we had at the time and has shown some very interesting results. The student, a 3rd year student at J.C.U. Veronica Magnusson, carefully sorted through each sample and found that while many poo's did not have any seeds in them 19%. Of all the seeds she found, Veronica also discovered that *Zostera* seeds were dominant among the samples we had and found in the poo obtained in November from Hervey Bay and Pioneer Bay. Only 1 sample contained *Halodule uninervis* seeds, that was found in a June collected sample from Shelley Beach. These observations match the dominant species found at all of these sites and the time of year would be when the seeds are at their maximum in the seagrass meadows.

So, now we know that seeds make it through the gut but we still don't know if they are able to germinate and grow once the poo is dispersed. although as the samples are frozen when collected we have a limited ability to interpret what the viability of seeds is. To test this we examined the seed structure microscopically to determine if the seed coat was intact and showing no signs of being digested or broken (see drawings).

Dugong poo collected in Hervey Bay by Kathryn McMahon. Some of these contained Zostera seeds.

Left: drawing by Veronica Magnusson of Halodule uninervis seed found in dugong poo, the right hand side depicting a split seed, the left an intact

Right: drawing by Veronica Magnusson of Zostera seed found in dugong poo, the right hand side depicting a split seed, the left an intact seed. Note the ridges on the seed are typical of Zostera seeds, they were also red-brown in colour.

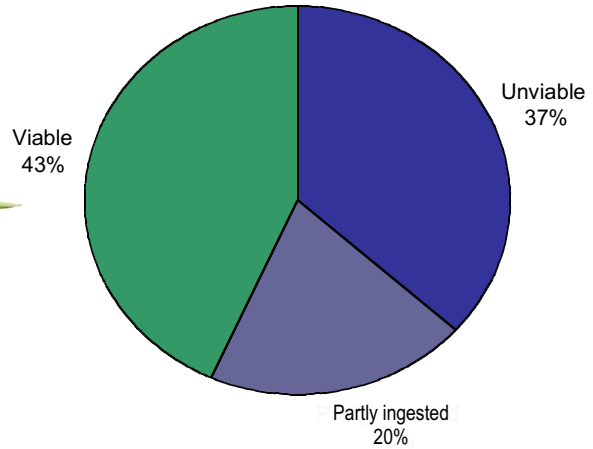


These results were promising indicating that 43% of the seeds were intact (see graph). A few seeds, 20%, had been partially digested in their passage through the gut of the dugong and the remainder, 37%, were empty of any embryo the seed coat being visible only. The fully intact seeds were examined further to determine if the embryo inside the seed coat appeared healthy, all were! So, although this is not a definitive analysis, nothing short of germinating the seeds from a poo can provide that level of confidence, we believe this gives us evidence that the dugong can transport seeds.

We are keen to keep collecting poo, if you see them out on the tidal flats, pop them in a plastic bag and freeze them. Get in touch with your seagrass watch co-ordinator to find out how to get the poo to us or call me directly.

We would like to thank all the people who have provided samples. They help us understand our seagrass habitats better.

Contacts: email michelle.waycott@jcu.edu.au telephone (07) 4781 5246.



Graph showing the proportion of seeds observed microscopically to be intact (=viable), showing signs of being digested or empty of seed embryo.

Seagrass Watch Training Day June 2005

Karen Bird (TCC) reports

Seagrass-Watch HQ (DPI&F) conducted Seagrass-Watch training for Townsville volunteers at Belgian Gardens State School on 4th June 2005. The training was funded by Envirofund with in-kind support from DPI&F, Townsville City Council and Belgian Gardens State School.

Fifteen people attended the training day, along with two representatives from Seagrass-Watch HQ in Cairns, DPI&F, CoastCare and Townsville City Council Representatives. Seagrass-Watch volunteers ranged from James Cook University students to primary school teachers and representatives from conservation groups across the region.

Len McKenzie, Seagrass-Watch program leader, provided an interesting visual presentation on seagrass meadows as ecosystems, and the animals relying on these systems for a life source. Len also discussed the major varieties of seagrass species found in Queensland, including the predominant plants around the Townsville region, and some handy tips on how to visually identify each species in the field.

Dr. Jane Mellors, from Seagrass-Watch HQ, discussed the Seagrass-Watch sites around Townsville and explained the visual and manual survey techniques used. Jane also gave explanations on how visual aids are used for seagrass coverage estimates, and the importance of gaining such vital information at regular times.

After the presentations and a wonderful lunch volunteers made their way down to the Rowes Bay site, where the survey and monitoring techniques were put to use.

Back Row L-R: Len McKenzie, Deb Bass, Karen Bird, Catherine Walsh, Jane Mellors, Chris Roberts, Vivien McConnell, Jason Vains, Peter Ellacoit Brett Murphy,
Front Row L-R: Rudi Yoshida, Sharon Cislowski, Michelle Jones, Anna Skillington, Kellie Lobb, Andrea Rodriquez, Gayle Joyce.

Seagrass Watch Magnetic Island

On the 23rd April 2005, Jane Mellors (Seagrass-Watch HQ) gave a presentation on the new seagrass monitoring program at Picnic Bay (Magnetic Island) to the Local Marine Advisory Committee, teachers from Magnetic Island Primary and members of Magnetic Island Rotary Club. Activities included seagrass monitoring techniques and seagrass identification. Magnetic Island Primary and Magnetic Island Rotary Club have adopted a seagrass monitoring site at Picnic Bay and will be monitoring every 3 months. Funding from Envirofund Round One 2004-2005 and in-kind contributions from DPI&F and TCC have provided kits and training for these groups.

Above left: Cockle Bay team primed for action L-R Elena, Catherine, James, Yuki, Linda, Marilyn and Alan.
Above right: Rhonda, Karen and Catherine estimating cover at Cockle Bay.

Cayla Ruttiman (Class 3/4c Magnetic Island State School) reports

On Tuesday 19th July, Class 3/4C went on an excursion to Picnic Bay to do a seagrass survey. Before we got on the bus we did a check to make sure everyone had everything they needed. When we got to Picnic Bay we ate some lunch then went down to the beach. Then we put our bags down on the sand. After that Jane [Mellors] showed us some equipment we needed to look at seagrass. Then Miss C [Cislowski] split us into groups, the people in my group were Cara, Seamus, Olivia, Puku, Jesha, and Lachlan. My group found heaps of *H. ovalis, H. uninervis* and some other seagrass. After we laid out transects and a quadrat we got the clipboard and wrote down what animals were near the seagrass like snails or crabholes. Then we wrote down what type of seagrass were in the quadrat. After that we needed to write down the percent of the seagrass coverage like 15% seagrass coverage, then the percent of algae cover that's how much algae is in the quadrat.

After that we did how much epi-cover and how long the seagrass leaf is. Then we did the next 5 metres and the next. After I did a few of them I joined the seed collecting group. In the seed collecting group you need to sieve a core and write down how many whole and half seeds you find. Soon after that we had to go back to school and eat big lunch.

Townsville Region - Queensland

Ecofiesta 2005

Karen Bird (TCC) reports

The Seagrass-Watch program was well displayed and presented at this years' Ecofiesta. The Seagrass-Watch stand generated a lot of interest from the public, with both school children and adults making inquires into the volunteer organisation. A seagrass identification activity was provided to create a hands-on experience with the visual concept proving popular amongst the many participants. A colouring-in activity for the younger children provided education about the many sea creatures that inhabit seagrass meadows.

Overall the day was great success, with the many activities for all age groups providing an exciting and educational experience for all who attended Ecofiesta.

Lucinda, Halifax Bay

In May, Jane Mellors (Seagrass-Watch HQ) travelled to Lucinda to inspect the seagrass site that the Herbert River Rotary Club want to monitor. The weather was definitely against them, with squalls coming across at regular intervals and gale force winds blowing. Needless to say the tide did not drop as much as it should. However enough of the seagrass meadow was exposed that they could confirm the species they would be recording and to decide on a sampling design. It was decided that instead of using the standard three transect (50m x 50m) design they will monitor 30 random quadrats between two GPS points at this intertidal site (HX1). This change in design was because the meadow was only approximately 25m wide and fringed a large sand bank.

Despite the weather there was a good turn up of volunteers who were all very enthusiastic.

Right: Members of Herbert River Rotary Club try their hand at estimating seagrass cover

The things you find inside quadrats - now was that random!!

Bushland Beach

Jane Mellors (Seagrass-Watch HQ) reports

Since the last newsletter we have successfully monitored Bushland Beach (BB1) twice. We were joined in April by many seasoned Seagrass-Watchers; Kath McMahon had flown in from Brisbane to get her fix of intertidal seagrasses before heading off to Perth, Jaunita Bite was there from Indonesia and Len McKenzie from Seagrass-Watch HQ, Cairns. With this eclectic group we felt eminently qualified to monitor the seagrass this month. We were again out on the seagrass flats in July. The Bushland Beach team were joined by regular watchers from the Shelley Beach sites, who wanted to see how the seagrasses at Bushland Beach compared to those at Shelley Beach. The verdict . . . *well that would be telling, come see for yourself*.

Above: Regular watchers Lux, Rosie and Gary with Mandy, Regina and Catherine

Above: Passerbyer Stuart stops on his beach stroll to join Lewis in estimating seagrass cover

Right: Len talks with Bushland Beach regulars Sandra and Rosie

Regional roundup

Overall the monitoring within the July 2005 period proved to be very beneficial, with a range of new sites across Townsville creating a rather hectic schedule for volunteers and organisers alike. Although more volunteers would be much appreciated, those keen Seagrass-Watchers that made themselves available, collected vital information on the health and composition of seagrass meadows during the winter months. The abundance of seagrass for the winter period for Townsville areas was generally low, but this is to be expected as winter is the slow growing period. Seagrass is much more productive in the summer months.

Unfortunately, Karen has announced she is retiring from the position of Local Coordinator due to current work and other commitments. Karen has done a great job helping to progress Townsville Thurangowa Seagrass-Watch and was successful in securing funds to assist with the development of the program in Townsville and Magnetic Island. She worked closely with local schools and the city council, developing several partnerships and promoting the program. We all wish Karen the best on her future endeavors and thank her for her efforts.

We are currently looking for a local coordinator in Townsville. Please contact Seagrass-Watch HQ if you would like more information (see page 20).

Belgian Gardens State School - Rowes Bay Junior Rangers

Rowes Bay Junior Rangers from Belgian Gardens State School recently monitored seagrass in Rowes Bay, Townsville. With training from Jane Mellors (Seagrass-Watch HQ), students gained a full appreciation of the values of the intertidal zone. This learning experience provided students with a sense of community involvement, and a rare look into the conservation methods used by environmental managers. Below is their account of the monitoring events.

Tess Mulhall 6J & Damien Cox 7J report

On Wednesday, 4th May 2005 some students from 6/7J at BGSS and Jane Mellors (Seagrass-Watch HQ) went out seagrass monitoring. Also with our teacher, Mrs Gayle Joyce of 6/7J and some parents, who took time to help supervise the children. We students are the Rowes Bay Junior Rangers and we have 2 tasks to do for the community this year.

1. Clean up Rowes Bay Beach
2. Monitor seagrass at Rowes Bay site RB1.

Our learning program is on the importance of water catchments, rainforests to the reef and seagrass meadows in the Townsville region. These play a vital role in supporting marine communities and help maintain coastal water quality and clarity.

The 2 main species of seagrass, *Halodule uninervis* and *Halophila ovalis*, are found in abundance and both are a very important food source for the dugong and the green sea turtle.

When we were monitoring the seagrass there are the things we had to look for and monitor: type of seagrass, sediments, algae cover, canopy heights, epiphyte cover and we also had to comment on things that we thought were interesting like animal habitats we saw. Every 3 months a different class will go down to Rowes Bay to do monitoring because over the 3 months seagrass differences change.

Three classes go and do this monitoring and send the data to the Fisheries experts. It is great fun and we know we are doing our "little bit" to help protect the GB reef.

"....I had heaps of fun and learnt heaps" Rebekah Ash 7J BGSS

Kayley Zuhorn 7J

On 4th May 2005 some students from 6/7J at Belgian Gardens State School went down to Rowes Bay Beach to monitor seagrass as part of the Rowes Bay Junior Rangers Program, run by our teachers Mrs Joyce and Mr. Murphy.

We established the "rangers" because we are a Reef Guardian School.

We received a seagrass monitoring kit from the Townsville City Council which had every piece of equipment necessary for the monitoring. At the beach we were met by Dr. Jane Mellors, who had already given us an introductory talk about seagrass at school. Jane helped us measure 50metres out to find the places where we had to put th transects and every 5 metres to place the quadrats.

There were 3 groups, each working on a transect and we recorded what we saw in each quadrat places at every 5 metres along the transect. In each quadrat we monitored the kind of seagrass, how much seagrass, the amount of algae cover, the average length of the seagrass and any other interesting things found.

After doing the quadrats, some students were shown how to monitor for seagrass seeds. We had to find whole and half seeds from under the mud and record how many we found in several locations.

It's a great experience to be able to monitor the seagrass. It's really fun and you learn a lot. Next term we will go down to Rowes Bay again and monitor the same site on a very low tide see if it has changed.

I was given the special task of entering the data the we recorded on the official Seagrass-Watch website and had to be very careful to be accurate.

Thank you Jane Mellors and the DPI&F for making all this possible for us.

Steven Murphy (Class 6M) reports

On Wednesday the 3rd of August, Belgian Gardens State School went for a trip to Rowes Bay to check how the seagrass is going. This is the second time this year we have went. Most of the seagrass that we found was the HU type and sometimes we found the HO type. When we were going out the water was up to our ankles and we were pretty much sinking in the sand because my shoes were under the sand when we were walking out. We found some sea squirts and worms when we were out there.

I thought it was a good but wet day. I reckon its good and important to check the Sea Grass every once in a while so we know if its going to die or if the Sea Grass is going good. I thought it was a fun day.

"....I enjoyed the excursion and wish I could do it again.It was an awesome experience" Kate Roots,6M, BGSS.

"....I think that the trip was very good, fun and educational. I learned a lot". Nicole Lay, 6M, BGSS.

"....I think the sea grass excursion was a wonderful way to show students just how important the sea grass is . I think all the students and teachers agree that this exursion was both an educational and fun way to help the sea grass" Melanie Whiting, 6M, BGSS.

"....I had a fun day but it was wet. but I didn't care" Cale, 6M, BGSS.

Seagrass-Watch Mackay

Jon Woodworth (Mackay Whitsunday Regional Coastcare Facilitator) reports

Seagrass is an important food to turtles and dugongs, but during drought kangaroos will sometimes eat seagrass too..

Residents at St Helen's Beach north of Mackay noticed during the height of last year's drought that mobs of kangaroos would hop out and munch on *Halodule uninervis* and *Halophila ovalis* meadows at low tide.

As well as kangaroos, black swans regularly visit the area and graze on the seagrass.

St Helens Beach

A group of volunteers from Friends of St Helens Beach are currently monitoring a site near the main boat ramp at St Helens. Recent monitoring at the site indicates that the seagrass is in Good condition. The group plans to set up second monitoring site at Main Beach St Helens on a more sandy location.

Long time local Stan Halliwell says that the St Helen's Bay supported a dugong station for about two decades from the turn of the century. Dugongs were caught by indigenous workers using row boats and harpoons and dragged ashore at Dewars Point. The place is named after Frank Dewar who owned the station which employed about 40 workers. The dugongs were drowned at sea and then dragged up the beach and boiled in a large vat. The meat was fed to the workers and sold to local farmers. The oil was very valuable and was used in a wide range of products. "The fact that such a big operation ran for many years indicates that the area sustained far bigger populations in those days," he said. The nearby Newry Island group of islands is now a declared Dugong Protection Area (DPA).

Right: Site SH1
Below from left to right: volunteers Ray Mackenzie, Michael Rosa, Stan Halliwell and John Feeney during monitoring of St Helen's beach seagrass.

Sarina Inlet

Sarina Inlet seagrass meadows have rebounded well from the January 2005 flood event and are now looking very healthy.

Volunteers from the Sarina Beach Progress Association recently monitored a site in Sarina Inlet and found lots of dugong feeding trails. The site is also popular with turtles which nest on Sarina Beach. Jane Mellors from Seagrass-Watch HQ recently visited the site to take sediment samples from the site to check for herbicide residues.

Mackay Whitsunday Regional Coastcare Facilitator Jon Woodworth gave a presentation to the Sarina Integrated Catchment Management Association recently explaining the Seagrass-Watch monitoring to members.

Volunteers from Sarina Progress Assoc, Noel Kane, Paul Aidulis and John Ryder about to set out to monitor Sarina Inlet. Sarina Inlet has bounced back from effects of flooding in January and is again in good health.

In May Jane Mellors (Seagrass-Watch HQ) visited Mackay and assisted Jon with monitoring at St Helen's Beach and Sarina Inlet. While there, Jane collected sediment samples from Sarina inlet for the RWQPP monitoring and provided training and helped clarify seagrass species. At St Helen's Beach (SH1) *Zostera* and *Halodule uninervis* can appear very similar as the plants are heavily grazed by turtles and dugong. St Helen's Beach is also one of the muddiest sites to monitor and volunteers are urged to conduct a thorough risk assessment (see page 19) each time they visit.

Left: Jon Woodworth sets out the site (SH1) at St Hellen's Beach
Below: Jane Mellors at the St Helen's Beach boat ramp after an afternoon "keeping fit" and covered in mud.

Thursday Island

Jane Mellors (Seagrass-Watch HQ) reports

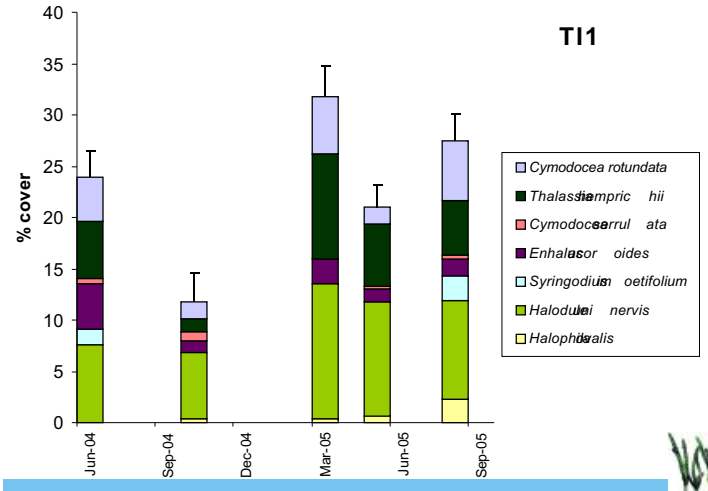
Back Beach Thursday Island

In May we monitored Back Beach (TI1) for a fourth time, so now we have a whole year's worth of data. It is getting to the point where are confident of relocating our markers and know what the protocols required for successfully monitoring our seagrass. Ashley had become quite a dab hand at the photography, while Akila and Koeygab are very adept at identifying the seagrass species and estimating cover and composition. In general the seagrass appeared sparser than when we last monitored in March. We also haven't noticed any *Syringodium* in our site since October last year. It has been great having Gilianne come along and help us monitor our seagrass meadow as she is able to tell us a lot about the biology of the animals that inhabit this meadow. At times, though we have had to rein her in and remind her that we are here seagrass-watching and not mollusc-watching. Thanks Gilianne and all the best.

Hail Hail the gang's all here!!

Right: Koeygab and Ashley estimate seagrass cover

Another fantastic trip was made to Thursday Island in late August. We successfully monitored Back Beach for the fifth time and a round of applause for all participants involved in this monitoring trip as we had to be on site by 6:00am, which is till very dark on TI, to catch the low tide. Due to a recent crocodile sighting we didn't actually venture onto the meadow until the sun was up, but because we are all now very experienced Seagrass-Watchers we polished off the monitoring in under 45 minutes.

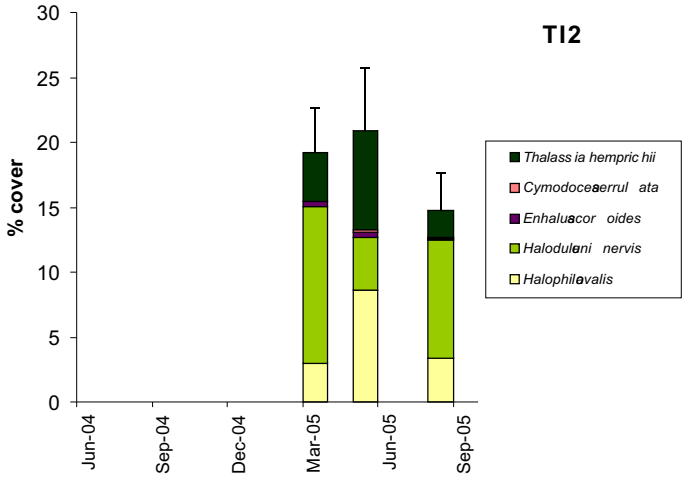


Front Beach, Thursday Island

We monitored Front Beach (TI2) for the second time with newcomers to Seagrass-Watch, Anita Zanardo and the Wheate-Church family, who quickly picked up the methodology and then there was no stopping them. While the seagrass cover appeared to be similar to our March monitoring, there did appear to be an increase in the occurrence of *Enhalus* in our plot and a definite decrease in the number of seeds found. The afternoon's monitoring was memorable as the weather was perfect and the sediment is nice and firm underfoot, which Jane tells us makes for a great site to monitor.

Above: A quick refresher on estimating cover: L-R Jillian, Kalina, Carla, Anita, and Siobhan, Adrian, Monika and Colleen
Top right: Karlina and the Church girls look for seeds
Bottom right: Jahmon and Jillian measure canopy height

In late August when we sampled, we had some new recruits (Alan Keeling, Assan Wapau and Hezrom Kris) to help monitor Front Beach. They were ably assisted by Ashley Hewitt who is a regular Back Beach Seagrass-Watcher.



Assan, Hezrom, James and Ashley monitor Front Beach