

# Seagrass-Watch



## news

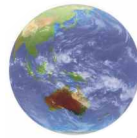
Issue 32 • March 2008

Seagrass-Watch is off to a great start for 2008 with reports of healthy seagrass from many regions. However, not everyone has been able to start monitoring for the year due to unsuitable tides. It is hoped that recent floods and elevated sea temperatures have had minimal impact.

In this issue you'll find articles on recent surveys conducted in the Torres Strait, to map seagrass and locate ghost nets, and how seagrass information has assisted with the declaration of MPAs in Palawan (Philippines). Read about community seagrass outreach workshops in Malaysia and Australia (New South Wales), and the development of a marine biodiversity database for Papua New Guinea. Catch up with Hervey Bay and the recovery of their seagrass. You'll also find our regular updates from groups in Queensland and Singapore.

Included are also articles on education activities such as EcoCamps in Rotuma (Fiji), SeaWeek activities on the Gold Coast and the Seagrass Angels in Singapore. You can also learn about epibionts and the effects of anchoring on seagrass in the Whitsundays.

In May 2008 Seagrass-Watch turns 10. With several workshops planned and intended presentations at international conferences, Seagrass-Watch continues to go from strength to strength.



### Defying the global trend

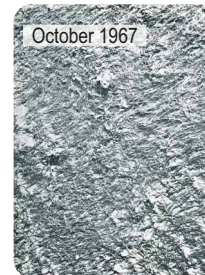
While recent publications from around the world are reporting significant human impacts on marine ecosystems (see *Science* 15 February 2008), the seagrasses of northern Australia, in particular northern Queensland, appear to contradict the global trend. Monitoring over the past few months has reported some of the highest seagrass abundances and distributions in the last 10 years.

Although no area is unaffected by human influence, large areas of relatively little human impact remain in northern Australia. This may be due to a number of factors, including: the general "remoteness" of the region; relatively low levels of coastal and urban development; or good management.

Throughout Queensland, seagrass meadows in 2007 were in a better condition compared to previous years. This could have been a consequence of reduced coastal runoff as much of state experienced a severe drought.

Monitoring sites in Townsville, Cairns and Torres Strait were examined in Jan and Feb 2008, and results indicate they continued to improve. Not only were the seagrasses reported to look healthier than ever (both abundance and extent), but the number of seagrass flowers, dugong grazing and associated fauna (e.g., juvenile prawns, juvenile sea cucumbers) were high.

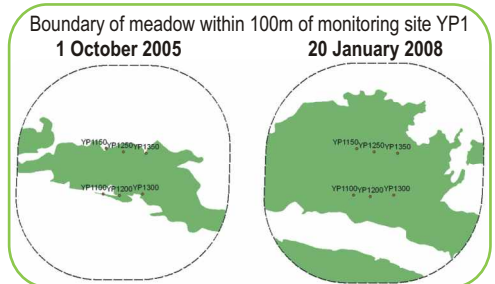
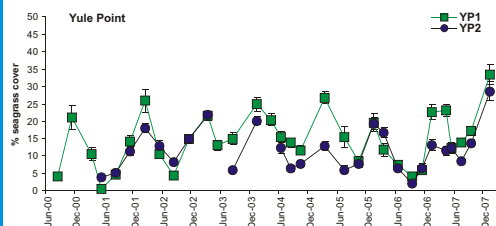
Of particular interest are the meadows at Yule Point, near Cairns. The meadows are typical of coastal seagrass communities in northern Australia, dominated by *Halodule uninervis* and *Halophila ovalis*. These meadows were first examined by Prof den Hartog in October 1967 and reported within his seminal text "The Sea-Grasses of the World". The species and abundances he reported 40 years ago look similar today. Over the past 10 years, the seagrasses at Yule Point have been monitored and seasonal patterns are evident. Being on the coast, the seagrasses are exposed to acute impacts such as storm events. These can mobilize the sand and change the locations of sand banks, tidal drainage channels and consequently the distribution of the meadows. Nevertheless, the species that exist in these meadows are clearly adapted to the dynamic nature of the environment.



**Images from the top:**  
 Juvenile sea cucumber *Holothuria scabra* (Jan08);  
*Halodule uninervis* male flowers (Jan08);  
 Yule Pt meadow 2008 and 1967

### What's inside:

| Article                             | page |
|-------------------------------------|------|
| Ghost net & seagrass survey.....    | 2    |
| Torres Strait .....                 | 3    |
| Townsville.....                     | 4    |
| Hervey Bay.....                     | 5    |
| Great Sandy Strait.....             | 5    |
| Moreton Bay.....                    | 6    |
| Gold Coast.....                     | 6    |
| New South Wales.....                | 6    |
| Singapore.....                      | 7    |
| SOS, Malaysia.....                  | 8    |
| Roxas MPAs, Philippines.....        | 9    |
| Motupore Island, PNG.....           | 10   |
| Rotuma, Fiji.....                   | 10   |
| Impacts of anchors on seagrass..... | 11   |
| Seagrass epibionts.....             | 12   |



Unfortunately, not all seagrass areas are defying the global trend. With the extensive flooding in central and southern Queensland, it is likely that some seagrass meadows could be severely impacted from the runoff of sediments, pollutants and nutrients from the land. Only the results of monitoring in the coming months will reveal the true extent of any damage.

Seagrass-Watch acknowledges the Traditional Owners on whose sea country we monitor



ISSN 1441-4236

DISCLAIMER: while all efforts have been made to verify facts, the Queensland Department of Primary Industries & Fisheries takes no responsibility for the accuracy of information supplied in Seagrass-Watch News. The views expressed in this newsletter are those of the authors and not necessarily those of the Queensland Government.

For more information about the Reef and Rainforest Research Centre visit <http://www.rrrc.org.au>

# Torres Strait

## Ghost Net Survey and Marine Habitat Mapping

Helen Taylor (DPI&F) reports



Mike Rasheed, Skye McKenna, Pearson Wigness and Helen Taylor prepare to search the Islands for ghost nets



Dumped oyster cages and a ghost net entangled within the mangrove roots



A large washed up ghost net on Masig Island

their way as they are carried along by currents and the tides.

On day one of the survey, two team members set off at low tide in a Robinson 44 helicopter to search for the destructive nets. We were joined by Pearson Wigness, a local Torres Strait Elder who is also the Ngurupai Dugong & Turtle Project Officer and a Seagrass-Watch participant. We were able to use Pearson's local knowledge to direct us to areas where he believed nets might be found.

After 4 hours of flying around, sadly almost 350 nets had been located. I asked Pearson after we landed whether he had expected to see so many nets and he dejectedly shook his head and said "too many". Most were found in the upper intertidal area having been washed up on the tide around the Inner Island Cluster (Palilug (Goods), Gealug (Friday), Muralug (Prince of Wales), Ngurupai (Horn) and Mawai (Wednesday) Islands). The location of these nets will be given to local community rangers involved in cleaning up ghost nets so that they can focus their efforts to remove as many nets as possible from the large area.

The next 5 days were spent island and reef hopping in the helicopter at low tide from Poruma Island in the south to Ugar Island in the north. We recorded information on what type of habitat was present (e.g. seagrass, coral, algae) as well as information on percent cover and species. A total of 1120 habitat assessment sites were conducted during this section of the survey!

One of the responsibilities of the Marine Ecology Group (Department of Primary Industries & Fisheries Queensland) is working with industry to help ensure that fish habitats are protected from damage.

In February we were lucky enough to be asked by the Torres Strait Regional Authority (TSRA) to undertake a survey looking for ghost nets and to map the marine habitats adjacent to the Great North East Shipping Channel in the Torres Strait. These areas contain some of the most sensitive marine habitats in Australia including coral, seagrass, mangroves and algae and are highly susceptible to damage caused by shipping accidents and oil spills. Ghost nets are abandoned, tangled fishing nets, most of them from foreign fishing vessels. The nets continually catch and often kill any marine life in

The information recorded will be used to generate habitat maps which will allow a more strategic approach for shipping accident prevention and response, and help to protect the valuable fisheries habitat of the Torres Strait.

All in all, the team had a fantastic week in a very special place and were sad to head home at the end. The islands were spectacular, the people were friendly and the seafood was fresh. We would like to thank Cape York Helicopters for their hard work, and the Torres Strait Islanders who allowed us to spend some time in their beautiful home! 🌿



**Images from the top:**  
Helen identifying seagrass on Masig Island; the helicopter used to map sensitive marine habitats; an intertidal reef flat.



### What are Ghost Nets?



Ghost nets are fishing nets that have been lost accidentally, deliberately discarded, or simply abandoned at sea. They travel the oceans of the world with the currents and tides continually fishing as they progress through the waters. As they are unattended and roaming, they fish indiscriminately, not only catching threatened species but undersized and protected fish as well.

The largest nets found in the Gulf of Carpentaria so far are gill nets estimated at weighing as much as 5 tonnes, approx. 4 kms in length with a drop of 12mts. In other parts of the world nets have been reported 2-3 times this size.



### Carpentaria Ghost Net Programme

In Northern Australia Indigenous Sea Rangers noted that many turtles were being captured in ghost nets that were washing up on the beaches. As much of this coastline is the breeding and foraging ground for 6 culturally and ecologically important species of marine turtle there was a real concern that so many were getting trapped and dying.

The Rangers collaborated with other non-government organisations, calling themselves "the saltwater people"; a name which recognises the shared concerns & custodianship for marine wildlife. The project is managed by the Northern Gulf Resource Management Group (NGRMG) who received funding from the Natural Heritage Trust, which is an Australian Government initiative to address issues relating to the management of our natural resources.

Source: <http://www.ghostnets.com.au>  
Images: Photographs courtesy of the Carpentaria Ghost Nets Programme



# Torres Strait



## Regional Roundup

Jane Mellors reports



Sampling on Hammond Is.



Seed searching and high algae cover over site (Horn Is.)



Thalassia fruit at Front Beach, T1

Torres Strait monitoring was conducted between 15th -18th Feb. During this trip we endured monsoonal downpours in the morning, clearing to blue skies in the afternoons, just in time for monitoring. The first port of call was Hammond Island. A big “esso” to Anima and Elizabeth for coming down to the site to help us monitor. On this occasion we were also joined by Carolyn and Juliet (AFMA) and Christina Howley (a regular Seagrass-Watcher from Cooktown). *Cymodocea rotundata* was extremely long with high coverage of epibionts.

The next day saw us monitoring at Wongai. The regular team of Stacey, Jake, Kanteesha, Jane and Pearson were on hand to gather the data. They were ably assisted by Lachlan, Christina and Chanya. Algae cover at this site was extremely high. The seagrass was covered by a blue green algal matte but

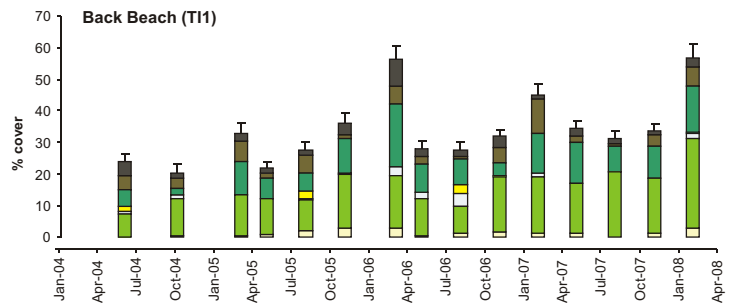
curiously the seagrass underneath still looked fine. Next on the schedule was T12 (Front Beach) and what a turn out. We had lots of kids checking out the animals in the seagrass meadow until the lure of slipping and sliding in the mud (away from T12) proved too irresistible. The regular crowd was joined by Janelle, Janine and Sally. For the first time since monitoring commenced seeds counts were notably high with Sally proving to be our seed magnet counting 38 seeds in one core!!!! Also of interest was sighting *Thalassia* fruits.



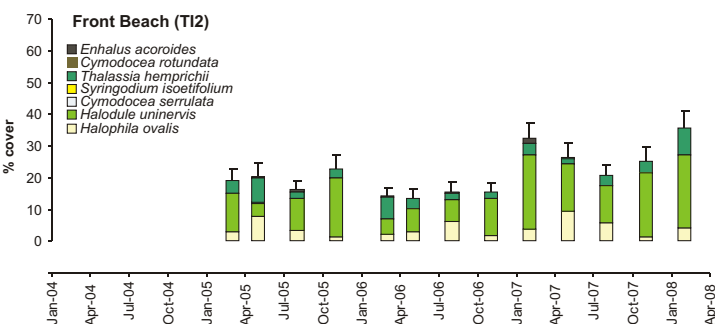
Extra hands help with monitoring at Front Beach (Thursday Island)



The final day of monitoring and we were at Back Beach (T11). It looked like the tide was not going to go down but as usual, all it required was a little patience. When the tide finally dropped it was all systems go and monitoring was completed very quickly even with a quick taxonomy lesson for Mr Kocho!! Many thanks to the teachers and students from the Marine Studies class that helped the regular crew. See you in May for more Seagrass-Watching. 🍀



The Back Beach Team complete monitoring in the Strait (until May)



# Townsville



## Regional Roundup

Posa Skelton reports



"They breed them tough in Queensland", said my fellow Seagrass-Watchers about the persistent buzzing of mosquitoes, as we zigzagged our way to Shelley Beach for our very first seagrass survey for the year. It was just after midnight on the 19th January, when thirteen dedicated Seagrass-Watchers felt their way through a winding narrow path lined with out-of-control weeds to the site. I was pre-warned that the mosquitoes would be bad, so despite the warm humid air, I was appropriately



dressed for the ski-fields of the Alps.

The midnight surveys are now entrenched in our annual Townsville Seagrass-Watch programme, thanks largely to nocturnal low tides. Oddly, they are often the most anticipated and well attended surveys. The turnout for the night was a blessing, which allowed the surveys to be done expediently.

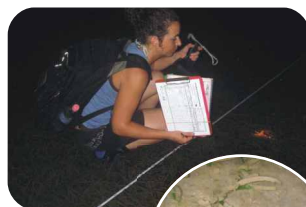


Bushland Beach was next surveyed again at mid-night 20th January. Five of us were able to make it, including Sharon and Mary from the Northern Beaches Rotary. Like the Shelley Beach survey, we were ably led by Jane Mellors and Bec Bowie from Seagrass-Watch HQ.

Bushland Beach took on a whole new perspective at night, with international waders doing their thing in the nearby seagrass meadows. The ankle deep mud slowed our pace towards the site, but it was all go once we located our marker. One thing for sure, the mossies were nowhere near as bad as Shelley Beach.

The late night-early morning surveys of Shelley and Bushland Beach took its toll, and it was left to Jane and Beck to continue the surveys over at Magnetic Island. They completed the surveys of Picnic and Cockle Bay on 22nd and 23rd January. A big sigh of relief all-round as it will be another 12 months before we contemplate another midnight splash-splash around our mud flats.

The beginning of the year is always a good time to start new resolutions. Perhaps with this in mind, our site coordinator for Bushland Beach, Lux Foot, has decided to make a "tree-change" towards Charters Towers. Lux is an inspiration to all of us and the gaping hole he leaves behind will be hard to fill. I was privileged to attend a recent



Above & Right: Well spotted!!



meeting of the Northern Beaches Rotary, where Lux was explicitly thanked for all his hard work in coordinating sampling. The nominal award he recently received as a Coast-Care Local Hero is well-deserved. On behalf of all the Seagrass-Watchers, I thank Lux for his coordination, dedication, leadership and friendship and wish him all the best with his new adventure. He

has promised to join us, whenever he can, to continue keeping an eye on our coastal environment.

With infectious enthusiasm, Jacky Stein has stepped into Lux's shoes and she's already raring to go. We welcome Jacky to our Seagrass-Watch fold and encourage all to join Jacky as she leads us in our next survey of Bushland Beach.

The merging of Thuringowa with Townsville councils has provided a perfect opportunity to assert our united identity. Ideas for a new logo and name for our Townsville-Thuringowa Community Seagrass-Watch were solicited (Issue 29). We had many positive responses, especially from our local schools who submitted many beautiful drawings, sketches and possible names. The inspirations they provided allowed us to come up with three logos, which had been circulated for voting. We express our sincere thanks to all those who voted and provided detailed comments on the designs, and special thanks to the teachers and students of Belgian Gardens School, Hermit Park State School and Magnetic Island State School

for your support. The International Ocean Institute has kindly donated educational material for the participating schools, as a token of appreciation and encouragement for your continued support.

The sampling dates for our sites are now on-line and we look forward to seeing you there. 🍀



## Magnetic Island

Bec Bowie reports.



On the 22<sup>nd</sup> January, four hardy Seagrass-Watchers (Jane, Carla, Jolene and myself) ventured onto the seagrass meadows of Cockle Bay. With the seagrass so lush and dense, animals were spotted everywhere, indicating that the site was a nursery. Thank you to Carla and Jolene for helping us out.

Picnic Bay was the last of our early morning monitoring events. This time the team was down to 2 (Jane and I). We headed out with all the energy we could muster after 3 successive early morning monitoring events. But Picnic Bay was the easiest out of all of them. We set up the transects and got to work. *Halodule uninervis* was the most dominant species on site, with *Thalassia hemprichii* and *Halophila ovalis* found in patches spread over the transects. Seeds were also recorded scattered over the site. 🍀



# Queensland

## Seagrass returns to Urangan

Trischelle Lowry reports



Our sites in the Hervey Bay area have continued to show improvement across the board, however our actual monitoring sheets don't tell exactly the same tale. Seagrass is still reasonably scarce along our transects and within the quadrats, but most sites currently support some very promising and plentiful patches.

On approach to the TG2 site at Toogoom a wide gutter contains a lush crop. Dave and Ronda Kohler also reported that slightly further to the north of this site several dugong have been spotted in the channel entrance to the Toogoom inlet. Dundowran sites also continue to support small patches mainly on the approach to the transects. Lloyd and Sandy McKay noted a large amount of sludgy discharge from a small creek near the DD1 site and



Toogoom seagrass

diligently passed this information onto the EPA for further investigation.



Shelly Beach (Hervey Bay) seagrass meadow. Insert: Kodee showing off his proud discovery

The Urangan sites are also on the improve with substantial meadows of *Zostera capricorni* and *Halophila ovalis* establishing on the seaward end of the transects. On a recent school excursion to Shelly Beach, keen volunteer Kodee Lowry proudly reported home that he had found "heaps and heaps" of seagrass. Although not one of our monitoring sites, I was keen to investigate the report. He was right!!!!!! A large meadow, complete with lush seagrass and numerous dugong feeding trails, was spread over a large area between two rock groynes. ♡

## Seagrass-Watch Training Workshop

May 17 - 18 2008

Hervey Bay & Great Sandy Strait

*Come and learn more about this valuable marine resource and learn how you can make a difference*

Whether you're a new participant or a seasoned "watcher", anyone with an interest in seagrass monitoring and conservation is welcome.

Workshop includes an afternoon of presentations and laboratory sessions on the 17th, and an afternoon in the field on the 18th.

If interested in attending please visit

<http://www.seagrasswatch.org/training.html> to register or contact [hq@seagrasswatch.org](mailto:hq@seagrasswatch.org) for further information. Registration is Free.



## Great Sandy Strait roundup

Gordon Cottle reports



It is pleasing to report that our last trip for 2007 to Reef Islands, using Paul Bailey's boat, was very successful. The experienced team of Robyn Bailey, Hanne Larsen, with recent recruit Helen Duplancic reported that seagrass cover at RI3 had changed little since the last monitoring event in May 2007. The site was still dominated by *Zostera capricorni*, however the presence of *Halophila ovalis* was highly variable across the meadow. There was also general evidence of marine activity with mud whelks throughout.



RI1 is a comfortable two kilometre trip between the Islands. Similar to RI3, the predominant seagrass is *Zostera capricorni* with light *Halophila ovalis* cover. The seagrass cover at this site was slightly lower than recorded in May 2007. There were several feeding holes observed in quadrats and exposed rhizome in others.

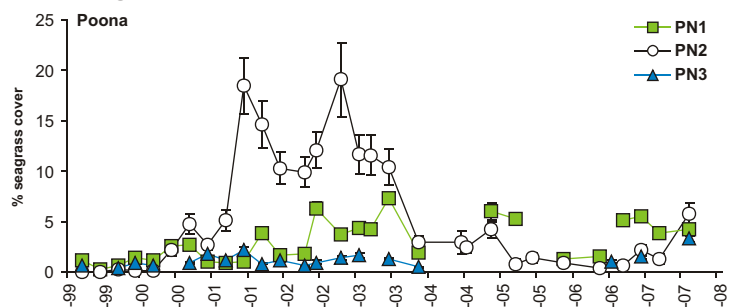
To get to R12 entails coming out of the main channel and travelling north along the western bank of the Island, about five kilometres. The most noticeable features were the absence of *Halophila ovalis* offset by much increased *Zostera capricorni*, with length of leaf to 9cm, and low epiphyte on transects 2 and 3. This site appeared to have increased the most since our last sampling, possibly a seasonal peak and a consequence of the more favourable conditions over recent months.

Overall, seagrass abundance at the Reef Islands appears to be relatively steady over the last five years, albeit a slight increase.

We commenced 2008 on a positive note holding our Annual General Meeting on 25th January, more importantly welcoming the return of Steve Nicol (an original member), and Gabby and Mike Williamson to our Team.

Their first survey was on 9th February at Poona PN2. The most notable feature on the visit was the absence of the algae that covered the site in August 2007 and a slight increase in seagrass abundance.

This site has deteriorated seriously since 2003, when recordings of up to 38% seagrass cover were made. Whether this decline is the result of some impact or a long term trend is unknown, as current abundances are similar to when the sites were established in 1999. What is also unknown is the resilience of the meadows, as coastal development has increased in recent years and the level of chronic impacts may have similarly increased. Seed sampling has not been routinely conducted at these sites and without knowledge of the seed banks we can only speculate on their ability to recover. The next survey in May will be very interesting. ♡



# Qld & NSW

## Moreton Bay Update

Keira Price reports

With all the rain that South East Queensland has had over the last few months it will be interesting to



Volunteers at Moreton Banks

see how this freshwater input may have affected Moreton Bay's seagrasses when we begin the first monitoring round of 2008 (March/April)!

The November/December 2007 surveys went well, with the state of seagrasses at sites monitored looking to be stable and average for the time

of year. An increase in macroalgae was noted by volunteers at many sites a normal occurrence that may be associated with the higher temperatures of the summer season.

After Len and Rudi (Seagrass-Watch HQ) visited late last year we are planning to start implementing their suggested improvements to our surveying methods starting this March/April period. This will add to the data that we collect and bring us in line with HQ standards and procedures. We have also added some seed core samplers to our kits for volunteers interested in having a go at finding some of the so far elusive seeds! 🌱



## New South Wales

Carla Sbrocchi reports

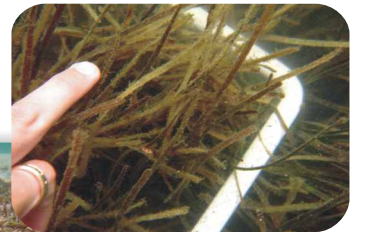
We've been very busy running training workshops throughout

NSW. In December 2007, the weather was fantastic and community members in Forster were receptive to undertaking seagrass monitoring in the Mid-Coast region of NSW. Throughout February and March of this year we've been undertaking workshops on the Central Coast (Lake Macquarie, Tuggerah Lakes and Brisbane Water) and have had some great response! Volunteers are keen to start monitoring over 15 sites within these three estuary systems. Wow! We are very much looking forward to hearing more from these groups as they begin their monitoring and are able to provide their first sets of data. 🌱



Above: Keen volunteers at Forster (NSW) using a bathyscope to estimate seagrass coverage

Below: Observing and estimating epiphyte cover



Monitoring at Victoria Point



Great Lakes seagrass



## Students get sandy studying science on the Gold Coast

Sheila Davis reports

A class of students got wet and sandy on their visit to the Gold Coast last Friday, March 7th during Seaweek, but they weren't out surfing. The Browns Plains Year 9 Science class was putting science into practice by monitoring the health of a patch of seagrass on the Gold Coast Spit following their visit to Sea World.

The visit was arranged by Browns Plains Science teacher Mr Ross Bailey in conjunction with the Jacobs Well Environmental Education Centre and Gecko Educators, a program of Gecko (Gold Coast & Hinterland Environment Council). Mr Bailey said that the students learned a lot during their visit to the Gold Coast from the features of marine mammals like dolphins and dugongs to the habitats of various marine environments and why they need protection from threats like siltation, dredging and development.

"The students had a fantastic learning experience," said Ms Gina Ygoa, teacher from the Jacobs Well Environmental Education Centre. "There was a lot of fun and excitement, plus a lot of hands-on work. They even had a visit from Diving Gold Coast underwater photographer Ian Banks. They were informed, involved and inspired in caring for our marine environment and that's the whole purpose of Seaweek." Seagrass-Watch local coordinator for the Gold Coast, Sheila Davis and Linda Ray, said that the students each had a role to play in the activities measuring, estimating, analysing and recording their findings. "They learned that seagrass is important, not only as habitat for many fish, crustaceans and other creatures but also as food for turtles and dugongs and feeding areas for migratory bird species preparing for their long flights home. This knowledge made them enthusiastic to protect it." 🌱



# Singapore



## TeamSeagrass gets going for 2008

[TeamSeagrass blog](#)

### Chek Jawa (20 Jan 08)

TeamSeagrass was back in booties and on the shores of Chek Jawa this HOT afternoon. We had quite a lot of first timers aka GreenGrassers, so Siti did a quick quiz on "Is this Seagrass?", which everyone passed with flying colours. Then it was straight to work on those transects.

The sea hares were everywhere too! Many were in huddles...ermh probably getting ready to lay MORE eggs? This explosion of sea



Above: Siti quizzing "green grassers"  
Right: Sea hares everywhere!!

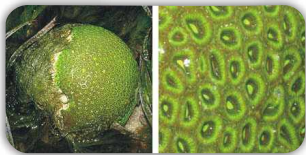


hares reminds us of our first monitoring in 2007, also on Chek Jawa. Wow! This shows that by simply visiting our shores regularly we learn something about the seasonal cycles that affect them.

Very quickly the Team were done and we decided to check out the shore for *Halophila beccarii*, a rare seagrass that is still found on Chek Jawa and we did find patches of it. It was a great day out, and we did a lot of work and had fun too!

### Sentosa (24 Jan 08)

A cool evening over Sentosa and you can see the seagrass and marine life on this marvellous natural shore. We wasted no time (not even taking the traditional group photo) and got down to monitoring the seagrass. The tide was not very low but the team worked fast in the fading light. This natural shore has lots of *Enhalus acoroides* and *Halophila ovalis*, and also lots of living corals, (many of the kind that glows in the dark at sunset, see left). We also spotted Copper banded butterfly fishes (*Chelmon rostratus*), which Siti says is a sign that the shore is healthy and doing well.



### Seagrass Angels @ Labrador (19 Feb 08)

It's been quite some time since we met up with the Seagrass Angels from Labrador and the angel commander - Mr Lim. So Siti and Shufen went down to get their hands and feet wet with them.

Just a recap, the hardworking trio and teacher monitor our seagrasses composed mainly of *Thalassia hemprichii* mixed with *Enhalus acoroides* and *Halophila ovalis* at



Labrador. On top of the usual parameters according to the Seagrass-Watch method, they also go around 'poking' seagrasses to monitor the growth rates (see Issue 30).

The entire shore was covered with macro-algae, mainly *Bryopsis sp.* and we were dismayed at the thought of not seeing the beautiful lush seagrass. Nonetheless, the Seagrass Angels persevered and carried on with the survey, trying not to miss out all the various species amidst the seaweed-laden substrate. They were pretty sharp and spotted some *Halophila ovalis* hiding below the *Thalassia hemprichii*, which were in turn 'hidden' by the top cover of macro algae. Well done for being so meticulous - kudos to the teacher too.

Fortunately for the sun-scotched seagrassers, the tide receded further, and the luscious green seagrasses once again unveiled... On completing the quadrats, we proceeded quickly (well, we got somewhat distracted along the way by flowering *Thalassia hemprichii*) and chose a lush looking patch of *Thalassia hemprichii*, Mr Lim got the girls to mark a square, within which we started to 'poke' or pierce a hole in the blades of seagrass, and with that the day's job was done.



### Pulau Semakau (20 Feb 08)

Our first weekday monitoring for the year and still we had a great turnout from the Team! It was a bit tough monitoring with the strong wind ruffling the water and the water murking up as we stepped nearby. But we found that if we stayed still for a while, we could get the job done. Seagrassing over, we headed off to explore the shores.

There were some interesting hard corals like *Heliofungia actiniformis* which is actually a mushroom hard coral. It has long tentacles so it's sometimes mistaken for an anemone. Those seen are usually brown, so this green was a special find. We also spotted a pair of mating *Jorunna funebris* nudibranchs.

Nudibranchs are hermaphrodites and exchange sperm when two individuals of the same species meet one another. They do it sideways, facing in opposite directions. The front end of this nudibranch has a pair of black edged structures that look like bunny ears (these are called rhinophores). The back end of the nudibranch has a circle of fluffy feathery structures which are its breathing gills.

Poor Siti couldn't be with us today even though she was also on Semakau. She was busy being filmed for the Once Upon A Tree series about our shores. Her segment will come up in episode 5! Isn't that fabulous, we must look out for it. 🌱



Above: Hard coral, *Heliofungia actiniformis*  
Below: A pair of mating nudibranchs



For more information visit : [www.teamseagrass.blogspot.com](http://www.teamseagrass.blogspot.com)



# Malaysia



## S.O.S. workshop Pendas Johor



Choo Chee Kuang reports

Save Our Seahorses (S.O.S.) has carried out a formal seagrass workshop at Pendas, Johor on 25 Nov 2007 for the local community participants who comprised mainly inshore fishermen. The workshop started with an introduction to the programme objectives and goals. Our invited speaker, En. Rozaimi from the Malaysian Nature Society who also did his master degree on seagrass cultivation, gave an introduction on the seagrass and its importance. Choo then continued to elaborate on the seagrass status at Sungai Pulai and the monitoring techniques.



Above: Choo briefing participants at the Balai Raya Kampung Ladang, Pendas. Right: Fishermen and village representatives examining a fresh seagrass specimen. Session handled by Ms. Yeong. Photos: Serina and Effendy



The participants then proceeded to inspect the fresh seagrass specimens and took the opportunity to taste the fruit of *Enhalus acoroides* before they departed to the intertidal Merambong seagrass meadow. The monitoring technique was demonstrated *in situ* and three 50m transects were run through the meadow. The species codes established by Seagrass-Watch proved to be very effective as all the participants had no difficulty recognizing and remembering them.



*In situ* demonstration estimating seagrass percent cover (Photo: Serina and Effendy)

The following day, a similar workshop was held at the Kampung Simpan Arang for the indigenous Seletar community who lives in riverine mangrove forest of the Pulai River. The turnout was better than expected and room was sold out.

The Seletar folks were charming people but not too shy to ask questions. Serina Rahman, an avid photographer, writer and active environmentalist, also gave a talk on the endangered species that are associated with the seagrass e.g. dugong and sea turtles. The crowd was much absorbed by her talk, despite the Malay language which was foreign to her.

Approximately 30 participants later proceeded to the riverine subtidal seagrass meadow for seagrass mapping. Unfortunately we didn't get any good pictures during the mapping because everybody was wet, including our photographers. The seagrasses were submerged and water visibility was less than a metre. Volunteers plodded in the knee-deep mud and engaged in hard-core mapping with unforgettable spirits.

We would like to thank the MNS facilitators: Serina, Effendy, Rusyanti, Mohala. Rozaimi and Khor Hui Min, not forgetting SOS volunteers who helped out on the first day: Kuah, Lee, Koa and Cheo. We are grateful to Cikgu Bakhtiar who helped us with the set up and thanks to Cikgu Zurina for various assistance. Last but not least, to our important collaborators, Sonny Wong from the MNS HQ, the ABN AMRO Bank representatives and the Tanjung Kupang Fishermen Association.

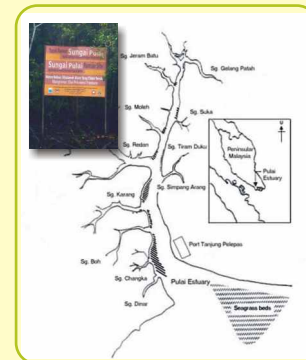


The indigenous Seletar villagers with the Malaysia Nature Society volunteers at the Kampung Simpan Arang workshop.



## Sungai Pulai Wetland

The Sungai Pulai wetlands, which are occupied largely by the Sungai Pulai Mangrove Forest Reserve (MFR), consist of mangroves (estuarine, riverine and dryland), intertidal mudflats, seagrass meadows and freshwater riverine forests. Sungai Pulai MFR remains as the largest intact block of mangrove forest in Johor and the largest remaining intact riverine mangrove area in Peninsular Malaysia.



In Feb 2003, the Johor State Menteri Besar, Dato Abdul Ghani declared the area, along with the mangrove forests in Tanjung Piai and Pulau Kukup, Ramsar sites.

Sungai Pulai MFR is home to about 24 'true' mangrove plant species as well as 21 more mangrove-associated species, which demonstrates a high species richness in the area. Out of these, 3 species are found to be notably uncommon, *Avicennia lanata* (an endemic species), *Bruguiera sexangula* and *Podocarpus polystachus*. The Sungai Pulai MFR is also rich in fauna: birds (53 species), mammals (26 species), reptiles (12 species), amphibians (7 species), fish (111 species) as well as benthic organisms (39 species).

The Pulai River Estuary was originally an ancient wetland. Because it is relatively pristine, its water supports abundant flora and fauna.

*Enhalus acoroides*, which is also the largest seagrass species in the world extending up to 2 ft in length, can be found in the Pulai River Estuary. The seagrass meadows support a variety of animals, some of them endangered like the seahorse and dugong. The commercially important fish, crabs, prawns and invertebrates like sea stars, sea cucumbers, anemone etc. also thrive in the seagrass meadows of Pulai.

Source: <http://www.wetlands.org/malaysia/en/articlemenu.aspx?id=5bc18f0e-b793-4967-9fb2-e9236b055b23>, [http://www.sosmalaysia.org/pulai\\_estuary.html](http://www.sosmalaysia.org/pulai_estuary.html)



For further information on SOS Malaysia visit their website at <http://www.sosmalaysia.org/> or download their latest newsletter at <http://www.sosmalaysia.org/publication.html>





# Philippines

## Seagrass areas declared protected areas in Roxas, Palawan, Philippines

Bella Sheila L. Albasin (Project Manager) reports



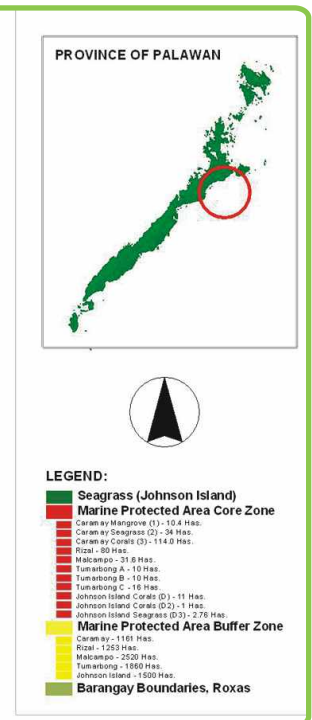
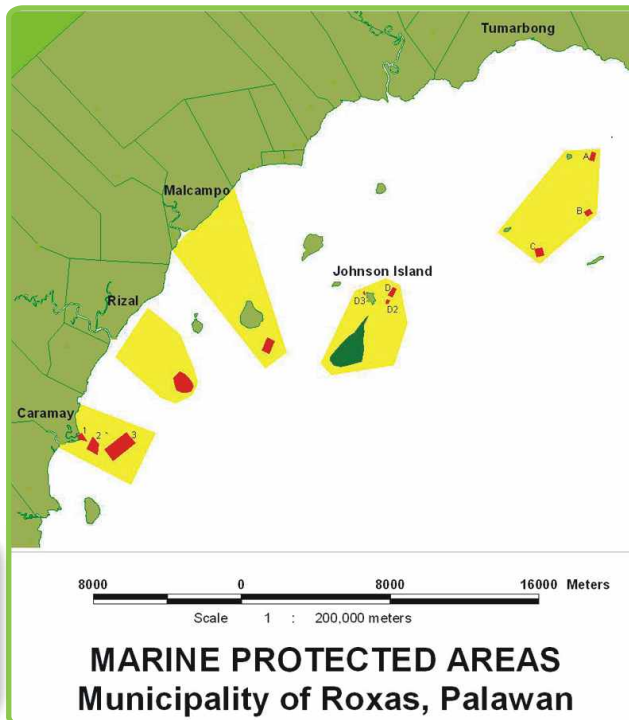
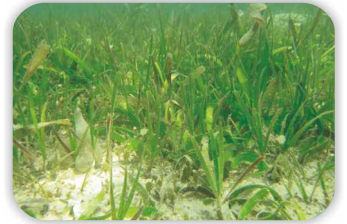
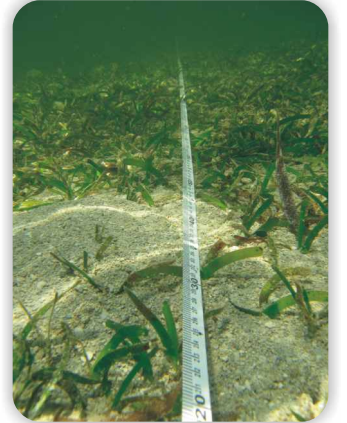
Four years after the baseline survey for seagrass in Roxas, Palawan was conducted (see Issue 23), two marine protected areas with core seagrass areas in Caramay and Johnson Island, 34 hectares and 3 hectares, respectively, have finally been established. According to the criteria used by the environmentally-critical areas network (ECAN) in Palawan, Philippines, core seagrass areas have: 1. high seagrass cover (50% and above); 2. high species richness (<5 seagrass species); 3. extensive bed width (<500 m); 4. and/or with dugong feeding trails.

Although seagrass meadows in Barangays Caramay and Johnson Island had seagrass cover of only 30-50% it had high species richness (8 species were seen in these areas). Dugongs are commonly seen by the fishermen in these areas. No fishing or gleaning is allowed in core areas.

The approved municipal ordinance for the network of marine protected areas (MPAs) in the municipal waters of Roxas, Palawan included adoption of the management plans drafted by people of the community and budget allocation from the barangay and municipal government unit. Locals were involved in delineating the boundaries of their protected area and in drafting the management plan. Some of them were part of the original group that was trained to conduct seagrass monitoring in 2006.

The next monitoring of seagrasses in Roxas will be conducted in April 2008. Tinitian, the area that has been monitored by locals for Seagrass-Watch will also be visited for monitoring, hopefully, with the same group who had been trained before. Advocacy for the declaration of this site, where dugongs are commonly-sighted, as a seagrass protected area is still being done. ♡

Roxas Population, Health & Environment Project  
Funded by USAID (Population & Reproductive Health Program, Global Health Bureau) under Grant Agreement GPO-A-00-03-00008 with WWF-US

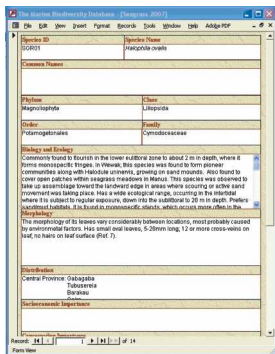
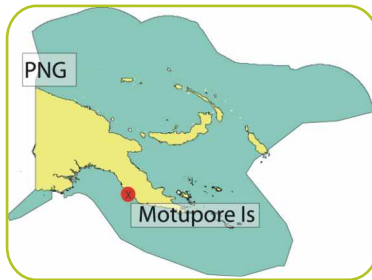


Images:  
Above: Seagrass-Watch sampling in Roxas.  
Right: Examining the *Thalassodendron ciliatum* patch



## Motupore Island, PNG

Jane Wia reports



The Motupore Island Research Centre (MIRC) through its specialist arm the Motupore Island Marine Biodiversity Unit (MIMBU) continues to support the activities of Seagrass-Watch in Papua New Guinea (PNG). This has been done by providing survey material and information on survey methods to members of local community who have expressed an interest to setting up seagrass monitoring sites in their villages. MIMBU also continues to conduct its own long term monitoring in the two sites set up on Motupore Island.

MIMBU has recently published the MIMBU Papua New Guinea Marine Biodiversity Database which lists a total of 1,474 marine species known to be found in PNG waters. Information for the development of the database was sourced from over 200 published and reputable records. Alongside this is a Human Resource database for individuals with an interest in the marine biodiversity of PNG. This database hold 126 entries and the majority of these are internationally based but who still have a strong interest in research on conservation and management of PNG's marine resources.

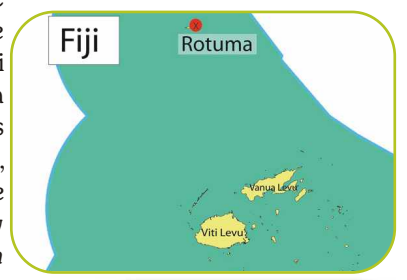
Both this databases are on CD-ROM and are attached to a consultative report on marine biodiversity research prioritization. This report, along with the databases has been distributed widely to relevant individuals and organizations both local and abroad. The databases will be updated annually and distributed free to interested individuals and organizations.

The publication is available free and copies can be obtained by contacting Ms Jane Wia on [wiajtupa@upng.ac.pg](mailto:wiajtupa@upng.ac.pg) or [mimbu1@online.net.pg](mailto:mimbu1@online.net.pg). For more information on our activities please visit our website: [www.mirc.ac.pg](http://www.mirc.ac.pg)



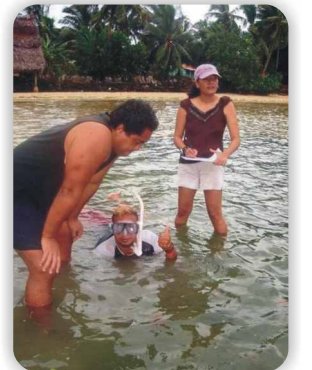
## Maka Bay, Rotuma, Fiji

Alfred Ralifo reports

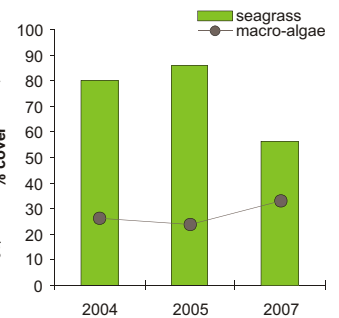


Following the wake of TC Damon (a tropical cyclone that passed through the Fiji Islands) on December 7<sup>th</sup>, a team of EcoCamp volunteers spent the day at Maka Bay, conducting extensive seagrass surveys of the only seagrass area (*Syringodium isoetifolium*) to be found in Rotuma. There were 19 volunteers who first took part in the orientation of how to conduct Seagrass-Watch survey techniques on the beach before finally taking the measure tape to the water. Four seagrass survey sites were set up spanning at least 400metres along the Maka shoreline and extending as far as 200 metres from shore towards the reef which fringes the lagoon to the bay area. Surveys are conducted only where there is seagrass growing, therefore the size of survey area indicated the extent of seagrass growth.

To get a better picture of the health of the seagrass at Maka Bay, annual extensive seagrass sampling must be conducted to monitor seagrass health over time. This kind of information will help towards the protection of such an important habitat and action led by the community Seagrass-Watch team piloted by the adoption of the seagrass area by the Motusa District School. It is through this learning and seagrass field surveys for which experiences are inadvertently shared with other schools during the EcoCamp program.



Images from top  
William, Vamarasi and Monifa:  
Seagrass-Watching in Maka Bay;  
Alfred Ralifo briefing volunteers  
before sampling



## EcoCamp

The EcoCamp, a first for Rotuma, was conducted over 3 days in December 2007. The camp attracted approximately 70 participants and offered hands-on activities that taught participants about the natural world.



The camp concept was a LajeRotuma Initiative in partnership with the schools on the island and linked into the ongoing environmental education awareness program that has been part of the Rotuman school curriculum since 2007.

The five schools have environmental activities where students adopt different habitats and learn how each habitat is dependent on another.

Source : [www.fijitimes.com](http://www.fijitimes.com)

# Research

## Anchors and impacts on seagrass meadows

Jo Taylor reports

In August 2006 I undertook a research project analysing the impact of anchor damage to the biodiversity of seagrass meadows in the **Whitsundays** (Queensland, Australia).

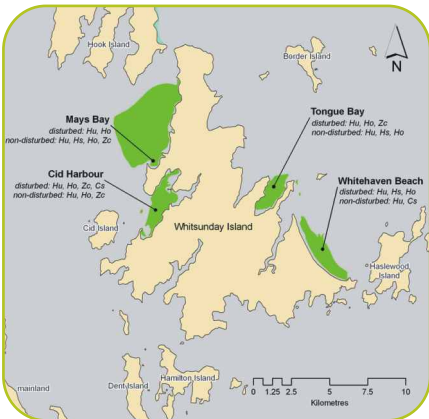
For seagrass meadows to function effectively they need to be intact. Anchors uproot and break seagrass rhizomes, destroying their regenerative capacity, often resulting in the loss of plants, species and meadows. However few studies have been conducted to investigate anchor damage disturbance to tropical seagrass communities. This study presented an opportunity to assess the integrity of four chosen meadows.

Using underwater visual surveys I recorded seagrass abundance and compared disturbed (highly used) and non-disturbed areas in four locations around Whitsunday Island.



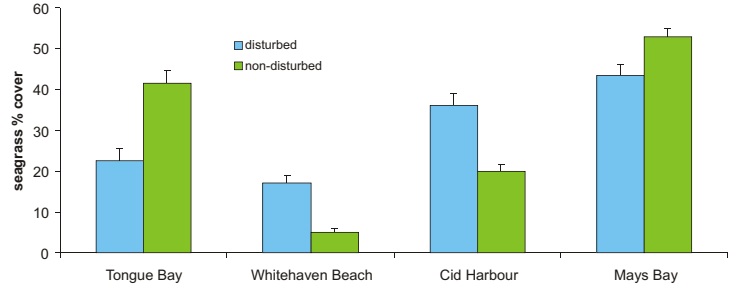
image courtesy Hamilton Island Resort

Whitehaven Beach

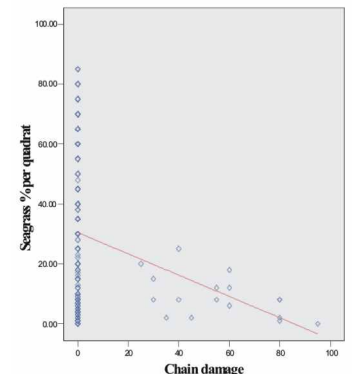
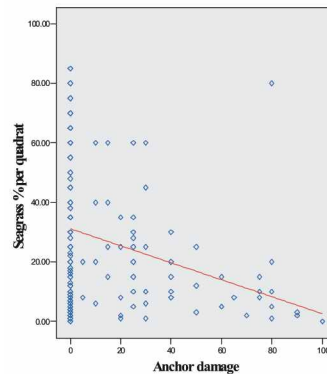


Anchor damage was highest at disturbed sites at Whitehaven Beach and Tongue Bay. Boat numbers were highest at Whitehaven Beach and Cid Harbour.

I found that anchoring in highly used areas generally corresponds to a lower seagrass percentage cover. Low anchor damage was recorded at Mays Bay suggesting heavy boating activity results in higher damage to the meadows and overall lower seagrass abundance.



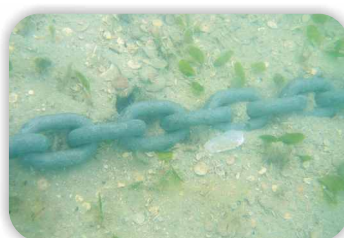
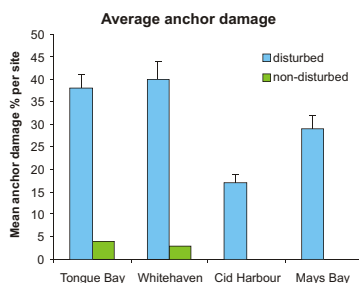
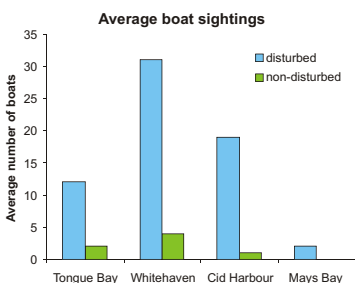
This data was supported by further statistical tests. Small negative correlations were found between anchor and chain damage and seagrass percentage cover. This suggests disturbance caused by anchoring could be having a detrimental effect on the meadows and their subsequent fauna and a negative effect on seagrass abundance. Small positive correlations were found between anchor and chain damage and bare sand percentage further suggests anchoring increases sandy patches and fragmentation of the meadows.



Scatter plots of relationship between seagrass percent cover and damage from anchors (above left) and anchor chains (above right)

Based on the findings of my research, the following management suggestions were recommended:

- Monitoring be continued throughout the year to account for seasonal differences and diversity indices be calculated. This data could further assist towards developing a conceptual model, predicting likely responses to impacts and threats of meadows;
- Implementation of a system of mooring buoys in high anchoring areas to allow for recovery and decrease fragmentation; and
- Educational programmes could be used to inform the public of the negative effects of anchoring by promoting codes of conduct in these vital ecosystems. 🌱



# Animal facts

## Seagrass epibionts

by Keira Price

Epibionts are organisms that grow attached to the surface of a living host. They are made up of plants (epiphytes) and sessile animals (epizoans) and in the marine environment will attach themselves to any firm, exposed surface.

Seagrass blades make a perfect host for epibionts which can often be seen in the form of brown and white scaling (epizoans, such as diatoms, bacteria, the larvae of numerous types of organisms, bryozoans, hydroids, etc) and/or as a furry covering of algae (epiphytes).

There are many benefits for epibionts from this living arrangement: the advantage of being able to colonise an unused surface in a highly populated environment, being able to attach to a flexible host higher in the water column bringing a better supply of nutrients without danger from the increased turbulence, being exposed to more light in an exposed habitat allowing better growth, more nutrients can be made available from the host organism, and in some cases the advantage of being protected by the host's defences.

There are also disadvantages for the epibionts: the potential instability of the host due to physical disturbances, changes in the host's life cycle, competition for nutrients with the host, or



In the case of seagrass, the disadvantages of being the host to epibionts can be disastrous. Rigid epizoans (e.g. Bryozoa) reduce the flexibility of the leaves causing them to become brittle and to break off in high turbulence. Epibionts can also increase weight causing a reduction in buoyancy. They can increase surface friction resulting in the host plant becoming dislocated from the substrate in high turbulence.

Seagrass blades can be damaged from grazers of the epibionts. One of the most drastic effects can be from shading of the leaf surface therefore reducing the plant's ability to photosynthesise. There are some advantages to the seagrass host: nutrients can be passed indirectly through the water column to the seagrass from epibiont outputs, at low levels of epibiont cover seagrass leaves may be protected from sunburn when high and dry.

The abundance of epibionts on seagrass depends on a number of factors: the leaf turnover rate, water temperature, availability of nutrients, salinity levels, current, velocity, depth and light availability.

In general, epizoans are more abundant on seagrasses in darker waters with low salinity, while epiphytes are more abundant in lighter waters.

Sources: Wahl, M. (1989) Marine epibiosis. I. Fouling and antifouling: some basic aspects. *Marine Ecology Progress Series* 58: 175-189. <http://itech.fgcu.edu.au/&issues/vol2/issue1/epibionts.htm>



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being eaten by a predator of the host organism. However, even with these disadvantages, the epibionts usually benefit more from this relationship than their hosts.

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

Contact: Seagrass-Watch HQ  
 Northern Fisheries Centre  
 PO Box 5396, Cairns. Qld. 4870 AUSTRALIA  
 Email: [hq@seagrasswatch.org](mailto:hq@seagrasswatch.org)  
 Phone: +61 7 4057 3731

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