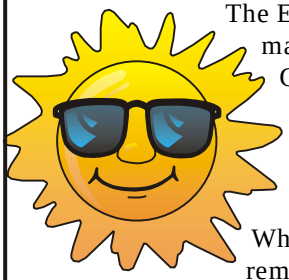
Queensland Seagrass-Watch news

ISSUE 16, February 2003

Happy New Year and welcome to the first edition of the newsletter for 2003. This edition includes not only updates from each region but an overall status report. It's great to read so many contributions from volunteers, so please keep them coming. Included as well is an update from the western Pacific and an article by Julie Philips on the algae which volunteers have reported from Whitsundays to Hervey Bay that is often confused with the seagrass *Halophila spinulosa*. Enjoy!!

Status Report: An El Nino led recovery

This is the second annual Seagrass-Watch report on the overall condition of seagrass meadows throughout Queensland. Seven regions are being monitored encompassing 34 locations and 70 sites. Each location has been assessed using the percentage cover data collected by communities and government participants. Detailed summaries of the data are included as a centrepiece in this Newsletter. Of the 34 locations examined, 22 were reported to be in stable condition, 7 were improving and 4 were in decline. For one location (Bushland Beach) there was insufficient data to determine a trend over the past 12 months. The possible reason for the general good condition of seagrass meadows throughout the state was the low rainfall over the past 12 months, reducing the damaging loads of sediments, nutrients and possibly herbicides to nearshore marine waters.



The El Nino (low rainfall) led recovery of many meadows in the Hervey Bay-Great Sandy Strait region, after the devastating floods in early 1999, was responsible for the improvement in this region. A different pattern was evident in the Whitsundays where some meadows remained stable, and others declined. In Whitsundays the other negative effects of El Nino, high seawater temperatures and sediment disturbance from strong winds, were possibly the cause of the downturn in growth over the 2001-2 summer. The downturn appears to have been short-lived and continued monitoring will track the recovery. In the northern regions of Townsville and Cairns a strong seasonal pattern in seagrass cover suggests no negative effect of high seawater temperatures on these meadows and healthy growth resulting from low rainfall. In Shoalwater Bay and Moreton Bay monitoring over the past year indicates meadows to be in a relatively stable condition.

The Mediterranean Invader - the green seaweed Caulerpa taxifolia

By Julie Phillips (UQ)

Caulerpa taxifolia has gained notoriety over the last two decades as an invasive species, most notably in the Mediterranean Sea. Although the source population for the Mediterranean invasion has not been identified, its presence is presumably the result of the accidental release of an 'invasive strain' into the sea near the Monaco Aquarium in the early 1980s.

Caulerpa taxifolia is indigenous to Australia and native to Queensland, being first recorded in 1855 near Cape York. It is a common species in tropical/subtropical Australia, ranging as far south as Port Denison and Southport on the Australian mainland west and east coasts respectively.

The origin of new populations of *Caulerpa taxifolia* found on the New South Wales coast since 2000 remains unknown. It is thought to be an introduction of either exotic strains from the Mediterranean or indigenous forms from Queensland. *Caulerpa taxifolia* now occurs in 7 estuaries in NSW, up to 800 km further south than the pre-2000 southern distribution limit of the species at Southport. In 2002, *Caulerpa taxifolia* was found growing at West Lake, near Adelaide.

CSIRO Marine Research are currently investigating *Caulerpa taxifolia* populations from the Hervey Bay region, Moreton Bay and NSW using DNA fingerprinting techniques in order to determine if any of the 'invasive Mediterranean' strain of the species occurs in Australia. Nicole Murphy and Julia Phillips (yes the name is correct) from CSIRO Marine Research (Floreat Lab, WA) with help from Jerry Comans, Karen Kirk and Juanita Bite made collections of *Caulerpa taxifolia* from Hervey Bay during November 2002. Collections of *Caulerpa taxifolia* were also made by Nicole, Julia and myself in December 2002, in Moreton Bay, with assistance from Darren Dennis (CSIRO Marine Research). Nicole is currently undertaking the DNA work and we eagerly await the results of her analyses.

ISSN 1441-4236

GSS & Hervey Bay Happenings!

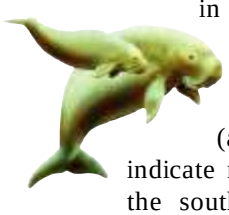
Great Sandy Strait Fauna & Flora Watch

Gordon Cottle reports

I hope that some of the following may be of interest to like minded "sea-grassers". Over the last six months our small team (Gary and I at Poona, Peter and Kerry at Tinnanbar) participated in 636 hours of volunteer activities. With ideal tides and weather conditions the November monitoring program was completed in eight days with some encouraging reports, particularly the absence of algae at Brown's Gutter.

In early October when Gary and I monitored Browns Gutter we observed a "brown sludge", approx 25-30mm thick, covering the site with extensive seagrass coverage beneath. Upon return to the site in early November the algae had completely gone and dugong feeding trails were present. [*This is a good reminder to include all seagrass within a quadrat in the percent cover observations - including seagrass which may be covered by algae but excluding seagrass beneath the sediment surface*].

In early November when Gary, John and I were monitoring Reef Island site RI3 we noticed that the majority of *Zostera* appeared "burnt", possibly a consequence of the hot weather and warm breezes during the low tides. Nevertheless, the site was still frequented by dugong as we observed several feeding trails. Also in November Gary, Peter, and I attended the Marine Park Forum and Turtle Education Program at Mon Repos, unfortunately marred by torrential rain which put a damper (to say the least) on proceedings. Gary spent three days at Sandy Cape assisting in the Loggerhead egg collection program, and has his name down for next year, after what he described as a fantastic experience. Gary also attended a program on Grey Nurse Sharks and spent a day in the Strait learning about water quality sampling, as did I on another trip.



In December Gary reported a pod of dugong in our local area (approximately forty) and our surveys indicate regular numbers of turtles throughout the southern Strait. On the down side, we located, identified and properly disposed of ten turtles, the results of boat strikes, tangling in crab pots, and one shark attack. As a direct result of local publicity and an excellent information board, supplied by QPWS and the Maryborough City Council, at the boat ramp, we are now receiving regular turtle reports from the public.

We gratefully acknowledge the generous donation of $500 from the Hervey Bay Dugong and Seagrass Program to be used for fuel to assist in reaching our Reef Islands, Brown's Gutter and Poona sites (also for our Dugong and Turtle survey trips which take about six hours).

February's monitoring is going very well, as a result of early morning starts and late afternoon finishes to catch the low tides. Breaking news - three pods of dugong in Tinnanbar/ Kauri Creek area on edge of feeding grounds waiting for tide.

Washouts & Whelks

Wendy Jones reports

Burrum Heads (BH2) is still looking good apart from the washout between transects 1 and 2. Between transects 2 and 3, there were clumps of seagrass holding sand with rhizomes exposed and a number of dugong feeding trails. The site was difficult to monitor as the windy (>20 knots) conditions and low atmospheric pressure kept the tide high. Shallow water and waves/ripples are the bane of all Seagrass-Watch observers!!! There were still a lot of whelks and invertebrates but not as many as before, with lots of empty whelk shells washed up along the beach, possibly a consequence of the fresh water from our recent heavy rains.

There are still visible dugong feeding trails between BH2 & BH3 and we have heard reports of a young dugong off Torquay Beach (where there is a lot of jet ski use).

There has also been a lot of algae (similar to that found on the inside of fish tanks) floating on the water & washed up on the local beaches. I assume that is because a load nutrients were flushed out with the recent rain.

Regional Roundup

At Wanggoolba Creek in early November the QPWS team (Michael Ford and Bill Alston) noticed that most of the seagrass on the flats at WC2 site had a brown/red tinge and that the site had lost it's healthy green appearance.

Also in early November, when Anne O'Dae and Steve Winderlich monitored Reef Island sites RI1 and RI2 they noticed 20 black swans in the area. They also found several large razor shells approximately 14cm across on the site and noted that seagrass in quadrats covered with water, was thicker and more "healthy" than those in dry quadrats.

At Boonooroo in early November however, Steve Winderlich and Mary Starkey noted a brown slimy algae around site BN2 plus a lot of mangrove seedlings sprouting.

In Tin Can Bay, Brad Norton noted that seagrass coverage was increasing on the shore side of the monitoring site. This is good news for the bay as seagrass has been slowly decreasing over the past decade. Continued monitoring of the Tin Can Bay site will be followed with interest.

Get well soon - Jerry .

We have recently been informed that Jerry Comans, one of the founding members of Seagrass-Watch, has been taken ill while on holiday overseas. Everyone at Seagrass-Watch would like to pass on our best wishes to Jerry and Lyn for a speedy recovery. Our thoughts are with you both.

Whitsunday Wanderings!

Monitoring News

Margaret Parr Reports

Pioneer Bay

Early birds in the Whitsundays started at dawn in early November to monitor sites in Pioneer Bay. Once we were awake, it was a pleasant, cool time of the day to be monitoring.

The seagrass looked quite healthy and without the covering of algae we have recorded previously although there was still some epiphytic growth on the plants. We noted some clumps of *Halophila ovalis* with unusually large and brown coloured leaves and found a patch of *Halophila spinulosa*. This is only the second occasion on which we have discovered this species in Pioneer Bay.

We observed sediment suspended in the incoming tide at the eastern side of the bay, presumably from the development happening with the extension of Able Point Marina.

We noted many dugong feeding trails near site PI2. Another sample of dugong poo was collected and dispatched to JCU in Townsville for examination for the presence of seeds.

Dugong feeding trails at Pioneer Bay (4 Dec 2002).

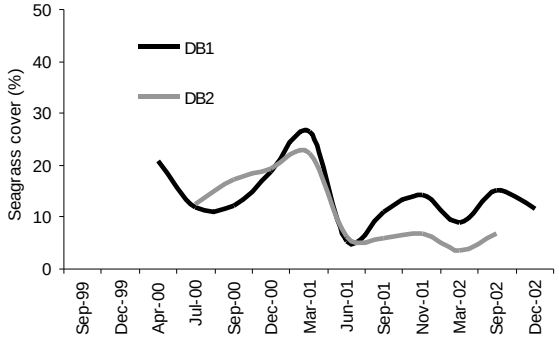
After cleaning up, we were ready for brekky on the foreshore of bacon and eggs washed down with a cuppa . What a magnificent start to the day!

Laguna Quays

A germinating seed was found when QPWS rangers and Whitsunday Volunteers combined forces to monitor the Laguna Quays site in November.

Dingo Beach

Jean and Joyce at Dingo had only time to sample one of their sites before the tide beat them. Their data so far is showing a typical seasonal trend in seagrass abundance.

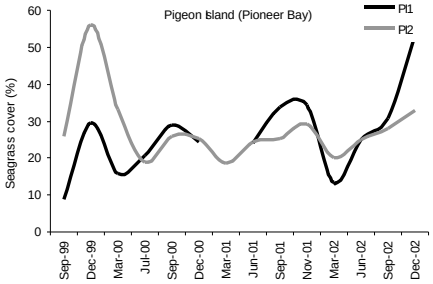


Hydeaway Bay

In early December, Maren reported fairly good seagrass cover (up to 80%), but noticed more sand than usual.

February 2003 Update

Some of the seagrass team took an impromptu walk along Pioneer Bay on Sat Feb 15. While the tides were too high to monitor our sites, we informally checked out the health of the seagrass. The exposed plants looked healthy with little epiphytic growth and cores dug from the sand revealed healthy seagrass roots underneath.



However the Bay had new patches of mud presumably from the development of Able Point Marina. Some of this mud had covered parts of the seagrass meadows

We will keep watching, although mid April is the first tide low enough to monitor our sites in the Bay.

Whitsundays OUCH Volunteers

Tony Fontes reports

After a short hiatus in the quarterly seagrass surveys due to lack of support, the OUCH Volunteers are back into it. Surveys were completed at Whitehaven Beach in September 2002 and February 2003. The much-needed support came from the Queensland Parks and Wildlife Services (QPWS). The big costs to surveying offshore sites are the boat trips. That problem has now been solved with transport being provided by QPWS. The QPWS workboat "Nunga II", a small barge, has proven to be the ideal boat for putting the volunteers on site and laying out the transect lines.

Even more support has come from the last round of NHT funding as the OUCH Volunteers and Whitsunday Volunteers have just received much needed money to continue their work in the Whitsundays. The money will be used to purchase equipment and charter boats for sites that QPWS cannot assist with.

The February survey at Whitehaven Beach picked up the return of the blue-green algae *Lyngbya* [see issue 9, March 2001]. This algae was last seen in the area last summer but disappeared over the winter. The algae was only noted at the southern end of the beach.

Midgeton loses Heather.

With much regret, Heather Hyde will no longer be able to monitor her sites at Midgeton, due to personal health. Although she has "canvassed the area for some new people", unfortunately no one has come forward to help out. Heather shall be greatly missed.

If there is anyone willing to take on Heather's site, please contact the Seagrass-Watch Coordinator.

Western Pacific

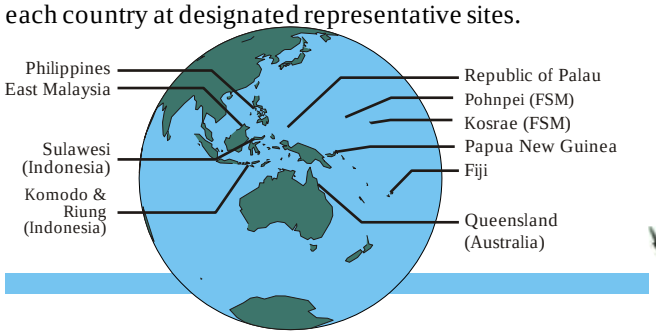
In 2001, the Global Seagrass Monitoring Network was established. The network has two components, one research-oriented (SeagrassNet) and the other community-based (Seagrass-Watch) which investigate and document the status of seagrass resources world wide and the threats to this important ecosystem.

Global monitoring for seagrass had not been attempted at this scale before and a pilot study was initiated with the financial assistance of the David & Lucile Packard Foundation and the University of New Hampshire. The Western Pacific was chosen for the pilot because it has extensive and diverse seagrass habitats and a myriad of coastal issues with the potential to threaten seagrass growth and survival. Challenges to seagrass in the western Pacific are numerous, similar to most parts of the world, ranging from population increase, fisheries practices, pollution and onshore development to global climate change and sea level rise. The combination of these factors and the remoteness of many locations provided a complex set of circumstances that challenges our scientific ability to monitor seagrass habitat and to test the diversity of habitat impacts. It is an ideal area for a pilot monitoring initiative.

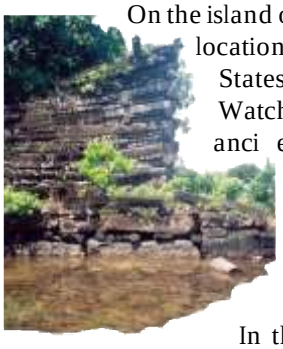
The community based component (Seagrass-Watch) is dedicated to the long-term conservation and responsible stewardship of critical seagrass habitats and resources in the Western Pacific region. The program is committed to helping people improve the skills, tools, and institutions needed to ensure that these biologically diverse ecosystems continue to function and thrive. Coastal communities in the island nations of the Western Pacific are not only concerned about the condition and loss of seagrass in their regions, but are keen to play a primary information gathering role and work in partnership with scientists.

Seagrass-Watch captured this interest and facilitated links between community networks, government agencies and local industry groups to provide scientific advice on critical seagrass resources. Where possible, the Seagrass-Watch program has been integrated with existing marine resource monitoring programs to develop a sense of ownership.

Long term monitoring sites were established in 2002 in the the Philippines, Malaysia, Indonesia and the Western Pacific island nations of Kosrae, Pohnpei, Palau, Kavieng (PNG) and Fiji. Community participants were mostly school students and local villagers, and local scientists, government and non government organisations provided support. Quarterly monitoring is now being conducted in each country at designated representative sites.



In Kosrae (Federated States of Micronesia), a monitoring site has been established at Kisacs (Tafansak), on the north of Kosrae Island. The site is adjacent to a village and supported by the local schools and Kosrae Fisheries.



On the island of Pohnpei, the largest island and location of the capital of the Federal States of Micronesia two Seagrass-Watch sites were established at the ancient city of Nan Madol. Ongoing monitoring is dependent on the co-operation of the College of Micronesia with the Pohnpei Conservation Society and local communities.

In the Republic of Palau, two sites were established at Betikl in the Rock Islands. The Rock Islands are part of a marine park/reserve and their distance from urban development and agricultural land-use suggests no obvious impacts from catchment activities. The information collected will complement existing coral reef monitoring programs inside and outside marine protected areas. The site is monitored by scientific and education staff from the

Palau International Coral Reef Centre with the assistance of students from Palau College and members of the Palau Conservation Society.

In East Malaysia (Borneo), sites were established in Sabah, north of Kota Kinabalu, in proximity to coastal townships. A student based marine scienceorganisation “The Marine Club” are taking a lead role in monitoring sites in the region with assistance from the University Malaysia and non government organisations such as WWF and Greenforce.

Western Pacific

In Indonesia, 3 regions are participating. Sulawesi (northern Indonesia) has a coastline of extensive coral reef and seagrass ecosystems important for fish, turtle and dugong populations. A site was established at the village of Terremel, about 150 kilometres north east of Manado. This intertidal site is part of a locally managed marine protected area established by the community, with assistance from Coastal Marine Resources Program and students from the Sam Ratulangi University.

Monitoring sites are also present in the Komodo National Park, situated on the eastern Indonesian archipelago. Sites have been established on the island Seraya Kecil, just outside the Park boundary, in front of a local tourist accommodation facility. Other sites were established on the island of Papagaran, inside the park boundaries and monitored with the assistance of the local village community. The seagrass monitoring is integrated with marine park monitoring programs of Komodo National Park and The Nature Conservancy (TNC). The monitoring will allow identification of critical seagrass habitats for fisheries and habitat management. Local communities in the region are collaborating with an ongoing education and awareness program conducted by TNC to educate and inform villagers on marine conservation issues and sustainable use of local marine resources.

The other monitoring location is near Riung on the northern coast of Flores in Indonesia. Monitoring sites

were established at Ontoloe and Bakau Islands. The seagrass meadows support extensive subsistence fisheries that harvest of sea urchins, sea cucumbers, small fish and shellfish for local markets. Monitoring is being integrated with the local school's education program and assisted by scientists and education officers from WWF, Dept. of Fisheries and TNC. Information on the health of seagrass meadows will complement projects undertaken by the local Department of Fisheries (Bajawa) to assess the condition of seagrass meadows, identify critical habitats for fisheries and establish areas of marine protection.

In Papua New Guinea, Ailan Awareness (a non-government organisation) monitors sites at Lavongai (New Hanover), Bol village (New Ireland), Panapai (Kavieng) and Mongkop (Kavieng) with assistance from Utu High School, Bol villagers, Mongkop High School and Lavongai villagers.

In Fiji, environmental issues are similar to the other western Pacific Island countries, such as deforestation; soil erosion, and sewage effluent. Community-based monitoring sites have been established with the coordination by WWF South Pacific and the Nadroga Navosa Provincial School (with local village support) in the Cuvu Tikina on western Viti Levu. There are very large seagrass meadows in Cuvu Bay, but they are threatened by turbid flood waters from the Voua River. Monitoring sites were situated close to a locally managed marine protected area monitored by WWF and the Foundation for the Peoples of the South Pacific. Other Seagrass-Watch monitoring sites were at Cawaci (Ovalau) where the student run " Environment and Landscape Group" from Saint Johns College were trained to monitor seagrasses on the fringing reef flat in front of the college. In recent years the reef has experienced blooms of green algae (seaweed) and physical disturbance from extraction activities.

Seagrass-Watch was immensely popular and the enthusiasm of students, villagers, teachers and local residents, and their eagerness to be involved in Seagrass- Watch, constantly provides challenges for the development of the program that has relevance to their culture and needs for management of their natural resources at the local scale.

Twin City Tidings

Moonlighting at Shelley Beach

The Shelley Beach team welcomed the Mundingburra Rotary Group along on their midnight moonlit sampling expedition. Rotary are keen to adopt Shelley Beach SB1 for future monitoring. As there had been no opportunity to do any training the group went along as scribes. They took to the activities like ducks to water, which was lucky as squall after squall came through the sites. The night had such a great turn out (19 people) that the team was able to split into two groups and do both sites.

Dipali Ayling and Barry Bemdell estimating % cover.

Beth, Steve, Dipali and Barry - Ducks to water or drowned rats?

Percent covers were once again higher at SB2 with seagrass cover ranging between 18%-60% with most covers hovering around the 40% cover. Seagrass cover at SB1 was slightly lower (0-50%) with the majority of cover in the 30% range. Seed counts were once again higher at SB2, while *Halodule uninervis* flowering was observed at SB1. Whilst sampling was an extremely wet affair, the team were rewarded during the walk back to the car park: the rain stopped, the moon came out and there were plenty of invertebrate wildlife to observe, such as a bailer shell and heaps of sea hares. After a good nights sleep everyone agreed it was great thing to do despite the inclement weather. Thanks to everyone who braved the elements during the trip. Special thanks to Phoebe and Sean Kelly who were both out, well past their bed times. Sterling effort!!!!

Bushland Beach

Regrettably, Bushland Beach monitoring did not go ahead in February as planned. Having only sampled once before, there were some concerns about relocating the site in the dark of night without any GPS co-ordinates. The next sampling trip will be in May when the team plan to take a GPS to identify their site and to also set up a second monitoring site closer to the Bohle River.

Sandfly Creek

Due to bad weather in November, and Dez Wells (plus boat) leaving, the Sandfly Creek site has not been monitored since August 2002. The group are trying to look at alternatives to accessing this site. Kayaks and canoes are being considered, however the feasibility of this has yet to be determined. If anyone has any experience in sea kayaking or has a dinghy and wouldn't mind helping out please contact the local coordinator.

Sea Hares at Shelley Beach

By Barry Bemdell (JCU)

During field trips to Shelley Beach in July 2002 and January 2003, many sea hares were encountered. Sea hares are slug-like molluscs. They were so abundant in July that it was difficult to avoid stepping on them, and in the unavoidable event, they left a purple stain on the sediment, marking the point of an individual's demise. Many sea hare species emit a purple ink-like fluid when distressed. It is thought to deter predators, but was no defense against the well-shod feet of Seagrass-Watch volunteers.

Sea hares at Shelley Beach were generally 5 cm long, mottled brown and beige, and covered in long protuberances (papillae) that gave them a 'shaggy dog' appearance. There were two species at Shelley, *Bursatella leachi* and *Stylocheilus striatus*. The former has two rows of blue spots along the back. The later is more elongate in appearance, usually has dark longitudinal lines, and has smaller and more numerous blue or purplish spots scattered over the body.

The sea hare Bursatella leachi from Shelley Beach, July 2002. Photo courtesy of Dr John Collins.

Both those species occur throughout the tropical regions of the world, and have been known to suddenly appear in very large numbers in places where they had been previously unnoticed. Those appearances are likely related to their feeding habits. Both species feed on blue-green algae. At Shelley Beach, during June and July, there was a very noticeable bloom of blue-green algae on the leaves of *Halodule uninervis* and *Halophila ovalis*. Sea hares could be seen removing material from seagrass leaves, without damaging them.

It is believed that algal feeders can benefit seagrass by removing algae that compete with seagrass for light. However, algae also provide a protective covering on seagrass leaves that reduces damage from ultraviolet light and desiccation during low tides. Whatever the cost/benefits to the seagrass, the extremely large numbers of sea hares seen and their appetite for algae suggests that they could, in the short-term, have a very significant impact on the balance between seagrass and algae in the meadow. For more information about sea hares, nudibranchs, and other related groups of animals see the web site www.seaslugforum.net.

Next Surveys in the Twin Cities

The next monitoring of long term sites will be between mid April and May 2003

Shelley Beach: Best tides are April 16-18.

Bushland Beach: Best tides are May 14-17.

Queensland Seagrass-Watch *news* continued ..

Looking after the dugong's food supply at Yule Point!

Tom Collis reports

Yule Point, north of Cairns, is a site that has been monitored by Indigenous students from Tropical North Queensland TAFE, since August 2000. Although the seagrass (*Halophila ovalis* and *Halodule uninervis*) cover here is relatively sparse, it is still a favoured feeding spot for dugongs with extensive feeding trails regularly seen on site during our monitoring visits. The data collected has produced some interesting trends in the percentage seagrass cover. In the hot times of the year the seagrass cover is higher whereas in the winter the seagrass cover is reduced significantly. Yule Point is relatively pristine so this pattern is probably natural. So in future, any changes to this pattern may indicate if the seagrass meadows are in trouble. So, by doing Seagrass-Watch we are trying to ensure the dugong's food supply at Yule Point is maintained.

The Cairns TAFE team at Rex Lookout, after an afternoon's monitoring at Yule Point

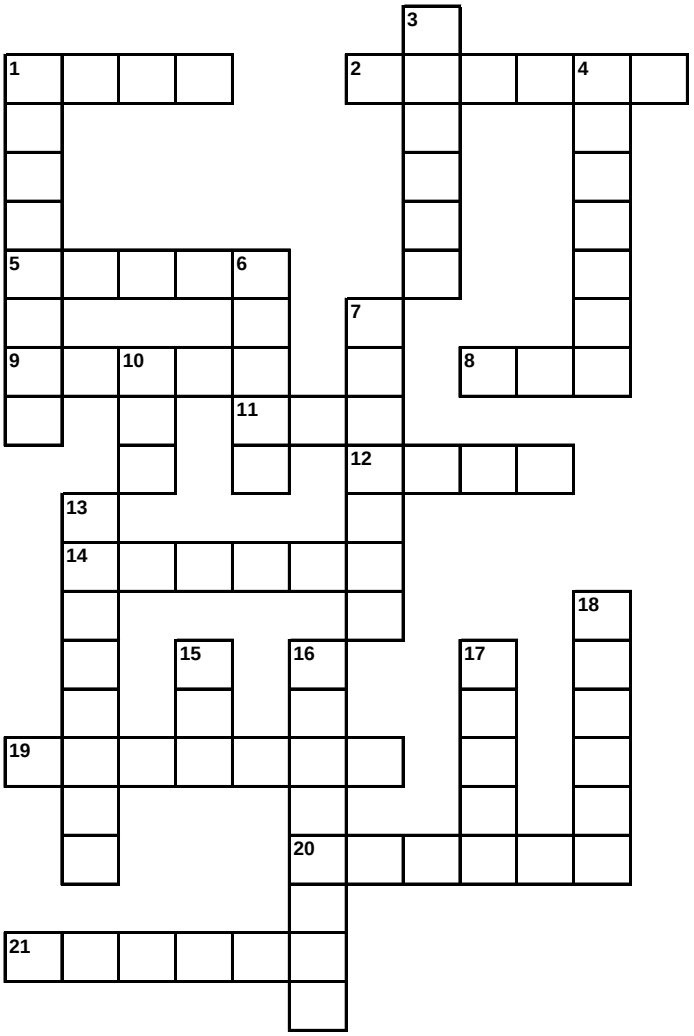
Melo (Melo) amphora - Bailer shell

By Jane Mellors

The Bailer shell (sometimes called a melon shell) is a volute gastropod. They can be found on beaches form Mauritius to Australia and to Papua New Guinea. Volutes are among the most sought after shells, with their giant size and colour patterns. The bailer shell is very important in traditional industries of the indigenous people of Australia and New Guinea. In Australia, the relatively flat surface near the lip of the shell can be cut into a Woomera tip. They were also used as a general container that could carry water or honey. They could be even placed directly in the hot coals of the fire to boil water. The shell is also used widely for ornamentation, such as pendants, breastplates and nose bones.

The Bailer shell serves many roles in the Trobriand Islands of Papua New Guinea. The shells were traded to the people of the Sepik River and used as barter and currency. The shell was used as a decorative item and worn suspended by a cord about a man's neck. Lastly, the shell would be used to bail out canoes, hence the derivation of this animals common name.

Got time? Test your knowledge with the puzzle below. Answers are at the back of the newsletter.



Questions

Across

1. Sampling intertidal seagrass meadows are best done at low _ _ _ _
2. This mammal eats seagrass
5. _ _ _ _ _ are a measure of a seagrass meadow's resilience
8. A set of information that can be used to identify seagrass
9. Seagrass seeds are collected using a _ _ _ _ _.
11. Global Positioning System (initials)
12. A transect is set up using a 50m _ _ _ _ measure
14. Device that holds a boat in place at sea
19. Defines the area that the percent covers are taken within
20. Instruments used to measure canopy height
21. Taken as a permanent record of per cent covers at a site.

Down

1. Quadrats are placed along a 50m _ _ _ _ _ _ _ _
3. This reptile eats seagrass
4. Seagrass meadows act as _ _ _ _ _ _ _ areas
6. After a cyclone, be prepared for a tidal _ _ _ _ _
7. Seagrass species with many cross veins and rounded leaf tip
10. Fish eggs
13. Seagrass with trident leaf tip
15. A group of whales
16. A marine flowering plant
17. Used for finding seeds
18. A crustacean that uses seagrass meadows as a nursery area

Queensland Seagrass-Watch *news* continued ..

Moreton Bay Seagrass-Watch

Paul Finn reports

The Seagrass-Watch program in Moreton Bay is set to expand into a large and valuable addition to the regions already established in Queensland. The volunteer recruitment drive has been so successful that we have enough people to form 78 groups and therefore monitor 78 new sites. This means we have more than enough people to cover the initially proposed 60 sites for Moreton Bay and can think about where else we would like to establish sites. We have had significant interest from people further south, in the Gold Coast area, and will be able to establish a meaningful number of sites in this area. With such a large number of sites to set up, people to train and a limited number of good low tides, it will take several months to establish all proposed sites. We will be training people in small groups at their respective sites over the coming months.

So far, a small number of new sites and volunteers to monitor them have been established. At one of these sites, Ormiston, an extensive network of dugong grazing trails has been discovered. This is great to see on the western side of the Bay and Network Ten's "Totally Wild" will be filming it for their program, so keep an eye out for it.

Seagrass-Watch featured heavily in recent World Wetlands Day activities on the 1st of February with approximately 80 people braving an approaching thunderstorm for a field

Paul Finn at Wellington Point, training a small group of potential Seagrass-Watch volunteers during World Wetlands Day activities.

workshop at Wellington Point. We had many interesting animals on display in tanks as well as samples of *Lyngbya* for people to become familiar with. A brief practical introduction to the Seagrass-Watch survey methods was delivered to participants in small groups before the storm hit (see photo).

Simon Baltais (Secretary, Wildlife Preservation Society of Queensland Bayside Branch) organises activities including seagrass identification workshops and mudflat spotlighting for our volunteers and others. These activities have afforded participants good views and large numbers of mud crabs, wobbegong sharks, octopus, sea stars, sea hares, nudibranchs and more.

Shoalwater Bay

Alice Kay reports

In 2002, Queensland Parks and Wildlife Service staff in Rockhampton began a four year study of intertidal seagrass in the Shoalwater Bay Military Training Area.

The main aim of the study was to determine how natural changes in seagrass abundance are related to the growth and breeding condition of resident green turtles, the breeding success of other species such as ospreys and pelicans and any observed changes in dugong numbers or movements.

Due to restricted access and lack of coastal development the seagrass meadows of the Bay are relatively free from human pollutants and impacts. The results of the study will also provide an interesting comparison for more disturbed meadows near towns and cities.

With the help of a small, but sturdy band of volunteers, surveys were conducted at five locations on the western side of the Bay at quarterly intervals during the year. The team camped out for six days at a time.

The first years result's indicate that the seagrass meadows of the Bay are in good health. Although there were some marked changes in seagrass abundance at some of the sites, these changes were site specific and did not appear to follow any general seasonal trend. Overall, they cancelled each other out suggesting that the Bay's average seagrass cover was very stable at about 20% to 22% for the year.

Do you want to get Involved?

Contact your local Seagrass-Watch representatives:

Hervey Bay:
Jerry Comans (Hervey Bay Dugong and Seagrass Monitoring Program) *Ph. (07) 4124 2393*

Great Sandy Strait:
Gary Nielsen (The Great Sandy Strait Fauna & Flora Watch) *Ph. (07) 4129 8117*
Steve Winderlich (QPWS Maryborough) *Ph. (07) 4121 1933*

Whitsundays:
Margaret Parr (Whitsunday Volunteers Association) Airlie Beach *Ph. (07) 4946 4996*
Tony Fontes (O.U.C.H) Airlie Beach *Ph. (07) 4946 7435*

Townsville:
Jane Mellors (*for* Townsville Seagrass & Mangrove Volunteers) *Ph. (07) 4722 2655*

Moreton Bay:
Nicola Udy (QPWS Cleveland) *Ph. (07) 3821 9024*

Answers to the puzzle

Across
1.Tide. 2.Dugong. 5.Seeds. 8.Key 9.Corer. 11.GPS 12.Tape 14.Anchor 19.Quadrat. 20.Rulers. 21.Photos

Down
1. Transect. 3. Turtle. 4.Nursery. 6. Surge. 7.Zostera. 10.Roe 13.Halodule. 15.Pod. 16.Seagrass. 17.Sieve. 18.Prawns

Queensland Government Department of Primary Industries

Text: Len McKenzie
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 JUNE 2003

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