

Seagrass-Watch Gold Coast



Newsletter No. 4 – July 2010



Winter Monitoring Season

Websites:

<http://www.wildlife.org.au/seagrasswatch>

<http://www.seagrasswatch.org>

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Training Day's

Field training days are an excellent way for new volunteers to acquire the skills required for monitoring a site and for existing volunteers to freshen up on their field techniques.

Training will be conducted at the following sites during July-August.

Tallebudgera Creek 1

Sunday 25th July

12:00 noon Training Session

Meet out the front of house # 152 Tallebudgera Drive
UBD map 60 ref E15

South Stradbroke Island 2

Sunday 8th August

10:00am Training Session

Meet at Runaway Bay Marina boat ramp
UBD map 19 ref C7

Lunch will be provided at each training session, so come along and enjoy a social and educational day by the water with Seagrass-Watch Gold Coast.

Please phone Daniela on 0432 988 513
to book your place and for catering purposes

New website page for SGWGC...

Check us out and keep informed

@

www.goldcoastcatchments.org/members/seagrass-watch.htm

And don't forget to tell your friends or other 's who may be interested.



Feather star surrounded by seagrass species - *Halophila ovalis*
South Stradbroke Island site 1 (SS1)

Once again, it's time for our cool winter monitoring season (July-August), so be brave, check out the 'Good Tides' section on the second last page and get in touch with Daniela to book your Seagrass-Watch kit and monitor your site.

With new sites being established in Tallebudgera Creek and on South Stradbroke Island, it would be wonderful for us to meet and put names and faces together at one of the two training days being conducted this season – see opposite for details.

You can now check us out on the Gold Coast Catchment Association (GCCA) website who have kindly created a page for Seagrass-Watch Gold Coast (SGWGC), this site will be updated with training days and events, making it even easier to stay informed and up-to-date – see opposite for details.

I look forward to seeing you out there in the field monitoring our precious seagrass meadows and meeting our new volunteers at the training days, until then;

Happy Seagrass-Watching, Daniela



'Clean up the Pin'

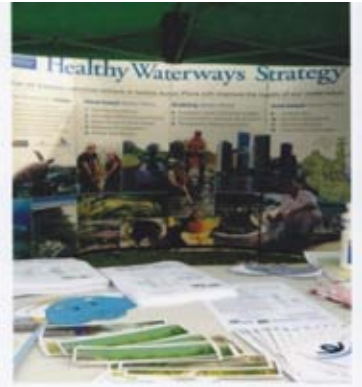
SGWGC had the pleasure of being part of this year's annual 'Clean up the Pin' day run by Sunfish South Moreton Branch and held at Jacobs Well boat ramp on Sunday the 16th of May.

The day began at around 7:00 am with a BBQ breakfast and 85 registered participants including; two GCCC divisional councillors, members of the Jacob's Well Fishing and Social Club and local community all doing their bit for the environment and healthy waterways by collecting rubbish built up on the Jumpinpin bay of islands.

This event has been running for the past 15 years and Sunfish has won numerous awards for the cleanup days. It's no wonder, this year 10 tonnes of rubbish was retrieved and brought back to the mainland using boats provided by QPWS (MV Spoonbill pictured), Port of Brisbane and GCCC and transferred into the big skip.

What a sensational effort, keep up the great work Sunfish and everyone who gave up their time and provided support to contribute to this annual event.

Keeping our islands clean and healthy



Green Day Out Many species, one planet, one future



Green Day Out is an award winning environmental festival which aims to raise awareness of sustainability and the environment.

Organised annually by Gecko – Gold Coast Hinterland and Environment Council since 1999, this festival is part of the United Nations World Environment Day celebrations.

This year it was held on Sunday the 13th of June at the new venue of Kurrawa Park in Broadbeach and SGWGC was proud to be there raising awareness of seagrass and Seagrass-Watch activities on the Gold Coast.



The day was abuzz with excitement, there was lots of great local music, a myriad of informative stalls with SEQC, GCCC, GCCA, BeachCare, PlatypusWatch, Gecko and SGWGC all there promoting local actions to protect and conserve the environment together with a wonderful array of sustainable products and services to enable people to make lifestyle choices that can change the world.

**One degree of change by everyone, every day
will change the future of the planet.**

Gecko Guest Speaker Night – South Stradbroke Island Turtles by Leighton Upton

Wednesday 28th July, 2010 from 6.30 – 8.00pm @ Gecko House, 139 Duringan St, Currumbin

www.gecko.org.au/guestspeakers

Seagrass is an engineering species

At Seagrass-Watch we monitor seagrass meadows to see if they are changing. We also know that seagrass has the ability to change it's environment. Seagrass stabilises sediments and lowers seawater acidity amongst other things (see SGWGC newsletter No. 1).

Up-to-date research has shown that seagrass meadows change the reduction-oxidation potential – redox- ('redox' is chemical electrical activity) in substrate within the rhizosphere (where rhizomes and roots are growing).

Redox affects the solubility of nutrients and the activity of enzymes and bacteria. Therefore redox is important to seagrass health. When sediments are deposited in a seagrass meadow, it stimulates bacterial activity which can lead to anaerobic (oxygen depleted) conditions. Anaerobic sediment conditions can contribute to a decline of seagrass.

The study was done at four sites in South East Asia but includes four species of seagrass found around the Gold Coast:

Cymodocea serrulata
Syringodium isoetifolium
Halodule uninervis
Halophila ovalis

http://www.seagrasswatch.org/id_seagrass.html



Thalassia hemprichii

http://www.seagrasswatch.org/id_seagrass.html

For a species with a shallow rhizosphere, like *Halophila ovalis* (found on the Gold Coast) the effect is confined to approximately 15cm depth of sediment.

Another species that was part of the study, which is not found around the Gold Coast is *Thalassia hemprichii*. *T.hemprichii* can affect the environmental redox potential up to 50cm deep into the sediments.

Article by Nick Hoffmann

SGW Coordinator Moreton Bay

Oxygen is released by seagrass roots (in the rhizosphere) changing the redox potential and therefore effecting the aerobic or anaerobic condition of the sediment. The deeper the extent of the rhizosphere, the deeper the effect on redox potential. The effect on redox also has implications for the other marine creatures making their life in the sediments below a seagrass meadow.

A seagrass meadow has the effect of improving environmental conditions for it's own health and benefit.

Seagrass is an engineering species.



Halophila ovalis

<http://www.umces.edu/grassecosystems.html>

Reference: Marba, N., Duarte, C.M., Terrados, J., Halun, Z., Gacia, E., Fortes, M.D. 2010, 'Effect of Seagrass Rhizosphere on Sediment Redox Conditions in SE Asian Coastal Ecosystems', *Estuaries and Coasts*, vol. 33, pp.107-117.

Seagrass surveys

Seagrass-Watch surveys are undertaken three times a year (March/April, July/August and November/December).

The **July / August 2010** monitoring period is upon us and there are plenty of good tide times to choose from – see Good Tides opposite for the Gold Coast Seaway.

Those who have been trained and set up at sites should select a suitable day and contact Daniela your SGW Co-ordinator to book out equipment. **Please give plenty of notice.**

Marine Strandings

If you come across dead or injured marine wildlife such as turtles and dugongs, please call the

**Marine Strandings Hotline on
1300 130 372**

Save the number in your mobile phone

Thanks

A big thankyou to all the volunteers for generously giving their time to this valuable community monitoring program.

SGWGC would also like to thank Kris Boody (GCCC) and Wal Mayr (GCCA) for their support and continued assistance.

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Seagrass-Watch Coordinators

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Disclaimer: The views expressed in this newsletter are those of the writers and not necessarily those of the Queensland Government.



**Queensland
Government**

Good Tides...

Month	Day	24hr Time / Height
July	Mon 5 th	0808 / 0.31
	Tue 6 th	0858 / 0.31
	Wed 7 th	0950 / 0.28
	Thu 8 th	1043 / 0.24
	Fri 9 th	1134 / 0.18
	Sat 10th	1224 / 0.10
	Sun 11th	1312 / 0.04
	Mon 12 th	14.00 / -0.01
	Tue 13 th	1451 / -0.02
	Mon 19 th	0805 / 0.22
	Tue 20 th	0902 / 0.26
	Wed 21 st	1003 / 0.27
	Thu 22 nd	1102 / 0.26
	Fri 23 rd	1155 / 0.22
Sat 24th	1240 / 0.19	
Sun 25th	1320 / 0.16	
Mon 26 th	1357 / 0.14	
Tue 27 th	1431 / 0.14	
Wed 28 th	1506 / 0.17	
August	Wed 4 th	0758 / 0.32
	Thur 5 th	0905 / 0.30
	Fri 6 th	1014 / 0.25
	Sat 7th	1115 / 0.16
	Sun 8th	1209 / 0.05
	Mon 9 th	1300 / -0.04
	Tue 10 th	1350 / -0.10
	Wed 11 th	1440 / -0.10
	Wed 18 th	0830 / 0.32
	Thu 19 th	0944 / 0.33
	Fri 20 th	1051 / 0.30
Sat 21st	1144 / 0.24	
Sun 22nd	1228 / 0.18	
Mon 23 rd	1305 / 0.14	
Tue 24 th	1340 / 0.11	
Wed 25 th	1414 / 0.11	
Thu 26 th	1448 / 0.13	

Quick Seagrass-Watch Reference Guide to Monitoring Techniques:

Sediment description: Dig your fingers into the top centimetre of the substrate and feel the texture. Describe the sediment by noting the grain size in order of dominance (e.g. sand, fine-sand, fine-sand/mud, mud/sand, mud/coral rubble). It will reduce confusion if we record the sediment in this way, taking care to list the sediment types in order from most to least dominant sediment type. For example, if the sediment is more muddy than sandy, then it is recorded as mud/sand.

Other organisms: If possible, be more specific about the number and type of other organisms present within quadrats. For example, information about the distributions of predatory versus algal-grazing gastropods is potentially important. Identification of other organisms should only be taken to the individuals' skill level, i.e. if you know what it is then write it down.

Water depth: We would like to start recording the depth of water present in each quadrat. Please measure the depth of water (in centimetres) in each quadrat and record it in the comments (if there is no water, please also make a note of this).

Photographs: These are to be taken at 5, 25 and 45 meters along each transect instead of 10, 25 and 40 meters. Please take the photo from as vertical as possible and make sure to include the three items: the tape, quadrat and quadrat identifier.

Estimating percentage seagrass cover: Always use the percentage cover photo guide to narrow down seagrass cover estimates. Also, please be more specific with estimates, especially if the cover is less than 50% (i.e. do not simply round off to the nearest 5%). Never use greater- or less-than symbols (i.e. '<' or '>').

Seagrass canopy height: When measuring the seagrass canopy height, please take care to select seagrass blades randomly and not to focus on the three longest blades. Seagrass-Watch HQ in Cairns advise ignoring the top 20% but if you have some other sort of system that works for you (e.g. always taking samples from roughly the same three points within the quadrat) then continue.

Seagrass species composition: Estimate the least dominant species first, up to 100%. This is useful for quality assurance/quality control (QAQC) procedure as some people have trouble adding up. If we have this system of writing down the least dominant species first then we can generally work backwards to get the percentage composition. Try and use several diagnostic characteristics for species identification (e.g. blade shape, leaf venation and rhizome structure/colour), not only one.

Macroalgae: Please record anything that is not attached to the seagrass and keep separate from seagrass cover, i.e. it is possible to get 100% cover for both seagrass and macroalgae if drift algae is covering the entire quadrat. In this case one must lift up and remove the drift algae in order to measure the seagrass.

Epibionts (epiphytes versus epizoans): Epiphytes are algae attached to seagrass blades and often give the blade a furry appearance. Epizoans are sessile animals attached to seagrass blades (e.g. ascidians or anemones growing on seagrass blades). Please do not include epizoans in with the estimation of epiphytes. Record the presence of epizoans in the comments or an unused/blank column. Also, we need to measure epiphytes more accurately, as a percentage cover, and not just within the three categories: low, medium and high. There is a new protocol for this, for example: if 20% of the seagrass blades are each 50% covered by epiphytes, then quadrat epiphyte cover is $[(20 \times 50) / 100]$ 10% (there is a matrix to help with this process, available to download at <http://www.seagrasswatch.org/monitoring.html>, under Quarterly Monitoring, Step 8. estimate epiphyte % cover). The values of percentage epiphyte cover may be lumped prior to data analyses but when and how to do this is for a statistician to decide.