Seagrass-Watch news

ISSUE 22, March 2005

Seagrass-Watch went on vaction for many over the new year period, but groups are now out once again "*watching their grass grow*". In this issue you can read about the status of seagrass resources across Queensland, the western Pacific and in the aftermath of the devastating Asian tsunami.

The Seagrass-Watch website has had a major overhaul, and is now brighter and more informative. Web users can now navigate through the long-term monitoring pages to view the status reports, see how their monitoring sites compare with others and learn about seagrass resources throughout the western Pacific. A downloadable spreadsheet is now available, so volunteers can enter and submit data via email. Check out the latest news and show your support of Seagrass-Watch by visiting our online shop. Also, if you have not registered with Seagrass-Watch HQ, please do so online.

Contents:

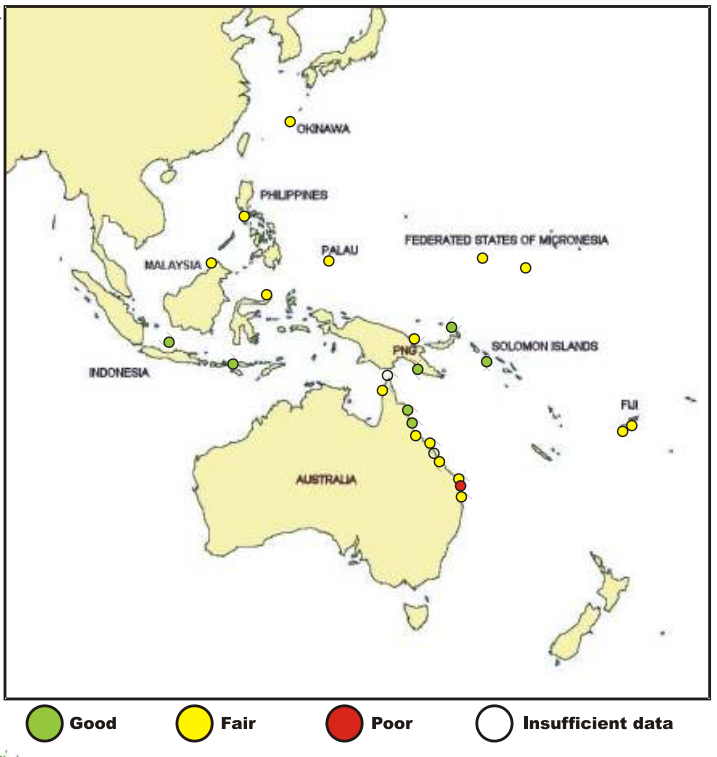
Seagrass status report: fairly healthy in Queensland and the Western Pacific

Healthy seagrass meadows throughout the Indo-Western Pacific support significant fisheries (commercial, artisinal & recreational), turtle and dugong populations. Seagrass meadows in the Indo-Western Pacific are in a **fairly-good** condition. Most regions across the Indo-Western Pacific are in a fair condition as most impacts are generally localised (more data is required from some regions for more accurate assessment of trends). For detailed reports on each location/region, visit the Long-term monitoring section of the website at www.seagrasswatch.org.

An important note of concern is that the only region with a fairly-poor report is the Great Sandy Strait in south-eastern Queensland (Australia). Monitoring has been occurring on a regular basis throughout the Great Sandy Strait, and 3 of the 8 locations have been declining in seagrass abundance over the past 2 years. The area contains 5,554 hectares of seagrass meadows of importance to fisheries, dugong and turtles, growing on intertidal sand and mud flats. Much of the Great Sandy Strait has also been included in a proposed State Marine Park recognising its environmental values.

However, Seagrass-Watch monitoring sites in the Great Sandy Strait show the health of the seagrass meadows are declining. Some of the sites are reporting higher epiphyte abundance than previous, although the data is highly variable. The 3 locations with poor ratings are on the western side of the Great Sandy Strait, adjacent to significant land run-off (agricultural and urban). These declines are serious and possibly the result of poor water quality from the adjacent catchments. Herbicide concentrations (Diuron and Atrazine) at concentrations close to concentrations known to impact seagrass photosynthesis, have been detected in runoff and in sediments in this system. Also, sewage and septic tank runoff is an issue in this region, as is increasing urban development in general. There are also previous losses of seagrass from Tin Can Bay and recovery seems to be poor.

It is hoped that the information provided by the Seagrass-Watch long-term monitoring will prompt a management response, and that actions will halt and reverse the decline before the eventual loss of seagrass and its fisheries/ conservation values.



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Asian Tsunami Disaster

The earthquake and tsunami of 26 December 2004, and the events that followed, will be remembered as among the worst human tragedies in history. The loss and devastation caused by this disaster brought incalculable suffering to millions of people around the Indian Ocean.

Approximately 300,000 lives have been lost, but the total will probably never be fully known. Apart from the human cost, the tsunami was an unprecedented natural disaster with enormous consequences for the region's environment.

Many Seagrass-Watch volunteers have asked if the tsunami had any effects on the seagrasses of the region affected. The following assessments are from collaborative researchers in the region and summarized from the report produced by the UNEP Asian Tsunami Task Force in close partnership with national environmental authorities in the affected countries. The impact of the tsunami varied enormously across and within affected countries.

THAILAND

In Thailand, the tsunami hit the Andaman Coast (954 kilometres in length) between 9.40 and 10.30 a.m. local time. The first waves passed almost unnoticed four to ten kilometres offshore. The second series of waves, however, up to 10 metres high, impacted severely on the six coastal provinces along the Andaman Sea, namely: Ranong, Phang Nga, Phuket, Krabi, Trang and Satun. The level of devastation in the six provinces varies significantly. The most affected province is Phang Nga, in particular Khao Lak district. Phuket and Krabi provinces were also severely impacted. In Ranong, Trang and Satun provinces, offshore islands sustained severe damage, but lesser impacts were recorded on the mainland.

Seagrass researcher Chatcharee Supanwanid (Kasetsart University, Bangkok) reported that the marine research station and Sea Turtle Conservation & Wildlife Sanctuary Project in Ranong province was destroyed. Sadly, 9 staff died and many people were injured. The village behind the station was destroyed and more than 70 people died. In addition, two dugongs and three dolphins were carried inland by the waves. One of the dugongs and both dolphins died.

Chatcharee also reported that in Trang Province (Haad Chao Mai National Park), the location of the first Seagrass-Watch rapid assessment workshop (in 1998), the fishing village at Koh Muk and Talibong Island where training workshop was conducted, was destroyed. Luckily the Trang Marine Research Station was OK. Before the tsunami hit, everyone from the station went to higher ground.

The seagrass meadows along the Andaman coast of Thailand cover an area of 7,937 hectares. To estimate the impacts of the tsunami disaster on the seagrass meadows, a rapid assessment was undertaken by the Department of Marine and Coastal Resources of MONRE covering approximately 70 per cent of the total seagrass area. Based on the results, 3.5 per cent of the inspected areas are impacted, through siltation and sand sedimentation, while 1.5 per cent of the inspected areas suffered total habitat loss. The most impacted sea grass meadows are those of Yao Yai Island, Phang Nga Province, which registered an estimated total habitat loss of 10 per cent.

The seagrass meadows of Talibong Island, Trang Province, which are the largest seagrass areas in Thailand's Andaman coast providing foraging grounds to a large dugong population, did not suffer any loss, although 10 per cent of the area is impacted by siltation or superficial erosion. It is estimated that it will take three months for seagrass to recover from siltation. However, it is not yet known how long it will take to recover from sand sedimentation. The assessments also revealed that seagrass meadows covering the inter-tidal zone appear to have prevented soil erosion of beaches during the tsunami event, such as at Kuraburi, Phang Nga Province.

Above: Chatcharee Supanwanid assesses seagrasses using Seagrass-Watch methods

Below & left: Dugong feeding trails in meadows at Haad Chao Mai National Park, Trang Province

INDONESIA

Within minutes of the earthquake, the first tsunami waves struck the Indonesian Island of Simeule, located approximately 40 kilometres from the epicentre. Waves between 15 and 30 metres high then proceeded to the western and northern coasts of Sumatra, causing massive

damage to thousands of kilometres of coastline in Aceh and North Sumatra Provinces and the western islands. A rebound effect then occurred, with waves pounding parts of the east coast of Sumatra.

In Aceh region, North Sumatra Provinces and the western islands of Indonesia an estimated 30 per cent of the nearly 100,000 hectares of coral reefs were damaged.

Besides coral reefs, highly productive seagrass meadows, totalling approximately 600 ha, are found off the coast of Nias and off Pulau Weh and Banyak Islands. Functionally, they also serve to trap coastal sediments, provide coastal protection from high waters and support endangered Green Sea Turtle and dugong populations in the area. The National Development Planning Agency (BAPPENAS) initial damage assessment estimated 20 per cent loss of seagrass meadows, approximately 600 hectares, for a net loss of $2.3 million ($2,684/ha estimated value). For coral reefs the estimated valuation of 30 per cent damage to 97,250 hectares is a net loss of $332.4 million ($1,599/ha). Wetlands International has also conducted preliminary assessments of the impact on seagrass in a number of Islands. Early results suggest extensive damage to seagrass medaows in Pulo Aceh, with less severe but significant impact in the Simeulue and Weh Islands.

The most serious threat to the coastal environment from the tsunami currently stems from the massive amounts of natural and man-made materials that were dragged into the ocean by the receding waters. This waste ranges from vehicles and fuel tankers to silt and debris, including whole trees. In the case of Calang and Teunom on the West coast of Sumatra, almost all above-ground infrastructure was sucked into the ocean by the tsunami. Aerial photos of the zone show surprisingly little remaining debris. The main risk is that this debris is causing secondary damage to the coastal environment by being continually pounded into delicate ecosystems by normal wave action. The extent of the problem is currently unknown.


Banda Aceh - 23 June 2004


Banda Aceh - 28 December 2004

Source: DigitalGlobe

SRI LANKA

The first tsunami wave began to impact the eastern coast of Sri Lanka about 100 minutes after the earthquake, at approximately 8:40 a.m. The wave surge was recorded at between 5 and 6.5 metres in most of the eastern and northeastern coast, and parts of the southern coast, doing most damage up to 3 metres above mean sea level. A secondary wave struck approximately 20 minutes later.

Seagrass meadows constitute the most extensive coastal ecosystem in Sri Lanka. They occur along the open coast as well as within estuaries and lagoons (UNEP-WCMC, 2003). Very large meadows exist around the north-western and southwestern coasts, and smaller seagrass meadows are found on the leeward side of coral reefs elsewhere.

In Sri Lanka, the impact of the tsunami on coral reefs and coastal ecosystems was highly varied, ranging from almost unaffected to extremely damaged. Damage to seagrass meadows however, was minor and where present mostly due to shifting rubble. Hardly any uprooting was observed. Severe beach erosion was observed both in the east and southwest areas, but impact was patchy.

THE MALDIVES

The Indian Ocean tsunami reached the Maldives at 9:20 a.m. local time, approximately three hours after tremors were felt. Tidal waves ranging between 1 and 5 metres high were reported in all parts of the country. The force of the waves caused widespread infrastructure devastation in the atolls, 80 per cent of which are less than one metre above sea level. On a per capita basis, the Maldives is one of the countries worst affected by the tsunami.

The Maldives are home to a vast system of world famous coral reefs that attracts tourists from around the world. The country's lagoons and reefs combined make up approximately 21,300 square kilometres. The tsunami however, generally had little direct effect on the country's coral reefs. The most serious concern was that sand and sediment was found to have coated and in some cases smothered sections of coral, particularly at lower depths. It is estimated that in the Maldives more than "100 million square metres of beach on 130 islands was eroded by the tsunami's force.

SEYCHELLES

The tsunami that hit the Seychelles travelled about 5,000 kilometres from the earthquake zone in less than seven hours. At 1 p.m. waves ranging from 2.5 to 4 metres in height hit the east coast of Praslin and Mahé islands. Another wave occurred at 5 p.m., followed by two smaller waves at 10 p.m. and at 5 a.m. on 27 December. The second wave had more or less the same effect as the first because, although smaller, it

Continued over....

Asian Tsunami continued.....
occurred at high tide.
The Seychelles has a coral reef area of 1,690 square kilometres with eight seagrass species. Damage to seagrass meadows was low, with only one definite case of damage recorded at Baie Ternaie Marine Park, Mahé Island. In this case, a seagrass meadow adjacent to a drainage channel in the reef was smothered by sediment, probably mobilized from the extensive shallows and reef flat area, and backwash from land. The Seychelles's small but important stands of mangroves amounting to around 30 square kilometres were also impacted mainly as a result of smothering of their 'breathing roots' by sand and silt.
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The effect on coastal ecosystems of other countries hit by the tsunami was similarly low.
A string of recommendations have been made including building the skills, knowledge and equipment base of the affected governments and local authorities. There are many lessons to be learnt including that barriers such as coastal mangrove forests and coral reefs save lives by deflecting the tsunami and that governments should protect such natural bulwarks. The report also recommends that more detailed studies, including long term monitoring, of the countries concerned and the main impacts sites, are needed. For further information, see UNEP Tsunami Response: www.unep.org/tsunami/

Okinawa Jangusa Watch

Readers may remember in the last issue (see issue 21), Masahito Yoshida (Nature Conservation Society of Japan) reported that Okinawa Jangusa Watch in Henoko mapped significant seagrass meadows important for endangered dugongs (a northernmost of its global distribution) in an area planned for a US marine corps airport construction.
Masahito reports that on 2 March 2005, Judge Patel denied DOD's motion to dismiss the lawsuit by Center for Biodiversity and Okinawa Local People and concluded that dugong is titled under the US National Heritage Protection Act in US District Court.
On March 10th, Greenpeace International launched the campaign to save dugongs and held a demonstration in Henoko. It is great support for local people. On the same day, Mainichi Paper revealed that Prime Minister Junichiro Koizumi told high officials of Foreign Ministry and Defense Ministry to reconsider the plan to relocate Futenma airport to Henoko, prior to the high official meeting between US and Japan that was held the end of February.
On March 16, Nature Conservation Society of Japan, WWF Japan, Wild Bird Society of Japan and Save Dugong Campaign Center together with Mr Higashionna will meet with Vice-Minister of Defense and Foreign Affairs to pass the presidents' letter to reconsider the relocation plan and to follow the recommendation of IUCN World Conservation Congress.
We will keep you informed of the outcomes of that meeting and future developments on the issue.

Ongoing Posidonia australis seagrass monitoring in Corner Inlet Marine National Park (Victoria).

Rebecca Koss (PhD Student), Deakin University

S.E.A.L. Diving services and the Traralgon Dive Club took part in *Posidonia australis* seagrass monitoring in Corner Inlet Marine National Park, Victoria on the 7 March 2005. Nine volunteers assisted in collecting qualitative and quantitative seagrass information in conjunction with the Parks Victoria Ranger, Jonathan Stevenson.
It was hoped that choosing a monitoring date during March would ensure that the weather would still be warm to undertake monitoring in a temperate marine environment. This would mean volunteers could wear surf wetsuits rather then the standard 7mm dive suits. However, the Victorian weather is known for its changeable nature and the day was overcast with rain predicted.
An overview of the monitoring methodologies was conducted by Jonathan, as there were many new volunteers in the group. This was undertaken on land prior to heading out to the monitoring site. To access the monitoring site, a Parks Victoria boat was enlisted. The ride out to the monitoring site proved to be a little choppy, but a lone seal kept us company for part of the trip. In the rain and wind, the 9 volunteers persisted in collecting seagrass data during low tide.
A section of the *P. australis* seagrass bed within the marine protected area was monitored. *P. australis* is known to have a decrease in leaf length during the winter months. This is due to die back of the top part of the leaf covered by epiphytical growth. Due to this natural change, monitoring will take place during winter and summer seasons.

Marine Park Authority in Indonesia formally adopts Seagrass-Watch

Stuart Campbell reports (WCS Indonesia Program)

In Indonesia a recent workshop help with Wildlife Conservation Society and the management Authority for Karimunjawa National Park (Java)developed an integrated monitoring program for surveying socio-economic and ecological factors within the marine park. As part of the workshop it was agreed to formally include Seagrass-Watch methods as part of the monitoring strategy for the next 5 years. The monitoring program will be used to evaluate the effectivenes of new regulations legislated in February 2005 that aim to protect marine resources within the park. The regulations include 10% of the coastal realm within no-take fishing zones, banning of destructive fishing practices throughout the park (eg. bombing, cynaide, muro-ami netting) and protection of critical habitats such as seagrass meadows.

Reef Water Quality Protection Plan (RWQPP) Monitoring

The Great Barrier Reef World Heritage Area is a nationally and internationally significant area with outstanding natural, social and economic values. Over the last 150 years the land catchment areas adjacent to the Reef have undergone extensive modification for urban infrastructure, agricultural production, tourism and mining. This modification has led to significant increases in pollutant loads in the rivers since the beginning of European settlement, such that now the major source of pollutants entering the Reef are the result of land use activities in the catchment areas.

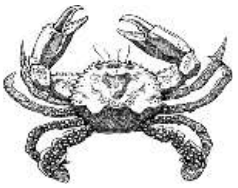
The balance of evidence is that sediment and nutrients from land-based sources are impacting the inner reefs and seagrass areas of the Reef. The vast majority of the 2900 reefs that make up the Great Barrier Reef are in good condition but some of the 450 inshore reefs are showing impacts consistent with a decline in water quality. The majority of chemical, sediment and nutrient pollutants affecting water quality in the waterways entering the Reef come from diffuse sources arising through land use activities in the Reef catchments.

For this reason the Australian and Queensland Governments have worked together to jointly address this issue by developing the Reef Water Quality Protection Plan (RWQPP, October 2003). A key component of the RWQPP is the implementation of a long-term water quality and ecosystem-monitoring program in the Great Barrier Reef lagoon. This program will assess the long-term effectiveness of the RWQPP in reversing the decline in water quality of runoff originating from Queensland catchments.

Monitoring of the major marine ecosystem types most at risk from land based sources of pollutants (mangroves, intertidal seagrass beds, and inshore coral reefs) will be carried out to ensure that any change in their status is identified. Monitoring sites will be associated with the river mouth and inshore marine water quality-monitoring programs to enable correlation with concurrently collected water quality information.

An inshore seagrass monitoring programme will augment the existing Seagrass Watch long term seagrass monitoring. This will include above and below ground plant measurements, tissue nutrient assessment, some assessment of reproductive health and morphology changes and broader mapping of seagrass distribution. 12 existing Seagrass-Watch long-term monitoring sites between Cooktown and Hervey Bay have been identified for inclusion in the program, with an additional 10 to be established. Over the coming months, scientists from Seagrass-Watch HQ (DPI&F), James Cook University and University of Queensland will begin monitoring with the assistance of local community volunteers.

This is a long-term plan to be implemented over a 10 year period. The results of monitoring and management actions will be seen over a much longer period, with improvements in water quality continuing to be measured and further actions taken past this time frame.



Muddies!!!

From Thursday Island in the north, to Great Sandy Strait in the south, volunteers often observe mud crabs partially buried when walking across the seagrass flats. Mud/mangrove crabs (*Scylla serrata*) are taken by commercial, recreational and indigenous fishers in Queensland and the western Pacific. In 2000 approximately 942 tonnes or $9.8 million of mud crabs were caught by commercial fishers in Queensland waters. Results from a 1999 survey of recreational fishers in Queensland, estimated that approximately 3.5 million mud crabs were caught by anglers, of which 28% were kept. Catch is limited to males only and there are a number of gear and size restrictions. The burrows of the mud crab are also protected, as are mangrove areas generally. The Department of Primary Industries & Fisheries in Queensland currently conducts a long-term monitoring program on mud crabs. For more information, visit www.dpi.qld.gov.au/fishweb/

Above & left: A mud crab in the dense Enhalus and Thalassia meadow at Back Beach, Thursday Island (Mar05)

Right: Bummer, it's a female!!! In the Halodule dominated meadows at Shelley Beach (Mar05)

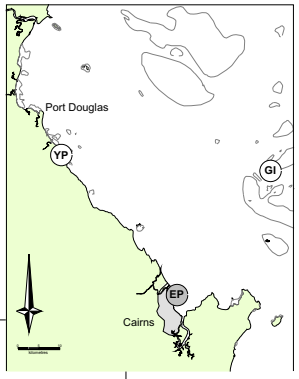
Left: A female mud crab in the sparse Halodule/Halophila dominated meadow at Tinnanbar, Great Sandy Strait (Dec04)

Queensland Seagrass-Watch Status Report
February 2005

detailed reports - www.seagrasswatch.org

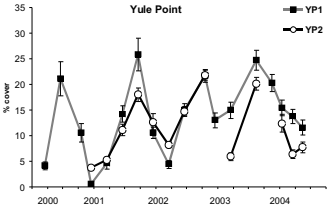
Status key
- Good *(improving)*
- Fair *(stable)*
- Poor *(declining)*
- Insufficient data

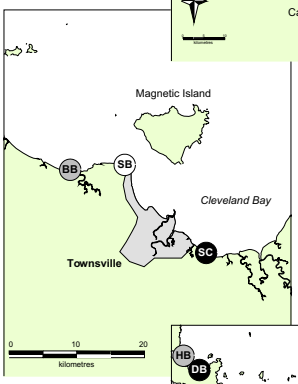
Cooktown
Cairns
Townsville
Whitsundays
Shoalwater Bay
Hervey Bay
Great Sandy Strait
Moreton Bay



Cairns

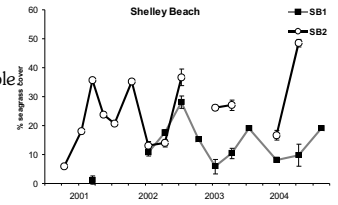
Seagrass cover: locations fair to good condition
Strong seasonal pattern: 75% change in seagrass cover
Low rainfall increases seagrass cover, high rainfall decreases seagrass cover
River systems enter nearshore waters in proximity to seagrass monitoring sites

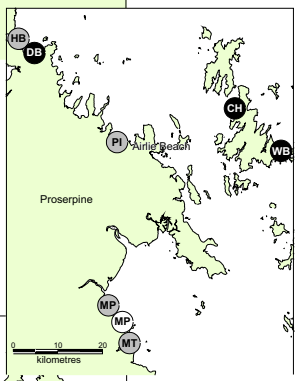




Townsville

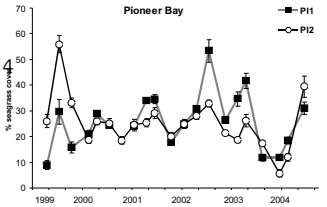
Seagrass cover: fairly-good condition. SC poor, but significant meadows in vicinity. Species composition stable
Strong seasonal pattern: significant increases (75%) in cover each spring. Low rainfall increases seagrass cover, high rainfall decreases seagrass cover
River systems enter nearshore waters in proximity to monitoring sites

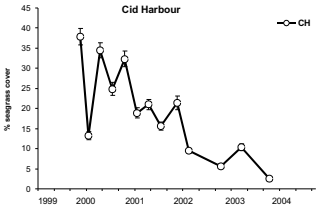


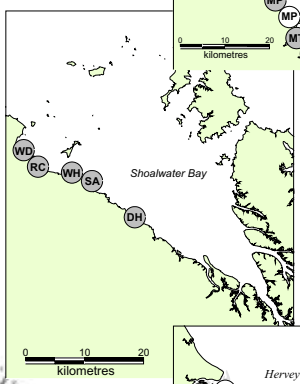


Whitsundays

Seagrass cover: generally fair condition. Offshore subtidal sites poor, steadily declining over the past 4 years.
Seasonal pattern: fairly typical, seagrass abundance higher in late spring-summer than winter
Possible causes: High seawater temperatures, nutrients & sediment disturbance
No relationship between rainfall and seagrass cover
Few large river systems enter nearshore waters in proximity to seagrass monitoring sites.
Some coastal/urban development.

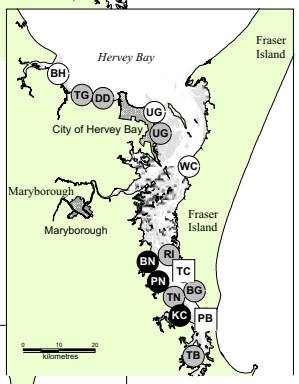






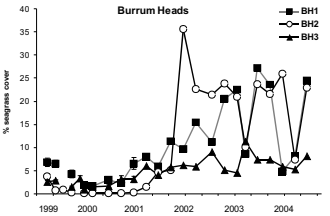
Shoalwater Bay

Seagrass cover: locations stable, in a fair condition
Seasonal pattern: fairly typical, seagrass abundance higher in late spring-summer than winter. Species compositions stable.
Possible causes: Regional climate (rainfall & temperature) most likely driver, but local characteristics also have significant effect
Few river systems enter nearshore waters in proximity to seagrass monitoring sites. No coastal/urban development.



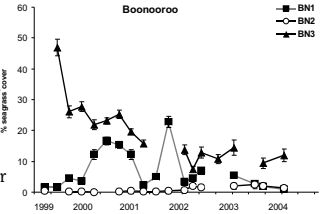
Hervey Bay

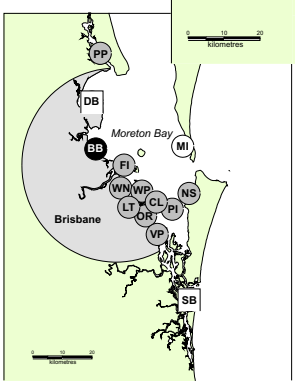
Seagrass cover: locations stable, in generally fair condition. Recovery of some meadows to pre-flood levels.
High rainfall decreases seagrass cover. Sediments and light reduction likely to cause seagrass decline
River systems enter nearshore waters in proximity to seagrass monitoring sites



Great Sandy Strait

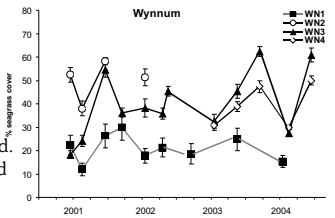
Seagrass meadows in a fairly-poor condition. Sites along western shores generally poor. Species composition stable. Algal low, but epiphytes increasing.
High rainfall decreases seagrass cover
River systems enter nearshore waters in proximity to seagrass monitoring sites





Moreton Bay

Seagrass meadows in a fair condition.
Seasonal pattern: evident in less impacted sites, cover higher in late spring-summer than winter. Species compositions stable.
Algal generally low, but isolated Lyngbya blooms reported.
Possible impacts: Coastal/urban development, runoff and bait-worm digging at some sites



Eleven regions are currently monitored across Queensland, encompassing 57 locations and 123 sites in total. Each location has been assessed using data collected by communities and government workers. Most locations reported to be in either stable or improving condition, only 7 were in decline. The possible reason for the fairly good condition of seagrass meadows throughout the state was the low rainfall over the past 12 months, reducing the supply of damaging loads of sediments, nutrients and herbicides to nearshore marine waters.

The low rainfall assisted recovery of many meadows in the northern Great Sandy Strait, after the devastating floods in early 1999. Of concern are the 3 locations with poor ratings on the western side of the Great Sandy Strait, adjacent to significant land run-off (agricultural and urban). These declines are serious and likely to be the result of poor water quality from the adjacent catchments. A different pattern was evident in the Whitsundays where mainland intertidal meadows remained stable, and subtidal offshore meadows declined. These meadows are subject to heavy tourism (boat traffic), although other disturbances are low. 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 stable condition.

Location	Code	Seasonal trend (% cover)	Feb-03	Feb-05	Threats	Habiat type
Torres Strait						
Thursday Island	TI	Insufficient data		Insufficient data	Not indentified	Protected fringing reef
Napranum						
Munding & Evans Point	NP	Insufficient data		Fair	Port development and land runoff	Estuary
Cooktown						
Archer Point	AP	Insufficient data		Good	Catchment inputs	Protected bay, lee of reef
Cairns						
Ellie Point	EP	Low winter, High summer	*Stable*	Fair	Catchment inputs	Open bay
Green Island	GI	Low winter, High summer		Good	Elevated nutrients and land runoff	Protected fringing reef
Yule Point	YP	Low winter, High summer	*Stable*	Good	Catchment inputs	Open coast, Lee of reef
Townsville						
Bushland Beach	BB	Low winter, High summer		Fair	Catchment inputs	Open bay, Lee of headland
Rowes Bay (Townsville)	RB	Insufficient data			Catchment inputs	
Shelley Beach	SB	Low winter, High spring-summer	*Stable*	Good	Catchment inputs	Open bay, Lee of headland
Sandfly Creek	SC	Insufficient data	*Stable*	Poor	Catchment inputs	Open bay, Lee of headland
Whitsundays						
Cid Harbour	CH	Low winter, High spring-summer	*Declining*	Poor	High temperature, hutrient inputs	Lee of island
Dingo Beach	DB	Low winter, High spring-summer	*Declining*	Poor	Sediment disturbance, high temperatures	Protected bay
Hydeway Bay	HB	Low winter, High summer	*Stable*	Fair	High temperature	Protected bay, lee of reef
Laguna Quays	MP1&4	Low autumn, high spring	*Stable*	Fair	Sediment disturbance	Open bay, Lee of headland
Midge Point	MP2&3	Low winter, High spring	*Declining*	Good	Sediment disturbance, high temperatures	Open bay, Lee of headland
Midgeton	MT	Low autumn, high spring	*Declining*	Fair	Sediment disturbance, high temperatures	Estuary
Pigeon Island (Pioneer Bay)	PI	Low winter, High spring-summer	*Stable*	Fair	Nutrient inputs	Protected bay
Whitehaven Beach	WB	Low winter, High spring-summer	*Stable*	Poor	Nutrient inputs, Boat anchoring	Lee of island
Mackay						
Finlayson Point (Seaforth)	FP	Insufficient data		Insufficient data	Catchment inputs	Open bay, Lee of headland
St Helens Beach	SH	Insufficient data		Insufficient data	Catchment inputs	Protected bay
Shoalwater Bay						
Wheelans Hut	WH	Low summer, high spring	*Stable*	Fair	Unknown	Protected bay
Duck Hole Creek	DH	Low summer, high spring	*Stable*	Fair	Unknown	Protected bay
Ross Creek	RC	Low winter, High summer	*Stable*	Fair	Unknown	Protected bay
Sabina Point	SA	Low winter, High spring-summer	*Stable*	Fair	Unknown	Protected bay
Windmill Creek Headland	WD	Low winter, High spring-summer	*Stable*	Fair	Unknown	Protected bay
Hervey Bay						
Baffle Creek	BC	Insufficient data				
Burrum Heads	BH	Low winter, High spring-summer	*Improving*	Good	Sediment disturbance	Open Bay
Dundowran	DD	Low winter, High spring-summer	*Stable*	Fair	Sediment disturbance	Open Bay
Toogoom	TG	Low winter, High spring-summer	*Improving*	Fair	Sediment disturbance	Open Bay
Urangan	UG	Low winter, High spring-summer	*Improving*	Good	Catchment inputs	Estuary
Great Sandy Strait						
Brown's Gutter	BG	Low winter, High spring-summer	*Improving*	Fair	Catchment inputs	Estuary
Boonooroo	BN	Low winter, High spring-summer	*Stable*	Poor	Catchment inputs	Estuary
Kauri Creek	KC	Low winter, High spring-summer		Poor	Catchment inputs	Estuary
Pelican Bay	PB	Low winter, High spring-summer	*Improving*	Insufficient data	Catchment inputs	Estuary
Poona	PN	Low winter, High spring-summer	*Improving*	Poor	Catchment inputs	Estuary
Reef Islands	RI	Low winter, high summer	*Stable*	Fair	Catchment inputs	Estuary
Tin Can Bay	TB	Low winter, high summer	*Stable*	Fair	Catchment inputs	Estuary
Tootoowah Creek	TC	Low winter, High spring-summer	*Improving*	Insufficient data	Catchment inputs	Estuary
Tinnanbar	TN	Low winter, high summer		Fair	Catchment inputs	Estuary
Wanggoolba Creek	WC	Low winter, high summer	*Stable*	Good	Catchment inputs	Estuary
Moreton Bay						
Bramble Bay	BBMB	none		Poor	Urban development, catchment inputs	Protected Bay
Bedrooms	BR1	Insufficient data		Insufficient data	Urban development, catchment inputs	Protected Bay
Cleveland	CL	Insufficient data		Fair	Urban development	Protected Bay
Deception Bay	DBMB	none		Insufficient data	Urban development, catchment inputs	Protected Bay
Fisherman Islands	FI	Insufficient data		Fair	Urban development	Protected Bay
Lota/Thornside	LT	Low winter, High spring-summer		Fair	Urban development	Protected Bay
Moreton Island	MI	Insufficient data		Good	Unknown	Protected Bay
North Stradbroke Island	NS	Insufficient data		Fair	Urban development	Protected Bay
Ormiston	OR	Insufficient data		Fair	Urban development	Protected Bay
Peel Island	PIMB	Insufficient data		Fair	Urban development, catchment inputs	Protected Bay
Pumicestone Passage	PP	Insufficient data		Fair	Urban development, catchment inputs	Protected Bay
Southern Bay Islands	SBMB	Insufficient data		Insufficient data	Urban development, catchment inputs	Protected Bay
Victoria Point	VP	Low winter, High spring-summer	*Stable*	Fair	Urban development	Protected Bay
Wynnum	WN	Low winter, High spring-summer	*Stable*	Fair	Urban development, catchment inputs	Protected Bay
Wellington Point	WP	Insufficient data		Fair	Urban development	Protected Bay

Townsville Regional roundup

Shelley Beach (SB2)

Shelley Beach was monitored on Tuesday February 8, late afternoon. An executive decision has been made not to monitor this site at night, as it is too far to walk in the dark. This means however, that there are tides levels that require walking through some very muddy patches to access and exit the site. Which for some volunteers meant wallowing through the mud!! Barry Bendell accompanied the group on this monitoring trip, so there were expert identifications of the invertebrates using the seagrass. All were amazed at how lush the meadow looked and there has been a noticeable change in species composition particularly in Transect 3 with *Zostera capricorni/mulleri* being more obvious.

Above: "We came, we saw, we monitored", Amy and Catherine (an old hand her first trip was Feb 6)
Below: Amy - a first timer

Bushland Beach

No monitoring was due during this period, however, after our moonlight sortie we are back to daytime monitoring. Our next scheduled monitoring day is Saturday April 9. We will be meeting at the Bushland Beach BBQ area at 14:30 before proceeding to our site with GPS in hand this time!!!! Anyone visiting the area is most welcome to join us.

Shelley Beach (SB1)

A previous attempt at Watching at Shelley Beach SB1 in late January had been abandoned due to inclement conditions. Nevertheless, on Sunday February 6 very early or was that Saturday February 5 very late, an eclectic group of Seagrass-Watchers scaled Cape Pallarenda in their mission to attain the Shelley Beach SB1. Yet once again there was a full contingent of volunteers despite the uncivilized hour! We even had some Seagrass-Watch first timers, who quickly cottoned onto the methodology and took off monitoring. The channel that has appeared in Transect 3 did make monitoring difficult due to the back shine of the torches, however it was agreed that all in all it was a great night out!

Above: Vern, Steve and Fred prepare for seed collecting

Below: Vern and Catherine counting seeds

Above right: Ray, Vern, Beth and Steve moonlight monitoring
Above left: Dick sports the latest look in Seagrass-Watch Couture

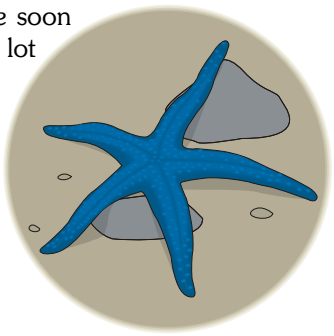
Seagrass-Watch Rowes Bay

In August last year, students from Belgian Garden High School, Townsville went on an excursion to Rowes Bay with Seagrass-Watch HQ scientist Dr Jane Mellors. This is their account of events from that day!!

Last Friday the 27th of August, 2004 my class 6M and 4/6MJ's class walked down to the beach at Rowes Bay to examine the seagrass with a lady, Jane Mellors, who is one of the people who studies the seagrass all over the Queensland coast.
We studied the seagrass by going out to the muddy seagrass area and wheeling out tape measures and putting down a thing called a quadrat every 5m and examining the area in the square quadrat.
I wasn't in the quadrat groups but you had to see the percentage (%) of seagrass in the area and then say what type of seagrass it was.
In my group I had Melanie, Nina, Ella, Jack and I. We had to look for seagrass seeds. They were small circular and black. We found 3 seeds. We were looking for them for about hour 45mins then we were called up to the Seroptomus Park to wash our shoes and have lunch. After lunch we played in the park for about 20mins and then went the quick short cut way back to school
We arrived back at school at about quarter to 3 and Mr Murphy talked to us then the Pallarenda bus bell rang and I caught the bus home.
I think the exersion was fun and I learnt something. I hope we do it again
Claire.

On Friday 27 August 6M and 4/6J went to the beach. At 11:40 we started to walk down to the beach. We got there at 12:10 and it took us 30mins to walk down. We went down to observe the seagrass and look at the animals that live in it.
When we got there we changed into old shoes and had a talk about what to do, then we split in 6 groups and went along a measuring tape. I went on the second one. The mud was squissy and goowy. Lots of people got stuck!
Then we put quadrats down every 5ms and looked at the animal life and looked at the seagrass. After that we looked for seeds, then walked back to our bags and had lunch. Then we played!
Soon it was time to walk back. We set off at 2:20 and it took 30mins to walk back. We got back to school we got calico bags. Then went home.
Hannah Thomas

Last Friday 6M and 4 6J went to Rowes Bay for the third time this year to study seagrass.
It started after morning tea. We walked from school to the beach at Rowes Bay. Then we walked out to the mud flats to see the seagrass. We separated into 4 groups, we studied the seagrass by putting a metal square half meter by meter and wrote the percentage of seagrass by comparing it to photos of squares of seagrass with its percentage next to it.
We also wrote if it was growing mud or sand, or to if there was anything living in it and anything strange. We did about 10 squares per group. After about what felt like and hour we went back to school by the short cut. When we got back everyone was tired and we soon went home. I enjoyed it a lot and hope to do it again.
No name supplied



Great Sandy Region - Queensland

In early December 2004, Len McKenzie from Seagrass-Watch HQ (DPI&F) visited Hervey Bay and the Great Sandy Strait regions to catch up with volunteers and give presentations on the status of the monitoring program and a status report of seagrass in the local area. Len gave presentations in both Hervey Bay and Maryborough. He also caught up with the local coordinators in the regions and assisted with on-site monitoring at Poona, Tinnanbar, Urangan and Toogoom. This was an opportunity for volunteers to have any questions regarding the program or findings answered. It was also a chance to review sampling methods and clarify any confusions that volunteers may have.

Unfortunately there has been a bit of a down turn in volunteers over the last 12 months or so because people are very busy and have other commitments, so it was great that so many people went along for the talks or met up with Len out in the mud.

Hervey Bay regional roundup

Seagrass meadows in the Hervey Bay region are in a **fairly-good** condition. Seagrass cover at some sites is good and showing seasonal trends (significant increases each spring), while the remaining sites appear to be recovering/improving. A sudden and dramatic decline in seagrass abundance in early 2004 at Urangan and Booral sites caused some concern, however abundance has recovered to "healthy" levels. Seagrass cover at locations such as Toogoom has remained low, a possible consequence of mobile sands in the region.

Right: Trischelle, Wendy & Marcus at Urangan

Below: dense Zostera meadows at Urangan

Below: large intertidal banks at Toogoom, with isolated Halodule plants

Great Sandy Strait regional roundup

Seagrass meadows in the Great Sandy Strait region unfortunately are in a **fairly-poor** condition. Seagrass abundance has recovered significantly at sites along the shores of Fraser Island since early 1999, however seagrass abundance at sites along the western shores of the Great Sandy Strait are generally in a poor condition as abundance has continued to decline over the monitoring period. The condition of some sites is unclear as monitoring has not been conducted recently.

At Poona, volunteers have expressed their concerns regarding stormwater runoff from new residential developments in the area, which may be implicated in the increase in algae and epiphytes observed across the adjacent seagrass flats. There has also been some erosion issues in the location, as Gordon had to locate a new and safer route in early March to access PN1. In March he found both PN1 and PN2 to be covered in sand/silt with very little visible seagrass.

Above: Bill Alston, Sue Sargent & Gordon Cottle

Left top to bottom: Development, stormwater runoff and adjacent seagrass flats

Below left: Wayne Mathews, Gordon Cottle & Marcus Bishop

Below right: Dugong feeding trails at TN3

At Tinnanbar, the meadows appear relatively stable, with extensive narrow dugong feeding trails throughout the area, possible indications of smaller mammals. There have also been positive sightings of a cow and calf from the adjacent caravan park foreshore.

Thursday Island

In March 2005, Jane Mellors from Seagrass-Watch HQ visited the Torres Strait. This trip saw a new cohort of Year 11 Marine Studies and Multi-Strand Science students being trained in Seagrass-Watch protocols. Equipped with this new knowledge, students joined regular Seagrass-Watchers to monitor the condition of the Back Beach seagrasses. As the monitoring occurred after school hours, some students even had to arrange transport home to their islands, because we didn't finish until well after the ferries had stopped running. Now that showed dedication! As a dengue warning was in evidence the council even supplied us with insect repellent!!!! This is the third time this site has been monitored and we have started to pick up subtle shifts in the mix of species at this site. This is possibly a seasonal phenomenon associated with the level of tidal exposure at this time of year, but won't know for certain until we do some more monitoring and have more data. We were also amazed at the large number of jellyfish found in and amongst the seagrass.

Left: Jayda and Ashley monitoring seagrass at Back Beach.

Federal Beach

During this trip, we also set up a new Seagrass-Watch site at Federal Beach (TI2). This site has completely different species mix from Back Beach with *Halophila* and *Halodule* being the most dominant. The site is also downstream from a storm water drain, so it will be interesting to monitor the impact of freshwater run-off on this meadow. As this site is easier to access (i.e. less muddy) it is hoped that the community and primary school students will participate in the monitoring of this site as part of the island's Clean Beach Initiative. To this end the Torres Shire Council with the Clean Beach Co-ordinators put in an application to Round 6 of the Envirofund - Thursday Island community Seagrass Watch and Clean Beach understanding and protecting our significant island habitats. If successful this will be the second NHT project ever to be funded in the Torres Strait.

Above: Counting seeds Federal Beach Akila, Carolyn Gilianne and Mishalia

Right: Monitoring Federal Beach

State School presentations

Whilst in town Jane Mellors took the opportunity to talk to students about seagrass and Seagrass-Watch from both Thursday Island State School and Horn Island State School as part of their respective Clean School Day and Sea-Week activities.

Left: Horn Island State School Talk

Below: Thursday Island State School Talk

Left: Classroom training with Marine Studies students Thursday Island High School

Gab Titui project

Barfly Issue 534

Torres Strait is awash with colour after a recent visit by three Cairns artists. Dominic Johns, Simon Poole and Daniel 'Wally' Wallwork, visited the Gab Titui Cultural Centre on Thursday Island to host a variety of arts workshops aimed at extending the arts opportunities for Torres Strait locals.

The three artists provided different skills, ranging from mosaics with Johns, Found object assemblage by Poole and Aerosol art provided by Wallwork.

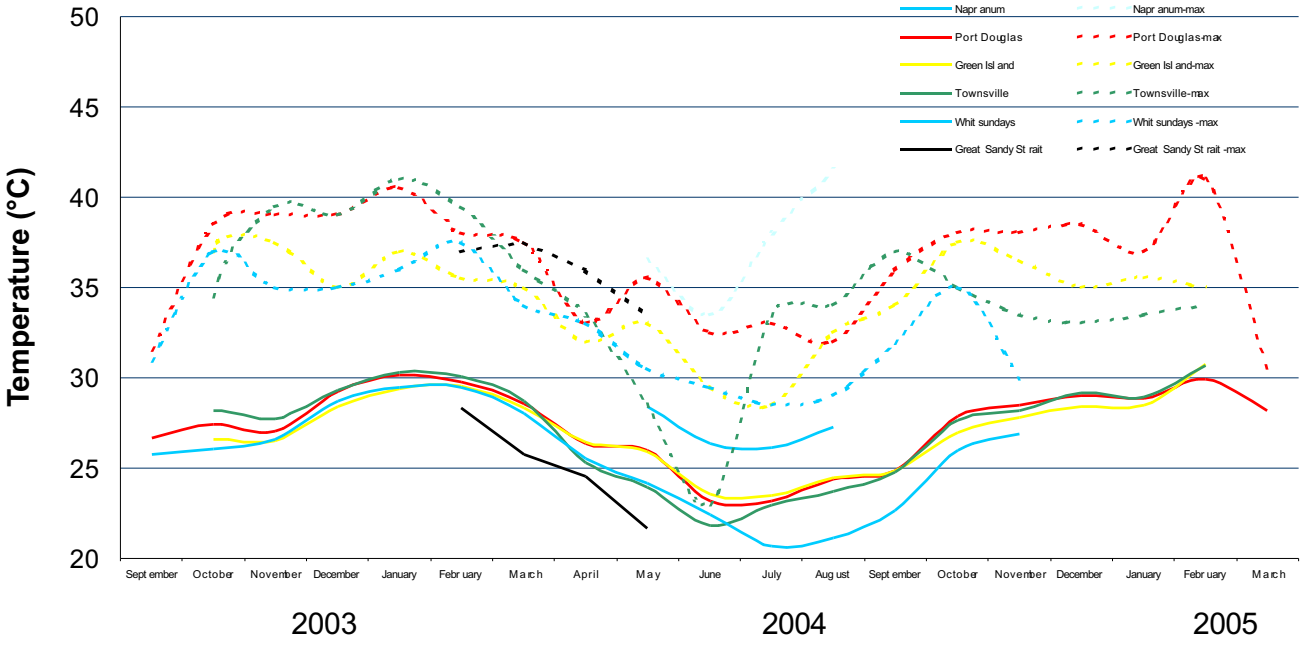
The workshops, held over a period of three weeks, coincided with the TI Cultural Festival and locals and tourists alike participated in the colourful and exciting program. The program was the result of an earlier Seagrass-Watch program funded by CRC Torres Strait, on which Johns of Shardworks Mosaic Studio was invited to research possible community development and education opportunities

"This was an exciting opportunity to collaborate with the people of the Torres Strait," says Dominic, "it was a great experience for all involved and hopefully we will see these programs develop further into the future."

The result of the workshops can be seen around Thursday Island with striking murals on the TI Hardware wall and colourful mosaics and sculptures at the Gab Tutui Cultural Centre.

Monitoring temperatures within the seagrass canopy

In December 2004, there were some concerns that sea surface temperatures across the Great Barrier Reef looked to be rising significantly with a HIGH probability of coral bleaching. However, sea surface temperatures this summer were generally lower than the previous year. This was possibly a consequence of storms and cyclones disturbing the tropical regions over the January and February. As a result, mean intertidal temperatures within the seagrass canopy did not exceed 30°C, although the highest maximum temperature reported in summer of 2004/2005 was 41°C at Yule Point (YP2) on 5 February. Latest research indicates that short term (less that 3 hours) exposure to elevated temperatures over 40°C can cause seagrass leaf/chlorophyll death. Maximum intertidal temperatures were significantly lower at Shelley Beach in Townsville, however the mean temperature was similar to 2004 at 30.6°C in February. High (>30°C) mean sea-surface temperatures have been acknowledged as the main cause of coral bleaching. Loggers for other sites have yet to be retrieved and downloaded.



Mackay

In early March, Jon Woodworth and volunteers from the local Progress Association visited Sarina Beach to determine if it was possible to establish a new monitoring site. They found some seagrass near the boat ramp, mostly *Zostera capricorni* and *Halophila ovalis*. Hopefully in May, scientists from Seagrass-Watch HQ can visit the region, to meet with the volunteers and run a short training workshop.

Whitsundays

Unfortunately, QPWS Volunteer Rangers were unable to conduct any monitoring over the last few months as the tides were not sufficiently low enough year to monitor sites . Monitoring is planned for April 2005.

Cooktown

Blair Terlier, the new biology teacher at Cooktown High School, will be taking over the seagrass monitoring from John McClaren. Christina Howley and the High School had their first monitoring event of the school year in early March. The monitoring went well, although only three students joined the team. It is hoped the marine studies students may join-in in the future. John did a great job introducing Seagrass-Watch to Cooktown. We wish him all the best for the future.

Do you want to get Involved?

Visit www,seagrasswatch.org ot contact your local Seagrass-Watch representatives:

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

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