

# MangroveWatch

Newsletter No. 4 October 2010



October/November

Monitoring



Blue soldier crabs inhabit the tidal mudflats around mangroves. They burrow down to a depth of 30 cm and may be covered by up to 2 metres of water during high tide.

Photo: Paul Finn

Welcome fellow MangroveWatchers!

It's that time again. This issue focuses on some very important inhabitants of the mangrove environment - the crab. Turn to the information page, on page 2, for a quick summary of why they are so important to the mangrove environment.

This issue also includes some summary results for the first time. In keeping with the focus on crabs, you will see some of the first comparisons for crab hole numbers. Have a look for your site.

Be sure to check out the tide times on the back page, and make contact with your fellow MangroveWatch crew members and book a kit.

Thank you to everyone who is volunteering their time to take part in the program, your time and effort is greatly appreciated.

I look forward to seeing you all again soon

*Happy Mangrove-Watching,*

*Chris*

**October and November is MangroveWatch Monitoring time. Now is the time to:**

- Make contact with your fellow MangroveWatch crew members. Contact Chris if you don't have their details.
- Check the tides on the back page and book your monitoring kit.
- Pass on this newsletter to anyone you think might be interested in volunteering for the program.
- Please photograph anything unusual on your monitoring visit with the camera provided.

NOTE: Photos taken on the monitoring camera may be used for promotional purposes. Please contact Chris if you don't wish your photo to be used.

- If you come across injured, stranded or dead marine animals, please call 1300 130 372 to report.
- Pick up kits from QPWS office  
34 Trafalgar St, Manly, via Fairlead Cr. Beside Moreton Bay Trailer Boat Club.

**Bookings essential.**

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# Mangrove Animals



## Why are crabs so important?

### *Crabs are energy recyclers.*

Crabs consume large amounts of leaf litter and in doing so, convert the nutrients of the litter fall into increasing their size, and their number. More crabs in the environment, means more food is available to other animals of the mangroves - animals that may not eat the mangrove plant directly but might consider a crab or crab larvae to be an ideal snack. With crab larvae known to be a major source of food for fish, it's easy to see why the mangroves are often referred to as a nursery for fish.

But that's not all. Nothing is wasted in the mangrove forest.

More crabs = more crab faeces.

Even crab faeces provide a source of nutrients for a range of small invertebrates (such as amphipods) which help to cycle even more energy.



Kiera Price

### *Crabs can influence mangrove community structure.*

Although it seems that crabs prefer litter fall, they are also quite partial to mangrove propagules, particularly the grey mangrove (*Avicennia marina*). Keen observers at various times of the year may even witness propagules sticking out of crab holes. By preferential selection of particular species, crabs are thought to play a role in influencing the intertidal distribution of mangrove species.

Crabs are key players in the energy recycling of the mangrove forest.



Photo: Bob Crudginton

The burrowing nature of crabs helps to aerate the sediments in mangrove forests

### *Crabs contribute to the quality of the sediment.*

Crabs, by their very nature, burrow. Crab burrowing helps to aerate the sediment of the mangrove environment. Mangrove sediments generally have very little oxygen. Many people notice that mangrove environments often have a characteristic odour. This odour, hydrogen sulphide, is a by-product from the chemical reaction of decomposition in the absence of oxygen.

Some research has shown that in the absence of crabs, sulfide and ammonium concentrations increase, which in turn may affect the productivity and reproductive output of the surrounding vegetation. Current research by the University of Queensland is investigating whether the aeration provided by crabs (and other burrowing animals) could be an essential factor helping mangroves to survive tough times like drought.

Few animals graze directly on mangroves. Bacteria and protozoans colonize litter fall and begin breaking it down chemically into organic compounds, minerals, CO<sub>2</sub>, and nitrogenous wastes. Amphipods and other small grazers speed up the process by reducing the litter to detritus. This increase in surface area aids microbial colonisation and this speeds up decomposition.

# what's happening around the sites

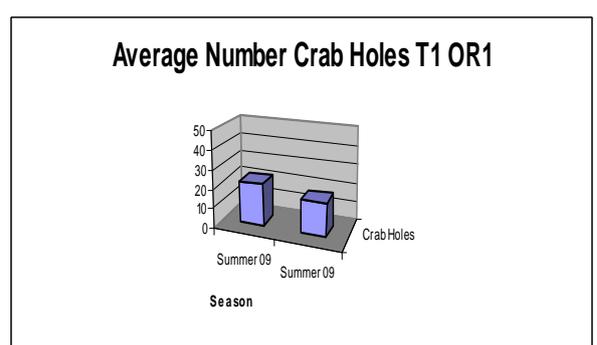
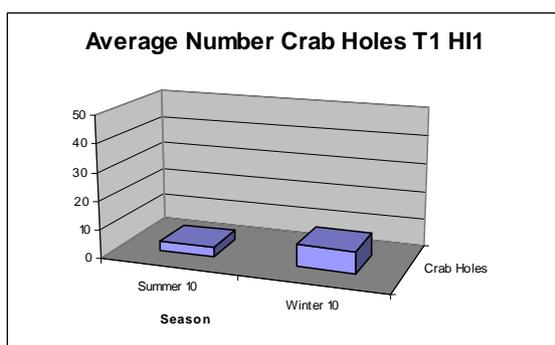
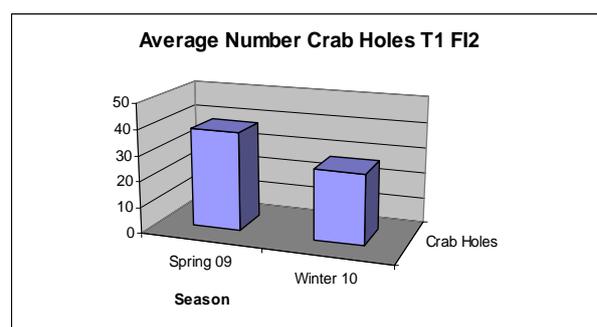
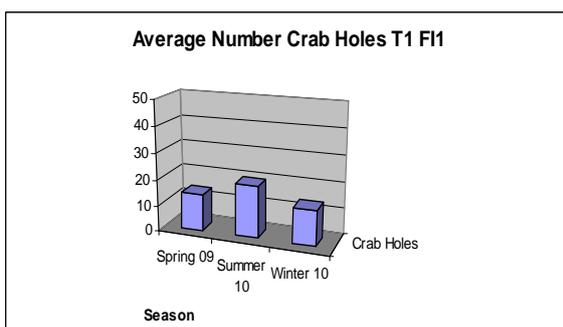
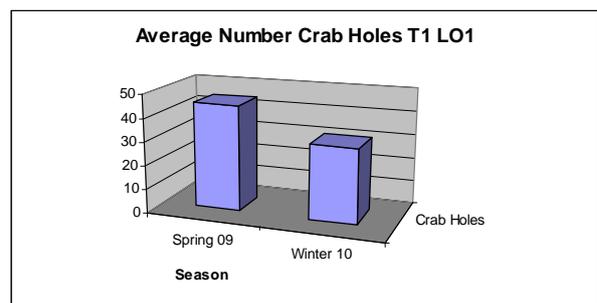
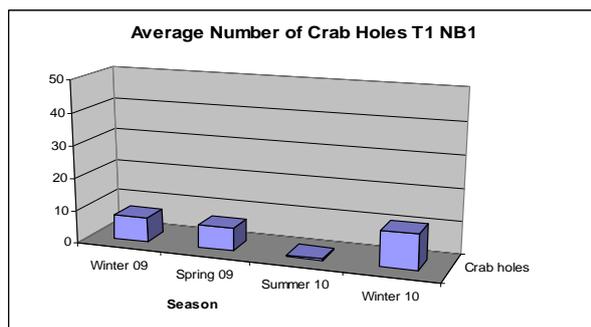
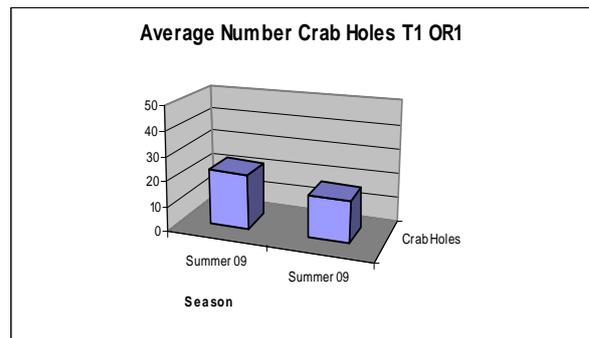
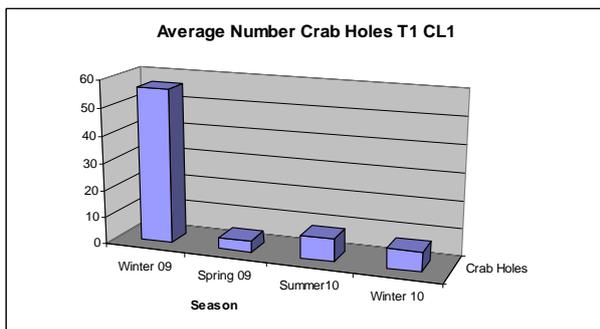


## Crab Holes

Crab activity around the MangroveWatch sites in Moreton Bay, are yet to show much of a trend, although it is still early days and there is much more data to collect and include.

The following comparisons are made with data from only one transect and there is, as yet, a lot of data to gather. Some sites are showing much less burrowing activity and this may be due to any number of reasons. This may include location and subsequent predation on crabs and burrowing animals, environmental conditions (weather, protection, pollutants).

The counting of crab holes in MangroveWatch is used as a measure of bioturbation, or, the amount of disturbance or turnover in the soil, and may be made by any burrowing animal (not just crabs).



# MangroveWatch Training

MangroveWatch field training will be conducted at the following locations during the October/November monitoring period:

Coochiemudlo Is(TBA)

Nudgee Beach (TBA)

If you would like to come along and refresh your skills, contact Chris

# MangroveWatch Surveys

MangroveWatch surveys are undertaken three times a year (February/March, June/July and October/November). The **October/November 2010** monitoring period is upon us and there is a limited number of good tide times - see tide times opposite (Brisbane Bar). Those who have been trained and have sites established should select a suitable day and contact Chris, your MW Co-ordinator, by email to book out the equipment.

Please give plenty of notice (at least a week).

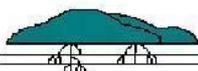
# Thank you

Thankyou to all volunteers for generously giving their time to this valuable community monitoring program.

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Wildlife Preservation Society of Queensland  
Bayside Branch ( Qld ) Inc



# Good Tides...

Month	Day	24hr Time / Height
October	Fri 01	0814/0.60 *early*
	<b>Sat 02</b>	<b>0939/0.60</b>
	<b>Sun 03</b>	<b>1101/0.52</b>
	Mon 04	1214/0.41
	Tues 05	1317/0.31
	Wed 06	1416/0.24
	Thurs 07	1510/0.21
	*early* Fri 15	0827/0.73
	<b>Sat 16</b>	<b>0952/0.78</b>
	<b>Sun 17</b>	<b>1112/0.75</b>
	Mon 18	1213/0.67
	Tues 19	1304/0.59
	Wed 20	1349/0.53
	Thurs 21	1430/0.49
Fri 22	1511/0.47	
*late* <b>Sat 23</b>	<b>1550/0.47</b>	
*early* Fri 29	0653/0.52	
*early* <b>Sat 30</b>	0800/0.59	
<b>Sun 31</b>	0920/0.61	
November	Mon 01	1040/0.57
	Tues 02	1154/0.50
	Wed 03	1301/0.43
	Thurs 04	1402/0.38
	Fri 05	1459/0.35
	*late* <b>Sat 6</b>	<b>1551/0.35</b>
	*early* <b>Sat 13</b>	<b>0743/0.74</b>
	<b>Sun 14</b>	0854/0.83
	Mon 15	1013/0.85
	Tues 16	1125/0.81
Wed 17	1225/0.74	
Thurs 18	1318/0.67	
Fri 19	1406/0.60	
<b>Sat 20</b>	<b>1451/0.55</b>	
<b>Sun 21</b>	<b>1535/0.52</b>	
<b>Sun 28</b>	<b>0749/0.56</b>	

Take care with a turning tide late in the day, and ensure you have sufficient time to complete your monitoring