FRIENDS OF GULF ST. VINCENT

Blue Swimmer

Newsletter of the Friends of Gulf St Vincent

Issue 16, March 2010

President's Report

Our Principal Objective is to foster a unified community approach to the protection and wise use of the Gulf St Vincent.

2009 has been a very busy year for the "Friends of Gulf St Vincent Committee" and the highlight of the year was the completion of the 23 page booklet "**Gulf St Vincent - a precious asset**" by a sub-committee consisting of Pat Harbison, Ian Kirkegaard, Angela Gackle and John Cugley.

John Cugley has successfully taken over the role of Treasurer from foundation Treasurer Nick Crouch while Angela Gackle has continued to do an outstanding job producing "Bluey".

The following is a compilation of the year prepared with substantial input by our Foundation Secretary Ian Kirkegaard and illustrates the commitment by the very dedicated and committed members of the committee:

- Barely a week into January – a letter was prepared and sent to Minister Holloway on the proposal to build a supposed 'marina' at Stansbury. This issue continued through the year, but, thanks to the efforts of very dedicated local folk, led by Trevor Carbins of the Oyster Bay Preservation Committee, this ill-conceived proposal was finally shelved by the Government.
- Soon after, we started on submissions on the Dublin Balefill, extension to the Inkerman Landfill. We asked that both landfills be monitored for signs of seepage, because this has not been done properly since the Inkerman site was opened.
- Our response to the EIS for the Port Stanvac Desalination Plant drew on input from several members, and our many contacts in affiliated organisations and universities.
- Linked to the proposals for Port Stanvac, we were approached by Helen Crawford who was concerned at the damage done to rock pools just north of the O'Sullivan Beach boat launching facility. A considerable quantity of material dredged from O'Sullivan Beach boating facility was dumped in these rock pools effectively smothering the rich reef marine life. We were able to provide Helen, and the Environmental Defenders Office, with technical support for their attempts to seek higher level review of the way that work was done.
- That started a new series of representations to Minister Weatherill, on the poor compliance with dredging guidelines at several sites around greater Adelaide. The correspondence has become needlessly complicated because two replies from the Minister so far have both offered wrong interpretations of what legislation applies to dredging in the SA Gulfs.
- Before the end of January, we were engaged again in submissions to the DAC on the Department for Environment and Heritage's (DEH) development application for the Sand Transfer Infrastructure Project, part of the Adelaide's Living Beaches Strategy. We appeared before the DAC, and were pleased to see that several local coastal groups won concessions for the construction and operation of this project.
- Also in February we made a submission to the EPA review of the EPP on Water Quality. We argued for more stringent application of criteria, no extension of the concept of a receival or mixing zone - in fact, we sought a more stringent interpretation here, and better training to make officers in the EPA aware of what the EPP was supposed to achieve.
- By March we were making strong representations for the River Torrens Task Force to reconvene to push for action on the report it had prepared for Government. Subsequently, we participated in a one-day

workshop which seems to have prompted some Government funding for water quality improvement for the Torrens, announced in November.

- Also in March we were well involved in preparing for the Community Water Summit, which had excellent speakers, and was a significant success in that around 140 people took part, and in fostering a continuing coalition of community groups campaigning on water issues.

- We continued to support the Cheltenham Park Residents Association in their campaign, including proceedings in Court, but this did not require a lot of individual time.

- By June we were analysing the proposal for extensive residential development for Buckland Park, and likely impacts of water flow management on the marine environment in Barker Inlet. One of the still-puzzling aspects of processes under the Development Act is that this proposal was to be assessed in isolation from the then-known proposal on the adjoining salt fields site, even though there would be obvious combined impacts of the two developments.

- We were very disappointed with the quality of feedback from the Government on management of turbidity off metropolitan Adelaide, so much so that we scheduled a forum for the end of August, with a working title 'Murky Waters', and pressed the Minister's office for a legally correct response to our several representations in time for that forum. A response did arrive, but, again, it was legally incorrect, so we could not use it. However there is some light at the tunnel. Minister Weatherill has written to the "Friends" in early February of this year stating "… the EPA will undertake a review of the laws relating to sea dumping and marine protection in SA coastal waters". We look forward to the review.

- Through this time, the booklet sub-committee continued to work with our designer, Sandra Elms, to get "Gulf St Vincent - a precious resource" printed so it could be released publicly within the time set by the terms of our agreement with 'Envirofund'. Actually, we had one time extension, and we acknowledge the patience of the 'Envirofund' office in working with us to complete this project successfully. As it happened, we were able to hand out 'proof' copies to everyone who attended the 'Murky Waters' forum – these where very challenging times for a volunteer organisation.

- A small task group, which included Alan Goldsmith, of the Western Adelaide Coastal Residents Association (WACRA), was also working up a proposal for community-based Secchi Disc monitoring of water turbidity program for around the Gulf. Thanks to Alan's contributions of program and web design, we are discussing a co-operative program with the Adelaide and Mount Lofty Ranges NRM Board, with hopes of getting it included in their next budget/investment cycle.

- In September we received the reports of the Seagrass Restoration Workshop held in April 2008. This is a substantial technical report, which shows, in essence - that seagrass can be restored, economically, if only the Government would get serious about water quality issues in the Gulf.

- While we were juggling the logistics of 7000 copies of the booklet, we also committed to a third forum for the year - at Stansbury, focussed on the proposed 'marina' on the last Sunday in November. As it happened, Minister Holloway effectively suspended the application the week before our forum, so we may have lost some of the immediate interest, but we made many new friends, and had yet another enjoyable, and informative, forum.

- We have distributed about 2500 copies of "Gulf St Vincent - a precious asset" to NRM Boards, direct to some schools, otherwise through Regional Education Offices, to our members and organisations with shared interests. Every member of 'Friends of Parks' has received at least one copy.

It is also with sadness but understanding that the committee announces the retirement of Ian Kirkegaard as Secretary and as a member of the committee. Ian has given outstanding commitment to the role and his contributions will be sorely missed. The "Friends" wish Ian all the best in his future endeavours in his home state of Queensland.

The "Friends" have also been actively collaborating with like-minded community organisations to secure a better deal for South Australia's water and interdependent ecosystems. The "Friends" are a foundation member of the Water Action Coalition (WAC) which was

launched at the Salisbury Wetlands Watershed on 19th July 2009.

WAC was an initiative resulting from the Community Water Summit held on 14th March 2009 and recently held the "Big Water Debate", co-partnered with The Bob Hawke Prime Ministerial Centre of the University of SA, on 11th February 2010 and attended by 400 people. WAC also co-partnered with the Save Our Gulf Coalition to hold the "Troubled Waters of the Gulf" on the 7th March 2010. This forum focussed on the mid-south coast and was attended by approximately 70 people including members of the "Friends".

As many of you are aware, the organisations either actively involved or supporting the Water Action Coalition are a very diverse group in terms of size, scope and style. WAC has been very successful in engaging not only the community from around the state but politicians ranging from independents to the major political parties to lobby for a better deal for our Gulfs and water environments.

There is much still be done to ensure areas such as Gulf St Vincent are indeed left in a better shape that they are now for the benefit of future generations.

John Caldecott

President

March 2010

Membership fees are due

This is a reminder that 2009/10 membership fees are now due. The membership fee is $10 and can be paid as follows:

Direct debit using BSB 6300-000 Account: 120 815 311 (Friends of Gulf St Vincent). Please make sure that you include your name in the reference field so that we know who is making the payment. It would be useful if you could also send an email to the Treasurer (john.cugley@bigpond.com) advising that you have made a payment.

Cheque or money order to Treasurer, Friends of Gulf St Vincent, 9 Sherry Court, Wynn Vale, SA 5127

Cash to any one of the committee members.

We rely on membership fees to help run our forums and to provide funds to support our work. Your support is greatly appreciated.
John Cugley

Treasurer
email: john.cugley@bigpond.com
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mobile: 0437-621288

Pat Harbison (R) and Jim Douglas at the Save Our

Friends of Gulf St Vincent Community Forum Semaphore Surf Lifesaving Club - 30th August 2009

This forum gathered a range of speakers to help us understand what is behind the "Murky Coastal Waters" of Adelaide's Coast. In addition the Friends launched the new booklet "Gulf St Vincent - a precious asset".

The Forum was supported by the Adelaide and Mount Lofty Ranges NRM Board.

Ian Kirkegaard – the Murkiness of Legislation: an Overview

In the 1960s Ian Kirkegaard was a prawn researcher – a keen young biologist working on the Moreton Bay fleet in Queensland. The boats were powerful, with engines that enabled them to work deeper waters, where they found new species and other interesting things, such as shells from military dumps in deep water, dating from the 1940s. 15 – 20 years later these grounds were being trawled causing serious problems. Some boats disappeared, and the speculation was that they had disturbed shells and set off explosions that sank the boats.

Similar experiences in other parts of the world prompted what became the London (dumping) Convention, which regulated dumping black-listed substances such as mercury, cadmium, organohalides, items of chemical warfare (undefined) and persistent plastics on a precautionary list. It came into force on 30 August 1975. It was not perfect, as was realised over the next 20 years as shipping and the fishing industry expanded.

The IMO (International Maritime Organization) tweaked the original convention but it became unmanageable, so a re-think was required on the issue of dumping at sea.

Australia was a signatory, and chaired technical and plenary sessions. Australia was also a driver of the International convention on ballast. Many agencies were involved up to the 1990s.

The Australian Government passed the Commonwealth Sea Dumping Act (1981) which mirrored the London Convention. Under the emerging Offshore Constitutional Settlement the States were then required to mirror the Federal Act, so there is no conflict. In 1984 South Australia passed the Environment Protection (Sea Dumping) Act (1984).

To enforce this Act, the offence is loading material intending to dump, i.e. a permit is required, otherwise an offence is being committed.

Minister at the time Don Hopgood looked at other aspects of Marine Environment Protection in SA, as it looked confusing. He found at least 38 Acts that purported to protect at least some part of the marine environment in SA. Ian K was asked to manage preparation of new, specific legislation for marine protection.

Some provisions carried a penalty of life imprisonment! There was also a Noxious Trades Act, which included activities such as knackery and fellmongering. Ian was asked to draft new legislation.

The Marine Environment Protection Act established a statutory body of nominated representatives of the community. Statutory instruments – the mechanisms for the Act – lay with the committee, and Ian became the Executive Officer. The body included Local Government, the Fishing Industry, Chamber of Commerce and Industry, Business SA, Chamber of Mines and Energy. Records had to be publicly available.

The body was asked to consider priorities and problems, and at the top of the list was turbidity.

E&WS management at the time said it needed time to comply with requirements (8 years) for outfalls. Under the Act they were given 8 years to transition. All outfalls had to comply by 2001.

E&WS was given more money (- and got permission for an environmental levy) to raise $250 - $300 M over 8 years. E&WS became SA Water, and we are still paying the levy.

There is no international convention on dredging *per se*. The London Convention manages some aspects by inference, particularly when it took up what is known as the 1996 Protocol, This Protocol prohibits dumping of most materials. It does allow dumping of:

- dredgings
- sewage sludge
- fish waste or material from commercial fish processing
- vessels & platforms or other man made

structures at sea

inert inorganic geological material

organic material of natural origin

bulky items – steel, concrete & similar

But only as a last resort! All such material has to be assessed for alternative uses first. If it has no use, it still has to be assessed for other kinds of disposal rather than being dumped at sea. Only if there is no real alternative, and it is innocuous, can it be considered for dumping.

While the guidelines for dredging and disposal of 'spoil' were applied in South Australian Gulfs, initially under the Marine Environment Protection Act from 1993, then under the same conditions proclaimed under the Environment Protection Act, because the South Australian Sea Dumping Act had not commenced (and still hasn't, after 26 years) the current Government was able to waive internationally agreed environmental controls for the deepening of the channel to Outer Harbour.

The results were extensive dumping of spoil in the middle of the gulf, and extensive turbidity during the dredging.

Simon Bryars – Impacts on Adelaide's Seagrass Meadows and Reefs
Simon's talk covered the marine habitats off Adelaide, seagrasses lost and reef degradation.

Seagrass meadows are generally *Posidonia* or *Amphibolus* (wire weed)

Reefs may contain kelp, red, green and brown algae. Sand is the other habitat.

Since the 1930s, 9,000 hectares of seagrass have been lost (*Amphibolus* and *Posidonia*) also selective loss of *Amphibolus* in some areas.

There have been blowouts and erosion at edges. Root mats break up and enlarge erosion areas.

North to South along the Adelaide coast there has been complete and selective (*Amphibolus*) loss near Bolivar, complete loss from dredge spoil dumping, complete loss adjacent to the Port River and Outer Harbour breakwater.

In the 80-90s, 360 ha was lost due to the sludge pipe outfall at Semaphore Park. This was shut down in 1993.

Near shore loss south of Semaphore is due to Glenelg WWTP outfall, the Torrens outlet and the Patawalonga outlet. With increasing urbanisation there is more stormwater discharge.

The sludge outfall off Glenelg (now shut) had a slightly different impact – not such a large footprint, but selective loss of *Amphibolus* and erosion and fragmentation.

Reef degradation

Since the 70s there has been major loss of canopy-forming algae on many reefs – up to 70% on some reefs.

Smothering of filter feeders (sponges, sea squirts) and reefs by sediments has led to a change to turfing algae or bare rock.

Reef health status – project ran for a few years to determine health shape of coastal reefs.

<u>It is important to keep collecting data!</u>

Causes of seagrass loss

<u>1 treated wastewater</u>

- increase in nutrients from Glenelg, Christies Beach, Bolivar, Port River
- Results from Adelaide Coastal Waters Study shows the footprint of nutrients from wastewater treatment plants and Penrice along the entire coastline from north of Gawler to Port nOarlunga.

<u>2 stormwater</u>

- more nutrients
- more sedimentation
- more turbidity
- stormwater events can cause complete light exclusion due to turbidity

<u>3 dredging</u>

- increases turbidity
- increases sedimentation
- direct smothering with dredge spoil

Tide and winds can compound the problem by keeping murky water close to shore.

<u>Evidence of dredging impacts</u>

- Dredge spoil grounds off Outer Harbour – known loss of seagrass
- Sand dredging off Port Stanvac during the 1990s – known impact on local reefs
- Outer Harbour channel dredging 2005/6 – probable impacts on local seagrasses
- O'Sullivan Beach boat ramp 2009 – smothered nearby reef
- Smaller scale ongoing dredging along metropolitan coast, eg West Beach.

Seagrass loss - photos taken in 2002 then repeated in 2007, show further loss of seagrass adjacent to Outer Harbour around the time of

dredging

Recent loss of concern

- Seemed to have stabilised in last 10 years
- Natural recolonisation was occurring
- Likely to have included wireweed (Amphibolus) of which very little is left off Adelaide

O'Sullivan Beach boat ramp dredging – before and after photos show smothering of reef to make new beach.

Conclusions

- There has been major loss and degradation of seagrass and reefs off Adelaide
- Wastewater/stormwater is the major cause together with dredging
- Dredging can have major impacts

Ongoing monitoring is essential to track ongoing and new impacts.

Rebecca Giles – Perspectives of Dredging Practices by an Independent Verifier

Rebecca has worked for 12 years with dredging as an independent verifier/auditor, and has been involved in around 50 dredging jobs around the State and 30 in Gulf St Vincent.

Dredging can be remedial, e.g. the River Murray mouth and the Torrens Lake, or capital works – such as navigation channels, marinas, boat ramps and moorings (which then require maintenance).

Navigation channels – there is a legal obligation to maintain access

Maintenance dredging, which can be ongoing due to longshore drift of sand, is usually carried out every 2-3 years but some need constant dredging – Glenelg, West Beach need 24 hour access for boats therefore are always dredging.

Rebecca is not involved in the approval process. A project is conceived, planned and designed. The site is investigated and environmental impact assessment carried out. An application is submitted for approval, and Council approves.

The verifier must maintain distance from the process.

The proponent discusses and agrees on the method of dredging and disposal with EPA

Application for licence – there is need for a verified monitoring program. The consultant or contractor develops a Management Plan.

The verifier decides if the Management Plan is appropriate

- determines whether the EPA-approved Management Plan was fully implemented
- determines whether results are valid and Quality Assurance/Quality Control is suitable (evaluation of data and field notes)
- provides feedback
- visits dredge site to get idea of quality/caliber of the operators (– generally better now than years ago)

Developing a Management Plan

- scope of work (area, depth, duration, timing)
- site characteristics (sediment type, potential for contamination, presence of *Caulerpa taxifolia*)
- Method of dredging – may be important if contaminants are present, e.g., Port River
- Monitoring for management (timing and locations of sampling, indicative indicators measured, control sites for comparison, contingencies)

Needs to take into account weather data, tidal data, sea height, potential information relating to plumes and their behavior.

There are rules and guidelines for projects

How do you do your best to comply with water quality criteria?

Rebecca described four types of dredges commonly used in South Australia, which operate using a combination of actions including suction cutting, dragging and backhoe, and listed their pros and cons and relative accuracy, manoeuvrability, and the situations under which they are likely to be used.

The next issue is disposal of dredgins and the options are:

Dewatering (disposal) - Offshore

Exemption required, only permitted for particular large scale projects where amenity is in issue

Piped or barged to location between seagrass and shore, distance selected for sand replenishment (CPB)

Sand drops out quickly. Turbidity effects can be widespread, but are preferable for amenity

Dewatering (disposal) - Onshore

Lagoon is preferable but must be fully engineered and properly constructed - and a very large lagoon is required for sedimentation, especially clay

Loss of space, safety and amenity issues with lagoons

Piped discharge above high water. Good

solids removal but amenity is generally a problem

Rebeccas conclusions are:

- There are more marinas and boat ramps being approved – that will need maintenance
- Monitoring is restricted to individual projects
- Cumulative effects are not effectively monitored
- Dredges used in SA generally cause only a small impact at the dredge face
- Disposal of dredged material causes the large part of the impact – there are few practical and cost effective alternatives.

Victor Gostin – Urban Spaceman – Geology of the Gulf

The sea inundated Gulf St Vincent about 6000 years ago

There were no sand deposits off the coast – all our sand is being formed by erosion.

Dredging scrapes up clay, rock, gravel – old soils and sediments and bedrock of land pre-inundation.

If one looks at the St Kilda (boat club) channel where the jetty is, it is possible to see cemented fossiliferous material of what is under the Gulf.

The Gulf is not homogenous – an exploration rig fell over because two legs were on calcrete and the third was on soup!

Despite being underwater the water is still complicated. Our Gulf is a veneer of shell grit with seagrasses on top of the original landmass.

Peter Taylor – Bathing Clarity: Perspectives of West Beach Life Saving Club

West Beach Surf Lifesaving Club is 800 M from the West Beach Boat Harbour. Since the boat harbour was built, the beach line has receded by 50 M.

Impact on the SLSC activities.

In winter, dredging is not an issue – there is no activity and training is conducted elsewhere.

In summer, if there is dredging occurring, events are cancelled and if there are storms, there is discoloured water from the Barcoo, Patawolonga and Torrens. The filthy water extends 30-40 M from shore.

Members education – they do not send nippers out in those conditions. If dredging stops mid-week, conditions may be OK by the weekend. If dredging continues until the end of the week, it is usually not OK.

They keep data on stoppage of activities – it may be 2-3 times each season.

No carnival events are held because there is no beach.

Beach patrols – if there is consistent dredging, water is murky and it is hard to see shadows due to poor visibility. It would be almost impossible to see a submerged person – let alone sharks.

Pat Harbison – "Gulf St Vincent, a Precious Asset" booklet launch

Pat introduced those present to the new booklet produced by the Friends of Gulf St Vincent with an Australian Government Envirofund grant.

Gulf St Vincent: a precious asset (2009) is a full colour, 24 page booklet suitable for primary schools and general interest. It gives an overview of the Gulf of St Vincent and the flora and fauna of its waters and coasts, its indigenous history, its discovery by European explorers and settlers, as well as current issues and threats to its marine environment.

Of particular interest to the Friends is the notion of organising regular observations on water clarity—particularly along the metropolitan coast.

Pat demonstrated the Secchi method for measuring turbidity., using a black and white disk lowered into the water until it is no longer visible. The standard is 1.2 M – if the ground is not visible the water is not safe for swimming. This method was the brainchild of an American Senator who used to wade into Chesapeake Bay in white sneakers to see how clean the water was.

Pat would like seaside schools to start collecting secchi data and instructions will be made available on the Gulf St Vincent website for making the disks.

Alan Goldsmith has developed a database for collecting turbidity data in the Gulf. It is planned to put a link on the GSV website.

Citizen Science – small groups collecting information.

Potential avenues for collecting secchi data:

- Surf Lifesaving Clubs – contact Surf Lifesaving SA

- NRM Boards – work with Gulf St Vincent
- Poster for schools
- Radio 891
- Coastal Radio
- Small Boat Owners Association
- Media release
- Councils – Environmental Health Officers

Helen Crawford – O'Sullivan Beach Boat Ramp Dredging – Impacts on Marine Life

Helen has been doing Reef Life Survey Training.

She moved to the area about 12 months ago and had been snorkeling in the cove nearby where there is a reef and permanent rock pool.

After dredging in 2009, the spoil was dumped on the cove and covered the reef completely.

Previous dredging was carried out in 2001 – when 10 – 12 cubic metres was moved. This time (early 2009) 15,000 cubic metres of sand was moved.

The effects include rubbish – loose plastic, fabric, the reef – animal, plants and food source were covered. There should be better screening of dredgings.

Before and after photos of the marine environment in the rockpool show ledges, rocky algae covered outcrops, fish, rays, cuttlefish. Helen showed a wide range of photos taken on the site before the dredging – fish, algae, invertebrates. A new species of alga has been identified at Port Stanvac.

There is a double-standard – we are not allowed to take animals from the intertidal zone, but it's OK to smother the whole cove.

<u>Summary of effects/impacts</u>

1. smothering
2. turbidity
3. nowhere for seeds and eggs to settle and grow
4. filter feeders suffocated
5. habitat and food supply degraded
6. generations of cuttlefish killed by egg smothering
7. dredging releases toxins and depletes oxygen and reef is stressed and open to invasion by other organisms.

Geoff Northcott – Coastal Impacts of Sand Transfer Project

Geoff's opinion is that a reasonable job is being done under current conditions.

Main activity centres on West Beach Boat Harbour, Torrens Outlet, Semaphore South.

Previously accumulated sand was bypassed to the north at these locations. The latest proposal for dredging is to pump sand from Point Malcom to Torrens outlet to West Beach Boat Harbour and Kingston Park.

The Adelaide Living Beaches report (2005) concluded that sand pumping is a challenge due to seagrass wrack. The test program recommended to determine the best system including screening for seagrass.

- Sand Shifter – problem was seagrass wrack – gets slimy
- Sand Pumping – trials were not successful, equipment was unsuitable

The seagrass problem remains unsolved.

A trommel was tested – a rotating inclined cylinder to move seagrass to one end. The screens were too flat – a steeper incline may have given a better result.

Only sand with a small amount of seagrass can be fed to the pumping plant.

Relocatable sumps are not a standard plant item.

Most positive impacts of sand pumping:

eliminates trucks from beaches

equipment required for sand collection will be less. If volumes handled are the same it is hard to see how this could be true.

Stansbury Forum Sunday 29th November 2009

When you walk into the Institute Building, and see how well it is maintained, you know you have come to a community that cares. A town of a few hundred permanent residents keeps its meeting place - soon to celebrate its centenary - in top condition.

John Caldecott opened the forum at 10:07, with 2 dozen people present. The announcement by Minister Holloway on November 19 that he would not allow further time for the 'developers' to make their case for the 'marina' had taken some of the urgency out of local action. The audience we did attract was there to learn a little more about their area, and to discuss wider issues around our precious asset - the Gulf.

Peter Stockings, Economic Development Officer of the Yorke Regional Development Board, gave us a synopsis of coastal processes on the Peninsula, leading up to the Marion Bay planning decision that took account of climate change. Peter, who has been with the Board for 8 years, and has spoken at several other 'Friends' forums, reminded us that the local Council is responsible for 380 km of coastline, and has to manage that from a small population and revenue base. Apart from the principle of who should pay in the longer term for bad land allocation decisions, the potential costs could too easily exceed the capacity of the local Council ever to pay. Even where the Council might achieve a good long term result from the planning system, legal expenses could imperil its budget.

The Marion Bay decision established a national precedent, in taking into account the probability of the development later incurring large costs because of predicted rises in sea level. The case is identified as

NORTHCAPE PROPERTIES PTY LTD v DISTRICT COUNCIL OF YORKE PENINSULA [2007] SAERDC 50 (19 September 2007)

and is available on the 'austlii' site - http://www.austlii.edu.au/cgi-bin/sinodisp/au/cases/sa/SAERDC/2007/50.html

To emphasise the main points, Peter listed settled areas on the Peninsula which are being undercut, or where major works are underway or proposed to slow that undercutting.

In response to a question from Scoresby Shepherd - 'How far into the future should a Council plan?' Peter said that the real decision point for a Council is - should it build an expensive seawall in an attempt to 'protect' residential lands. As an indicator of the rate of change Peter mentioned the water levels inside the Coobowie Causeway, which are rising at an apparent rate of some millimetres a year.

Trevor Carbins introduced himself as a Stansbury resident of 10 years. He also emphasised that the campaign for Oyster Bay drew on a local permanent population of just 550 people; yet they were able to gather in excess of 2000 signatures on a petition to the Minister, and established active links with recreational fishing and boating interests, the yacht squadron and other local and visitor groups.

Trevor did remark that the history and form of the Port Vincent marina helped the Stansbury campaign. To give focus to the forum, Trevor proposed a resolution to be considered at the end of the day's proceedings.

In comments and questions, Peter Stockings relayed comments from a recent local government national conference, where the Mayor of an east coast Council had remarked that insurers were simply declining cover for coastal lands at risk of flood in tidal surges.

One questioner sought assurance that the Coobowie wetlands inside the causeway would not be taken up for housing. Peter Stockings advised that the area was zoned for farming, so any such change would have to start with a proposal to change the zoning. This should be sufficient to alert local interest groups.

The coffee and scones prepared by the local Lions Ladies made it difficult to get our audience back into the hall for the next speaker, but we certainly did not lose anyone.

John Cann, Adjunct Professor at the Mawson Lakes campus of Uni SA, where he had lectured in geology for 40 years, opened his talk with an observation that he had not fully realised the implications of the 'marina' proposal until a recent visit to the area; now he considered it to be an abomination.

John took us into the geology of the area by telling us that local sea level had varied 120 metres through and since the last glacial period. At the last warming period, sea level was c. 2 metres above where it is now. He expects a similar rise, as the polar caps melt, through the next warming period.

John demonstrated how the local area had been shaped because it lay on one of the separation zones during the breakup of Gondwana - the supercontinent of c. 120 million years ago. The progression of marine waters along that separation zone, between what is now southern Australia and Antarctica can be traced in the fossil record. The climate in which those fossils lived is a little confusing, because as recently as 25-35 million years ago, 'Stansbury' was c. 15 degrees of latitude further south, but the fossil record reflects rainforest on land. The high sea level accounts for marine deposits now in the Murray Basin, and for much of the calcium carbonate structure of Yorke Peninsula.

John had set out fossils he had taken out of the nearby cliffs in the last few days. He spoke about the ecology of one of the common fossil organisms, the Heart Urchin *Lovenia,* which is related to the modern sea urchins and starfish.

Eberhard and Jenny Wuehr (Stansbury) and Anne Caldecott (Adelaide) inspect fossils from the Stansbury cliffs *(photo courtesy of Yorke Peninsula Country Times)*

The fossils attracted a practical question - is there any law prohibiting the taking of fossils. John said there were broad prohibitions on removing material from shores, but it was allowed to take fossils for educational purposes.

John spoke of the many factors that change a regional climate. These include variations in Earth's orbital cycles, which can alter solar effects by about 30%. On top of that, the continents were redistributed from time to time. Apart from that repositioning, such redistribution changed ocean circulation, with often dramatic results in the short term.

Continuing the geological theme, **Scoresby Shepherd** spoke on Reg Sprigg, who had been born on the way to Yorketown hospital in 1919, at a time when his parents ran the Stansbury store. The family moved away in 1924, but Reg returned most years, developing an interest in the local fossils as he grew older.

Scoresby spoke of his own explorations from Reg's research vessel, *Saori.* This included a survey of the bottom of Gulf St Vincent, with dives at 5 km intervals on transects across the Gulf. This could amount to 10 dives a day, to depths of 40 metres, which is not recommended practice now.

The results of that survey were summarised in a chart, published in 1976. **Gulf St Vincent - a precious asset** reproduces that chart, alongside results of a 2002 video survey, which suggests extensive changes in the bottom biology. Much of the bryozoan (known to boaties as 'coral') and hammer oyster assemblages, and the deeper seagrasses, have now gone. The most likely explanation for these changes is that they were caused by prawn trawling, before the fleet returned to the present, highly targeted harvest. This is a difficult environment to carry out biological research, but one of Scoresby's concerns is that that bottom degradation could be a factor in observed declines in catch of the preferred food fishes like whiting, snapper and gar.

Scoresby revealed some little known history - such as Reg Sprigg building an artificial reef off Stansbury in 1965. It was built up of 'Besser' blocks, so should still be out there, but, if anyone knows where it is, they are not telling (naturally).

Scoresby also spiced his account with recollections of 'incidents' with the dive chamber, and problems with head count after a dive.

This forum was a lively one for questions. One was concerned with reports of decline of kelps in the Gulf. Scoresby suggested that the decline appeared in limited areas around Adelaide. Kelps elsewhere around the State remained in good condition.

And the effect of discharges from the desalination plant at Port Stanvac? Literally unknown, because there are no data from the test run of the osmotic modules.

Reg Sprigg's biography, by Kristin Wiedenbach, is published by East Street Publications under the title **Rock Star.**

The Lions Ladies had set out an excellent lunch, and, for a change, the visiting 'Friends' had opportunity to chat over all sorts of questions and issues with the good folk of Stansbury. We were really feeling 'at home' here.

The audience dragged itself away from the lunch tables for the afternoon session, and we found we had gained a couple of people for the afternoon. Trevor Carbins introduced presentations from local people with strong interest in seeing Stansbury's environment and planning managed sustainably.

For the last 4 years, **Steve Bowley** has operated a 20 hectare oyster lease in Oyster Bay. Steve is delegate to the State oyster growers association and chairs its research committee http://www.oysterssa.com.au/saoga.php

Their objectives - on the website - stress sustainability, and minimising environmental impact on and from the oyster industry. Steve quickly briefed us on the significance of South Australian oyster farming on the national, and soon world, stage. Of seven licences in Stansbury, three would have been within the limits of the proposed 'marina'.

Stansbury is an 'ongrowing' area, and stock is moved elsewhere for final conditioning for market. The area has a sound quality record - with 2 closures for reasons of water quality in 10 years comparing well with other regions around Australia.

For that reason, the local growers were concerned over denser housing spread across the bay because of the greater risk of oyster contamination by coliform bacteria.

A further concern would have been the turbidity effects from dredging a channel 1.7 km long, given that a sediment level of 3 gm/litre in seawater almost halves oyster feeding rates.

Rob Tonkin, a resident for 13 years, followed Steve, to talk about experiences they had gained from other marina developments during the Oyster Bay campaign. The standout example of poor engineering analysis, leading to poor design, came from Busselton, WA, and the local campaign had received generous co-operation from residents in that area. Rob added details and photographs of Martha Cove in Port Phillip Bay, which was difficult to define as either a boat haven, or a housing development. That has not troubled the designers of the marketing websites. The 'breaking news' from that entire development was the financial disaster of the lead financier - City Pacific.

Rob referred to the slow sales of sites at Port Vincent, and the apparent effects on coastal circulation from the groynes at Port Vincent, and the extensions to the Stansbury boat ramp. We were left with a clear message that too many marinas were still designed and built with little regard or knowledge of the environment. Even with 'quick and dirty' construction, they were financially dubious also.

Allan Russell then stepped up to share some of his diving experiences in the Stansbury area with us. Allan is a long-time resident, and his talk spanned something like half a century of local diving. He reminded his audience that at one time local divers took the so-called 'native' or Port Lincoln mud oyster in Oyster Bay. As diving became a wider recreational experience, collectors sought shells such as the Black Cowrie, Pheasant shells, Murex and the false helmet Cassis. Allan and Brenton between them had prepared an excellent slide show of the marine fauna.

A regular comment from the speakers at the afternoon session was to acknowledge the hard work and organising skills of Trevor Carbins, for spurring a local response to the original proposal for 'development' of Oyster Bay, and for devising the tactics that clearly had worked.

Bob Mensforth set out for us the formal planning procedures that had applied to this proposal, and probably would apply to future proposals. Bob spoke from a working background in building design and local government, and, as much as he could, on the Development Assessment Panel for Yorke Peninsula, of which he was a member.

Bob explained that, under the Development Act, proposals first were put into one of three categories. These were known as complying, requiring consent, and non-complying. That categorisation determined all following paths for assessment. Assessment against objectives and principles of the local plan came later in the process.

One extra consideration for coastal councils was that their jurisdiction did not extend beyond mean low water mark. Bob added observations on local development considerations and processes. He noted that the Yorke Peninsula area had been identified in a recent article in the *Australian.* The local DAP had more independents than elected members. The local Development Plan was due for review in 2011, so any person or group which wanted to influence the next Plan should be preparing their case now.

Bob's briefing gave Trevor the cue for us to return to the resolution he had suggested at the start of the Forum. Thanks to Bob's insights into the subtlety of wording, the Forum agreed that the Oyster Bay Preservation Committee and Friends of Gulf St Vincent might seek guidance from people such as Hon. Mark Parnell MLC in drafting an effective amendment to the local Plan, and that we make a joint submission to that planning review.

L-R: Friends' President John Caldecott, Angela Gackle with Secchi Panda, Pat Harbison with the new Friends' booklet and Ian Kirkegaard. *(photo courtesy of Yorke Peninsula Country Times)*

Before that, however, we had the pleasant task of distributing copies of **Gulf St Vincent - a precious resource -** to the audience. Pat Harbison gave the audience a quick trip through the booklet, pointing up items of special interest. Pat also distributed more Secchi socks, while Angela Gackle, in a world premiere, displayed a very smart prototype of the Secchi Panda (see photograph)

The Forum finished at 4:25 PM, and we thank the residents of Stansbury for making us feel so welcome, and providing a lively discussion through the day.

UP TO 300KM OF SEAFLOOR DAMAGE LIKELY IN SPENCER GULF

The danger of BHP-Billiton establishing a large desalination plant at Point Lowly, Spencer Gulf, is that a similar DESAL plant in the Arabian Gulf (Persian Gulf) has problems of ever increasing salinity at the intake, and destruction of seafloor biota over a wide area.

At only a 20m depth the saline effluent at the proposed site in Spencer Gulf, will provide a very saline flow - very nasty to anything living around that depth, that will take a LONG TIME to flow out of the Gulf.

Near Port Lincoln, at the mouth of Spencer Gulf the depth reaches to only some 50m.

Therefore the gradient is 30m over ~250km (=250,000m) or 1: 8300 a VERY VERY SHALLOW SLOPE.

And the toxic effluent will be damaging the Gulf below the 15m depth (assuming a little mixing) from Point Lowly to the southern entrance below Port Lincoln - around 300km away.

It may be predicted that all the Gulf seafloor fauna that lives below some 15m depth all the way down the 25O-300km length of Spencer gulf will be severely affected.

Spencer Gulf fisheries had better be really worried !!!

Our EPA had better send some staff over to the Gulf States (Arabian Gulf) to check how their Desal plants are coping after a few years of activity.

Dr Victor Gostin
Environmental Geoscientist
Geology & Geophysics
University of Adelaide

SNIPPETS

Accolades for our booklet!

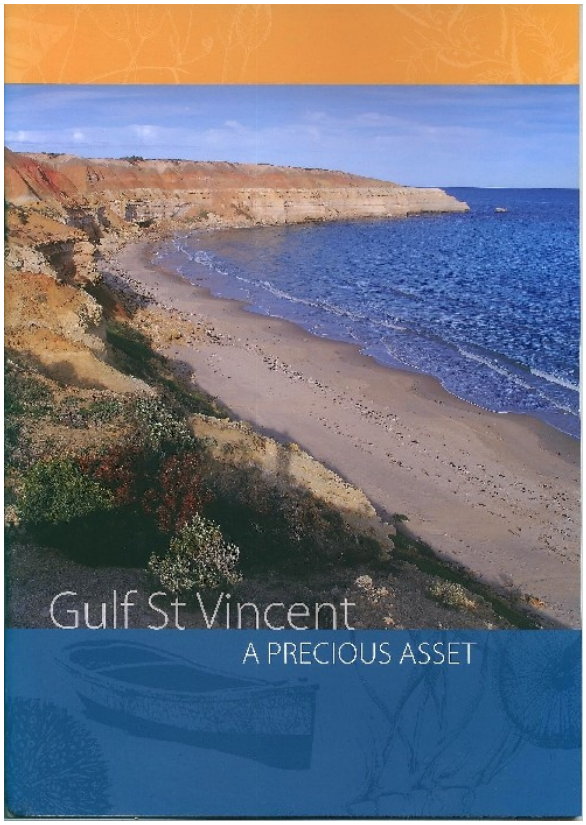
"a brilliant publication ... I must congratulate your group not only on the quality of the content but also the presentation. It is a publication that "does you proud" whilst at the same time being a useful advocacy tool with respect to the need for proper stewardship of the Gulf."

David Mitchell, President, Friends of Parks Inc

And from Matt Cattanach,
NRM Education Co-ordinator

"The document **Gulf St Vincent – a precious asset** is thorough, engaging and it provides important historical messages. We will place a copy in our resource library that is accessed by teachers and students. I would request an additional 5 copies to provide to NRM Education offices across Adelaide.

We will promote your booklet to schools that are interested to find out more about coastal issues."



The Friends are currently in the process of distributing the booklet to NRMBs, Regional Education offices and other relevant organisations. Our aim is to distribute about half now, and hold about half for further distributions across the next few years.

Further to our 'Murky Waters Forum' last year, the following is an excerpt from a letter the Friends received from the Hon Jay Weatherill, Minister for Environment and Conservation.

On the basis of the above comments the EPA reiterates its earlier advice but, noting that legislation related to marine pollution is quite complex and potentially confusing, the EPA will undertake a review of the laws relating to sea dumping and marine protection in SA coastal waters. This would focus on the 1984 Act, the related 1996 London Protocol, and any other legislation relating to marine pollution (including the Protection of Marine Waters Prevention of Pollution from Ships Act 1987), to examine whether or not there are any gaps; a need to extend the operation of the Water Quality Policy; or change dredging conditions.

You are invited to discuss further questions about the matter with Mr Tobias Hills, of the EPA, by telephoning 8204 2036 or via email at tobias.hills@epa.sa.gov.au.

Yours sincerely

Hon Jay Weatherill MP
MINISTER FOR ENVIRONMENT AND CONSERVATION

/ 9 / 2010