



## President's Message

It is worth reflecting on the the issues raised by the speakers at our AGM, Sam Gaylard from the EPA and Tim Kelly the outgoing CEO of the Conservation Council, whose papers are reproduced in this issue of the Blue Swimmer, both raised the question of how we can get involved in the major issues that are confronting the coast.

Sam spoke of the monitoring programs in the Gulf and his talk coincided with the release last year from the EPA of the Adelaide Coastal Water Quality Improvement Plan (ACWQIP). The ACWQIP described the overall picture of the broad environmental condition of Adelaide's coastal waters and recognised the decline in health of seagrass beds and reefs off the Adelaide coastline as a matter of significance. It published a Community-agreed vision of: "Healthy aquatic ecosystems where environmental, social and economic values are considered in equal and high regard in the balanced management approach that aims to see the return of the 'blue line of seagrass' closer to shore by 2050".

Sam stated that the FoGSV's Secchi Monitoring program had the potential to add value to the condition reports by measuring water quality at more frequent intervals than the EPA can. Since the AGM the FoGSV have been successfully been awarded stage 2 of the project with coordination undertaken by the Adelaide and Mount Lofty Ranges NRM Board. The aim of Stage 2 of the program is to expand the number of sites being monitored across the Gulf, review the current volunteer base and encourage the participation of coastal organisations and interested community groups. The program will run through to the end of June 2015

In Tim's presentation he spoke of the infrastructure developments in South Australia and spoke of the dire consequences of uncontrolled coastal developments, he concluded

with the Reef Watch western blue groper surveys of 2012-13 and news that blue goppers have been reported off the desal plant.

FoGSV have adopted the Blue Groper Public Art Project at Port Noarlunga. The Conservation Council had identified the approaches to the Port Noarlunga Reef System as ideal to create a significant and iconic public art installation. The intention of the project will be to raise community awareness of the state of the reef system and, over time with water quality monitoring and Reef Watch Surveys, see increases in the diversity and numbers of fish surveyed.

The good news was that a Western Blue Groper was photographed on Sunday 30 March on the reef adjacent to the end of Port Noarlunga Jetty, unfortunately on the same day The Sunday Mail had a photograph of trophy. a 100cm, 30kg blue groper caught at Coffin Bay.

By getting involved in these projects we will promote FoGSV's aim to engage the community in a better understanding of and caring for the Gulf.

**Rob Bosley**

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The Friends of Gulf St Vincent AGM was held on November 27, 2013 and following official business we heard from two invited speakers.



### The EPA's Nearshore Marine Aquatic Ecosystem Condition Reporting Program

The first speaker was Sam Gaylard from the EPA, who gave a presentation on condition monitoring in the Gulf, theories behind what they are looking at, how it's reported and some examples of what has been found in the Gulf St Vincent program.

The aim of this monitoring program is to look at multiple lines of evidence to assess broad habitat condition (at the scale of tens of kms). The bio-units being monitored were developed in the late 1990s for all coastal areas throughout South Australia.



EPA is looking at broad-scale ambient condition rather than impact assessment – to ascertain background water quality and condition of the environment. Impact assessment is left to industry monitoring programs and specific investigations, which are discussed later.

This program will produce a snapshot of condition at a point in time. The results are compared against a conceptual model, developed in consultation with experts, of what the condition of near shore waters in South Australia should look like.

### The question: Is this condition changing over time?

The program has three tiers.

The first is a desk-top risk assessment, to collate and look at historical information and really define the conceptual model. Is our understanding of this system consistent with our conceptual model - that is, will this area respond as predicted by the model?

We look at biological and ecological processes and develop a **predicted condition**. To do this we look at the risk assessment, threats to water quality in the area and predict what we think the condition will be. For example, we know the Port River Barker Inlet will not be pristine because it has been subjected to more than 200 years of human activity – so it provides a point of reference, or context, to the results.

The second tier consists of field monitoring, again looking at broad scale condition. We look at the evaluation and compare it to the conceptual model of reference condition and that develops our **observed condition** – what we actually found it to be.

Tier two will highlight areas of uncertainty. The program is peer reviewed, the results will be reported via the AECR, and a technical report, which will provide detailed science.

Tier three is a more detailed, finer resolution scientific survey. If the reporting highlights significant uncertainty or large variance from what was predicted, we may do more investigations to work out why it is different, subject to additional funding. That is essentially saying, there is something going on in this area that we don't understand because it doesn't fit within the conceptual model, so we need to work out why. Potentially that could mean there could be some risks or ecological processes in the environment that we don't understand.

The tier three scientific survey may include source detection methods, or we can use different analytical techniques to work out what is causing the change in condition.

The Federal government uses the IMCRA (Integrated Marine and Coastal Regionalisation of Australia) system of ecoregionalisation throughout Australia termed Bioregions—regions with broadly similar habitats. Within each Bioregion are a smaller scale of regionalisation termed biounits, which were delineated by Edyvane in the late 1990's and we are using those smaller spatial units rather than the whole coast, with a few tweaks, for logistical reasons.

Within each bioregion are a number of biounits, which is the level of reporting in our report card. In GSV some are quite large, so a lot of science is needed to get a representative view of what is happening. For example, each site in the Orontes biounit is made up of a series of ten samples. To account for the variability of the marine environment, for each site we take a 50 m underwater video transect looking at the habitat, and water samples from that area. At each site we have a high degree of confidence that what we are seeing is actually there and when we have enough sites in each biounit, we can have a high degree of confidence at that level as well.

Multiple lines of evidence is a methodology that has been used quite extensively and acknowledges that there is no single measure can provide the perfect view of condition – there is no magic index or parameter that will tell us exactly what is going on. Inconsistencies and variability often confound assessments and it has generally been accepted that using a number of measures is the best way to show change over and above natural variability. It also accepts that the system is comprised of biological, chemical and physical attributes, which can all change over different time and space scales. We measure indicators in each compartment (biological, chemical and physical) to gain more detailed understanding of those processes and how they relate to our conceptual model.

There is some evidence from worldwide surveys, including work that has been done in GSV and throughout SA, that the habitats at highest risk of degradation are in close proximity to human activity. Additionally risk assessments within GSV have highlighted significant threats particularly along the metropolitan coast, where habitats have been degraded because of nutrients and poor water quality.

With this in mind the program is limited to locations between 2 -15 metres deep and the habitats in that zone are dominated by seagrass, rocky reef and unvegetated sediment. We have developed conceptual models for those habitats types in response to changes in nutrients and light. What are the processes involved when these parameters change?

The conceptual model for seagrasses would predict that, as you increase nutrients or decrease light,

seagrass cover is likely to reduce and beds may become fragmented, there can be increases in epiphyte loads, (indicating nutrient enrichment) increases in opportunistic macroalgae, and possibly changes to water chemistry and resulting flow-on changes within the ecosystem, including possibly fewer fish and invertebrates. These are therefore the parameters that are measured or assessed.

In reef areas the processes are different but the risk factors are mostly the same – nutrient and sediment. They are likely to change in the amount of large brown canopy algae, and the amount of turfing algae, mussel beds or bare substrates and changes to water chemistry.

Unvegetated sediments are less well understood – particularly in waters less than 15M deep. We know a little more about deeper waters, particularly around aquaculture. This is, however, a gap in our knowledge. Some of the processes that may be happening are bioturbation, a change in the type of epifauna and an increase in the indicators of nutrient enrichment.

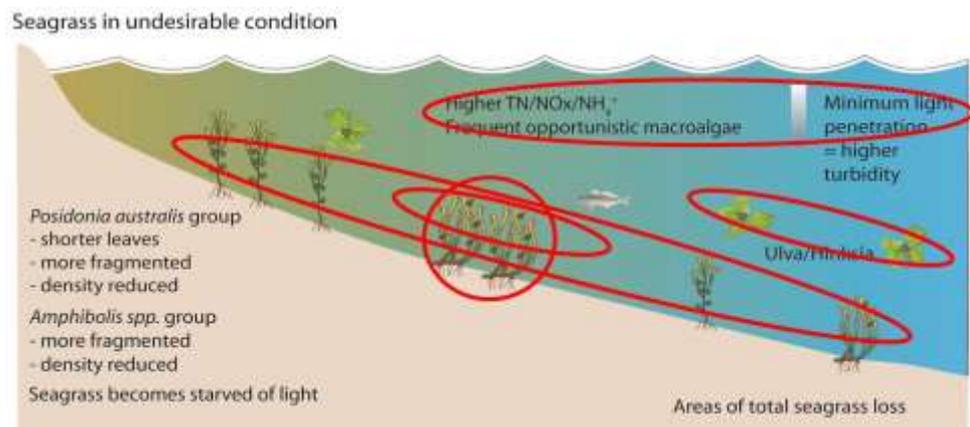
### The Monitoring

Changes in habitats, as well as some of the chemistry indicators, occur over different timescales. Habitats will generally change more slowly, whereas the chemistry can change really quickly.

Changes in some attributes can be transient without affecting the habitat. You can have pulses of nutrients going through a seagrass habitat without it having an effect so we need to take this into account in condition reports by looking at both condition and modifiers to determine if the habitat is potentially under stress.

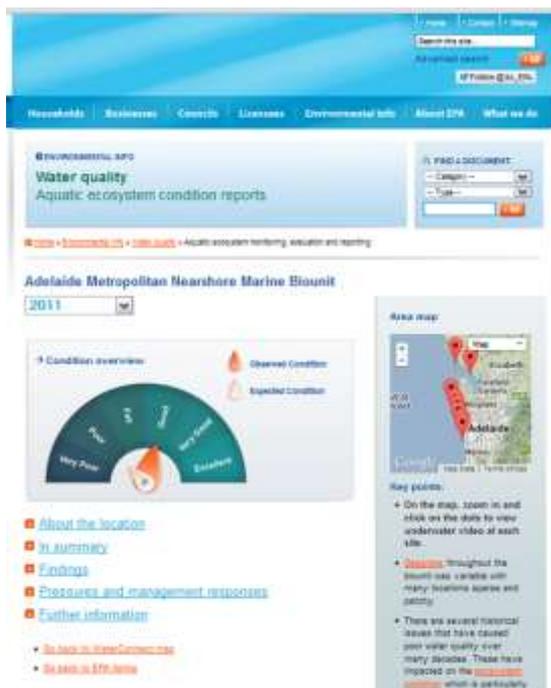
Our results are a snapshot of condition over two seasons. We sample the same sites extensively in autumn and then again in spring to look at season differences over the year.

We only have the resources to sample one bioregion each year so the surveys will cycle



through one of each of the State's bioregions each year, resulting in the survey coming back to the same site every five years. When considering habitat parameters, that's probably about the right amount of time to see a difference in the seagrasses.

Our broad human disturbance gradient has six categories, where the best state is excellent, and with increasing disturbance the condition declines to very poor. The report cards can be seen on the EPA website. Speedo dial shows the condition, between the observed and expected, map of the sites, summary of key findings, all clickable to access more detail. We show pressures and management responses – essentially it's not really effective if we just talk about condition without exploring why – and the causes and the logical response, ie what is being done to fix it for each pressure. There are links to the raw data and the detailed scientific documents, with stats etc, also available. Two minute videos for each location show a representative grab of all ten transects at that site, so that you can actually see what those conditions look like.



The [Waterconnect website](#) is run by DEWNR, who house all of the data, and this map shows the monitoring information. There is a creeks program in inland waters (green), the lower lakes, is shown in light blue, and the marine areas are blue. The map reflects that sampling has been carried out in GSV and Lower Spencer Gulf. We have sampled upper Spencer Gulf but that data hasn't been processed yet, and should be available in May 2014.

## Findings

GSV has now been sampled twice, and the lower Spencer Gulf once. The Yankalilla and Wardang biounits were assessed as poor, and we wouldn't normally have expected these areas to be impacted. Condition was excellent at Tippiara (Wallaroo, Pt Hughes, Moonta) but we found that seagrasses were heavily loaded with epiphytes at Tippiara so they are considered to be under stress. Condition is separated from the modifiers (more transient measures) because although these seagrasses have more epiphytes than what we would consider unaffected by nutrient enrichment, they appear to be able to tolerate the load and survive, as the cover of seagrass is currently excellent.

At inner Moonta for example the location is close to shore and you can see that the epiphytes are different to further offshore. The next step could be to differentiate between epiphyte types to see if there are patterns in the locations.

The Adelaide metro biounit was separated out to reflect different management regimes and levels of risk. We have 10 sites with 200 video transects, and 60 water samples. Broadly, some sites were in good condition and others were totally bare of seagrass, from where we knew there had once been seagrass. A number of locations were affected by excess nutrients and some at times by poor water clarity. From what we know of the gulf that is nothing new. Generally the sites that were particularly good were further out. Those in close were more impacted. Some were particularly affected by turbidity.

The FoGSV Secchi monitoring program has the potential to add value to the condition reports by measuring water clarity at more frequent intervals that what EPA can.

Pressures and management responses in this region (Adelaide Metro biounit) relate largely to:

1. Wastewater treatment plants (Bolivar and Glenelg) that are discharging nutrients. The ACWQIP set targets to reduce nutrients, and SA Water is being encouraged to improve their processes to reduce nutrient discharge and meet their licence compliance requirements.
2. Sediment and coloured runoff from metro stormwater is another risk with set targets. AMLRNRM has a number of programs to improve harvest, treatment and reuse of stormwater, through gross pollutant traps, wetlands etc. This work is ongoing.
3. Dredging is a licensed activity under the Environment Protection Act 1993 and is regulated through conditions on licences requiring suitable management of dredge spoil and discharge water and that monitoring programs are in place.

## Beach Alert system

The EPA with the AMLNRMB have developed an SMS system to notify when the metropolitan coast has potentially impacted water – not necessarily unsafe, but when stormwater drains are discharging, suggesting that there could be areas where water based activities should be avoided for a period of time.

The system provides real time monitoring of bathing water quality – 98% of the time it is fine for swimming. The 2% is about turbidity rather than pathogens. Year round notifications are available via the EPA website.

**Q** *The fish kill earlier in the year was extraordinary, and seemingly due to large warm body of water, with no apparent cause or origin. What is your impression of the event?*

**A** two key points are that occurrences of warmer water are probably due to global warming and they are likely to continue and get worse. The load of nutrients in our near shore waters probably made it worse, so if we can reduce the load it should help with severity.

**Q** Why is Yankalilla biounit so poor?

**A** There are not many sites between Sellicks and Rapid Bay – which affects how representative the sites are, but the northern sites off Christies, Onkaparinga outflows and urban expansion, affect the state of the northern part of the biounit. There is also some uncertainty about amount of seagrass that was in those areas originally due to light monitoring in the past. DEWNR aerial photography, and AMLNRB monitoring, looking at river mouths and seagrass suggests that it is not too bad, but was not included in this reporting.

**Q** Any scope to use volunteers to do more monitoring of those sites, eg Reefwatch?

**A** Potentially it's limited, due to underwater towing of video rather than a dive program. Do use community data to aid interpretation. Went through all of reefwatch monitoring reports to look at Yankalilla biounit. While the program has been designed to be independent, community and other research information is useful for interpretation to get a broader perspective

**Q** Do you use any remote technologies in addition to visual and chemical?

**A** One of the limitations in some of the remote technologies is reflectance off the bottom, and being able to get a clear signature. CSIRO has been working on improving this. We would like to be able to link up between autumn and spring sampling periods using remote sensing satellites (SeaWiifs and MODIS) to look at suspended solids and chlorophyll in between those sampling times. Because a lot of the sites are close to shore, and some of the remote methods are

quite coarse, you need to select grid areas that exclude land from the sampling area, so that would exclude a lot of the near shore sites, but we are looking at it for the future.

**Q** *Dredging is a huge issue for many coastal watchers – they are getting away with poor practices*

**A** EPA has recently got a licence to use NearMaps (a more regular and higher resolution aerial photography website, similar to Google Earth) which we have been using to look at dredge operations. There are a number of things that could be done better with respect to dredging practices, and one of those could be potentially separating sand from dead seagrass as its likely that the dead seagrass contributes to the dark plumes that are sometimes generated. Unfortunately, it is not a simple answer as the sand is needed for beach replenishment and retention in the near shore. For swimming quality, the EPA would prefer that it be moved away from the nearshore zone but all aspects need to be balanced. We acknowledge that there is a lot more work that is needed in this space, and it is starting.

**Q** Has there been any change to the methods/ conditions relating to the O'Sullivan's beach dredging

**A** We have pushed them hard to find a better disposal location. We would prefer the spoil be dumped further offshore, but the Coastal Protection Board wants it retained in the active zone. So again it's a balancing act with all the stakeholders.

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## Infrastructure, Development and South Australia's Gulfs – A Personal View

Tim Kelly outgoing CEO of Conservation Council

As a CE Tim was always struggling to have input into things, and cherished advocacy of groups such as FoGSV to alert CCSA to issues, and depended on scientists, volunteers, supporters and others to keep them in the loop. He doesn't get into the detailed science, but sometimes delves a little more deeply into the policy.

The following issues are of particular concern for our marine environment and common challenges in the Gulfs in particular.

### Industrial development

Among the pressures that CCSA has been seeing is industrial development. Two hundred years of development can't be good for the environment. In new areas of industrial development and human settlement we can expect problems, unless we become remarkably better at what we do. There is no doubt that we can get better, but we probably won't get all the way that we need to protect those environments.

### Port and mining infrastructure support proposals

CCSA made a submission on the Lucky Bay proposal – which they described as ports, ports and more ports, where too many ports are barely enough! That is the situation we are facing currently – particularly in Spencer Gulf.

There is a pretty good argument for some consolidation and integration of ports placement in the best place for the environment and for industry as well.

Port Spencer is 26 km north of Tumby Bay and 1.4 km from the Lipson Island penguin rookery and conservation park. CCSA was very concerned about that because, while penguins are generally believed to be declining, that might be the only place in the state where they are not, because they didn't actually measure what was happening at Lipson Island.

A 515 M jetty is proposed to load cape sized vessels and 20M tonnes pa, but looking to double for magnetite and grain. Then there will be other issues of bringing in pigeons and galahs into this area (and the competition that will create) along with unforeseen consequences. This port was given major project status – a common theme – that these ports have major project status from the govt which helps facilitate getting them approved.

The Cape Hardy project is a 1.6 km jetty, 30M tonnes pa, designed for cape sized vessels and again was given MPS. From what we've seen there were no obvious shorebird breeding sites and it's not up against dunes. We should have an EIS. In risk and constraints this is lagging behind others – Port Bonython and Port Spencer have a real head start, so if this was a place where you would consolidate a port/export facility it has catching up to do.

(All of these facilities will have impacts on whales – one washed up this year near Tumby Bay with blunt head trauma, which typically comes from running into a big boat or large object.)



At Lucky Bay, IronClad plans to cart crushed iron from Wilchery Hill mine to Lucky Bay in road train trucks, then to 70 M long barges for trans-shipment, then loading onto 70K tonne panama export vessels 9km offshore.

Risks and constraints are shorebird breeding nearby, low lying coastal dunes (dune clearance will be required for infrastructure), impacts of barge trans-shipments. It is not a suitable site for large scale expansion to a major consolidated port, and it will impact the local community.

At Port Bonython there some major concerns. One is that it is in the habitat of the slender-billed

thornbill and the other is that the proposed port is over the breeding area for the Northern Spencer Gulf Giant Australian Cuttlefish. There are real concerns about Port Bonython. The port is proposed for 50 M tonnes pa (land zoning could increase this). The site was chosen by the state government based on zoning, without regard to the environment, in determining the location. The current EIS, which has just completed its consultation, said that they didn't consider any alternative location because the state government had already decided the location - which doesn't seem like an ideal way to conduct an EIS.

Flinders Ports won the tender to design and build the port. It will generate 270 new shipping movements (400,000 km of shipping travel per year) to the Upper Spencer Gulf. Risks and constraints include the possibility that a single accident or cumulative impacts could cause the extinction of the cuttlefish, which is currently at very low numbers.

A tide-dependent port creates risks of propeller wash, sediment disturbance, scraping of shoals and shipping congestion. The likelihood of whale strikes is higher with more shipping traffic and the risk of introduced marine pests increases. Rail and port facilities will disturb the habitat of the slender billed thornbill, which is listed as vulnerable (under the Environment Protection and Biodiversity Conservation Act 1999).

The Braemar Bulk Export Project has a floating port with an export loading facility approximately 4km off Myponie Point, north west of Wallaroo. This \$5B project also has MPS. A 385 km slurry pipeline will transport ore, and dewatering will be carried out at sea. The floating processing facility is planned off YP, north of Wallaroo in Upper Spencer Gulf. Of this project Minister Tom Koutsantonis stated "When fully developed the project has the potential to increase the state's exports of iron ore concentrate from 12M to more than 100M tonnes per year." That is huge compared with the other ports.

Risks and constraints are shipping congestion and impacts on the marine environment from escaping slurry, (it has not been made clear in the statements yet how they will dewater the slurry, how they will recycle or use that fluid) disposal of recovered water and new mooring points and/or inadequate mooring points leading to the use of anchors.

Another aspect of this is that the regional mining and infrastructure planning process has looked at the other needs that go with expanded mining. They have identified the need for significant water supply for some of these proposals.

### **Desalination requirements**

DPTI Regional Mining and Infrastructure Plans have identified the need for:

- On-coast desalination plant and transmission to Central Eyre
- On-coast desalination plant and transmission network across Eyre Peninsula
- Southern Eyre Peninsula on-coast desalination plant with SA Water integration (which is not a natural fit because of different treatments required and reluctance to share the same pipeline)
- Transmission of raw seawater and on-site desalination plant/s
- On-coast desalination plant and transmission main to Braemar cluster (shooting it up to Broken hill and getting it back again).

Medium scenario water demand to support mining requirements is an extra 100 GL/a. High scenario water demand is just under 250 GL/a.

Most of our other water sources are proscribed. There are other opportunities to get groundwater from inland, but generally these proposals are suggesting the use of seawater. The State Government, committed through its Water for Good Plan, to deliver a statewide desalination policy, which we believe there is a need for. It is about three years behind schedule.

### **Consequential developments**

Coastal development to support mining brings with it demand for urban settlements with coastal views. We have been calling for infrastructure planning to be integrated with local planning in these areas, because we don't want to see ad hoc sprawl or inappropriate development - unless we are prepared to see our coastlines spoiled.

The questions we need to ask are

Should the relatively unspoilt areas of coastline be subjected to linear coastal settlements and inappropriate development?

Who decides? Is it Local Government or Minister Rau?

Particularly when you have ministerial initiated development plan amendments for some of those projects, some big decisions are being made by the Minister for Planning.

### **Inappropriate Coastal developments**

One that has been brought to our attention is the Murrays Point development at Port Lincoln. It is a really important large piece of native vegetation immediately south of the main township of Port

Lincoln. The development will include a marina, Greg Norman golf course and a housing estate.

Letter from Minister Rau to Council - "Issues of native vegetation clearance within the proposed industrial precinct will however still need to be resolved". It states that he has spoken to the Sustainability, Environment and Conservation Minister about "possible amendments to the Native Vegetation Regulations to resolve the issues".

The wharf precinct is the first stage of the development. Residential, retail and a golf course will follow. This allows them to apply to clear smaller areas of vegetation each time, but eventually resulting in destruction of the entire uncleared area, due to the need for 20 M clearances and fire safety zones.

What's at stake?

**Native Vegetation:** A huge piece of significant coastal vegetation, coastal mallee, heathland, samphire, wetlands to be completely destroyed. Seagrasses – to be destroyed by disturbance and sediment from dredging.

**Planning Integrity:** If rules are again changed to suit business investments, it will have serious repercussions as to how future developments involving land clearing are dealt with in the state. The development plan amendment and planning process is a real challenge at the moment.

**Ending on a more positive note with the Ridley Salt Fields**

*Risks*

- Some bird populations including migratory waders are at risk where the stopping of salt production is likely to reduce brine shrimp
- Increased access by some using off road vehicles or illegally hunting
- DPAs to allow for developments - in some areas that could be OK, but in others it just shouldn't happen.

*Opportunities* - we understand something is being considered

- There is an opportunity for a significant expanded coastal conservation zone – which would be a real benefit for Adelaide
- Funding and collaboration will be required to make any "managed" or reconstructed areas successful

At a recent conference on the saltfields experts discussed what might happen when you change from an artificial ecosystem that produces brine and brine shrimp to something else. It is really quite hard to predict, but there will be winners and losers and there will be change. It is unclear at this stage exactly what the state Government (or a future state Government) will propose.

## Think-Design-Deliver Planning Review

This Expert Panel has been given a very wide remit to review the State's planning system. It will focus on our 20 year old planning legislation, but it will also look at all legislation that intersects with planning, and any other factors that have an impact on the planning system. Tim encourages people to get involved, so that future planning takes community views into consideration and takes us to a more sustainable SA, then we have to articulate that and participate.

At the moment there are so many ministerial-initiated development plan amendments that by the time the planning review is completed its likely there won't be much to do because most changes will already have been made.

<http://thinkdesigndeliver.sa.gov.au>

## Reefwatch Western blue groper surveys 2012-13

Three key findings from the survey are:

- A lack of adults in areas outside of the protection zone including at sites where they had been seen previously
- The 'appearance' of adults at a number of sites inside the protection zone since previous surveys
- Juvenile recruitment at many sites across the entire State, not just in the west of SA

The document is worth a look and it would be great to raise community awareness of the marine environment, and the blue groper is a great species to focus on. If we could bring them back into GSV for the longer term that would be fantastic.

Subsequent to the report, blue groper have been found at the desal plant. If we can create the ecosystem to support the blue groper then other species are likely to come back as well.

[Current status of Western Blue Groper at selected locations in SA: results of 2013 survey and comparison with historical surveys](#)

Tim has been pushing the need for consolidation, particularly under the EIS or public environmental report clauses – whether under state or federal legislation, that request that proponents identify what alternatives have been considered. This is usually just given lip service, but could be strengthened by saying that proposals won't be accepted until a consolidated solution is presented. We are starting to get some traction here, but the CCSA and other groups need to keep demanding this rigour.



## Correspondence from Yorke Peninsula

### Pine Point cliffs at risk

I am concerned about the damage that will be done to a very unique part of our South Australian coast line once a road is built along the top of the cliffs to skirt the proposed Hillside Mine at Pine Point. I believe the colours in the cliffs rival the cliffs of Rainbow Beach in Queensland, which are a tourist attraction for that state. In thinking this, I may be overselling them, but I do not think so. The fact is few people have seen these cliffs for they can only be reached on foot, even though they begin just past the first headland, about 200 metres from the car park. I am anxious to get other opinions.

With so many concerns being raised by locals about the proposed mine, people are overlooking the destruction that will occur to this unique coastal asset. When the tide is in, the little bays with the coloured cliffs behind, provide a beautiful and peaceful beach walk. Unfortunately this will be lost forever next year, once gullies are filled in, tops of cliffs levelled and rubble pushed down the cliff face, in order to build the new main road that will run along the top.

Regretfully I think the mine will go ahead which will be a tragedy for all generations that follow ours. Taking the road inland would however at least be one good thing that could be done for the generations that follow ours.

Enclosed are a few photos I took on my phone at Easter. These photos include a random shot which shows the incredible range of rocks that



are scattered all along the foreshore, another feature of this area.

My hope is that people will take notice of these cliffs before it is too late, and if they agree with me, then action will be taken to see that the road is redirected inland, not along the coast.

**Regards, Bob Hawes**



# Good News for the Gulf

## Underwater & Airborne Technology to help map Gulf Seagrass

### Port River dolphins in new population study

A new study is being undertaken to better understand the population size and behaviours of the Upper Port River dolphins.

The year long study will collect baseline data on the number of dolphins frequenting the Port River and report on their behaviours and other aspects of the habitat that might influence their well-being.

The study, jointly funded by Renewal SA and the City of Port Adelaide Enfield, is being led by Dr Mike Bossley, Science and Education Manager at the Whale & Dolphin Conservation (WDC) who says the Port River dolphins are a precious asset of international significance.

“The ongoing presence of a small subset of these dolphins in the Inner Port area is already a tourist drawcard and it is important to ensure they continue to thrive in the area,” said Dr Bossley.

“With increased activities in the inner harbour the government has wisely decided to fund research to monitor the numbers using the area” he said.

“The Port River estuary is important for the dolphins because it has abundant fish, few predators and it is protected from rough weather. However, the estuary also has numerous hazards the dolphins must deal with including pollution, entanglements, noise and deliberate attacks.”

“As their home, the Port River habitat is critical to dolphin conservation as it provides all the necessities for life.”

Observation stations located at Harts Mill and Birkenhead will be used to collect the data which will provide insight for economic development and tourism initiatives in Port Adelaide.

The study is an important collaboration between government and conservation organisations to understand the Port River dolphin population.

Renewal SA strongly supports the work of WDC and the Adelaide Dolphin Sanctuary in their efforts to better understand the Port River dolphins and is pleased to be able to work with both organisations on this project.

The Port River dolphins are vital to the community, not only a much loved tourist attraction, but also as an important economic driver which attracts more people to be living, working, spending time and investing in the Port.

SA Water will shortly begin the testing phase of a research project to develop more efficient and effective mapping of seagrass in Gulf St Vincent.

The project is a collaboration between the Taiwan-based National Cheng Kung University (NCKU) and Instrument Technology Research Centre (ITRC) and is funded by a \$300,000 international research grant received through the 2012/13 Premier’s Research and Industry Fund.

SA Water’s Senior Manager of Research and Innovation, Mike Burch, says this joint-project will evaluate advanced technology involving an underwater sensor towed behind a boat that can generate a detailed map of the coastal seabed.

During field work over the next year, data will be collected from airborne sensors such as remote-controlled drones and satellites which will help build larger-scale seafloor maps.

This technology is seen as a significant improvement on the traditional mapping method of aerial photography which can be costly and is unable to collect what is referred to as digital hyper-spectral information which provides more accurate and clearer images.

The sensors may also ultimately be used to monitor and manage water quality in both the ocean and in reservoirs.

Minister for Water, Ian Hunter, says data from the mapping will give a clearer picture of the health of the seagrass.

“There’s more than 9,500km<sup>2</sup> of seagrass along South Australia’s coastline, which provides an essential habitat to a wide range of marine species such as fish, crabs and sea urchins,” he says. “It also stabilises the seabed to prevent erosion and sand movement.”

Scientists from NCKU and ITRC will be here from the 5th-9th of May, bringing with them a recently modified sensor and underwater towing platform for testing in an area of Gulf St Vincent.

Further field work on the project is scheduled between July and August this year.

Photo of underwater sensor kindly supplied by Clare Hesketh, SA Water





## SNIPPETS

### Live video feed from NOAA deep sea dives

From May 7 - May 22, NOAA Ship Okeanos Explorer will be mapping along the U.S. East Coast, and streaming seafloor mapping data along the way. Learn more about the expedition and see video feed from the dives on the internet (at <http://oceanexplorer.noaa.gov/okeanos/media/exstream/exstream.html>).

Feel free to send this website to anyone you think may be interested.

### Friends of Gulf St Vincent Website

Have you noticed recent changes on the [FoGSV website](#)? We have a new webmaster – Pam Wales is now contributing her considerable expertise to vamping up the website and making it more interesting and up to date! Of particular are the panels on the home page where you can access recent articles and look at events that are coming up. Please let us know about events to add to the calendar.

### Donation to Friends of Gulf St Vincent

The FoGSV were delighted to receive a donation recently. Jan Portalessi forwarded \$200 — the proceeds of a raffle at the Pt Noarlunga Open Water Swim. Thank you so much, we will endeavour to invest this in our Gulf wisely.

### Life Membership to FoGSV stalwarts

At the AGM we announced that the FoGSV have conferred life membership on Jim Douglas and Andrew Winkler. Jim and Andrew both gave their time, skills and energy to this organisation for many years, and this has been acknowledged gratefully. We were glad to have Jim present to accept his certificate at the AGM, but Andrew unfortunately could not be there. As many of you will know Andrew has been instrumental in working for the preservation of the Torrens Island Quarantine Station, and has now formed the Friends of Torrens Island.

### Coming Events to put in the diary

"Fleurieu Above & Below Marine Festival" to be held at Port Noarlunga (date to be advised)

'Beneath the Waves' Film Festival night during Science Week (in mid-August).

Our Secretary Pam Wales will email Members when dates have been set for these events.

### Update on Tennyson Dunes heritage status

The Minister for the Environment/Sustainability, Water and Aboriginal affairs, Ian Hunter MLC, has announced that he is proceeding to make the Tennyson Dunes a Conservation Reserve under the Crown Lands Act 2009.

The conditions of this dedication will ensure that inappropriate development does not occur in the reserve.

In addition, the management plan to be prepared for this reserve will provide that the Coast Park Path will be diverted around the Tennyson dunes.

### Relevant articles on FoGSV Website

There is a new feature on the home page of our website — Recent Articles.

If you find an item that you think would be of interest, send the link to Pam Wales, ([pamwales@gmail.com](mailto:pamwales@gmail.com)) who will share it via the website.

### Natural History of Gulf St Vincent

Do you have a copy of this excellent publication? At nearly 500 pages it provides outstanding information on our Gulf. For more information see the blurb about it on our website under [Resources](#)

**We welcome contributions from members and others who have something to say about the Gulf!**

