

# NEWSLETTER

No. 2 August 2007

**WELCOME TO THE SEADRAGON FOUNDATION INC.**



**We hope you will enjoy the experience of supporting the sustainable management of the Leafy Seadragon through a new type of environmental organisation. The SFI is an organisation being tailored for the conservation challenges of the 21<sup>st</sup> century.**

Thanks to Eunice and Frits van Emden for giving us the opportunity to meet people at their lovely home at Normanville. The afternoon tea was wonderful and we had four new members join.

If you missed out on this community gathering, we will be having another one in late spring.

**The SFI thanks Karen Whitford for producing and emailing this newsletter**

Many of the images on this newsletter are available on the [www.ifg.bioteck.org](http://www.ifg.bioteck.org) website

## SEADRAGON FOUNDATION REPORT

Robert Browne

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The Seadragon Foundation Inc. (SFI) has fully developed its system for managing its membership and accounts, thanks to Frits our Treasurer and Karen our Secretary. We have implemented systems to comply with both Federal and State privacy laws and within our Management Panel and Public Fund Panel membership information is only given on a need to know basis. Our websites are developing and visits have doubled over the last couple of months.

A highlight of the July period was giving a talk about the SFI to a gathering at Frits and Eunice's place at Normanville. Their hospitality was great and the local people who joined will further our aim to develop a Yankalilla SFI Group.

The SFI encourages public engagement in marine conservation and supports the establishment of conservation diving sites. David Muirhead must be thanked for offering his knowledge and experience toward the development of a close inshore conservation diving site at Normanville.

Divers have a natural caution when telling others of good dive spots. However, David has written us an article for this newsletter that is the first step to the formal recognition of this site (see YANKALILLA BAY CONSERVATION DIVING article below).

Due to family demands Neve Canvese is unable to continue with assisting the development of branding and logos. Special thanks to Neve for the time and effort she has contributed and we give her and her family our best wishes.

### LEAFY SEADRAGON HABITAT THREATENED

*The habitats of the Leafy Seadragon are being threatened by the decimation of western blue groper populations. The western blue groper is a very special and magnificent fish essential to the ecological function of South Australian reefs and their surrounding areas.*

The future of the western blue groper is threatened. There has been talk and reports supporting the protection of the blue groper for 40 years. In response to threats facing the blue groper the SFI engaged a vigorous discussion during the first week of August 2007 with other marine conservation groups. Within the SFI mostly members of the Inshore Fish Group - inc. were intimately involved in this discussion.

There was no doubt by fisheries scientists, divers, conservationists, fishers and others concerned with the sustainable management of our marine resources that the take of blue groper must be greatly reduced.

The SFI explored the possibility of catch and release. However, the high mortality of released fish, their age at maturity, their reproductive strategies, and rate of recruitment finally showed that catch and release of large fish was not a viable option.

Consequently, the SFI is currently supporting the total protection of the blue groper, initially through endorsement of an approach by the Marine Life Society of South Australia (MLSSA) to the South Australian government (see LEAFY SEADRAGON HABITAT THREATENED "Protect the Western Blue Groper" article below).

## WEB NEWS AND MEMBERSHIP NEWS

*Karen Whitford*

Our website [www.seadragonfoundation.org](http://www.seadragonfoundation.org) had 229 visits on average for July.

The websites have been fun to develop, but I am still learning so if there are any budding website designers out there, please don't hesitate to contact me and give me some advice, it would be greatly appreciated, please contact [www.seadragonfoundation@gmail.com](mailto:www.seadragonfoundation@gmail.com)

The [www.seadragonfoundation.org](http://www.seadragonfoundation.org) site still hasn't had its final style established. We are waiting to see how the SFI develops and what its web needs are.

Besides the SFI site we have two sister conservation sites. The [www.ifg.bioteck.org](http://www.ifg.bioteck.org) site is mainly dedicated to southern Australasian Inshore Fish including detailed species profiles of seadragons, seahorses and pipefish. This site had 4200 visits in July. Our other site which was established for amphibian conservation also has information about Ewens Ponds, and a large photo gallery of animals. This site had 2000 visits in July.

Welcome to our first two new international members, Patricia Black from Sweden and Elizabeth Forrest from Tennessee, USA.

Patricia is an Australian citizen who now lives in Sweden. She has a wide experience in theater costume design and choreography and has worked on productions in the Opera House, and now regularly commutes from Sweden, where she teaches, to London as an arts educator. Patricia started in Adelaide and is now one of the top Shibori designers. Shibori is a Japanese term for several methods of dyeing cloth with a pattern by binding, stitching, folding, twisting, or compressing it. Patricia has lectured on Shibori in the USA, South America, Europe and even in the top Shibori school in Japan, the Tama Art University in Tokyo. Patricia has been a board member of the Arts Council of Australia.

Elizabeth lives in Memphis, Tennessee, and has worked with the conservation of tortoises for many years. Elizabeth hopes to further her medical career and is studying with the eventual goal of becoming a doctor. She is captivated with Leafy and Weedy seadragons and other syngnathids and is especially interested in the mythology of seadragons.

**THE SFI NEEDS MORE MEMBERS TO ENGAGE ACTIVITIES LIKE ESTABLISHING FAMILY CONSERVATION DIVE SITES, PROTECT LEAFY SEADRAGON REEF HABITAT, AND TO MAINTAIN AND DEVELOP OF OUR EDUCATION AND WEB RESOURCES.**

After two months we are well toward our goal of 50 members so that we can become a tax exempt environmental charity.

If each current member just recruited one more member we would be there!!

Please help. Membership forms are available on our website.

## PHOTO GALLERY

*Karen Whitford*

We have large photo galleries of fish and South Australian coastal scenery on the Inshore Fish Group [http://www.ifg.bioteck.org/photo\\_gallery.htm](http://www.ifg.bioteck.org/photo_gallery.htm) site and of numerous amphibians and reptiles and other animals. If you have any photos or ideas for the newsletter please let me know and I will add them into the newsletter.



*Grange Jetty. I hope you are all enjoying yourselves and thinking about the long summer days ahead, diving, snorkeling and swimming. Not that winter should stop you from going down to the beach. I go for lots of walk along the beach, usually from Grange and Henley Beach. Recently I have started walking from Semaphore to Largs. It's interesting to see how the foreshore has changed over the years. Image courtesy of Karen Whitford.*

*Emu  
for  
fish*



*Bay, Kangaroo Island. We completed a survey inshore fish of a number of sites on the north coast of Kangaroo Island with the Californian Academy of Science in March 2007. But we didn't survey Emu Bay; wonder what inshore live here? Image courtesy of Karen Whitford.*

The Seadragon Foundation Inc. is not currently having regular meetings.  
However, we will publicise special marine conservation events.

## Climate Change Talk

Prof. B. Brook

**Wednesday 15<sup>th</sup> August 8pm Conservation Centre**

120 Wakefield St. City.

Prof. Barry Brook has been contributing to the Advertiser's "Living Earth" magazine and is the Director of the Research Institute for Climate Change and Sustainability.

This talk is arranged by the Marine Life Society of South Australia.

## YANKALILLA BAY CONSERVATION DIVING

*David Muirhead (Inshore Fish Group)*

Normanville Beach at Yankalilla Bay, South Australia, is home to one of the highest variety of pipefish in the world. These pipefish have proven a bonus for overseas and local conservation divers which have delighted in the experience. There are two species that inhabit the sand flats close inshore. The Brigg's crested pipefish (*Histiogamphelus briggsi*) and the closely related Rhino pipefish (*Histiogamphelus cristatus*). These species are among a number of exciting discoveries by the Seadragon Foundation Inc. members, myself and Kevin Smith, during surveys for new species.



*Brigg's crested pipefish (Histiogamphelus briggsi) was only known as far west as the Robe in the SE of South Australia until they were found at Normanville Beach by David Muirhead and Kevin Smith.*

*The finding of this species in such an accessible location shows how little is known of inshore fish in South Australia.*

*Image courtesy of David Muirhead.*

The Seadragon Foundation Inc. supports the development of a range of conservation experiences based around the seadragons and their other Syngnathid relatives. The close inshore aggregations of pipefish mainly occur during the warmer months an ideal time for even casual diver/beach lover to see these unique creatures.

*This close up of the head of a Brigg's crested pipefish. The calm shallow waters of Normanville are ideal for the photography of a wide variety of pipefish.*

*The head in this photo would be about 2 cm long.*

*Image courtesy of Graham Smith.*



The Syngnathid family includes seadragons, and their cousins the seahorses and pipefish. Pipefish are smaller and less spectacular than their close relatives the leafy seadragon and weedy seadragon. Nevertheless, the delightful and beautiful pipefish are as mysterious and appealing as they are exotic. There is already a substantial community of divers targeting the leafy seadragon and other species at the nearby Rapid Bay jetty.



*The Rhino pipefish (*Histiogamphelus cristatus*) is named because of the very high crest on its snout.*

*The very square snout may be an adaptation to camouflage these pipefish as they mimic broken pieces of strap weed (*Posidonia* sp.).*

*Image courtesy of Graham Smith.*

Seadragon conservation and eco-tourism in the Yankalilla area will benefit by catering to increasingly discerning conservation divers. Yankalilla Bay is remarkable in that timid shore divers and snorklers could hope to see these pipefish live in standing-depth water in sandy areas. These are the very areas preferred by summer recreational paddlers and swimmers. So Yankalilla Bay can offer both the beginner and experienced diver a unique experience.

To those both local to the area and across the world I invite you (?at leisure in a quiet moment?- as if!!) to view a particular page on the Inshore Fish Group's very user-friendly website([ifg.bioteck.org](http://ifg.bioteck.org)). The Inshore Fish Group is a working group within the Seadragon Foundation Inc. Please visit 'Brigg's Crested Pipefish' in the pipefish species list found in the 'Pipefish' section <http://www.ifg.bioteck.org/Fish%20species/Histiogamphelus%20briggsi.htm>

There you will see some images, correctly credited as taken off Normy and featuring Brigg's crested pipefish, which is just one of a surprising variety of pipefish species Kevin Smith and I have sighted and photographed in Yankalilla Bay.



*The spotted pipefish (*Stigmatopora argus*) is one of the most widely distributed and common pipefish species in South Australia.*

*As with all pipefish and other syngnathids the males carry the eggs.*

*The females in common with many pipefish display to the females. In the case of the spotted pipefish the females display by flattening their bodies.*

*Image courtesy of Graham Smith.*

This diving experience at Normanville Beach would augment the Leafy Seadragon Festival experience and would encourage some of the diving interstate and international eco-tourism subset of Leafy Sea Dragon Festival participants make return visits. The Normanville Beach site lends itself so perfectly to public snorkeling/diving etc. and difficulties in access to other sections of the beach make this the ideal diving site.

The Seadragon Foundation Inc. has a mandate to support the sustainable management of the leafy seadragon and its habitat. This includes its syngnathid relatives and other inshore fish. Consequently we will be very concerned with the management of the Normanville diving site. We have been monitoring the site for several years and will continue and improve our monitoring of Normanville Beach.

The sustainable management of the dive site should be overseen by our Yankalilla working group, Yankalilla council community members and other local community groups. If increasing numbers of 'dive guides' or conservation divers visit this site, along with the already large local beach going community and Surf Life Saving Club etc., then the syngnathids themselves will be protected in that any unscrupulous collectors would be seen by passers-by or watchers on the balcony of Surf Life Saving Club etc.

I think that the current kiosk/dining facility could provide Yankalilla District Council an ideal public aquarium facility and marine interpretative center, with a restaurant, as they usually are!. Of course this would have to be coordinated with other local tourism information facilities.

If divers want to observe and photograph non-seadragon Syngnathids including pipefish and maybe seahorses and weedy seadragons - some will have the collector mentality that has driven many like myself to amass more images than we know what to do with, and still we go back in the water eager for more! - then I suspect they will be hard pressed to find a more genial, convenient and accessible site than Normanville.



*Stigmatopora sp.*

*This is a type of pipefish that the Inshore Fish Group and especially Kevin Smith and David Muirhead has been studying for several years. We are currently describing this species and completing a comprehensive study of the pipefishes and other syngnathids of South Australia.*

*Image courtesy of David Muirhead.*

If these early indications are a guide perhaps divers photographic collections and interactive experiences might never reach 'full house' with regard to the Southern Oz pipefish species list.

This is because new endemic inshore species will likely be formally described and hence added to the list on an ongoing basis here in South Australia - as well as Western Australia etc, but South Australia in particular was in the doldrums for decades, with essentially no work done on pipefish identification until recently since the pre-SCUBA era.

Now that public interest in inshore fish has been rekindled by Kevin Smith, Robert Browne, myself and others, the Inshore Fish Group have been finding new types and have just described the Southern Gulf Pipefish *Stigmatopora narinosa* (Browne and Smith 2007, in press). The southern gulf pipefish is the first new pipefish species named in southern Australia for decades. It is also the first confirmed in SA since the early years of last century. The southern gulf pipefish has so far not been seen at Normanville but is found at Seacliff and is common at several popular Yorke Peninsula jetty dive sites. I could go on but if you want to read more on my pet subject the same IFG website has an excellent summary.

More information on the pipefish at Normanville can be found in the Marine Life Society of South Australia August Newsletter. Notes on a Recent Dive (*David Muirhead*)  
<http://www.mlssa.asn.au/>.



*Carrackalinga beach with Normanville Beach in the distance to the north. There are many exciting opportunities for the exploration of marine life on Fleurieu Peninsula, South Australia.*

*Image by Karen Whitford.*

## LEAFY SEADRAGON HABITAT THREATENED

### PROTECT THE WESTERN BLUE GROPER

*Robert Browne*

*The habitats of the Leafy Seadragon are being threatened by the decimation of western blue groper populations. The western blue groper is a very special and magnificent fish essential to the ecological function of South Australian reefs and their surrounding areas.*

*The total protection of the western blue groper must be immediately implemented as recommended by the – South Australian Scalefish Fishery Management Committee - to sustainably manage the largest and most magnificent resident reef fish in South Australia, and our reefs ecology, recreational fishing and eco-tourism.*

South Australia is fortunate to have surviving populations of the western blue groper (*Achoerodus gouldii*). The western blue groper is a giant member of the wrasse family and grows to 1.7 meters and 70 years of age. The western blue groper is the largest reef-dwelling fish, in South Australia, and a slow grower taking 15 years to reach sexual maturity at 55-60 cm, and 70 years to reach a maximum length of 1.7 m. Populations of western blue groper are very susceptible to fishing pressure and the shortest population doubling time is more than 14 years.

For divers, it is a special treat to see a groper swimming slowly and majestically in the water, approaching the diver fearlessly, and then following with disarming curiosity. Whether a fisher or a diver we all like blue groper and want the minimal protection to sustainably manage the species and therefore restore numbers and foster older fish.

We know that blue groper provide ecological balance to the system. Blue groper eat large invertebrates including urchins, both grazing and predatory molluscs, and crustaceans. These invertebrates in turn regulate the large seaweeds and other macroalgae that grow on reefs and thus influence the vegetation and community structure.

For instance the blue groper is a major predator of the spiny sea-urchin. In reef habitats across the globe - when uncontrolled - sea urchins have devastated reefs, leaving sea-urchin barrens devoid of algae. Sea urchin barrens are increasing along the east Tasmanian coasts reducing the productivity of the reefs by 80-90%.

The adults also have a remarkable bite-and-suck behaviour, by which they can dislocate their jaw and open it widely to bite large chunks of the algal mat, suck them into the gaping mouth cavity, and then filter out the tiny crustaceans living in the mat. This manner of feeding is difficult and exhausting, and it may not be only a friendly gesture when a groper takes a piece of abalone or other shellfish from a diver.

Therefore, natural populations of the blue groper are necessary to provide ecological stability to reefs. This then leads to the reefs being able to support and maintain the population of the many fish that aggregate on reefs like Trevally, Snapper, and other bottom feeders.



*A large adult blue groper foraging.*

*Image courtesy of David Muirhead.*

The blue groper is a wrasse. Wrasse are intelligent, inquisitive and active fish and many are brightly coloured with large scales. Many smaller brightly coloured wrasse make delightful aquarium fish. Most wrasse are territorial and many inhabit territories occupied by a family of males and females. Many wrasse that live in families have an interesting method to maximise egg production. Most of the wrasse are females and when the dominant male dies the biggest female changes into a male.

The blue groper has an interesting life history. They spawn in spring and the larvae drift in the ocean for a couple of months then settle in shallow close inshore reefs. These babies feed on tiny mussels scraped from the rocks or on small crustaceans. As they grow to juveniles they brave deeper water of two to three meters depth and are a dull green-grey. The juveniles then change to a uniform pale green and stay in sheltered waters and grow for ten years until they are sub-adults 20-60 cm long. Along open coasts these sub-adults are not abundant and are at densities of one to eight every hundred meters of rocky coastline.

Once large blue gropers were common and the blue groper was abundant in its reef home. However, years of fishing both deliberately and as incidental by catch have reduced their numbers. Marine conservationists have already initiated an educational process to alert concerned fishers to identify and release juvenile blue groper.

In 1971 the blue groper was finally protected in Gulf St Vincent and Spencer Gulf. There is a minimum 60 cm and maximum 100 cm size limit to blue groper. However, blue groper juveniles although protected are still captured by recreational fishers, and blue groper numbers are almost certainly less than they once were. Even though concerned for blue groper conservation, many fishers do not recognize that the small greenish "rock cod" that they have caught is in fact a juvenile blue groper. On southern Yorke Peninsula, where adult blue groper were once common they are now rare.

As sub-adults mature they change to a beautiful blue, the females being somewhat more greenish than males. They move to deeper water feeding on crabs, molluscs, sea-urchins, and worms and might even move offshore to deeper reefs of 30-50 m.



*A juvenile blue groper.  
Juveniles blue groper are first seen at 5-10 cm size, and are called juveniles to a length of 20 cm when they are aged about two years old, they then sub-adults from 20-60 cm length with an age range from 2-15 yrs. Please release any blue groper you accidentally capture.*

*Image courtesy of David Muirhead.*

The blue groper lives in small families of a mature male and female and some sub-adults occupying a home range over several thousand square meters. Males fiercely combat for their territories but their valor is not protection against modern fishing methods. Mostly the groper is a gentle creature and swims placidly over its territory, occasionally diving to the bottom to roll over boulders in search of small crabs, sea-urchins or molluscs.

When fishing for wrasse the large dominant males, if there are any left, are often the first caught. Blue gropers are large fish and do not handle catch-and-release well, particularly when large specimens are hauled up from depths. Large males that may dominate a particular territory – even if they survive – would have their reproductive potential compromised. So a male blue groper caught even if released is effectively worse than a dead fish; he is probably incompetent and preventing the dominant female from taking his place.



*A blue throated wrasse. This species is related to the blue groper.*

*Image courtesy of David Muirhead.*

There are an increasing number of charter boats that are working the offshore islands. The Charter boat fishery is able to take an increasingly large number of people to these sites, and catch and release would inevitably damage the blue groper population. There is also increasing pressure on southern blue morwong, redfish, boarfish and other large reef fish. However, the sustainable management of offshore reef charters is dependent on the total protection of the blue groper.

There have been many attempts over the last 40 years to protect the blue groper, beginning in the 60's with Dr Scoresby Shepherd— order of Australia 2007 - and other early divers, then by SCUBA divers associations in the 70s and 80s, and by individual attempts since then. In 2005 it was recommended to the South Australian Dept of Primary Industry and Resources that the blue groper be protected under the Fisheries Act, but this has not occurred.

During the 1960s the new sport of spear fishing became popular. At this stage even later marine conservationists like Rod Taylor and Jacques Cousteau loved spearing trophy fish. Along with many other large resident fish across the world the blue groper – who would swim up to divers - were decimated. Of course spear fishing divers would usually target the largest fish.

Divers and fishers target the blue groper, a trophy, a prize; take a photo and show people. Nowadays many would rather see blue goppers common again, to know that they are there, that there is a world where big blue goppers swim close to their original numbers and size. There used to be places accessible to the public where you could feed blue goppers on the rocks. Blue goppers look like grey ghosts rising from the depths then slowly assume shape, colour and texture as they reach the surface.

The total protection of the blue groper must occur now to protect both the largest and most magnificent reef fish in South Australia, to protect our reefs ecosystem for the sustainable management of reef fishing, and to provide for diving eco-tourism.

The recreational sector is very important to the people of South Australia and spends \$419,000 every day of the year in pursuit of recreational angling, is the fifth largest employer supporting 15,000 jobs and has a total investment in excess of \$1.2 billion in boats and tackle.

South Australian Recreational Fisheries Advisory Council (SARFAC) is a prescribed peak body recognized in Government Fishery Regulations, whose role is to advise government on recreational angling issues and to advocate on behalf of the 427,000 recreational anglers that fish in South Australia.

SARFAC co-manages South Australia's fisheries with government, the commercial sector and community and co-ordinates eight government regional recreational fisheries committees.

The adequate implementation of the full protection of the blue groper will require the support of recreational fishers.

Acknowledgements: This article is based on many years of work by Dr Scoresby Shepherd, South Australia, Reef Watch, MLSSA and many others that treasure the unique marine life of South Australia.