

# Southern Oceans Seabird Study Association Inc.

" Wildlife Research "

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Lindsay & Janice

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ISSUE No. 10

Editor: Lindsay E. Smith

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| <b>EDITORIAL</b> |
|------------------|

SOSSA is growing!. A warm welcome to all new members that have joined the ranks. It is indeed **encouraging to see more and more people giving support.**

Initially we thought that we may attract a few hardy soles, interested in the natural history of our oceans and coasts. Perhaps we could encourage maybe 40 or 50 people from around the country to keep in touch. Perhaps share their experiences through a little newsletter. Just a few short notes, nothing too scientific, something that may stimulate the interest of the average naturalist interested in what is happening around them. A forum where they could ask questions or offer advise on a variety of subjects concerned with the natural world.

Our first newsletter was produced in July 1993 by the New South Wales Albatross Study Group. It was only 35 years in the making, but it did have 4 Pages. It was basically a call for information on the Giant Cuttlefish (*Sepia apama*).

Back in those days the NSWASG had a handful of members and worked mainly with catching and tagging Wandering Albatrosses and the occasional trip to the Five Islands to band Little Penguins and Shearwaters. In that newsletter we reported that we were attempting to catch Black-browed Albatrosses and had met with little success, a sum total of TWO plus One Southern Giant Petrel!!!, Great stuff!!.

Today we produce over 400 newsletters and send them to 13 countries around the world. We are still studying Cuttlefish and in the last two years we have captured and banded over 450 Mollymawks, including Black-browed, Yellow-nosed and Shy Albatrosses. Not to mention lots of Giant Petrels, Penguins, Shearwaters and other seabirds.

In conjunction with other groups we study the movements of Wandering Albatrosses around the globe, using state of the art satellite technology.

NONE of this would have been possible without the dedication and assistance of YOU our members to YOU, I say thank you, take a bow for a JOB WELL DONE!.

Keep up the good work there's a great deal more to be done.

Lindsay E. Smith  
Editor

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|--|
| <b>FIVE ISLANDS REPORT</b><br>Summer 1995-96 L.E Smith |
|--|

As stated in our last newsletter the season on the Five Islands was a very successful one, with many new birds being banded and several re-traps of birds banded previously. The season started off well with good numbers of birds returning to breed. This initial influx was however to be short lived as few birds remained to breed successfully. The reason for this diminished breeding success could possibly be tied to the huge Pilchard die-off which occurred earlier in the season, perhaps due to the shortage of food many birds abandoned their breeding attempts.

Many of the Wedge-tailed Shearwaters continued to excavate burrows as late as February, though these were occupied mainly by birds that were undergoing partial body moult, possibly failed breeders.

The Little penguins fared somewhat better, though most breeding pairs were successful in rearing only one young to fledgling age instead of the usual two. The chicks which

managed to fledge before mid February were of a good weight, in the order of 1200 grams. Chicks which fledged later were very much lighter indeed, generally below 700 grams. Downy young with weights as low as 360 grams being found washed up alive on local beaches. Unfortunately many of these failed to respond to care and died.

The good news for the Five Islands Project is that we now have a few more trainee banders to help with the field work. Congratulations to all who were successful in getting their permits, I am looking forward to another successful year on the Islands next season.

Many thanks to Steve Popple and members of his staff at the Wollongong Botanical Gardens. Steve and his crew have been busy propagating cuttings of plant material from the islands in order to revegetate small sample plots, part of a pilot study for a possible longer term regeneration program for the Five Islands.

During the Clean up Australia campaign Michael Jarman, Rob Webb and myself removed five 350 litre bags of rubbish from the Five Islands. The majority of which was plastic bottles, with an assortment of other odds and ends including fishing floats, net, broken surfboards and shoes etc. Thanks lads it was a great effort!

## THE PENGUIN PARADE

by Bronwyn Jarman  
W.I.R.E.S.

I have never been able to eat fish, simply because I can't bear the smell. However since I have been rehabilitating Little Penguins, my back yard positively reeks of fish and my hands seem to have a faint fishy smell no matter how much I scrub them.

It is well worth the discomfort when you see these marvellous little birds toddle down the beach and swim strongly off towards the islands, after coming in often reduced to skin and bone and unable to stand.

It sometimes takes months before they can be released, especially if I get trapped with one just prior to moult.

One of the more pleasant tasks is when they are strong enough, taking them to Towradgi toddlers pool and letting them have a swim. I am sure they sense the water as we approach as they get quite excited. The very sick ones won't go in. I just put them on the steps and they just stand there. When their condition picks up a bit more they will jump in and have a swim.

If you have not seen a Penguin swim, then you are really missing something. They are truly in their element. Their joy at being in the water is obvious to all who gather to watch them. It is for me a great time to unwind after a hard day at work. Just sitting there in the fresh air watching these little ones rolling over on their backs, diving, swimming the length submerged and bobbing up like corks in the most unexpected spots in the pool.

At first they might only last 5 or 10 minutes the swim to the steps and "ask" to be lifted out!!!!. Eventually they extend their time and when I have to enter the water, chase them up and down the pool, and recruit onlookers to help me catch them, I know they are ready to leave.

When Penguin season ends, I really miss them waddling up to the kitchen door begging for their fish. I miss the pleasant evenings spent watching their antics in the water. Now my lawns start to recover. The brown burnt patches begin to green over. The lingering fishy odour dissipates, until next year when we start all over again.

## CUTTLE FISH

In our rush to get the last Newsletter No 9 out, a slight oversight was made. Though it appears to have been picked up by only one member. (Neil Johnston) Thank you "Johnno", for noticing that we had not included the **Cuttlebone Description Sheet**. Please note that we have included it along with this draft of the Giant Cuttlefish *Sepia apama*, for comment. Ed.

## "SHORE LINES"

### Beach Washed Turtle at Corrimal Beach

May 4th 1996

After a call from Bronwyn Jarman, (see Penguin Parade), advising us that a large sea-turtle had been found washed up on Corrimal beach. Captain Carl Loves went to inspect it for us in the pouring rain. It was quite dead and he suggested we collect it, as it was still relatively intact. Boy, did it smell!!!.

We contacted our favourite taxidermist "Damien" and he came straight down the following morning to retrieve it. The specimen was tentatively identified as a Hawksbill Turtle. Though it was too far gone to make into a mounted specimen. Damien will assemble it as a skeleton.

The cause of death was not determined. However, an autopsy revealed that it did not die from the ingesting of a "Plastic Bag" or Balloon, as is often the case!. Nor did it show any indication of being injured in anyway. We can only hope that it died of natural causes possibly, old age.

It is very rare to see this species so far south, as it usually occurs in North Queensland and has possibly come down the coast with the East Australian Currents.

## SEABIRD SIGHTINGS SHEET IS ATTACHED AT THE BACK

Unfortunately the Brisbane boat trip seabird report is limited to April only due to cyclonic conditions.

## MARINE HABITAT REPORT

MARCH 1996 - Tony Ashby

### A MAJOR SEABIRD EVENT OFF THE COAST BETWEEN BALLINA AND THE GOLD COAST SEAWAY

In February an event of considerable importance for local seabird watchers occurred off the coast between Ballina and the Gold Coast Seaway. This event was the appearance in the area of thousands of seabirds of various species some of which are considered to be uncommon. It would appear that the coming together of these seabirds was associated with the presence of large schools of Engraulids a member of the Anchovy family that collect in large accumulations of 4 or 5 species grouping together by size rather than species.

Little is known about the make-up and movements of these schools commonly referred to as baitfish other than that they are an important resource for marine predators. It is thought by officers of The Southern Fisheries Centre that these schools are part of a mass of migratory movement at this time of the year. It appears from recent observations that the schools are

either existing in the local estuaries of The Tweed, The Broadwater and The Richmond or using them as a sanctuary against the veritable hordes of predators present. It would also appear that the movement of these Baitfish is associated with the ebb and flow of the local rivers and the relationship of these streams of water with the East Australian Current. It is also obvious that strong post cyclonic winds that commonly occur at this time of the year affect both fish and birds.

The birds observed other than for a small number of exceptions were either Shearwaters or Terns and on some days maybe 1000+ birds were present off the Tweed entrance alone. The majority of Shearwaters were Wedge-tailed with small but at times significant numbers of Streaked, Buller's, Flesh-footed and Fluttering types. For the Terns, Crested Terns were the most abundant but there were also large numbers of Common Terns and small numbers of Little Terns and Common Noddy. Arctic Jaegers were observed in small numbers at all locations with Pomarines also appearing at Ballina. At Point Danger above the entrance of the Tweed River a magnificent White-tailed Tropic bird soared around the point at times only a matter of a few metres above the observers. A visit was made to Fingal Head which is adjacent to Cook Island and it was apparent that considerable numbers of Crested Tern were breeding and had chicks as there was a continual stream of adult birds flying to the island with baitfish in their bills. It was estimated that there was some 5000 to 7000 Terns around the island with numerous graceful mating flights observed also Terns sitting on the ocean which is an uncommon sight. A small flock of immature Tropic Birds gliding and riding the up-draft at Point Danger in company with a lone Gannet were observed in the late afternoon of the 16/03/96.

In Ballina, John Izzard who was first to notice the occurrence of the event, made some quite spectacular observations including 105 Streaked Shearwaters in one sitting, 100+ Jaegers including both Arctic and Pomarine. Also observed were the same species of birds seen off the Tweed and the Gold Coast Seaway. John had similar spectacular observations at the same time in 1995 and is of the opinion these appearances are associated with cyclonic wind patterns particularly with an easterly component. It is my personal opinion that baitfish movements around the entrance to the Richmond river are also a consideration in the appearance of seabirds off Ballina as these fish are often at the mercy of the wind for short periods just as the birds are.

It is obvious that these schools of baitfish are of extreme importance to the seabirds that turn up off the coast at this time, probably every year and possibly in tens of thousands. The Crested Tern colony on Cook Island is dependant on this resource and it would be thought that it could not survive without the regular event occurring nearby. At the same time the seabird observations were made, it was also noted that Dolphins and pelagic fish such as Tuna were present in large numbers. With just one years set of observations it is apparent that any exploration of the baitfish schools could have deleterious effects on the association of seabirds, Dolphins and predatory fish supported by this resource.

Next year The Brisbane Seabird Group will be prepared for this event and will attempt to make observations of baitfish movements and abundance as well as identifying species. We hope we can supply information to the Southern Fisheries Centre and in particular to Adam Butcher who is the Centres baitfish expert and supplied general information for the preparation of this article.

#### OBSERVERS:

|                            |  |
|----------------------------|--|
| Gold Coast Seaway          | Tony Ashby, Les Dick.  |
| Point Danger / Tweed Heads | Paul Walbridge, Tony Ashby, Andrew Stafford, Tom Tarrant, Sandra Harding, David Milton, Graham Palmer, Hans & Judy Best, Mike Mathieson, Les Dick, Keith Smith, Joyce Harding, Joanna Morgan, Fred Ambrust, Ron Dowling & Gold Coast Bird Group. |
| Fingal Head                | Paul Walbridge, Tony Ashby, Andrew Stafford, Tom Tarrant.  |
| Ballina                    | John Izzard.   |

## SANDRA " K "

### SEABIRD WATCHERS BOAT TRIP DATES ARE:

SUNDAY: 26th May 96 - 23rd June 96 - 28th July 96 - 25th August 96.

COST: \$ 45.00 PER PERSON

### Captain Carls Bit

**Whales (cetaceans fish birds etc). Boat trips, other than organised bird watching trips**  
Carl at PO. Box 148 Fairy Meadow NSW. 2519 or Mobile Ph: -018-423 555

#### 1st April 1996

Lindsay had a great day out with Carl and a team of game fisher-persons who had a successful day. One chap caught a Striped Marlin of 110+ Kilo's - Lindsay was a little disappointed as he was just starting to have a little kip and they woke him to watch the fight.

The Tuna tagged was tagged and released. Carl is with the Tag and Release program. Several Striped Tuna and Dolphin fish were also caught for the day.

Lindsay managed to catch and band 13 Great-winged Petrels (*Pterodroma macroptera*), New Zealand form. This is the most Great winged Petrels that we have caught and banded at sea since starting the seabird banding project.

Several small pods of Dolphins were also sighted, these included Common, Bottle-nosed and Risso's Dolphins.

So every one returned home tired but all quite pleased with the events of the day.

11th March 96 while out on a game fishing expedition another sighting of interest was a Grey Ternlet was spotted out on the shelf which is approximately 30 kilometres out to sea.

## News From New Zealand

### Antipodes Island Expedition Report 1994

Jacinda Amey, Gus McAllister and Gerry Clarke have completed their report on the 1994 Expedition to the Antipodes Islands. Congratulations to all involved in the expedition for a job well done. The report is very well produced and reflects the incredible amount of work achieved by the members of the expedition. Their work has added greatly to our knowledge of the Antipodes Albatross (*Diomedea exulans antipodensis*).

P.S. A little bird told me that Kath Walker and Graeme Elliott, (N.Z. Dept. of Conservation) returned to the Antipodes this season and we look forward to hearing from them. Ed.

## Seabird Watching

The seabirds of the world remain one of the last frontiers in our understanding of the birds of the world. Much is to be learned of their distribution and movements at sea. There are several ways in which much data can be obtained including banding, satellite tracking, conducting regular boat trips in a given location, collecting beach washed derelicts sea watching from headlands and at sea observation.

All of these methods are useful tools in helping us to determine the distribution and movements of seabirds, however each of these methods have certain limitations. To gain a better prospective or understanding of the seabird distribution and movements we need to utilise as many of these tools that are available to us. Much of our present knowledge of sea birds is based on the collection of data from all of the above methods.

### **Banding or Ringing:**

The banding or ringing of sea birds is usually conducted on the breeding grounds where known. This is a great way to find out the age of a given individual, particularly when the birds are banded as chicks. It also allows us to determine whether the parents mate for life or only for that season. It is useful in determining the origins of birds found away from the banding site. Some of the problems associated with banding include access to breeding grounds, many of these are situated in areas that are not readily accessible on a regular basis, such as many of the sub-antarctic islands. Access can also be difficult on many of the less remote breeding sites, often it is not possible to land a craft on many of these breeding sites due to the nature of the Islands, Stacks, Cliffs etc, combined with prevailing sea conditions make the banding of seabirds problematical and dangerous. In addition to this the mortality rate among young seabirds is often quite high, many of those chicks that are banded will die in their first year at sea, resulting in less birds returning to the breeding grounds, although the mortality rate is less as the birds grow older, many seabirds do not reach breeding age for several years and are therefore unlikely to be encountered on the breeding grounds for many years. In reality other than those unfortunate enough to die close to shore and be picked up by some enthusiastic beach comber there is little that can be learned of their movements.

### **Satellite Tracking:**

Though some success has been achieved using this state of the art tracking. There are several major drawbacks involved, not the least is the expense. (The tracking of a single Wandering Albatross for 4 months is in the vicinity of \$5000). Though much real time data can be obtained using this method, it can only effectively be conducted on Albatrosses, Large Penguins and large Petrels, due to the present size and weight of the PTT (Platform Terminal Transmitters) 80-100 grams. The method of attachment of PTT's is still problematical, the PTT's are either glued to the feathers on the birds back, or for short term attachment up to 14 days attached to the feathers using waterproof tape.

### **Collecting Beach-Washed Specimens:**

Collecting beach-washed seabirds has given us an insight into the movements of some species, though most beach-washed records come from the more populated areas and usually. These are collected after severe storms or unusual weather conditions usually associated with cyclones etc, where the birds collected may well have been blown well away from their usual distribution and are suffering exhaustion. There are many cases of seabirds being recorded far inland. In addition to this there are very few dedicated beachcombers that are interested in picking up the decaying corpses of the birds.

### **Sea Watching From Headlands:**

Watching seabirds from headland can be an enjoyable pastime, if the weather is good. However, there are few people who are dedicated enough to sit for hours on a windswept headland peering out to sea in the hope that they may see some rarity come close enough for them to identify. In any case many seabirds are pelagic by nature and seldom if ever venture close inshore when away from their breeding grounds, so the possibility of seeing them from shore is unlikely.

### **Pelagic Boat Trips:**

Pelagic boat trips are amongst the best ways to observe seabirds in their natural environment. Many seabirds are attracted to boats, especially fishing trawlers. The birds can be attracted to the boat by throwing food overboard, (Chumming). Once a crowd of birds is attracted to the boat, it in turn attracts the attention of many other birds often from a long way away. By bringing the birds to the boat it is possible to more easily identify them, usually there are several other people on the boat that are familiar with many of the more common species. These expert observers will usually assist the new chum in identifying those birds that come to the boat and

will help with advice on what key characteristics to look for in order to confirm the birds identity. Some boat trips will supply a list of species that have been recorded on past trips and in what months they have been recorded. This will enable you to study up on those species that you are likely to encounter on your trip. Remember it is far easier to study up on say 20 species than it is to study all those species that may have been previously recorded for the area in which you currently are. This list will include many species that may be seasonal or rarely recorded. This list will prove invaluable in helping you sort out what to look out for. By coming along on a boat trip you will not only add to your knowledge of seabirds and hopefully see some new ones, you will be assisting us all in understanding the seasonal movements of seabirds through the region and the number of birds that rely on this region as food resource for the breeding season or the non breeding season whichever is the case. We would like to thank you for your support and wish you a GREAT TRIP.

### Welcome To The Wollongong Boat Trip:

The Wollongong boat trip has been in operation since 1984. It was originally organised by David Fischer to take interested birdwatchers out to the continental shelf which lies approximately 30 Kims off shore. The shelf break is an important feeding area for many pelagic seabirds including Petrels and Albatrosses.

During the past 11 years the Wollongong boat trip has built up an International reputation as the place to go to see seabirds in Australia. Indeed many people come to Wollongong from all over the world just to go to sea on the Sandra K. The Wollongong Boat Trips are amongst the most reliable boat trips anywhere in the world. It is rare indeed for the boat trip to be cancelled due to weather conditions.

## LETTERS TO THE EDITOR

Dear Lindsay,

The recently published Report on the Australian Bird and Bat Banding Scheme, 1984-95 reports the recapture of a Black-headed Gull (*Larus ridibundus*), at sea off Bellambi NSW 34 20' S 151 00 E on August 11th 1994 by H. Battam. Band No CM0-02930 Banding place DIANCHI LAKE YUNNAN PROVINCE CHINA 25 00'N 102 42'E.

As you and Harry Battam often work together catching Albatrosses at sea off Bellambi, perhaps you may be able to shed further light on the above encounter?.

Kind regards

Sheila. B. Wright

Rocky Point. NSW.

Dear Sheila

I too was amazed to read the above account of the Black-headed Gull off Bellambi NSW, on August 11th 1994. Indeed, Harry Battam and I were working together catching Wandering Albatrosses off Bellambi on August 3rd 1994. On this day Harry and I captured a juvenile Southern Giant Petrel (*Macronectes giganteus*) fitted with an unusual band. The inscription on the band, was not immediately discernible, however the number was, and read MO-02930. As the origin of the band was not known, it was replaced with an ABBBS band No 131-85923. The foreign band was sent to the ABBBS for identification. I suspect that there has been an error in identification of the band, perhaps it lost something in the translation!.

Both Harry and myself are certain that the bird in question was indeed a juvenile Southern Giant Petrel.

Hope that this information is of some assistance. Ed.

P.S We have since captured 2 juvenile Southern Giant Petrels fitted with Polish Bands, off Bellambi.



**1996-1997 MEMBERSHIP FEES DUE 1ST JULY 96**  
 (It is a yellow one this year so look for it please)

**NEW MEMBERS**  
**96-97 new additional memberships only**

Roland Seitre (France) has joined for-3 years. Illawarra Bird Observers Club-(IBOC).  
 Lesryk Consultants, Illawarra Senior College, Angela Russell.

***NEXT NEWSLETTER SHOULD BE OUT IN AUGUST 96 ?***

Till then Keep Well & Be Happy.

If you have something to add to the newsletter, then please post or fax it. Better still on disk using Word for Windows (I will return your disk), this would save Janice lots of typing. 😊

**\*\*\*\*\*NEXT SOSSA MEETING\*\*\*\*\***

**AGM - Annual General Meeting**

**Saturday 22nd JUNE 96**

Held At SOSSA HQ

7.30 pm at 10 Jenkins Street, Unanderra NSW.

**We will provide Tea, Coffee & Biscuits.**

**(If you want alcohol for after the meeting then please bring it with you).**

**ENCLOSED**

**96-97 MEMBERSHIP FROM - (The Yellow one.)**

**AGM - PROXY FORM (on the back, please complete, cut off and return).**

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" Wildlife Research "

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Phone: Lindsay & Janice 042-716004 or Mobile: 018-603007  
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## ANNUAL GENERAL MEETING

Saturday 22nd June 1996

MEETING: 7. 30 pm

Held at: 10 Jenkins St. , Unanderra NSW.

ALL COMMITTEE: APOLOGIES MUST BE MADE IF NOT ATTENDING MEETING BY CONTACTING Janice/Lindsay/Harry or Fax. THEIR APOLOGY WILL BE ADDED IN NEXT MINUTES.

### AGENDA

THIS IS 21 DAYS NOTICE OF AGM

### CURRENTLY IN OFFICE

PRESIDENT: Harry Battam  
SECRETARY: Janice Jenkin-Smith  
ASSISTANT SECRETARY: Rob Webb  
TREASURER: John Boness  
PUBLICITY OFFICER: Lindsay Smith

A PROXY FORM IS ATTACHED FOR YOUR VOTE AND NOMINATION OF AND ELECTIONS OF POSITIONS

COFFEE, TEA AND BISCUITS ARE PROVIDED. IF YOU WISH TO HAVE OTHER THEN PLEASE BRING OTHER.

### FORM OF APPOINTMENT OF PROXY

Rule 35. 2

I, \_\_\_\_\_ of \_\_\_\_\_  
FULL NAME ADDRESS

being a member of: Southern Oceans Seabird Study Association Inc.  
NAME OF ASSOCIATION

hereby appoint \_\_\_\_\_ of \_\_\_\_\_  
(FULL NAME OF PROXY) (ADDRESS)

being a member of the association, as my proxy to vote for me on my behalf at the general meeting of the association (annual general meeting or special general meeting, or as the case may be;

held on Twenty Second day of June 1996.  
and at any adjoumment of that meeting.

\*\*\*\*My proxy is authorised to vote in favour of/against  
(Delete as appropriate) the resolution (Insert details).

\*\*\*\*To be inserted if desired.

\_\_\_\_\_  
Signature of member appointing proxy

NOTE: A proxy vote may not be given to a person who is not a member of the association.

## CUTTLEFISH BONE - DESCRIPTIONS

Dear Cuttlefish survey participants

We are sorry that it has taken so long to get back to you with any useful information on the identification of Cuttlefish bones. The truth is that it has NOT been put into the TOO HARD basket. Though at times we think that it should be. So please bear with us as we work through it.

We have tried to present some basic sketches that look somewhat remotely like the Cuttle bones that we have. We have encountered more than a few problems in attempting to present them. Not the least is due to a pretty poor artist, (Lindsay).

### Introduction:

**SEPIA Sp.** In order to attempt to describe the Cuttlebone (*Sepion*) it is necessary to describe the make up of the Sepion. Ref to Figure 1.

The names of the parts are the standard names as used by the scientific community.

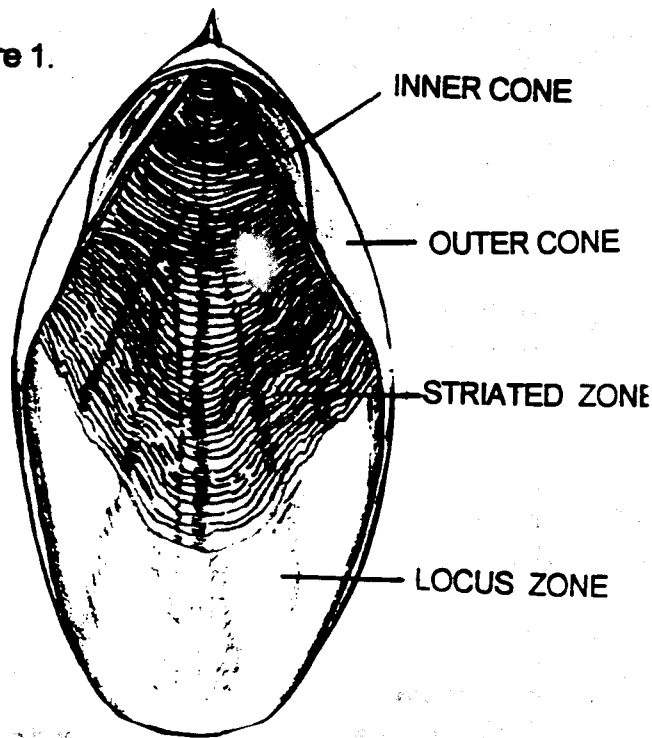
Dr C.C. Lu of the Museum of Victoria, has kindly supplied some detailed descriptions of some specimens from his as yet unpublished work on cuttlefish.

We thank Dr Lu for this information, however we feel that these descriptions, whilst being technically correct are of great value to scientists working in the field and familiar with the technical jargon which leaves us mere lay people somewhat bewildered.

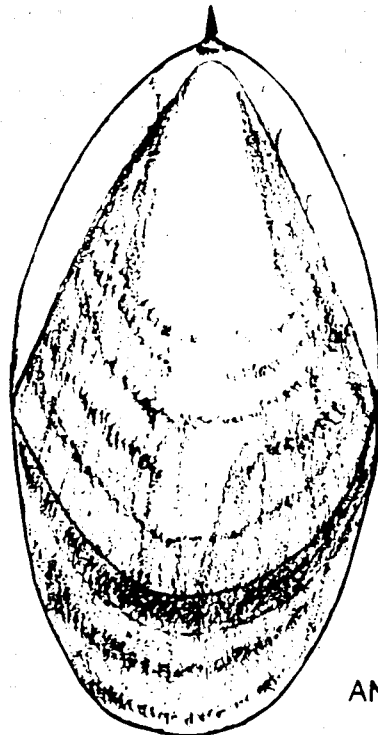
We hopefully can describe them in more simple terms. Any specimens that you are unable to identify from the guide should be sent to SOSSA and we will confirm their identity for you. Though this may take some time depending on the species.

POSTERIOR END

Figure 1.



VENTRAL SURFACE



ANTERIOR END

DORSAL SURFACE

**Cuttlefish Information sheet No 2**  
**Giant Cuttlefish (*Sepia apama*)**

**SEPIA APAMA**

*Sepia apama* is the common cuttlefish off Southern Coast of Australia.

**General Description**

Typically elliptical in shape, generally one third as wide as it is long. This is the largest species found in Australian coastal waters. The largest sepions from this species collected during our study, is 535 mm x 185mm. Whole Animals collected with sepions of this size have a weight of 15-17 Kilograms.

**Note:** Animals from further south and west appear to be generally smaller on average.

**Outer Cone**

The outer cone of this species is very large and prominent occupying approximately 25% of the total length of the sepion. In very large specimens it may be very thick, as much as 25mm towards the posterior end. It is unlikely that mature specimens of this species would be mistaken for any other species.

**Posterior spike**

The spike is usually short and blunt and is present only in smaller animals. The outer cone thickens and becomes elongated, the spike disappears in larger animals.

**Inner Cone**

The inner cone is very prominent, extending to occupy approximately 30% of the outer cone.

A distinctive ridge appears at the junction of the inner cone and the striated zone.

**Dorsal Surface**

The Dorsal surface is generally off white, or pinkish with bluish-grey bands appearing in the surface, these bands follow the curve of the sepion. The dorsal surface is slightly granulated in texture and has no definite keel, being more or less a continuous smooth curve across the entire surface.

**Ventral Surface.**

The striated zone of the ventral surface extends to occupy approximately 40% of the total length of the sepion. A series of shallow grooves radiate across the striated zone from the posterior end of the sepion.

The locus zone occupies approximately 50% of the ventral surface and has a wide, shallow groove in the centre.

**Sexes**

Females tend to be smaller than Males with the outer cone being more extensive, wider and flaring more. The general shape being more oval than males, which appear more elongated.

**Habitat and range**

Coastal waters from Brisbane, south to the northern coastal regions of Tasmania, extending through Bass strait, west to Western Australia, north to the Houtman Abrolhos.

*Sepia apama* is an inhabitant of shallow reefs and rocky headlands to 45 Fathoms. Appears to move into shallower waters to breed, usually less than 20 fathoms.

**Spawning**

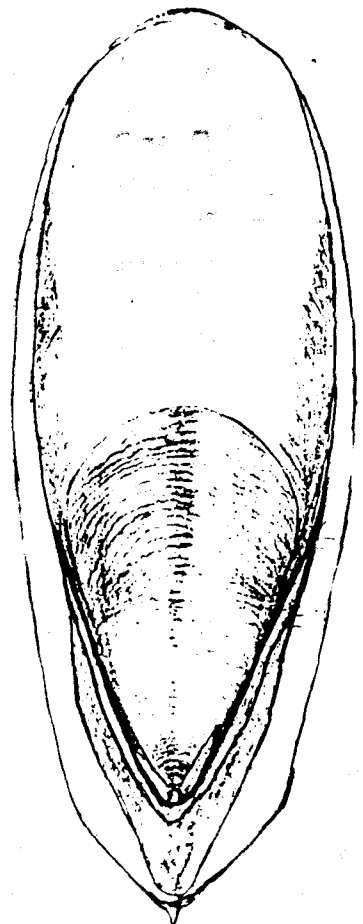
At Wollongong: NSW.

Latitude: 34°25'00S, Longitude: 150°54'24E

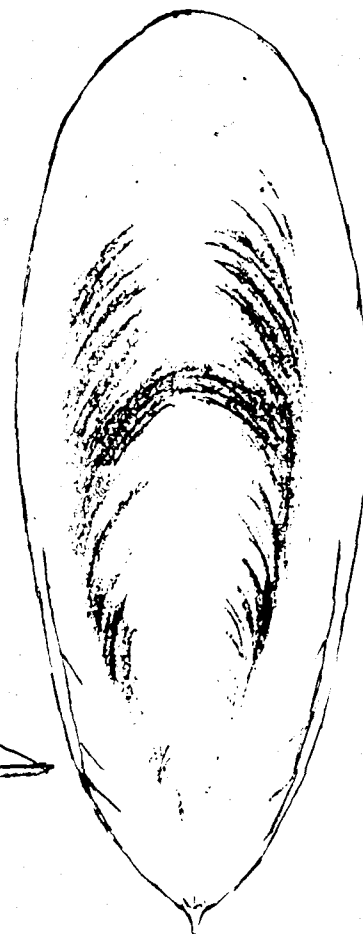
Spawning and resultant die off occurs in the winter months usually June to late August. With some animals dying at other times.

Spawning appears later further south and west, more data required.

Seasonal die-off is variable: many hundreds of bones and dead animals may be collected in some years, but fewer in other seasons. During the breeding season most animals that die appear in the range, 270mm to 500mm + some individuals are found to contain eggs, when collected (dying on the sea surface).



VENTRAL SURFACE



DORSAL SURFACE



| Species   | month → | Brisbane |     | Wollongong |     | Portland |  |
|---|---------|----------|-----|------------|-----|----------|--|
|   |         | Apr      | Feb | Mar        | Apr |          |  |
| Wilson's Storm-Petrel, <i>Oceanites oceanicus</i>         |         | 9        |     | 3+         | 3+  |          |  |
| Grey-backed Storm-Petrel, <i>Nereis garrodia</i>          |         |          |     |            |     |          |  |
| White-faced Storm-Petrel, <i>Pelagodroma marina</i>       |         |          |     |            |     |          |  |
| Black-bellied Storm-Petrel, <i>Fregetta tropica</i>       |         |          |     |            |     |          |  |
| White-bellied Storm-Petrel, <i>Fregetta grallaria</i>     |         |          |     |            |     |          |  |
| <i>Fregetta</i> sps.                                      |         |          |     |            |     |          |  |
| Australasian Gannet, <i>Morus serrator</i>                |         |          | 5   | 16         | 5+  |          |  |
| Brown Booby, <i>Sula leucogaster</i>                      |         |          |     |            |     |          |  |
| Masked Booby, <i>Sula dactylatra</i>                      |         |          |     |            |     |          |  |
| Red-tailed Tropicbird, <i>Phaethon rubricauda</i>         |         |          |     |            |     |          |  |
| White-tailed Tropicbird, <i>Phaethon lepturus</i>         |         |          |     |            |     |          |  |
| Great Skua, <i>Catharacta skua</i>                        |         |          |     |            |     |          |  |
| South Polar Skua, <i>Catharacta maccormicki</i>           |         |          |     |            |     |          |  |
| Arctic Jaeger, <i>Stercorarius parasiticus</i>            |         |          | 5   | 10         | 1   |          |  |
| Pomarine Jaeger, <i>Stercorarius pomarinus</i>            |         | 1        | 50  | 20         | 1+  |          |  |
| Long-tailed Jaeger, <i>Stercorarius longicauda</i>        |         |          | 3   |            | 1   |          |  |
| Southern Skua, <i>Catharacta antarctica</i>               |         |          |     |            |     |          |  |
| Silver Gull, <i>Larus novaehollandiae</i>                 |         | 70       | 20  | 50         | 30+ |          |  |
| Kelp Gull, <i>Larus dominicanus</i>                       |         |          | 15  | 5          | 8+  |          |  |
| Sabine's Gull, <i>Larus sabini</i>                        |         |          |     |            |     |          |  |
| Pacific Gull, <i>Larus pacificus</i>                      |         |          |     |            |     |          |  |
| White-winged Tern, <i>Chlidonias leucoptera</i>           |         |          |     |            |     |          |  |
| Common Tern, <i>Sterna hirundo</i>                        |         |          | 1   |            |     |          |  |
| Roseate Tern, <i>Sterna dougallii</i>                     |         |          |     |            |     |          |  |
| Arctic Tern, <i>Sterna paradisaea</i>                     |         |          |     |            |     |          |  |
| White-fronted Tern, <i>Sterna striata</i>                 |         |          |     |            |     |          |  |
| Black-naped Tern, <i>Sterna sumatrana</i>                 |         |          |     |            |     |          |  |
| Sooty Tern, <i>Sterna fuscata</i>                         |         |          |     |            |     |          |  |
| Bridled Tern, <i>Sterna anaethetus</i>                    |         |          |     |            |     |          |  |
| Crested Tern, <i>Sterna bergii</i>                        |         | 53       | 12  | 9          | 5+  |          |  |
| Grey Ternlet, <i>Procelsterna cerulea</i>                 |         |          |     |            |     |          |  |
| White Tern, <i>Gygis alba</i>                             |         |          |     |            |     |          |  |
| Caspian Tern, <i>Sterna caspia</i>                        |         |          |     |            |     |          |  |
| Little Tern, <i>Sterna albifrons</i>                      |         |          |     |            |     |          |  |
| Lesser-crested Tern, <i>Sterna bengalensis</i>            |         |          |     |            |     |          |  |
| Common Noddy, <i>Anous stolidus</i>                       |         |          |     |            |     |          |  |
| Black Noddy, <i>Anous minutus</i>                         |         |          |     |            |     |          |  |
| Lesser Noddy, <i>Anous tenuirostris</i>                   |         |          |     |            |     |          |  |
| Little Pied Cormorant, <i>Phalacrocorax melanoleucus</i>  |         |          |     | 1          |     |          |  |
| Black-faced Cormorant, <i>Phalacrocorax fuscescens</i>    |         |          |     |            |     |          |  |
| Pied Cormorant, <i>Phalacrocorax varius</i>               |         |          |     |            |     |          |  |
| Little black Cormorant, <i>Phalacrocorax sulcirostris</i> |         |          |     |            |     |          |  |
| Great Cormorant, <i>Phalacrocorax carbo</i>               |         |          |     | 4          |     |          |  |
| Australian Pelican, <i>Pelicanus conspicillatus</i>       |         |          |     | 5          | 4   |          |  |
| Great Frigatebird, <i>Fegata minor</i>                    |         |          |     |            |     |          |  |
| Lesser Frigatebird, <i>Fegata ariel</i>                   |         |          |     |            |     |          |  |

**Wollongong Boat Trip Bookings:**

Phil Hansbro. (SOSSA) 56 David Street TURNER. CANBERRA ACT 2612

**Brisbane Trip Bookings:**

Paul Walbridge. (SOSSA) 135 Lytton Road East Brisbane QLD 4169

**Portland Trip Bookings:**

Mike Carter. (SOSSA) 30 Canadian Bay Road Mt. Eliza VIC 3930

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**BOAT TRIP DATA SHEET - DSOSSA-BTDS-V1.5-04011996**  
 SOSSA - 042 - 716 004 - Fax: 042 - 724 626. PO. Box 142 UNANDERRA NSW 2526

|   |                   |
|---|-------------------|
| Date:   | Data recorded by: |
| Counting Method (circle): 360° 180° stern 180° bow Other (specify): |                   |
| Location: (enter name):   |                   |
| Air temp:   | Water temp:       |
| Air pressure:   | Cloud cover:      |
| Wind speed and direction:   | Sea conditions:   |

\*\*\*\*\*THIS SECTION ABOVE HAS BEEN LEFT ON FOR ANY PERSON THAT MAY SEND US DATA

**Seabird Records 1995 - 1996 WOLLONGONG BRISBANE PORTLAND**

| Species   | month → | Brisbane |     | Wollongong |      | Portland |  |
|---|---------|----------|-----|------------|------|----------|--|
|   |         | Apr      | Feb | Mar        | Apr  |          |  |
| Little Penguin, <i>Eudyptula minor</i>                  |         |          | 2   | 1          |      |          |  |
| Common Diving Petrel, <i>Pelecanoides urinatrix</i>     |         |          |     |            |      |          |  |
| Southern Giant-Petrel, <i>Macronectes giganteus</i>     |         |          |     |            |      |          |  |
| Northern Giant-Petrel, <i>Macronectes halli</i>         |         |          |     |            |      |          |  |
| Southern Fulmar, <i>Fulmarus glacialis</i>              |         |          |     |            |      |          |  |
| Cape Petrel, <i>Daption capense</i>                     |         |          |     |            |      |          |  |
| Blue Petrel, <i>Halobaena caerulea</i>                  |         |          |     |            |      |          |  |
| Great-winged Petrel, <i>Pterodroma macroptera</i>       |         | 5        | 30  | 30         | 20+  |          |  |
| White-headed Petrel, <i>Pterodroma lessonii</i>         |         |          |     |            |      |          |  |
| Providence Petrel, <i>Pterodroma solandri</i>           |         | 7        |     | 5          | 100+ |          |  |
| Tahiti Petrel, <i>Pseudo bulweria rostrata</i>          |         | 11       |     |            |      |          |  |
| Kermadec Petrel, <i>Pterodroma neglecta</i>             |         | 2        |     |            | 2    |          |  |
| Herald Petrel, <i>Pterodroma arminjoniana</i>           |         |          |     |            | 1    |          |  |
| Kerguelen Petrel, <i>Lugensa brevirostris</i>           |         |          |     |            |      |          |  |
| Soft-plumaged Petrel, <i>Pterodroma mollis</i>          |         |          |     |            |      |          |  |
| Mottled Petrel, <i>Pterodroma inexpectata</i>           |         |          |     |            |      |          |  |
| Juan Fernandez Petrel, <i>Pterodroma externa</i>        |         |          |     |            |      |          |  |
| White-necked Petrel, <i>Pterodroma cervicalis</i>       |         |          |     |            |      |          |  |
| Black-winged Petrel, <i>Pterodroma nigripennis</i>      |         |          |     |            |      |          |  |
| Cook's Petrel, <i>Pterodroma cookii</i>                 |         |          |     |            |      |          |  |
| Gould's Petrel, <i>Pterodroma leucoptera</i>            |         |          | 1   |            |      |          |  |
| White-chinned Petrel, <i>Procellaria aequinoctialis</i> |         |          |     |            |      |          |  |
| Black Petrel, <i>Procellaria parkinsoni</i>             |         |          |     |            |      |          |  |
|   |         |          |     |            |      |          |  |
| Streaked Shearwater, <i>Calonectris leucomelas</i>      |         | 2        |     |            |      |          |  |
| Wedge-tailed Shearwater, <i>Puffinus pacificus</i>      |         | 85       | 400 | 400        | 500+ |          |  |
| Buller's Shearwater, <i>Puffinus bulleri</i>            |         | 1        |     |            |      |          |  |
| Flesh-footed Shearwater, <i>Puffinus carneipes</i>      |         | 3        | 60  | 10         | 3+   |          |  |
| Pink-footed Shearwater, <i>Puffinus creatopus</i>       |         |          |     |            |      |          |  |
| Sooty Shearwater, <i>Puffinus griseus</i>               |         |          |     |            |      | 2+       |  |
| Short-tailed Shearwater, <i>Puffinus tenuirostris</i>   |         |          | 2   | 20         | 10+  |          |  |
| Fluttering Shearwater, <i>Puffinus gavia</i>            |         | 2        | 1   | 20         | 5+   |          |  |
| Hutton's Shearwater, <i>Puffinus huttoni</i>            |         |          |     | 1          |      |          |  |
| Manx Shearwater, <i>Puffinus puffinus</i>               |         |          |     |            |      |          |  |
| Audubon's Shearwater, <i>Puffinus lherminieri</i>       |         |          |     |            |      |          |  |
| Little Shearwater, <i>Puffinus assimilis</i>            |         |          |     |            |      |          |  |
| *Fluttering/Hutton's                                    |         | 3        |     |            |      |          |  |
| Antarctic Prion, <i>Pachyptila desolata</i>             |         |          |     |            |      |          |  |
| Slender-billed Prion, <i>Pachyptila belcheri</i>        |         |          |     |            |      |          |  |
| Fairy Prion, <i>Pachyptila turtur</i>                   |         |          |     |            |      | 30+      |  |
|   |         |          |     |            |      |          |  |
| Wandering Albatross, <i>Diomedea exulans</i>            |         |          |     |            |      |          |  |
| Royal Albatross, <i>Diomedea epomophora</i>             |         |          |     |            |      |          |  |
| Black-browed Albatross, <i>Diomedea melanophrys</i>     |         |          |     | 1          | 3+   |          |  |
| Shy Albatross, <i>Diomedea cauta</i>                    |         |          |     |            |      |          |  |
| Grey-headed Albatross, <i>Diomedea chrysostoma</i>      |         |          |     |            |      |          |  |
| Yellow-nosed Albatross, <i>Diomedea chlororhynchus</i>  |         |          |     |            |      | 3+       |  |
| Buller's Albatross, <i>Diomedea bulleri</i>             |         |          |     |            |      |          |  |
| Sooty Albatross, <i>Phoebastria fusca</i>               |         |          |     |            |      |          |  |
| Light-mantled Albatross, <i>Phoebastria palpebrata</i>  |         |          |     |            |      |          |  |

Months: Jan-January, Feb-February, Mar-March, Apr-April, May-May, Jun-June, Jul-July, Aug-August, Sep-September, Oct-October, Nov-November, Dec-December