Edited by
Peter Symes &
Rosemary 'Roz' Lunn

POINT & CLICK ON BOLD LINKS

Equipment *in the news*

Mares bungee

An alternative to steel spring straps, this novel item relegates adjusting a fin strap to the past. Mares state that bungees exceed steel springs in all aspects: higher elastic properties, unaffected by sun, salt and chemical agents, light weight and economically priced. **Mares.com**

Mini-Explorer

The Mini-Explorer is a natty high performing LED light from Halcyon. It's roughly the size of a smart phone with a burn time of approximately 4.5 hours, which will appeal to both recreational and technical divers. The Delrin casing is pretty much indestructible, whilst the innovative handle can be adjusted for left or right hand operation, and it folds to protect the LED and lens for travelling. **Halcyon mini-explorer**

Twin-Rescuer

This double linecutter from Mac, an Italian knife specialist, makes quick work of ropes, lines and monofilament. The quick release sheath can be easily mounted on a BCD or webbing. **Mac-coltellerie.it**

Retro from Poseidon

The Jetstream Mk3 is an updated version of the classic Jetstream regulator where Poseidon has connected a Jetstream second stage with an Xstream first stage, thus creating a high performing regulator. **Jetstream Mk3**

Travelwing

The BuddyTravelwing is a lightweight BDC that only weighs a travel-friendly 2.7kg. It comes with integrated weight pouches, which hold up to 5kg of hard or soft lead and are secured with a 25mm buckle and large velcro flap. Also standard is the time-proven integrated shoulder-dump, which dumps at a slower rate than the other two dump valves, making it ideal for (one-handed) fine-tune buoyancy control. According to A.P.Valves the new wing is extremely comfortable with or without a suit, with very generous padding at shoulders, waist and back. It also features a cummerbund that is size adjustable at front and rear to perfect the fit and has a waistband that can be tightened with either hand. The Travelwing offers 14.5kg of lift and can be used with all cylinder sizes up to 15 litres. **AP Valves**

Lanyard

Safety is a key issue in all freediving. These new safety lanyards has been designed by no other that the freediving world record holder Stig Åvall Severinsen. There are two different lengths (50cm and 100cm) and two different carabineers (steel and aluminium) – to meet the requirements from all athletes and disciplines. The new lanyard has been approved by AIDA international.

Breatheology

Cyberglove

There is always a compromise when designing equipment. Oceanic have somehow managed to push this when designing the Cyberglove. It has maximum dextritiy, thermal qualities and is abrasion resistive, whilst feel and touch has not been compromised. The result is a premier super stretch glove that benefits from rubberized reinformed palms and fingers.

Oceanic cyberglove

1Tb USB pocketknife

An object of desire that works. Swiss Army knives have always been a handy tool to stash in your repair kit box. Victorinox have now added a 1 TB solid state USB drive, giving you peace of mind that you have something to hand to save those precious underwater shots. The company states it is the world's smallest high-capacity SSD drive available. Currently the release date is slated for August with a price point of approx US$2,500 - 3,000 for the 1 TB model. For those of us with less deep pockets, Victorinox have augmented their Slim flash USB line with a USB 3.0. This will be available in 16GB, 32GB, 64GB, and 128GB capacities.

Victorinox.com

Squid LED

Green Force's new Squid video light is encased in aluminium that has been processed three times to produce a hard corrosion resistant surface. It's bright too - Green Force state that this 1850 light produces a 1.850 lumen strong / 120° wide beam at a colour temperature of 4.000K with no hotspots. Naturally it's compatible with all Green Force Flexi battery packs plus the Hybrid 8 and 12 battery packs. **Green Force**

T9 Backpack

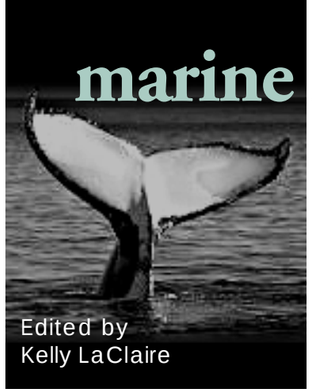
Weighing in at 3.5kg the T9 Roller Backpack from Aqua Lung meets most airline size requirements for checked luggage. The lightweight aluminium handle extends and the bag is additionally equipped with back straps for convenience. Aqua Lung have also remembered to add a very handy rigid handle to the bottom of the bag to aid in loading / unloading.

Aqualung T9

Seac 3D

Seac has launched the '3D' BCD. It features an innovative bladder which Seac state "improves buoyancy and because it's detached from the back plate, reduces the 'sail effect' ". Weighting in at just under 4kg (size large),the 3D also has 'Soft Comfort' reverse-stitched shoulder straps, and a super-comfortable anatomic back plate cover.

Seacsub.com



Edited by
Kelly LaClaire

Federal judge refuses to halt anti-whaling activity

A federal judge in the U.S. city of Seattle declined to restrain the anti-whaling activities of the Washington state based, Sea Shepherd Conservation Society.

Saying that he would write an official ruling at a later date, Judge Richard Jones made it clear that he is inclined to deny a request for a legal injunction—a court order prohibiting someone from engaging in certain actions—made by Japanese whalers against the environmental group.

"It is a victory for Sea Shepherd," said Charles Moure, an attorney with the Seattle firm of Harris & Moure representing the activists. "It's a victory for the whales."

The Institute for Cetacean Research, the Japanese whaling group, claims Sea Shepherd has repeatedly attacked their ships during the whaling season in Antarctica, essentially hindering its ability to harvest cetaceans for what the whalers say is purely research.

Sea Shepherd activists proudly admit to throwing glass bottles filled with paint or butyric acid (a nausea inducing repellent) at the whaling vessels, using stink bombs, prop foulers and many other nonlethal means to interfere with the whale hunts. But the conservation group says that they have never rammed Japanese ships and have never once caused an injury to whaling crew members.

Sea Shepherd president, Paul Watson, argues that it is the whalers who have resorted to the most dangerous tactics—ramming conservation boats; throwing concussion grenades, bamboo spears or heavy nuts and bolts at the environmentalists; as well as using high-propulsion water cannons.

Sea Shepherd also asserts that their activities are not prohibited by international law and that the court doesn't have jurisdiction in the Southern Ocean.

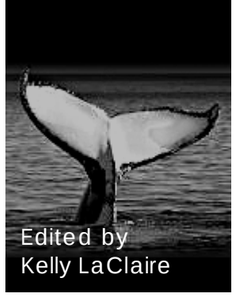
Each hunting season runs from about December through February, and during that time, Japan whaling fleets kill up to 1,000 whales.

Sea Shepherd has sent boats to Antarctica for the past several years in an attempt to harass the whalers and stop the harvest. Violent clashes have sometimes occurred, including an incident involving the sinking of a Sea Shepherd vessel.

Watson says nothing will stop Sea Shepherd from continuing its anti-whaling activities, and the group considers the judge's ruling a successful victory. ■ SOURCE: SEA SHEPHERD, SEATTLE TIMES

WORDPRESS

Sea Shepherd crew throw stink bombs at a whaling vessel



Edited by
Kelly LaClaire

Shepherd's beaked whale

AU.WHALES.WILDAIRIES

Ultra rare Shepherd's beaked whale caught on video

Tasmanian scientists have captured video footage of the extremely rare and almost never seen Shepherd's beaked whale. The film, taken by a research team working in the Eastern Bass Straight off the coast of Tasmania, is the first ever recorded since the whale was discovered in 1937. Very little is known about this species. Only a handful of people have ever seen one, and even fewer have been lucky enough to get a picture.

"To encounter this group was amazing, but the fact that they remained at the surface for so long that we could get many minutes of footage is unique," said lead researcher, Michael Double. "I've never seen any other footage of Shepherd's beaked whale, and since we've come back, we've been doing a fair bit of research on this, but really there are so few photographs even, never mind about footage."

The film is several minutes long and shows a small pod of about a dozen of the black and cream colored beaked whales interacting with a pod of pilot whales and a group of bottlenose dolphins. Researchers were shocked to see the cetaceans and even more thrilled to actually get live footage of the animal in the wild.

Shepherd's beaked whales, or Tasman whales, are one of the largest of the beaked whales (7m / 21ft) and have a very distinctive melon-shaped forehead and quite a prominent beak. They live only in very deep, isolated waters.

The last study done on them in 2006 was brief, and scientists are hoping the new film can add much needed insights into the life and behavior of this rare and illusive species. ■

SOURCE: ABC NEWS

Bangladesh declares wildlife sanctuaries for endangered freshwater dolphins

The Bangladesh government has officially announced that three new wildlife sanctuaries have been established in the world's largest mangrove ecosystem —the Sundarbans. The sanctuaries were adopted, in part, to protect the last two remaining species of freshwater dolphins left in Asia—the Ganges River dolphin and the Irrawaddy dolphin, which both share habitat in the area.

Both species have seen greatly declining populations worldwide over the last few decades, but a surprisingly moderate number still exist in the Sundarbans, which may act as a future safety-net against their possible extinction.

The three protected areas will cover 19.4 miles (31.4km) of rivers and waterways where human activities and Ganges River and Irrawaddy dolphin contact are most intense.

The locations and sizes of the dolphin safe havens were determined according to a study conducted by the Wildlife Conservation Society (WCS) and the Bangladesh Forest Department.

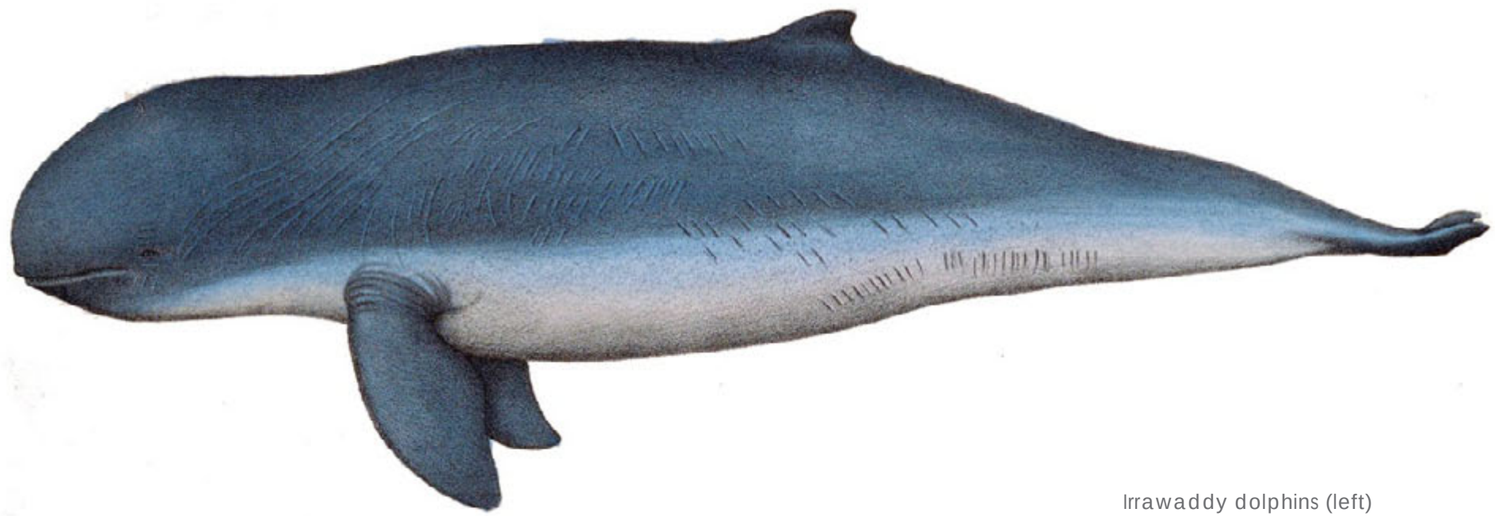
"A critical component will be to engage local human communities," said Dr Tapan Kumar Dey of the Bangladesh Forest Department. "The wildlife sanctuaries will be used as a natural laboratory for developing management practices that balance wildlife conservation with the resource demands of a large and growing human population."

Over fishing seems to be the dolphin's greatest threat. Fine-mesh fishing and shrimp nets used in the areas often ensnare enormous quantities of by-catch (species not meant to be caught) and are rapidly depleting the waters of the dolphin's natural prey.

Unfortunately, freshwater dolphins are among the most threatened sea life on earth; their hunting and breeding grounds are enormously impacted by human activities and pollution. As such, environmentalists greeted the news with enthusiasm, hoping to stop another catastrophe like the recent extinction of the Chinese Yangtze River dolphin. Over fishing and habitat degradation killed off this freshwater species in 2002 after having lived in the Yangtze River for more than 10 million years.

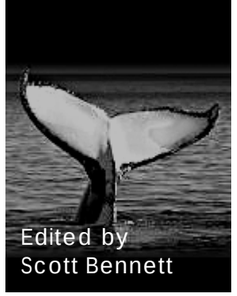
The WCS, through its Bangladesh Cetacean Diversity Project, will begin a traveling dolphin exhibition called, The Shushuk Mela, which will be brought to local communities bordering the Sundarbans mangrove forest. Their aim is to raise awareness about the new sanctuaries and engage local fishermen and other community members in important discussions on species conservation and water management. ■ SOURCE: WCS.ORG

WORLDWILDLIFE.ORG



BERJEAU / PUBLIC DOMAIN

Irrawaddy dolphins (left)
Ganges River dolphin (top)



Edited by
Scott Bennett

Amazon.com no longer selling whale meat

Yes, you read the headline correctly—there is nothing wrong with your eyesight.

Amazon.com was found to be selling over 147 different cetacean products on its Japanese language site, including canned whale meat, whale bacon, whale jerky and whale stew.

But after only one day of public backlash resulting from a report issued by the Environmental Investigation Agency (a non-profit group that engages in undercover investigations of wildlife and environmental abuses) the e-commerce giant, Amazon.com, has removed all products containing whale and dolphin meat from its Japanese language website, which generates around 15 percent of Amazon's total sales.

It is unclear if Amazon headquarters was aware that these items were being sold or not, but they have yet to announce a complete ban on whale meat for its web sites and conservation groups, such as the Humane Society, are calling for them to immediately change their policy, asking Amazon customers to contact the company and stop using the site until they do.

According to the Environmental Investigation Agency's report, they purchased eight products from the Japanese web site and found that six of them exceeded safe mercury levels, and one contained mercury levels 50 times higher than safety regulations permit.

Moreover, since many products were listed as coming directly from Taiji, where almost ten times as many dolphins are killed as whales, it is safe to assume that a good number of whale meat products are mislabeled and actually contain dolphin meat. ■ SOURCE: SEATTLE POST, EIA

Whale burgers sold on Amazon? Not anymore

Achim Schlöffel

Text by Peter Symes
Photos courtesy of Tourism Unlimited

The founder of Innerspace Explorers (ISE), Achim Schloffel, talks to *X-RAY MAG* about diving across the English Channel, explorations and running a dive training agency.

X-RAY MAG: You have announced that you are going to cross the English Channel underwater. What is the status on that project?

AS: We are now in a period where we focus on daily physical training and testing equipment. One of the most important devices will be a Bonex scooter. However, it is not one of the models that you will see on display here at the expo (BOOT — ed.) but a highly modified model that is not yet commercially available. The current speed is up to 140m per minute, which is so fast that you need to have a windscreen in order to hold onto it.

X-RAY MAG: How come you decided to dive the English Channel? Is it an adventure or promotional event?

AS: It was never planned as a promotional thing. The idea dates back to when I was a teenager, when I realised that people were swimming across the Channel, and my immediate thought was if they can swim it, I can dive it. But until a few years ago when better technology emerged, especially in the field of scooters, it was not feasible, because you had to switch scooters and have surface support that could handle change of gear. In my opinion, that doesn't mean that you dive though the Channel. You have to descend in France, ascend in England, and there should be nothing in between.

X-RAY MAG: You said the scooter is fast. How long do you expect it will take you to do the crossing?

AS: The crossing is about 34km as the crow flies, but the diving distance is about 50km. As we will make good use of the tidal currents, we estimate it will take 7.5 to 8.5 hours followed by 3-4 hours of decompression.

In the middle of the Channel, there is an approximately ten-mile-wide shipping lane with major traffic where I will be at a minimum of 35 meters deep to avoid any issues with big ships. Approaching that, I will be at about 15m and then drop down to 35m. Once I have passed the shipping lane, I will ascend to about 25m. From a logistical viewpoint, it is planned much like a cave dive.

X-RAY MAG: Will there be any means of communicating with you during your crossing?

AS: I will have access to some GPS data to make sure that I am on track.

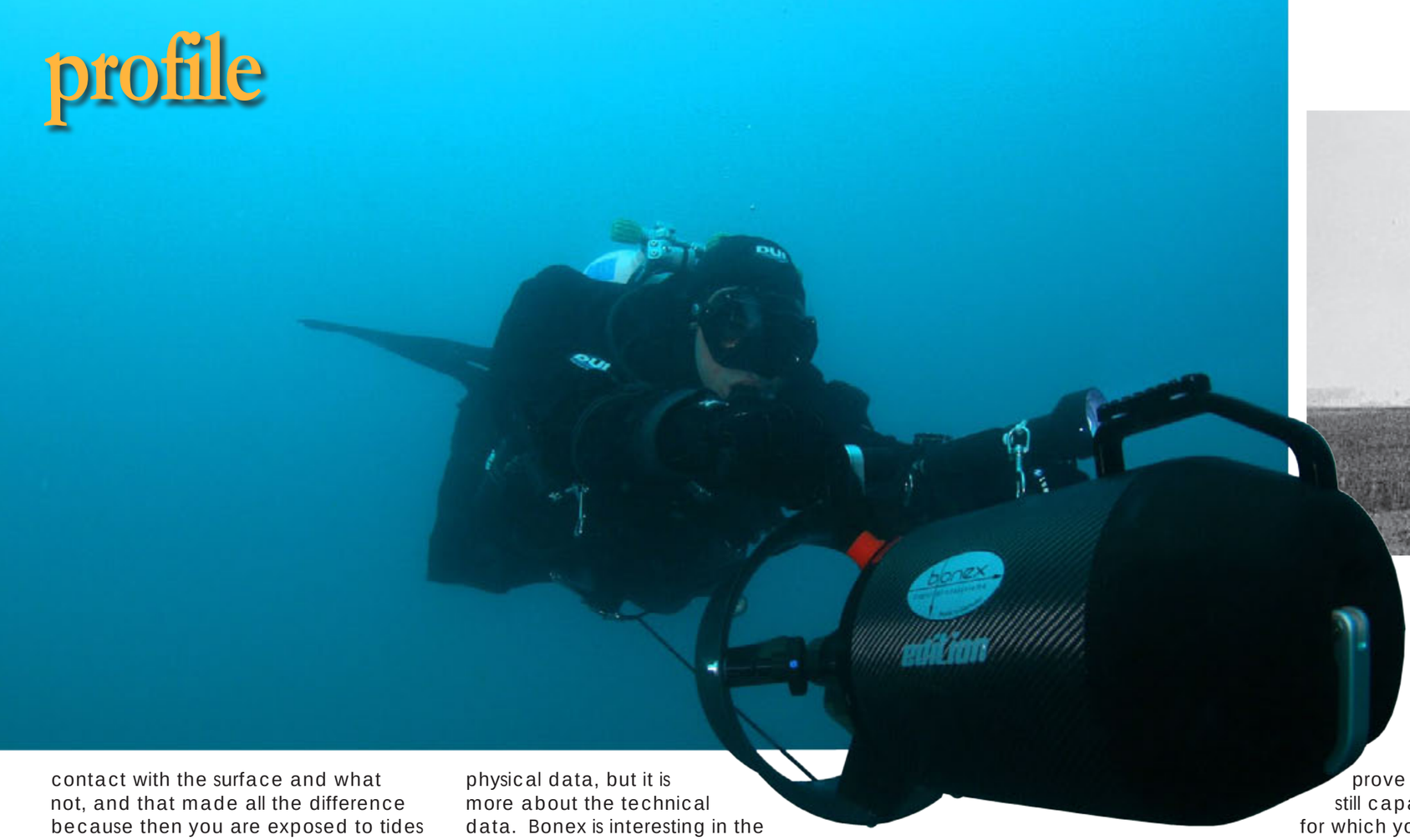
X-RAY MAG: So while you are down deep, nobody will know where you are?

AS: That is correct. But there will be a boat following my projected course with a GPS, and I will have Nautilus Lifeline beacon as an emergency backup. There will be a boat on each side of the shipping lane, so it should only take five—perhaps ten—minutes to get to the location should anything happen. The shipping lane is one of the busiest in the world, so we are not permitted to have a little boat following me into the area.

X-RAY MAG: So you will be all alone?

AS: There is a big difference in how you look at it. A lot of other people who have attempted something similar have been afraid of going deep and having decompression, of loosing

Achim Schlöffel



It has already been over at century since the French aviator Louis Blériot in 1909 became world famous for making the first flight across the English Channel in a heavier than air aircraft, winning the prize of £1,000 offered by the Daily Mail newspaper.

contact with the surface and what not, and that made all the difference because then you are exposed to tides and wind, which made it hard for them. But if you consider it like a cave dive, you take most of these problems out of the equation. The idea of being alone in the dark is not an issue because, as a cave diver, you are used to it. We do that all the time. It is more about the configuration.

The idea of being alone in the dark is not an issue because, as a cave diver, you are used to it. We do that all the time.

X-RAY MAG: Is there any scientific aspect or research involved?

AS: We are in negotiation with both Aquamat and DAN regarding the collection of data, but since we are only doing one dive, which is not going to be repeated, it can hardly be called scientific. We will collect a range of physical data, but it is more about the technical data. Bonex is interesting in the performance of their scooters, and I will bring along some computers to test their performance during long exposures and see how they correlate to our calculations.

X-RAY MAG: Do you have any way of determining what the current will be at depth? It may be different from that on the surface.

AS: We have a pretty good understanding of the water flow and what goes on and when. Once again, it is one of the busiest shipping lanes in the world, so we have a pretty good idea of the currents.

I would also like to mention that the WDCS—The Whale and Dolphin Conservation Society—has shown considerable interest in the outcome. While there are not many marine mammals in the channel—they seem to be located up farther north—the organization would like to have a first witness account about what the environment is like when you are surrounded by big vessels in terms of noise and other disturbances.

X-RAY MAG: I understand that you also head a training agency. What is the difference between yours and all the others?

AS: First of all, we have a couple of unique points in the training program. For example, certifications are limited to three years, after which you have to renew, and you cannot do that by email. You have to meet with an instructor and prove to him or her that you are still capable and possess the skills for which you are certified. Especially in technical diving, that is important. It is no good when somebody who is trimix certified and hasn't been diving for perhaps ten years just jumps into the water, endangering himself and those who are diving with him. The same principle applies to instructors. They also have to renew every three years and prove to us that they are still able to teach at the required levels.

Secondly, we emphasise critical skills. We strongly believe that technical diving training should be tough. We want the student to figure out during training whether he or she is mentally and physically capable and able to handle the stresses involved. We do not want them to figure that out at a depth of 80m but in three meters, with an instructor beside them.

X-RAY MAG: So, are you saying that your courses are also some kind of stress test?

AS: Yes, absolutely. When you are purposely put under a lot of stress, you will learn how to handle this. During training, we will give you experiences in all the potential problems you could face in a real dive. For example, if I clap you on your shoulder to signal that we are pretending that your regulator is not working anymore, what is the experience worth if you are still breathing from it? What is the point? However, if I make you switch on a dead regulator, you will have the experience that it is not working, that you cannot breathe from it and you have to figure out what to do. Perhaps you will reach back and switch it on rather than reach out for your buddy or race to the surface. If we do this three times, and you freak out every time, we will be obligated to tell you that this is not for you.

The major structural difference between our organisation and the others is that we firmly believe in exploration. It may be a somewhat overused term, but who is really exploring? But if somebody invests all the time and money required to become a technical diver, it means that he or she has some dreams of seeing a virgin wreck or exploring a cave passage where nobody has been before. But if you look at the state of the industry in the past ten years, it has usually meant ending up in the same quarry as before but with three stages more, and in turn, that means that divers lose interest, and they quit, which is a shame. So, I think that the organisation also has a duty to make sure that these divers are also able to participate in the type of diving that they are trained for. So, Inner Space Explorers are also involved in setting up all kinds of projects and trips on a regular basis in collaboration with partners and centres all over the world. And then we make our students participate in these expeditions.

X-RAY MAG: So, your philosophy is that technical diving is more means to this end—a way of making exploration possible?

AS: It is a tool, yes. For example, we had this course in Denmark, and in the area, there were two wrecks in only five meters of water. Everybody knew where they were, and the local PADI centers used them for their navigation training. But when I asked around what the wrecks were and for how long they had been there, nobody knew. So there was the project: figure it out. We then spent a week doing measurements and a photo-mosaic, and in the end, we learnt that the wrecks were of two vessels that had collided. We also did some carbon dating and found out that they must have gone down around 1640, and suddenly there was a lot of interest. A university then became interested in the matter, and all of a sudden, it became a big project.

Another project that we have coming up is the Dive and Kayak Expedition in Palau, where you do not have to be a technical diver, though there is a going to be a cave and wreck dive. It is going to be a small group led by me, but the whole idea is to follow the ecosystems from the inner lagoon where we can see fish nurseries to the outer reefs, so you get a better understanding of the unique corals and geology of Palau. This is a good example of exploration that doesn't require any advanced or technical diving but is something everyone can enjoy.

There is no trimix or deco involved, but we go into fine tuning of skills and trimming that we promote and teach. These ecosystems are delicate, so it is essential that divers are properly trimmed so that they do not disturb the environment. It makes a big difference. In is regard, I should emphasise that some of the courses, such as Basics of Exploration, is open to everyone, and it doesn't require any technical equipment or training.

During the course, which will focus on buoyancy skills, there will also be some exposure towards different types of equipment and configurations, so you will understand what happens if you change your gear into a more technical direction. The first entry course is for anyone who wants to have better skills underwater and not be reliant on a buddy. It is also great for photographers.

X-RAY MAG: You say entry level, but it is not a basic scuba diving course?

AS: No. You have to be a certified diver. It is more akin and comparable to GUE's Fundamentals but has a more practical approach and is focused on skill refinement. In fact, we accept the Fundamentals course as an entry requirement for the subsequent classes.

X-RAY MAG: Is there any minimum requirement to join these courses?

On our last course, we had divers ranging from Open Water divers to Trimix Instructor Trainers, and the funny thing was that in the end, they all said that they learned a lot. So, it's about filling the gaps in the existing training.

X-RAY MAG: How long does such a class take?

AS: It is a 3½- to 4½-day course. The extended course takes a day more because it includes Tri-ox—hyperoxic trimix but on a no-decompression recreational level—so you can take a single tank and stay at a 36m depth and still get the benefits of the 70 percent nitrox and the 30 percent helium.

X-RAY MAG: So divers can come in with an entry level course, and you will let them do mixed gases in the end?

Sure. No problem. It is a wrong assumption that just having a different mix of gases in your tank makes it dangerous. It is not. The question is where and how do one use that mix. Tri-ox can be beneficial in 20 meters if one is taking pictures of fish. I often take pictures at such depths, and when I compare the images taken on nitrox or trimix, I can see a difference. It is just about being more aware.

X-RAY MAG: Being a Devil's advocate, I ask you why do we need yet another agency to do all this?

AS: Because we offer something that is not on the market.

X-RAY MAG: Couldn't these courses be offered from within some of the existing agencies?

AS: I did. I worked for ten years in GUE, and I think when we started, we were pretty much where we are now—except perhaps for the exploration part of it—and people really appreciated it. But then, it just took a different path—one could say more commercial—and I didn't want to follow that road. The growing number of students choosing InnerSpace Explorers for their training proves me right in that people want this kind of harsh kind of training and that they appreciate being a real part of a team.

We also offer courses in a proper context. It is like when you had your drivers licence for ten years and your driving school came back to you and offered you a course in driving in icy conditions. But if you live in Dubai, what is the use of that? In InnerSpace Explorers, we will also actually take you to Norway, for example, where you will get a real opportunity to use your skills. That is another significant difference.

X-RAY MAG: How big is Inner Space Explorers?

AS: We are in our fourth year. We have about 600 certified divers and 18 instructors. We keep growing but slowly. I get a lot of requests from instructors, but out of some 10-15 requests about instructorships, there is probably just one I would seriously consider. It's because they would be representing my name. I have over the years trained more than 3,000 divers, and they are all healthy and in good spirits, and I want to keep it like that.

X-RAY MAG: Where do the majority of your students come from? Germany?

No, from all over the world, but mostly Europe and the Middle East have been growing fast recently.

X-RAY MAG: If you are concerned about instructors not representing you properly, does that mean that you have to train each one personally?

AS: I have trained them all up to now. I have been quite concerned about what goes on when you inject all these intermediary layers with instructor trainers and instructor trainer trainers that you see in bigger organisations because, all of sudden, you completely lose overview and control of what is going on. So right now, we are considering just having one instructor trainer for each region, i.e. one for the Middle East, one for Europe and one for the United States.

Right now, the instructor candidate needs to obtain two signatures from the board of directors, which consists of five members. One instructor trainer and one from headquarters cannot certify an instructor on their own. This is to avoid having friends and such being appointed instructors without the necessary qualifications. At least two from HQ need to sign off on the candidate. So, either there is a second director on location during the Instructor Training Course (ITC) or the candidate has to see one of them at another meeting. This assures the quality that we aim for in instructor training, and it prevents "mass production".

X-RAY MAG: Aside from diving the English Channel, do you have any other grand projects in the pipeline?

AS: There are lots of places I personally would like to see—Bikini atoll, some deep stuff off Palau and various wrecks around the world, but coming up soon are some new wrecks and some caves off Sardinia we want to explore. We will be quite busy the next two to three years just with these plans.

X-RAY MAG: Do you have any role models?

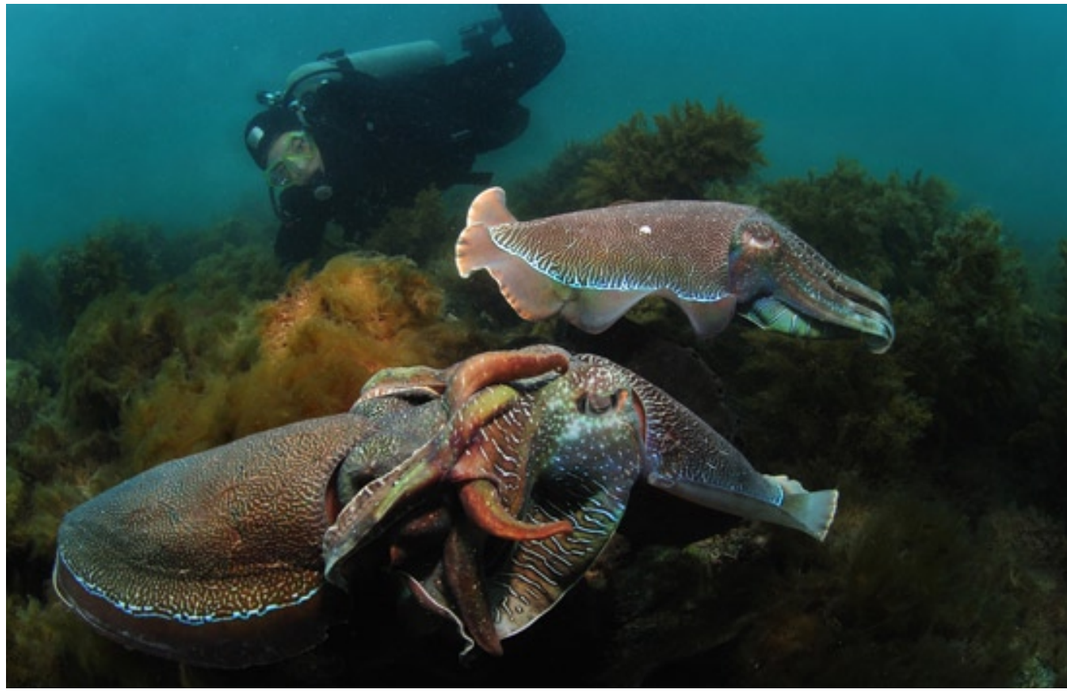
AS: When I was seven, I was asked what I wanted with my life, and I replied that I wanted to be like Jacques Yves-Cousteau, and (giggles) it is funny that we are now not far off in terms of diving and exploration.

X-RAY MAG: What about teaching philosophy?

AS: We are a DIR-minded training agency, and we stand for tough training but fair training. We will tell you if technical diving is not for you. ■

Communing with the Cuttlefish

One of Australia's most unique underwater events is facing a new challenge. The Australian giant cuttlefish mating aggregation—the world's only large-scale cuttlefish gathering—has seen the first major decline in numbers since the event was protected from commercial fishing nearly 14 years ago. Warmer than average water temperatures are believed to be the cause, and with the construction of a desalination plant becoming increasingly likely, the future of this rare phenomenon is in jeopardy, Seanna Cronin reports.



Text and photos by Seanna Cronin

Each winter the sleepy industrial town of Whyalla becomes a bustling regional center. Divers, scientists, documentary filmmakers and tourists armed with snorkel gear flock to the dusty red South Australian mining town to see one of the world's most unique marine spectacles. Each winter thousands of Australian giant cuttlefish (*Sepia apama*) migrate from the reaches of the Upper Spencer Gulf to the shallow rocky reef between Fitzgerald Bay and False Bay to participate in the penultimate event of their short lives. The annual gathering, starting in May and ending in August, is their one chance to mate and pass on their genes to the next generation.

It's a three-month marathon of competition and complex courtship, which sees these normally solitary and shy animals gather in concentrations as high as one cuttlefish per square metre. The cuttlefish throw caution to the wind in their attempts to mate, completely ignoring divers and snorkelers.

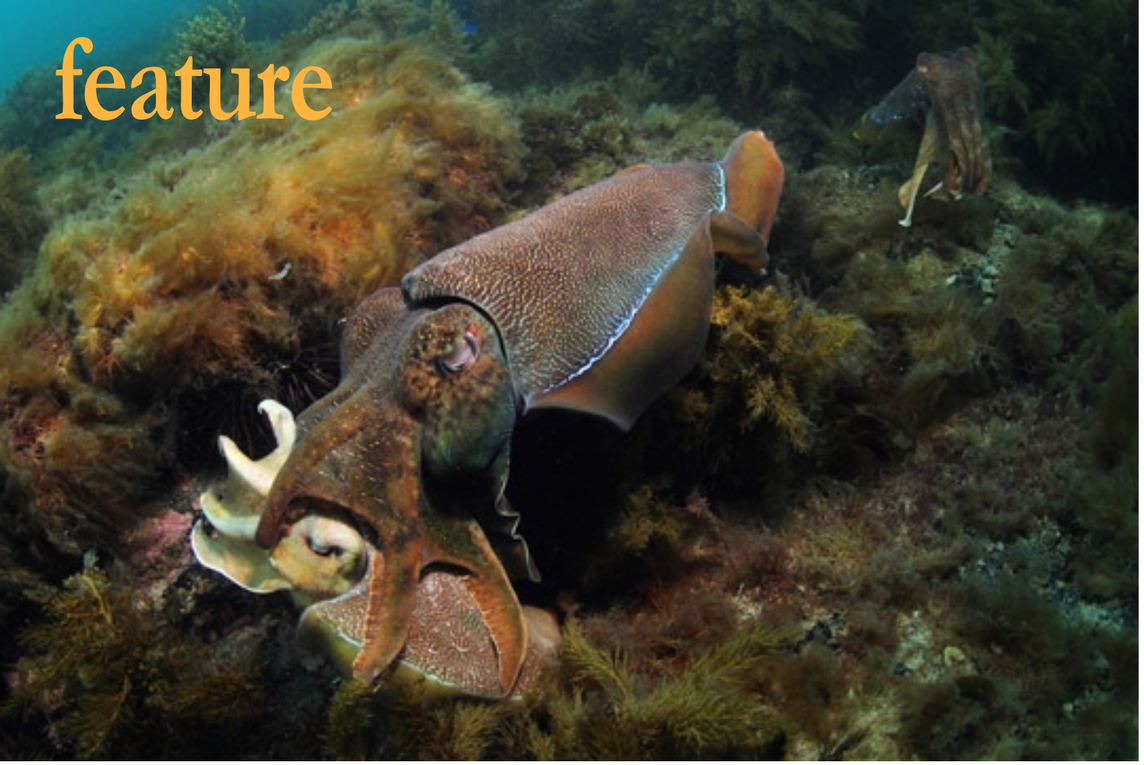
In just a few metres of water, smaller males can be observed outsmarting their stronger rivals by cross dressing as females. It's a sneaky but effective strategy, thanks to the amazingly diverse array of colors, patterns and textures made possible by specialized skin cells called chromatophores.

CLOCKWISE FROM TOP LEFT: A male does his best to guard a female he recently mated with from other males; Distracted by their need to mate, the cuttlefish allow divers to get very close; Australian giant cuttlefish use their specialised chromatophores to communicate and blend in with their surroundings

Whyalla Diving Services owner, Tony Bramley, knows the cuttlefish better than anyone. He has been nicknamed, the Godfather of Cuttlefish, because of his experience diving with the mating aggregation since 1979.

Bramley estimates only 20 percent of the cuttlefish from the 2010 season were seen in 2011. In the early 1990's there was a small amount of fishing during the mating season, mostly for bait, but when demand for cuttlefish in Asia ramped up in the mid '90s the aggregation was specifically targeted by commercial fishing operations.

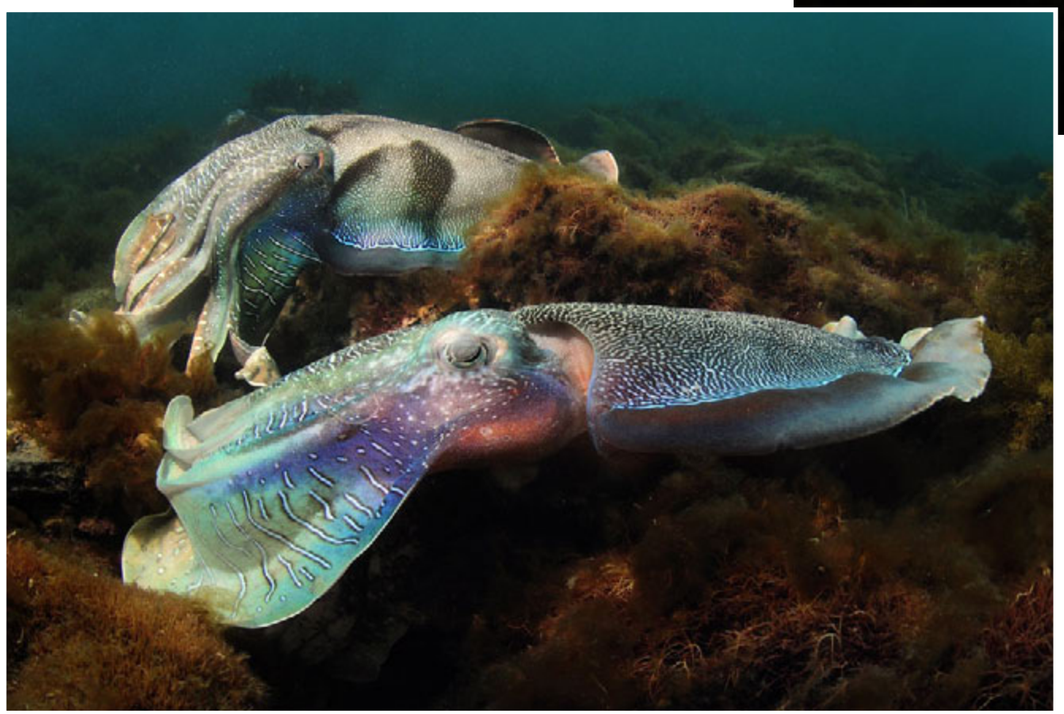
Bramley and other divers successfully campaigned for protection for the cuttlefish after the aggregation was nearly fished out in 1998. The number of cuttlefish at the annual mating aggregation has been steadily



increasing ever since.

The 2005, 2006 and 2007 events were bumper seasons, still not as abundant as when Bramley first started diving with the cuttlefish, but a healthy increase on the first official government counts of 2002. There was a slight dip in 2008, and the 2009 and 2010 seasons appeared to plateau but showed no signs of decrease or widespread ill health in the population.

This past year's season was the first time cuttlefish numbers had declined significantly since intensive commercial fishing in 1998. Bramley believes warmer than average water temperatures are the most likely culprit.



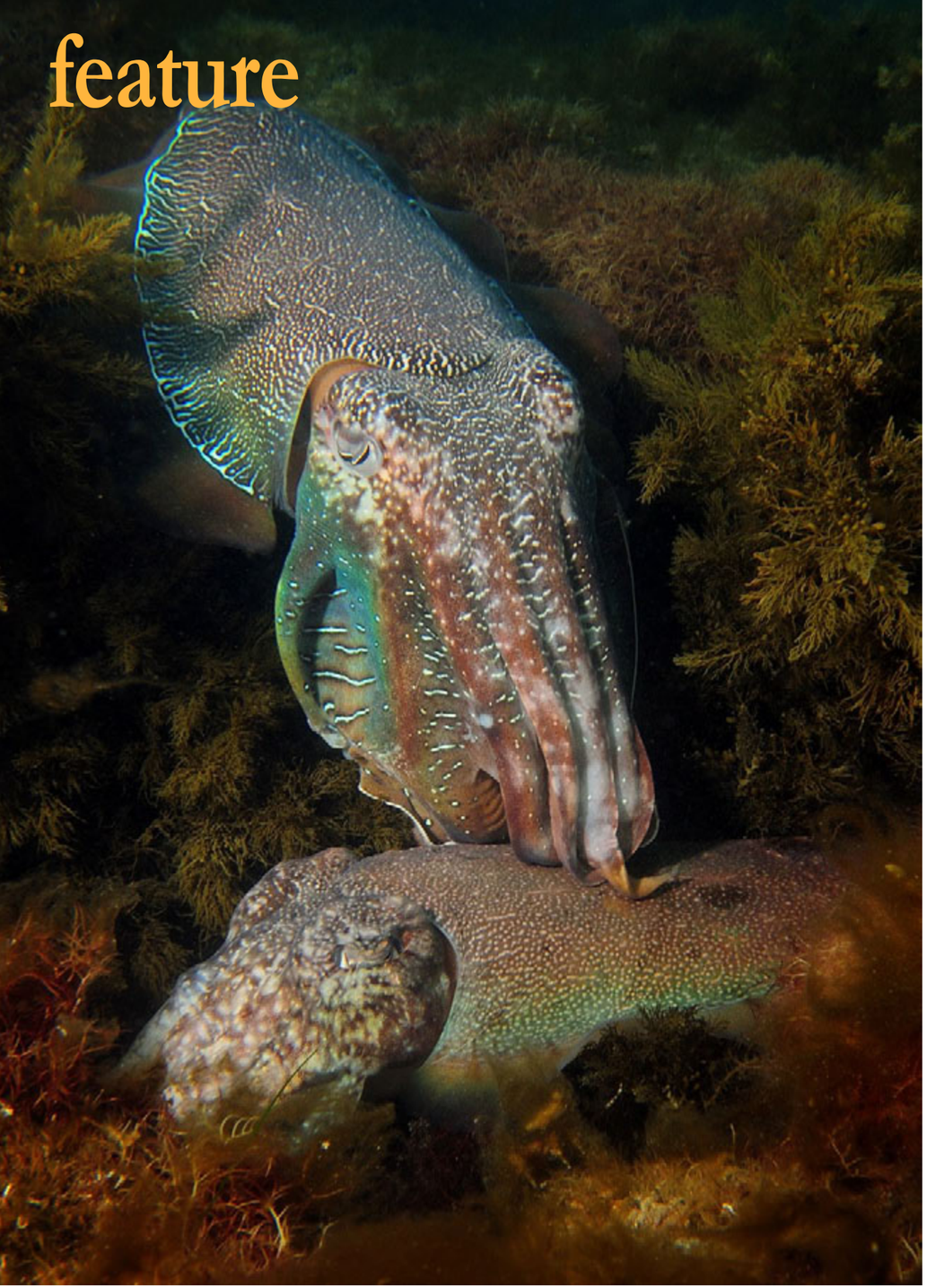
CLOCKWISE FROM TOP LEFT: A male gets a bit rough with a female when she tries to sneak off after mating; Cuttlefish locked in their lovers' embrace as the male passes spermatophores to the female; Cuttlefish lay their ping pong ball-sized eggs under rocky ledges; Two large males put on a dramatic display as they try to impress nearby females

"There was no difference to any activity that I know of in the gulf last year," he said. "It's not like there was some development or dredging or new industry coming online. As far as I know, other than the temperature difference, it was just another season. Right up into the middle of June the water temperature was up around 17°C. Normally, it gets below that by May."

The giant cuttlefish in the Upper Spencer Gulf are particularly vulnerable to fishing and other pressures, like increased water temperatures, because of their dense concentrations during the mating season and their short life cycle.

After hatching, juvenile cuttlefish move out into the gulf where they lead solitary lives, taking shelter under ledges from predators such as dolphins. Less than a year later, they return to the shallow rocky reef of their birth to mate and then die shortly afterwards. Thus, each year's population is directly dependent on the success of the previous year's aggregation. The fewer adults that are able to mate, or the less eggs that survive to hatching, the fewer adults there will be to mate the following year.

"Those two years where we had full com-



CLOCKWISE FROM FAR LEFT: A moment of cuttlefish intimacy; The regional town of Whyalla. Whyalla is known as the place where the South Australian outback meets the sea; Divers and snorkelers must negotiate Point Lowly's rocky shore to see the cuttlefish

mercial fishing, in 1997 and 1998, the flow-on effect was really noticeable right up through 2002," Bramley said. "There was no recruitment in those two years."

There is hope that since the cuttlefish successfully recovered from those fishing pressures, they should also be able to bounce back from last year's unseasonably warm temperatures. But that's only if temperatures return to the normal 12-15°C range, and while fishing efforts can be regulated, it's much harder to do anything about water temperature.

"It's very worrying, but we'll know a lot more at the beginning of this season," Bramley said.

Man-made threats

Last year's disappointing season came just a few months before the approval of the expansion of BHP Billiton's Olympic Mine Dam, which increases the chances of a desalination plant being built at Point Lowly —ground zero for cuttlefish.

"The Point Lowly area is one of the few areas in the Upper Spencer Gulf that has rocky reef habitat that's suitable for Australian giant cuttlefish to lay their eggs," said Dr Bronwyn Gillanders from the University of Adelaide.

BHP was under pressure to find an alternative location for the desalination plant to protect not only the cuttlefish but the overall health of the gulf, which is also an important nursery for South Australia's snapper. Yellowtail kingfish are also thought to migrate to the Upper Spencer Gulf annually as part of their spawning migration.

"That whole gulf region is quite unique," said Gillanders. "It's referred to as a reverse estuary, which means that it's got much higher salinity at the head of the estuary and then you get to marine salinities out towards the mouth."

The South Australian and federal governments approved the expansion, which would be a multi-billion dollar economic boost for the area, in October but imposed 150 conditions. Divers and conservationists are now waiting to see what BHP decides. The mining giant is expected to make its final decision by the middle of this year. If the desalination plant goes ahead at Point Lowly, then it could make it harder for the gulf's cuttlefish population to recover from last year's drastically smaller mating aggregation.

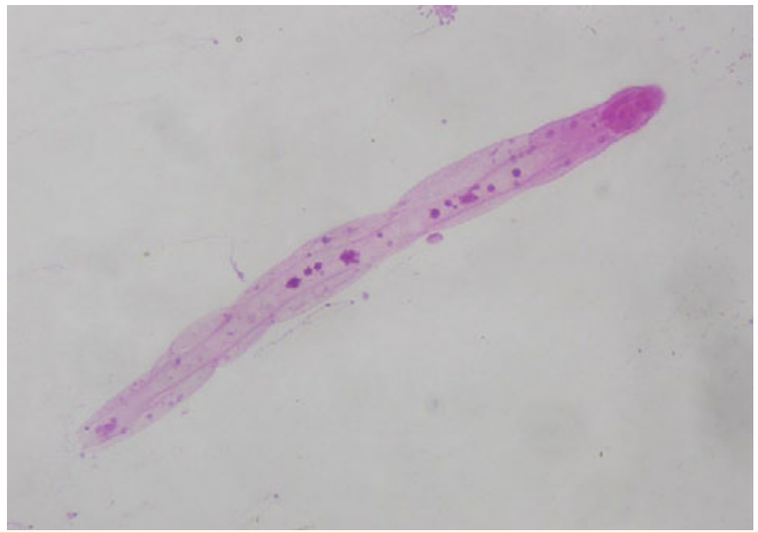
In her research, Gillanders found that even small increases in salinity negatively affect the survival of cuttlefish eggs. Increasing the salinity from the gulf's current levels of 38 to 40 parts per thousand to 50 parts per thousand in the laboratory resulted in total mortality of the eggs.

"Each generation is totally dependent on the previous generation," Gillanders said. "So if you have reduced numbers up there then potentially you'll get reduced numbers the following year, so it becomes a slippery slope of decreasing numbers."

There are concerns the desalination plant, and the dredging required for deep-water access for ships to transport the mine's copper and uranium, could also negatively affect the gulf's aquaculture industry as well as the seasonal tourism generated by the cuttlefish.

Cuttlefish

Location of Spencer Gulf in South Australia on global map (left); The popular dive site of Stony Point near Point Lowly (below); A glass side of a stained dicyemid parasite viewed under a compound microscope (bottom)



CLOCKWISE FROM ABOVE: Divers need not go far or deep to witness a range of behaviors including mating at the annual aggregation (above); University of Adelaide PhD student, Sarah Catalano, collecting sediment samples at Stony Point (right)

Ongoing research

If the Upper Spencer Gulf's population of cuttlefish can be shown to be genetically distinct from other giant cuttlefish, then there would be greater need for more protections of the mating aggregation.

Adelaide University PhD student, Sarah Catalano, is using parasites to find out more about the population structure and species status of the Australian giant cuttlefish in southern Australian waters.

Dicyemid mesozoan parasites are found in the kidneys of cephalopods and generally each species of parasite only infects one host species. So, by studying the genetics of the parasites found in Australian giant cuttlefish, Catalano should be able to show if the cuttlefish of the Upper Spencer Gulf are more genetically distinct than previously thought.

A genetic study by Gillanders, one of Catalano's supervisors, and Dr Steve Donnellan from the South Australian Museum showed that the cuttlefish from the Whyalla mating aggregation were a distinct gene pool from their Lower Spencer Gulf counterparts. Catalano's research, which continues this year, could provide further evidence towards the genetic separation of this population. The South Australian Research and Development Institute (SARDI) will also be carrying out more research at Whyalla this year.

After divers observed the unexpected drop in cuttlefish numbers last year, researchers from SARDI came to Whyalla in September to take DNA samples from the remaining cuttlefish. The South Australian government has given SARDI a $115,000 grant to gather more data at this year's mating aggregation.

As for the future of the cuttlefish, the next few months will be a waiting game. The flow-on effect of last year's drop will become evident as cuttlefish begin to gather in late May or early June. And sometime during the mating season, BHP should also announce its decision on the Olympic Dam Mine expansion. In many ways, 2012 is shaping up to be the year that makes or breaks this remarkable natural event. ■

Text by Robert Osborne
Photos by Debbie Stanley
and George Sharrard

WWII Battles in Conception Bay

Bell Island Wrecks

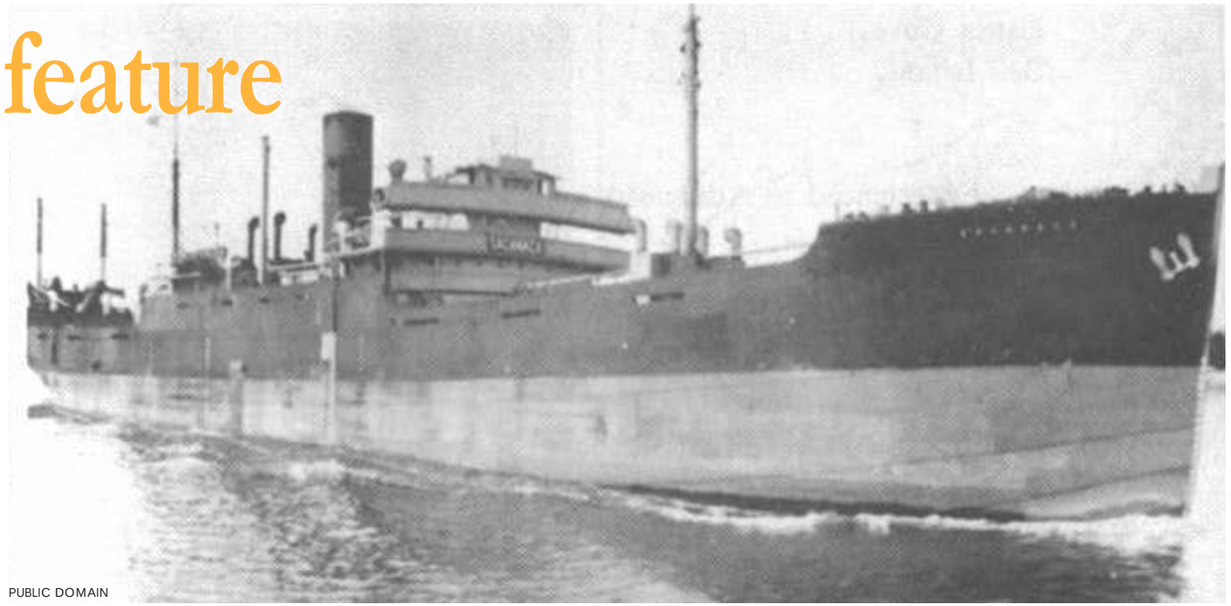
Just knowing that Vikings started a settlement here a thousand years ago and that the first fishermen from Europe began arriving in the 1500's adds to a sense of history that cloaks the Canadian province of Newfoundland and Labrador. It's a sense that I'm acutely aware of on this sunny day in June on board the vessel, *Ocean Quest,* as the skipper, Bill Flaherty, navigates across Conception Bay towards Bell Island. I'm on my way to dive on what are known as the "Bell Island Wrecks". These are not artificial reefs. These are ships that were part of a catastrophic historic event, four World War II cargo ships that were sunk by German U-boats. It's a history that Bill is only too happy to talk about as we motor along.

The incident began on 4 September 1942. On a moonless night, *U-513* crept into the convoy anchorage in Conception Bay. How it got in is reminiscent of a plot from an old Hollywood war movie. *U-513* tucked itself under the stern of the *SS Evelyn B* and followed her into the anchorage.

Ships came to this harbor to load up on iron ore from the mines on Bell Island. The cargo was important for making steel crucial for the war effort. Naturally, German U-boats were interested in stopping that effort.

Bell Island in Conception Bay

DEBBIE STANLEY



PUBLIC DOMAIN

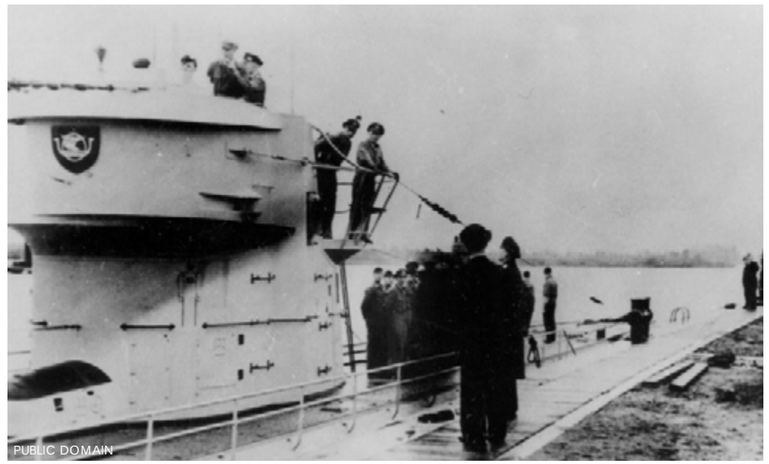
CLOCKWISE FROM LEFT: The *SS Saganaga*; Diver in torpedo hole in the side of the wreck of *PLM-27*; *U-513; U-518;* Captain Rolf Rueggeberg

PUBLIC DOMAIN

After arriving in the bay, Captain Rolf Ruggeberg of *U-513* decided to wait until the following day to attack. In the morning, Ruggeberg surfaced, selected a target—the *SS Lord Strathcona*—and fired. But the two torpedoes misfired. *U-513's* crew hadn't armed their detonation switches. The torpedoes merely ran out of fuel and sank to the bottom. The sub was spotted ironically by the *Evelyn B*, the same ship *U-513* had followed into the harbour. The *Evelyn B* opened fire with its deck gun, forcing *U-513* to dive. From its submerged position, *U-513* selected another target—the *SS Saganaga*. She fired quickly. This time, there were no mistakes. Both torpedoes hit the ship. Filled with iron ore, the *Saganaga* went down in minutes.

The entire anchorage erupted in chaos. Ships were frantically trying to get underway to escape the U-boat. Ruggeberg selected another target. But in the confusion of the battle, as *U-513* maneuvered to get into position, the ship it had targeted—*SS Lord Strathcona*—swung around and hit the U-boat's conning tower. Though slightly damaged and forced to the bottom, *U-513* recovered quickly. Without hesitation, she fired two torpedoes from her stern tubes. The *SS Lord Strathcona* was hit twice and also went down in minutes.

The water was now teeming with injured sailors—the anchorage filled with their cries. Shore guns, ineffectively positioned, attempted to come to bear on the action. Ships were still trying to get out of the bay even as small boats were setting out from Bell Island to rescue survivors. In the confusion, *U-513* slipped out into the Atlantic and disappeared.



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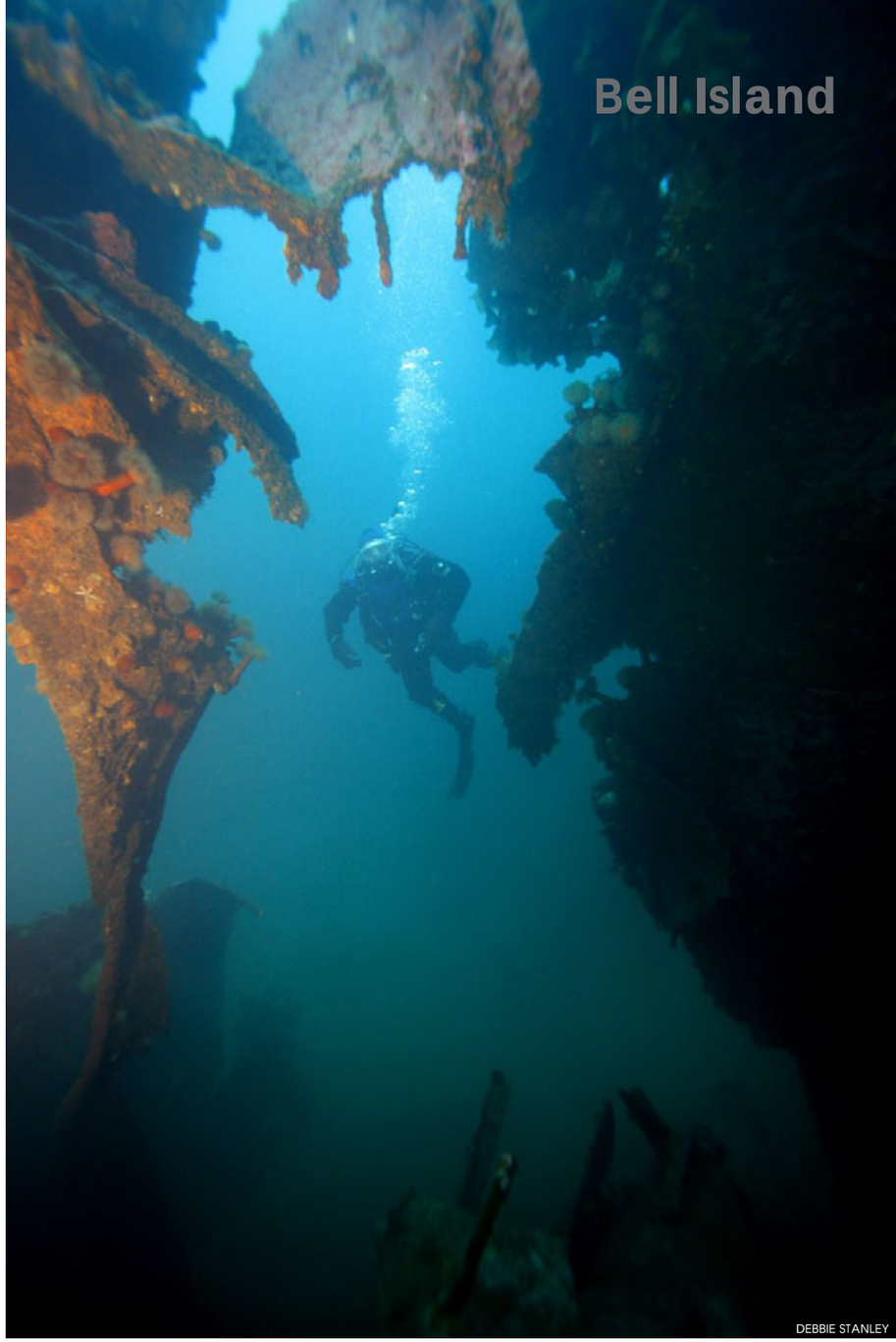
Twenty-nine men died as a result of the attack—all from the *Saganaga*.

Diving

Today, the consequences of those attacks lie underwater like broken and discarded toys waiting to be reclaimed. And I was about to dive down and explore them.

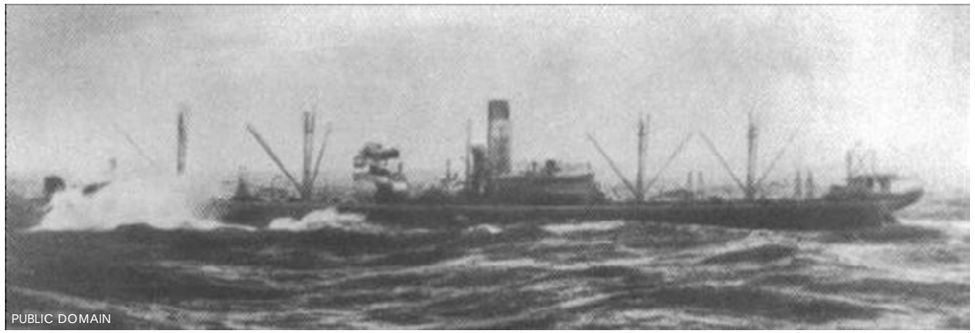
My guide was Debbie Stanley, one of the co-owners of Ocean Quest—a dive lodge on Conception Bay that specializes in diving the wrecks. She and her husband, Rick, have taken on the role of unofficial custodians of the site. Though the wrecks are not designated as protected by Canada's federal government, every diver on board has been warned politely, but firmly to "take nothing but pictures and leave nothing but bubbles". These wrecks are, after all, graves for dozens of sailors killed in action.

Rick and Debbie are fighting to have the wrecks declared National Historic Monuments in order to stop the occasional



DEBBIE STANLEY


DEBBIE STANLEY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The *SS Lord Strathcona* (left); Sunset at Conception Bay (far left)

pillaging. "Every time I swim past a box of bullets on the deck, there's a few more bullets missing," Rick explained. "And the brass plaque on the lifeboat was pried off last year."

SS Lord Strathcona

Deb and I geared up and dropped over the side and down the mooring line towards the *SS Lord Strathcona*—a Canadian ship of 7,335 tons some 406 feet long. She sat between 90 and 125 feet, and as we approached, my first thought was that it looked as though I was swimming towards a coral reef. Of course, I knew that was absurd. But on this sunny day the light penetrated down, dappling the ship with bands of light and creating an explosion of gold, pinks, oranges and purples—all different-colored sea anemones. They encased large parts of the super structure creating the appearance of a wreck covered with coral.

The visibility was surreal. As I hovered just above what would have been the super structure, I was able to see half way to the stern of the ship. Remember, this was a 400-foot-long cargo ship. I'm guessing the visibility was at least 100 plus feet.

Deb signaled to me, and we descended a few more feet where she introduced me to one of the resident lumpfish.

Now, there may be uglier fish in the ocean, but if there are, I've yet to see them. Think the Hunchback of Notre Dame—this fish looks as if it's survived a seriously disfiguring accident some time in its life. Then Debbie panned her light across the creature, and the beast transformed into a beauty—vibrant colors, pinks and greens lit up on the lumpfish. Something about ugly ducklings and fairy tales coming true sprang to mind. Debbie signaled me again, and we headed towards the stern.

By the way, did I mention that the water was brisk? Perhaps brisk isn't the right adjective, possibly bone numbing is more accurate. The average temperature on this day was around 39°F.

Later, I would find out that it could get even colder. For example, when I was deep in the *SS Rose Castle*, I experienced temperatures as low as 36°F. Some of the tech divers report 28°F deep in the holds where the water doesn't move. Dry suits are a must, serious undergarments recommended. The bottom line is that the temperature is the price you have to pay for these sensational dives.

Fifteen minutes into the dive and Debbie had taken me to the stern. An old 4.7-inch deck gun sat covered with multi-colored sea life. I could still make out the unmistakable shape of a weapon, but the shawl of plumose anemones removed any threatening qualities. We circled the gun a couple of times and headed back to the ascent line. On the way, I was shown a machine gun that sat on the deck, but I was not too keen to linger, my body was starting to get really cold. Nevertheless, after an hour surface interval, I was chomping at the bit to go down again.

The next dive was on the *Lord Strathcona* but not as deep and not as cold. This time, we headed straight for the bow. I got my picture taken doing my best "I'm the king of the world" imitation, poked my head into the room where an old Marconi radio was still attached to the wall and spent a few minutes playing with a flat fish.

As we neared the ascent line, we encountered a large jellyfish called a Lion's Mane. With their venomous sting, they're usually given a wide berth. But this one has drifted into the wreck and


GEORGE SHARRARD


DEBBIE STANLEY

Ammunition on deck area (right); Diver and lumpfish (far right)

GEORGE SHARRARD

CLOCKWISE FROM LEFT: Ocean pout; Radio room on the *Rose Castle*; Divers check out a lion's mane jellyfish tangled in the wreckage

GEORGE SHARRARD

become entangled. We swam in for a closer look. Moments later, I was also introduced to another local denizen—the Ocean Pout. I was immediately struck by its uncanny resemblance to the rock star, Mick Jagger, or perhaps Steve Tyler?

As we headed back into port (stuffing our faces with homemade moose meat stew to warm up), past the shear cliffs of Bell Island, weaving among a couple of tankers anchored in the bay, the sun beating down, I was beginning to sense that this was going to be a very special week of diving.

SS Saganaga & PLM-27

The following morning, the skies were blue once again, and the seas were calm. We headed out to explore a couple of different wrecks. In the morning, we would dive the shallowest of the wrecks, *PLM-27* (Paris, Lyon, Marseilles)—a Free French ship I was told was caught in the second round of U-boat attacks; and in the afternoon, we would dive the *SS Saganaga*. Once again, on the way out Bill gave me the history.

It was 2 November 1942, only two months after the first attack. If people thought the first attack had been an anomaly, they were sadly mistaken. This time, *U-518* slipped quietly into the bay. To avoid detection, she hugged the cliffs of the mainland so closely that her bridge crew reported seeing cars driving along the roads of the mainland. This time, the captain—Captain Friedrich Wissmann—decided on a night attack. But his first shot was no truer than that of his earlier counterpart. *U-518* fired at a coal boat moored near the Scotia Pier. The torpedo missed and instead hit the pier causing substantial damage. Wissmann's second two shots would not go astray. *U-518* swung around and lined up a shot on the *SS Rose Castle*. Two torpedoes were fired in quick succession. Both found their marks—one in the stern and one in the bow. The *Rose Castle* went down in minutes. The attack was unexpected and, of the 43 crew, 28 men lost their lives.

U-518 continued its attack. The Free French ship, *PLM-27*, was moored near the *Rose Castle*. She had fired flares to help survivors from the torpedoed ship. *U-518* used the light to line up a perfect shot. *PLM-27* took a torpedo dead amid ship. She was split almost perfectly in two and sank in seconds. Twelve men died.

GEORGE

DEBBIE STANLEY

This time, it was snowing and cold when the attacks took place. There were no rescue boats in the area. Eighty-six-year-old, Gordon Hardy, survived the attack on the *Rose Castle*. He painted a picture of a Dantesque Hell. He remembers being in his bunk amidships when the first torpedo struck. He jumped into the frigid water in his underwear just as the second torpedo hit. He spent hours clinging to a raft listening to the screams of other men around him in the dark. The cold was almost unbearable. He told of seeing some men die even as they were being pulled from the water. Once again, in the confusion, *U-518*, slipped out of the bay and back into the Atlantic.

It's a horrifying story, but hard to imagine on a warm sunny spring morning. However, that was about to change. Deb and I suited up and quickly descended to the wreck of the *PLM-27*. As with the other wrecks, *PLM-27* sat upright on the bottom. She was relatively shallow, sitting in only 60 to 80 feet of water. After a quick look at the propeller, we worked our way forward from the stern towards amidships. Debbie swam through a

DEBBIE STANLEY

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DEBBIE STANLEY

CLOCKWISE FROM ABOVE: Divers at the bow, interior, deck gun and anchor of the *SS Saganaga*

gap in the side of the ship, stopped and gestured for me to look around. At first I was puzzled. Look at what? I was floating in the middle of a large hole in the side of the ship.

Then, it dawns on me. This was a wound from a torpedo. The two-inch steel hull was jagged and peeled back like so much aluminum foil. I was awestruck by the scale of the destruction. To be in the vicinity of an explosion capable of ripping a ship open like a cardboard box must have been a terrifying experience. How anyone lived through this explosion is beyond my comprehension. I felt a deep sadness for the sailors who were caught in this attack. Particularly when I remembered that many floated and died in the freezing water after surviving the explosion. It's little wonder Deb and Rick are fighting so hard to get this area declared protected. I understood it as a debt owed the men who died on these ships.

A sober feeling followed me for the rest of the day. I enjoyed exploring the wreck of the *SS Saganaga*, but I couldn't get the image of that torpedo hole out of my mind. In fact, that haunted sensation was only reinforced when I was shown the anchor of the *Saganaga*. A massive piece of iron, it must have weighed a couple of tons.

DEBBIE STANLEY

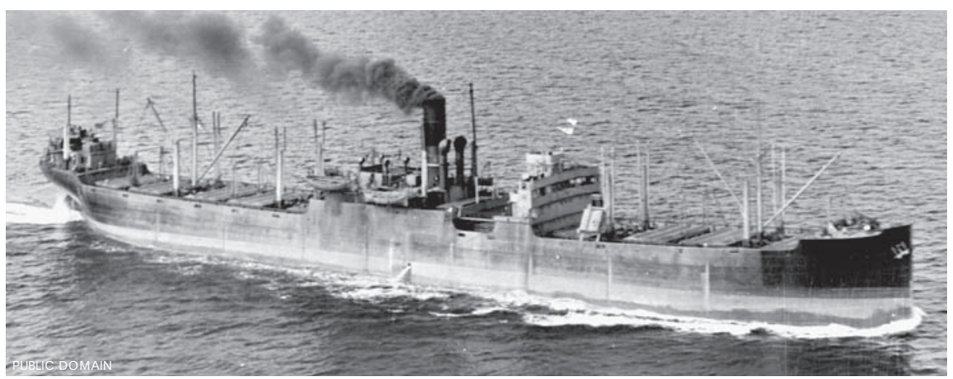
DEBBIE STANLEY

Bell Island

COUNTER-CLOCKWISE FROM TOP LEFT: A diver explores the *PLM-27*; The *Rose Castle*; Diver inside the *PLM-27*; Writer Robert Osborne

Robert Osborne is a Canadian writer and based in Toronto, with 25 years as a journalist in television news and seven years as a dive writer. Visit: ***www.canadiandiver.ca***

DEBBIE STANLEY



PUBLIC DOMAIN

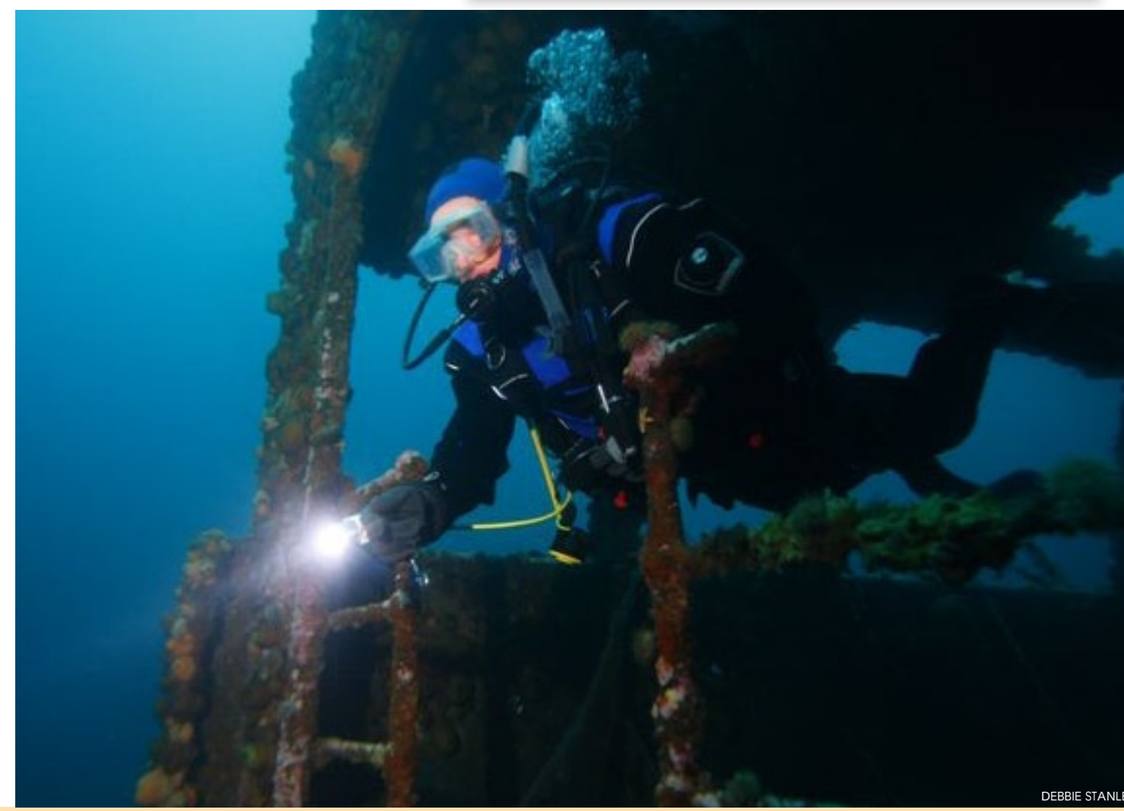
And yet it lay discarded half way along the ship, blown from the bow some 275 feet away as casually as a letter tossed across a table.

SS Rose Castle

Day three and we were exploring the deepest of the wrecks—the *SS Rose Castle*. She was also the most intact. In fact, it was a little eerie to swim among the upright masts and cranes that looked almost ready to use. She was also the coldest dive and bottom time (at well over 110 feet to the deck) was fairly limited for recreational divers. But we did have just enough time to reach the massive stern gun.

By the end of the week, I had managed to put in four days of diving on the wrecks. I was struck by three thoughts. First of all, that anything I thought I knew about diving in Newfoundland and Labrador was wrong. I had imagined Newfoundland and Labrador's waters to be dark and cold, with low visibility and not much to see anyway. I was right about the cold, but dead wrong about what was there to explore and how clearly it could be seen. I've dived tropical waters that would be put to shame by the stunning viz and rich life of Conception Bay.

My second thought was that not only had I dived some of the best wrecks of my life, but I had been touched by a sense of profound history that had given added meaning to the experience. My final thought was for the men who endured those two nights back in 1942. I was left with a deep respect for anyone who lived and died in the battles around Bell Island. ■



DEBBIE STANLEY

Hooded Nudibranchs

Weird creatures from inner space

Text by Peter Symes
Photos by David Hall

This strange-looking creature, *Melibe leonine*, is one of the most characteristic members of the Opisthobranchia. It most notable feature is the large expandable muscular oral hood, fringed with sensory tentacles, which it opens and throws forward in order to catch food in matter similar to a fisherman with a catch net. It is also known as the Lion Nudibranch because of the hoods likeliness to that of a lion's mane.

This species feeds on just about anything that is unfortunate enough to swim in front of its gaping head, and its diet includes copepods, amphipods and ostracods, as well as small post-larval molluscs. This species hunts mainly attached but is a good swimmer when harassed or dislodged. The animal stands attached to the substrate (often a blade of eelgrass or kelp) and expands the oral hood ahead of itself to trap prey. It then sweeps the hood left and right or downward. When the ventral surface of the hood contacts a small animal, the hood rapidly closes, and the fringing tentacles overlap, holding the prey in. The whole animal is then forced into the nudibranch's mouth.

This spectacular nudibranch can seasonally be found in large numbers on kelp—particularly in kelp beds south of the Puget Sound—and sometimes 'swimming' in coastal waters. When swimming, it is usually upside-down, and thrashes or undulates back and forth. It is often seen swimming near the water's surface in the summer, or after fall and winter storms disturb the eelgrass.

The wide flattened cerata (fringes) of this species are easily detached when disturbed by fish or predators, as a defensive mechanism, inviting the predator to follow the detached body part drifting in the current, rather than stay around and hassle the animal itself. Animals are often found with some or all the cerata missing or in a state of regrowth. Predators may include fish, kelp dwelling crabs and sea stars.

This species occurs on the west coast of North America, from Alaska to Baja California. Eggs can be found in the Washington state area at any season. The eggs are attached to kelp and eelgrass in long, wide yellow or cream-colored ribbons, which form tight coils or wavy folds.

Melibe leonina has a sweet fruity aroma, which you can smell throughout the room when a number of them are in a tank. It tends to 'get to you' like a bad perfume. They are gregarious animals and probably use it to keep together. ■