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POINT & CLICK ON BOLD LINKS



# Equipment *in the news*



Edited by Peter Symes & Rosemary 'Roz' Lunn



## OCS

You can tell that Oceanic has a passion for timing devices and computers. Their latest offering to hit the market—the OCS—is an elegant wristwatch dive computer. Oceanic states that it has an intuitive operating system. The OCS benefits from a Dual Algorithm® and an advanced digital compass. You can also programme it for three Nitrox mixes, and it's neatly packed in a strong, lightweight composite housing reinforced by a stainless steel case back and bezel. It's future proof, too, because operational improvements and new features can be installed via Firmware Auto-Update through the optional PC Interface kit. [oceanicworldwide.com](http://oceanicworldwide.com)



## warp1

At last year's Orlando DEMA we got a close look at the new Aquabionic warp1 fin from Cetatek. This Canadian-based manufacturer stated they were introducing the world's first water adapting responsive propulsion system for fins. When divers 'power up their legs' and kick harder, this patent pending technology apparently spreads and cups the fin blade in response to an increased load on the actuator joints. [cetatek.com](http://cetatek.com)



## Luminous idea

The SEE-ME delayed surface marker buoy from Custom Divers is a visual marker. What makes this different is that the diver can zip a torch / flashlight into a pocket and it illuminates the whole D-SMB. When a torch is fitted and switched on, the SEE-ME becomes completely luminous and is fully visible through 360 degrees, thereby giving superior visual sighting, especially after dusk.

[Customdivers.com](http://Customdivers.com)

## Keldan Luna V

As with so many other fancy top-end brands, Keldan's coveted dive lights always seemed somewhat out of financial reach except for the well-off. Not any more. The new Luna 4 V is a smaller, more economical, yet still very powerful video light from the Swiss manufacturer. The battery pack is exchangeable, (a benefit of all Keldan lights) thus allowing quick battery changes within a few seconds. There are five selectable levels from 11 watt to 45 watt, resulting in a burn time of 45 to 180 minutes with the 5000K colour temperature matching that of daylight. Dry weight is a mere 0.7kg.

[Keldanlights.com](http://Keldanlights.com)





### f-LIGHT

The Manta f-LIGHT travel bag from Fourth Element is designed with travel in mind. Weighing in at less than 1kg but with a generous 115 litres (4 cu ft) it is one of the lightest dive bags on the market. By getting rid of the wheels of traditional bags, Fourth Element has managed to reduce the weight of the bag, freeing you to bring all the equipment you need for your adventure. Pair the Manta with the Remora travel bag, and you have a system meticulously designed from first principles for the travelling diver. [fourthelement.com](http://fourthelement.com)



### Tea Tree oil

Earol Swim Tea Tree Oil delivers a metered dose of olive oil and tea tree oil into the outer ear finely coating the auditory canal creating a water resistant barrier. The oils have natural anti-fungal, anti-bacterial, anti-viral and anti-infection properties.

When combined with the pump action metered spray delivery system, it will help prevent the incidence of trapped water and swimmer's ear.

[hlhealthcare.co.uk/earol-swim](http://hlhealthcare.co.uk/earol-swim)

### The Legend lives on

Aqualung's new version of their classic Legend regulator is smaller and lighter. The new tough PVD finish will keep its good looks, too, as the pink gold is much harder and durable than traditional chrome plating. The Legend LUX second stage also features the Master Breathing System (MBS) which is a new, simple and effective way to adjust the breathing performance of your Legend LUX. The MBS controls two functions at one time. It controls the direction of air, which alters the venturi effect, as well as changes the opening effort. [aqualung.com](http://aqualung.com)



### Alu Trio

The Alu Trio's flattened, elliptical shape makes it a snug fit in a BC pocket. The light source is three LED's with a joint output of 780 lumen. The body is made from anodized aluminium alloy, and the magnetic sliding switch that is self-locking makes it easy to operated with one hand. It is powered by eight AA-batteries. The alu trio is depth rated to 300m. [aqualung.com](http://aqualung.com)



### Suunto D9tx

The D9tx now boasts trimix compatibility—allowing for switching between of up to eight gases—and the Suunto Technical RGBM algorithm, previously only found on Suunto HelO2 as well as a tilt-compensated 3D compass. Compact with a titanium bracelet, this new top model from Suunto is stylish enough to wear as an elegant time-piece, too. The wireless air integration is an optional extra. [suunto.com](http://suunto.com)





## Dyron UV light

The Dyron 4200 Solaris UV light is for viewing and photographing fluorescence underwater. The light is supplied with a gel filter that can be cut and fitted to a mask, and also between a wet lens and the port of a housing. The 5W light has 16 LEDs, which emit a 120° beam with a maximum output of 4200 lumens and has a burn time of 30 to 50 minutes depending on power setting. [Dyronstore.com](http://Dyronstore.com)



## Explorer

The Hollis Explorer is a recreational rebreather. The unit is neither a fully closed nor a pure semi-closed system, but an intelligent hybrid that utilizes the best of both worlds. The Explorer uses a single gas; Nitrox, and is electronically controlled to achieve the optimal balance of PPO<sub>2</sub> and dive time that all breather divers desire. Hollis state the simple interface is easy to learn and straight-forward to dive [hollisgear.com](http://hollisgear.com)

## OneSuit

Poseidon's retro-style new wetsuit line instantly transported us back to 1965 and the glamorous James Bond film, Thunderball. Sean Connery, clad in an iconic red wetsuit, battled with SPECTRE over two nuclear warheads.

James Bond always had the latest gadgetry so we think he'd be interested in Poseidon's comments. They state they've created 'a revolutionary suit made out of a material never seen in a wetsuit before'. The One-Suit Membrane is primarily intended for tropical waters. Sub tropical diving has not been overlooked, and there are additional garments (vest and shorts) to allow the diver to layer up and increase their thermal protection.

The cool-looking membrane (that gives this suit its unique look) also makes it easy to don and doff. Furthermore the membrane prevents the diver from getting over heated on the surface whilst protecting the diver from the marine environment just as efficiently as a neoprene suit. [poseidon.com](http://poseidon.com)



## Trim inflation pillow

Dive Rites' Trim Inflation Pillow is designed to solve the problem of 'heavy legs', which is especially prevalent for rebreather and sidemount divers. Providing 10lbs of lift, the Trim Inflation Pillow easily attaches under any buttplate-style system. A 12-inch inflator with 15-inch LP hose is mounted on the right side with an OPV on the left. However, these can be switched if desired. The Trim Inflation Pillow gives the diver flexibility to switch out tanks, change exposure protection or move from sidemount to rebreather units all of which affect trim and the amount of counterbuoyancy needed. [diverite.com](http://diverite.com)



## Do you have to bring that iPad of yours along?

Despair not. UK-based Lomo Watersport have launched an iPad drybox; ideal for those who like to take their favourite tablet on a dive boat, sailing or anything environmentally hostile. Lomo state that these boxes can stand up to a fair amount of abuse, whilst protecting your iPad from bumps and knocks. Manufactured from ABS plastic, with chunky hinges, padded interior and a reinforced hinge, the IPAD drybox is watertight in most situations and can cope with being dropped into water. Priced at £29.99 it's available exclusively via Lomo's website [Ewetsuits.com](http://Ewetsuits.com)

# Reviewing Atomic Aquatic's Cobalt Übercool

**There is a first for everything, and as a case in point, I took Atomic Aquatic's Cobalt right out of the case and went diving with it without bothering reading the manual first. Under other circumstances, I would condemn such apparent reckless behaviour, but aside from also wearing my usual computer, I wanted to validate the claim that the interface was indeed so clear and intuitive that you could indeed just dive with it right out of the box.**

And so it seems. Once in the water, it seemed pretty straight forward. The user interface is just like that of a cell phone, with four big navigational buttons and a logical, clear menu. Any modern human who is not a technophobe should feel at home straight away. The buttons are big enough to be easily operated with bulky

dry gloves. One push at the left button brings me back to the main menu. I scroll down and up through the options with ease using the up and down buttons and go into a menu by selecting it with the right button. The information architecture is well executed. My TV remote control works the same way.

Atomic Aquatic's Cobalt computer enticed me from the first glance with its Star Trek, fancy looking digital compass. The interface gets top marks for clarity and ease of use. As the images show, it is also easy to read in the dark.

In the settings menu, the user can enter up to three defined 'gas mixes'. As the only variable gas is oxygen, which can be set to 22-99%, the gas mixes in question are really just grades of nitrox. That makes it a computer that can be used in fairly advanced recreational diving, up to advanced nitrox, up to entry level decompression diving training. While it may be depth rated to 100m, therefore not a technical computer, it is clearly not designed for this segment in mind anyway. All that being said, it can still bring you fairly high up the skill ladder.



The interface is both easy to read and easy to use, even under challenging circumstances such as in the dark and cold

Once again, even with bulky drysuit gloves on, I had no troubles changing gas mixes in the water.

As the computer prioritizes the essentials first, as it should, it also comes across as a good companion for dive trips. Its 'Quick Disconnect' makes it fast and easy to connect and remove the computer when travelling or between dives. What I appreciate when I am out in some remote location doing many repetitive dives, and some of

them deep, is being able to go over my dive profiles and, where possible, keep an eye on the tissue loading.

It may be my neurotic side rearing its ugly head, but diving is about being safe. I can get a preview of the profile on the Cobalt. Needless to say, it does not get very detailed on the computer itself, yet it serves the job of giving one the general picture on the spot, including the No Fly time.

There are many good computers on the market, but the built-in compass on this unit is the deal-clincher. I always had compasses on my consoles but rarely used them for reasons I am not quite sure of—most likely because I had to take my eyes off my main instruments and mess around with a clunky mechanical bezel that tended to get stuck. On the Cobalt, by contrast, one can't help but keep an eye on it and start using it.

The build of the Cobalt seems quite sturdy, and when I first handled it, the unit felt a wee bit heavy. But with direct comparison to similar units, it is quite compact and is packed with features. The batteries are sealed inside the case but can be recharged by the user. The charger connects via a socket with wet contacts and can be charged either through the main outlet or USB. ■

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# Diving With Dinosaurs

—*The Nile Crocs*  
*Okavango River, Botswana*

Text and photos  
by Amos Nachoum

My guide and I saw the croc on the surface, basking in the sun, laying on the papyrus grass. It was a Nile crocodile about five meters long and agitated by our invasion of its space. It moved lethargically and got into the water. We followed it, as it swam against the current. We drove the boat a hundred feet upstream, dived in and let the current carry us toward the beast. We saw it laying motionless on the gray soil of the riverbank. Its large head was under a broken tree trunk. I got myself ready to take its picture. Richard, my guide, was on one side, and I was on the opposite side. The



croc was between us. We were only at 5m depth, and the visibility was fair. Then—as if in slow motion—the croc went into reverse, climbed over the tree trunk and charged full speed toward my guide.





Richard saw the large croc rushing toward him. He raised his Hawaiian spear to defend himself. The croc pushed against the spear, pinning Richard against the river bed. The spear was bending, and sand was rising. The croc and Richard were swinging from left to right. Richard was holding his spear as hard as he could, swinging wildly from side to side. It looked almost like they were 'dancing'. More likely, they were locked in a struggle against each other and not letting go.

All this time, I had been following Richard underwater and was positioned behind him. I finned as hard as I could to get as close as possible to the action in order capture it with my super wide angle 14mm lens. But a thought was running through my mind, "Should I continue taking

Fourteen-foot croc lays on river bank amongst the reeds

CLOCKWISE FROM TOP LEFT: Team travels down the Okavango River seeking Nile crocodiles to photograph and film; Ready for diving; Getting into the water to meet the croc. PREVIOUS PAGE: Nile croc nicknamed, Scooby, shows off his powerful gaping jaws; Amos Nachoum (inset)



CLOCKWISE FROM LEFT: Rear view of a Nile croc; Croc inspecting underwater filmmaker, Brad Bestelink; Brad and croc in motion; Guide, Richard, with Hawaiian spear encounters croc in the Okavango River

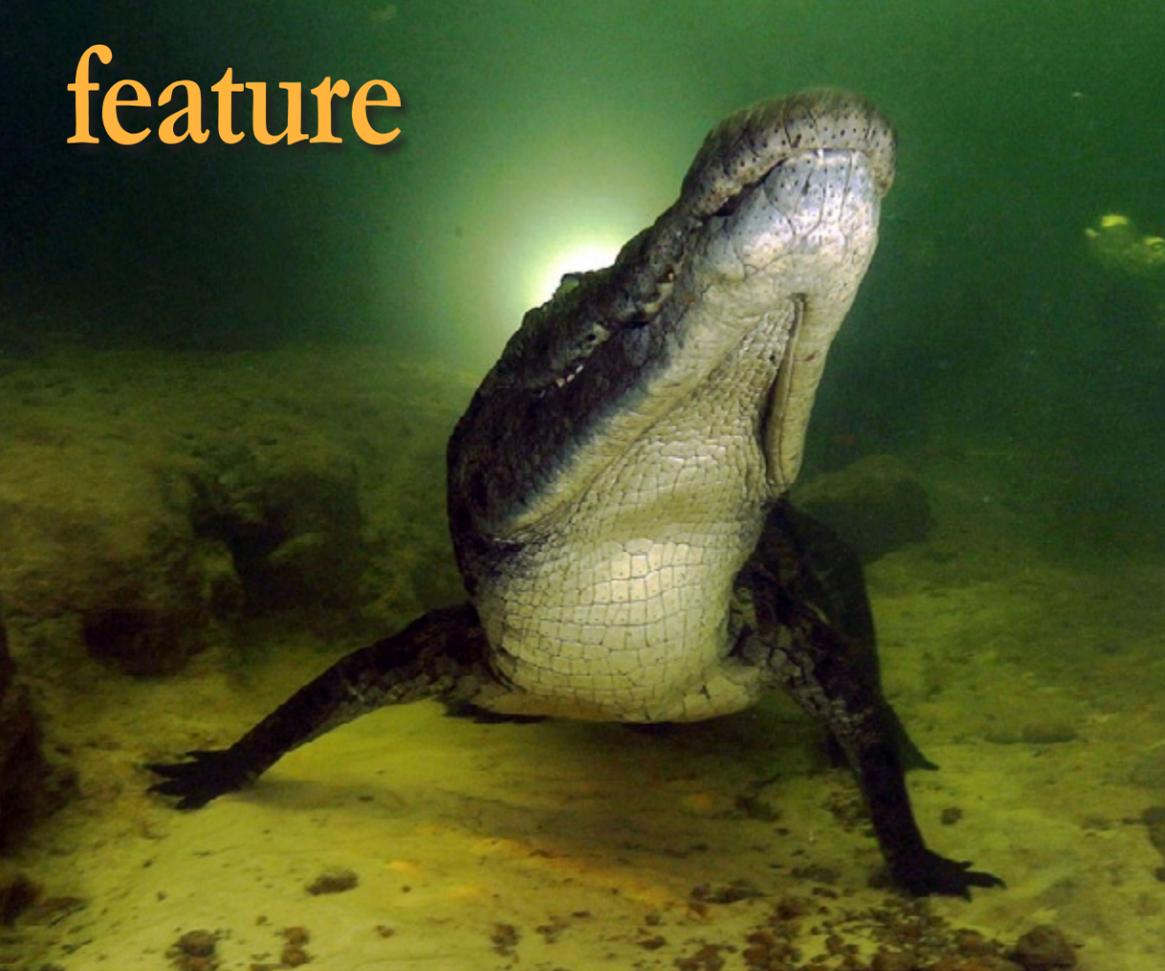
pictures, or shall I help Richard push this croc away?" Before I had to make this 'painful' decision and give up my camera, the croc let go and turned away, but not before it reached the surface and open its jaws wide, for one more fantastic photo opportunity to capture croc behavior.

Richard's head turned quickly, looking for me, and directed me to swim across to the other side of the river away from the croc. We started swimming just above the sandy

bottom of the river, pulling and helping each other to move against the current. It was hard work, but with the thought of the croc behind us, we found a new source of energy. We resolved that, under normal circumstances, we would likely abort the trip, but not this time.

We swam along the opposite bank of the river, presumably away from danger. Richard was ahead of me, moving leisurely down the current. I, for no apparent reason—just





CLOCKWISE FROM LEFT: Crocodile at the surface of the river; Backlit croc lifts head; Richard with spear encounters croc on the river bed; Amos' hand and croc's tail

my sixth sense—decided to look back. Even if I lost sight of Richard, I thought I would catch up with him. I turned my head back, and to my surprise,

two meters away from me, a dark figure filled my view, which could not be anything else but the croc coming toward us, and this time, from

my fins and myself about a meter from the bottom, and the croc was now under me. At that moment of advantage, I pushed my camera and my

behind. Now, I was in front of this wild animal, and I had no spear to defend myself, only my camera.

In a split-second decision, I raised

knees against the croc, pinning it against the bottom. Sensing the struggle behind him, Richard turned back to look for me. The croc, which was pinned under me, turned 90 degrees, and with all its power, pushed me over and ran out into the river current. Richard then led the way, rising to the river surface, signaled the boat, which maneuvered over our heads, and we both left the water speedily. It was enough *crocking* for one day.



## PHOTO HIGHLIGHT: TIPS FOR WORKING IN MURKY WATER

Working in murky water immediately requires me to work only with a wide angle lens and to get very close to the subject. That means working with super wide angle lenses, and I'm talking about the Canon 14mm lens with 108-degree coverage and a 15mm fisheye lens with 176-degree coverage.

Since I was working along the bank of a river with lots of vegetation—which casts shadows over the croc—and I needed to highlight the color and texture of the crocodile's skin, I decided to work with strobes in order to highlight the shadows. However, due to sand particles in the water and the current, I had to avoid aiming the strobe light directly at the subject in order to avoid backscatter.

In this case, I decided to aim my strobes upwards toward the surface. Since we were always diving in shallow water, the light from my strobes reached the surface, which was only two or three feet above my head, and reflected back down onto the subject. However, I now had to closely monitor the results on my screen, adjusting the strobe output power, while at the same time modifying the ISO—both of which helped me to extend the range of the light reflected from the surface, since the light now had to travel much further than in the case where one aims directly at the subject, as one would usually be shooting underwater.

That being said, I was also mindful of my white balance and adjusted it according to the color of the water.

Last but not least, I do not suggest to anyone to attempt to dive any river full of crocodiles without an expert—a person who has done it before more than one or two times. If you do not understand crocodile behavior and have not dived the river location before, just don't do it.

*Due to the inherent risk in diving at Okavango River, I escort only two divers for one week on this diving adventure, which is most unique in the book of diving safaris. The next expedition is in June 2012 at the Okavango Delta in Botswana. Contact Amos at: [crocphoto@biganimals.com](mailto:crocphoto@biganimals.com) ■*



The mighty jaws of the Nile crocodile (above). Expedition members saw crocs every day, four to five times per day, which were anywhere from seven to 12 feet long

Clearing the way for the boat (left)

Croc rising (top left)

Storytelling by the fire after an eventful day of *crock-ing*—the adventure of searching for and finding crocs in the Okavango River in Botswana with plenty of photo ops along the way (bottom left)

The Okavango River drops from its headwaters in Angola down the wide flat delta in Botswana and crosses Namibia's Caprivi Strip to finish its 1,100 kilometer journey to the Kalahari Desert. Yes, you read that right, the Okavango doesn't flow into the sea. Its fresh water flows into the Kalahari, fanning out during flood season to form the largest inland delta in sub-Saharan Africa. On this expedition, we saw crocs on

the river every day, four to five times per day, which were anywhere from seven to 12 feet long.

*This first-of-a-kind extreme diving adventure is only suitable for two guests at a time. The next experience in the wild with Nile crocodiles is scheduled for 5-14 June 2012 in the Okavango Delta of Botswana. Contact Amos Nachoum at [Biganimals.com](http://Biganimals.com) or telephone: 415-923-9865 ■*



Edited by Kelly LaClaire & Scott Bennett



ERIC CHENG

# Are sperm whales cultural beings?

**Differences in patterned clicks of sperm whale communication may lean towards culture rather than genetics. Findings could influence conservation efforts; instead of solely focusing on the animals' habitat, protection should also consider which dialect they use.**

Researchers have discovered that differences in the patterned clicks of sperm whale communication may lean towards culture rather than genetics. A study published in *Behaviour Genetics* suggests that sperm whale groups are made up of individuals that use the same dialect, rather than those that come from a similar

area of the Pacific. The creatures hold a range of records: they're the deepest diving mammal, the largest toothed whale and have the biggest brain on Earth. However, they don't have the sharpest eyesight or sense of smell, so they communicate using codas. The sounds are very different than those of other marine

mammals like humpback whales, which sing haunting songs to each other, or dolphins, which whistle.

### Clans

All sperm whales in a pod use the same small selection of patterned clicks. In the Pacific, sperm whales belong to one of five clans. Each

use a different dialect made up of a different handful of similar Morse code-like patterned clicks called codas. The clicks may be employed to communicate that they belong to a particular pod and to maintain social bonds. The whales create the sounds in the "big tub of oil at the front of their huge heads", explained Luke

Rendell from the University of St. Andrews. Along with air sacs in the whales' heads, the structure produces multiple pulses, just fractions of a second apart.

### Cultural transmission

Rendell contemplated whether the difference between clans was down to genetics. "It's an obvious question to ask. What are the genetics of these populations? Are these dialects culturally transmitted or genetic?" To obtain an answer, Rendell and colleagues from the United States and Canada extracted DNA from the whales' sloughed skin to see if they could see any genetic differences between the clans. In total, DNA was analyzed from 194 sperm whales belonging to 30 different social groups from three of the vocal clans across the Pacific Ocean.

Once the dialects were biologically determined, it was surmised that those sharing the same dialect would have similar genes. Instead, they found that whales with different repertoires of codas are often genetically similar, suggesting that the genetic differences don't explain clan differences, and that dialects must be passed down through the generations. Not only do the clans possess different dialects, they also have different hunting patterns, parenting habits and reproductive rates.

"All the evidence for culture relies on methods of exclusion. It's very difficult to actually prove cultural transmission," stated Rendell. "But our finding isn't consistent with anything other

than cultural dialects." Sperm whale pods are made up of females—with a few young—and average around 12 individuals. Male sperm whales leave the pod when they're juveniles and join all-male pods for a few years, before beginning a solitary life roaming the oceans.

Findings from this research could help influence conservation efforts; instead of solely focusing on the animals' habitat, protection should also consider which dialect they use. "We hope our finding will get people thinking about conservation, and the idea that behaviour in marine mammals is culturally-determined," Rendell said. ■

*Are these dialects culturally transmitted or genetic?*

*"Sometimes a deep breath is all you need to regroup and re-energize."*

- Szilvia Gogh



Gogh Jewelry Design



# Whales get the bends too

Whales and seals could suffer from the same decompression sickness experienced by human divers. Scientists at St. Andrews University find evidence of bubble formation in the bodies of cetaceans.

Until now, it has been contentious as to whether cetaceans could suffer from the disorientating sickness that can cause everything from skin rashes to death in extreme cases in humans, the university writes on its website. Their new study, published

*While the bends is rare under normal circumstances, excessive human noise or disturbance may cause a marine mammal to change its diving behaviour in ways that result in serious illness or injury.*

December 21, provides evidence of bubble formation in the bodies of beached

whales and seals that suggests the potential for decompression sickness, caused by the pressure experienced during deep sea diving.

The research also suggests that excessive human noise, such as exposure to military sonar, might cause disorientation in marine mammals, leading to them losing their natural defences and to succumb to the bends rather than avoid them.

Lead researcher Dr Sascha Hooker of the University of St. Andrews commented, "Decompression sickness, commonly known as 'the bends' is a serious problem for human divers, but the jury has been out as to whether marine mammals could get the bends or if it would be as serious for



A spherical lesion found in a rib of a dead sperm whale that beached on Nantucket was likely caused by nitrogen bubbles

them.

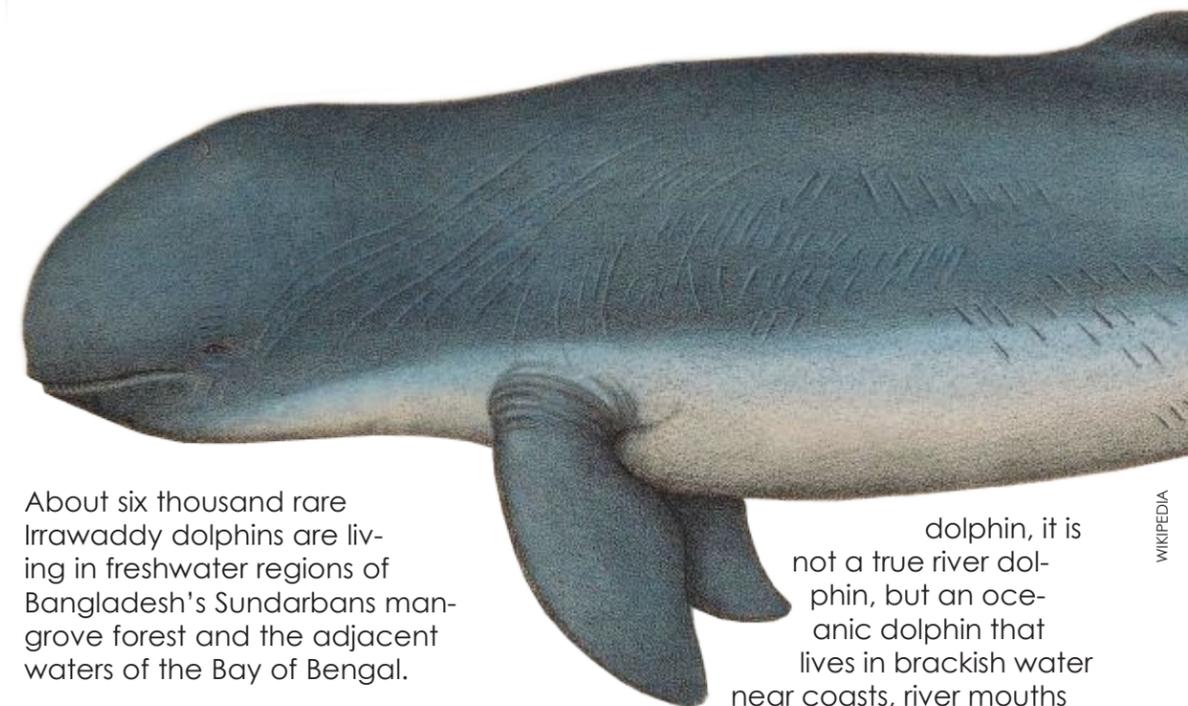
"Unfortunately the technology doesn't yet exist to measure what is going on physiologically inside a free-living whale during its descent to depths of over 1,000 metres.

Researchers began to question the conventional wisdom—that marine mammals have anatomical and physiological and behavioral adaptations to

avoid the bends—after examining beaked whales that had stranded on the Canary Islands in 2002. A necropsy of those animals turned up evidence of damage from gas bubbles.

The animals had stranded after exposure to sonar from nearby naval exercises. This led scientists to think that diving marine mammals might deal with the presence of nitrogen bubbles more frequently than previously thought, and that the animals' response strategies might involve physiological trade-offs depending on situational variables. In other words, the animals likely manage their nitrogen load and probably have greater variation in their blood nitrogen levels than previously believed. ■

## Thousands of rare Irrawaddy dolphins are living in Bangladeshi waters



About six thousand rare Irrawaddy dolphins are living in freshwater regions of Bangladesh's Sundarbans mangrove forest and the adjacent waters of the Bay of Bengal.

Elsewhere, such as in the Mekong River where the critically endangered dolphin was once plentiful, the numbers were just down to 85, according to WWF research done in 2011. As calf survival was found to be very low, researchers concluded that the small population is declining and at a high risk of extinction.

Irrawaddy dolphins are similar to the beluga in appearance, though most closely related to the orca. Although sometimes called the Irrawaddy River

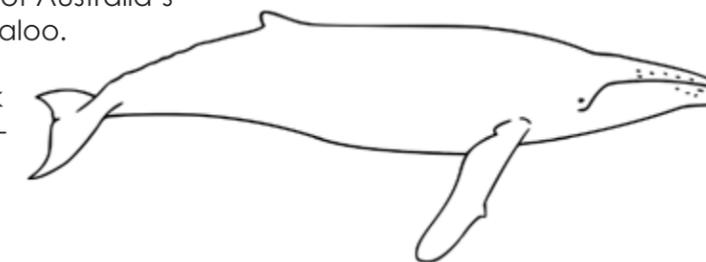
dolphin, it is not a true river dolphin, but an oceanic dolphin that lives in brackish water near coasts, river mouths and in estuaries. It has es-

tablished subpopulations in freshwater rivers, including the Ganges and the Mekong, as well as the Irrawaddy River from which it takes its name. Irrawaddy dolphins are more susceptible to human conflict than most other dolphins who live further out in the ocean. The majority of reported dolphin deaths in all sub-populations is due to accidental capture and drowning in gill nets and dragnets. Degradation of habitats is another main threat to Irrawaddy dolphins. ■

## Migaloo, the white humpback, may have an albino offspring

A white humpback whale calf recently spotted off the coast of Queensland is thought to be the off-spring of Australia's famous white humpback, Migaloo.

However, Mark Read of the Great Barrier Reef Marine Park Authority, cautioned that without DNA information experts would be unable to link the calf to Migaloo. ■



PETER SYMES

TOM KLEINDINST, WOODS HOLE OCEANOGRAPHIC INSTITUTION

WIKIPEDIA



# U.S. lawyers file lawsuit against Sea Shepherd on behalf of Japanese whalers

The Seattle, Washington, office of a Portland, Oregon, based law firm, Miller Nash, has filed a lawsuit against Paul Watson and Sea Shepherd on behalf of Japanese whalers accusing the anti-whaling activist group of harassment.

Since 1977 the Sea Shepherd Conservation Society (SSCS) has gained worldwide notoriety from their efforts to thwart illegal whaling across the globe, avowing in their mission statement:

"To end the destruction of habitat and slaughter of wildlife in the world's oceans in order to conserve and protect ecosystems and species. Sea Shepherd uses innovative direct-action tactics to investigate, document, and take action when necessary to expose and confront illegal activities on the high seas. By safeguarding the biodiversity of our delicately-balanced ocean ecosystems, Sea Shepherd works to ensure their survival for future generations."

Despite the huge financial setbacks of Japan's recent earthquakes, tsunamis and a devastating nuclear disaster, or perhaps because of those things, whalers were given several million dollars in governmental relief funds and are spending a portion of that money at Miller Nash in an attempt to get American courts to prohibit Sea Shepherd vessels from leaving port, essentially blocking the conservation group's efforts to prevent the Japanese hunts.

## Japanese government

In a statement from the Institute of Cetacean Research (the organization that conducts the whaling program



Crew of Sea Shepherd throw rancid butter in bottles at whaling ship

under the authority of the Japanese government) and Kyodo Senpaku Kaisha (the owner of many of the whaling vessels) said:

"Kyodo Senpaku Kaisha and the Institute of Cetacean Research along with research vessels' masters filed a lawsuit against the Sea Shepherd Conservation Society (SSCS) and Paul Watson. The Institute of Cetacean Research and Kyodo Senpaku are seeking a court order in the U.S. District Court of Seattle, Washington, that prevents SSCS and its founder Paul Watson from engaging in activities at sea that could cause injuries to the crews and damage to the vessels. Japan's whale research program in the Antarctic (JARPA II) is a

legitimate program conducted since 2005/2006 under Special Permits granted by the government of Japan and is greatly contributing to the advancement of scientific knowledge of whale resources in the Antarctic. The activities perpetrated by SSCS and Paul Watson not only put at risk the safety of the research vessels at sea but are also affecting the scientific achievement of the JARPA II research program and therefore cannot be overlooked."

## Sea Shepherd

Sea Shepherd, thus far, seems unconcerned about the litigation and plans to continue its efforts to curtail whaling activity.

"This seems like a frivolous lawsuit to me," said Captain Watson. "We have the images of the Japanese whalers destroying one of our ships, ramming our ships, running over our crew, firing upon us, throwing concussion grenades, deploying acoustical weapons, hitting us with water cannons and bamboo spears, and they are suing us because they are accusing us of violence towards them. We have not rammed them, and we have not caused a single injury, nor have we been charged with a crime or even reprimanded by anyone for our actions. They have not. This is simply a case of using the courts to harass us. I don't believe they have a case, and I doubt a



Sea Shepherd Captain Paul Watson



Edited by  
Kelly LaClaire



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MV Steve Irwin is part of the Sea Shepherd Conservation Society's fleet of vessels

U.S. court would take this seriously. Unlike Japan, the courts in the United States don't automatically do what the government demands that they do."

### American law firm

What was concerning to Watson and Sea Shepherd was the fact that an American law firm had agreed to represent the legal actions of the Japanese. In an article posted on the Sea Shepherd website the group said:

"Sea Shepherd is surprised that an American law firm, with a reputation for supporting a no-kill

animal shelter, would represent a company that is illegally slaughtering defenseless whales inside the boundaries of a whale sanctuary. Miller Nash obviously has lawyers in their firm who care about the welfare of animals. They seem to be opposed to the killing of defenseless [cats and dogs], so it is a mystery as to why they would be willing to represent one of the cruelest and most barbaric animal slaughtering industries on the planet.

"An American law firm defending Japanese outlaw whalers from American whale defenders seems to be very un-American. It is most

certainly inhumane and disgracefully insensitive to the agonizing, cruel death inflicted upon these highly sensitive, intelligent, and socially complex, sentient victims of their ruthless clients. I urge our supporters and people around the world who love whales and who oppose whaling to politely contact the law firm of Miller Nash and ask them how they can justify this contradiction."

If you would like to contact Miller Nash, they can found at [www.millernash.com](http://www.millernash.com). ■ SOURCES: SEATTLE POST INTELLIGENCER, ANIMALPLANET.COM, TAIPEI NEWS

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## Norway harpoons efforts to recognize whaling as threat to whales

**Although a dying industry, whaling still poses a real threat to conservation, Latest blow to fight against whaling comes when Japan's whaling fleet is poised to set sail for Southern Ocean Sanctuary.**

An intergovernmental conservation body representing more than 100 countries has failed to recognize whaling as a threat to whale conservation after objections from Norway—one of the three remaining countries that still kills whales for commercial reasons.

At the tenth meeting of the Conference of the Parties to the Convention on Migratory Species (CMS) in Bergen, Norway, party members agreed to a global programme of work addressing human-induced impacts on cetaceans, but withdrew whaling after Norway argued that the CMS was not the correct forum for this issue. This latest blow to the fight against whaling comes when Japan's whaling fleet is poised to set sail for the Southern Ocean Sanctuary to kill up to 935 minke whales and 50 endangered fin whales in defiance of global opposition and several international laws.

Patrick Ramage, the director of International Fund for Animal Welfare's (IFAW) Global Whale Programme, said: "Norway has harpooned efforts to have CMS recognize the very real threat posed to whales by

commercial whaling. While on one hand Norway committed to fight some important threats to whales through this forum, it has managed to kill any mention of whaling, which could and should have appeared in this important global resolution."

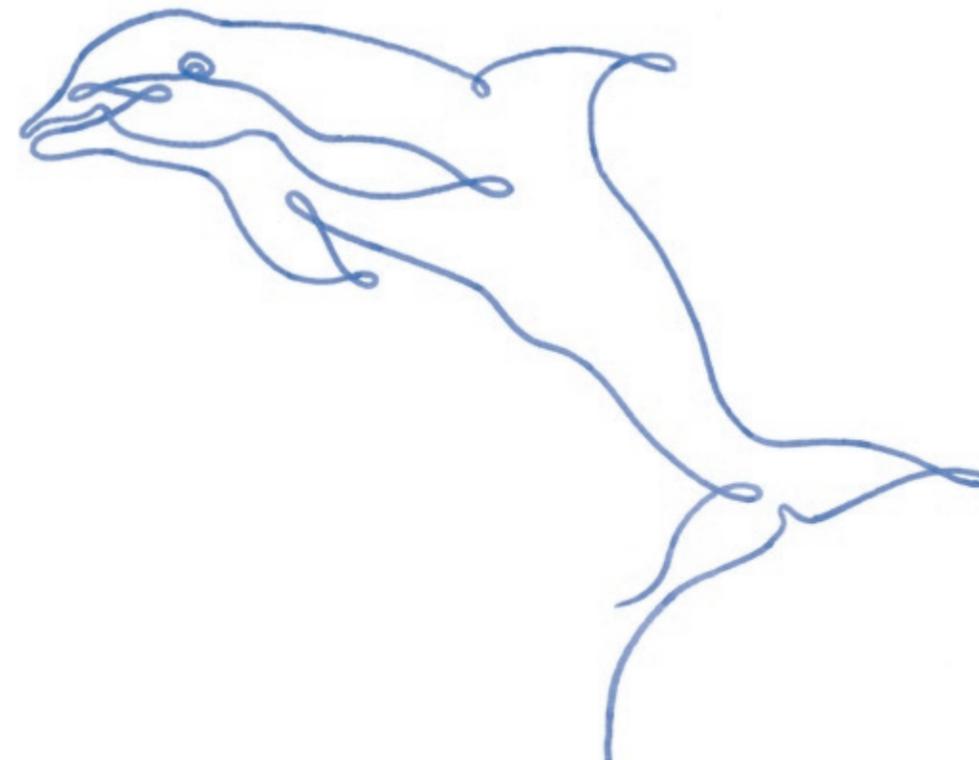
In a draft version of the resolution, commercial whaling was cited as one of the higher threats to whales, but was removed in the final version. "Whaling is a dying industry but one which poses a serious threat to whales at a time when they face more threats than ever before. IFAW is disappointed that an opportunity for this international

forum to recognize the threat of whaling was scuppered in this way," added Ramage.

IFAW opposes whaling because it is cruel and unnecessary, with footage of Japanese whaling analyzed by scientists showing whales can take more than half an hour to die. The organization promotes responsible whale watching as a humane and financially viable alternative to the cruelty of whaling. Despite this setback, the IFAW was pleased to see that other substantial threats, such as bycatch, pollution and feeding ground degradation, were included. ■



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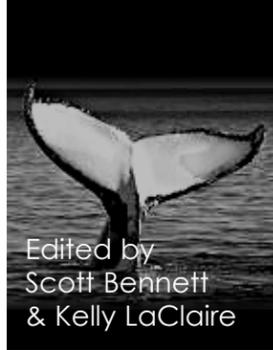


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Edited by  
Scott Bennett  
& Kelly LaClaire

# Whales win, walrus lose in warmer Arctic

**'New normal' means tourists and oil drilling. Loss of sea ice seriously affects polar bears and walrus, which utilize ice floes as hunting platforms.**

In an annual assessment called the Arctic Report Card, specialists from 14 countries assessed the Arctic has moved into a warmer, greener "new normal" phase, meaning reduced habitat for polar bears and more access for development. In 2011, Arctic air temperatures were approximately 1.5°C higher than the baseline number for the previous 30 years, along with a dramatic decrease of sea ice and glacier mass.

With less bright ice to reflect sunlight, and more dark open water to absorb it, the Arctic's changed characteristics will probably feed on each other and accelerate.

"We've got a new normal," said Don Perovich, an expert on sea ice at the U.S. Army Corps of Engineers' Cold Regions Research and Engineering Laboratory in New Hampshire. "Whether it's a tipping point and it will never recover, who can say? But we have a new normal . . . that has implications not just for the ice but other components of the Arctic system."

**Climate change effects**  
Released as U.N. climate talks

proceed in Durban, South Africa, the Arctic report found significant changes in atmospheric, sea ice and ocean conditions, and in landbased ice including glaciers, while marine and terrestrial ecosystems were also changed by the Arctic warming trend. The Arctic acts as Earth's "air conditioner" and also as a potent global weather-maker. The report found that even as the Arctic warmed, a shift in weather patterns sent cold Arctic air as far south as the United States and densely populated parts of northern Europe.

The Arctic's turning point came in 2006, when persistent weather patterns pushed out sea ice.

The following year, the Arctic ice extent, the area of the ocean covered by ice at summer's end, dropped to its lowest level ever. In 2011, Arctic sea ice reached its second-lowest extent. With less sea ice to clog potential shipping lanes, development in the Arctic is likely, said Monica Medina of the U.S. National

Oceanic and Atmospheric Administration. The Arctic "new normal" means oil and gas companies and tourists can begin to expect routine access to the area, according to report co-author, Jackie Richter-Menge, of the Cold Regions laboratory.

## The New Normal

The new warmth means more tundra vegetation, with taller shrubs winning out over lower-lying moss and lichens which could affect caribou and reindeer. The loss of sea ice seriously affects polar bears and walrus, which utilize ice floes as hunting platforms. Whales were winners, especially those that migrate from temperate areas as they could remain in the Arctic for longer periods while the water remained open in the summer. Populations of tagged bowhead whales from Alaska and west Greenland were able to mingle in the Northwest Passage, which was blocked by ice until this century.

At the base of the marine food chain, biological productivity soared by 20 percent between 1998 and 2009 with more sunlight penetrating the increasingly open Arctic water. However, Arctic water also absorbs climate-warming carbon dioxide, which has made the Beaufort and Chukchi seas more acidic, which could erode the shells of some shellfish species. ■



## Grad student hopes to study dolphins with backward fins

I know what you're thinking, because the first time I saw this picture, I thought the same thing. "That's Photoshopped, right?" Nope. That is an adult male eastern spinner dolphin, and yes, the fin is backwards.

But don't be alarmed. It's totally natural—at least for the adult males of this species. The females and juveniles have dorsal fins that look absolutely normal. At some point during the male's maturation, the fin changes aspects and begins to lean upward and finally ends up facing completely forward. Also unique to these spinners are the slightly upturned tail fins and the bulge just in front of the fluke.

"We've known about these dolphins for 50 years," said Matt Leslie, a graduate student at the Scripps Institution of oceanography, "but not a lot has been done to actually study why it's on backwards."

In an attempt to figure out why the eastern spinners have such strange characteristics, Leslie wants to build models of these unique dolphins and study them in a flow tank (basically a machine that works like a wind tunnel but with water). By look-

ing at how water streams around the models at different speeds, Leslie hopes to discover how the backward fin and upturned tail tips might affect the dolphins' swimming capabilities. He has a hunch it may give the spinners particular advantages in maneuverability and overall stability.

But it could far more basic than that. It is entirely possible that the anomaly is nothing more than a visual "turn on" to females, and that the males physical form changes with full maturation in attempt to appeal to possible mates.

To find out for sure, Leslie needs to perform a variety of tests and that calls for funding. Currently, this research isn't at the top of any large-scale funding agency's "donation list", so Leslie is appealing to ocean lovers, whale and dolphin enthusiasts and anyone who may be interested in helping solve the riddle of the eastern spinner dolphins with donations.

If you would like to see more pictures and video of these amazing dolphins, as well as Leslie's explanation of his project, log on to You Tube and type in Matt Leslie Dolphins. ■

SOURCE : SCIENTIFIC AMERICAN



WIKIPEDIA

# —A matter of comfort Sidemount Workshop

Text by Olga Torrey  
Photos by Larry Cohen

**When I started scuba diving, I became aware of the limitations of an injured body. Every time I carried a scuba tank, the acute pain in my lower back and shoulders increased, and it took a long time for the pain to go away. I did not want to give up scuba diving, so I looked for a solution and found one—diving sidemount.**

The best time of my life was when I competed in track and field as a teenager, in college and as a young adult. I continue to engage in sports today, including cross-country skiing, snowboarding, table tennis, basketball and many other sports. Injuries I sustained through sports stopped me from fully enjoying these activities. Since 1999, I have suffered from a back injury and have had both my shoulders operated on.

When a competitive athlete ages, he or she becomes more susceptible to injuries. Participating in sports requires one's full focus. The body becomes a machine that must properly function to produce the best results. Keeping the body healthy is extremely important, and the joy of victory over one's opponents comes with a price. If the individual push-

es the body to the limit, it could break. Physical injuries are the worst nightmare for any active person. One might embrace new challenges, but the body doesn't rebound as quickly. Minor injuries become a problem, and to continue an active lifestyle, one has to consider alternative techniques. I am one of those athletes.

Last year, I went to Dutch Springs, located in Bethlehem, Pennsylvania, USA, to practice diving and my photo-video skills. After finishing the dives, I expressed frustration about my pain loud enough for others to hear. Some moments later, Sean Martini—a scuba instructor from The Scuba Connection dive shop—suggested I take a sidemount class. Sean clearly explained the benefits of this gear configuration. He believed using sidemount could solve my issues. I had never even seen a diver in sidemount gear before, but I was willing to give it a try.

Dive Rite held a sidemount demo at Dutch Springs in the summer of 2010. My first step was to try it out in the water. Under the guidance of a scuba instructor, we did a 15-minute dive. Back at the surface, unclipping my tanks, I exited the water with just the harness. Finally, a dive without pain. I made the decision right on the spot to take a sidemount workshop.

## The workshop

The following week, two of my curious scuba buddies joined me for the sidemount workshop given by The Scuba



Connection. Wayne, the business owner and an instructor, greeted us with a smile before starting the class. Manuals, pens and tank rigging parts were laid out around the table and the floor. When I saw so many unknown scuba parts, I doubted if I could remember them all and how to put them in order.

The workshop began with the history of sidemount. The configuration

was designed for extreme cave divers. Wearing tanks on their side, technical divers could penetrate tight passages too small for traditional back-mount rigs with multiple stage bottles. Other advantages include two separate sources of gas, with two independent regulators. One also has easy access to tank valves, in case of an emergency.

Sidemount allows for a greater range

of motion, comfort and vision. Buoyancy and a streamlined profile are easier to maintain. Entering and exiting the water without tanks is another advantage. Petite or aging divers can use different size cylinders.

I was already convinced that sidemount was for me. Eager to get into the water, I wanted to experience these benefits over my single tank back-mount





covered.

Wearing a drysuit, heavy undergarments and thick gloves that restricted movement, I had some difficulty clipping and unclipping the tanks and thought the clips were too small. The motion to perform this task made my shoulders ache.

When we took a break, I expressed my concern regarding the clips. I asked my instructor to replace the small clips with larger ones. Wayne explained why we needed the smaller clips to keep a low profile and streamline configuration. He said practicing would develop muscle memory, and this task would get easier. However, he agreed to temporarily substitute larger clips to

make it easier to attach the tanks.

Another issue came up with tanks unclipped and pushed ahead. To keep proper trim with steel tanks brought to the front, a diver must establish buoyancy. I did that, but I could not hold the cylinders for too long. The seven-pound negative tanks were too heavy for me to stay in proper trim. I realized more work had to be done in the gym.

We learned advanced finning techniques including frog, modified frog, flutter, modified flutter, helicopter turns and reverse kicking. I tried to mimic the instruc-

tor's techniques but realized more practice was needed. Other skills included deploying surface markers, ascending to a safety stop and maintaining proper trim. It was not an easy task to keep eye contact with my buddy and maintain neutral buoyancy while deploying a safety sausage.

### Drills

The third day was as intense

as the previous days. Wayne outlined the day's plan on the blackboard. We worked on the system's attachment points adding other gear including lights, lift bags and reels. Gas management was explained in detail, and we performed valve shutdowns and air sharing while swimming.

The valve drill was a very tricky part of the workshop. I was instructed to swim to the sunken

configuration.

After history and theory, Wayne demonstrated tank rigging. He dressed and undressed a scuba tank, explaining step by step the proper attachment of straps, clips and bungees.

My practical scuba friend, Jeanne Chin, brought her camera to record every stage of how to do the tank rigging. It was very helpful for remembering how to rig the cylinders.

It was now our turn to rig the tanks. We practiced until it became familiar.

### In the water

On the second day, we hit the water at Dutch Springs. The class began establishing proper buoyancy control, weighting and trim on the surface. When my buddies and I felt comfortable, we ventured out toward the training platforms at a depth of 30 feet.

I was overweighed. Wayne kept the Nomad weight plate on my harness with pockets facing out in case the weight needed to be readjusted. Finally, I established my buoyancy and focused on trim.

Easier said than done. My legs

pulled me down into a vertical position. Two steel tanks on my sides felt awkward. Wayne gently pulled my feet up and my shoulders down, this helped me get into proper trim. My body was tense, and it took some time to get used to this.

We learned how to route the hoses correctly and worked on valve drills. Images of rigging tanks from my dive buddy's camera were burned into my mind. Cylinder removal and replacement in different positions, unclipping the back of the cylinders and pushing them ahead was



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different environments and personal body types. Divers should be aware of their own needs when selecting equipment. I purchased a Dive Rite Nomad XT sidemount rig because the company has experience with technical dive gear.

The super-tough exterior is resistant to punctures and abrasions. The wing provides up to 50 pounds of lift, which

is perfect for the steel tanks I use.

The harness has a snug fit, which is essential. My instructor and I spent time adjusting the harness to the proportions of my body. I liked the padded shoulder and cross-chest straps for proper comfort and fit. Being a cold-water wreck diver, I appreciate that adjustments can be handled with thick gloves, and I enjoy the flexibility of the attachment points for all my loose gear.

When diving off boats, I use an equipment line. I clip off one tank in the water at the end of the dive. This way, I can climb up the ladder where a crew member removes my second tank. This is easier on my body.

Besides diving New York/New Jersey's wreck valley, I have travelled with my

sidemount gear to the Thousand Islands, Alaska and Bonaire. Outside of Florida's cave country and Mexico's Mayan Riviera, sidemount is not very common. One might expect resistance from dive operators who usually deal with single tank divers. Today, some recreational and technical training agencies offer sidemount courses, increasing the popularity of the configuration.

For the past year, I've met more sidemount divers. Sidemount was once a technique used only in the technical community, but now it's available to recreational divers. This makes it possible for divers of all levels to pursue their underwater passion. When I am asked why I chose this configuration I say, "Long dives, no pain." ■

Sikorsky H-37 helicopter using compass readings; then, penetrate the chopper through the back door; and finally, swim the full length of the helicopter. I was told to be ready for surprises.

When I swam in, I saw a flash card suddenly appear in front of my face. It read: "Cutting Tool". I pulled out a knife from my thigh pocket. "Backup Light", "Reel" and many other commands followed.

At some point, the instructor disappeared from my view. I relaxed, thinking I had finished my tasks for the day. Suddenly, a burst of bubbles erupted from my tank valve. Surprised and shocked, I realized I had a free-flow on my left tank. It took me a few seconds to evaluate the situation. I switched regulators, shut the tank valve and breathed from my right tank. Wayne had simulated the free-flow by sneaking behind my back.

Dealing with this kind of an emergency is much easier and safer with sidemount. You could see the valves and operate them without physical obstruction. This is not the case with back-mount.

We also practiced donning tanks while floating at the surface and handing them to a tender, or boat mate. After three days of training, it was time to demonstrate what we had learned. This time, I was more relaxed, knowing that I had a redundant gas supply and was more in control of my gear. This lowered my sac rate and allowed me to do longer dives. Because of this workshop, I am a better diver.

### Rigs

The market offers a variety of sidemount rigs that meet the needs of



## A White House for Anemonefish

**Even if they offer a wonderful photographic occasion, sea anemones bleaching can be another signal of reef suffering due to water temperature increase.**

Text and photos by Francesco Ricciardi

Coral bleaching is a natural phenomenon of zooxanthellae (the symbiotic algae necessary for the survival of many hard and soft corals) expulsion that some corals and anemones experience in presence of high temperatures, which induce the production of toxins by their symbiotic "allies". In this case, the enemy comes from inside and should be eliminated, thus, the animal eliminates the microalgae. Sadly famous is the massive coral bleaching induced by El Niño in the 90's, especially in the Indian Ocean. Other events of coral bleaching have been recorded worldwide, including the Great Barrier Reef and the Indo-Pacific area (Indonesia, Malaysia, Philippines). Some of these areas are showing signs of recovering, but the increasing temperatures remains a critical threat for every coral reef.

Recently, dive spots all around the Asian reefs presented a quite unusual incidence of sea anemones bleaching, due to the higher sea

temperatures recorded this year. Even though it's a great photo opportunity—of the primary sea anemone inhabitants, the clownfish (often called anemonefish) which with their bright colors make a wonderful color contrast to the white background of the bleached anemone—the shining white sea anemones are not a really good signal of coral reef health.

Even when there is not a massive coral bleaching event similar to that which occurred in many parts of the world, too many sea anemones bleaching in a given area are a warning signal that we should not underestimate, even if natural cycles of warmer waters can occur in some areas.

In Indonesia, in the North Sulawesi Area (Bunaken, Manado Coast, Lembeh Strait just to cite the most renewed areas!) the first signs of bleaching came from the magnificent sea anemone (*Heteractis magnifica*), which apparently is the

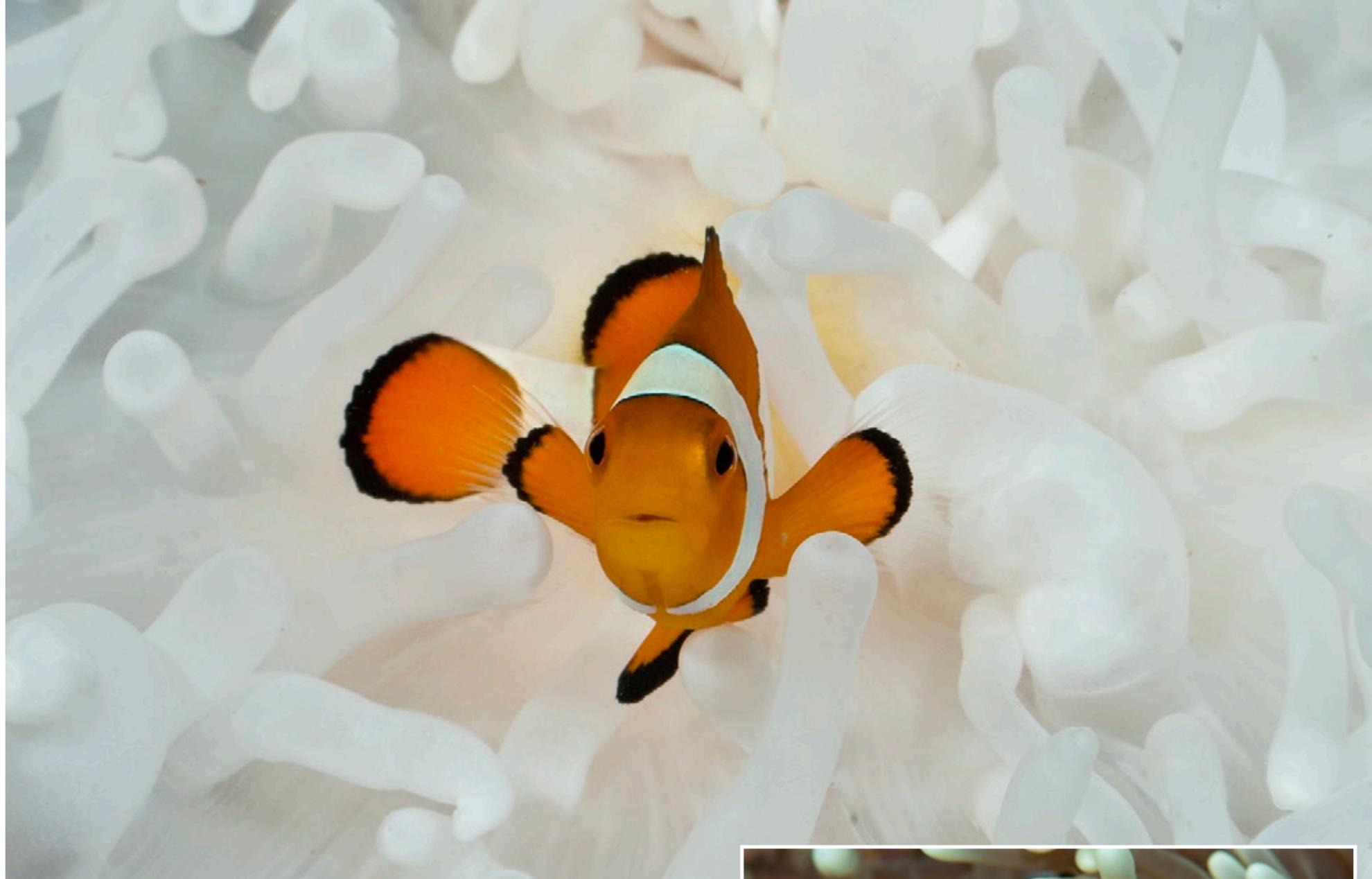
most sensitive species in the area. At the moment, other species such as *Heteractis crisper* and the bubble sea anemone, *Entacmaea quadricolor*, are showing signs of bleaching.

Anemone bleaching is not an instantaneous process; anemones start losing color slowly, passing from their natural color to a greenish-brownish one, before becoming something like a fluorescent green and finally completely white. In some occasions, especially at dive sites that I visit more commonly, it has been possible to monitor the color changes from the normal one

to the completely white phase.

Due to the importance of zooxanthellae in the sea anemone's physiology, the resistance without these microalgae is quite limited during this time; if they are not able to recover, bleached anemones start disappearing, especially if other conditions (light and food availability) are not optimal.

So, what about their inhabitants, the colorful anemonefish? Of course, a healthy anemone is necessary for their protection, and anemone bleaching can threaten the survival of some local populations. ■



Before and after (big image): the same magnificent sea anemone and his clownfish, the western anemonefish (*Amphiprion ocellaris*) photographed in November 2010 and February 2011. Fukui Point, Bunaken Island, North Sulawesi, Indonesia