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Edited by
Arnold Weisz

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The European Union (EU) are planning to prohibit lead in sports equipment from 2012. The French company Sublest already has a solution for this with its lead free weights. The weights are made of cast iron and have a ten percent larger volume than equal lead weights. Presently there are weights available from 0.5 to 3 kilos. The company is also planning to launch ankle weights and "soft weights" next year. www.sublest.fr

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www.suunto.com



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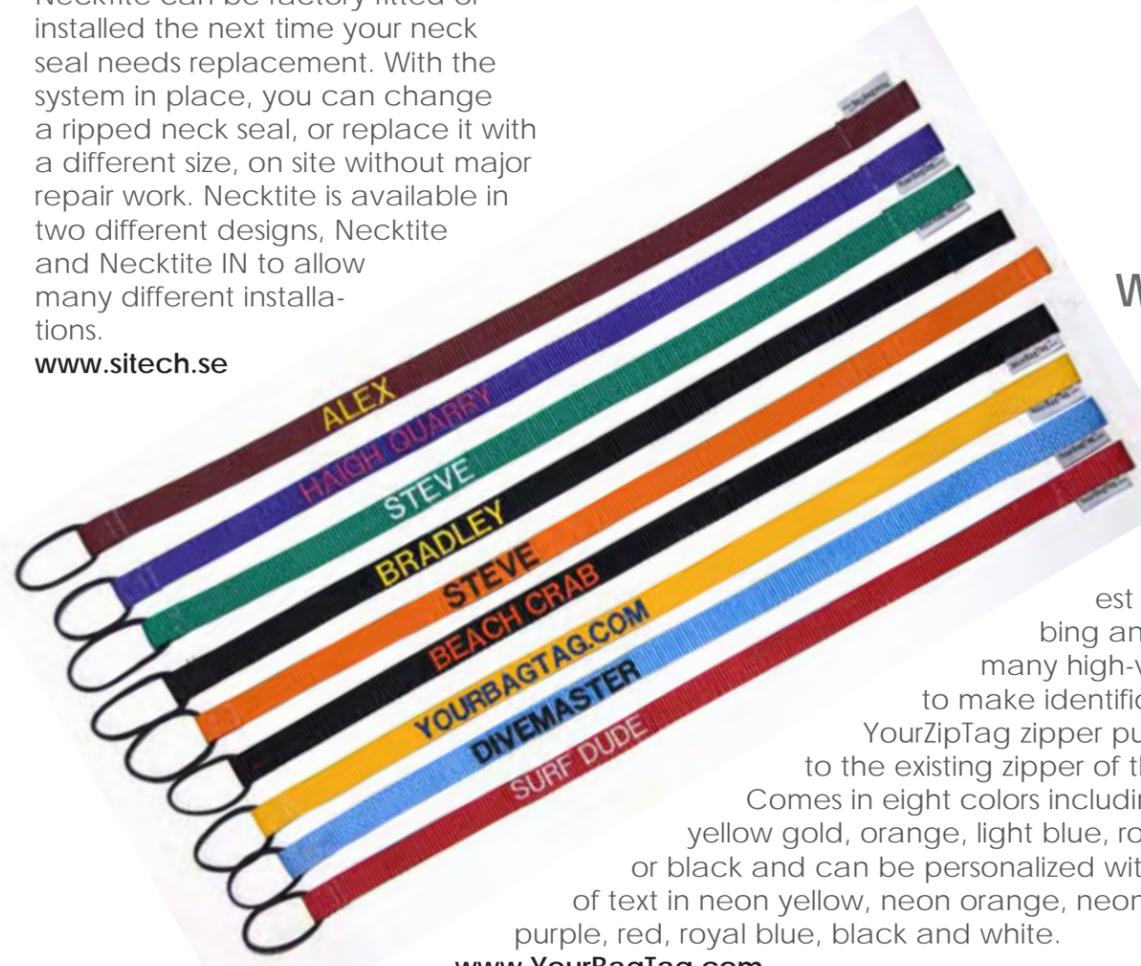
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www.sitech.se



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To Boldly Go Where ...

—the *Star Trek* legacy goes underwater

Why Roddenberry Dive Team?

Rod: I've loved it for many years. The beauty, the mystery, the adventure is what attracted me to the underwater realm. It really had nothing to do with *Star Trek*. I was certified during my first year of college in 1993... I didn't even think to connect the two worlds until many years later.

In the same way that *Star Trek* portrays a future where humanity has embraced diversity and reached into space in search of new ideas and life forms, the Roddenberry Dive Team (RDT) is a real world effort to share and preserve the wonder and diversity of our oceans and environment. Through scuba trips, special events and thought-provoking seminars, the dive team will inspire the change that will lead to a future where our species work together for the betterment of all life.

What do you mean?

Rod: Every diver I have met is considerably aware of the ocean and the state it is in. When I was young, I knew what my father (Gene Roddenberry, creator of

Star Trek) did for a living, but I wasn't into it myself. I guess I was a rebellious teenager and didn't see things eye-to-eye with him. When he passed on, I started to look into the bigger picture and the idea behind the series, and I became very proud of him and how he reached out and inspired so many to go beyond their perceived barriers and achieve a better understanding of human values.

When I hear people talk about how *Star Trek* inspired them to achieve greatness, it makes me proud of what my father did. It is those principles that my father stood behind that I want to implement in the Roddenberry Dive Team. When I first met Greg, he told me we could do something more than just a "dive club", and I believed him... and we have spent the past year of planning just that.

Greg: I have been a scuba diver for 33 years, and I grew up in Kansas about as far from water as you can get. I'd see scuba divers on TV or read about them, and it was really an exciting adventure for me. I was also as *Star Trek* fan, so



Eugene "Rod" Roddenberry (left) with Greg Martin at a recent event on Catalina Island, California

Text by Peter Symes
Photos courtesy of
Roddenberry Dive Team





TM & © 2007 CBS STUDIOS INC.

Starship Enterprise from the early *Star Trek* series. The *Star Trek* universe created by Gene Roddenberry is the setting of six television series including the original 1966 *Star Trek*, and eleven feature films.

when I heard about Rod's idea, it immediately went together in my mind—it was just a natural.

Greg: *Star Trek* has developed a bit of a stigma over the years—you know, over the top fans, etc. I don't know if you have been to a soccer or football game lately; there are some pretty over the top fans there too! These fans are just really embracing Gene's ideals for a better world. The dive team is not about *Star Trek* but about the philosophies that Gene created as part of the overall theme of *Star Trek*. We are using those themes and the fun of it to bring people together to make a difference in our oceans for all of the future generations to come.

What principles or ideas do you share with Star Trek?

Rod: The two worlds—the exploration of outer and inner space—go hand-in-hand. Instead of starting “just another dive club”, we want to create awareness and get people involved in preserving our

environment. Just in my relatively short diving career of 16 years, I have seen changes for the worse, and that is scary. These changes over time might be forgotten if we don't have anyone around who remembers how it used to be and to help the rest of us. The younger generation also needs to be aware. We hope to involve both science and marine experts (as well as a few celebrities) so that they can explain these matters and help inspire change.

Another parallel is that we don't go out on “dive trips”, we call them “dive missions”—in the same manner that *Star Trek* had “away missions”—since we want to go diving with a purpose. We always want to incorporate a message for what we do. If there is not a concrete message relating to that mission, then there should at least be the message of hope.

Listen to our radio interview with Rod, Greg, Peter Symes and Ken English on www.xray-mag.com/X-Raydio



Gene Roddenberry, creator of *Star Trek* and Rod's father

History is history for a reason, and we shouldn't stop making progress because we are scared of moving forward.

How is Roddenberry Dive Team organised?

Greg: Rod is the president and founder, and I am the executive director.

Rod: It is membership driven and we would like it to grow into a large “dive collective” that is essentially a global community of divers and ocean lovers who are working together to inspire change for a better future. We would like to do more than just organizing events here on the West Coast and even the US. We plan to have trips and meet up with like-minded dive groups from

all over the world. Preserving our planet and protecting life is a global responsibility, and we know we are not alone in our beliefs. As far as logistics to the dive team membership, there is a membership fee of US\$49.95 per year, which goes towards setting up various activities and events. While not officially a non-profit organization, we are non-profit oriented and are reinvesting all money back into the team objectives.

When we go out on our dive missions, we also want to explore the above-water part of the environment and get into the cultural element. So, if you are not diving, there are a lot of other activities you can participate in and also online.

We have a ton more information of what the RDT is all about at our

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profile

website. I encourage anyone who's curious to go to www.RoddenberryDiveTeam.com and check it out!

Greg: We hope to have as many non-divers as divers joining because we also want to take part in lots of activities such as beach clean-ups and the like.

We won't be able to have the traditional club meetings, but we do hope to be able to have meetings in cyberspace.

The film studios owns the rights to Star Trek, and I assume, all of the derived merchandise. Couldn't that lead to some conflict over your dive team?

Rod: No, because we work off the Roddenberry Dive Club name and not Star Trek, and the studios have been quite gracious about us and will continue to be so as long as we don't go in and make any money off the Star Trek name.

Of course, they see us as something that also benefits their enterprise, too, and even in the case of any issues arising, I think they would consider it bad PR going into a spat over it. We might consider going into making some underwater vehicle later, so perhaps we have to talk to them there. However, my family does have some rights to sell Star Trek merchandise.

What are your long term goals?

Greg: First we must build up membership. Then, I would like the dive industry to think of our group as doing some important work. We want to take the next step with the young kids to educate them on what is going on with our oceans. We need that youthful excitement we are hoping to utilize it to make a difference in our oceans. ■



Paramount Pictures has produced eleven Star Trek feature films, the most recent released in May 2009 with a twelfth in development, possibly to be released in 2011, which will celebrate the Star Trek franchise's 45th anniversary



Roddenberry Dive team was introduced to the general public at the recent Scuba Show in Long Beach, California

For me, the series was best when it was about issues. "Star Trek" has tackled many racial and economic issues. We were the first to do ecological issues, and we always talked about peace on many planets. Those are still such relevant issues for the new film. On the series, a writer would come to the set and say, "I'm really passionate about this issue," then he would work it into the "Trek" world. That's the beauty of these stories.

—Leonard Nimoy,
quoted by Los Angeles Times
on May 3rd



Leonard Nimoy played the character of Spock on the first Star Trek series, that ran for three seasons from 1966 to 1969, and he reprised the role in the movie sequels (most recently 2009's Star Trek) and the follow-up series, Star Trek: The Next Generation

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Treasure Hunting

in the 21st Century

Dan Porter of Blue Water Ventures Key West (left) and new treasure hunting team member, Michael DeMar (right), show off the valuable gold chalice that DeMar recovered from the *Santa Margarita* wreck site off the coast of Florida, USA

Text by Millis Keegan
Photos by Millis Keegan, Allie Porter

Treasure hunter for a day —

Rumor has it that the sandy beaches of Florida are riddled with gold coins. Now, that may not be 100 percent true. If you stroll along the beach in early morning, chances are you won't see any shiny objects of any worth along your way, but you might see one or two hopeful souls looking for prosperity with a metal detector in their hand. They actually have good reason to search. Florida's coastline is pretty much dotted with colonial wrecks. Those ships belonged to Spanish treasure fleets that perished under violent hurricanes in 1622, 1715 and again in 1733.

Diving for gold or just a cool adventure



The shipwrecks broke apart, and the remains have been scattered over centuries. It is hard to believe that it is even possible to find anything from those treasure fleets, other than by chance, because the sea is vast, and it is such a huge area to explore. This is warm, salty water, so it's not like you can search for something as big as a wreck. Any wreck here has long since disintegrated, and its contents are spread over miles and miles and buried in sand and mud.

But here I am, ready to be part of Keith Webb's Blue Water Ventures

Key West crew dive team, at least for a day, to do just that. Search for a buried fortune.

I am geared up, about to jump in. Being one of those unfortunate ones dealing with seasickness, I couldn't have asked for a better day... on the boat, that is. The current out here is brutal. It is shallow water, so when the Gulf turns the tide, it is whopping down there. The divers are used to it, and I got some advice: Just stay in the excavation, and keep your head down.

It was not very far from here that

the team found a fabulous gold chalice a few months ago. The guy who found it was Michael DeMar, a new member of the team. What a start to his hunting career! Chris Rackley, a veteran who has been part of the crew a number of seasons and my dive buddy for the day, was right there with him when he found it. We were climbing onto the dive ladder while he told the story.

Finding the gold seemed so easy, and that's when it hit me. There might actually be a possibility that I could find a part of this historical treasure as

well! Thrilling, people, thrilling!

The other crew diver diving this day was Chris Tanaka, a younger member of the crew. He was here because he wanted to have fun. Finding treasure was a bonus, and that seemed to be the overall sentiment among these guys. They were here for the adventure.

We took the plunge, and the divers went to work immediately. The metal detectors swept the bottom, left to right, right to left. The team tried to cover as much ground as possible in as short time as possible. The total

ALLIE PORTER





Treasure Hunting

LEFT TO RIGHT: The metal detector picks up on small items hidden in the sand; Something is hiding in the hole, but what? This could be signs of a ships nail or a hull spike, a great clue that indicates that we are on the right trail; Finds are collected in a box, and brought to the surface for documentation

HISTORY

According to Blue Water Ventures researchers, it was in the year 1622 that a treasure galleon carrying the wealth of the "Indies" was destroyed in a violent storm. All possible means were attempted to locate and reclaim her riches. After some initial success, salvage was ultimately thwarted by rapidly shifting sands and savage currents. The fortunes of the 1622 Fleet shipwreck *Santa Margarita* were abandoned and left to their fate in the waters of the Florida Straits.

Today, Blue Waters Ventures Key West has launched their fourth consecutive season of search and recovery of the *Santa Margarita* shipwreck. It is known from archival records that up to 169 silver bars weighing between 80 and 100 pounds each, up to 80,000 silver treasure coins, and no less than 800 ounces of gold from the *Santa Margarita* still await discovery. And that is just the documented treasures. The majority of the gold bars, bits, discs and chains found to date (106 pounds in the summer of 1980, alone) were contraband. Because the *Santa Margarita* was battered and broken apart in the storm, its cargo was distributed over an extensive area and now lies scattered and hidden. More info: www.bluewater-ventureskw.com

search area—the so-called "Ghost Trail"—was huge, and the items searched for were small, so time was of essence.

Visibility was bad, but that was expected. As the prop wash deflectors moved the sand and created a working space for the divers, sediment mixed with the water. It was like diving in watered down milk. The sand had built up on the sides of the search area, but the metal detector would indicate if anything was hidden there.

Michael and his buddy spotted something and signalled for me to come over. A hit, already? This was great! I hurried over, getting the camera ready for the big revelation. What could it be? A nice piece of scrap. Oh, well... next time.

A few minutes later, they were done, and we headed up to hang on the outside of the boat while we moved to the next excavation point, and the prop wash deflectors went to work again. We did not move very far, the search areas overlapped each other, which is a characteristic of the search pattern. Every excavation overlaps so that the team can say for certain that there are no major artifacts left in the area. We got the OK, and jumped in again.

This time, I was more used to the surroundings and the process, and I took some time to look around. The

sand had once again been moved to the side by the prop wash deflectors, and we were moving around



This is an exact replica of the contents of a treasure chest filled with silver coins found in the ocean. The chest is long gone, but the size of it is easily determined...

on the exposed limestone. It was like checking out the holes in a seriously major block of Swiss cheese.

Collected around the edges were large old shells and sand dollar skel-

etons, waiting to be crushed by the ocean to become sand sometime in the future. Who knows how many hundreds of years they have been hiding under the sand. I picked one and took a closer look; they seemed bigger than what you find today, and a thought passed through my mind: were shells larger centuries ago? Like pre-trawler time?

The divers interrupted my profound thought process; it was time to move the boat again.

Every dive was less than five minutes, and the depth between 8-30 feet (3-10 meters). Very tedious, very monotonous, very boring, and as far away from an Indiana Jones life as you can come, yet the divers seemed to like what they were doing. Why? Because once in a while you actually find something that tickles your imagination; once in a while you find gold and jewelry, and seriously, where would the fun and excitement be if you did *that* every-day?

The *Santa Margarita* wreck

The excavation of the *Margarita* wreck is the result of modern technology and creative minds. It is time for lunch, which gives me the opportunity to visit with the captain, Dan Porter.



ABOVE LEFT TO RIGHT: Life aboard is pretty much just another day at work, as the pieces found on the bottom is brought to the surface, the deck crew takes over, and the sorting and documenting begins. SECOND ROW: The prop wash deflector allows the divers to search the bottom more effectively. BELOW: Search vessel, *Blue Water Rose*

He tells me that what began as an exploratory expedition quickly changed when the gold chalice was found. The chalice was probably one of the most significant finds in 30 years on this site. That, plus various ship wreck debris found, told them they were on the right track, and from that moment on, the search needed to be more methodical. That meant more work, more of that tedious, monotonous, boring work, but it has turned out to be very successful work as well.

So far, millions of dollars worth of treasures have been recovered, not to mention the historical value of the search.

The captain showed me charts on the computer. What we were doing was following what was referred to as a ghost trail, which sounds more exciting than it really is. What the Blue Water Ventures team did was to calculate possible find sites based on where the *Margarita* sank and weather and current pattern over the course of hundreds of years. Using that information, they plotted a course

that stretched several nautical miles and defined a trail—The Ghost Trail.

Father and son

Dan Porter is a second-generation treasure hunter, or finder, as he also refers to himself at times. He and his father, Don, worked with Mel Fisher so there is a lot of collected know-how between them—knowledge that has helped refine the search methodology over the years. Porter explains:

“I have gone from every aspect of searching from the mid 80’s to today. Back then when we found a shipwreck, we kind of jumped around searching for the treasures. The positioning system used was the one used in the oil field areas when they were setting up oil rigs. It was effective for the time, but nothing compared to today. Today, we are trying to stay on the cutting edge, using technology such as the DGPs system that has an accuracy down to 6 cm, and remote sensing multiple beam sonar, and so on.



We are heavily equipped, and we are advancing every day.”

Porter also pointed out that the most powerful tool in archeology and as a modern shipwreck salvor is data. “What happened in the old days determines today’s search pattern,” he said.

Historical value

We also discussed the historical value of the search. Everything found isn’t gold and precious stones, but it is still a treasure. And preservation means a lot to Blue Water Ventures. Both effort and time goes to documenting and preserving the finds.

Once out of the water items are tagged and documented, a note is made about which area it was found; then it goes into a holding area and is kept submerged until it is delivered to the conservation lab at their joint venture partner, Mel Fishers Treasure, to enter a preservation process. After that, pieces

of historical interest may be donated to the Mel Fisher Maritime Museum, or other museums.

“That is the integrity of what we do, we are striving to set standards for modern day historical ship wreck salvage,” said Porter.

I decide to do one more dive for the day; maybe this will be the dive when we find the mother load, and I wouldn’t want to miss that!

This time the guys told me to hold on to the line all the way down, which turned out to be good advice. The current was roaring, ripping, pulling. If it wasn’t for the weights at the end of the line, there was no way I would have made it down.

We had to fight hard to search, but the crew divers seemed unaffected by the conditions. They motored on with the metal detectors swinging like extended parts of them.

This time, I actually found something.

It looked like a piece of glass deeply imbedded in the coral. I carefully wiggled it out of its hole. It turned out to be a part of a plastic bucket. So much for my day as a treasure hunter. But hey! A day diving is a good day, and if I am not materially richer, at least I am an experience richer. ■





How to become a Treasure Hunter

— Interview with Keith Webb

LEFT: Treasure!
Silver coins

Text by Millis Keegan
Photos by Carol Tedesco

Treasure hunting is a high-risk venture. To stay on top of the cutting edge technology and to keep the best treasure seekers on staff takes money, money, and yes, more money. There is hard work involved, both in the field, as I found out first hand, and in finding the finances to keep the search going. This is where Keith Webb comes in. He is the founder and CEO of Blue Water Ventures of Key West, Inc, and it is his job raising funds to keep the search going. The company also strives to be responsible shipwreck salvagers and set standards for other treasure salvagers in the world.

“You can’t just go out there and recklessly search the bottom. Considerations have to be made both regarding archeological and biological values, in particular in tropical and sub-tropical waters.”

MK: So how did you get started, Keith?

KW “I spent my life in the financial market. When I decided to semi retire, I moved to Key West with my family, but I wasn’t prepared for all that free time. After a short period I got too BORED. I had two choices, start drinking at 10 in the morning or do something more interesting.”

So, what could be an interesting venture for a mind that wasn’t quite ready for retirement? Living in the Keys is living the “Island Lifestyle”. People are laid back, creative minds are at work and you have to be part of that to enjoy yourself full time. When learning the ropes, there was

one thing he did notice early on, something rather intriguing. Pretty much every day you could find a number of divers in the waters of Key West Marine Park with a metal detector seeking gold and silver coins, which is totally illegal by the way. It was a way to finance their lifestyle. Inspired by the fact there are treasures laying on the ocean floor, he began to think about what a good course of direction would be for him, being a business builder and all.

KW: “I contacted Kim Fisher, of Mel Fisher’s Treasures; he gave me a chance in the treasure hunting business, and that was it. Since I love history and I want to solve mysteries, that was a good place to start.”

After some time, he founded Blue Water Ventures and started his search for the treasures of the Santa Margarita.

KW: “It wasn’t part off the plan to become a treasure hunter, but things that happened throughout my life made me ready to accept it when the opportunity was there.”

It is hard work, and there are times when frustration hits, but Keith Webb gets his reward from observing the passion of people that get involved in Blue Water Ventures.

KW: “As they climb up on the ladder, with tears in their eyes after finding a piece of history, that’s it, that’s life. What can I say? I am not in this because I am lured by the gold and silver, I am in this for the adventure, and that’s what I am trying to do with Blue Water Ventures. I

want to sell the adventure, you know? If we find the mother load, well, that’s a bonus.”

MK: Hell of a bonus, if you ask me. Where can I sign on? No, seriously, can anyone be part of this adventure? Does it require some kind of qualifications?

KW: A first hand experience of what it is like to work on a search and salvage vessel and seek treasure can be offered under certain conditions. Diving the site, how ever, is not for everyone. As you experienced yourself Millis, a certain level of diving proficiency is required for this site, so while a journalist might visit the site, only those with strong diving skills are invited to dive with the crew. It is a question of liability. In the past, we have offered a program for mature students pursuing marine archaeological education, and are looking forward to offering more such programs in the future. Requests of this nature should be directed to Carol Tedesco at bluewaterkw@aol.com. Those wishing to participate as investors can contact me through the web site.

This upcoming seasons salvage plan will have the team working in an area that has seen little exploration in the past. The expectations

are high, and why not? What’s the purpose of searching for something if you don’t believe you are going to find it?

MK: What do you see happening in the future? Lets assume that the mother load is found and salvaged, what happens then?

KW: This is not the end. The Santa Margarita project is a golden opportunity to join the adventure; but the adventure does not stop there. We are actively negotiating numerous wreck sites throughout the Caribbean, and there are some extremely good prospects waiting around the corner.

And that’s it, for now. For anyone interested in being part of something as interesting and exciting as this, contact Keith Webb, Blue Water Ventures via the companies web site at www.bwwkw.com, and drop us a line if you find something...



Millis Keegan (right) talks treasure hunting with Keith Webb (center)

A Grooming Tool of Solid Gold

—Discovered on the 17th Century Shipwreck *Santa Margarita*

"I saw a large piece of a ship's mast from a vessel of at least 120 tons. I tried to haul it aboard but was not able to."

These evocative words, recorded by Christopher Columbus in his personal log on 11 September 1492, illustrate how fragile and uncertain was life at sea during the epoch of the great wooden sailing ships. Imagination provides ghostly footage of a ship heaving and battered in a violent tempest; the master of the vessel perhaps urgently ordering the carpenters to cut away the masts, as occurred in the destruction of the Portuguese East Indiaman *Santo Alberto* a century later.

Hard and brutal

Life at sea was hard, often brutally so, as those who search for sunken shipwrecks today are reminded time and time again. And so, when Keith Webb's Blue Water Ventures Key West (BWVKW) search and recovery team salvaging the remains of the 1622 shipwreck *Santa Margarita* uncovered an artifact so exemplifying love of artistry and elegance—the magnificent solid gold personal grooming tool discovered on 18 May 2008—the contrast was particularly poignant.

Eccentric artifacts

What is perceived today as a curious and eccentric artifact was at the time a symbol of cultured attention to hygiene, and when exotically crafted in solid gold such as this one, a success symbol and conversation piece. (Oh, this little trinket, Don Philippe? Just a little something I picked up during my recent adventures in the New World.)

In fact, combinations of mani-

cure/ear-scoop/toothpick grooming tools of greater and lesser elaborateness have been discovered on the *Santa Margarita*, the 1622 shipwreck *Atocha*, and on Florida's east coast 1715 Fleet wrecks, indicating their popularity and widespread use.

Gold toilet set

In his book, *The Toothpick: Technology and Culture*, Henry Petroski quotes toothpicks as "next to the wheel ... man's most universal invention." He writes of an estimated 5,000 year old tradition and describes a particular gold toilet set discovered in present-day Iraq, believed to be from about 3500 B.C. The set includes tweezers, ear spoon and a "spatulate, stiletto-like instrument running to a point." He references discoveries of similar sets made of silver, copper and bronze in Europe as well as in China, Japan and other Eastern countries.

While such instruments phased in and out of style over centuries, Petroski credits the Renaissance period, called "the golden age of toothpicks", as a time in which the toothpick "alone or in a toilette set, exposed or in a decorated case, appears to have been worn and used most conspicuously and proudly."

*"Next to the wheel
... man's most uni-
versal invention."
— Henry Petroski
quote about
toothpicks*

Human/serpent motif

The *Santa Margarita* grooming tool, which was discovered by BWVKW diver Chris Rackley, is of high-karat gold and features a human profile reminiscent of a ship's masthead. This head emerges from the body of what might be a dragon or other fantastical serpentine creature, uniting a toothpick at one extremity and an earwax scoop at the other.

More than one expert perceived an Asian appearance, and African characteristics have been suggested as well. However, because of the merging of artistic traditions that resulted from a rapidly shrinking world, it is conceivable that the creator was a New World artisan influenced by the craftsmanship of foreign cultures.

Elements of creatures emerging from the body of a serpent are an ancient Mayan motif. Noted examples are the jaguar, the quetzal bird and humans. In his book *Ancient Civilizations of Mexico and Central America*, Herbert Joseph Spinden tells of the Mayan god Itzamna, described by Spanish writers as "the creator and father of all, the inventor of writing, the founder of the Maya civilization, and the god of light and life". In Mayan art, Itzamna is represented in the form of an old man with a high forehead, a strongly aquiline nose, and a distended mouth, toothless or with a single enlarged tooth in front.

Interestingly, this artifact, which appears to have a dragon or serpent motif when viewed horizontally, suggests an avian theme when viewed vertically. In his article *The Principal Bird Deity* in Maya Art – An Iconographic Study of Form and Meaning*, Yale University's Lawrence W. Bardawil describes the Mayan Principal Bird Deity as being incorporated into "expressions of a multi-natured concept." He goes on to describe Itzamna depicted in the Late Classic Period as a "bicephalic bearded dragon" and also makes a reference to the deity being represented as a "fish monster."



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Spanish Galleon (top); 17c. solid gold grooming tool (bottom)

He states, "By including an avian manifestation of Itzamna, and thus depicting three creatures, one terrestrial, another aquatic, and another aerial... the Maya ingeniously define the omnipresence of the concept." Simply put, this god was represented at vari-

Text and Photos by
Carol Tedesco



Pope Alexander VI (1431–1503)

ure representing the half-bird, half-woman Kinnari of Hindu mythology, whose likeness appears throughout Southeast Asia.

The East-West connection

If the artifact was to be of Eastern manufacture, one might ask how such an object found its way onto a Spanish galleon in the Florida Straits in the year 1622. The answer lies in the relationship between Spain and Portugal, and begins in 1493, when Pope Alexander VI, a Spaniard, issued a series of papal bulls adjudicating conflicting Spanish and Portuguese claims by assigning each a geographical zone for their exclusive development.

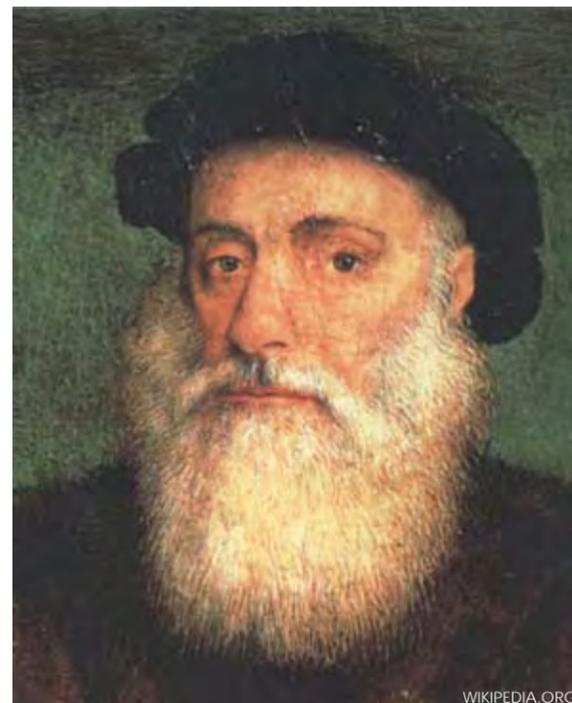
The following year, Spain and Portugal agreed to a treaty that assigned most of the Western Hemisphere,

except for Brazil, to Spain, while leaving the eastward route to Asia for Portugal. (Walton, *The Spanish Treasure Fleets*)

In 1487, following several decades of Portuguese exploration and penetration into trade with West Africa, explorer Bartolomeu Dias rounded the Cape of Good Hope, demonstrating that the Indian Ocean was accessible from the Atlantic. In 1498, Portuguese navigator Vasco de Gama led an expedition that established an ocean route from Portugal, down the west coast of Africa and around the Cape of Good Hope, to the East.

Just two decades later, in 1519, Portuguese explorer Ferdinand Magellan, in the service of Spain, embarked on

Woodcarving of Kinnari, a mythical creature, which is half bird, half woman, found in Hindu and Buddhist legend. Photo courtesy of TheGoldenLeafThailand.com



Portuguese navigator Vasco de Gama (left) and explorer Ferdinand Magellan (below)

an exploratory voyage where, in 1521, he was the first European to reach the Southeast Asian archipelago later named for King Philip II of Spain—the Philippines.

So, by 1622, Portugal had already



long been trading in Africa, India and the Orient, and at the time of the sailing of the *Santa Margarita*, Portugal and Spain were united under one crown. Therefore, to find artifacts of Eastern origin on a Spanish Colonial shipwreck in the Americas is not surprising.

Disappearing act

The toothpick/ear-scoop grooming tool and related toilette-sets-as-jewelry nearly passed from human custom and consciousness altogether. Errol Flynn did not sport one in *Captain Blood*, nor Johnny Depp in *Pirates of the Caribbean*, though it is undeniably a captivating accessory.

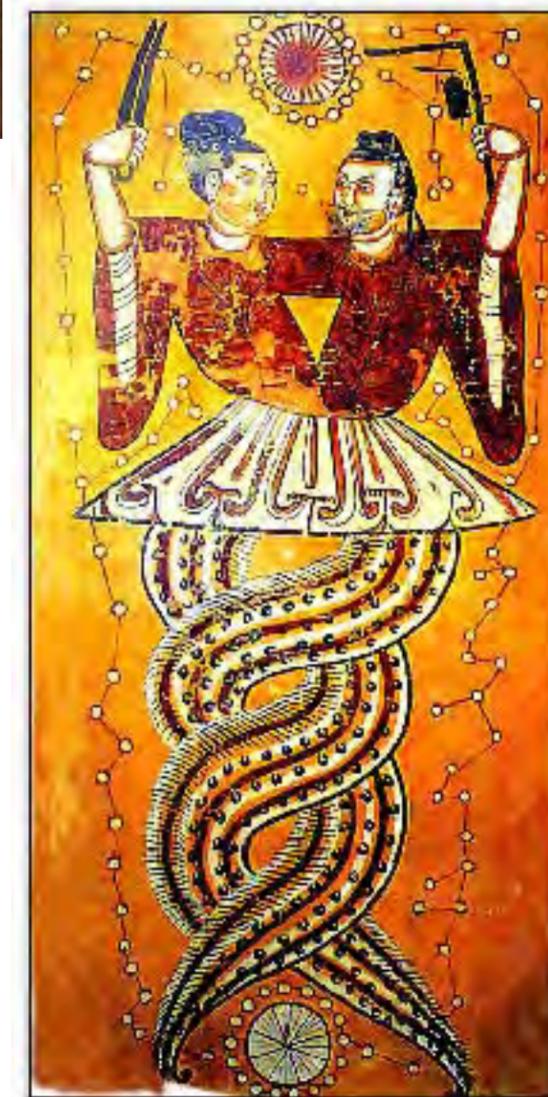
There are two particular reasons so very few jewelry pieces of this genre survived the centuries—economics and taste.

Gold and silver money was valued entirely by weight; a person in need of quick cash or goods would use their jewelry as currency, and it would ultimately be melted down. Additionally,

Supernatural beings of Chinese legend: Nuwa, the first female human on Earth and Fuxi, the first male

as jewelry styles passed out of fashion, it was common to melt and rework the metals into more contemporary designs. Consequently, if it were not for sunken shipwrecks and buried hoards, exceptional antiquities such as the *Santa Margarita* grooming tool might never reappear in the world.

Keith Webb's *Blue Water Ventures Key West* is a joint-venture partner of Mel Fisher's *Treasures*, currently searching for and recovering the remains of the lost galleon *Santa Margarita* in the Florida Straits. For more information on the project, visit www.bluewaterventureskw.com. ■



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Going, going, gone...

British Columbia's Reefs of Steel

New Life for Canadian Military Ships

Text and photos by Barb Roy

I could hear a low rumble as detonated explosives echoed down long empty corridors and through multiple decks of steel. Three hundred and sixty-six feet of ship began to groan and creak while water rushed in to claim its above water existence. Watching from a safe distance, former crewmembers and excited divers marveled at enormous geysers of escaping air mixed with water while the *HMCS Saskatchewan* began its final objective—to become Nanaimo's next artificial reef of steel. As with previous retired Canadian military ships, the *Saskatchewan* gracefully accepted its place in Canadian history as the fifth Destroyer Escort to be transformed from a once powerful tool of war into British Columbia's newest dive site.

Twelve years have passed since the *Saskatchewan* was scuttled next to Snake Island, on the mid-eastern side of Vancouver Island in British Columbia, Canada. The *Saskatchewan* is one of two Nanaimo wrecks purposely put in place by the Artificial Reef Society of British Columbia (ARSBC).

It is the winter of 2009, and I have joined a few friends to make my annual inspection and photo documentation of the ship's wondrous conversion into a thriving living reef. My husband and fellow wreck explorer, Wayne Grant, and technical dive instructor trainer, Ron Akeson, have joined me. Ron has brought several of his technical diving students along to practice skills and check out their new deep diving gear.

"I would much rather have my students learn how to deal with any gear or performance problems on one of these ships, in a somewhat similar wreck environment, than on a natural, possibly more fragile wreck," states Akeson. "If a technique isn't right, we have the time and depth to practice the skill until it becomes second nature without worry of currents, entanglement or damaging a potentially historic wreck."

During the short journey to the site (about 15 minutes from

Departure Bay), retired Nanaimo dive instructor and charter operator, Ian Hall, told us how the *Saskatchewan* and the other two scuttled wrecks has helped Nanaimo's dive industry:

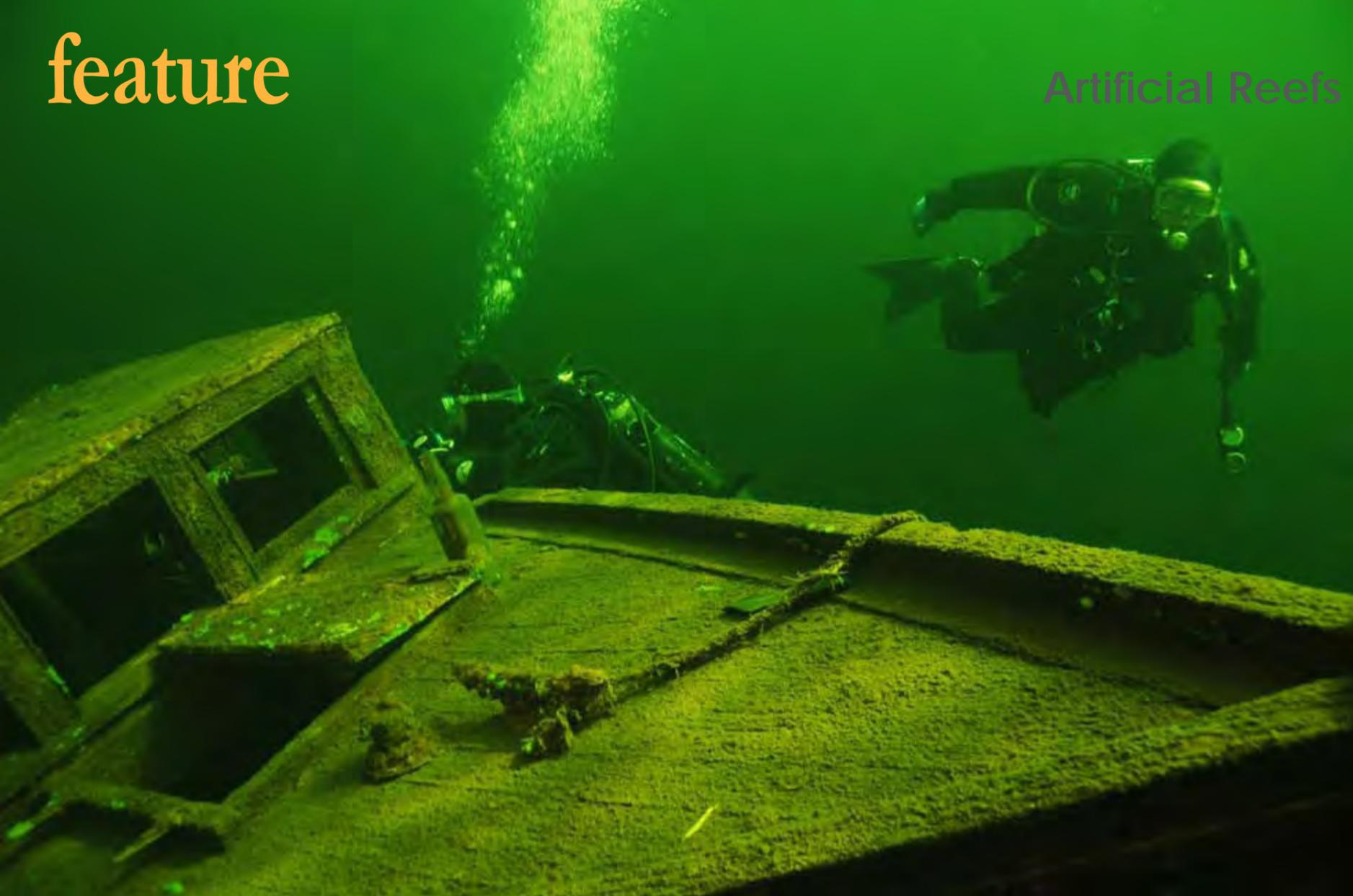
"Since *Saskatchewan* was scuttled in 1997, we were busy almost every weekend with dive charters for over ten years. From 1997 to 2004 we did over 8,916 logged dives on the *Saskatchewan* alone! People came from all over the world because we had something new and unique. Back then, and now, about 64 percent of our clientele wanted to dive on the *Saskatchewan* or the *Cape Breton*, a 400-foot (122 meter) ship similar to the Liberty-class Ships in the US Military."

Ian went on to tell us that over 50 percent of his customers were divers using double tanks or rebreathers. Technical divers however, seem to prefer the *Cape Breton* because of its depth (140 feet/42.5 meters) and the fact it has a vertical shaft from the main deck leading to the engine room.

Both underwater photographers and naturalist also enjoy the two ships because of the abundance of life attracted to them.

Before sinking both vessels were thoroughly cleaned of all wires and furnishings. Huge 4x6-foot (1.2 - 1.6

Spectators enjoyed a show of pyrotechnics during the sinking of the *HMCS Cape Breton* next to Snake Island near Nanaimo, BC



meter) holes were cut throughout all decks and hull to ease entry and exits.

Diving the *Saskatchewan*

Once everyone was in the water we descend down the mid-ship line on the *Saskatchewan* (one of three lines). We were blessed with over 80 feet (23m) of visibility! At 30 feet (10m) a gray outline came into view. At 50 feet (15m), I paused to adjust my strobes just below the radar platform, catching a glimpse of a huge lingcod resting at the far end.

On my way to capture the shot, Wayne zoomed

by on his scooter, determined to see how it would handle inside the wreck. Two of the technical students began laying out their practice lines at 90 feet (27 meters). I could hardly wait to see what new critters

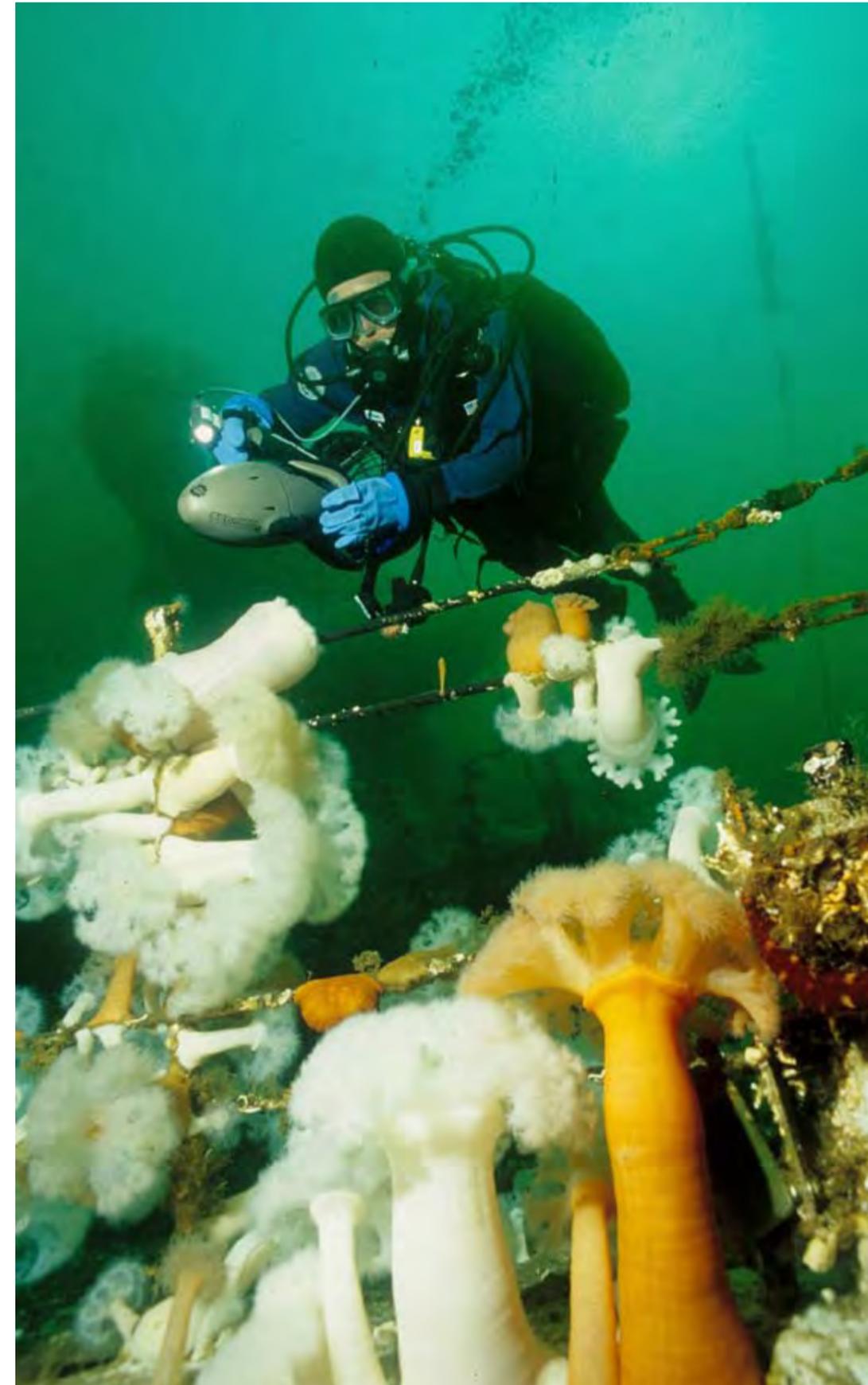
had decided to call the *Saskatchewan* home.

It was unbelievable how the rails, ladders and wheelhouse windows (once void of life) were now completely covered with barnacles, encrusting invertebrates, anemones, swimming

scallops and golden colored feather stars. A rainbow of tiny delicate hydroids and tunicates decorated the outer parts of the ship to gather nourishment in slight currents, which



Powell Lake wooden boats (top left); *Saskatchewan* covered with life since sinking in 1997 (above and left inset)



737 Boeing jet plane in Chemainus (above); Diver Wayne Grant exploring *Saskatchewan* (right)

can occasionally be felt by divers during extreme tides.

At this rate of growth it won't be long before the entire wreck is completely covered with life. Schools of juvenile rockfish and silvery clouds of tiny baitfish elegantly weaved across the upper deck, through the Captain's cabin and towards the forward twin 3-inch 70-caliber gun barrels. I found it hard to imagine these long slender devices supporting so many critters, were once used to fend off aerial attacks.

On the main deck, at the bow, cabezon and lingcod vigilantly guarded their personal territories between white and orange plumose anemones in hopes a passing female would consider their domain a suit-

able nesting site. Smaller sculpins, decorator crabs and shrimp had made their homes in the open spaces in-between the main deck plates, where access holes had been cut.

Every now and then Wayne would pop up through a hatch to check on me. He was like a kid with a new toy zipping in and out of the ship, followed by another diver with a scooter. On a prolific wreck such as this, it doesn't take long for me to burn through a 2GB memory card using video and stills!

After surfacing, everyone was beaming with enthusiasm. Wayne was pleased to find the scooter successfully pulled him through multiple rooms and down Burma Road (a corridor traversing the length of the ship)

without kicking up a trail of silt, as fins usually do. I had plenty of images to add to my documentation records and have noted seeing a new grunt sculpin, about the size of my hand. The students finished their skills in full Trimix gear with all potential problems alleviated or resolved.

"I really like these wrecks for keeping my techniques sharp," exclaimed Rob Wilson, visiting rebreather diver from the Marysville, Washington. "Winter weather conditions always yield excellent visibility and its good practice for when we dive on real wrecks. I can't stress it enough how important it is to stay up on safety procedures and to first do a dive to check out all new equipment. We want no surprises at 250 feet!"



Artificial Reefs

Artificial reef projects

Wreck projects of this nature, often called "Artificial Reefs," have always played an essential economic role in British Columbia's dive-tourism market. Positive environmental effects gained from providing additional marine habitat include increased fish populations, additional substrate which attracts algae and kelp—providing protection from predators.

To gain a better perspective, the City of Nanaimo's Economic Development Group did a local study in 2003, concluding dive tourism annually brought in an estimated three million dollars in tourism revenue.

The ARSBC actually began when a group of ambitious Canadian divers who loved to dive on shipwrecks, got together in 1990 over a beer in a local pub. Hence, the society was formed and the craft of sinking ships began in Canada to enhance existing destinations around BC.

They wanted to create safe diving sites for divers to explore within the 100-140 foot (30-43m) depth range. One thing led to another, and the *GB Church*, a 175-

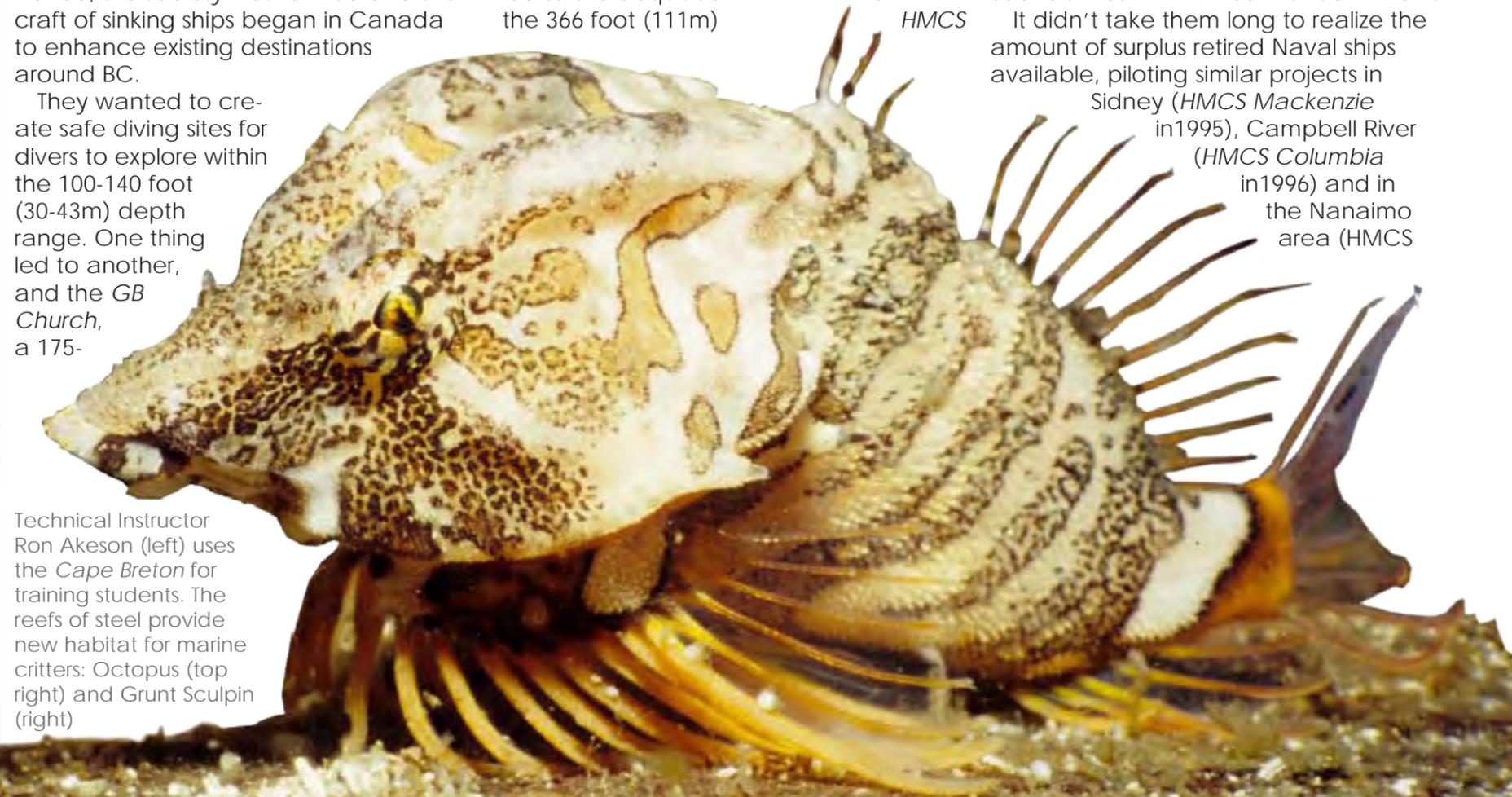


foot (53m) freighter was scuttled near Sidney, BC in 1991. This in turn led to the acquisition of the 366 foot (111m) *HMCS*

Chaudiere—another retired Canadian Navy vessel, which was scuttled in Sechart Inlet in 1992 near Kunechin Point.

It didn't take them long to realize the amount of surplus retired Naval ships available, piloting similar projects in Sidney (*HMCS Mackenzie* in 1995), Campbell River (*HMCS Columbia* in 1996) and in the Nanaimo area (*HMCS*

Technical Instructor Ron Akeson (left) uses the *Cape Breton* for training students. The reefs of steel provide new habitat for marine critters: Octopus (top right) and Grunt Sculpin (right)





Saskatchewan in 1997, *HMCS Cape Breton* in 2001). California State and Mexico even collaborated with the ARSBC to acquire a few of these excess Canadian ships, with ARSBC representatives on hand to consult for cleaning and sinking procedures.

In 1992 eastern Canada followed suit starting the Nova Scotia Artificial Reef Society, scuttling the retired *HMCS Saguenay* in 1994 and the 122-foot (37m) trawler, *Matthew Atlantic* in 1998. The society also acquired the retired St Laurent Class *HMCS Fraser* in 1997, docking it on the LaHave River in Bridgeport and turning it into a museum.

"Originally we wanted to sink the *Fraser*," states Rick Welsford, a key member in obtaining the Nova Scotia vessels. "But later we decided to send in a proposal to the Canadian Navy to preserve the *Fraser* by turning it into a Naval Museum. Divers also have an opportunity to see how the ship is laid out before diving on its sister ship, the *Saguenay*."

Artificial Reefs

In 2000, the Historic Sites and Monuments Board of Canada acknowledged the former *HMCS Fraser* as being historically significant to Canadians.

Whether the reason is to provide substrate to attract marine life, provide a training platform, or for economic

reasons, dive communities around the globe are now or have already pursued having a ship of their own to attract divers. Many even have plans for a series of ships, to be scuttled. In the United States: California, Texas, Florida, and many other coastal states have

similar artificial reef programs in place or are establishing them.

"I think that a lot of people forget about the environmental value of these artificial reefs," points out Mike Lever, owner and operator of the ocean-going live-aboard dive vessel *Nautilus Explorer*. "If it weren't for the protection these ships provide, all of those tiny critters now living on the wrecks might otherwise be fish bait. And the invertebrate life simply wouldn't be on a mud bottom. With the fish stocks under such enormous pressure in Georgia Strait, the wrecks provide some relief for natural reefs to recover and every bit of sanctuary helps."

Consulting

In an effort to expand and help other countries around the world to start similar artificial reef projects, three members from the Canadian ARSBC branched off, forming a formal consulting company independent of the ARSBC. Canadian Artificial Reef Consulting (CARC) was established in



Rear guns on *Columbia* in Campbell River (above); The *HMCS Annapolis* is the next ship to be put down in Howe Sound, (inset); A fish-eating Rose Anemone (right)



A female wolf eel finds a home on the *Saskatchewan*

ing from the Canadian Navy are pre-cleaned of all hazardous material and dangerous substances. In the United States, however, restrictions from the Environmental Protection Agency (EPA) have proven in the past to be a hurdle of red tape. With new funding available from the Federal Government, cleaning to EPA standards should become more feasible.

"It's very important to us," comments Wes Roots, member of the CARC team and owner of WR Marine (company hired to clean and prepare several ships for the ARSBC), "That these ships are made as 'diver' and 'environmentally' safe as possible. We have a proven track record and a system that works from years of experience."

Currently Wes Roots and CARC are working with the ARSBC to prepare another Destroyer Escort—the 371-foot

2003 to offer expertise in financial matters, preparation and cleaning recommendations and also demolition.

"We have teamed up with groups

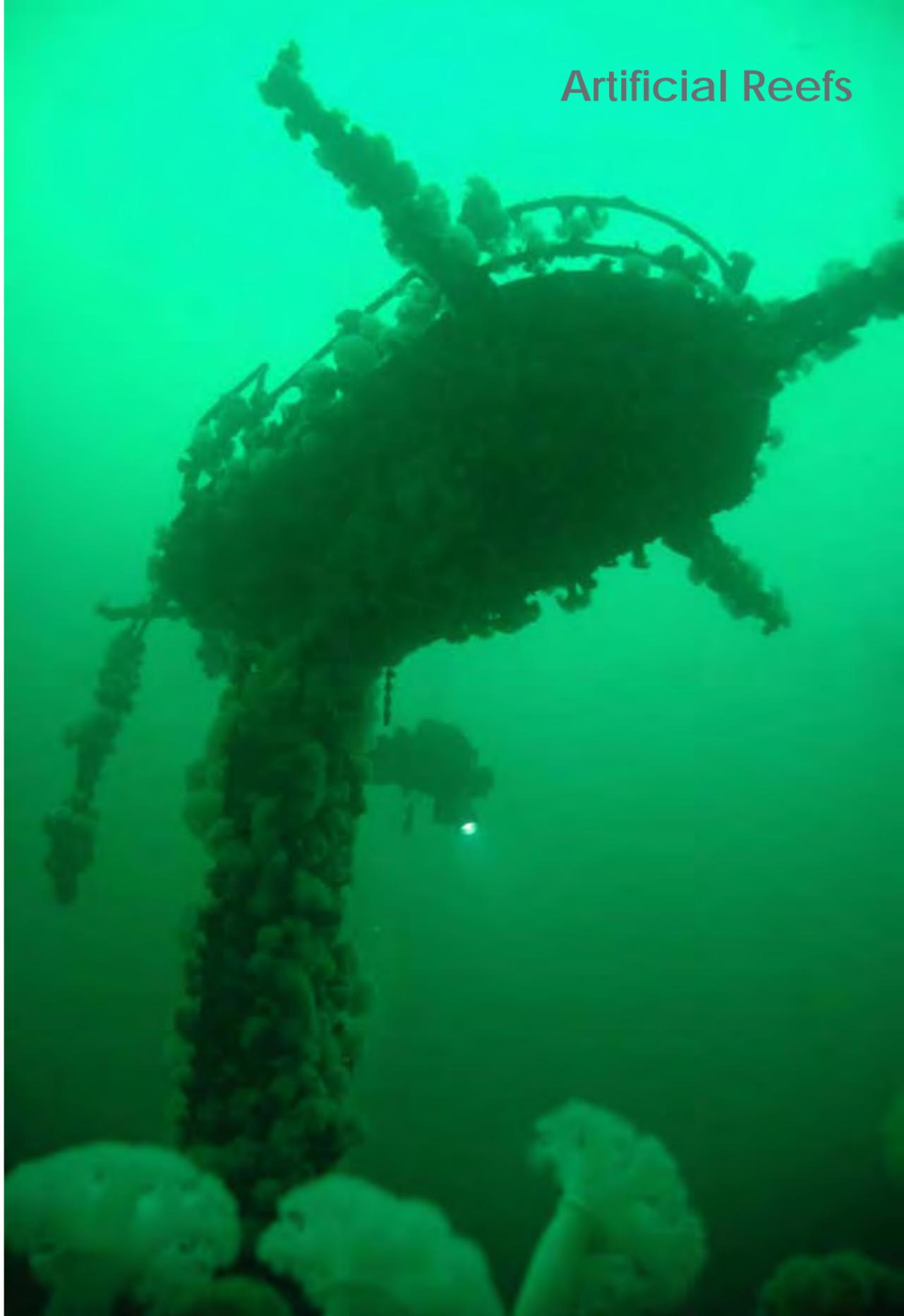
from around the world, helping them establish their own reef making programs," explains Jay Straith, former President of the ARSBC and current President of CARC. "We now have people capable of looking at long term ship stability issues, and issues relating to salvage, ship yards, diver risk mitigation and placement."

To date, team members of the CARC have assisted with projects in Quebec, the Caribbean, Australia, New Zealand, and the United Kingdom. Future projects include the United States and other parts of Europe.

Preparation

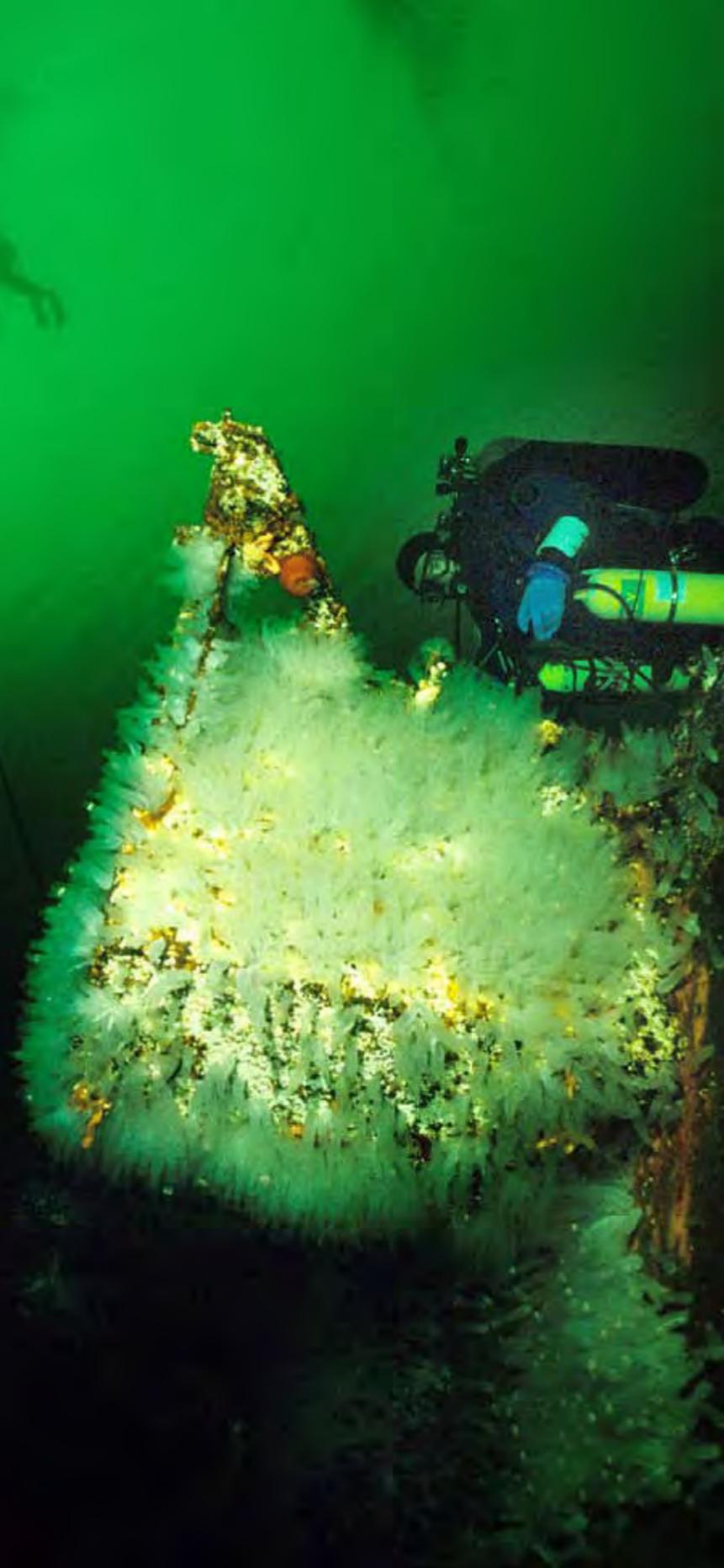
The whole preparation process for a ship

takes anywhere from six to 12 months depending upon the extent of readiness required by the community receiving the ship. In BC, most of the ships com-



Artificial Reefs

Anemones soften the texture of the radar tower on the *Cape Breton* (above) Diver Wayne Grant (left) coming up through a hatch on the *Saskatchewan*



Divers descend on the *Chaudiere* in Sechart Inlet; Statue of a bronze mermaid in Powel River (inset); Divers (top right) peer into the skylight shaft of the *Cape Breton*

Artificial Reefs



(113m) *HMCS Annapolis*, for sinking in Howe Sound. The ship was acquired in 2008 and brought to a cove on Gambier Island for preparation, from the Esquimalt Naval Base on Vancouver Island.

Although volunteers were used in preparation of previous ships, the *Annapolis* has used volunteer help almost exclusively. Since October of 2008, groups of 6-20 volunteers have gathered on weekends from supporting dive stores and clubs in British Columbia and Washington State to be transported by local dive charter operators on their boats to the ship. They bring tools, gloves, dust masks and coveralls to disassemble things,

carry items and sweep floors for the day.

Deirdre McCracken, Director of Public Relations for the ARSBC and co-owner of Ocean Quest Dive Centre in Burnaby explains more on volunteer ship preparations:

"The plan over the previous months was to mine as much metals as possible to sell as salvage, concentrating on just about every part of the ship. The only areas not mined as intensely is the engine room, boiler room and steering room, but that is yet to come. The accumulation of months of work to clean, clear, stack and strip all manner of materials literally began to choke productivity. Rooms were

stacked with sorted items such as light fixtures, gear boxes, fiber glass, aluminum racks, sinks, bed bunks, ventilation ducts, drawers and the list goes on.

"Getting this volume of work neatly organized and staged is due entirely to the volunteers who love to be a part of each step. We have some serious 'repeat offenders' some of whom have been aboard more than ten times and others are getting as close. When we reach this accumulation level, like in May, a barge is rented to support a 52-foot trailer and two container bins. The trailer is used for debris only, like the estimated removal of 600 bags of fiberglass insulation we



Mosshead warbonnet peeks out from the safety of its barnacle home on the Mackenzie ship; Diver checking out a wooden boat in Powell Lake (top right)



hailed out hand over hand from various parts the ship. The other bins are for metals, mostly aluminum parts."

Deirdre also explained that the *Annapolis* was the only ship acquired by the ARSBC with all of the wire removed, saving additional work. "We had an amazing support from our dive community," continues Deirdre. "With representation from every dive centre in the Lower Mainland, including store owners, managers, customers, various clubs, our American diving friends, as well as our local charter operators, working shoulder to shoulder to make this a truly collaborative effort from the dive community. This is a reflection of the passion, support and driving force behind this unique project, and is what has kept it going though all phases thus far."

"We still need volunteers every weekend up until sinking," adds Howard Robins, President of the

ARSBC. "Most of the permits are in place and after Environmental Canada gives their final approval, we will talk sink dates. If not in 2009, for sure in 2010. Halkett Bay Provincial Marine Park is the location we are currently looking at."

Protected areas

The ARSBC also hopes to eventually establish protected areas around the all of their projects in British Columbia, falling under BC Parks jurisdiction and protection.

"ONLY THE FIT SURVIVE" is the motto proudly used to represent the former *HMCS Yukon* (now a reef in California) adapted from a Robert Service poem. One can easily find truth in these words when looking at the long-term survival of our oceans.

By placing these reefs of steel beneath the waters of our world today, perhaps natural reefs will have time to replenish. I can't think of a better way or a more suitable

final mission to honor the massive ships that once protected our loved ones during times of world turmoil, when the alternate choice for their use is to the scrap yard. As divers it's our job as oceanic ambassadors in the long run to work together to preserve this environment and ensure its continued existence for future generations.

Reference Sites

- Artificial Reef Society of British Columbia: www.artificialreef.bc.ca
- Canadian Artificial Reef Consulting: www.artificialreefs.net
- Something fun and educational for kids at National Geographic: www.nationalgeographic.com/xpeditions/lessons/08/g912/artificialreefs.html
- The Dive Industry Association of British Columbia: www.diveindustrybc.com
- Tourism British Columbia: www.hellobc.com ■



silver



www.seacam.com

turtle tales



Edited by
Bonnie McKenna

Road sign indicating the area is safe for turtles

This year, the marine turtle salvation project of Cozumel is celebrating its 25th anniversary

For hundreds of years the indigenous people of Cozumel, the Mayan, have consumed turtle meat and turtle eggs. The meat was cooked and plated or prepared as a soup, while the eggs were a favorite with drinkers in the cantinas. Today, turtle meat and eggs are no longer available for purchase on the island.

Text and photos by Bonnie McKenna

"The turtle salvation project was started by a core group of divers who would go out on the beaches at night to protect the turtles from poachers," said Sherri Davis, owner of Cozumel Insider and a project leader for the turtle conservation effort.

Seasons

The predominant species of turtles that nest on the island are Greens and Loggerheads. Greens nest from mid-April to early July; Loggerheads nest from mid-June to mid-September.

A number of local citizens and expats living on Cozumel, wanting to help protect the turtles, banded together in brigades to patrol the beaches on the east side of the island during the nesting season.

After seeing what the brigades were doing, scientists from the city's Department of Ecology got involved. At first, they dug up the nests and moved them to a sanctuary for protection; now it is

no longer done, nor is it necessary. Today, scientists from Mexico City, with new methodologies and ideas come to Cozumel during the nesting season to participate in the conservation of the turtles.

One of the government programs began in the late 1980s. This effort eventually evolved in to a small city-funded program that now operates only on donations from citizens and tourists.

The Parks and Museum Foundation of Punta Sur Park began their program in

2000. Access to the park is closed at night thereby enjoying good protection from poachers. It is a for-profit program; tickets are sold through the museum, cost approximately US\$40, enabling tourists to come out to the beaches during the nesting season.

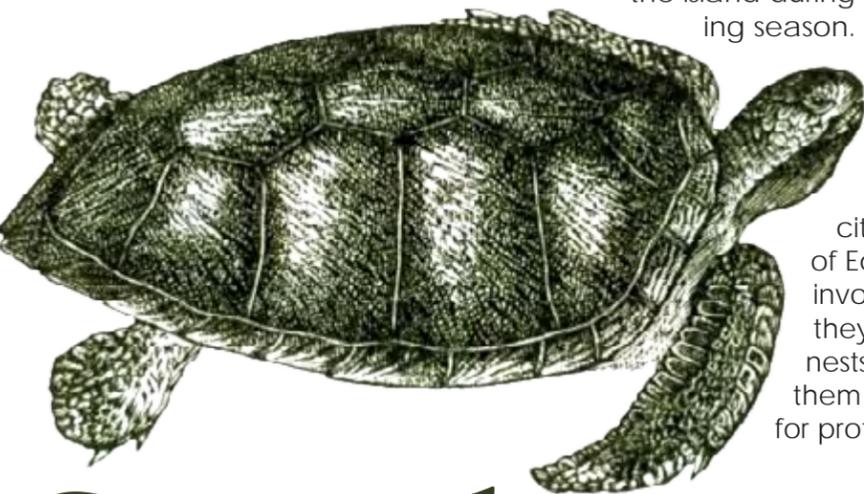
"Fortunately, the original core committee has remained. The government changes here every three years; we can



Sand erosion on the beaches, the result of two major hurricanes in 2005, makes it difficult for turtles to find a place to nest



ABOVE: A number is painted on the road indicating a nest location on the beach. The mark makes it easy for volunteers to find the nest
CENTER IMAGE: The codes on the red stick markers indicate date of the nesting and the species of turtle. CC is *Caretta caretta* or loggerhead, CM is *Chelonia mydas* or green turtle



Cozumel, proud of its conservation effort



(Continued from previous page) only hope the new group is interested in protecting the turtles and their nesting areas," Davis commented. "The city oversees the programs, but often times, it is a fiasco. The program is built on sharing information, but sometimes the new regime does not want to share the information. The veracity of the data may be skewed somewhat, but it is close."

During the nesting season, the Cozumel city workers, in co-ordination with the local police and federal armed forces, limit activity on the island's eastside beaches during the nesting season.

Currently, there are seven brigades and two groups from the Department of Ecology who divide up the beach patrols each night during the nesting season.

"The nests are marked with GPS, a stake is planted to mark the nest and paint is sprayed on the road pointing to the location of the nest. All this makes it easy for the volunteers to go back after the hatch to count the fertile eggs and the false eggs," Davis said.

Many visitors inquire about contributing some of their holiday time to participating in the program. Since 2006, in an attempt to generate more awareness and interest in the turtle salvation program, visitors have been allowed to participate under the supervision of a brigade member.

To participate, visitors must request permission in advance of arrival on Cozumel. Make requests to turtles@cozumelinsider.com. Allow 4-6 weeks for a response. ■

Failure to protect sea turtles

The U.S. government has banned Costa Rican shrimp from being shipped to the United States until further notice. The embargo is due to Costa Rica's failure to enforce the laws required of commercial shrimpers to protect sea turtles from capture and death by using the Turtle Excluder Devices. Costa Rica's shrimper fleet numbers 55 boats and capture 15,000 turtles per year, the majority of which die by forced immersion. Over the past five years, 29 shrimp trawlers have been caught without TEDs, using tampered TEDs or with other serious problems that compromise the effectiveness to free turtles according to Incopesca and the Costa Rica Coast Guard National Service. Several boats have been caught twice without TEDs. None of the cases have resulted in a sanction of any kind and the boats have been permitted to continue operating. In 2008, Costa Rica exported 161 million pounds of shrimp to the United States. ■

Costa Rica's shrimper fleet captured 15,000 turtles



A "Turtle Excluder Device" is a grid of bars with an opening either at the top or the bottom of the trawl net. The grid is fitted into the neck of a shrimp trawl. Small animals such as shrimp pass through the bars and are caught in the bag end of the trawl. When larger animals, such as marine turtles and sharks are captured in the trawl they strike the grid bars and are ejected through the opening

Plastic garbage a threat to leatherback turtles

Leatherback turtles, the most widely distributed reptiles on earth, are threatened with extinction, in large part due to the carelessness of humans.

We have seen reference to the dangers plastics pose to marine life, garbage that humans indirectly deposit in the ocean, but apparently we have not received the message. This according to co-author Mike James of Dalhousie University in a recent article published in the *Marine Pollution Bulletin*.

In a look back at necropsies

over the last century from all over the world, more than one-third of the turtles had ingested plastic.

Once leatherbacks ingest plastic, thousands of spines in their esophagus make it nearly impossible to regurgitate. The plastic can lead to partial or complete obstruction of the gastrointestinal tract resulting in decreased digestive efficiency and for some, starvation. ■



The journey of a green turtle opens the mystery of an oceanic highway

The journey of a green sea turtle from Indonesia to Australia is helping conservationists to understand turtle migratory routes.

The turtle left a nesting beach on East Java and traveled across the Indian Ocean to the Kimberley's in Western Australia. The route highlights the connection of the Kimberley marine ecosystem and its link to the Coral Triangle.

The Coral Triangle spans Indonesia, Malaysia, Philippines, Solomon Islands and Timor Leste and contains the habitats of six of the world's seven species of marine turtles: green, hawksbill, leatherback, flatback, olive ridley and loggerhead.

WWF hopes that this information will lead to networks of marine protected areas. ■



Illegal trade in Vietnam's marine turtles continues

Marine turtles have all but vanished from Vietnam's waters, and illegal trade is largely to blame, says a new study by TRAFFIC, the wildlife trade monitoring network.

A government-owned souvenir shop selling illegal turtle products is a symbol of how a national ban on turtle products enacted in 2002 has been undermined by lack of enforcement. In Ha Tien and Ho Chi Minh City, traders cited Indonesian and Malaysia as their main source of turtles and raw scutes.

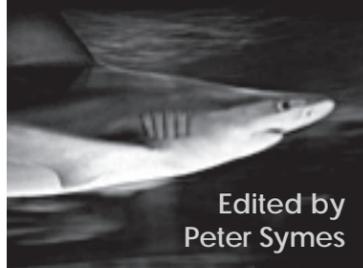
Already threatened by habitat degradation, accidental and opportunistic capture by fishermen, and the direct take of eggs, whole turtles are stuffed and their shells turned into jewelry, fans and handicrafts. ■

Prehistoric turtle goes to hospital for a CT scan

A 75-million-year-old turtle was taken to Deaconess Hospital in Bozeman, Montana, USA, in hopes of finding its head, eggs and embryos.

The fossil, only the second in the world found with eggs inside, is from the genus *Adocus*. The turtle was found in the Grand Staircase-Escalante National Monument in Kanah, Utah.

The test was inconclusive. The turtle was then taken to the Museum of the Rockies, which has special software for looking at CT images. Results of the findings will be presented at the International Symposium on Dinosaur Eggs and Babies in August 2009. ■



Edited by Peter Symes



Allowing guests to snorkel at St. Johns and other Far Islands, especially when C. longimanus is present, is highly unprofessional. Not only does it place guests at risk of injury, but such unprofessional action gives the whole Egyptian Red Sea dive industry a bad reputation
—HEPCA

Earlier this summer a snorkeler was fatally wounded by an Oceanic Whitetip shark off St. Johns in the Red Sea. The death was especially tragic because it could have been avoided if guests had been stopped from snorkelling, says HEPCA.

Since the death of the snorkeler, dive guides have reported to HEPCA that some *C. longimanus* at the Far Islands are displaying overly inquisitive or even aggressive behaviour towards them while diving. This included sharks near the surface moving rapidly towards divers at 30m. Others have reported being bumped, tanks nudged and sharks swimming extremely close to them

and their guests.

There may be a number of reasons why these animals are behaving this way. It could be due to the illegal actions of some divers who have been feeding them in these areas or boat crews baiting them. Alternatively, or in combination with, it may be due to natural seasonal causes relating to reproduction or the presence of natural prey. Whatever

the reasons, dive guides are urged to be especially vigilant when diving in areas where *C. longimanus* is commonly encountered. In light of this recent information, a list of recommendations—when taking guests to areas where this species is commonly encountered—has been expanded.

The earlier and new recommendations are:

- * No swimming and snorkelling in waters where this and other large species of sharks are known to frequent
- * No deliberate feeding of this species or the dumping of waste from boats, which may attract this and other potentially dangerous sharks (both activities are illegal in Egyptian waters)
- * No SCUBA diving without an experienced

dive guide in waters where this species is known to frequent

- * In areas such as the Far Islands, where this species is frequently observed, it is advisable that divers enter (and are retrieved from) the water as close as possible to the reef.
- * In areas such as the Far Islands it is illegal to be involved in any night diving activities.
- * Dive in groups and keep close together.
- * Two dive guides should accompany each group.
- * Divers should leave the water immediately if sharks display signs of aggression such as nudging or circling divers, or moving rapidly towards them.
- * Report to HEPCA any incidents of aggressive behaviour by these animals towards divers, and
- * Report to HEPCA the names of vessels whose divers or crew are observed feeding or baiting sharks. ■

HEPCA (Hurgada Environmental Protection and Conservation Association) is a leading NGO (Non Governmental Organisation) working in the field of marine and land conservation. Founded in 1992 by 12 members representing the diving community of the Red Sea, HEPCA is actively working towards the goal of protecting and preserving the natural resources of the Red Sea and Egypt. www.hepca.com

Rays replace sharks on restaurant menus as populations plummet

Falling shark populations is prompting Asian chefs to look for manta and devil rays to help meet the never abating demand for shark fin soup.

Mantas and mobulas are being used as shark fin soup filler where their cartilage is being mixed with low-grade shark fins in cheap versions of the soup.

“The life history of manta rays makes them highly susceptible to overfishing,” said Tim Clark, a marine biologist at the University of Hawaii. With a life span thought to be well over 50 years, the fish reach sexual maturity only in their teens, at which time they produce one pup every one to three years.

While the rays, which are distantly related to sharks, are ending up in Hong Kong’s restaurants, their gills are also being used in traditional Chinese medicines. “The big market is for the gill elements,” Clark added. “They are dried, ground to a powder and used in traditional Asian medicines.”

Reaching sizes of up to 7m (23ft) across the wings, the manta’s branchial gill plates, which filter plankton from seawater, constitute a tiny portion of a body that can weigh up to 2.5 tonnes. The plates can fetch up to US\$300 on the street in China. Practitioners of traditional Chinese medicine claim that gill rakers — called peng yu sai — reduce toxins in the body by purifying the blood. ■

Be vigilant around the Oceanic Whitetip