

# THE UNDERSEA JOURNAL<sup>®</sup>

KEEPING PADI PROFESSIONALS INFORMED, INSPIRED AND INVOLVED SINCE 1967 THIRD QUARTER 2011



# PROJECT AWARE<sup>™</sup>



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MOVEMENT**

THE UNDERSEA JOURNAL

PROJECT AWARE RELAUNCH » NEW REBREATHING COURSES » ECO-TOURISM TRAVEL » BUSINESS: GOING GREEN

THIRD QUARTER 2011

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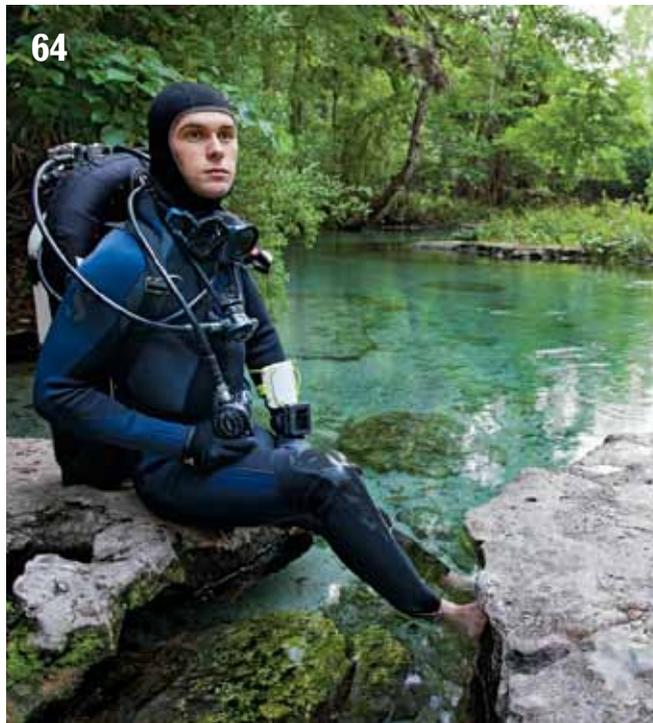
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This product is from sustainably managed forests and controlled sources.



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# EDITOR'S DESK

## The New Project AWARE

Since you're an avid diver, I'm sure you know that water covers more than 70 percent of the Earth's surface. Nor is it news to you that the ocean contains some of the most productive and most important ecosystems we have, and that without them, the global environment would collapse.



What many people don't know – including divers – is that as important as this ecosystem is, less than *one percent* has legal protection – only a small portion of which is fully protected through no-take zones. We can't live without the aquatic world, yet 99 percent of it is relatively open to pollution, overfishing and other destructive practices. Because people don't know about the peril and the issues, destructive practices continue in some places unabated.

If we were beyond the point of no return, there'd be no reason to write this editorial. Thankfully, we're not. As the ocean struggles for its life – *our* life – we're seeing new forces emerge on its behalf. The most powerful of these is . . . *you*.

The information age is bringing a revolution to social change. It's uniting people in common causes around the world, and arming them with information and the means to distribute it. For the first time in history, individual voices make

a difference. Armed with the knowledge that the Chilean seabass is actually the Patagonian toothfish – an overexploited fishery – for example, a diver who is also a chef can post in a culinary forum and literally influence thousands to choose a different seafood. Most people care enough to choose differently – they just need to know there's an important reason to do so.

Project AWARE Foundation has a new vision, mission and goals [see page 51] along with a new focus on two major areas – sharks in peril and marine debris. Project AWARE also has a new logo representing its commitment to an unprecedented movement that unites you, me and millions of other divers to take action to influence environmental policies at local and international levels. Together, divers are changing the world – making it better by working to protect the oceans that we all depend upon, and that future generations will depend upon.

There are two critical ocean conservation issues before us right now: sharks in peril, and marine debris. Project AWARE is taking a stand on both of these.

Many of the world's shark species are on the brink of extinction. Like most apex predators, most shark species grow slowly, mature late and produce few young, which makes them particularly vulnerable to fishing pressure. Overfishing, shark finning and bycatch continue to decimate shark species. Recently, AWARE divers helped champion a call for

the European Commission to strengthen its finning ban, and together, we'll look to close regulatory loopholes in the areas that matter most. At the grassroots level, get out the word – sign the shark petition at the Project AWARE website, don't buy shark fin products in particular, and shark products in general.

Project AWARE is also zeroing in on the battle against marine debris beyond cleanups. In more than 100 countries, this puts *divers* on the front lines. We are the ones collecting debris *underwater* as well as *in* the water or *near* the water, identifying the trouble spots and gathering data so we can find solutions, support the efforts of local leaders to improve comprehensive waste management and help at the regional and international level.

As a PADI Member, you're already one of thousands of divers in the battle for the ocean's future – our future. You're also one of the leaders, positioned to enlarge our numbers by taking students and divers to [projectaware.org](http://projectaware.org) (on your smartphone, tablet or laptop) to show them how they can stay informed, stay involved and make a difference.

A single voice gets lost in the roar, but millions shouting together rise above it. A single different choice doesn't affect corporate policy, but the same choice by millions *forces* it, willing or not. That's what Project AWARE's new emphasis is all about – being heard and making different choices to keep the aquatic world vibrant and healthy.

Good luck and good diving,  
Drew Richardson Ed.D.  
Publisher & Editor-in-Chief

# PADI ON TOUR

PADI Executives are in the field and on tour. From New Jersey, USA, to Russia, PADI Executives from around the globe are on tour attending Tec Xplor events and trade shows, visiting with PADI Dive Centers and Resorts and staying connected in the field.

**[1] PADI RUSSIAN DISTRIBUTION CENTRE 10-YEAR ANNIVERSARY** Shown here are PADI Europe, Middle East and Africa Limited, Vice President Sales and Marketing, Douglas Nash and Director and owner, PADI Russian Distribution Centre, Irina Beresneva, with the Bristol Blue Glass Vase presented to the Russian Distribution Centre by PADI Europe, Middle East and Africa Limited on the occasion of the centre's tenth anniversary servicing PADI Members in the Russian Federation.

**[2] PADI TEC XPLORE DAYS, NEW JERSEY, USA** Following Beneath the Sea, PADI TecRec staff hosted a full-day event filled with seminars covering sidemount, rebreathers, future PADI course offerings and appearances by some of the biggest names in the tec industry. Pictured [L-R]: PADI Course Director and TecRec Instructor Trainer, Jeff Loffin, PADI Technical Field Consultant, Jill Heinerth, and PADI Worldwide President and COO, Drew Richardson. All three presented at the Tec Xplor event.

**[3] BRASIL DIVE FESTIVAL** This past April, PADI Latin America hosted the tenth annual PADI Dive Festival in Sao Paulo, Brasil. The festival is the largest in South and Central America, and representatives from PADI Dive Centers and Resorts, travel agencies, manufacturers and more participated in and attended this successful event. Pictured outside the show [L-R]: PADI Americas Vice President Operations, Dana Stewart, PADI Americas Training Consultant, Karin Boss, PADI Americas Vice President Training & Customer Service, James Morgan.

**[4] TECREC INSTRUCTOR TRAINER CROSSOVERS** On 16 March, the PADI organization completed the first orientation program for Instructor Trainers (IT) in the PADI TecRec system. Four experienced ITs from other agencies attended the event, which was conducted in the offices of PADI Asia Pacific in Sydney. Shown here are the staff and newly qualified PADI TecRec ITs. Pictured [L-R]: PADI Asia Pacific Educational Consultants, Thomas Knedlik and Dan Macherel, TecRec Instructor Trainers, Phil Grey and Steve Burton; PADI Vice President Rebreather Technologies, Mark Caney; TecRec Instructor Trainer Ben Reymenants; PADI Asia Pacific Educational Consultant Alex Boulton and TecRec Instructor Trainer Matt Partridge; Vice President PADI Worldwide and Director of Marketing PADI Technical Diving Division, Terry Cummins.

1-4: COURTESY DOUGLAS NASH; MICHAEL A. HYDUK; KRISTIN VALETTE; COURTESY PADI WORLDWIDE



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As seen in Dive Training Magazine (May 2011)



# www.diversdlyte.com

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## THE UNDERSEA JOURNAL

keeping CALM professionals informed, inspired and involved



**PADI**

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# PADI<sup>®</sup>

## DEMA SHOW 2011



## MINI SEMINARS - CONVENTION CENTER

### **How's the Viz 2012?**

**Dr. Drew Richardson**

Ready to revolutionize your business? Join PADI Worldwide President and Chief Operating Officer, Dr. Drew Richardson as he shows you what's in store for the next 12 months. In addition to assessing the state of the industry, market trends and certifications information, Richardson will highlight an upcoming series of PADI programs that will boost your profits while transforming the way you do business.

### **Risk Management for Instructors**

**Pat Fousek**

Are you prepared in the event of a dive accident? Learn how conservative decisions provide better protection for you and your divers by analyzing real dive incidents. Find out how to better manage risk in your courses and throughout your dive career during this 90-minute seminar.

### **PADI Standards and Opportunities**

**Julie Taylor Sanders**

Learn how to leverage your strengths and experience through opportunities with specialty courses and PADI eLearning®. You'll also hear how to integrate the latest ILCOR Guidelines into your Emergency First Response courses and how you can incorporate new Project AWARE initiatives to maximize your conservation efforts.

### **New Programs and Products to Revolutionize How You Do Business**

**James Morgan**

This 90-minute seminar highlights innovative products and services, and then reveals how you can use them to improve customer relations, attract new customers, boost sales and increase revenue. Topics include: Recreational and Technical CCR courses, the PADI Online Community, PADI Pros' Site, eCard, PADI Preference Center, TecRec Center Award and Green Star Award.



## MINI SEMINARS - CONVENTION CENTER

### **Public Safety Diver**

**Bill Hammy/Mike Berry**

Discover how to increase your revenues by expanding into this niche market. This seminar will cover the newly released program along with plans for future distinctive specialty courses and instructor ratings. You'll also learn how to reach out to military, police and fire personnel.

### **Tec Program**

**Karl Shreeves/Mark Caney**

This seminar presents an overview of the recently released PADI Rebreather Diver courses and TecRec Technical CCR courses. The seminar also previews courses in development as well as looking at popular sidemount training and hardware options.

### **Creating a Go Pro Profit Center**

**James Morgan**

Learn how to expand your instructor development program and make it a lucrative profit center. This seminar will teach you how to plan and host a Pro Night to boost certifications and equipment sales. Pro Nights around the world are averaging \$10,000 US per event and some have reached more than \$100,000 US. Hear real life examples of tactics dive centers have used to pull off the ultimate Pro Night - infusing revenue into their business.

### **Swim Into Profit**

**Bob Coleman**

Keep your pool active all year round with the PADI Swim and Swim Instructor Trainer programs. This seminar will show how you can integrate a swim program into your business and generate a new revenue stream. Find out how reaching out to this audience can bring new divers into your store.



## MINI SEMINARS - CONVENTION CENTER

### **AWARE 2.0: Building Your Local Ocean Movement**

**Jenny Miller Garmendia**

Together, we're rethinking what's possible in ocean protection. Discover what's behind the recent Project AWARE relaunch and the focus on two major ocean issues: marine debris and sharks in peril. Dive into the new online community for conservation leaders, My Ocean, and see how you can use it to advance your local ocean movement and contribute to global change.

### **Dive Against Debris: Moving Beyond Cleanups**

**Ania Budziak/Seba Sheavly**

Worried about the onslaught of ocean trash? If so, this session is for you. Dive professionals are getting serious about marine debris. In this lively session we'll talk trash and explore how the new Project AWARE program, Dive Against Debris seeks to expand the world's understanding of the marine debris problem underwater and work to solve it both locally and globally.

### **Twelve Keys to Building your Bottom Line with EVE**

**Terry Cummins/ISSYS Staff**

Learn how you can use EVE to: diagnose customer wants and needs, establish a marketing strategy, develop your customer relationship management, strengthen financial analysis, enhance time management and much more in this hour long seminar.



## BUSINESS ACADEMY SEMINARS

### **Business Academy Overview**

Get ready to revolutionize your business with the PADI Business Academy. Targeted at PADI Dive Center and Resort owners and managers, the PADI Business Academy curriculum delivers relevant, cutting-edge business information designed to improve your bottom line through 13 workshops.

The following six workshops will be offered during DEMA Show and will get you started improving your day-to-day sales strategies, increasing your online presence, expanding your travel business and much more.

---

### **Sales Training - Redefining Your Customer Relationships**

Bill Hammy/Kristin Valette

Has hesitation, fear or uncertainty ever prevented you from asking for the sale? Learn how preparing for the sale, meeting customer needs and being comfortable asking for the sale can exponentially increase your profits. This 90-minute seminar will change how you and your staff interact on the sales floor.

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### **Pricing Strategies - Pricing with Confidence**

Bob Coleman/James Rogers

This cutting edge, 90-minute seminar will teach you how to maximize profits by using customer perception to adjust your pricing. You'll learn how techniques like anchoring, charm prices, sale price markers and price tags - along with how adjusting your product mix and price - can boost your bottom line.

---

### **Is Your Website Working for You?**

Kristin Valette

Is your website meeting your expectations? Could it do better? If so, this 90-minute seminar, packed with information, is for you. You'll hear from web developers about simple turn-key solutions to revamp your site, maximize traffic and increase search engine optimization. These tried and tested tactics will ensure your website is working for you.

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### **Engage Your Network: Social Media Strategies 101**

Kristin Valette/Danny Dwyer

Discuss the growing power of social media and how you can take advantage of this powerful medium to grow your business. You'll learn how social media works and receive tips for blogging, posting to Facebook, Twitter, YouTube and Google Places. Learn how inserting keywords in blogs can increase your search engine rankings, maximize your exposure on Facebook plus many more ways to increase your use of social media.

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### **Destination Anywhere... Travel = \$\$**

Nick Jenny/Christine Grange

In today's economy, it's more important than ever for dive businesses to incorporate travel in their product mix. This seminar will show how to get started and provide ways to capitalize on dive travel business. Learn how to turn your staff into dive travel specialists, identify resources to train your staff, how to market your trips and maximize profits on both group and individual bookings.

---

### **Risk Management for Retailers & Resorts**

Pat Fousek

Is your dive center or resort prepared in the event of a dive accident? Learn how conservative decisions provide better protection for you and your divers by analyzing real dive incidents. Plus, find out how you can better manage risk in your courses and throughout your dive career.

## PADI PROGRAMS AT THE ROSEN CENTRE HOTEL

### **PADI Live...from the red carpet**

Walk the red carpet and bask in the accolades as the PADI organization recognizes and applauds your star power. Join us for an interactive session focusing on trends for 2012 where you are an active part of the discussion. This informative session will not only recognize the success of PADI Members, it will also drill down into the tactics they employed to generate their stardom. Then, get ready as the stage lights up as the keynote speaker prepares you for the week ahead with a good dose of both humor and inspiration. Come share in the excitement as each and every one of you will be recognized for the stars that you are. Then, stay for the after-party to catch up and mingle with friends and colleagues from around the world.

Register at <http://padilive.eventbrite.com>

---

### **2012 Course Director Update**

This half-day program is open to all renewed and active status Course Directors and will focus on:

- New and revised programs and products as well as an overview of any associated standards and curriculum changes as they relate to Instructor Development.
- How to acquire the new Recreational Rebreather and Tec Rebreather Instructor Trainer credentials.
- Members sharing their keys to success and tips for organizing Pro Nights.
- Up-to-date explanations of the Knowledge Development criteria being applied during Instructor Examinations and the Course Director Training Course.
- Ceremony honoring the 2010 Platinum Course Directors in attendance.

Register at <http://2012coursedirectorupdate.eventbrite.com>

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### **EFR Instructor Trainer**

This half-day program is open to all Emergency First Response Instructors who have completed the preparatory online component and conducted at least five Emergency First Response courses or issued at least 25 Emergency First Response course completion cards. Included is access to online presentations, an Emergency First Response *Instructor Trainer Manual*, Emergency First Response Instructor Course Lesson Guides, Emergency First Response Instructor Course exam booklet and Instructor Trainer application fee. Please bring a current or updated Emergency First Response *Instructor Manual*.

Register at <http://efrit.eventbrite.com>

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### **2012 IDC Staff Instructor Update**

This half-day program is open to all renewed IDC Staff Instructors and will focus on:

- New and revised programs and products as well as an overview of any associated standards and curriculum changes as they relate to Instructor Development.
- How to acquire the new Recreational Rebreather and Tec Rebreather Instructor Trainer credentials.
- Members sharing their keys to success and tips for organizing Pro Nights.
- Up-to-date explanations of the Knowledge Development criteria being applied during Instructor Examination and the Course Director Training Course.

Register at <http://idcstaffinstructorupdate.eventbrite.com>

## PADI PROGRAMS AT THE ROSEN CENTRE HOTEL

### **EVE - Marketing Workshop**

ISSYS Staff

Learn how you can use EVE to implement fundamental marketing strategies to keep your divers coming back. Find out how EVE makes it easy to market to divers while in a class, enhance continuing education, maximize your equipment service income, turn rentals into a true profit center, retain divers through the PADI System of diver education and turn sales into future marketing opportunities. EVE can help you do all this in a seamless, integrated strategy. Plus, you'll also learn how to implement a Hot Leads strategy.

Register at <http://evemarketingworkshop.eventbrite.com>

### **EVE and The Business Of Diving**

ISSYS Staff

Want to get the best out of using EVE in every area of your dive center? Sign up for this session and see how you can make every area of EVE a valuable and profitable part of your business. This is a hands-on guide to getting the best out of EVE for your dive center or resort.

Register at <http://evebod.eventbrite.com>

### **Getting started with EVE & EVE Online**

ISSYS Staff

The biggest barrier to making necessary changes and embracing the future can often be the fear of change. See how implementing EVE can start making you money and helping you retain your customers from day one. You'll also learn how you can project your store's strengths and qualities into the wider world with an integrated, online solution that can turn your business into a clicks and mortar operation.

Register at <http://eveonline.eventbrite.com>

### **EVE - Advanced Workshop & Integrated Marketing for Dive Businesses**

ISSYS Staff

Learn how to implement a consistent, automatic marketing strategy. The core of your marketing strategy is delivering coherent, enticing messages to the right customers at the right time. Master the development of this strategy and learn how to deliver these messages with the EVE Auto E-mail Agent.

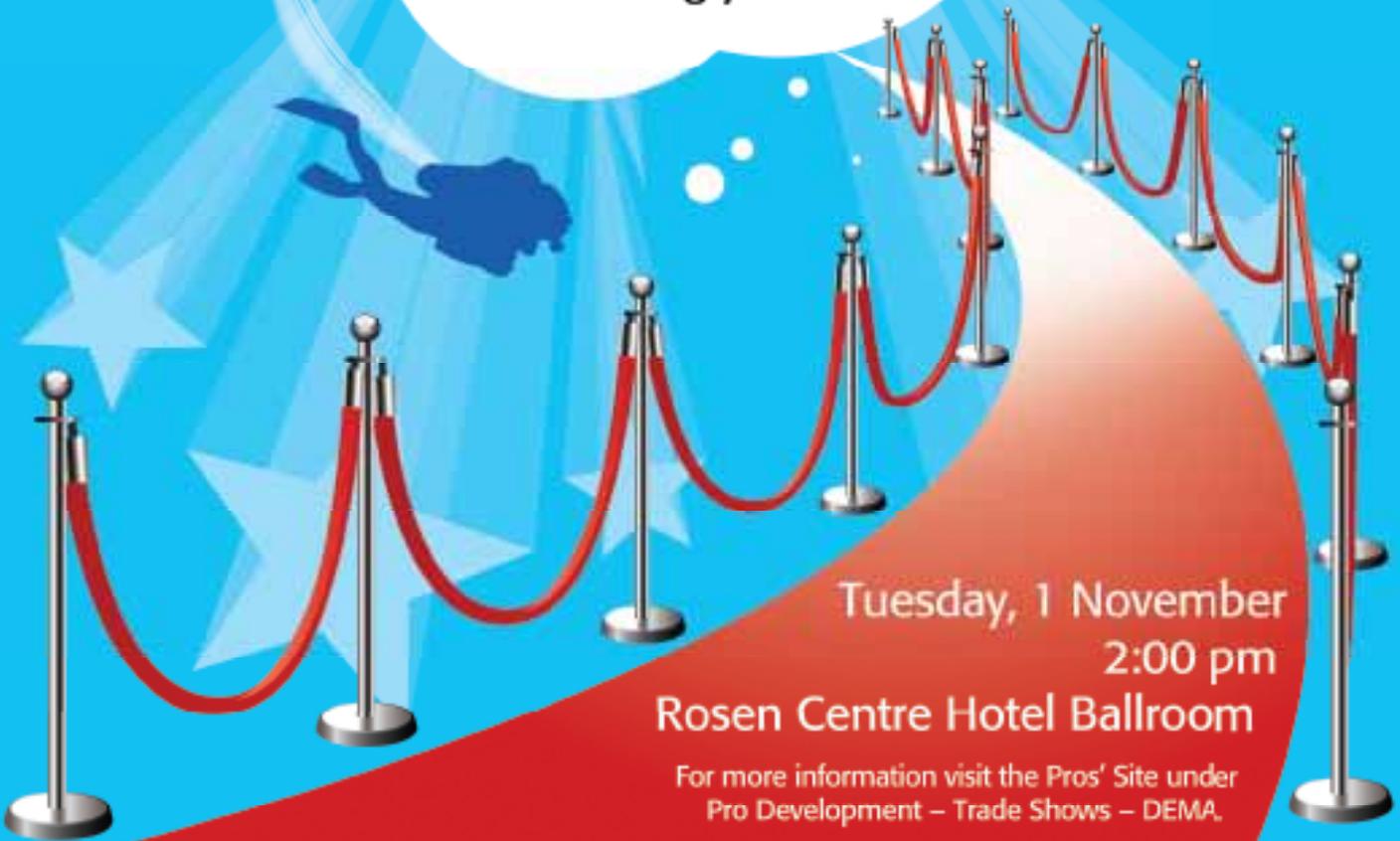
Register at <http://eveadvanced.eventbrite.com>





# PADI LIVE

From the red carpet...  
starring you!



Tuesday, 1 November  
2:00 pm

Rosen Centre Hotel Ballroom

For more information visit the Pros' Site under  
Pro Development – Trade Shows – DEMA.

# On the Cutting Edge

What's new in the world of dive gear. **BY DARYL CARSON**

Helping a customer make the right purchasing decision — for his or her skill level, body type, diving environment and professional needs — is a crucial service. We've got the lowdown on these products from Cressi, Light & Motion, Nuvair, Nauticam and XIT.



1

## 1 CRESSI AIR TRAVEL BC

At less than 2.5 kilograms/6.0 pounds in size Medium, the Air Travel is a true featherweight and ideal for divers journeying to far-flung destinations. Its lightweight and ultraslim design make it effortless to pack into small spaces and keep it nicely streamlined underwater.

**COOL FEATURES:** Integrated weight pockets mean divers don't have to sacrifice convenience for easy carrying » Three dump valves make buoyancy adjust-

ments possible at any orientation » A large accessory pocket for carrying essential gear » Slimline, rear-mount air cell » Folds easily and compactly.

**WHY IT'S HOT:** The Air Travel is so light and compact it never has to be left behind, meaning divers can always enjoy the comfort of using their own gear. [cressi.com](http://cressi.com)

## 2 LIGHT & MOTION SOLA DIVE 1200

Compact and versatile, the SOLA Dive 1200 gives divers plenty of lighting

2



**IT HAS SMART CONTROLS, IS EFFORTLESS TO CHARGE AND IS SMALL ENOUGH TO USE WITH A WRIST MOUNT.**

options in a light they can take on every adventure. Light & Motion has designed a light that has smart controls, is effortless to charge and is small enough to use with a wrist mount.

**COOL FEATURES:** Fully sealed body incorporates a sliding magnetic switch » Beam switches from spot to flood » Users can select three power levels to manage brightness and lengthen burn time » Built-in Lithium-ion battery is easily charged through external wet connection » Optional padded wrist mount or BCD/lanyard clip for multiple carrying options.

**WHY IT'S HOT:** In addition to being small and powerful, the SOLA truly provides multiple lighting options, equally filling the bill as a main light source or trusty backup. [uwimaging.com](http://uwimaging.com)

KATY DANCA GALLI

3



**THIS TURNKEY SYSTEM HAS A HIGH CHARGE RATE AND COMES IN AN ALL-IN-ONE PACKAGE THAT'S ENCLOSED FOR COOL, QUIET OPERATION.**

4



5



**3 NUVAIRE VOYAGER IV**

This LP and HP nitrox generating system is built for dive shops that support technical diving, generating nitrox mixes up to 40 percent O<sub>2</sub> and has optional trimix capability.

**COOL FEATURES:** Fully enclosed for cool, quiet operation » Charging rate of 481 lpm/17 cfm » Nuvaire membrane system » HP compressor delivers air to 414 bar/6000 psi and nitrox to 248 bar/3600 psi » 1,700,000 lt/60,000 cf HP filtration » Interstage pressure gauges » Automatic shutdown for high pressure, high temperature and low oil.

**WHY IT'S HOT:** This turnkey system has a high charge rate and comes in an all-in-one package that's enclosed for cool, quiet operation. [nuvaire.com](http://nuvaire.com)

**4 NAUTICAM NA-LX5 HOUSING**

Panasonic's Lumix LX5 is a powerhouse compact camera, delivering raw format capability, manual exposure with full control and TTL function in manual mode. Underwater shooters can put each of these capabilities to use thanks to

Nauticam's rugged aluminum NA-LX5 housing.

**COOL FEATURES:** Excellent ergonomics and ultracompact design for easier maneuvering underwater » A double-locking clasp for a secure seal » A sensitive shutter release that provides tactile feedback » TTL capability that allows any shutter speed and aperture combination with external D-TTL and DS-TTL capable strobes.

**WHY IT'S HOT:** The NA-LX5 makes a significant step toward putting DSLR capabilities in the hands of photographers who prefer the ease and maneuverability of a compact system. [nauticamusa.com](http://nauticamusa.com)

**5 XIT 404 2ND RATE SLATE**

For most divers, a slate is a luxury, but for many pros it's a necessary tool for teaching, research or communication. XIT 404's popular Aqua Pencil has become a favorite of many such divers. Now, the

2nd Rate Slate system allows for easy mounting of the Aqua Pencil to any slate they already own.

**COOL FEATURES:** Ruggedly built like its Aqua Pencil companion, the system includes a high-impact bracket and corrosion-resistant hardware » Mounts easily by drilling two holes in any existing slate and attaching with the hardware provided.

**WHY IT'S HOT:** Because it puts a reliable and durable writing tool in your hand and means the end of hunting for a golf pencil before every dive. [xit404.com](http://xit404.com)

FROM TOP LEFT, CLOCKWISE: COURTESY NUVAIRE; COURTESY NAUTICAM; COURTESY XIT 404

# PADI Programs and Products Continue Launching All Year Long

Halfway through the year, the PADI organization continues to deliver new tools, programs and products to help you succeed.

BY ADRIANNE MILLER, MARKETING CONSULTANT, PADI AMERICAS



**Dive Anywhere events give divers the chance to participate in local events.**

## Dive Anywhere

// LAUNCHED 1Q //

PADI Dive Centers and Resorts have been posting events that are popping up all across the globe as part of the Dive Anywhere campaign. Members gain more exposure for their event by posting the upcoming event at the PADI Pros' Site under Toolbox/Marketing/Marketing Campaigns. Events will appear on the interactive map at [padi.com/dive-events](http://padi.com/dive-events), and consumers can search by location to find and attend diving events close to home or where they plan to travel.

## PADI On Tour

// LAUNCHED 1Q //

PADI Staff are continuing their world tour supporting PADI Members through Goals for Growth, Member Forums and Instructor Examinations, as well as industry and consumer shows. The PADI Business Academy is about to hit the road and webcasts have been added to the PADI Pros' Site in English, Spanish, French and Portuguese.

## Peak Performance Buoyancy Specialty Course Revisions

// LAUNCHED 2Q //

The Peak Performance Buoyancy Specialty course was recently revised to include a new diver manual and updated instructor guide to accompany the video. There are no standards changes to the course, but the course content now includes an introduction to rebreathers and their specialized buoyancy considerations.

## Recreational Rebreather Courses

// 3Q LAUNCH // PADI TecRec is launching rebreather courses for recreational divers who want to take advantage of the benefits of rebreather diving. The PADI Rebreather Diver and Advanced Rebreather Diver courses will train divers in the use of Type R (recreational) eCCR and eSCR rebreathers.

## PADI I Sidemount Diver

// LAUNCH 3Q // The PADI Sidemount Diver course will introduce recreational

divers to the advantages of a different equipment configuration. Advantages of sidemount configurations for recreational divers include being able to carry cylinders separately on land, ease of donning equipment in the water, having more gas to take advantage of your no stop dive time and the option to carry two smaller cylinders instead of one large one.

## Tec Sidemount Diver

// LAUNCH 3Q // The PADI Tec Sidemount Diver course will expand the PADI Sidemount Diver's knowledge, skill and experience to familiarize them with the use of sidemount equipment for tec diving. PADI TecRec programs already allow sidemount equipment and many tec divers find carrying and accessing multiple cylinders easier in this configuration.

## Technical CCR Courses

// 4Q LAUNCH //

For those interested in diving deeper into rebreathers, PADI Tec CCR courses address the more involved skills required for Type T (technical) CCRs. The Tec 40 CCR and Tec 60 CCR courses will be available in fourth quarter of 2011, while Tec 100 CCR will be available in early 2012.

## PADI Green Star Award

// LAUNCH 4Q //

Get recognized for your conservation efforts and attract new divers with the PADI Green Star Award. Conservation is important and the Green Star Award can differentiate PADI Members from their competitors. Stay tuned for more information.

## Project AWARE Relaunches

// LAUNCHED 2Q //

With its relaunch on World Oceans Day, 8 June 2011, Project AWARE Foundation — the PADI organization's long-time non-profit partner — is flicking the switch on a modern environmental movement for ocean protection. Visit the Living Seas section on page 46 for more information.

# Welcome New PADI Retailers and Resorts

Congratulations to the 124 new PADI Dive Centers and Resorts joining the PADI family during the first quarter of 2011. Please visit the PADI Pros' Site for a complete list of new members.

BY JO WALTERS, MARKETING CONSULTANT, PADI AMERICAS

## Enter the Diver's Lair

**How one man's date with destiny took him full circle to become a PADI Dive Center owner.**

Located in the city of Valparaiso, Indiana, USA, Diver's Lair was originally called The Scuba Tank. New owner Les Corkill knew it well in those days, because he earned his PADI Open Water Scuba Instructor rating in that very same spot in 1995. After the business went through a series of partnerships, the owners wanted to retire and Corkill was ready to jump in. "The timing was right; the previous owners were ready to retire and I was open to a major career change. I wanted to pursue my passion. The passing away of friends and family members reminded me that time was slipping by and that 'later' might be too late."

The first thing Corkill did was mod-

ernize the store. "We felt this was the best way to distinguish ourselves from the competition." The retail space now sports two large flat-screen televisions, so the first thing people see when they walk in the door is video of people diving.

Corkill also repainted the store in bright Caribbean colors and commissioned Bridget Muntzing, a successful local teenage artist, to paint a large mural in the training room.

Corkill places great value on his ties



to the Valparaiso community. "I spent a total of 20 years as a salesperson, working for various large banks and traveling most of the time. And while I value the friendships I made during those years, I am delighted that I now have the opportunity to connect with my community – the people here at home."

Corkill reinforces those community ties by reaching out to the various organizations with dive training programs. In fact, he's tied in to the career development programs at two local steel mills, works with local Boy Scout and Girl Scout troops and conducts diver training programs at four nearby high schools.

Never one to miss out on a great demographic, Corkill teaches courses at the upscale Sand Creek Country Club and has forged a relationship with the existing Valparaiso Dive Club. He promotes the club at Diver's Lair and attends its meetings and events. This gives him the opportunity to present new products and services to the club members.

In the dive center, the second television is dedicated to product demonstrations. "I like to have plenty of product for people to touch, feel and try on. For example, I usually carry two or three brands of BCDs and stock a wide selection of sizes. The video comes in handy if someone falls far outside the normal size range – although they can't try it on, they can see how it will fit on video."

But by far, his favorite innovation is the introduction of EVE 5 Software. "Yes, there has been a steep learning curve," says Corkill. "But it's the intricacy of the program that makes it so powerful. Besides, I've been attending the EVE User's Group web and teleconferences and I recently completed the EVE Business of Diving Webcast, all of which make the program easier to use and understand."

All in all, Corkill seems quite satisfied with his life as a PADI Dive Center owner. "I like being around people who dive or aspire to dive. Experiencing the underwater world completes their vision of a full life. It's my job to help them safely achieve their goals and have fun trying. There is nothing more satisfying!" It seems that being a dive center owner completes his vision of a full life, too.



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# Patience and Preparation Pay Off

BY BOB WOHLERS



**PHOTOGRAPHER:** Phil Mercurio,  
PADI Divemaster - 162364

**WHERE:** Rapid Bay Jetty, Rapid Bay,  
South Australia, Australia

**CAMERA SYSTEM:** Canon IXUS 980-IS  
with wet macro lens and Inon D-2000  
strobe.

**SUBJECT:** Purple Nudibranch,  
*Flabellina sp.*

This month's image by PADI Divemaster Phil Mercurio is an exercise in both patience and preparation. He spends purposeful time "hunting" for interesting subjects and prepares by focusing on subject knowledge. Mercurio explains *preparation* this way:

*"While I have always enjoyed hunting for subjects, it is really helpful to stack the deck in your favor through subject-focused continuing education. There are numerous local and general field guides whose information can help you find specific subjects. Information like habit type and prey selection can lead you in the right direction. I regularly use A Field Guide to the Marine Invertebrates of South Australia by Karen Gowlett-Holmes (2008) to look for specific creatures I am interested in, such as the purple nudibranch."*

Mercurio also knows that information about prospective subjects will help you *find* them and decide *how* to image them.

Specifically, Mercurio studies his prospective subject's habitat type, food selection, body type and general biology. For example, from his reading he knows that this nudibranch is *benthic* – meaning it lives on the bottom, crawling around on substrate.

Knowing a bit about the subject also helped Mercurio decide how to image the subject. For example, Mercurio knows where the nudibranch's head is – preventing him from simply imaging the "wrong end" of the creature. Further, while eye contact in fish photos is generally important, that is not the case with nudibranchs. Mercurio realized that other key nudibranch body features are important for this subject and focused on:

**1 Gills** – Used to collect oxygen. This nudibranch's gills are the orange protrusions on its back.

**2 Rhinophores** – Used to sense chemical molecules emitted by predator and prey alike. These are the two purple protrusions coming from the nudibranch's head area.

**3 Mouth** – Used for feeding. This nudibranch's mouth is pointing closest to the camera on the head, just below the rhinophores.

**4 Foot** – That portion of its body on which the nudibranch attaches to and crawls along the bottom.

I also like Mercurio's photo for a couple of other reasons. First, by using a strobe and small aperture, Mercurio was able to throw the background out of focus, emphasizing all of the aforementioned nudibranch body parts. Second, Mercurio captured the image of this nudibranch just as it was raising its head up off the bottom. The composition adds depth and interest while showing off the creature's foot.

» Want to see your photo published in the next issue of *The Undersea Journal*? Have a pressing question that you want to ask a photo pro? Contact Adrienne Miller at [adrienne.miller@padi.com](mailto:adrienne.miller@padi.com) with your images, photo tips or questions.

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# Family Additions

From new PADI Instructors to divemasters in space and PADI Dive Centers and Resorts winning awards, there's so much going on around the world with the PADI family. Find more photos and stories in the References – Reading Room at the PADI Pros' Site.



### 1 | Chile's President Goes Diving

President Piñera from Chile went diving in Punta de Choros with PADI Dive Resort Memo Ruz, Punta de Choros, Chile. Pictured here [L-R]: Memo Ruz, President Piñera and Pablo Rossel.



### 3 | Dive Egypt

PADI Europe presents the award for the South Egypt dive center processing the most certifications in 2010 to PADI Five Star Instructor Development Resort Euro-Divers Club Med El Gouna, Red Sea, Egypt. Shown here: [L-R] Regional Manager of Euro Divers El Gouna Marcelo Guimaraes, Dive Center Manager Stephanie Oliver and PADI Regional Manager Egypt Reto Moser.



### 2 | Costa Rica Fire Department

PADI Course Director Francesco Nistri and owner of Diving Mania in San Jose, Costa Rica, provided the entire Costa Rica Rescue Team with free training. Shown here: The Fire Department Chiefs of Costa Rica presenting PADI Latin America Regional Manager Robert Sievens [center] with a plaque of gratitude.

### 4 | PADI Instructors in Bonaire

PADI Five Star Instructor Development Center Dive Friends Bonaire and Buddy Beach and Dive Resort hosted an instructor development course in Bonaire with PADI Examiner Gary Newman. Congratulations to the new instructors [not in order], Ewald van Hoeijen, Philip Twilhaar, Yori Carnas, Volker Ozean, Lenaart Kluiters, Marian Reinova, Derk Bevers, Susan Porter, Sara Brandsen, Mariska de Waard, Carl Perpich and Maarten Bot. Special thanks to PADI Course Directors Thomas Kurz and Pepe Mastropaolo and PADI Staff Instructor Christina Wootton.



### 5 | Family of PADI Instructors

In January 2011, PADI Asia Pacific Director, Training and Quality Management, Mike Holme, ran a PADI Instructor Examination with two twins and their mother, along with several other successful candidates. The competition between the three divers could have been intense, but they all excelled and passed their instructor exam with flying colors. Pictured [L-R]: Harrison, Karen and Taylor



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Koens from Subsurface Fiji on Beachcomber Island.

**6 | Diver Retention Award**

PADI Americas Vice President of Operations Dana Stewart and PADI Canada Regional Manager Randy Giles presented the Diver Retention Award to Patrice Perron and Stéphanie Labbé of PADI Five Star Dive Center Plongée Sous-Marine Nautilus in Québec City, Canada. Pictured [L-R]: Stewart, Perron, Labbé and Giles.

**7 | From Boy Scout to Instructor**

PADI Instructor Matt Martin [second from left] became interested in scuba after a Discover Scuba Diving experience with his then Boy Scout Troop and PADI Course Director John Langlois of Enfield Scuba in Enfield, Connecticut, USA. Martin worked his way up the ranks and is now teaching at his college in Connecticut, USA. Pictured is one of Martin's first divemaster classes [L-R]: Jon Coscarelli, Martin, PADI Americas Regional Manager Stush Doviati, Tyler Vallario and Jon Lee.

**8 | New Instructors from PRO Dive Mexico**

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Mexico, are Course Director Anders Heegaard and PADI Instructor Examiner Gary Cruea with the successful instructor candidates from Pro Dive Mexico. Congratulations to Antonio Bernal, Simon Page, Jo Jo Willink, Sean Turnbull, Clare Johnson, Charlie Kessler, Ben Eisele, Ivan Samra, Manuel Medina, Leo Morante and Geraldine Solignac.

**9 | PADI Instructor Exam in Bali**  
 Beautiful Bali in Indonesia was the location of the PADI Instructor Exam (IE) held in March 2011 with a total of 26 candidates. Conducting the IE were PADI Instructor Examiners Mike Holme and Thomas Knedlik from PADI Asia Pacific. The PADI Course Directors were Knut Hoff, Minni Vansgaard, Ayala Cohen, Jonathan Cross and Gary Brenand. The candidates pictured here (in no order) are: Johan Sualang, Yves Hofmann, Tanguy Philippart de Foy, Thomas Ward, I Wayan Mulliartha, Janri Arter Wanget, Tony Jumadil, David Shread, Johanna Vorreiter, Bob Sim, Val Tan, Satouka Basso, Kah Heng Neo, Chris Bowmer, Andrew Miranda, Kevin Godden, Moritz

Drabusenigg, Ursula Wastian, Reinhart van Meteren, Teit Jensen, Rebecca Johansson, Joslyn Davis, Emma Astroem, Tilke Rumpff, Emily Rixon and Alexander McKenzie.

**10 | Award for Diver Dan's Scuba Center**  
 During the Our World Underwater Show in Rosemont, Illinois, USA, PADI Americas Sales Consultant Bret Lorea [center] presented Brian Vacarro [left] and Dan Vacarro [right] with an award for their Goals for Growth achievement for 2010 at PADI Dive Center Diver Dan's Scuba & Aquatic Center, which is located in Kenosha, Wisconsin, USA.

**11 | PADI Instructor Exam in Thailand**  
 In March 2011, 34 candidates attended a PADI Instructor Exam on the island of Koh Tao in Thailand. PADI Course Directors Mathew Bolton, Robert Murphy, Peter Nieuwhof, Mark Soworka, Tim Hunt and Patrick Tassin expertly prepared the group. PADI Instructor Examiners Rob Scammell, Tim Marshall

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and John Kinsella conducted the event. Proudly displaying their PADI Open Water Instructor certificates are [not in order]: Tatjana Vujkovic, Alexander Zollinger, Carmen Isaak, Martial Moulin, Juan Jo Diaz Fernandez, Erneste Guijarro Adame, Medwin Culmer, Kate Howard, Cameron Bobberman, Nariman Orousi, Alexander Luijk, Susanne Hunold, Jeremy Young, Alan Ireland, Nicolas Cessaroni,



Richard Todd, Christina MacDonald, Helen Timbleby, Cameron Brown, Sonia Pinilla, Jaqueline Suvacardov, Vincent Guitard, Virginia Levrini, Ross Bowman, Kipp Hennen, Olivia Edmonds, Richard Petitpas, Johan Jankewitz, Laszlo Janekwitz, Bijloos Pierre, Caroline Mercier, Andreas Schneider, Jinathon Sharland and Jeremy Savidge.

**12 | Sport Chalet at PADI Americas**  
More than one hundred Sport Chalet

staff members representing 34 stores visited PADI Americas to attend the Sport Chalet Scuba Training University. This one-day, innovative program helps the staff of Sport Chalet learn about various aspects of diving and helps prepare them for the upcoming dive season.

**13 | Fifteen Years and Growing Strong**

PADI Master Scuba Diver Trainer Bill Matthies is presented with the PADI Resort and Retailer Association Fifteen Year Award for PADI Five Star Dive Center Minnesota School of Diving, in Brainerd, Minnesota, USA. Matthies also recently received an award for his contribution to diving in the Great Lakes region from the Great Lakes Shipwreck Preservation Society. Pictured [L-R]: Bill's son and co-owner of Minnesota School of Diving Todd Matthies and Bill Matthies.

» **What's going on in your area? Send your photos and share your stories about the creative programs you're running, events you're participating in and awards you're winning. Your photo may be included in a future issue of *The Undersea Journal* or posted at the PADI Pros' Site. Please send high-resolution photos only to [journal@padi.com](mailto:journal@padi.com).**





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Learn More



**Stan Holford**

10 May 1934 – 20 March 2011

It is with deep sadness that the PADI family announces the passing of Stan Holford. Holford was born in the Old Fold area of Gateshead, England, in 1934. His first job was selling fruit and vegetables from a barrow, but Holford had a yearning for more adventure. Holford became fascinated with diving from an early age after reading stories about the frogmen – men who trained to dive in a military capacity. In 1950, Holford started one of the first PADI centres in the United Kingdom, The Diving Centre Ltd. in Newcastle Upon Tyne. His desire for adventure turned into a passion for giving thousands of people their first chance to breathe underwater. Holford’s sons, PADI Course Directors Karl Holford and Michael Holford and PADI Master Instructor Jake Holford, also followed in his adventurous footsteps. Stan Holford will be sorely missed by all.

**Dr. Christian J. Lambertsen**

15 May 1917 – 11 February 2011

One of the most influential divers of the 20th century, Dr. Christian Lambertsen, passed away at the age of 93. Known for being the first to introduce the acronym SCUBA in 1952, Lambertsen’s technical and physiological contributions, particularly to American military divers, were milestones in human reentry to the sea. His development and introduction, against an indifferent US Navy, of the Lambertsen Amphibious Respiratory Unit (LARU) oxygen rebreather during World War II helped establish the first American underwater combat teams for the Office of Strategic Service (OSS) and all combat diving that followed. Coupling his technical ability with his medical training, he was Professor of Environmental Medicine at University of Pennsylvania in Pennsylvania, USA. (Courtesy of Leslie Leaney, Publisher, *The Journal of Diving History*)



**David Merbach**

3 October 1964 - 27 March 2011

The PADI family expresses condolences to the family and friends of PADI Divemaster David Merbach. Merbach’s passion for scuba began in 2001 while living in California, USA. Two years later he came to MDC Sports in Rochester, Minnesota, USA, for training, and his enthusiasm grew even more. As a divemaster, Merbach loved to share the joy of scuba with others, especially kids. Even near the end of his life, he was hard at work with the Rochester Scuba Club, creating opportunities for young divers. Merbach’s gentle spirit, laughter and strength of character will be missed. He is survived by his wife Sarah Merbach, daughter Monica Merbach and son John Merbach. (Courtesy of PADI Five Star Dive Center MDC Sports, Rochester, Minnesota)

**Agnes Milowka**

23 December 1981 – 28 February 2011

It is with a heavy heart that the PADI family mourns the passing of Agnes Milowka at the age of 29. A PADI Divemaster since 2004, Milowka travelled extensively as a technical diver, explorer and photographer and nurtured great friendships on expeditions and film projects around the world. Pursuing a graduate degree in marine archaeology at Flinders University in Adelaide, South Australia, Australia, she cut her teeth on wrecks, but it was during a year abroad, interning at Dive Rite in Lake City, Florida, USA, where she developed a deep love for cave diving and exploration. In recognition of her legacy, The Agnes Milowka Memorial Environmental Science Award has been established by Mummu Media. The award will support underprivileged schools in the area of science, marine studies or exploration. Please visit [agnesmilowka.com/index.php/awards.html](http://agnesmilowka.com/index.php/awards.html).



**Witold Smilowski**

13 November 1956 - 28 March 2011

The PADI family will sincerely miss PADI Course Director and translator Witold Smilowski. Already a successful dive instructor and businessman, Witold became a PADI Member in July 1994 in South Africa. He became a hugely active PADI Course Director in 1996, and planned to become a PADI Platinum Course Director. Witold issued more than 5000 instructor level certifications in his career as a PADI Course Director. He was an extraordinarily successful trainer, educating and influencing new instructors from all over the world. He also worked directly with the PADI organization in dive market development, government relations, translations, assisting the instructor examination process, reviews and beta testing of new PADI programs. Witold was an exemplary PADI ambassador and a dear friend. Our deepest condolences go out to all his family and friends.



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- What will I see?
- What should I pack?
- When is the best time to go?

Currently, divers frequently have to scour the internet for this information – much of which isn't meaningful or customized. Later this year, however, PADI will launch ScubaEarth, a new diver community filled with information in one credible location.

Stay tuned for more details and get ready to visit ScubaEarth.

KATYDANCA GALLI



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# Our World-Underwater Scholarship Society Awards

Each year, the Our World-Underwater Scholarship Society (OWUSS) awards three Rolex Scholarships to young people considering a career in an underwater-related discipline. Each scholarship recipient spends a year working alongside current leaders in underwater fields. As a sponsor of the Scholarship Society, the PADI organization congratulates the 2011 recipients:

## Australasian Scholar – Anthea Ibell

Anthea Ibell was born and raised in Christchurch, New Zealand, and was exposed to the ocean from an early age during family trips to a holiday house in Marlborough Sound.

A PADI Diver since 2007 and a PADI Instructor since 2008, it was Ibell's four months of travel around North and South America that opened her eyes to different cultures, world-views and natural biodiversity. Upon arriving home, she quickly returned to school and earned her Bachelor of Science in Zoology, with a Minor in Archaeology, at Otago University in New Zealand. She continues to work as a dive instructor and is pursuing her interest in photography.

Ibell's passion is fueled by the fear that the ocean's natural wonders might not always be here. Her aim is to educate people about the ocean's vulnerability through programs such as Conservation Awareness week, Project AWARE cleanups and taking everyday actions such as recycling, reusing and conservation.



## European Scholar – Erin McFadden

*It is a true privilege to be representing both the Our World Underwater Scholarship Society and Rolex and one for which I will be eternally grateful.*

Erin McFadden was born and raised in the Scottish coastal town of Dunbar and has always found the sea a source of fascination and contentment. Currently in her final year at the University of St. Andrews in Scotland, McFadden is pursuing her undergraduate degree in Marine Biology.

Becoming a PADI Open Water Diver at the age of 17, McFadden set off on a marine conservation expedition to the Bahamas less than a year later. It was this five-month trip that she credits with inspiring her and unearthing her

true passion for diving and the underwater world – along with the opportunity to earn her PADI Divemaster certification.

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McFadden's studies and dive experiences, including divemaster work in Cyprus and Zanzibar along with internships in South Africa and Mozambique, have developed her appreciation of the need for globally effective and sustainable conservation and resource management measures. She believes educating the dive community, and ultimately the wider world, will be fundamental to the implementation of effective conservation measures.

### North American Scholar – Christian Clark

*What if I could energize the public and politicians enough to actually make a change on a global scale?*

Born in Atlanta, Georgia, USA, Christian Clark, spent his early years living in Brazil and Canada before finally moving back to the United States. The one constant in Clark's life, however, has always been water.

In August 2010, Clark graduated with a Bachelor of Science in Global Environmental Science from the University of Hawaii (UH). Clark's years at UH were packed with volunteer work, research cruises and scientific diving.

Working as a research assistant in the Holland Pelagic Fish Lab, he co-authored two journal articles based on his part in work quantifying the movement of sharks and other apex predators around the Hawaiian Islands. He also participated in three research expeditions to Antarctica studying the effect of climate change on benthic ecology, which formed the basis of his senior thesis.

A diver for 10 years with more than 320 logged dives, Clark hopes to explore careers that maximize his diving, research and media communication skills.



To read more about the 2011 recipients or to find out more about the OWUSS, visit [www.owuscholarship.org](http://www.owuscholarship.org).

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# The World's First Rebreather Dive?

M. de Saint Simon Sicard, Paris, France, 1853

BY LESLIE LEANEY



Rebreathers are an established part of the dive equipment market and were in use at the dawn of recreational scuba diving. Austrian Hans Hass used them regularly for underwater filming before Jacques-Yves Cousteau and Émile Gagnan created the Aqua Lung in 1943. Rebreathers had been successfully used by various military combat units during World War II, and are now a common item in the dive lockers of military and law enforcement units around the world. They are also the equipment of choice for our present-day technical divers.

So how long have they been around? To help me answer that question I consulted with my research friend Daniel David, and together, we ended up back in Europe in the 1600s. Around 1620, Dutchman Cornelius von Drebbel went under the River Thames in London, in a submerged vessel that used “a mysterious chemical which revived the air (trapped) inside.” This is a period record of a possible rebreather, but not much more is known about it.

Leap forward about 230 years to Paris, France, and we find published records of a M. de Grandchamp diving in the River Seine near the bridge of Grenelle, to a depth of 5 metres/15 feet for an hour and a half. The report states that his equipment had no air pipes attached to the

surface. It was self-contained and a forerunner of what later became known as a Self Contained Underwater Breathing Apparatus – SCUBA.

In describing the apparatus, the reporter notes, “the novelty and importance of the invention consists in the fact that the diver carries...the means to supply himself with fresh air.” Further, “Two flexible tubes...come out of the back part of the casque (helmet), and are fitted to a metal box, which the diver carries on his back...the box containing artificial air, which passing through one of the tubes, reaches the mouth of the diver. The quantity of air supplied is regulated at his will, simply by turning a copper screw placed above his right shoulder, which opens or closes one of the valves in the box. The other tube serves to pass off the carbonic gas, and to absorb it in a reservoir contained in the box.”<sup>1</sup>

Viola! A rebreather by its modern name.

Frenchman M. de Saint Simon Sicard, constructed the equipment. He had been working on its design and development for some time and had received a patent for it in 1849. Fortunately, not only was the dive recorded but it was also witnessed by a committee appointed by the Minister of Marine, which was presided over by Vice Admiral Baudin. The same experiment was repeated shortly after in front of around 500 people.

The really good fortune for dive history is that an illustrator was also on hand and delivered a fairly detailed image of how the equipment appeared in operation with the diver, and also showed Sicard's underwater lamp. As can be seen, the diver is wearing self-contained equipment, with a safety rope to the surface tenders as his only connection to the surface.

Was this the first rebreather dive? Possibly. It might be the first public demonstration of what we know as a rebreather. Our research continues.

<sup>1</sup> *L'Illustration, Journal Universel*

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# Proof Positive

Groundbreaking New Study Could Confirm Scuba's Healing Effects

BY BROOKE MORTON



Cody Unser (at right) knows firsthand the healing effects of scuba on a paralyzed diver. In May, researchers met on Grand Cayman to study those benefits.



They're known as "zingers" — sensations that return to paralyzed body parts.

For Cody Unser, they appear in her bladder, and only when she is scuba diving. The daughter of American race-car driver Al Unser Jr. fell ill with the spinal disease transverse myelitis during a basketball practice in 1999. The next day she couldn't walk.

Two years later, at her family's urging, Unser traveled to Cozumel, Mexico, to become a PADI certified diver. Lost sensation reappeared, and she found that the sport buoyed her spirit in a way nothing else had. "Scuba motivated me to keep living," she says.

Since that trip, she has become dedicated to sharing the physical and mental benefits of scuba. Through her organization Operation Deep Down, an offshoot of her First Step Foundation ([www.cufsf.org](http://www.cufsf.org)), more than 100 military veterans have earned their dive certifications.

This May, thanks to a collaboration

with the Johns Hopkins Hospital in Baltimore, Maryland, USA, and Kennedy Krieger Institute, she will have the chance to explore the reaches of scuba as a rehabilitative tool. With help and support from Red Sail Sports and Sunset House, a team of four scientists, including Adam Kaplin, chief psychiatric consultant at the hospital's Transverse Myelitis Center and Multiple Sclerosis Centers, and Daniel Becker, Head of Pediatric Restoration Therapy at the International Center for Spinal Cord Injury (ICSCI) at Kennedy Krieger Institute, will join Unser, her family and a team of 10 veterans and a control group of their 10 able-bodied



**“SCUBA IS ITS OWN MEDICINE,” SHE SAYS OF A BELIEF SHE HAS LONG-HELD, AND IS EXCITED TO SOON PROVE TO THE SCIENTIFIC COMMUNITY.**

buddies on Grand Cayman to quantitatively measure the effects of diving on mind and body.

Until now, only anecdotal evidence has suggested that diving produces zingers, increased bodily strength and mobility, elevated moods and other gains. Kaplin and his team will be the first to publish an English language article that answers the question: Is scuba beneficial to paraplegics and others with loss of functionality?

Of the many tests the team will conduct, the dynamometer test will record how much force each subject can generate in particular muscle groups. Kaplin will carry out a series of semi-structured clinical interviews to gauge emotions before and after diving. Pulmonary activity will be tested to determine if patients gain lung capability — compromised from years in a chair. Standard exercises help the lungs, but not to the extent that Kaplin believes scuba can heal: Breathing compressed air at depth increases tissue oxygenation.

Kaplin also expects the psychological impact to be great. “Helping people master something is amazing,” he says. “In this case, scuba is the closest thing to flying with no apparatus.”

Unser has witnessed this joy. “Scuba is its own medicine and sets us free,” she says of a belief she has long-held, and is excited to soon prove to the scientific community.

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# PADI Professionals Inspire



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**Inspired to Dive** – I had traveled to the Great Barrier Reef with the intention of snorkeling as I usually do. However, listening to PADI Open Water Scuba Instructor Jeremy Roberts speak to the potential introductory divers I was inspired to give it a go. Unfortunately, I had trouble equalising and had to return to the surface. The crew, and especially Jeremy, were so disappointed for me that they arranged to coach me again one on one and convinced me to try again with Jeremy as my instructor. This time, with his great patience and calming manner, I managed to carry out all of the skills required for my Discover Scuba Diving session and I had an amazing experience. Without Roberts'

skills as an instructor I would have given up. I am now booked to do a course over the summer holidays. Instructors like Jeremy are great ambassadors for PADI and I would like to thank him for taking the extra care it took for me to enjoy the magic of diving. — *PADI Open Water Scuba Instructor Jeremy Roberts, Surrey Hills, Victoria, Australia*

**All in the Family** – Our two sons just completed their open water dives in Monterey, California, USA. Their instructor, Ben Byington, was outstanding. During the pool session, his class was small with four students. One of the students was having difficulty with the equipment and skills. Ben spent appropriate time with this student without compromising the quality of instruction

for the other students. He spoke patiently with the student having difficulty and still maintained a command presence and professionalism. This eventually had a calming effect on the student struggling to master the skills of a beginner, and ultimately the student was successful in performing the skills required. It is truly a pleasure to see such an accomplished instructor take the time to instruct all his students with patience, professionalism and passion for the dive sports. Byington is an asset to PADI and Dolphin SCUBA Center. My wife and I are planning on taking the open water dive class in May and look forward to the course and Ben's instruction. — *PADI IDC Staff Instructor Ben Byington, West Sacramento, California, USA*

**One in a Million** – Whether Mauritzia is instructing, guiding a group or private guiding, she has the ability to instill a relaxed and happy atmosphere, while at the same time injecting massive enthusiasm and an infectious, unadulterated joy of diving. Students and qualified divers alike all instinctively put their full trust in her. She makes every dive special for everyone

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whether they have been diving for 30 years or 30 minutes. I cannot praise Mauritza highly enough – she is one in a million. — *PADI Master Scuba Diver Trainer Mauritza de Klerk, Cape Town, South Africa*

**Memories that Will Last** – I received excellent service at the Sailing Club in Nha Trang, Vietnam. I would especially like to praise our instructor, Kris Williams. He was absolutely superb, extremely personable, helpful, and made the whole experience even more enjoyable. His knowledge and expertise of the area meant he was able to show us things underwater, like a cleaner wrasse – a definite highlight of our dives! He was very understanding when I had an attack of nerves, and he managed to quickly calm me down, making me feel more confident. Finally, his help and skill with the underwater digital camera that we rented left us with some superb photo memories. We will be recommending him and the whole Sailing Club company to anyone we know going out to Nha Trang. — *PADI Five Star Dive Center Sailing Club Divers, Vietnam, and PADI Master Scuba Diver Trainer Kristofer Williams, Llanbrynmair, Wales, United Kingdom*

**Going Below and Beyond** – I recently completed Tec 40 and was a little nervous as to how I would cope with the additional kit and planning requirements. My worries were quickly put at ease by my instructor Gary Lawson. He ensured that I was comfortable with what I was doing and knew what the steps for each dive were. As a result of this, I completed three very enjoyable technical dives. I am now planning on signing up for my Tec 45 next year. — *PADI Master Instructor Gary Lawson, Scotland, United Kingdom*

**Well-Rounded Instructor** – My instructor was absolutely amazing! William Mainord was informative, thorough and considerate. He was knowledgeable and taught me everything from safety to respecting the reefs, as well as exploring a whole new world underwater. I cannot wait to start my advanced open water course. I will definitely tell all my friends what an outstanding instructor William is and how they should definitely look for him when they consider doing a dive course. — *PADI Master Scuba Diver Trainer William H. Mainord, Key Largo, Florida, USA*



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PROTECTING OUR  
**OCEAN**  
**PLANET**  
ONE DIVE AT A TIME

OUR NEXT 20 YEARS BEGINS NOW

**A**ll systems are go for the new Project AWARE Foundation, relaunched on 8 June 2011 (World Ocean Day). It's been just a few short weeks since the debut, and so far, the Foundation has rolled out the new logo and the new mission and vision for the ocean's future. New and refreshed programs as well as a new online platform and website to support the official

CARLOS VILLOCH/ALAMY

movement for ocean protection have also launched. And the display of renewed passion for ocean protection echoed around the world, in real time, on the new [projectaware.org](http://projectaware.org), is inspiring.

This ongoing series in *The Undersea Journal* has explored our shared history and what led us to this change. It has also explored our growing movement for ocean protection, as well as programs to

tackle two ocean issues on a whole new level – sharks in peril and marine debris. As the Foundation presses onward toward its new mission, this is the perfect opportunity to answer some burning questions, satisfy curiosity and explain in greater detail how the Foundation is all new. We'll also explore a few of the reasons why now is truly the best time in the 21-year history to be AWARE.

**BY JENNY MILLER GARMENDIA, EXECUTIVE DIRECTOR, PROJECT AWARE FOUNDATION**



Project AWARE has narrowed its focus: The Foundation will take a leadership role in policy decisions that protect sharks and tackle marine debris.



## NOW IT'S TIME TO ADOPT A WHOLE NEW APPROACH

**Q:** Why the overhaul of the long-time organization and the new mission? Ever since Project AWARE first hit the streets in 1989, it has evolved with the ever-growing need for conservation. Now it's time to adopt a whole new approach and harness the ongoing work of dive leaders around the world to achieve measurable change for our ocean. Over the past 21 years, much of our work together has focused on education and awareness and achieved significant success on a grassroots level. But with the growing strength and passion of the dive community, much more can be done. Over the years, policy leaders have increasingly taken an interest in and listened to what divers have to say. We are a much more invested and powerful voice than we realize. It's clear, now more than ever, that divers have a much greater role to play in making positive changes in the

environment and our collective voice can be brought to decision-makers to encourage change. In order to do so, we must connect everything we do locally to achieve our goals on a larger regional and international level. To be effective, we must also hone our focus to those ocean issues where divers are uniquely positioned to contribute the underwater perspective – therefore strengthening and complementing the work that others are doing on land and completing a 360-degree view of marine issues.

**Q:** Why the new logo, look and feel? Project AWARE has changed from top to bottom, and this means it is a perfect time to reflect these changes, encompass the new vision for the future and honor the Foundation's unique scuba diving heritage. This new logo is the third evolution since PADI first created

the Project AWARE philosophy in 1989. And there's never been a better, more appropriate time to distinguish ourselves as a unique organization of divers with a pinpointed focus on the ocean's future.

When faced with the opportunity to refresh the Foundation's look and mark this major relaunch, the creative possibilities seemed limitless. In the end, the evolved logo retains, celebrates and expresses divers' unique connection with the ocean, its creatures and the passion to protect it. It will be recognized by our global volunteers, supporters and partners for years to come.

**Q:** Project AWARE has narrowed its focus for ocean protection. Why the two issues – species decline and marine debris? With so many issues facing our ocean planet, it's unrealistic to think one group or organization can meaningfully ad-

COURTESY PADI; OPPOSITE, CLOCKWISE FROM LEFT: BANS DIVING CENTRE, THAILAND; VISUAL & WRITTEN SUI/LAMY; COURTESY PADI



dress them all. Narrowing focus expands the depth of involvement on particular issues directly related to divers (who are usually the first to visually see changes as they occur), changes in species abundance, and ocean debris. Talk to any diver who has been around for a few years and they will tell you stories related to the issue of abundance – days when their favorite dive sites were diverse and thriving. Divers have seen drastic change over time and the Foundation wants to reverse these negative trends.

Sharks are iconic for divers, and they symbolize healthy, thriving environments. Changes in the ecosystem are immediately obvious when sharks are wiped out. The current shark population crisis marks a sense of urgency and divers are increasingly part of their protection. The same is true when it comes to the amount of trash, plastic or fishing gear – plain junk – invading dive sites and even the most remote locations in our ocean. Divers are qualified to describe marine-debris issues underwater and take actions beyond traditional cleanups to address prevention and management.

Even within these two focus areas – marine debris and species decline – there is tremendous work to be done. Building on our mutual efforts and partnership over time is critical.

**Q:** How will divers truly help protect sharks? How has the focus on sharks changed in recent years?

Sharks have a serious image problem – one that Project AWARE has and will continue to battle in the coming years. It's clear that, at the policy level, economics play a powerful role in their conservation.

Project AWARE is increasingly active in global management and policy discussions and one thing stands out: Commercial fishing is usually the only economic sector represented and plays a powerful role in decision-making. It's time that the collective power of millions of divers around the world is heard loud

**Above:** Shark fins processed for shark-fin soup. Shark finning is one of the world's most destructive fisheries.

and clear. The major role that diving and tourism play in many economies needs heavy consideration when decisions are made – for example, heeding scientific data and the need for unsustainable shark fishing to stop. The Foundation's experience as a Shark Alliance Steering Committee Member in Europe, working with the European Union (EU) Commission to close shark-finning loopholes, for example, has shown that divers can play a significant role in the health or loss of a species.



Since 1989, Project AWARE's logo has expressed divers' unique connection to the ocean, including the Foundation's newest logo (far right).



## THERE IS NO LIMIT TO WHAT DIVERS CAN ACCOMPLISH

**Q:** What's so different about the approach to marine debris now, versus the cleanup efforts from years past?

Marine debris – or trash in our ocean – is rising to the top of the marine policy agenda. Scientists, resource managers and governments increasingly recognize it as one of the most serious ocean issues of our time. It is an issue not addressed by traditional cleanups alone. Cleanups play an important role in developing community awareness and engaging the broader dive community in keeping dive sites clean and safe. But cleanups alone do not address the problem at its source. AWARE divers are recognized for the unique ability to provide the world with the global underwater perspective of marine debris. Now, we're igniting a comprehensive, year-round data collection program – Dive Against Debris – the only effort of its kind to date, focused on prevention of debris underwater. These efforts enable the sharing of underwater data with key global players and partners including the United Nations Environment Programme (UNEP), the National Oceanic and Atmospheric Administration (NOAA) and the Ocean Conservancy among others. And the data supports local dive leaders too, fueling

efforts to reduce waste and implement management practices where needed.

At the 5th International Marine Debris Conference in Hawaii, USA, in March 2011, Project AWARE representatives met with leading scientists and organizations approaching this issue from land. It was very clear that AWARE divers, providing an underwater perspective on this global issue, are critical to filling current data gaps.

**Q:** How does a bigger focus on ocean advocacy fuel policy and management change?

There is no limit to what divers can accomplish for conservation. But real, effective ocean policy and management also dramatically influence lasting change on the ground. For instance, it's almost impossible to reduce the amount of derelict fishing gear lost or abandoned at sea, when there is no place to properly dispose of that gear on shore. Recent policy changes to an international treaty (MARPOL – the International Convention for the Prevention of Pollution from Ships) now require ports to put disposal sites on shore to prevent dumping waste at sea. For some Caribbean islands, this provides an opportunity to

use these sites to handle local waste and recycling challenges as well. So, policy and management changes can have a dramatic effect on the ability to deal with these grassroots issues. This is why the relaunch of Project AWARE aims to connect the dots between the powerful actions divers take on the ground with policy and management changes.

**Q:** What led to the new AWARE movement and online community platform, My Ocean?

Project AWARE's powerful movement for ocean protection starts with you. And our interconnected web of shared experience online will power our offline results. Technology is the key element differentiating movements today from those of the past. The new online community, My Ocean ([projectaware.org](http://projectaware.org)), allows us to collaborate globally within one cohesive online platform. Together we amplify our collective efforts, shining a light on our community actions and strengthening our voice for the ocean.

This growing global movement is a shining hope for ocean protection. AWARE leaders like you are passionate about your business, the condition of local dive sites as well as the state of



Project AWARE is pushing to spur policy change aimed at reducing marine debris – and is asking PADI Members to lend a hand.

FROM LEFT: COURTESY PADI; WATERFRAME/ALAMY; OPPOSITE: MAUIDREAMS DIVE CO., HAWAII, USA



the ocean planet. Now, within the My Ocean community, you can create a profile for your local dive center, dive club or organization or for you as a dive professional working toward ocean issues – or both. You can share your local successes front and center, profile your volunteers, manage your protection activities and events, contribute content in your My Ocean blog and populate your other social networks in one click. You can contribute conservation photos and videos, manage and visualize marine debris data for local dive sites (coming soon) and so much more.

More important, everything you do here shows the world how deeply committed divers are. It helps us establish our position as a serious movement gaining momentum and attention for critical ocean issues on the global policy agenda.

## 1-2-3 LAUNCH

### **Vision**

A return to a clean, healthy and abundant ocean planet.

### **Mission**

Project AWARE Foundation mobilizes the world's divers into a global force to protect our ocean planet.

### **Tagline**

Protecting Our Ocean Planet - One Dive at a Time<sup>SM</sup>

### **Goals**

**No. 1:** An abundant ocean rich in diversity

• **FOCUS AREA:** Shark conservation

• **GOAL:** To end unsustainable shark fishing, increase protection for vulnerable shark species and reverse the drastic decline of shark populations worldwide.

**No. 2:** A clean and healthy ocean

• **FOCUS AREA:** Marine debris

• **GOAL:** To provide the underwater perspective of marine debris impacts, take action to reduce waste, improve waste management practices, end littering and prevent debris from entering the ocean.



Volunteers from Desert Divers in Egypt at the Florida Miami Beach ECOMB Environmental Coalition of Miami Beach Big Sweep beach cleanup (this page and opposite page).



## START YOUR MOVEMENT TODAY

Top Five Actions to take you from AWARE advocate to AWARE leader:

- **MY OCEAN** - Create your individual or organizational profile for ocean protection today. Here, you'll post and manage your conservation events and activities, blog about them and the issues confronting your local dive sites. You'll maintain conservation photo and video galleries and connect with dive buddies for upcoming ocean conservation events and more.
- **PROTECT** - Take your ocean protection efforts to the next level - Dive Against Debris. You can

collect data for change and remove debris from your favorite underwater environments locally. Find training tools and guides online to get you started and mobilize teams of dive volunteers. Most important, enter your underwater data - year-round - directly to Project AWARE.

- **ORGANIZE** - The new [projectaware.org](http://projectaware.org) is your new hub for ocean protection dives, community efforts, conservation campaigns, fundraisers and more. Place your activities on the Action Map, connect your events to your My Ocean profile and blog where you can to manage

volunteers and display your results.

- **CAMPAIGN** - For the first time, the AWARE website and community is powered for advocacy. Together, we can rally petition signatures, contact policy makers and influence change. Find new tools to help you gather shark signatures with your mobile phone and publicize your support for the issues that matter most.
- **SUPPORT** - It's critical. Visit the new [projectaware.org](http://projectaware.org), join the movement and support ocean protection efforts worldwide. Our vision for change depends on it.

**Q:** Project AWARE keeps referring to "AWARE leaders." What's an AWARE leader?

AWARE leaders are everyday ocean heroes seeking really big results. They're not just sitting back, hoping others will do the work. They're rethinking what's possible for ocean protection and diving in. Whether it's engaging and training divers to become underwater data collection experts, organizing policy rallies and petition campaigns or aligning business goals with ocean protection initiatives - the Foundation recognizes leaders and supports their efforts.

**Q:** PADI started the AWARE philosophy in 1989. What is AWARE's current relationship with PADI?

PADI established Project AWARE Foundation, which it continues to support in kind, operationally and financially, with donations each year. The Foundation is a separate registered nonprofit organization with offices in the United States, United Kingdom, Switzerland and Australia, and a volunteer office in Japan. The Foundation raises its own funds and defines its mission and goals.

But the partnership with PADI is extremely important for the network of professionals around the world who power global conservation activities and programs. The in-kind donations, such as office space, free advertising space and the ability to raise funds through PADI's certification card processing system, are also critical. The Foundation could not achieve its goals without PADI and the work of such dedicated dive leaders and volunteers.

For detailed information, Project AWARE's financial records and details of the donated services can be seen in the online annual reports at [www.projectaware.org](http://www.projectaware.org).

**Q:** Project AWARE is a nonprofit entity that needs financial support to survive. What's the best way to financially support ocean protection through AWARE?

As PADI Professionals and trainers, dive students will follow your lead. The best way you can influence ocean protection is to transmit ocean protection priorities to your students and divers. Encourage

# SEA THE CHANGE CONSERVATION CONTEST IS SPREADING

Maybe it's just the \$5000 US grand prize up for grabs, but it's more likely that the PADI Sea the Change campaign is spurring people into action because everyone likes to do something good.

Thousands of people around the globe are sharing the ways – big and small – they bring about conservation change in their communities. The conservation contest launched in March 2011 and has already, at the time of this writing, has drawn 24,000 visits to view and share compelling videos via Facebook and Twitter.

Some of the popular video clips involve teaching kids about the ocean in Kona, Hawaii, USA, ways to clean up beaches in Borneo and divers collecting underwater rubbish in Nicaragua. Themes range from educating people about marine life to natural phenomena to tangible actions that protect and conserve.

"It's inspiring to see people spread awareness about protecting the underwater world among their own friends. The PADI organization is excited to be a part of this conservation effort and make it easy to harness the power of social media to join conservation and scuba diving in people's minds," said Kristin Valette, Vice President of Marketing and Communications at PADI Americas.

Anyone 13 years or older can enter the contest through 15 December 2011.



**SEA THE CHANGE**  
**\$5000**  
US GRAND PRIZE

The video with the most public votes will win \$5000 US and the PADI organization will donate an additional \$5000 US on the winner's behalf to Project AWARE Foundation.

To learn about how you can use this cam-

paign in your business and generate free publicity via local media, visit the Marketing Toolbox at the PADI Pros' Site, select Marketing Campaigns and then select Sea the Change.

them to support the Foundation by making a donation in addition to their certification or replacement card processing fee or donate to the movement directly online at [projectaware.org](http://projectaware.org). Some instructors and dive centers role model this by donating to AWARE on behalf of their divers and challenging them to match the donation. Others conduct fundraisers or fundraising challenges as part of their conservation activities and community initiatives. Transparency, credibility and inspiration are important to all donors so let your divers know how

donations are used by taking full advantage of information and resources online.

**Q:** What are the new tools for ocean protection that also take into consideration my current business needs?

You need visibility for your growing green business and you need packaged content to make your ocean protection efforts seamless and sustainable. For launch, you'll see the new AWARE website and My Ocean community are all centered on you, the AWARE leader. It brings your local protection efforts

to life, front and center of the AWARE community. There are maps, blogs, social networking capabilities, advocacy tools, distinctive specialty courses, data collection capabilities and more. And while this relaunch is exciting, realize too that it's just the beginning. Expanding on these tools to support your efforts into the future is a critical part to our shared success. Go see the changes for yourself. Let us know what you think and what you'd like to see next – email [information@projectaware.org](mailto:information@projectaware.org). 



# WHY CONSERVATION?

BY MEGAN DENNY, SALES CONSULTANT, PADI AMERICAS

This isn't one more article about "going green." This is an article on how to make your **BUSINESS MORE PROFITABLE** using **GREEN IDEAS AND TECHNOLOGY**. You have my word: there's nothing in the following pages that will make you feel guilty for driving a big tank-hauling truck, though you may feel compelled to buy a new toilet.

## Unlikely Tree-Huggers

First, let's talk about a group of people who only care about one thing – money. When heavy-hitters like Dow Jones, Citigroup and Bloomberg use "green" data to determine a company's valuation – that's when going green goes legit.

For example, the Bloomberg financial group (one-third of the \$16 billion US global financial data market) launched "ESG data" for its customers in 2009. This new data includes more than 100 indicators on environmental, social and governance issues. Clients using Bloomberg's more than 250,000 data terminals view ESG data on up to 3000 publicly traded companies.

In recent years, dozens of well-known companies made green business decisions, not just for the glowing press release but because it made good financial sense.

Celebrity Cruises uses chilled river rock

instead of ice to keep its buffet line cold. The rocks can be reused and require no special treatment or processing.

Haägen-Daz, dependent on honeybees to pollinate strawberry, mint and other plants that turn into ice cream flavors, has sponsored \$620,000 US in honeybee research and habitat development in the last three years.

MillerCoors/MolsonCoors engages in a variety of expense-reducing green activities such as turning waste into income by converting brewing by-products into fuel-grade ethanol. In the UK, the Molson bottle was redesigned to reduce packaging weight by 4500 tons per year (resulting in lower fuel expenses), and in North America, more efficient keg and pallet pickup routes took 1400 trucks off the road.

Wal-Mart's green conversion has trimmed packaging, saved huge amounts of water, cardboard and diesel fuel and

reduced their shipping costs. The company has also produced more affordable organic and earth-friendly products to attract green customers and improve the bottom line (from in the book *The Unlikely Story of Wal-Mart's Green Revolution* by Edward Humes).

The Ingenio El Portrero sugar factory in Mexico invested in a more efficient cooling system that cut freshwater consumption by 94 percent.

Mitsubishi Semiconductor America, Inc. invested in water-saving technologies that reduced water use by 70 percent and wastewater effluents by 75 percent. This investment paid for itself within two years.

The efforts of these large companies should not be discarded as irrelevant to the average dive shop or unaffiliated instructor. Compared to these behemoths, the average dive business is agile and can implement change with relative ease.



## Increase profits through green business practices

What follows are eco-friendly ideas that will reduce the cost of doing business while simultaneously reducing your impact on the environment. Since we all have to start in the pool (or pool-like conditions) before we can progress to open water, we'll begin with simple ideas you can implement this weekend and gradually move to large-scale ideas that will add to your long-term profitability.



### Eco-Tip of the Month

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Share a monthly conservation tip on your Facebook page and electronic newsletter. Encourage readers to share this idea with five friends. By asking customers to “like” and share your monthly tip, you’ll also generate word of mouth marketing for your business.

A quick Google search provides plenty of tip ideas, but here are a few to get you started:

- Don’t water your lawn in the middle of the day or on windy days. Significant water loss occurs in the middle of the day due to evaporation. In the case of wind, your water blows onto the sidewalk or your neighbor’s yard.
- Sign the Project AWARE Shark Petition at [projectaware.org/givesharksachance](http://projectaware.org/givesharksachance).
- Share your favorite Sea the Change video at [padi.com/scuba/special-offers/sea-the-change](http://padi.com/scuba/special-offers/sea-the-change).
- Increase foot traffic by inviting customers to bring in recyclable items such as used cell phones. Work with local facilities to ensure proper disposal and recycling of these items. Deep Ecology (North Shore, Hawaii, USA) collects fishing weights for recycling. Owner Pat Johnson says, “We collect them in a recycling bin, and when we have a certain amount we have it melted down and made into dive weights.”

KEY

• \$\$ VALUE from \$-\$-\$-\$

TIME from minimal to long term



### Switch to PIC Online

• \$



Transition from paper PICs to PIC Online. Divers receive their certification cards faster, and you save on the cost of postage. Ask your sales consultant if the PIC Online sub-admin option is available in your region. This new tool allows dive center staff to submit PIC Online certifications under a store’s account without having full access to the dive center’s PADI Pros’ Site account.



### Go Paperless

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Many computer printers now double as scanners. By scanning student record files at the conclusion of the program, you can transmit student information easily and save on printer ink (which can be toxic and can cost quite a bit). PADI Members are required to save student records for seven years, so be sure to create a digital backup of the files.

Additionally, a paperless office can expand your employee talent base. Jenny Collister, owner of dive and adventure travel company Reef and Rainforest in Portland, Oregon, USA, said, “We made the move to a paperless office. Not only does it save money, it allows us to hire the best employees in North America – not just those who live in San Francisco, Portland [etc.]” Her remote employees handle a variety of duties, including accounting.



### Sell Products for Customers Who Embrace the Green Lifestyle

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As a dive center, whatever eco-friendly merchandise you have in stock is ten times cooler than what the evil corporations are selling. Why lose that sunscreen sale to Boots or Wal-Mart? Why let your customers buy their next laptop sleeve from Amazon or Apple?

Here are some eco-friendly products you can sell to capture purchases that might be made elsewhere:

Purchase your logo-branded goods from a green company such as Ecologic Designs (Colorado, USA). Ecologic Designs uses old scuba and surfing wetsuits as the source materials for laptop sleeves, beverage cozies and mask straps branded with your logo or other design.

Stock T-shirts with an ocean-hugging message such as those sold by [loveouroceans.org](http://loveouroceans.org). A portion of the proceeds is used to preserve the ocean and its inhabitants.

*National Geographic* has reported on the link between conventional sunscreen use and coral bleaching. Eco-aware divers will want to use “reef safe” biodegradable sunscreen (and in some resort areas of Mexico, biodegradable is the only sunscreen permitted).

Rather than selling water in plastic bottles, sell metal water bottles branded with your dive business logo. Make filtered water available for customers who purchase a bottle or bring their own.

FROM LEFT: COURTESY PADI; JON WHITTLE; TK; OPPOSITE: DANITA DELIMONT/JALAMY; CARRIE GARCIA



**Invest in a pool cover to conserve energy on your dive operation's outdoor pool.**

**DUI'S >  
ECODIVEWEAR  
BASE LAYER  
NOT ONLY  
APPEALS  
TO A GREEN  
CONSUMER,  
IT BRINGS AN  
EXTERNAL SALE  
BACK INTO THE  
DIVE CENTER**



**Buy a New Toilet**

Let's talk for a minute about water – not the stuff we dive in, the kind we flush, drink and use to fill our pools. *USA Today* recently reported, “The price of water is increasing – in some places dramatically – throughout the world. Over the past five years, municipal rates have risen by an average of 27 percent in the United States, 32 percent in the United Kingdom, 45 percent in Australia, 50 percent in South Africa and 58 percent in Canada.”

With the cost of water on the rise, using less water decreases operating costs. The toilet is inevitably frequented by customers. While some choose to decaffeinate in their wetsuits, the rest will take advantage of the traditional facilities. So why not buy a water-saving toilet?

As every child in the United States knows, Thomas Crapper invented the modern toilet, but we must thank Australian Bruce Thompson for inventing the dual-flush model. High-efficiency com-modes can reduce water use by up to 67 percent. In the United States, this equates to (roughly) \$105 US savings per year. By this estimate, the cost of an average \$200

US dual-flush toilet would pay for itself in two years. Australian residents may be eligible for a \$200 AU rebate from the government. Search “toilet rebate Australia” for details.

**Pool Conservation Tips**

If your dive operation includes a pool, there are technologies to help reduce your operating cost. A variable speed pump can reduce your electric bill. Some local governments and energy companies offer a financial incentive to make this upgrade. The variable-speed pump adjusts its RPMs depending on demand saving energy and money. Solar pool heating is a relatively inexpensive investment and pays for itself in a short amount of time.

If your business has an outdoor pool, invest in a pool cover. Pools lose 2.54 centimetres/1.0 inches of water per week in the summer due to evaporation, and a pool cover can reduce this water loss by 95 percent. The cover will also help retain heat, reducing your energy bill and thereby operating costs.

**Develop Business**

In the dive industry, DUI's ECODiveWear base layer exemplifies a product that appeals to a green consumer and brings an external sale back into the dive center.

Susan Long, President and CEO of DUI, said, “For years, dive stores have been sending divers to REI or other sporting goods stores to buy their base layers. Why send a customer somewhere else? We designed it [ECODiveWear] to cost the same as something you would see in an REI-type store for a recycled product.”



## Partnerships

Partner with other businesses whose customers have a passion for the environment. This could be a local restaurant or market that sells only sustainable seafood products, a cycling shop that caters to bike commuters, or your local aquarium.

Cross-promote your eco-friendly businesses through electronic and traditional means. Create reciprocal specials such as “bring in your PADI certification card within 30 days of certification and receive a free entry/admission” or “free introduction to scuba for you and a friend with any purchase of \$100 or more.”

Run a contest with another business to see who can raise the most money for Project AWARE. Devise fundraising benchmarks and incentives such as, “donate \$100 and receive a 10-punch air-fill card” or “at the \$1000 mark, the owner will dye his hair pink.” Post regular updates on your website and Facebook page, and email your local news stations to attract publicity. Captain Pink Hair could be big news on a slow day.

## Research

**Consider using greener fuel on your dive boat. Above: L'Oceanographic Science Centre in Valencia, Spain.**



## Government Incentives

PADI Members in the United States (including American Samoa, Guam, Northern Marianas, Puerto Rico, and the United States Virgin Islands) can search [dsireusa.org](http://dsireusa.org) to determine what's available in their municipality. Depending on the city, simple upgrades such as installing LED exit signs or upgrading to more-efficient light bulbs qualify for a tax credit.

Jeff Smith, owner of Pacific Wilderness (San Pedro, California, USA), described how a state-sponsored rebate program covered the cost of converting 60 fixtures to energy-efficient fluorescent bulbs. Smith said, “A subcontractor offered to replace our existing fixtures to T8 fluorescents. I was able to have over 60 fixtures changed out (bulbs and all) at no cost to me, and they didn't disrupt the look of the store. The subcontractor collected the rebate, and I save \$250 US a month in electrical costs.”

The following are links to government-sponsored incentives:

- Canada: [oee.nrcan.gc.ca](http://oee.nrcan.gc.ca) and click on Grants and Financial Incentives
- Australia: [climatechange.gov.au](http://climatechange.gov.au) and click on “What You Can Do” followed by “Business and Industry”
- United Kingdom: [decc.gov.uk](http://decc.gov.uk) and type “incentives” into the search box.
- México: [www.cfe.gob.mx](http://www.cfe.gob.mx)

For government incentives in other areas, please use your preferred search engine.

Boat operators may be eligible for funding to cross over to greener fuel. With the cost of oil continuing to rise, alternative fuels such as propane and biodiesel may prove to be less expensive.



On Maui, Hawaii, USA, Deep Horizons runs on 100 percent biodiesel, the only dive boat on the island to do so. The engine conversion and installation of a 1900-litre/500-gallon storage tank (with filtration) was a significant investment up front, but the company now spends less on boat maintenance costs and has reduced its refueling time saving on labor costs also.

Pat Johnson from Deep Ecology in Haleiwa, Hawaii, USA, said, “Three years ago, we converted our boat to propane. At the time we converted [propane] was much cheaper, but that's not why we did it. Since we did the conversion, the engine has been running better than ever. We have to do things to make sure it's kept up and we added extra safety features, but it's worth it. Propane versus diesel burns much cleaner.”

## Ecosystem Services Review (ESR) Assessment

FROM TOP: HANNU LIVAAR/JALAMY; TY SAWYER; OPPOSITE: TY SAWYER; MASA USHIODA



**Get behind conservation measures such as fishing bans to protect your local dive sites.**

Ecosystem services are the ecological processes and resources that benefit individuals and society. Examples include water purification services by wetlands or the attractive and diverse habitat of your local dive site. Vitel (Nestle), BC Hydro, Rio Tinto and Unilever all recently conducted an Ecosystem Services Review (ESR) assessment of their business to determine the services that are critical to their business success. An ESR assessment goes something like this:



Measure your business' dependence on eco-resources. If, for example, 75 percent of your business relies on certification dives at one open water site, what would happen if it became unusable due to an environmental issue or government decision?

List and rank dependence, impact and influence. What resources are we dependent on, and who has the ability to



influence change? What are the current trends (local attitude and government regulation) that influence this resource?

Create an action plan to protect against

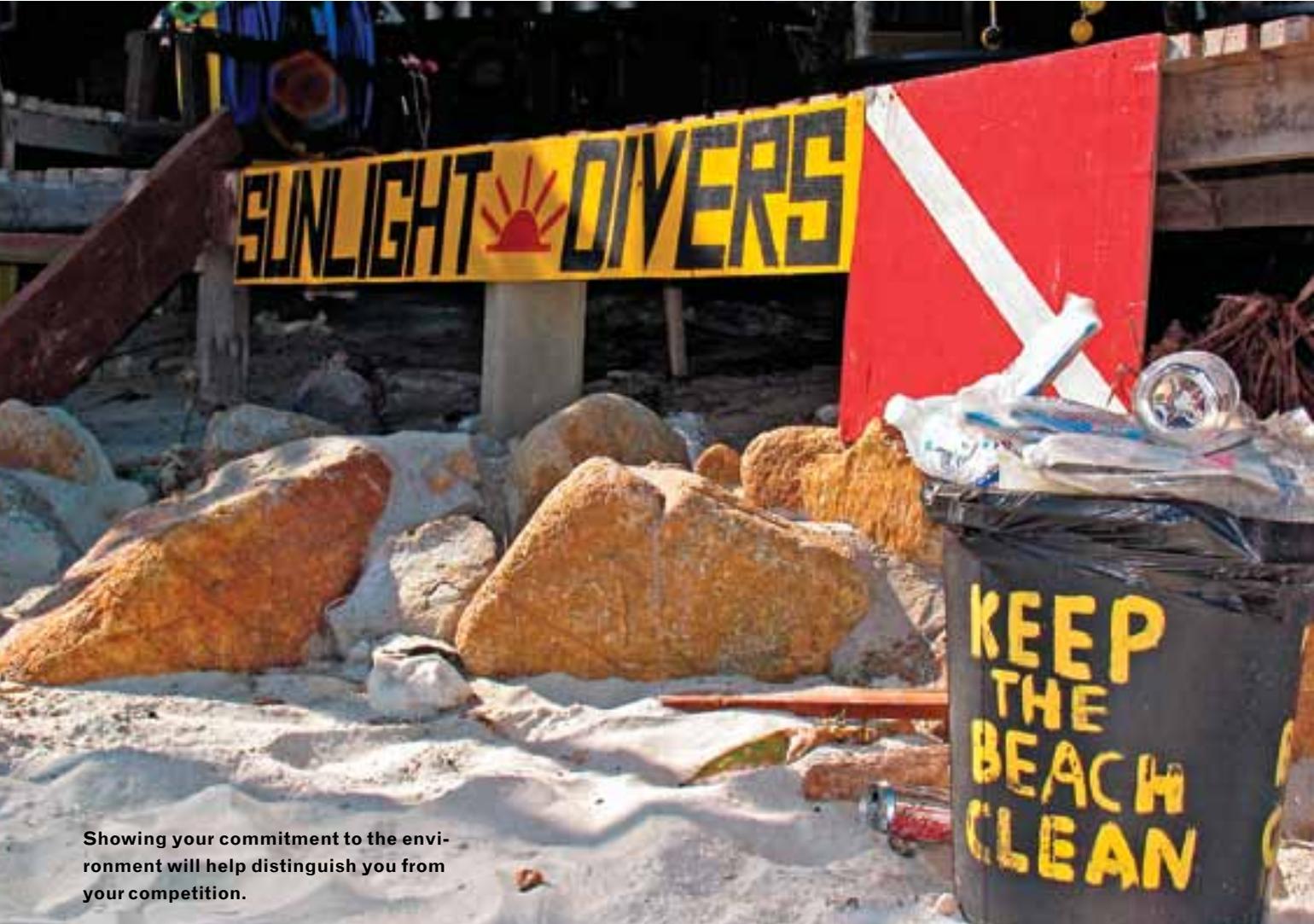
loss, and also consider improvement. What if your local open water site had better access or facilities? How might that increase business and who can influence this change?

For example, a fishing ban at Shark's Cove and Three Tables dive sites in Hawaii, USA, improved the marine life population within a few years. Large marine life has returned and smaller marine populations have started to thrive. While fishermen have moved elsewhere, the dive business has grown.

For more information and a step-by-step ESR assessment tool for businesses, please visit this website: <http://www.wri.org/publication/corporate-ecosystem-services-review>.

**Capitalize on Your**

**DETERMINE THE LOCAL RESOURCES YOUR BUSINESS IS DEPENDENT ON AND THEN CREATE AN ACTION PLAN TO PROTECT THEM AND INCREASE YOUR BUSINESS.**



Showing your commitment to the environment will help distinguish you from your competition.



## Eco-Efforts

Consumers seek out and pay more for eco-friendly products and experiences. Don't believe it? Google "Summit Series." Recently featured in *Forbes*, this \$3500 US per person, 30-and-under eco-adventure cruise included shark-tagging and coral-reef building.

Sales of Marine Stewardship Council-certified seafood products increased 30 percent last year to \$2 billion US in sales worldwide. Consumers seeking sustainable fish can find MSC-certified products at more than 1200 different retailers worldwide, including Whole Foods, Sainsbury's, Loblaws and Japan Co-op.

Promoting your green activities will distinguish you from other businesses and attract customers looking for an eco-experience. Graham Casden, owner of Ocean First Divers, Colorado, USA, promotes a

strong environmental message on his website and attracts customers from Denver – over an hour's drive away.

On the busy island of Oahu, Hawaii, USA, Deep Ecology's commitment to conservation helps them stand out from the dozens of other dive operators. Manager Pat Johnson said, "Travelers find us on the internet and 90 percent of those people tell me they chose us because of what we stand for. People want to support this kind of [eco-friendly] company."

In addition to promoting your green activities online, reinforce the message with in-store signage. If you buy a new dual-flush toilet, print out a little sign to put on top of it: "I save 25,000 liters/6000 gallons of water a year." Brag about your solar-heated pool, and call attention to your mask straps made from recycled wetsuits. These actions tell the consumer that your business is different, better, and

one that is environmentally conscious and active.

For businesses located within a large resort or hotel, the green aspects of your business make scuba a compelling choice for guests. Being the most "eco-friendly" activity at the resort gives guests a reason to try scuba instead of parasailing. Your eco-activities also help the resort stand out from competitors.

The world's waterways are the dive industry's number one product. An investment in our environmental capital is one guaranteed way to pay dividends. By eliminating waste (wasting energy, wasting water), profitability rises while environmental impact goes down. When we connect conservation to the bottom line, we preserve our industry for the future. The state of our world's oceans has left us with two choices: make smart business decisions, or pray that the Mayans were right and in 2012 Mother Earth will hit the reset button. Whether you choose to go green for financial or philanthropic reasons, the choice is clear.

ANDREW WOODLEY/ALAMY; OPPOSITE: TY SAWYER/COURTESY/MAD FISH DIVERS

**WHETHER YOU CHOOSE TO GO GREEN FOR FINANCIAL OR PHILANTHROPIC REASONS, THE CHOICE IS CLEAR.**



## Eco-Operator Profiles

There are dozens of ecologically minded dive operators in the PADI family. Here are profiles of a few. To read and interact with other eco-leaders, visit [projectaware.org](http://projectaware.org).



### Deep Ecology - North Shore, Hawai'i, USA

“When people find us on the internet, 90 percent of those people tell me they called us because of what we stand for.”

Pat Johnson, owner of Deep Ecology, describes the dive operator's humble beginnings: “We started out as the North Shore tree-hugging hippies. Now it's all cool, but it wasn't 14 years ago. Fourteen years ago, we made the commitment to being a green business: we're not going to drop anchor on the reef, we're not going to touch anything, and we'll do an eco-[dive] briefing not just a regular briefing. When we take the boat out, we stop at a turtle cleaning station and the guide jumps in and checks for any injured turtles. It takes a little more time, but that's part of our commitment.”

That commitment is how Deep Ecology has saved 55 Hawaiian sea turtles and developed a reputation as an environmental leader.

“The goal in the beginning was to make a difference on this island,” says Johnson. “Now people seek out our niche, the name Deep Ecology says it all. Today, we have a group of very diverse clients – military, local, and visitors. We get a lot of interna-

tional clients – they are very eco, people are looking for that. It's more than a holiday experience – diving with Deep Ecology is a genuine investment in the protection of Hawaii's marine environment.”

Johnson also spoke about Deep Ecology's work to implement a fishing ban at the Pupukea Marine Life Conservation District (Shark's Cove and Three Tables dive sites).

“We were an enemy to our own peers back then. But over the years of having Shark's Cove as a protected site, we've seen a big change. Protecting it has made the site better. There's big life there now. So many come to Shark's Cove now, they've asked people to carpool.

“After 14 years, we're thriving. Because of our commitment, our repeat and referral business is strong – we have a base that refers and comes back to us year after year. We've built that loyalty and earned that loyalty. I feel very proud of all we've been through.”

### Matava Resort Fiji and Mad Fish Divers

Imagine cutting your electric bill down to zero. Matava Resort Fiji has accomplished this feat by running on solar power.

This eco-upgrade along with other changes has made the resort nearly self-sufficient. Stuart Gow, co-owner of the resort, explained that 60 percent of Mat-

ava's food is locally sourced, reducing the need for expensive imported food and the costs associated with bringing it to the island. The resort maintains a large organic garden and purchases fruits and vegetables from the local village farmers after supplying them with seeds. The guest *bures* are kept cool by shade and ocean breezes, and all gray water is piped out to rubble drains for flowers and plants.

Recipient of numerous awards including Virgin Holidays' 2010 sustainable tourism award and AON Excellence in Tourism award 2011, the resort's eco-friendly attitude is a beacon for travelling divers.

“We strongly believe that business has increased due to our vigorous environmental policies,” said Gow.

“We have established a marine reserve from the boundary of the Matava foreshore extending out to encompass the opposite Waya Island. This area is protected from any sort of fishing, shell collecting and reef walking. We have also helped the village of Nacomoto. Each time we dive there, we make a contribution to the village. This clearly benefits all parties. The diving is superb, the village gets income and the fish have a sanctuary to breed.”

The dive operator at Matava, Mad Fish Divers, converted its boats to four-stroke engines. Gow states, “In fuel savings alone, four-strokes pay for themselves in just nine months of operation. That's not just green, that's business sense.” 



Converting to four-stroke engines has allowed Mad Fish Divers to realize significant fuel savings.



PADI's Rebreather Diver and Advanced Rebreather Diver courses allow avid rec divers to use closed-circuit technologies.



# REBREATHER LAUNCH

The PADI organization steps into the world of recreational and technical rebreathers **BY KARL SHREEVES, DIRECTOR, DECOMPRESSION DIVING, PADI TECHNICAL DIVING DIVISION**

## PREVIEW: PADI REBREATHER AND TEC CCR COURSES

Announced in late 2010, PADI Rebreather Diver, Advanced Rebreather Diver and Tec CCR Diver courses are in development, with the first rollout scheduled for the third quarter 2011. Subsequent courses will debut over the remainder of the year and into 2012. This is a tremendously complex project that involves developing multiple courses with support materials; to date, the PADI Technical Diving Division and the global PADI Offices have completed a great deal of work. Here's an update on where these courses stand and a look at things to come, with the caveat that some things may yet change. Note also that there are prerequisite and instructional design questions still to be answered.

## TWO COURSE FLOWS FOR TWO KINDS OF DIVERS

Until recently, rebreathers and rebreather training has been primarily tec oriented – even if the diver was only interested in no-stop diving shallower than 40 metres/130

feet. The thinking was that using these technologies required a tec diving mindset with respect to procedures and equipment care. The emergence of new, highly automated rebreathers opens the door for avid recreational divers to use closed-circuit technologies. From an instructional design perspective, this calls for two course types with different approaches applied to different rebreathers.

The PADI Rebreather Diver and Advanced Rebreather Diver courses address recreational diving with Type R (recreational) rebreathers, which are fully automated systems with limited manual controls. The foundational philosophy is that student divers are not tec divers, nor do they desire to be. As in open-circuit recreational diving, these divers respond to rebreather problems by bailing out to open-circuit and ending the dive. They don't need to be trained in manual rebreather operation or other return-to-the-loop emergency responses. Training focuses on this, as well as rebreather-related pre-dive setup, checks, planning and post-dive maintenance.

The PADI Tec CCR Diver courses address technical diving with Type T

(technical) CCRs, which include a range of eCCRs and mCCRs. The philosophy is that student divers want to tec dive CCRs, and will likely dive beyond recreational limits and may progress into overhead (physical or virtual) environments. Life-support problems with a CCR must therefore allow the diver to diagnose and, when possible, return to the loop to complete the dive. Training is significantly more demanding because these divers must learn to be tec divers, as well as learn to tec dive CCRs.

Here are the currently planned courses and structures.

## PADI REBREATHER AND ADVANCED REBREATHER DIVER COURSES

### PADI Rebreather Diver

- Trains beginning rebreather divers to dive Type R rebreathers to a maximum depth of 18 metres/60 feet.
- Minimum Instructor Rating: PADI Rebreather Instructor.
- Prerequisites: PADI Open Water Diver, PADI Enriched Air Diver (or qualifying certifications from

FROM LEFT: JOE DOVALA/WATERFRAME/GETOSTOCK; STUART PHILPOTT/ALAMY; WATERFRAME/ALAMY; OPPOSITE: KARL SHREEVES

# REBREATHER LAUNCH

another training organization); 25 logged dives, 18 years old.

- Ratios: 4:1; 6:1 with certified assistant.
- Equipment: As required by General Standards and the environment; Type R rebreather listed by PADI Office.
- Gases: Air diluent; oxygen; enriched air allowed if specified by manufacturer (enriched air required for SCRs.)
- Depths: Maximum depth not to exceed 18 metres/60 feet; individual dives have differing minimum and maximum depths.
- Hours: Daylight hours.
- Minimum Number of Dives: One confined water, one confined or open water, four open water (six total).

## ☑ PADI Advanced Rebreather Diver

- Trains PADI Rebreather Divers to make no stop dives with Type R rebreathers as deep as 30 metres/100 feet (40 metres/130 feet with PADI Deep Diver certification).
- Minimum Instructor Rating: PADI Rebreather Instructor.
- Prerequisites: PADI Open Water Diver, PADI Rebreather Diver (or qualifying certifications from another training organization), certified for Type R rebreather used in the course; 30 logged dives, 18 years old.
- Prior to Certification: PADI Advanced Open Water Diver.
- Ratios: 4:1; 6:1 with certified assistant.
- Equipment: As required by General Standards and the environment; Type R rebreather listed by PADI Office; bailout cylinder with 850 litres/30 cubic feet of free gas (or more) with open circuit regulator, rigging for attachment to the diver and hose of sufficient length to share gas with another diver.
- Gases: Air diluent; oxygen; enriched air as specified by manufacturer (enriched air required for eSCRs).
- Depths: Maximum depth not to exceed 30 metres/100 feet; individ-

ual dives have differing minimum and maximum depths.

- Hours: Daylight hours.
- Minimum Number of Dives: One confined water, four open water (five total).

The courses are *unit specific* – divers qualify on individual rebreathers separately. The PADI Rebreather Qualifier program allows certified Rebreather and Advanced Rebreather Divers to qualify for a different unit without repeating the entire course.

### Course Support Materials Include:

- PADI *Rebreather Diver & Advanced Rebreather Diver Manual*

- PADI *Rebreather Diver and Advanced Rebreather Diver Instructor Guide*
- PADI Rebreather Diver & Advanced Rebreather Diver Lesson Guides
- PADI Rebreather Diver Exams
- PADI Advanced Rebreather Diver Exams
- PADI *Rebreather Diver & Advanced Rebreather Diver Key Skills* video

## ☑ PADI Rebreather Instructor

- Qualified to teach the PADI Rebreather Diver and Advanced Rebreather Diver courses. Certification requirements:



- Be a Teaching status PADI Open Water Scuba Instructor or higher.
- Be a PADI Enriched Air Diver Specialty Course Instructor.
- Be a PADI Deep Diver Specialty Course Instructor.
- Be certified as a PADI Advanced Rebreather Diver (or have a qualifying certification from another training organization) with the specific rebreather used in the course. Additional qualification procedures may exist for individuals who have a qualifying certification from another training organization.
- Have a minimum of 150 logged dives, with at least 75 dives made on a rebreather, of which at least 50 dives and 50 hours are on the specific Type R rebreather for which the instructor is qualifying as a PADI Rebreather Instructor.
- Successfully complete the PADI Rebreather Instructor training course conducted by a PADI Rebreather Instructor Trainer.
- Have assisted with at least one PADI Rebreather Diver course or one PADI Advanced Rebreather Diver course.

#### PADI TEC CCR DIVER COURSES

##### ☑ Tec 40 CCR Diver

- Entry-level course that trains exper-

rienced recreational divers in tec diving and CCR diving. Students learn to make no-stop tec dives and limited decompression tec dives to 40 metres/130 feet.

- **Minimum Instructor Rating:** Tec 40 CCR Instructor.
- **Minimum Certified Assistant Rating:** PADI Divemaster or higher level PADI Member with PADI Tec 40 CCR Diver certification.
- **Prerequisites:** PADI Advanced Open Water Diver, PADI Enriched Air Diver (or qualifying certifications from another training organization), PADI Deep Diver or proof of 10 dives to 30 metres/100 feet. 30 logged dives, at least 10 using EANx, deeper than 18 metres/60 feet. 18 years old.
- **Prior to Training Dive 5:** PADI Rescue Diver.
- **Prior to Certification:** 50 logged dives.
- **Ratios:** 4:1; 6:1 with certified assistant (unless a lower maximum is specified by the manufacturer of the Type T CCR used in training).
- **Equipment:** As required by General Standards and the environment; Type T CCR listed by PADI, tec equipment as listed in instructor guide.
- **Gases:** Air diluent; oxygen; air

or enriched air for bailout gas – allowed as diluent if allowed by manufacturer.

- **Depths:** Maximum depth not to exceed 40 metres/130 feet. Individual dives have differing minimum and maximum depths.
- **Hours:** Daylight hours.
- **Minimum Number of Dives:** Two confined water or limited open water, six open water.

##### ☑ Tec 40 CCR Instructor

Requirements for this course are still in development.

##### Course Support Materials Include:

- PADI *Tec 40 CCR Diver Manual*
- PADI Tec 40 CCR Diver Lesson Guides
- PADI *Tec 40 CCR Diver Instructor Guide*
- PADI Tec 40 CCR Diver Exams

Certification is unit specific.

##### ☑ Tec 60 CCR Diver

- Trains experienced Tec 40 CCR Divers in CCR decompression diving as deep as 60 metres/200 feet using nonhypoxic trimix or heliox diluent.
- **Minimum Instructor Rating:** Tec 60 CCR Instructor
- **Minimum Certified Assistant Rating:** PADI Divemaster or higher-level PADI Member with PADI Tec 60 CCR Diver certification
- **Prerequisites:** PADI Tec 40 CCR Diver (or qualifying certification from another training organization). 150 logged dives, with at least 25 dives and 50 hours with the Type T CCR used in the course. At least 10 of these must be deeper than 30 metres/100 feet.
- **Ratios:** 4:1; 6:1 with certified assistant
- **Equipment:** As required by General Standards and the environment; Type T CCR listed by PADI with offboard diluent loop supply capability, tec equipment as listed in instructor guide
- **Gases:** Air, nonhypoxic (16%+ oxygen) trimix or heliox diluent; oxygen;



diluent and enriched air for bailout gases

- Depths: Maximum depth not to exceed 60 metres/200 feet; individual dives have differing minimum and maximum depths.
- Hours: Daylight hours.
- Minimum Number of Dives: One confined water or limited open water, six open water.

## ☑ Tec 60 CCR Instructor

Requirements for this level are still in development.

### Course Support Materials Include:

- PADI *Tec 60 CCR Diver Manual*
- PADI Tec 60 CCR Diver Lesson Guides
- PADI *Tec 60 CCR Diver Instructor Guide*
- PADI Tec 60 CCR Diver Exams

Certification is unit specific. Different Type T units may be used by students in the same course provided the instructor is qualified as a Tec 60 CCR Instructor on all units in use.

## ☑ Tec 100 CCR Diver

- Trains experienced Tec 60 CCR Divers in CCR decompression diving as deep as 100 metres/330 feet using hypoxic and nonhypoxic trimix or heliox diluents.
- Minimum Instructor Rating: Tec 100 CCR Instructor.
- Minimum Certified Assistant Rating: PADI Divemaster or higher level PADI Member with PADI Tec 100 CCR Diver certification
- Prerequisites: PADI Tec 60 CCR Diver (or qualifying certification from another training organization). Experience requirements are still in development.
- Ratios: In development
- Equipment: As required by General Standards and the environment; Type T CCR listed by PADI with offboard diluent loop supply and offboard enriched air/oxygen supply capability, tec equipment as listed in instructor guide
- Gases: Air, hypoxic and nonhypoxic trimix or heliox diluent; oxygen; diluent and enriched air for bailout gases
- Depths: Maximum depth not to

exceed 100 metres/330 feet; individual dives have differing minimum and maximum depths.

- Hours: Daylight hours.
- Minimum Number of Dives: In development.

## Tec 100 CCR Instructor

Requirements for this level are still in development.

### Course Support Materials Include:

- PADI *Tec 100 CCR Diver Manual*
- PADI Tec 100 CCR Diver Lesson Guides
- PADI *Tec 100 CCR Diver Instructor Guide*
- PADI Tec 100 CCR Diver Exams

Certification is unit specific. Different Type T units may be used by students in the same course provided the instructor is qualified as a Tec 100 CCR Instructor on all units in use.

» For updates and continuing information about the PADI Rebreather Diver and Tec CCR Diver courses, visit the TecRec blog at [www.padi.com/tecrecblog](http://www.padi.com/tecrecblog).

## Offer Conservation Opportunities with PADI Specialty Courses

Prepare your divers to participate in your environmental projects by offering related PADI Specialty certification courses. Learning new skills and practicing techniques ahead of time will enhance their enjoyment of any type of environmental effort, be it a beach cleanup or a whale shark identification expedition. Also, consider offering an entire PADI Master Scuba Diver program designed to create divers who are environmentally aware and ready for action.

Start with the Project AWARE Specialist course to provide a good base for any environmental effort, then add courses specific to diver interest or specific projects, such as the Digital Underwater Photographer course – it's not just about beauty shots. Have your divers take conservation shots and show the state of the underwater environment. These photos can be submitted to Project AWARE or even [marinephotobank.org](http://marinephotobank.org). Other courses applicable to nearly any underwater effort include Peak Performance Buoyancy, National Geographic Diver and Underwater Naturalist.

Consider the environment in which the project will take place



as well as the activities it will include. For example, the AWARE – Fish Identification and AWARE – Coral Reef Conservation courses may be particularly applicable to warm-water expeditions, while Ice Diver and Dry Suit Diver provide important skills for projects that take place in more demanding cold-water conditions. If your

underwater cleanup includes a wreck dive, then Wreck Diver and Underwater Navigator certifications will be especially useful.

In a sense, any PADI Specialty course will help prepare divers for a conservation project simply by increasing their range of dive skills and experiences. So grab your PADI Instructor Manual and keep conservation in mind, take a fresh look at the list of standardized PADI Specialty courses. The better prepared divers are to participate in volunteer opportunities, the more they'll enjoy the experience. That means they'll keep coming back for more courses, more projects and more fun.



## TALKING TEC

Customers who get additional training and step up to tec diving need appropriate equipment. Here's a guide to some of the latest tec gear offerings by manufacturers.

**BY DARYL CARSON**

**A**s tec diving has moved from the fringe of the dive world into the mainstream of the sport, equipment designed for the tec crowd has flourished. Many dive center shelves sport at least a token offering of this gear, from twin-cylinder BCD rigs to a trimix-capable computer or a high-end canister light. But really tapping into this part of the dive-equipment market requires a working knowledge of the unique challenges tec divers face and the capabil-

ities they're looking for in their gear. Simply put, divers who venture beyond the boundaries of recreational diving are looking for redundancy, dependability and performance. Each item of gear featured on the following pages adds one or more of these qualities to the tec diver's kit. What does it mean for you? Understanding these attributes and being knowledgeable about these products will help dive center and resort staff meet the needs of tec divers. >>

### MINI3 LED TORCH

**Features:** This compact LED light runs on three AAA batteries and puts out a tightly concentrated 210-lumen beam. It delivers four hours of burn time.

**Benefits:** The anodized aluminum body and double O-ring seal of the Mini3 make it highly durable, both in terms of depth and surviving the hard knocks on the boat deck. Its concentrated beam is excellent for use as a spotlight and the use of easily sourced AAA batteries makes it a great travel companion.

**Closing the Sale:** Hollis has done a good job of delivering a tec-worthy light at an unbelievably reasonable price. Communicating this great value will help divers see this as a true utility light. **USD; hollisgear.com**



### VR TECHNOLOGIES VRX COMPUTER

**Features:** The VRx, with its VGM algorithm, automatically adjusts to match a diver's profile for optimal decompression and handles everything from enriched air to trimix to rebreather diving. In addition, users can adjust multiple conservatism factors. Also notable are a high-resolution display screen, built-in light and a replaceable, rechargeable Lithium-ion battery.

**Benefits:** The VRx software's ability to handle multiple gasses as well as open- and closed-circuit diving means divers won't outgrow this computer. The VRx is intensely practical, with an easy viewing screen and multiple battery-charging options.

**Closing the Sale:** The VRx will fit the needs of any tec diver, but it's probably best targeted to serious tec divers. Emphasizing the ability to tailor the computer's algorithm to personal needs will really appeal to this crowd. **technologyindepth.com**



### IST SPORTS DOLPHIN TEC JT65D BCD

**Features:** A dual-bladder, rear-mount air cell is paired with a stainless backplate and padded harness. Contoured shoulders have quick-release buckles and weight-integrated pockets are mounted at the hips.

**Benefits:** Redundant, 29 kilogram/65-pound lift air cells provide peace of mind at depth and the included bungees aid streamlining. The deluxe style harness boosts comfort.

**Closing the Sale:** Divers get total tec capability while retaining a few creature comforts, like weight pockets for single-tank dives. **istsports.com**



### APEKS TEK 3 REGULATOR SET

**Features:** The Tek 3 first stages have been designed specifically for use with twin-tank configurations, with dedicated left- and right-hand orientations. In the complete set they're paired with XTX50 first stages, which have left/right reversibility and feature diver-adjustable venturi and inhalation resistance controls.

**Benefits:** Apeks first stages offer excellent cold-water performance and the unique configuration of the Tek 3s allow for effortless streamlining, helping to prevent snags in overhead environments. High-performance second stages also offer the versatility of diver-changeable exhaust tees.

**Closing the Sale:** The dedicated left/right first stages and left/right reversibility of the second stages make these regulators highly versatile and really take the hassle out of gear configuration. **aqualung.com**

## OMS REBEL HEAD LAMP

**Features:** A single high-intensity LED puts out more than 200 lumens of light using four AAA batteries. It uses a low-friction twist activation with a magnetic reed switch and can be used with a headband or optional Goodman wristband. Burn time is 25 hours or 60 hours on flashing SOS mode.

**Benefits:** The 200-lumen output makes an excellent work light and is sufficient as a backup for navigation. Rugged construction gives this light a depth rating of 100 metres/330 feet, and it offers multiple mounting options.

**Closing the Sale:** Tec divers will understand this headlamp provides a high-quality redundant system. Emphasizing its versatility and ease of maintenance (using standard AAA batteries) should seal the deal [omsdive.com](http://omsdive.com)



## DIVE RITE NITEK Q

**Features:** A brilliant OLED display and two-gas nitrox capability are standard with the NiTek Q, but it can be upgraded to handle full trimix (seven gases) and to support rebreather diving. A rechargeable battery provides 30 hours of dive time, and the MIL-SPEC hard-anodized housing helps provide a 150 metre/492-foot depth rating.

**Benefits:** The NiTek's OLED display makes viewing easy under the toughest conditions, plus the system's software can be upgraded.

**Closing the Sale:** Dive Rite's stellar reputation will go a long way, as well as explaining that owning the NiTek prepares budding tec divers for a nearly unlimited future. [diverite.com](http://diverite.com)

## WHITES DIVING FUSION BULLET

**Features:** The Fusion system marries a waterproof inner layer with a high-stretch outer abrasion-resistant layer to produce an incredibly form-fitting suit. Whites' Seal Lock Technology (SLT) and silicone seals allow divers to replace seals as needed.

**Benefits:** The Fusion system gives divers the warmth of a dry suit with the performance, fit and mobility of a wet suit. The SLT system means divers can replace seals at the dive site if one tears or snags rather than missing a dive.

**Closing the Sale:** The real benefit of the Fusion suits is that they provide a streamlined profile and easy swimming. Tec divers already laden down with gear will appreciate this more than anyone [whitesdiving.com](http://whitesdiving.com)



## SCUBAPRO X-TEK PURE TEK

**Features:** Available with either a 14-kilogram/30-pound lift wing for single tanks or a 27-kilogram/60-pound lift wing for doubles, the X-Tek Pure Tek air cells are paired with a stainless backplate, continuous harness, multiple D-rings and a single tank adapter with superinch straps.

**Benefits:** The stainless backplate and continuous harness deliver stability and durability with a minimum of bulk. The heavy-duty harness and D-rings can be configured to accommodate any setup.

**Closing the Sale:** This is Scubapro's version of the basic BCD system tec divers have used for decades. Buyers should know it provides durability and streamlining and can be infinitely customized to handle one, two, four or more tanks. [scubapro.com](http://scubapro.com)





## OPEN WATER DIVER COURSE QUIZ?

Test your knowledge about the PADI Open Water Diver Course

BY JULIE TAYLOR SANDERS, INTERNATIONAL TRAINING EXECUTIVE, PADI WORLDWIDE



More people in the world begin diving via the PADI Open Water Diver Course than any other. Whether you are a new instructor or more experienced, challenge your Open Water Diver course instructional savvy and brush up on a few practices. See how well you do!

**1** Why is it important to get new student divers in the water as soon as possible?

- a. Because they are coming to you to go diving, not just talk about it.
- b. Some potential divers may not yet be fully committed; a Discover Scuba Diving experience may cinch their decision.
- c. The bulk of learning to dive happens in the water.
- d. It increases motivation and interest.

e. It isn't important; most thrill seekers prefer delayed gratification.

**2** When using the PADI Discover Scuba Diving experience as a recruitment program to increase Open Water Diver course enrollments, be sure to:

- a. In confined water, ask participants if they want to try some scuba skills; if so, introduce Confined Water Dive 1 skills "just for fun."
- b. Give credit when due – Record Confined Water Dive 1 and/or the Discover Scuba Diver open water dive on a PADI Referral Form and Training Record.
- c. Upon completion of the Discover Scuba Diving program, set up the program participants with the forms, PADI eLearning gift passes/mate-

rials they need, make assignments and schedule the next confined water session.

**d.** Tell participants that this is just the beginning of their dive adventure.

**3** The PADI Scuba Diver certification

- a. Is a good option particularly when student divers don't have a lot of time to book open water dives.
- b. Is a great way to gain dive experience and confidence under supervision.
- c. Is a required certification prerequisite to the Open Water Diver course.
- d. Has no expiration and can be upgraded to Open Water Diver certification at any time by completing the rest of the course requirements.

**4** True or False: To save some time and get divers in the water quicker at the confined water site, you can set up student scuba units for them in advance.

**5** When a student diver exhibits signs of fear when practicing a skill in confined water, which points provide the best setup for positive learning?

- a. Ask the student diver what is causing the anxiety, don't assume that you know.
- b. Be patient, deliberate and calm.
- c. Go slowly, at the student diver's pace, not yours.
- d. Take the skill in sub steps, reassuring the diver along the way.
- e. Develop and nurture confidence in that skill before going to a new skill.

**6** True or false: Assuming there are no safety issues, it is always best to swiftly correct a diver as soon as you see a skill performed incorrectly.

**7** True or false: It's important to list all the mistakes student divers might make with a skill when you are briefing it so that they are more likely to avoid them.

**8** There are no "staged" skills on Open Water Dive 1, because:

- a. It eases the transition from confined water to open water by reducing task loading and allowing for acclimation to the new environment.
- b. Regardless of whether or not there are set skills, to dive, student divers will be practicing skills such as buoyancy control, descent/ascent, equalization, swimming underwater, etc.
- c. It motivates continued learning and interest.
- d. Instructors need a break from conducting skills.

**9** "Explore the dive site" is a requirement for each open water dive, because:

- a. Student divers may discover unknown artifacts valuable to science.
- b. Diving is all about exploration, so they should be experiencing that during training.
- c. While student divers explore the site, they are continually practicing and polishing their overall dive skills.
- d. It shifts focus from staged skills to the environment and what they signed up for in the first place.

**10** Specialty activities pique curiosity and generate excitement in diving. Which of the following specialty ideas can you use in concert with the PADI Open Water Diver course?

- a. Allow your divers to use cameras or fish identification slates when they are exploring the dive site, as long as they put them away during skills demonstrations.
- b. Conduct an Adventure Dive after Open Water Dive Four.
- c. Conduct Open Water Diver Course Dive Four from a boat, on a wreck, while drifting and wearing a dry suit

**11** Besides entertainment value, in what way do these underwater games reinforce specific diving skills and principles? (Match game to value)

**Team relays (such as spoon/ping pong ball)**

A novelty to most, it reinforces three-dimensional movement

**Mask swaps**

Reinforces skills already introduced by following instructor step-by-step

**Do as I do**



Builds teamwork, buddy signals, instinctive performance and skill recall

**Shallow water swim (no touching pool sides, bottom or surfacing)**

Reinforces mask removal/replacement skills while trying new masks

**Skill combination drill in teams**

Divers have to control buoyancy and swim methodically while concentrating.

**Underwater headstands**

Reinforces care for the environment when diving in sensitive areas

**ANSWERS:**

- 1. a, b, c, d.
- 2. a, b, c, d.
- 3. a, b, d.

4. True. Student divers must independently assemble and disassemble a scuba unit at least three times by the end of Confined Water Dive 3 and five times before the end of Confined Water Dive 5.

- 5. a, b, c, d, e

6. False. As long as safety is not an issue, student divers benefit from making mistakes and self-correction, and from you coaching them after they've had a chance to work through it on their own.

7. False. Briefings should be brief and reinforce the objectives and value. Focusing on pitfalls of an improperly executed skill can emphasize pitfalls, rather

than the proper way to carry out the skill.

8. a and b. If you checked "c," that's okay too.

9. b, c, d. If you checked "a," give yourself an extra point.

10. a, b, d. If you checked "c," nice try. Reread "Open Water Diver Course to Specialty Diver Courses" under "Linking Courses" in the "General Standards and Procedures Instructor Guide" of the PADI Instructor Manual.

11. Team relays (such as spoon/ping pong ball) - Divers have to control buoyancy and swim methodically while concentrating  
Mask swaps - Reinforces mask removal/replacement skills while trying new masks  
Do as I do - Reinforces skills

already introduced by following instructor step-by-step

Shallow water swim (no touching pool sides, bottom or surfacing) - Reinforces care for the environment when diving in sensitive areas

Skill combination drill in teams - Builds teamwork, buddy signals, instinctive performance and skill recall

Underwater headstands - A novelty to most, it reinforces three-dimensional movement

**HOW DID YOU DO?**

**11 correct:** You rock!

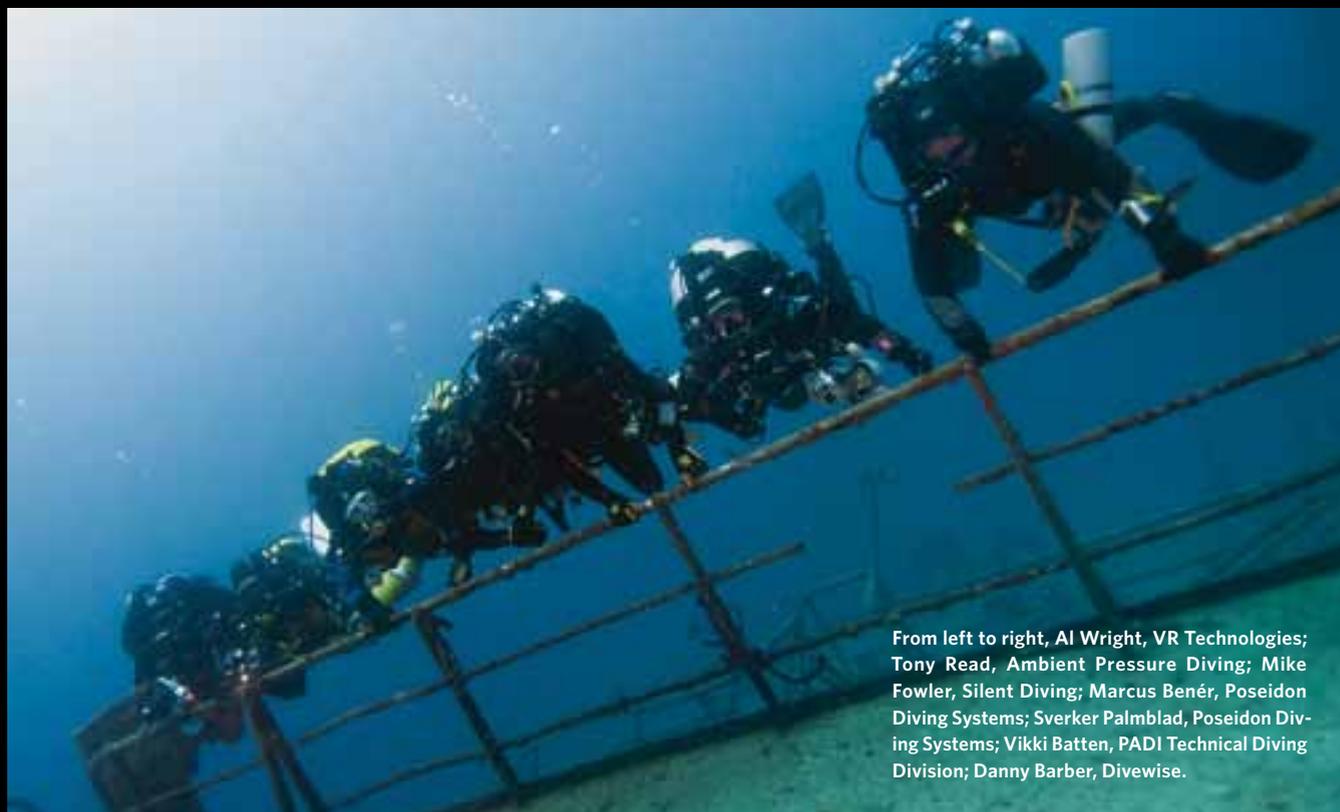
**7-10 correct:** Way to go!

**6 correct:** Not too bad, but you better brush up on PADI Standards before you teach this course next time.

**5 or less correct:** Time to see your PADI Course Director for an update!

## PADI TEC NEWS AND EVENTS AROUND THE WORLD

Tec Xplor events, Rebreather Forum 3.0 and the PADI Technical Diving Division in Action



From left to right, Al Wright, VR Technologies; Tony Read, Ambient Pressure Diving; Mike Fowler, Silent Diving; Marcus Benér, Poseidon Diving Systems; Sverker Palmblad, Poseidon Diving Systems; Vikki Batten, PADI Technical Diving Division; Danny Barber, Divewise.

### TEC XPLOR DAYS

Launched in late 2010, PADI Tec Xplor Days introduce divers to technical dive training, equipment and seminars.

Tec Xplor days have already taken place in the Asia Pacific region, the United Kingdom and the United States. The events have been extremely well supported by PADI Instructors and technical dive equipment manufacturers and have let hundreds of divers experience tec diving equipment in a pool, chat with the

experts, and get individual advice from some of the biggest names in the field.

Each event features speakers from the PADI Technical Diving Division, such as Dr. Drew Richardson, Mark Caney, Karl Shreeves and Vikki Batten. Presenters have also included some PADI Technical Field Consultants for the upcoming rebreather courses such as Jeff Loflin, Jill Heinerth, Martin Robson and Phil Short.

To find out more about these free and informative

events – along with the latest tec diving news – check out the TecRec Blog at [www.padi.com/tecrecblog](http://www.padi.com/tecrecblog). — Vikki Batten and Alex Boulton

### REBREATHING FORUM 3.0 IS BIG NEWS FOR 2012

Rebreather Forums 1 and 2 took place in 1994 and 1996, respectively, and DSAT published the proceedings of Rebreather Forum 2. These forums covered nearly the entire realm of rebreather

knowledge and interest at the time, including rebreather maintenance, sport diver training, military rebreather training, physiology, equipment testing and risk management.

The dive industry and rebreathers themselves have changed dramatically since that time. Rebreathers are currently moving into the diving mainstream due largely to improvements in technology and training.

Rebreather Forum 3.0 is

scheduled from 18-20 May 2012 in Orlando, Florida, USA. The primary forces behind this event are PADI, DAN and the AAUS and the event will provide a unique opportunity for experts to discuss the many aspects of rebreather diving and help advance the science and sport of rebreather diving.

— Vikki Batten

## REBREATHER COURSE DEVELOPMENT AND TESTING

When it comes to course development and testing, the PADI staff don't rely just on internal expertise. The development team frequently consults outside experts who assist by reviewing the course content.

The upcoming release of PADI rebreather courses is no exception as experts from the PADI Rebreather Advisory

Team have been guiding development. The PADI Rebreather Advisory Team is also involved in course review and testing.

In addition, the Technical Field Consultants are a group of experts in areas of rebreather diving, including design and manufacture, physiology, decompression theory and training. This prestigious group includes Professor Simon Mitchell, Terrence Tysall, Martin Robson, Richard Pyle, Jill Heinerth, Phil Short and Kevin Gurr.

Several rebreather manufacturers have also been instrumental in course development, generously sharing their time and expertise.

As a culmination of this development and testing process, PADI Rebreather Advisory Team members Karl Shreeves and Vikki Batten joined representatives

from Ambient Pressure Diving, Poseidon Diving Systems and VR Technologies in Malta for a week of testing and trials along with a photo shoot.

During April and May, the courses were tested to iron out the last few wrinkles and gather valuable information from both divers and instructors. Martin Robson, assisted by Vikki Batten, taught the first PADI Rebreather Diver Course to Rich Somerset. The newly trained diver said, "I am confident and keen to use the unit, which is probably the clearest indication that the program was successful."

— Vikki Batten

## PADI TEC REC TAKES ON OZTEK 2011

OZTek, held in Sydney, Australia in March, is the southern hemisphere's premier event for technical diving enthusi-

asts, manufacturers, trainers and explorers. This year, the conference hosted more than 40 international speakers who covered a wide range of topics, including medical concerns for open-circuit and closed-circuit rebreather divers, rebreather manufacturing and development, wreck hunting, cave diving and exploration.

The PADI Technical Diving Division staff gave a number of the talks:

Mark Caney, Vice President of the Technical Diving Division and Director of Rebreather Technologies, discussed the development and focus of PADI Rebreather courses.

Terry Cummins, Technical Diving Division Director of Marketing Development and Danny Dwyer, Director of Marketing at PADI Asia Pacific, discussed the marketing approach to TecRec training and the recently announced PADI TecRec Dive Centre award.

Richard Evans, Manager of Quality and Risk Management at PADI Asia Pacific and Caney also covered the necessity for diver safety as the primary mission in both recreational and technical diving.

— Alex Boulton



From left to right, back row, Tony Read, Ambient Pressure Diving; Vikki Batten, PADI Technical Diving Division; Sverker Palmblad, Poseidon Diving Systems; Mike Fowler, Silent Diving; Marcus Benér, Poseidon Diving Systems; Karl Shreeves, PADI Technical Diving Division; Al Wright, VR Technologies

# Giving Back Through Voluntourism

HOW TO ADD OCEAN CONSERVATION AND COMMUNITY  
PROJECTS TO YOUR GROUP DIVE TRAVEL VACATIONS

BY BROOKE MORTON



IMAGEDEPOTPRO/ISTOCKPHOTO



“The average person does not have a direct link to the ocean, other than what they eat,” says Marc Bauman, Director of Sales and Marketing at Palau Sea Ventures, also known as Sam’s Tours.

“Because divers know first-hand how delicate the marine environment is, it’s my belief we have a responsibility to give back,” he says.

Many divers already honor that unspoken obligation, participating in beach cleanups and other give-back opportunities organized by their hometown dive centers and resorts.

But imagine how much good this untapped resource could generate if applied overseas on your next dive trip.

“They’re almost always available, but many dive shops don’t advertise voluntourism opportunities,” Bauman says, adding that he hopes greater numbers of group leaders will start inquiring.

Margo Peyton, trip organizer and owner of Kids Sea Camp, has been creating these opportunities for years. She advocates reaching out to help not only beaches but schools, hospitals and other facilities in the community in need.

Her giving goal? To foster a meaningful connection between her trip guests and the local community.

“We have turned our trips from summer vacations into life-altering experiences,” she says.

Regardless of who or what you choose to help, volunteering opportunities can easily be added to an upcoming trip — with a little forethought and planning.

#### ASK QUESTIONS

Ask a project how much time you would like to devote to a project, suggests Nathan Cook, PADI IDC Staff Instructor at Eco Koh Tao, an environmental awareness and action group in Thailand. Also consider what level of dive experience is required to get involved. Some projects, such as beach cleanups, are ideal for any group, whereas something such as a coral restoration project is often better suited for advanced divers. However, Cook points out these advanced projects can always benefit from another set of hands, regardless of dive ability.

“Even if it is observation and handling materials — it all helps,” he says.



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**THE STAFF STEERED  
 HER TOWARD THE  
 ISLAND’S BLUE IGUA-  
 NAS, AN ENDANGERED  
 SPECIES. PEYTON TOOK  
 HER GUESTS TO THE  
 ANIMAL’S SANCTU-  
 ARY TO HELP RAISE  
 AWARENESS.”**

At left: Planting coral in the Florida Keys.  
 Below: Ron Stevens working with kids attending the Fiji Kids Sea Camp. Opposite page: Sam’s Tours’ International Beach-Clean-Up Day on Ngemelis, Palau.

**DECIDE WHOM OR WHAT YOU’D LIKE TO HELP**

In addition to considering the interests of your group, Peyton suggests talking with the dive center or resort you’ll be visiting and asking them to identify ocean conservation opportunities or other community needs.

When Peyton recently planned a trip to Grand Cayman, she asked the dive center she was partnering with, “What is in danger? What is being overlooked?” The staff steered her toward the island’s blue iguanas, an endangered species. Peyton took her guests to the animal’s sanctuary to help raise awareness. Artist Ron Stevens, a Kids Sea Camp regular, led a painting workshop in local schools, explaining to the kids how their art would help the island. The children’s works were then auctioned to help raise \$20,000 US to help save the island’s blue iguanas

On more remote islands, she searches for organizations, such as schools, orphanages and hospitals that will open their doors to her guests. Then she contacts these places directly to ask for a list of supplies they need. She then distributes this list to her trip participants.

“When we bring families to a particular destination, we want two things,” Peyton says. “We want guests to

experience local culture, meet the people and understand what their presence means to local kids. Second, we want to give local kids the chance to be part of what people come from around the world to enjoy.”

Peyton also points out, “Most of the PADI Dive Resorts I work with are giving back to local programs already. You can always add to what they’re doing.”

The opportunities are as varied as the destinations themselves. All across the globe, PADI Dive Centers and Resorts are involved in targeted projects that benefit the environment and their local community.

**PADI DIVING SOCIETY IN PALAU**

“We were flying home on International Beach Clean-Up Day,” says Ajá Smith, PADI Americas Marketing Consultant. Not wanting to miss the event, she started planning with Marc Bauman of Sam’s Tours to host an event the day prior to their departure. But



Smith was worried that Palau was too clean — from what she had seen, the island nation seemed largely unspoiled.

Bauman, an avid camper, suggested an out-of-the-way private island, known as Ngemelis, which could benefit from their efforts. Due to its position along a popular boating channel, garbage had been collecting on its shores.

Bauman also suggested that the group partner with the Palau Civic Action Team, also known as the Naval Mobile Construction Battalion. On island, the group is known for their work building fences for local schools as well as firehouses.

Bauman set to work organizing the necessary permits. Like the relationship between Sipadan and Borneo, this island requires special permission to visit.

Smith added the event to the group's itinerary, branding it as the Bon Voyage Party. "We made it about the appeal of this island," she says. In the welcome

packet, she stressed that the day would also include time to snorkel these little-seen reefs, as well as barbeque and explore the shores that they would clean.

The group collected 22 bags of rubbish. But they hadn't anticipated an added benefit of the day.

"Too often during these dive trips, you're underwater or at the resort," she says. By partnering with the civic action team, "they gave us a whole new insight into what it's like to live on Palau."

#### ECO KOH TAO IN THAILAND

Many dive centers are involved with ongoing projects that can benefit from additional hands. Eco Koh Tao, an organization specializing in eco-tourism on Thailand's Koh Tao, has created what it calls Junkyard Reef. This project serves double-duty: Nathan Cook and his team members collect recyclable materials, which serve as the building blocks for constructing an artificial habitat.

"Creating artificial reefs specifically as training areas has become a high priority for us simply because of the sheer number of divers on Koh Tao at any one time," Cook says of the stress these sites absorb, which reduces the stress on nearby living coral reefs.

This area has also become important to the sci-



Above: Theresa Kaplan, PADI Diving Society Director, at the event on Ngemelis. Right: Junkyard Reef, Thailand. Opposite page: Kids Sea Camp, Grand Cayman: By selling artwork, the kids saved several turtles slated for soup.

“

**JUNKYARD REEF HAS BROUGHT NEW SPECIES TO KOH TAO, AND IT'S NOW HOME TO A WIDE VARIETY OF MARINE LIFE NOT REGULARLY SEEN ELSEWHERE AROUND THE ISLAND.”**



entific research that Cook's organization conducts. "Junkyard Reef has brought new species to Koh Tao," he says. "It's now home to a wide variety of marine life not regularly seen elsewhere around the island."

### KIDS SEA CAMP IN FIJI

One project that Peyton treasures is her work with the Malolo school of Fiji. As part of her pre-trip research, she talked with the schoolmaster and together they decided that her group would visit the school for five hours. Prior to the visit, she also worked with the schoolmaster to create a list of sporting goods, art supplies and other materials that would benefit the school, and shared this list with her guests. They arrived bearing soccer balls, field-hockey equipment and other items.

To help educate the kids about their reefs, Peyton and the Mamanuca Environment Society (MES) spoke to the group about the importance of preservation. (Fiji is one of the biggest exporters of coral for aquariums.) Together, she and MES explained how reefs benefit communities, such as protecting the islands from storms.

The kids — both from the United States and Fiji — were also asked to write a list of five questions to ask someone from the other location. Additionally,

each had to share something that represented his or her day-to-day life. The American kids showed iPods, Nintendos and other electronics, whereas the Fijian kids shared wooden toys and kites fashioned from tarp. The Fijian kids also taught the group their dances, songs and games.

"A lot of times when we travel, we don't get beyond the surface," Peyton says. "But on this trip, the Americans experienced a different culture, one without air-conditioning and water running from taps."

"My hope is that when these kids are back home brushing their teeth, that maybe they will think about the child they met in Fiji and how far he walks to get water, and they'll realize how precious [water] is."

These projects don't happen haphazardly. Planning is key to adding a voluntourism element to a group's dive vacation.

### REACH OUT TO THE LOCAL TOURISM BOARD

"Tourism boards are usually willing to embrace these projects; they want to give back, too," Peyton says. She adds that they have a great knowledge base and can steer you toward helpful contacts. Plus, they can help ensure that you work with reputable organizations.

CLOCKWISE FROM RIGHT: COURTESY KIDS SEA CAMP; COURTESY ECO KOH TAO (2); COURTESY PADI





**Kids Sea Camp, Grand Cayman:** Teen divers leap into the water from the dive boat. Besides contributing to local conservation efforts, the kids have a lot of fun, too.

### IDENTIFY YOUR STRENGTHS

When putting together a voluntourism dive vacation, try to match the strengths and interests of the group with a conservation or community need of the destination you're planning to visit. When Peyton noticed that many of the parents attending Kids Sea Camp work as doctors, she suggested that they offer their services during their trip to Roatan, Honduras. The doctors welcomed the idea, bringing medical supplies. They held a free clinic to treat the locals, and also worked with Honduran doctors and nurses to share their knowledge.

### BE INCLUSIVE

Ask the dive shop you'll be visiting if they know of any local groups or organizations that may want to come participate. Not only will more hands generate more good, but the added fellowship could lead to unforeseen connections. "When we share experiences, we all grow," says Peyton.

### MAKE IT A PARTY

Most important, make it fun. Bauman suggests making it a challenge or a contest. He also recommends a party afterward.

On a recent clean-up, he sent a crew down early to start grilling and setting up so that a celebratory meal was ready immediately following the project. "Don't make the activity the focal point," he says. "Remember that they're on vacation. They're there to have fun."

### WORK AN EVENT INTO AN EXISTING ITINERARY

One way to maximize time and money is to work an event into a pre-existing schedule, suggests Bauman. Add a beach cleanup during a surface interval, or after lunch. "It doesn't have to be a stand-alone event," he says. "If you have 20 people walk the beach for one hour collecting garbage, you'd be surprised at the amount you come up with."

COURTESY KIDS SEA CAMP; OPPOSITE: UGURHAN BETIN/ISTOCKPHOTO

## TRAVEL GUIDE

### FIJI

» **Getting There:** Fiji has two international airports to choose from: Nadi (airport code NAN) and Nausori (airport code SUV) if you're staying on the east coast of Viti Levu.

» **Best Time to Go:** The best time of year to visit is during the dry season, also known as the Fijian winter, which extends from May to October. This time is also the most popular, so expect to pay full-price, with costs peaking in June and July. The country's wet season is from November through April. You'll

also want to time your visit to avoid the Fijian school holidays; the first lasts two weeks and starts in late April. The second typically starts in mid-August.

» **Travel Tips:** Fijian restaurants offer a multiethnic culinary experience. Try kokoda, fresh fish served in a half coconut filled with lolo, the sweet cream of the coconut.

» **Money Matters:** The Fijian dollar is the official currency. Most restaurants and resorts accept credit cards. ATMs are common in cities. If you're headed to a remote area, bring enough cash to

cover the duration of the trip (plus a little extra for emergencies).

» **Average Water Temperature:** 26-27° C/78-81° F

» **Average Visibility:** 24 to 37 metres/80 to 120 feet

### PALAU

» **Getting There:** Continental, Asiana, China, Japan and Delta airways offer flights to Koror (airport code ROR).

» **Best Time to Go:** Visit outside of the November to May typhoon season; February and March are the driest months.

### CONSIDER THE COSTS

“One of the biggest problems we face is people thinking that ‘volunteer’ opportunities should be free,” says Cook. His outfit offers intensive programs lasting from two weeks to a year or longer. These opportunities also include instruction, including the PADI Peak Performance Buoyancy Specialty course, and equipment rental. With so much included, Eco Koh Tao adds a price tag; the two-week program costs 36,025 Thai baht, or approximately \$1191 US.

For one-day opportunities, gas, food and materials need to be considered. However, sometimes these costs can be offset by donations. Another way Bauman helps organize opportunities is by contacting local businesses, letting them know how dive groups will help the island. In one instance, the island guests cleaned a locals’ only beach. (On Palau, beaches are designated for tourists, locals or both). Because this outreach benefitted the community so directly, he was able to gain the support of a grocery store that donated meat for a barbeque, and from a distributor that donated beverages.

### TRY FUNDRAISING

If you find that the costs are greater than anticipated, try fundraising.

“Ask if people will donate 10 dollars for a project,” suggests Peyton. “Just be very clear about what their money is going toward.”

### EXPLAIN THE PROJECT AHEAD OF TIME TO GUESTS

When Peyton contacts a local school for a list of supplies, for example, she includes that list in her documents package, sent to every trip participant. She also sends an itinerary that details what the volunteer project will entail.

Bauman also underscores the importance of up-front explanations.

“If someone said you had to cut the lawn on vacation, what would your reaction be?” he asks Bauman. “If you’re spending \$5000 US on a dive trip, you usually want to get in as much diving as possible. If you ask them if they want to get sweaty and clean a beach, most would rather kayak,” he says.

He’s learned that it’s best to explain the project, its goal and how it affects the community. Upon learning how a few hours can impact the destination, most people become eager to help.

“We explain that every water bottle, every bit of Styrofoam that we collect helps,” he says. “People get that.”



“**WE EXPLAIN THAT EVERY WATER BOTTLE, EVERY BIT OF STYRO-FOAM THAT WE COLLECT HELPS.”**

### DON'T STOP GIVING WHEN YOU RETURN HOME

Consider alternative ways to help. Through her charitable organization, Ocean Wishes, Peyton raises funds to help kids become scuba certified. She asks anyone to visit her website, oceanwishes.org, to nominate a deserving youth.

“I’m generally looking for someone whose family couldn’t afford a certification, and someone who dreams about doing something with the ocean,” she says.

After she’s found the lucky 13 winners each year, she sends a check to their local dive shop to cover the course costs.

The chance of windy and rainy days increases June through October.

» **Travel Tips:** Make time to do the famed encounter at Jellyfish Lake, but wear sturdy shoes to make the hike down the rocky path to the lake and wash off any harmful sunscreen before entering the water.

» **Money Matters:** The official currency in Palau is the US dollar and tipping is not expected.

» **Average Water Temperature:** 29° C/84° F

» **Average Visibility:** 30 metres/100 feet

### THAILAND

» **Getting There:** Visit Koh Tao, in the Gulf of Thailand, year-round, but know that the coldest time to visit is November through February. February and March are the warmest months on Koh Tao, and November is typically the wettest. Whale sharks and mantas congregate in March and April.

» **Best Time to Go:** Avoid visiting during Thai holidays, including the Songkran Festival in mid-April, the King’s birthday on 5 December and New Year’s — unless you like to mingle with large crowds.

» **Travel Tips:** Thailand is popular with the budget-conscious backpacking crowd because it’s possible to tour vast parts of it inexpensively and public transportation is cheap. Visit at least one of the country’s strikingly beautiful temples, which are a blend of the exotic and the spiritual.

» **Money Matters:** The official currency in Thailand is the baht.

» **Average Water Temperature:** 26-31° C/78-88° F

» **Average Visibility:** 18 to 30 metres/60 to 100 feet 

# Training BULLETIN

**A Training and Education Update for PADI Members Worldwide**

THIRD QUARTER 2011

Product No. 01224

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### ***Training Bulletin Required Reading***

This update is the primary training communication from your PADI Office to you. It announces PADI training standards and procedures changes and their implementation date. Your PADI Membership commitment requires you to keep abreast of PADI standards by reviewing and putting into practice the information in this quarterly update.

The *Training Bulletin* is published quarterly by PADI, Professional Association of Diving Instructors  
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# New and Revised

## PADI eCard

PADI Members can combine the power of smartphone technology when certifying divers with the release of the PADI eCard, an electronic version of the PADI certification card.

PADI eCard is hosted, managed and displayed using the PADI App, initially accessible on Apple and Android smartphones. Development for other operating systems will follow. The PADI eCard is proof of certification. Security of the eCard is a primary concern, so QR coding (a specific, two-dimensional code) is integrated to make authentication straightforward and easy.

Initially, the eCard will be available through Replacement Card Online only. Divers obtaining a replacement card will have the choice of an eCard, a plastic card or both. In addition, PADI Members can use PIC Online credits to sell eCards to existing PADI Divers through the Online Processing Center on the PADI Pros' Site.

All PADI Members will receive a free PADI eCard for their highest core level (including Course Director and IDC Staff Instructor) as a 2012 membership renewal benefit. The eCard will be available for replacement cards to consumers in fourth quarter 2011.

PADI eCard development resets the bar for positive identification certification delivery while embracing environmental stewardship by reducing the amount of plastic, paper and transportation used to deliver certifications to divers.



## Peak Performance Buoyancy Revised

The Peak Performance Buoyancy specialty course is PADI's fourth most popular specialty course. This year, the instructor guide and video were revised and updated, and now there is a new manual to accompany the course. In addition to techniques and reminders about how divers can help care for the environment through diving performance, the course now provides information on buoyancy control for divers using semi-closed and closed circuit rebreathers.

Revised English products include the Peak Performance Buoyancy Specialty Instructor Guide (70236), Peak Performance Buoyancy Video (70858), the new Peak Performance Buoyancy Manual (79315), and the Peak Performance Buoyancy crew-pak with DVD (60177). Contact your PADI Regional Headquarters to order these materials.

## Self-Reliant Diver Forms

The PADI Self-Reliant Diver distinctive specialty course announced in last quarter's *Training Bulletin*, includes a course-specific release – the PADI Self-Reliant Diver Course Liability Release and Assumption of Risk Agreement (10337). Have divers review and complete this form at the beginning of the PADI Self-Reliant Diver distinctive specialty course. To download the specialty instructor guide and the release, go to the Pros' Site: Training Essentials/Curriculum/Diver Training/Specialty courses. The release is in the instructor guide appendix, and also found in Forms and Applications in Training Essentials.

In addition, there is a new release you can use for

certified divers who choose to dive alone through your dive operation. The diver's choice to do so and assumption of the risk is acknowledged by a signature on the Self-Reliant Diver Liability Release and Assumption of Risk Agreement (10155). Find the form on the Pros' Site, Training Essentials/Forms and Applications.

If you have questions about liability releases for training and nontraining activities, contact your PADI Regional Headquarters. For PADI's position on diving without a partner, please visit References/Topics of Interest on the PADI Pros' Site.

# Rebreather

## PADI Rebreather Courses Launch

Announced in late 2010, PADI Closed Circuit Rebreather (CCR) courses are in development, with the introduction of recreational rebreather courses scheduled for the third quarter 2011, and tec-level rebreather programs debuting over the remainder of the year and into 2012. An overview of the recreational courses follows, with the caveat that there is still potential for change following BETA testing.

The PADI Rebreather Diver and Advanced Rebreather Diver courses train divers for recreational diving with Type R (recreational) rebreathers, which are fully automated systems. These systems, which are fully electronically controlled, are referred to as eCCRs or eSCRs. Divers using these units respond to all serious rebreather problems by bailing out to open-circuit scuba and ending the dive. Training focuses on this, as well as rebreather-related pre-dive setup, checks, planning, buoyancy and post-dive maintenance.

### PADI Rebreather Diver

Trains divers new to rebreathers on Type R (recreational) rebreathers to a maximum depth of 18 metres/60 feet.

Minimum Instructor Rating: **PADI Rebreather Instructor**

Prerequisites: **PADI Open Water Diver, PADI Enriched Air Diver (or qualifying certifications), 25 logged dives, 18 years old**

Ratios: **4:1; 6:1 with certified assistant**

Equipment: **As required by General Standards and the environment; Type R rebreather listed by your PADI Regional Headquarters**

Gases: **Air diluent; oxygen; EANx allowed if specified by manufacturer (EANx required for eSCRs)**

Depth: **Maximum depth not to exceed 18 metres/60 feet. Individual dives have differing minimum and maximum depths.**

Minimum Number of Dives: **1 confined water, 1 confined or open water, 4 open water (6 total)**



### PADI Advanced Rebreather Diver

Trains PADI Rebreather Divers to make no stop dives with Type R rebreathers as deep as 30 metres/100 feet (40 metres/130 feet with PADI Deep Diver certification).

Minimum Instructor Rating: **PADI Rebreather Instructor**

Prerequisites: **PADI Open Water Diver, PADI Rebreather Diver (or qualifying certifications), certification in Type R rebreather used in course, 30 logged dives, 18 years old.**

Exit Requirement: **PADI Advanced Open Water Diver**

Ratios: **4:1; 6:1 with certified assistant**

Equipment: **As required by General Standards and the environment; Type R rebreather listed by PADI Regional Headquarters; bailout cylinder with at least 850 litres/30 cubic feet of free gas with open circuit regulator, rigging for attachment to the diver and hose of sufficient length to share gas with another diver.**

Gases: **Air diluent; oxygen; EANx as specified by manufacturer (EANx required for eSCRs)**

Depth: **Maximum depth not to exceed 30 metres/100 feet. Individual dives have differing minimum and maximum depths.**

Minimum Number of Dives: **1 confined water, 4 open water (5 total)**

The courses are unit specific – divers qualify on individual rebreathers separately. The PADI Rebreather Qualifier program allows certified Rebreather and Advanced Rebreather Divers to qualify for a different unit without repeating the entire course. Complete a PIC Online for each unit on which the diver completes training.

# Rebreather

## Course Support Materials

- PADI *Rebreather Diver and Advanced Rebreather Diver Manual*
- PADI Rebreather Diver and Advanced Rebreather Diver Instructor Guide
- Rebreather Diver and Advanced Rebreather Diver Lesson Guides
- PADI Rebreather Diver and PADI Advanced Rebreather Diver Exam Booklet
- PADI *Rebreather Diver and Advanced Rebreather Diver Key Skills* video
- Rebreather training liability releases

## PADI Rebreather Instructor

Qualified to teach the PADI Rebreather Diver and Advanced Rebreather Diver courses.

Certification requirements:

- **Be a teaching status PADI Open Water Scuba Instructor or higher.**
- **Be a PADI Enriched Air Diver Specialty Instructor.**
- **Be a PADI Deep Diver Specialty Instructor.**
- **Be certified as a PADI Advanced Rebreather Diver (or have a qualifying certification) with the specific rebreather used in the course.** Additional qualification procedures may exist for individuals who have a qualifying certification from another training organization.
- **Have a minimum of 150 logged dives, with at least 75 dives made on a rebreather, of which at least 50 dives and 50 hours are on the specific Type R rebreather for which the instructor is qualifying as a PADI Rebreather Instructor.**
- **Successfully complete the PADI Rebreather Instructor training course conducted by a PADI Rebreather Instructor Trainer.**
- **Have assisted with at least one PADI Rebreather Diver course or one PADI Advanced Rebreather Diver course.**

## PADI Rebreather Instructor Trainer

PADI Course Directors/Tec Rec Instructor Trainers who are PADI Rebreather Instructors and want to qualify to teach PADI Rebreather Instructor courses take the PADI Rebreather Instructor Trainer Course. To find out more, go to the Pros' Site/Pro Development/TecRec/PADI Rebreather Instructor Trainer Course.

For more information on the Tec CCR Diver courses, see the Third Quarter 2011 *The Undersea Journal*. For updates and continuing information about the PADI Rebreather Diver and Tec CCR Diver courses, visit the TecRec blog at [www.padi.com/tecrecblog](http://www.padi.com/tecrecblog).



# Rebreather

## Rebreather Diving FAQs

**Q. Which units may be used in PADI Rebreather courses?**

A. PADI will maintain a register of rebreathers that manufacturers have specified meet the key features of a Type R (recreational) or Type T (technical) rebreather and have successfully undergone internationally recognized third-party testing against an appropriate standard such as EN14143. Only rebreathers that have been included in this central register can be used for PADI Rebreather courses. Find out which units are on the register via the PADI Pros' Site.

**Q. Can CCR units be used in PADI courses other than rebreather courses?**

A. Yes, 1) in most courses, as long as course performance requirements can be met when using the unit, and 2) if the rebreather is listed on the register (see above), and 3) if divers have appropriate rebreather credentials. Rebreathers may not be used in PADI Discover Scuba Diving programs, PADI Scuba Diver, Open Water Diver or Instructor Development Courses.

**Q. What PIC do I use to certify PADI Rebreather divers?**

A. Only PIC Online is available for processing PADI Rebreather diver certifications as it simplifies the process of selecting the specific rebreather unit used during the course. Note that divers can earn multiple certifications if they complete training on one unit, and take a PADI Rebreather Qualifier program on other units.

**Q. If I'm not a tec or rebreather diver, do I need to know about how rebreathers function?**

A. Yes, PADI Professionals should be informed and stay-up-to-date on diving technologies even if you're not a tec or rebreather diver. This will help you understand and prepare for all types of different equipment configurations you may come across such as rebreathers, long hose configuration, etc., and emergency procedures to employ when supervising divers using this equipment.

Look for a rebreather orientation to be released soon that you can use to teach rescue divers, divemasters and instructor candidates about rebreathers. Additionally, read through the PADI Rebreather materials to get insight and find more information. Other resources are *The Undersea Journal*, the TecRec blog at [www.padi.com/tecrecblog](http://www.padi.com/tecrecblog), as well as other diving periodicals/websites.

## Standards Changes

### PADI Standards Changes

Please make the following revisions to your professional manuals, effective immediately:

#### **PADI Instructor Manual**

Open Water Diver Course Instructor Guide

Section One, Course Standards, Course Subsets —  
Delete this section and replace with:

**Course Subset**

PADI Scuba Diver is a subset of the Open Water Diver course. See PADI Scuba Diver Instructor Guide for PADI Scuba Diver standards.

**Note:** The Open Water Diver – Controlled Environment certification is being discontinued due to lack of interest.

Adventures in Diving Program Instructor Guide

Section One, Course Standards, Diver Prerequisites — delete last part of the third bullet and delete fourth bullet:

- 12 years old to participate in all other Adventure Dives, ~~except the Enriched Air Adventure Dive.~~
- ~~15 years old to participate in the Enriched Air Adventure Dive.~~

# Standards Changes

## PADI Instructor Manual

### General Standards and Procedures Guide

- Delete the “Controlled Environment” definition and subsequent text.
- Key Standards, Summary of PADI Specialty Diver Courses – change Enriched Air Diver minimum age prerequisite from 15 to 12.
- Under the Open Water Dive definition, add the new text (second paragraph) below:

### **Open Water Dives**

Open water is a body of water significantly larger than a swimming pool offering conditions typical of a natural body of water encountered by divers.

Within this definition, there are certain sites (very large aquariums and specifically-constructed environments designed for recreational diving, for example) that provide conditions typically associated with natural bodies of water, such as appropriate depths for diving, the ability to plan and experience a dive, bottom contour and composition, water temperatures representative of the open water dive experience, and/or others. Sites having such attributes can be appropriate for conducting the following PADI open water dives:

- Discover Scuba Diving dive(s)
- PADI Scuba Diver dives
- Open Water course Dives 1 and 2
- Specialty course dives that have an Open Water Diver (or lower) prerequisite

**Note:** Certain manmade sites are equivalent to open water for conducting some PADI open water training dives as listed. For example, PADI Instructors may conduct Open Water Diver course Dives 1 and 2 (and issue PADI Scuba Diver certification or referral) in man-made environments that fit within this definition. In this example, student divers may choose to complete PADI Open Water Diver Online, all confined water dives, take the first two open water dives at one of these sites, and complete the last two dives at a more traditional open water site for Open Water Diver certification. When local dive sites are inaccessible or conditions undesirable, this option can be useful to further training, maintain diver skill-level and interest, and to provide a quality dive experience.

## PADI Course Director Manual

### Standards and Procedures section

Equipment, add:

Semi-closed and closed circuit rebreathers are not used during the IDC.

**Note:** The IDC trains instructor candidates to teach and work with divers learning open circuit diving. PADI Rebreather Instructor is a higher level of attainment than Open Water Scuba Instructor.

## PADI Public Safety Diver Course Instructor Guide

Student Diver Prerequisites, add underlined text:

2. Certified as a PADI Rescue Diver or have a qualifying certification from another training organization. Training may be completed along with the PADI Public Safety Diver course.

**Note:** PADI Rescue Diver training may be conducted before or in conjunction with the Public Safety Diver course, and is now an exit requirement.

3. Proof of affiliation or employment with a public safety team (law enforcement, fire fighting, paramedic, EMT, dive rescue team, etc.).

**Note:** Affiliation, in this case, means that the diver has an association or relationship with a public safety dive team; has documented plans to form a public safety dive team in the near future; or, is training to qualify for a public safety team.

## Pros' Site Multilingual Log in Help

Beginning in April 2011 the PADI Pros' Site has self-help guides available in a number of languages on the log in page. Currently, the guides are available in Dutch, French, German, Italian, and Spanish.



# Training

## Training FAQ

**Q: May scuba cylinder systems buoyed at the surface (such as SNUBA and TOOKA) be used instead of traditional scuba equipment configurations during the PADI Discover Scuba Diving program?**

**A:** No. The PADI Discover Scuba Diving program is designed to allow people to try diving using traditional scuba units.

If you would like to offer experiences to clients using scuba cylinder systems buoyed at the surface, these experiences must be separate from PADI programs, for these reasons:

- PADI has no programs designed for use of these units.
- PADI Discover Scuba Diving equipment and performance requirement can't be met while using these units.

If you offer diving experiences on these units, follow the manufacturer's requirements and recommendations in terms of operation, maintenance and how to conduct an orientation to the unit. If you have questions about insurance coverage for these experiences, contact your PADI Regional Headquarters.

**Q. If a diver wants to complete only one Adventure Dive, is the diver required to have all materials as listed in the Adventures in Diving Program Instructor Guide?**

**A.** Yes. Student divers must have all required materials even if participating in a single Adventure Dive. A diver receives credit for the Adventure Dive when all dive performance requirements are met and the Knowledge Review is complete. Knowledge Reviews are located in the PADI *Adventures in Diving* manual, *Multimedia* or Online, and student divers are also required to have the Deluxe Data Carrier and a log book for use during and after the course.

An alternative is to have the diver enroll in the corresponding specialty diver course and complete the course Knowledge Review and complete Dive 1, which credits as an Adventure Dive. Bear in mind, however, that if either the PADI Enriched Air Diver or Digital Underwater Photographer specialties are chosen, those divers, too, must have their own personal student manuals for the related course as that is a requirement.

**Q: Does an instructor candidate need to have the divemaster slates that come with the PADI *Divemaster Manual*?**

**A.** Yes. All core course manuals and the slates that come with them are required materials for the IDC.

**Q. Does an instructor candidate need to have the new cue cards for the divemaster course?**

**A:** Yes, effective immediately (if available in a language the candidate understands). When the divemaster course was revised last year, new cue cards were developed for the instructor to use while teaching the course. Instructor candidates must have a personal set of the new divemaster course aquatic cue cards as stated in the Standards and Procedures section of the PADI *Course Director Manual* – Instructor Candidate Materials.

**Q. Do certified divers taking the PADI Scuba Review program complete the PADI Medical Statement?**

**A.** Yes. Reference the Scuba Review Instructor Guide in the PADI *Instructor Manual*, Program Standards under Forms, which states that you follow General Standards and Procedures documentation procedures. This means that Scuba Review participant complete the PADI Medical Statement and PADI Safe Diving Practices Statement of Understanding; and, because they are certified divers, the Certified Diver Experiences Programs Liability Release and Assumption of Risk Agreement.



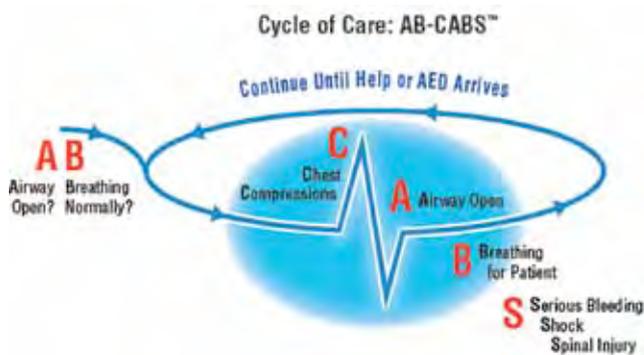
# Emergency First Response

## Revised EFR Primary and Secondary Care Materials

As with previous guidelines changes, the release of the 2010 ILCOR (International Liaison Council on Resuscitation) Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care has seen Emergency First Response® revise and update its existing materials. These are soon to be released. The main change you'll notice is the creation of an internationally compatible EFR Instructor Guide, participant manual, video and Care at a Glance reference.

The ability to create internationally compatible products is a result of increased agreement between many of the ILCOR member resuscitation councils. Great emphasis on early and effective chest compressions is the main thrust of Guidelines 2010. Rescue breaths now follow chest compressions in all regions.

The traditional ABCs order of priority care has been adjusted to AB-CABS™. The new memory word first prompts responders to perform a quick patient check, noting an open **A**irway and normal **B**reathing, as before. If the patient is found to be unresponsive and not breathing normally, a responder delivers chest **C**ompressions, opens the **A**irway, and delivers rescue **B**reaths. The "S" portion of the CABS mnemonic reminds responders to also check for **S**erious bleeding, **S**hock and **S**pinal Injuries on responsive patients. The care priority steps outlined in AB-CABS is graphically represented in EFR's Cycle of Care.



Translations of the new materials will be prioritized where existing regional materials are outdated. In the meantime, current translated participant manuals have been updated with errata containing all of the Guidelines 2010 changes and are therefore valid for the immediate future in their current format, until revised materials become available.

The new materials will be available third quarter. You may still use existing stock of materials by incorporating the 2010 Guidelines changes into skills practice as outlined in the First Quarter 2011 *Training Bulletin* and Fourth Quarter 2010 *Responder*. Revised Care for Children and workplace program materials will be coming next.



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# RISK MANAGEMENT

## Training Scuba Divers: A Fatality and Risk Analysis

As presented by Dr. Drew Richardson at the 2010 DAN Diving Fatality Workshop

BY JOHN KINSELLA



The bottom line: Participant safety should be placed above all other objectives.

In the last two issues of *The Undersea Journal*, Risk Management articles over-viewed Dr. Drew Richardson's paper "Training Scuba Divers: A Fatality and Risk Analysis" and took a detailed look at one of three study areas: Fatalities occurring during PADI-sanctioned training or under supervision of a PADI Member while enrolled in a non-PADI program. Continuing this analysis, the two other study areas – diving fatalities occurring outside of PADI-sanctioned training programs and involving a PADI-certified diver and fatalities involving a PADI diving professional (Divemaster / Assistant Instructor / Instructor) while at work – are examined here.

### DIVING FATALITIES OCCURRING OUTSIDE OF PADI-SANCTIONED TRAINING PROGRAMS AND INVOLVING PADI-CERTIFIED DIVERS

This section looks at a total of 806 fatalities for the two 10-year periods researched. Attempting to accurately quantify the number of PADI-certified divers active during these periods is challenging at best, and is itself the subject of much debate.\* Subsequently, a reliable denominator could not be determined and fatality rates could not be calculated. However, a marked increase in the total number of certifications issued in the second period (11,568,983 compared to 5,655,142, or close to a 205 percent increase) was noted, without a corresponding proportional increase in fatalities (290 compared to 518, or close to a 178 percent increase). These

\* See Al Hornsby's paper "Models For Estimating the Diver Population of the United States: An Assessment" in the 4<sup>th</sup> Quarter 2010 *The Undersea Journal* for the definitive take on estimating this denominator and on the challenges involved. Hornsby is Senior Vice President of PADI Worldwide, and presented this paper at the 2010 DAN Diving Fatality Workshop.

numbers are useful for comparison only, and while they do *not* represent the population studied, they *are* good indicators of increasing dive activity and an apparent improvement in the fatality rate.

Again, for both periods, drowning, “unknown” and cardiac events are the three biggest causes of death. There is significant consistency here across all study areas and, while PADI Professionals will clearly have less direct influence on this population of divers (because they are not in training), emphasizing safe diving practices and dive fitness is always appropriate.

Speaking of fitness, Richardson notes the median age for cardiac events rises from 50 to 55.5 from the first period to the second. While it is not possible to accurately infer an overall improvement in health from this data, it is reasonable to say that this isn’t bad news.

### FATALITIES INVOLVING A PADI PROFESSIONAL (DIVEMASTER / ASSISTANT INSTRUCTOR/ INSTRUCTOR WHILE AT WORK

This section looks at a total of 22 fatalities for PADI Professionals at work over the two 10-year periods researched. The fatality rate for the first period (1989-1998) is 1.4 per 100,000 PADI Members and it drops to 1.1 per 100,000 for the second period (1999-2008). This is more good news and an indication a decreasing fatality rate among PADI Professionals.

Richardson includes some significant detail on individual cause of death for this group, which is detailed in the sidebar. This makes for some sobering reading and is worth reflection for a few reasons: Yet again, the “big three” of drowning, unknown and cardiac are confirmed. The details also shed some light on why the

“unknown” category features so prominently: in many cases, it’s just not possible to say with any certainty what happened. Deep diving is a factor in several cases and warrants careful planning and consideration (as addressed in the 2<sup>nd</sup> Quarter 2011 edition of *The Undersea Journal*). The particulars in many of the descriptions speak for themselves and contain valuable lessons for people who take the time to read them.

After reviewing, examining and analyzing this vast amount of information over a series of articles, it would be hard to conclude any better than Richardson himself does in the last sentence of the paper: “While we may never be able to reduce the number of scuba diving-related fatalities to zero, as a community, we must never cease in our efforts to strive toward this goal.”

### FATALITIES OCCURRING OUTSIDE OF PADI TRAINING

(1989-1998) 5,655,142 total certifications during this period		
Highest Certification or Program	Number	
Discover Scuba Diving	1	
Open Water Diver/ Junior Open Water Diver	158	
Advanced Open Water Diver	58	
Wreck Diver	1	
Rescue Diver	27	
Master Scuba Diver	1	
Divemaster	15	
Assistant Instructor	3	
Open Water Scuba Instructor	22	
Master Scuba Diver Trainer	2	
Master Instructor	1	
Unknown	1	
<b>Total</b>	<b>290</b>	
Cause of Death	Number	Percentage of
Drowning	113	39%
Unknown	97	33.40%
Cardiac	41	14.10%
Embolism	29	10%
Boat Propeller	6	2.10%
Asphyxiation	1	0.30%
Asthma	1	0.30%
Decompression Sickness	1	0.30%
Shark Attack	1	0.30%

(1999-2008) 11,568,983 total certifications during this period	
Highest Certification or Program	Number
“Resort”	2
Scuba Diver	2
Basic Scuba	4
Open Water Diver/Junior Open Water Diver	188
Adventure Diver	1
Advanced Open Water Diver	120
Wreck Diver	1
Dry Suit Diver	2
Enriched Air Diver	5
Arch Research	1
Cavern Diver	1
Rescue Diver	36
Master Scuba Diver	7
Divemaster	29
Assistant Instructor	2
Open Water Scuba Instructor	21
IDC Staff Instructor	1
Master Scuba Diver Trainer	10
Master Instructor	3
Course Director	1
Tec Deep Instructor	1
Unknown	78
<b>Total</b>	<b>518</b>

Cause of Death	Number	Percentage
Unknown	216	41.70%
Drowning	166	41%
Cardiac	84	16.20%
Embolism	32	6.20%
Boat Propeller	8	1.50%
Decompression Sickness	2	0.40%
Aneurism	1	0.20%
Anoxia and Hypercapnia	1	0.20%
Asthma	1	0.20%
Blood Clot - Lungs	1	0.20%
Cerebral and Pulmonary Edema	1	0.20%
Contaminated Air	1	0.20%
Pneumothorax	1	0.20%
Respiratory Distress - Pulmonary Edema	1	0.20%
Ruptured Ulcer	1	0.20%
Shark Attack	1	0.20%

For more detail, please go to the PADI Pros’ Site.

# QUALITY MANAGEMENT **STATS**

[FIRST QUARTER 2011]

Each quarter, PADI Worldwide publishes its quality management activities in the Quality Management Report. This feature reports the number and types of quality management investigations and actions conducted by the Quality Management Department and Committee. It publicizes the names of individuals who have been expelled from PADI membership due to gross violations of PADI Standards or ethics. (See the listing on padi.com for PADI Members who are presently suspended.) The following statistics reflect the worldwide membership, including PADI Offices and international territories.

Members Expelled.....	5
Members Suspended .....	1
Members Retrained or Reoriented .....	8
Members Terminated.....	1

### Breakdown By Type of Retraining/ Reorientation Required

IDC/IE.....	1
OWSI/IE.....	1
IDC or OWSI .....	0
Status Update.....	6
Members Placed in Review Status.....	36
Standard Compliance Agreement .....	110
Members Requiring Counseling.....	100
Closed With No Further Action .....	156

**TOTAL.....417**

### MEMBERS EXPELLED FROM PADI:

#### January - March 2011

Stephen Darling [MSDT - 463861],  
*Raki Raki, Fiji Islands - 13 January 2011*  
Pola Pangalu [EFRI - 271830],  
*Raki Raki, Fiji Islands - 13 January 2011*  
Morito Asai [MI - 107757],  
*Saipan, Northern Mariana Islands - 10 March 2011*  
Jose Acosta [AI - 239926],  
*Columbus, Georgia, USA - 24 March 2011*  
Carlos Torres Ramirez [DM - 272568],  
*Tulum, Mexico - 24 March 2011*

### MEMBERS SUSPENDED FROM PADI:

#### January - March 2011

Tyler Newell [MSDT - 261448],  
*Honolulu, Hawaii, USA - 10 February 2011*

### SPECIAL NOTICES:

#### January - March 2011

Pedro Paulo Guzman Greene [DM - 242221],

*Santiago, Chile*

Is not a current PADI Member at any level and has not been since 2009.

Aquastrophics, USA. Please note that David Holt, Aquastrophics, SDA (Scuba Divers of America) and OnlineScubaLessons.com have never been PADI Members. Please also note that the academic program offered by these three entities is not valid for PADI Open Water Diver referrals nor certification. (WRSTC Posting 03 Apr 2006: "At a recent meeting, the members of the recreational Scuba Training Council determined it was important to provide collective clarification regarding agency-neutral on-line training programs. Over the past two or three years a number of websites not affiliated with a training agency have launched on-line scuba training programs. On these sites, the customer is led to believe that all training agencies will accept these programs to meet their academic requirements for scuba training. This is not correct. Because of concerns about the educational validity of these programs and the inability to monitor the quality of education and services, as well as liability and insurance issues, each RSTC member organization has independently determined it cannot accept these non-affiliated training programs to meet its academic requirements. Before customers sign up for any on-line training program, they should first check with the retail store, instructor or training agency, they wish to receive certification through to verify if that on-line program is acceptable for meeting the training agency's requirements.")

## LEDs Promise a Brighter Future

It is always exciting to me when *The Undersea Journal* theme is the environment. While we face many problems related to environmental health, we also see innovations and solutions that promise a positive future. It's my belief that the PADI family has a role in this, and that we're accountable for taking that role on. It starts with setting good examples for the dive community at large, but PADI Members and offices are already doing more than that.

Since my education and expertise aren't in environmental science, it would be naive and inappropriate for me to suggest what PADI Members *should* be doing. The reports that come in from the Regional Managers and the Project AWARE Foundation show that you and your colleagues are ahead of the curve in many ways when it comes to the environment; I salute your initiative and creativity on behalf of the underwater world. Honestly, I suspect I have more to learn from you than you from me in this area.

That said, there's *one* area in which I feel particularly qualified to make some suggestions. If you'll excuse the pun, I'd like to shed some light on the topic of LEDS and CFLs. In the last *Dive Industry News*, you may recall, I related that a flood wiped out my house and that it's being reconstructed, literally from the ground up.

As you'd expect, before the flood, almost all of our incandescent light bulbs had been replaced by LEDS – and now, they *all* are. But before we entirely condemn incandescent bulbs because of their

poor energy use, an article I ran across in *IEEE Spectrum Magazine* by Brian Bowers reminds us that the incandescent bulb was exactly what we needed 130 years ago when it emerged. It arose in the gas-lamp era when public safety and soot were issues. The emergence of the telegraph and telephone and the rise of internal combustion created the fertile environment for the development and demand for the incandescent light bulb.



Although a brilliant invention (pun intended), its energy efficiency is deplorable by modern standards. The efficiencies of bulbs are measured by a rating called Overall

Luminous Efficacy. The standard incandescent 60-watt bulb has an OLE of 15 and a new LED has an OLE of about 65. In other words, an LED is about 333 percent more efficient than an incandescent. And it's not just the electricity you save creating light – in the warm months, you also save the electricity required to keep your house cool. The typical US home has 45 lights; if you have half of them on and they're incandescent, that's like having two 1200-watt hair driers running.

To quote Bowers, "Even if you're not particularly worried about global climate change, the needless electricity expense should give you pause."

At this point, you may wonder why I'm not singing the virtues of the CFL (Compact Fluorescent Light) bulb, which is also more efficient than incandescent, yet costs a lot less than the LED. CFLs have been a good "gap-closer" as household LED technology catches up, and they have reduced energy consumption and fossil-fuel emissions dramatically. Indeed, thanks largely to the CFL, several countries such as Brazil, Venezuela, Germany, Austria and Australia are mandating the abolition of the incandescent light. In California where I live, the 100-watt bulb will be extinct by legislation

and the CFL, and people are actually hoarding the product (exactly *why* escapes me).

But the CFL has down sides compared to the LED. First, it also generates heat – not as much as an incandescent, but more than an LED. Second, it has about half the life of an LED. Third, and most significantly, it has mercury, which makes environmentally responsible disposal problematic, especially in some developing markets. LEDS, by contrast, should be disposed of as e-waste, but are much easier to recycle because they lack mercury.

Although LEDS cost more than CFLs, they're a better choice for the environment, and their longer lifespan offsets most of the investment difference. They're also less fragile and, as technology and demand advance, should drop in cost while rising in performance. LEDS have the edge over CFLs in energy efficiency, with their energy advantage likely to increase quickly.

By now, I think you get the point. If everyone reading this article replaced a quarter or half of their incandescent light bulbs with LEDS, it would make a significant difference. Better yet, replace them all. If you've already done this, good for you.

A single LED bulb, over its life, will save a ton of coal in an area supplied by fossil-fuel electricity. In areas supplemented by solar, tidal or wind energy, each LED bulb leaves that much more environmentally friendly power available for other uses, thereby reducing the need to use fossil sources.

So, thank you Mr. Edison, Mr. Grove, Mr. Swan, Mr. Maxim and the other fathers of the incandescent light bulb. You gave us what we needed when we needed it. Please understand as we change them out for a brighter future with LEDS.

Sincerely,

Brian P. Cronin  
Chairman and CEO  
PADI Worldwide



**PADI**<sup>®</sup>  
**padi.com**