



Edited by Peter Symes

# Several new species of orca

*One of the newly designated species preys on seals in the Antarctic while another eats fish*

Tissue samples from 139 killer whales collected from around the world confirm a theory scientists have had for years. Orcas, commonly known as killer whales comprise several different and distinct species.

Specialization in diet and hunting tactics along with differences in markings led marine biologists to suppose that they might be looking at different orca species instead of a single population. One of the newly designated species preys on seals in the Antarctic while another eats fish, said Phillip Morin of the US National Oceanic and Atmospheric Administration's (NOAA) South-west Fisheries Science Centre in La Jolla, California, who led the research.

## DNA

His team sequenced the DNA from the whales' mitochondria, a part of the cell that holds just a portion of the DNA. Mitochondrial DNA is passed down with very few changes from mother to offspring. New sequencing methods finally made it possible to do so, Dr Morin said in a statement.

"The genetic make-up of mitochondria in killer whales, like other cetaceans, changes very little over time, which makes it difficult to detect any differentiation in recently evolved species without looking at the entire genome," he said.

"But by using a relatively new method called highly parallel sequencing to map the entire genome of the cell's mito-

chondria from a worldwide sample of killer whales, we were able to see clear differences among the species." The team looked at orcas living in seven ecological niches around the world identifying each group as an ecotype.

## At least three species

On the basis of ecotype behavior and the new DNA data, the two Antarctic orca groups that eat seals and fish should be recognized as distinct species, as should the North Pacific transients, Dr. Morin's group concluded in a report published this month by Genome Research. The other ecotypes should be regarded as subspecies pending further data, they said.



Related studies led by Andy Foote from the University of Aberdeen, show that there are two distinct species of killer whales in the waters around Britain. Samples were taken from 62 killer whale skeletons kept at sites including the Natural History Museum in London and the National Museum of Scotland

Some skeletons were hundreds of years old while other samples died in 2008. The length of each whale and whether their teeth had been worn down were also noted in the study. In the wild, killer whales that eat herring and mackerel display the tooth wear while those that are thought to eat marine mam-

mals, such as small dolphins and whales, had virtually no tooth wear.

NOAA has designated a population of killer whales that lives in the Pacific off the coast of Washington state as endangered.

In Association with Olympus Dive Center

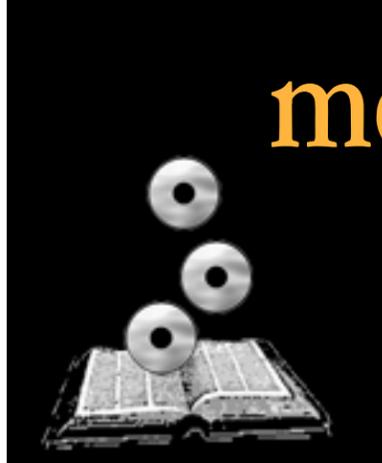
# ELASMODIVER Presents: SHARKFEST

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Dying Struggles of the Spermaceti Whale. Image Date 1837

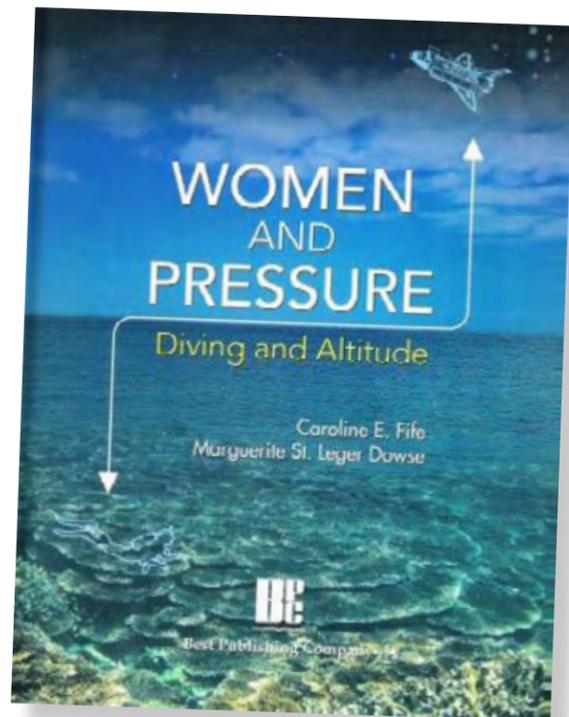




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## Dive into the gender gap

Readers with interests in the scientific aspects of diving have a must-get book to put on their shelves in *Women and Pressure: Diving and Altitude* from Best Publishing Company. In the 400-page hardcover, Caroline E. Fife and Marguerite St. Leger Dowse assemble articles on the similarities and differences between men and women working in hyperbaric conditions. It grew out of a 1986 Undersea and Hyperbaric Medicine Workshop chaired by Fife's husband William, who died in 2008 and to whom the authors dedicated their work. Its 27 chapters are divided into sections on decompression illness, human factors and the workplace. Chapters are articles written by scientists with expertise in their various fields such as

pathology of DCI, physiology of cold-water diving, health standards, combat pilots or underwater archeology. Each author supports the findings with data from studies, often presented in tables and graphs, and heavily footnoted sources of information. Many end with a summary or a list of key points that identify what is known, and often more intriguing, what has yet to be learned about the topic. Profiles of pioneering women and a comprehensive index that eases cross-referencing topics close the book. Fife is a consultant to NASA's Johnson Space Center Neutral Buoyancy Lab and an advisor for Divers Alert Network. St. Leger Dowse is a mainstay in England's Diving Diseases Research Center and is the only person to twice receive British Sub Aqua Club's Duke of Edinburgh prize.

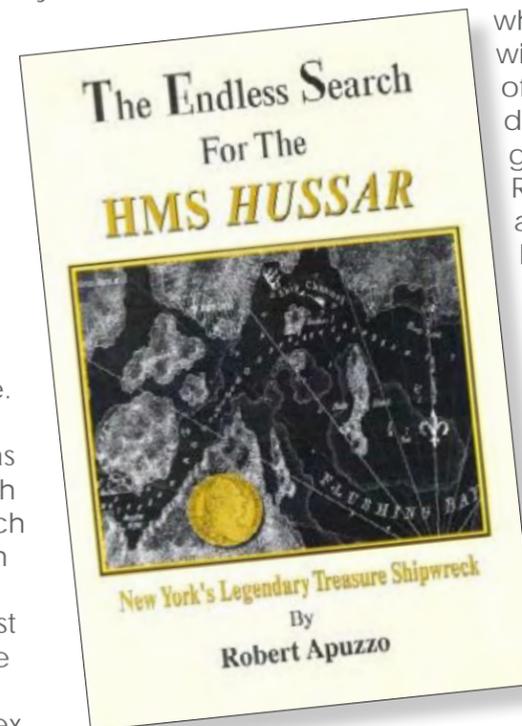
ISBN: 978-1-930536-54-8. [www.bestpub.com](http://www.bestpub.com)

## Read an unsolved mystery

Robert Apuzzo has provided a real service for historians, wreck divers and media junkies by pulling together *The Endless Search for the HMS Hussar*, a 154-page soft cover from R&L Publishing. The British Revolutionary War ship sank on 23 November 1780, after striking a rock in a current-raked narrow

stretch of water known as Hell's Gate, where New York's East River connects with Long Island Sound. It carried scores of shackled American prisoners to their deaths and, rumor holds, a fortune in gold and silver to pay British troops in Rhode Island. Apuzzo, an amateur archeologist and a New York history buff, collected articles dating from 1780 through 1985 from local newspapers and magazines about the *Hussar*, its wreck and many of the attempts to find the ship to salvage its rumored treasure. The articles provide glimpses of the people and society in their day. Since they're reprinted verbatim, the articles also show fluctuations in spelling and phrasing that occurred as the King's English evolved into an American language in the United States. Woodcuts and historic black and white photos illustrate the text. The gear images

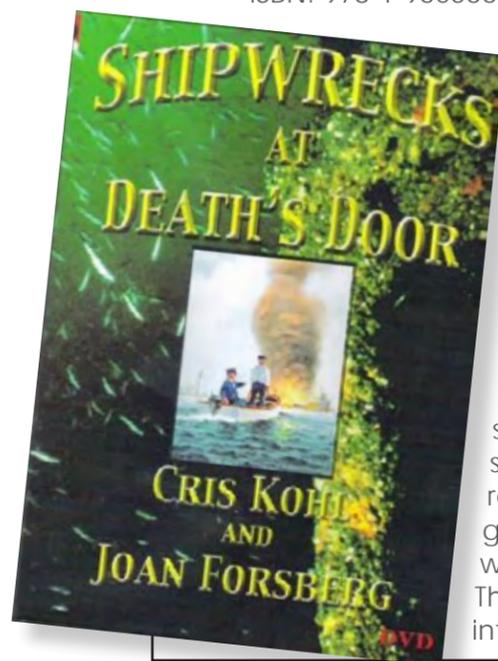
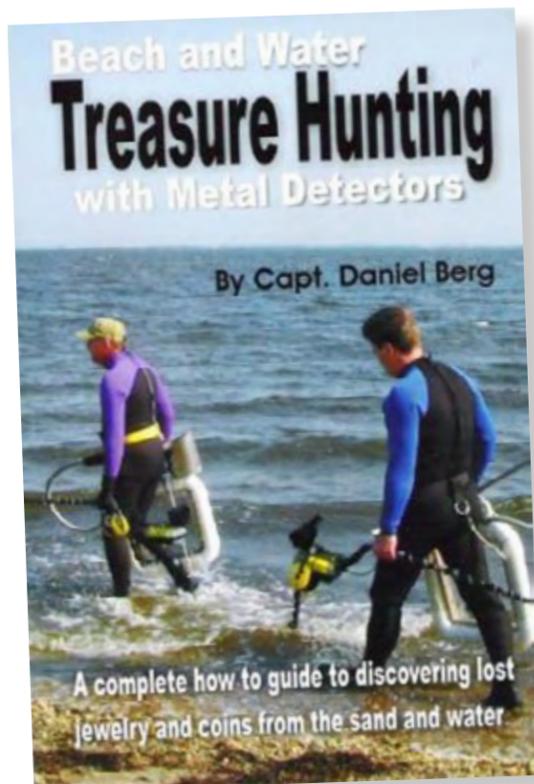
especially instill an appreciation for modern scuba kits. Despite attempts by hundreds of amateur and commercial salvors, no one has yet to find the jackpot if indeed there is one, so the final chapter of this mystery has yet to be written. ISBN: 978-0-9629913-2-5. E-mail the author at [ERI101@aol.com](mailto:ERI101@aol.com).



## A book to treasure

Captain Daniel Berg has developed a handy guide to help divers and non-divers find more fun and valuables in and around the water. *Beach and Water Treasure Hunting With Metal Detectors* from Berg's Aqua Explorers publications is a slim soft cover. Yet, its 68 pages cover anything a neophyte needs to know to get started looking for treasures at beaches and at depth. It starts with descriptions of the various detectors' features, explaining which are useful where. He then suggests techniques that could improve the odds of returning from an outing with valuables instead of bottle caps and very historic pop-top aluminum can openers. The book is illustrated throughout with gem-studded

rings, coins that are hundreds of years old and other artifacts, many recovered by his hunting buddy and fellow diver Mike McMeekin. The only thing lacking is an index, but it's hardly needed because of the good organization of the chapters. This is the most recent in a line of diving books that are available in many dive shops or on-line as eBooks or PDF downloads. ISBN: 978-0-557-14768-7 [www.aquaexplorers.com](http://www.aquaexplorers.com)



## Relax to a view of Death's Door

Thanks to Great Lakes historians, Cris Kohl and Joan Forsberg, wreck divers can get a sense of visiting Lake Michigan's best sites by popping *Shipwrecks at Death's Door* into the DVD player. The 45-minute video draws its name from the series of islands and shoals interspersed with deep water that form passages into Green Bay, Wisconsin, USA. Opening shots from the deck of a ferry making way in rough seas through a snowy late-fall gale give viewers a sense of the fury captains face when the inland freshwater ocean turns ugly. Threading their vessels through the passages into the relative calm of Green Bay offered

their only chance for survival. Many didn't make it and now make the region a prime destination for diving. About one-third of the time is spent underwater with images by the authors as well as Kim Brungraber, a local diver and author. Kohl and Forsberg alternate narrating the video adding variety to the presentation, which is so packed with facts and anecdotes that it must be viewed several times to catch its content. Their stories of the ships and the people who sailed them add warmth to the tragedies that happened on cold seas. They also call attention to the many museums, pubs and quaint towns to visit during surface intervals. The DVD is a companion to their newly released book of the same title, which will be reviewed in an upcoming Book Log column. No ISBN. [www.seawolfcommunications.com](http://www.seawolfcommunications.com)



tech talk

# Wetsuits *Hot or not?* *How far have we come?* anno 2010

Today's modern wetsuit embodies technology that benefits divers with an abundant choice of options to fit most any size and shape of diver, and any style of diving activities from mild tropical to very cold water.

Text by Wayne Fenior

Waterproof's new W1 suits are a good example of how far contemporary wetsuit design has come



## Birth of the wetsuit

Would you consider building your own wetsuit straight from raw materials? It hasn't been that long back in diving history when this option was widely utilized by divers trying either to save a little cash, or to get a closer custom fit. The materials and patterns were available from several dive suppliers. Fortunately, the choices now are better than ever for choosing your next perfect wetsuit.

Today's modern wetsuit embodies technology that benefits divers with an abundant choice of options to fit most any size and shape of diver, and any style of diving activities from mild tropical to reasonably cold water.

Wetsuits have long been one of the distin-

guishing marks of the scuba diver, along with our other gear like tanks, masks, and fins. But even as we've seen remarkable development over the 50-plus years of our sport, the underlying principles remain the same when considering the modern wetsuit: it must isolate and insulate.

The materials have evolved dramatically over time along with numerous styles and options available to the diver. But still the principle remains that if a suit fits poorly, even though constructed of the warmest and latest high tech materials, the diver will still get cold because of water flush (constantly needing to re-heat the water entering or sloshing around in the suit). The suit that is meant to provide protection from the elements is allowing the elements to flood in next to the diver's skin with every twist and turn of the body and fin kick.

## Poly... erh!?

Polychloroprene, invented by DuPont scientists in 1930 and originally called Duprene, was the first mass produced synthetic rubber; and eventually branded as Neoprene.

In its raw unmodified form, its characteristics and insulating properties are very similar to rubber—the same substance earliest wetsuits were constructed from. By foaming the base polymer with nitrogen gas bubbles, the insulation properties greatly improve. Since the early 1970's, what we now know as neoprene has completely replaced rubber for the suits we wear today.

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Flashback to 1971 and magazine advertisements of the day. Building your own wetsuit straight from raw materials was commonplace among divers trying either to save a little cash, or to get a closer custom fit

WATERPROOF



### Full stretch

New materials in the last few years have given the diver the benefit of “full stretch” neoprene suits, which have spandex added to the material that is able to more closely fit the diver’s body. But a possible liability of these new “super stretch suits” is the temptation for the manufacturer to utilize the materials as a quick fix for poor design. Remember also that as a suit needs to stretch to fit over problem fit areas, the insulation properties become less effective, as the suit becomes thinner. Another potentially dangerous problem that can occur as a diver squishes him- or herself into a suit that is just a bit tight is increased resistance effort in breathing underwater, as the wetsuit constricts the diver’s potential lung volume (remember your first instructor taught you to breathe slightly slower and deeper underwater from a regulator).



Stretch panel on a modern suit



## Wetsuits



*Whenever diving in the ocean, I always recommend my students wear full suits for their protection benefits from scrapes and things that may sting if they get careless.*

James Bond in *Thunderball* (1965) made wetsuits look hot... or not?

### The lightweights

At the lightest end, one and two millimeter suits are available for the warmest tropical waters, and shorties (short sleeves and shorts), for the most tepid conditions. These lightweight suits are effective above 27°C (80°F). Whenever diving in the ocean, I always recommend my students wear full suits for their protection benefits from scrapes and things that may sting if they get careless.

If you will be in the water for extended periods, or if your activity level is going to be low, opt for the heavier suit. Where and when thermoclines are possible, opt for the heavier suit! Even in my native sunny Florida on the same dive site the same day, a dramatic difference



If you will be in the water for extended periods or if your activity level is going to be low, opt for the heavier suit

from morning to afternoon can be seen because of a thermocline that moved over the area. For safety sake, the diver should opt for more insulation, as you can always vent or flush the suit.

### Mediums

Medium weight wetsuits are generally constructed with five millimeters of neoprene. Options for your style of diving include two-piece suits with farmer John/Jane bottoms and jacket style uppers that combine to give you two layers of insulation on your torso, in addition to the now traditional one piece suits.

### The 7mm

For cold water below 21°C (70°F), 7mm neoprene will be necessary for all but the most active divers. It is in this category of suits where the manufacturers have the most opportunity for innovation. In addition to one-piece suits, be sure to

One or two pieces? Advertisement for Collins & Chambers from October 1969



## tech talk

Warm enough?



*For the sake of both safety and comfort, the diver should opt for more insulation, as one can always vent or flush the suit.*

explore your options with two-piece suits and extra thermal insulation layering.

For the coldest temperatures, explore the semi-dry suits, which only allow a small quantity of water to enter the suit. Do your homework and shop well for this purchase, with your priority of properly fitting suit as your ultimate goal.

### The usual evolution

Most divers enjoying our sport today go through a metamorphosis in their thinking and shopping patterns from when they select their original exposure suit to when they vow to never again make the mistake of "buying the cheapest to save money". But the diver who has learned the cold lesson that a quality suit does indeed make a difference in how comfortable they will be underwater, still may not know the questions to ask when choosing their next suit. This article will help you know what to look for along with the proper questions to ask your local dive retailer, as you prepare to shop for that new suit!

### Ask the diveshop

Is this a company specializing in wetsuits? There is more to this question than the apparent answer. Most (if not all) major suppliers

SCUBAPRO

### "Semidry!?"



SEACSUB

Semi-dry is a bit of a euphemism for "less-wet". These suits come with snugly-fitting seals at the wrists, neck and ankles, the purpose of which is to prevent water from leaving the suit as the wearer moves around. This does not mean that the suit is water-tight. The wearer does indeed get wet in a semi-dry suit, but the water that enters is soon warmed up and does not leave the suit readily, so the wearer remains warm. Any residual water circulation past the seals still causes heat loss. But semi-dry suits are cheap and simple compared to dry suits. These suits are usually also made from thicker grades of Neoprene.

of gear have branded suits to go along with their masks, fins, and regulators, and the lion's share of divers are proud to wear a wetsuit emblazoned with their favorite manufacturer's logo. But problems begin when divers are forced to choose between only four common sizes frequently offered (small, medium, large and XL in women's or men's). Remember, functionally, the suit isolates and insulates. If the isolation fails because of improper fitting, nearly no amount of insulation will occur as water continues to pour fresh into the suit.

### What sizes are offered?

You may be lucky enough to fit

FOURTH ELEMENT

## Wetsuits

into one of the four main offered sizes, but chances are that your body type may require more specialization. The premier companies offering exposure solutions will typically offer more options for the close fit (up to 20 or more different sizes). This increases the chance that you will get "your custom tailored fit" without the need to offer a custom built suit in your size (less wait for your size and a substantial savings in cost to the diver).

**What are the layering options?** You can expect to extend your diving season with optional vests, hoods, hooded vests, and even step-in hooded vests. If the suit fits properly, the option of additional layering will insulate the water trapped in the suit from external cooling.

### Warranty?

Typically, the companies specializing in wetsuits will have longer warranties on materials and workmanship.



### What is the construction of the suit?

Usually, a heavier suit will be glued and stitched to prevent water from entering the construction seams. Lighter suits (i.e. 1-3mm) are stitched on-

### What about the kids?

Great care needs to be taken to assure that the same guidelines utilized for adults are afforded even more attention when outfitting children for scuba diving and other water sports. With close fit being the ultimate goal, remember that our little people will lose critical body heat even faster than adults, and if your water babies are typical, having extreme fun in the water will prevent them from looking for an exit long after most adults have reached their cold threshold. Be prepared to try multiple manufacturers' suits, looking for proper fit with no loose bagging along with the proper seals found on adult suits. The investment will keep your kids happier and safer as they enjoy the sport.



IC-COMPANY

ly—fine for tropical diving, but a problem whenever your diving day requires long periods in the water.

### Is the suit anatomically correct versus a flat pattern?

The companies devoted to specializing in

## A neutrally buoyant suit = less lead

Fourth Element's Thermocline neutrally buoyant system represented an evolution in thermal protection, using state of the art materials to maximize performance without compromising on comfort. The Thermocline neutrally buoyant wetsuit system is comprised of the long-sleeved top and the "explorer" and offers the equivalent protection of a 3mm wetsuit but weighing less than 1kg (2.2 lbs). Thermocline also provides a real solution for people who suffer from neoprene allergies by eliminating contact between the skin and the wetsuit.



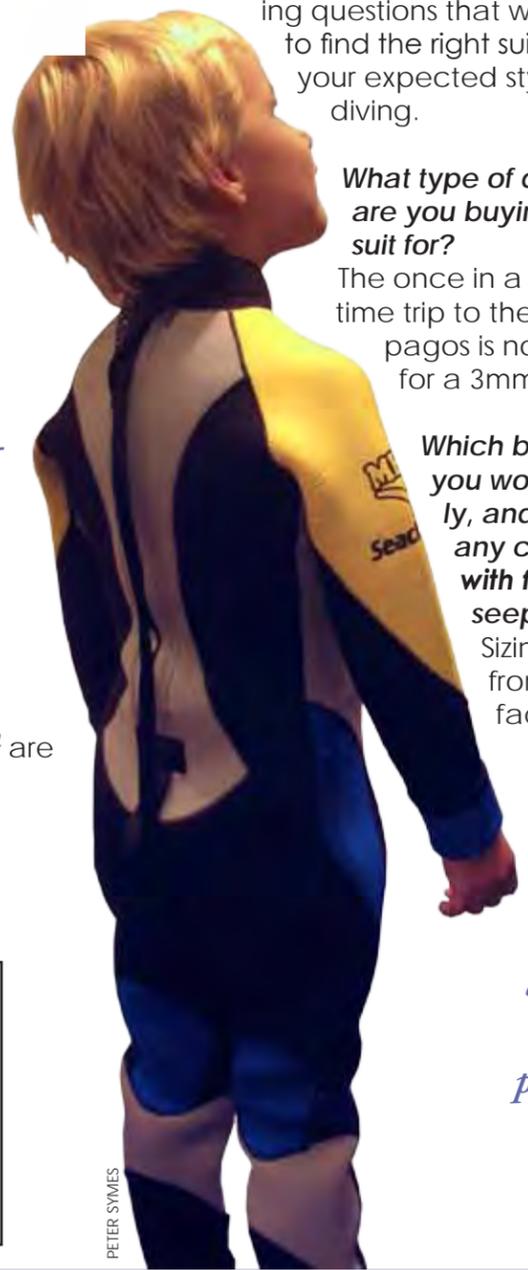


# Wetsuits

exposure suits offer their large variety of sizes based on an anatomical three-dimensional fit. When the suit fits correctly, there is very little (if any) slack areas where body mass fails to fill out the suit. These slack areas invite larger quantities of water to collect and slosh around in the suit, drawing more body heat and energy from the diver.

### See your local retailer

It seems easy enough and tempting just to surf the internet hunting for the best price and the nicest looking suit. What the diver is missing out on is the expertise gained typically over many years as a dive professional. Your retailer should ask you revealing questions that will help to find the right suit for your expected style of diving.



PETER SYMES

Is the suit three-dimensional or just made up of flat panels?

*Slack areas invite larger quantities of water to collect and slosh around in the suit, drawing more body heat and energy from the diver.*



WATERPROOF

### Reflective linings

Australian manufacturer Radiator led the way in developing multilayered wetsuits. The Radiator suits combines four layers one of which is a reflective titanium coating that acts as a highly efficient barrier to the outside cold. [www.radiator.net](http://www.radiator.net)

### What type of diving are you buying the suit for?

The once in a lifetime trip to the Galapagos is no place for a 3mm wetsuit.

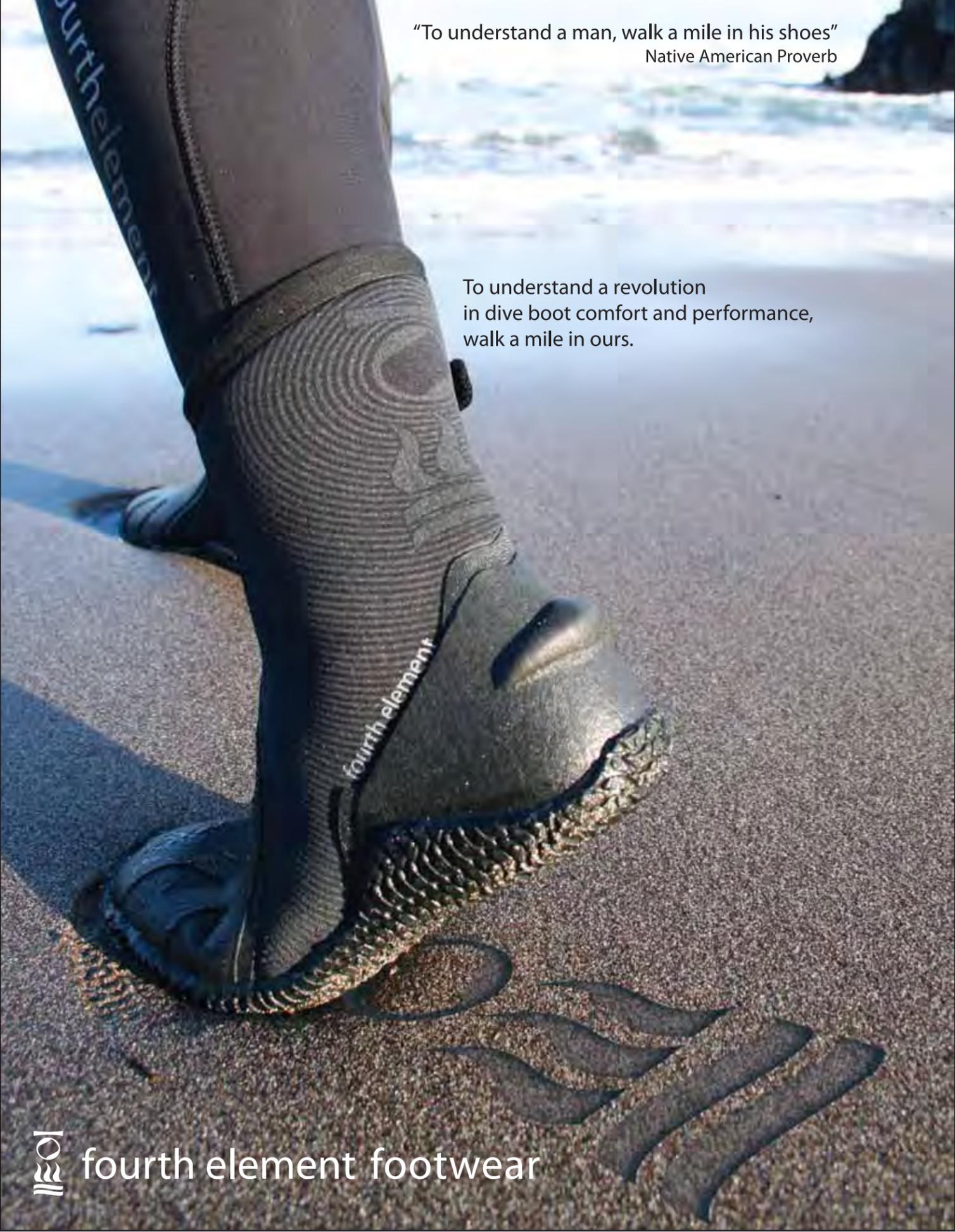
### Which brands have you worn previously, and were there any challenges with fit, flush or seepage?

Sizing charts from manufacturers

*Do your homework and shop well for this purchase, with your priority of properly fitting suit as your ultimate goal.*

“To understand a man, walk a mile in his shoes”  
Native American Proverb

To understand a revolution in dive boot comfort and performance, walk a mile in ours.



**fourth element footwear**



# tech talk

Sun and salt takes it toll. Rinse well while your are out and hang to dry in a cool, airy and shaded place when you get home



PETER SYMES

helpful for finding your best fitting size, but they are only a guideline. Your retailer should help you in the fitting process to insure that your new wetsuit will fit well, so that you can stay warm.

### Care

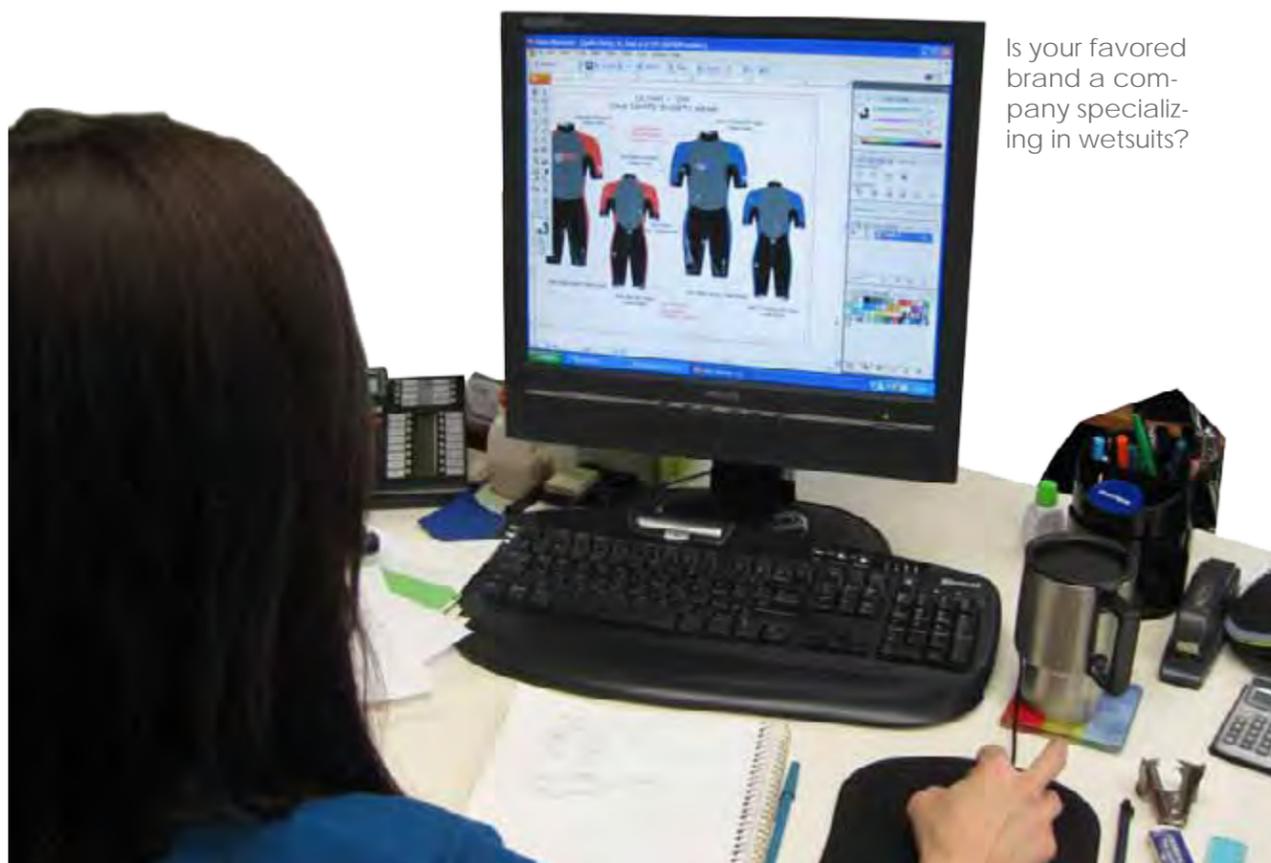
Neoprene will eventually fail as the material breaks down and nitrogen bubbles in the materials are crushed, broken and diminished. Rinsing your suit in fresh water after usage and drying out of the sun will keep the suit newer for a longer period of time.

I have certain associates that are in the water nearly every day with students, and they regularly will run their wetsuits through the washing machine on the gentle cycle with cold water and a mild detergent. Suit life is greatly extended by this practice, they have reported. Wetsuits should then be stored hanging loose to prevent crushing of the neoprene, in a dry cool place guarded from sunlight.

### Wetsuit hygiene

A topic typically untouched by a lot of instructors is wetsuit hygiene, or more specifically the sound advice of not urinating in your wetsuit. A lot of divers will argue the point, but remember one of the functions of the suit is to isolate. As a good parent, I hope you wouldn't let your child sit for hours in a wet diaper, and it goes without saying, that I have seen what appears to be diaper rash on a few divers in my day. The practice of more and more dive centers today is the option not to rent wetsuits because of health issues. For those still wishing to rent, the vehicle rental practice is certainly worth considering: "An accident is as good as a sale." ■

*As a good parent, I hope you wouldn't let your child sit for hours in a wet diaper, and it goes without saying, that I have seen what appears to be diaper rash on a few divers in my day.*



Is your favored brand a company specializing in wetsuits?

## Stats from our survey

Some interesting facts about your fellow divers wetsuit usage:

● *What percentage of your dives in the past two years were made without a wetsuit?*

Only 3% answering said none, with an overwhelming 52% answering 90-100% of the time.

● *What are the water temperatures in which you conduct most of your dives?*

Above 25°C/77°F for 30% of the majority, then diminishing with the water temp colder.

*Many thanks to everyone who participated in our online survey and helped us prepare this article.*

● *What pieces of thermal protection do you own?*

The highest percentage was the 3mm one-piece suit, with 61% of the respondents owning this suit. In second place was the 3mm shorty at 45%, and the least popular was the 5mm two-piece.

● *What are the most and least important criteria you use in choosing a suit?*

35% responded that price was most important; 25% said that their instructors opinion was least important; 26% said a friend's opinion was least important. Fit was overwhelmingly the strongest criteria for choosing a suit by 79% of the respondents. ■



# The latest & coolest

Some of the

Some two months prior to going to press, we wrote all known manufacturers of wetsuits asking them to supply us with information and images on the latest models. Some did, others didn't

## SeacSub SkinFlex

"300% stretch," boasts the Italian manufacturer. In a dynamic and continually changing world, here is the new frontier of wetsuits: "Hyper Flex" Neoprene with a new generation, ultra-elastic lining that stretches up to 300% and the water-resistant Silver Seal Titex zipper that allows high performance plus great fit and comfort.

Outer lining: Hyper Flex  
 Inner lining: Fine Plush  
 Zipper: Super Seal Titex  
 Wrists and ankles: Glide Skin Hood:  
 Integrated in the vest and with the "Air Draining" system  
[seacsub.com](http://seacsub.com)



## Scubapro Everflex

Scubapro's advanced, extra-comfortable EverFlex line has been stylishly redesigned for an even better fit and freedom. The new EverFlex neoprene steamers are now in a pre-formed dimensional shape, so it fits and moves more naturally with your body and delivers unparalleled comfort, stretch and flexibility. Scubapro also added heliospan lining in the torso area of the steamers, for added protection and insulation. EverFlex provides excellent fit for a wide range of people. If you are tired of the struggle to get into your suit, EverFlex is for you.

[www.scubapro.com](http://www.scubapro.com)



## Camaro Seamless Pronomic

Camaro's seamless suit is hailed as a world's first thanks to a patented seamless bonding technology. The Hydronomic Series is the first Seamless generation and has been completely redesigned. The seamless bonding technology used with highly flexible material has created a suit with a high degree of comfort and freedom of movement.

The suit comes with a double collar, a release-zip and a G-Lock Zipper at the back. The 7 and 5mm suits are equipped with double cuffs and zips on arms and legs. The 3mm version is equipped water flap on arms and legs for warm water.

[camaro.at](http://camaro.at)



## Bare Elastek

The Bare Elastek 5mm is a double glued full-stretch suit with high-end features and anatomically correct pattern for three-dimensional fit throughout. Features a heavy-duty, color coordinated, G-lock back zipper with stainless steel slider, skin-to-skin internal sealing zipper flap and embossed inner elbow flex panels.

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



# Fourth Element Proteus

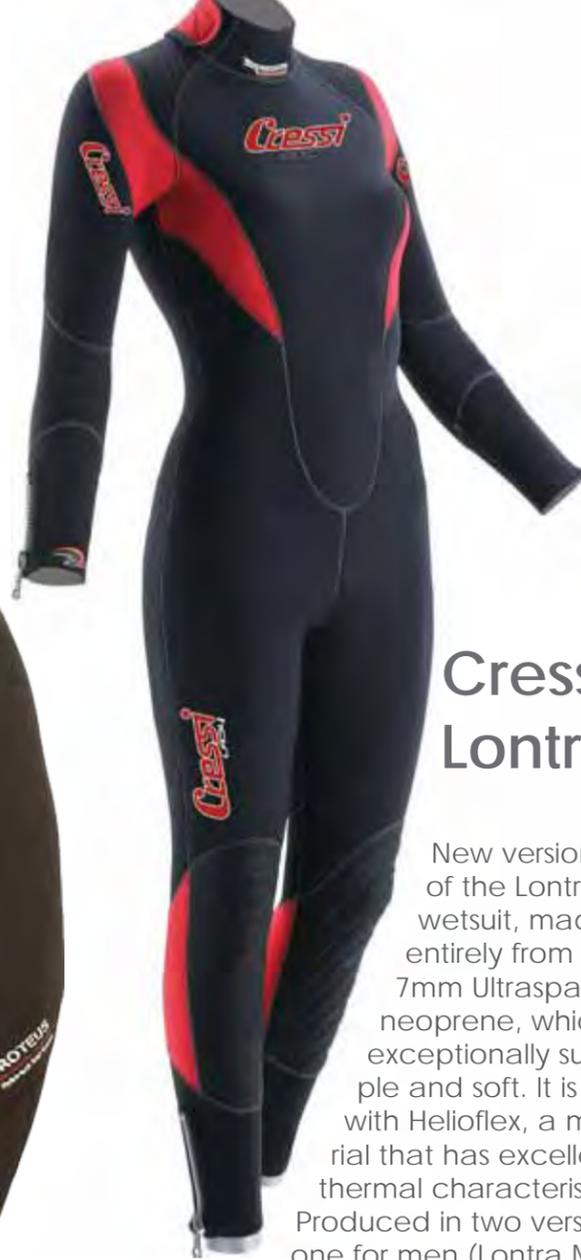
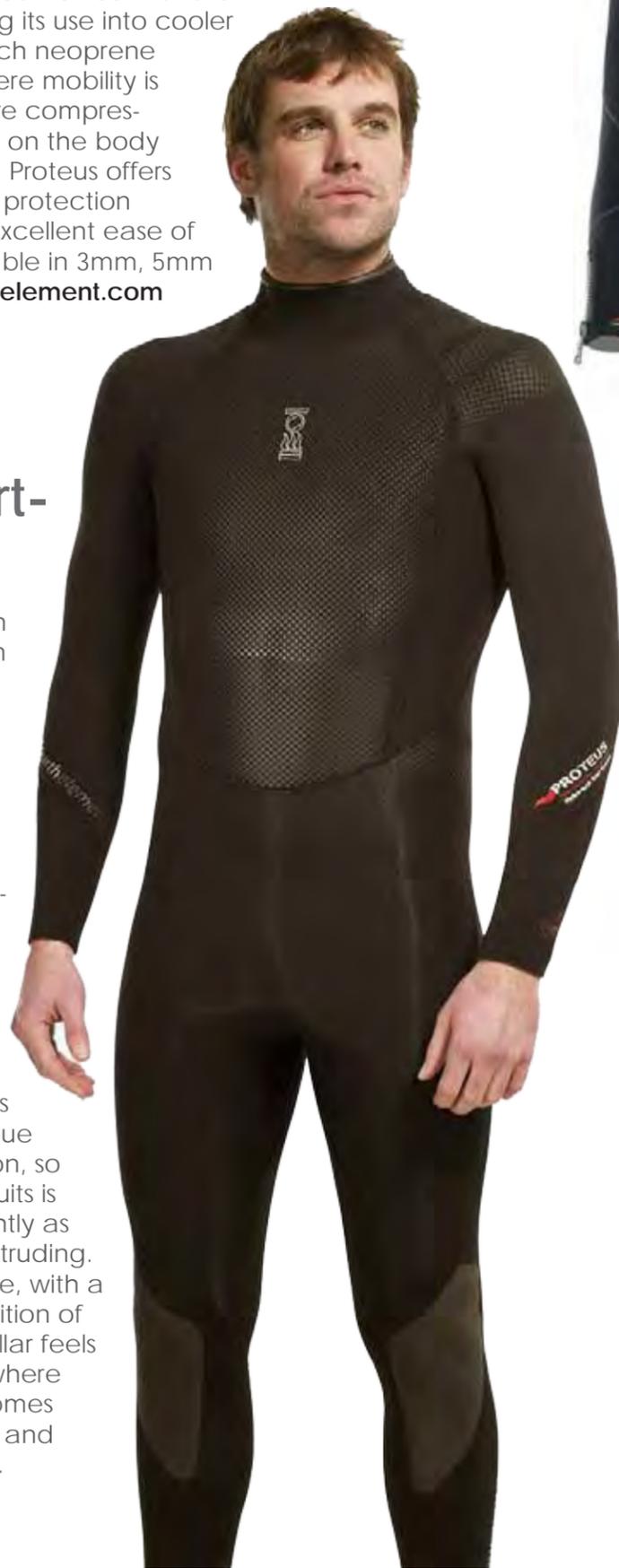
Ideal for use in temperate to warm waters, this versatile dive wetsuit can also be combined with the Short John wetsuit extending its use into cooler conditions. With superstretch neoprene on the arms and legs where mobility is required and thermocore compression resistant neoprene on the body core panels, the 5mm Proteus offers outstanding thermal protection and comfort with excellent ease of movement. Available in 3mm, 5mm and 7mm. [fourthelement.com](http://fourthelement.com)



## IQ Comfort-flex

The Smoothskin is laminated on one side and has a closed rubber surface on the other side. The smooth surface seals well with the skin and prevents the intrusion of water. An additional zipper at the collar provides additional wearing comfort. Under water, the throat is usually stretched due to the lying position, so the collar of wetsuits is tailored more tightly as to avoid water intruding. But on the surface, with a more natural position of the head, the collar feels restricting. This is where the neck zipper comes in; Open the zipper and breathe more easily.

[iq-company.com](http://iq-company.com)



## Cressi Lontra

New version of the Lontra wetsuit, made entirely from 7mm Ultraspan neoprene, which is exceptionally supple and soft. It is lined with Helioflex, a material that has excellent thermal characteristics. Produced in two versions: one for men (Lontra Man) and one for women (Lontra Lady), this is a modular wetsuit that includes an all-in-one jacket and hood, which can be purchased separately. [www.cressi.com](http://www.cressi.com)



## Waterproof W2

W2 is Waterproof's new back-zip wetsuit. After all the excitement created by the W1 front-zip suit, the W2 had to exceed this suit, so the task set for the design team was challenging. The result, W2 available in two versions—5mm and 7mm—surpassed expectations. W2 features include anatomical gender-specific design, comfort front neck zipper, inner plush lining and a moulded rubber kneepad featuring a "hinge" effect. For further W2 suit and W2 icevest features and product information, please visit: [www.waterproof.eu](http://www.waterproof.eu)



*“The thing with diving is that it can really bite you, and I soon discovered I wanted to share this new world with as many people as possible. The obvious answer for me was to start making underwater films, so I stole a friend’s camera for a couple of weeks, one which had been used by Cousteau on some of his underwater documentaries, and off I went.”*



# Mike Valentine

*Underwater  
Cinematographer*

You wonder, sometimes, how things link up. For example, how is a scuba diving suit connected to the likes of household names such as *Dr Who*, *Casino Royale*, *Trainspotting*, *Star Wars Episode I: The Phantom Menace*, *Basic Instinct II*, *Atonement* and the latest Ridley Scott/Russell Crowe epic, *Robin Hood*? Whilst on paper there’s not an obvious association, I know I’ll find the answer waiting for me in a small Chelsea café. A large gregarious Welshman, fizzing with energy, is talking in an animated fashion on a mobile. He is the renowned and much respected underwater cinematographer, Mike Valentine.

Interview by Roz Lund  
Photos courtesy of Mike Valentine

It’s been more than 20 years since film director, Nicolas Roeg, gave Mike Valentine his first break filming Oliver Reed and Amanda Donohoe in *Castaway*. “I was in the Seychelles for almost two months, shooting and directing all the underwater sequences from a script that contained only two lines of description. The result was more than six minutes of screen time, something I still feel lucky to have achieved at that time” Valentine grinned. This achievement was remarkable because Valentine had just given up his “safe” day job as a senior sound technician with the BBC to work as a freelance underwater cameraman.

“I found it ironic that my first professional job was in the Seychelles, because this was where I first experienced scuba. In 1977, during a holiday there, I noticed a sign saying ‘Visit the Underwater World

for US\$20’. It was the best 20 bucks I have ever spent. I was instantly hooked. So, as soon as I got back to the UK, I joined the United London Hospital Diving Group—a local BSAC (British Sub Aqua Club)—and learnt to dive. The thing with diving is that it can really bite you, and I soon discovered I wanted to share this new world with as many people as possible. The obvious answer for me was to start making underwater films, so I stole a friend’s camera for a couple of weeks, one which had been used by Cousteau on some of his underwater documentaries, and off I went.”

Eventually, armed with *Silent World*, Valentine knocked on the door of BBC Acquisitions and showed them his 6.5 minute Red Sea mini epic. After shooting another ten films, he was given an offer he couldn’t refuse, to take his underwater expertise to the Seychelles to work on *Castaway*.

“Diving is an incredible sport, and

# profile

something that I dearly love. When it comes to work, the diving I do is completely different. I've often noticed that recreational divers think that they can get into the film or television industry because they dive. It's not quite that simple.

"Diving is just the means of getting to work. I dive whilst other people catch a train. It's what

you do when you get to work that counts. In this day and age, it's never been easier for someone to pick up a video camera and shoot underwater and call themselves a director of photography or a camera operator," said Valentine. (A director of photography, or cinematographer, is the chief of the camera and lighting crews on a film, and therefore

responsible for achieving the artistic and technical decisions related to the image).

## What matters

"At the end of the day, whilst you can use technology to help achieve an improbable shot, the one thing you can't buy, skip or fast forward, is experience. This is such an important thing, and

*Diving is just the means of getting to work. I dive whilst other people catch a train. It's what you do when you get to work that counts.*

good production teams know and appreciate that in the long run—having experienced personnel will save them money. It's not uncommon for me to have a meeting with the producer during pre-production and for them to remark that, "We've storyboarded the sequence, but we don't know how to shoot it, and we don't think it will work.

"Therefore, experience is an invaluable tool in my job. I not only have to work out how we will physically achieve the image desired, I have other major considerations, too, such as ensuring we stay within budget and timescales, logistics, and most importantly, actor and crew safety. After working on over 80 features, I can still say that every day we go to work is still fun, because I feel that we are still unlocking the door of the underwater world and sharing its beauty with as many people as possible," said Valentine.

## "We"

"I say 'we' and I do mean, We. I could not achieve what I do on my own. I am part of a very strong team, and it's the only way we could do what we do successfully. You've watched us work, Roz, and observed that not all of our team scuba dives. Instead, we're split between top-



We're now working with Ridley Scott on his version of the Robin Hood story starring Russell Crowe

side and underwater. As you know, on the surface is Françoise, the underwater co-ordinator. Her job is mentally stressful, as she has to deliver the shot list. This means that she will talk through and rehearse every single shot with the whole crew before it happens—the topside crew, me, the artist(s),

*"At the end of the day whilst you can use technology to help achieve an improbable shot, the one thing you can't buy, skip or fast forward, is experience."*

the cable wrangler and the safety divers. It's imperative for a safe and successful shoot that everyone is relaxed, understands, and is happy, mentally and physically, with what is about to take place. When you look back at some of the more complicated sequences we've filmed, such as Daniel Craig and





Eva Green in the lift, which fills with water as the Venetian house sinks in *Casino Royale*, you can see why having a strong underwater co-ordinator is key.

"Sat alongside Françoise is the first assistant cameraman/focus puller, and next to him, the second assistant cameraman/clapper loader. And again, they are also crucial personnel. When you consider that the resulting footage will be blown up many times to become an enormous

image on a cinema screen, you can understand why so many people are involved in the camera department. Effectively, I point and shoot the image, whilst the first assistant cameraman ensures that the image is always sharp by remotely controlling the lens focus. Can you imagine if it's a tiny bit out of focus on a monitor, just how ghastly it will look on a huge screen at the Odeon Leicester Square? Then the second assistant camera-



Two of the 80 films on which Valentine has worked (left). Valentine in action on set (below)

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man is responsible for loading the film in the magazine, noting down what lenses were used, how many takes, etc, whilst working to the instruction of the first assistant cameraman. And then, the camera itself costs several thousand pounds, so you need both the first assistant cameraman and the second assistant cameraman to work together closely and ensure that all runs smoothly topside,

and that the housing is well-sealed, so that it does not flood.

"Meanwhile, underwater, I have a safety/cable wrangler diver with me monitoring my air and ensuring that I don't get tied up in cable, whilst every actor involved in the sequence has their own personal safety diver. Hence, you can see why I say 'we'. We've a solid team ethic where everyone understands and respects each other's position, and we all watch each other's backs," said Valentine.

#### Long days

"The film industry has traditionally long days, so that you get the most of the light. Consequently, a typical day for us will be to arrive at the

## Mike Valentine

studio, or on location, at 7:30 am, in time for breakfast. Prep starts at 8:00 am, and we are in the water by 9:00 am. Four hours later, we will climb out for lunch. Then, at 2:00 pm, we are back in the water until 6 or 7:00 pm. So, diving for a living is not only mentally demanding, it's physically demanding, too," said Valentine.

*Believe me, the producer doesn't come around to ask if the dive team and I are warm enough.*

#### Shooting Robin Hood

"We're now working with Ridley Scott on his version of the *Robin Hood* story starring Russell Crowe. Obviously, at my age, I want to be as warm as possible, so decent suits and

thermal underwear are high on the list for my team and I. When you are working on a big budget feature, believe me,



