

PNWD DIVER

SUMMER 2016

M A G A Z I N E



Featuring:

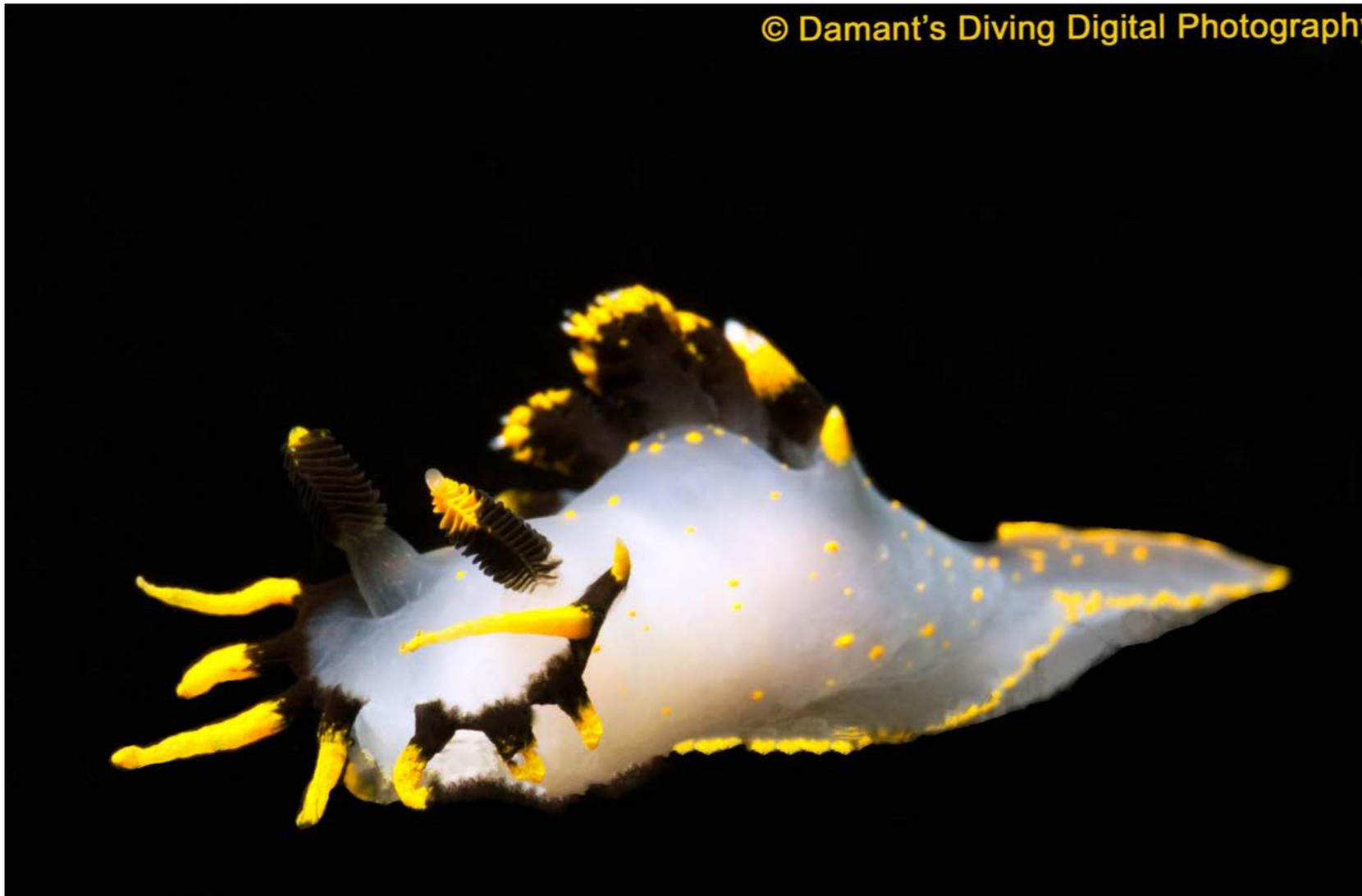
Chad Tamis
Bill McKinnon
Marc Damant
Rick Waines

and more...

01 About the Magazine

SUMMER 2016 PNWDiver

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Cover photo by Marc Damant

Canon T2i in an Aquatica Housing using Canon 100mm macro and + 5 diopter, f22, 1/125sec

The Pacific NorthWest Diver Magazine is published quarterly and is a publication of the Pacific Northwest Underwater Photographic Society, which is an organization formed to encourage interest and participation in underwater photography. The organization's central goals are: to provide an environment where photographers can help other photographers improve their skill; to promote Pacific Northwest underwater photographers; and to share the beauty of our underwater environment with the non-diving public. If you have an idea for a story or would like to present an article for consideration, please contact the editor/publisher.



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Polyorchis penicillatus at Bamfield Marine Sciences Centre ©Chad Tamis

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©Marc Damant



“I think that our fundamental belief is that for us growth is a way of life and we have to grow at all times.”

-Mukesh Ambani

Almost two years ago we changed the format of this magazine. This led to bigger issues and bigger images and more detailed articles. In fact, this is the biggest issue yet! It's time to make some changes again. Not big ones, and not necessarily only to changes in the way the magazine looks, although that's a part of it.

You will notice more white space and breathing room. This is to let the images rest on the page without too much competition. Stop and enjoy the works of these awesome artists: Chad Tamis, Bill McKinnon, Marc Damant and Rick Waines.

Steve Taylor challenges us with snoot photography, which takes our lighting to a new level. Rick Waines takes on the challenge of photography while breathhold diving – a subject near to my heart. Andy Lamb joins the team to educate us on the various Rockfish of Howe Sound. How timely.

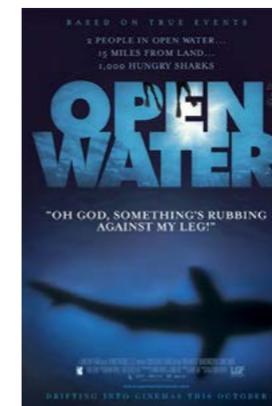
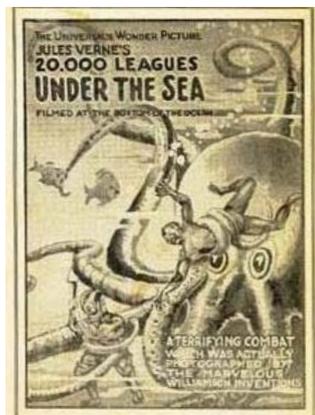
Upgrading isn't just limited to photography. Alan Wong tells us about the Mooring Buoy Reno Program. Adam Taylor focuses on the expansion of Halkett Marine Park. Dale Carlisle takes us through the historical changes through dive movies.

One final change: I've added a [PNW Diver Magazine Sharing Group](#) on Facebook. If you have been inspired to try something new, share it with us on this page. To respect privacy, this group is moderated, so you will need to join in order to post your pictures, videos or thoughts.

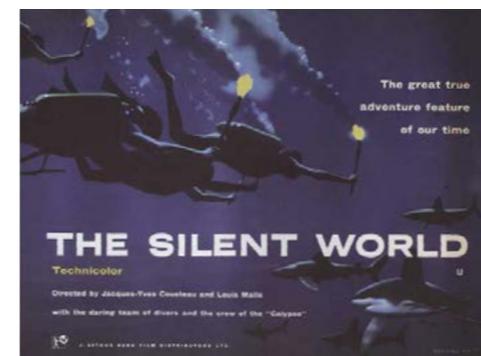
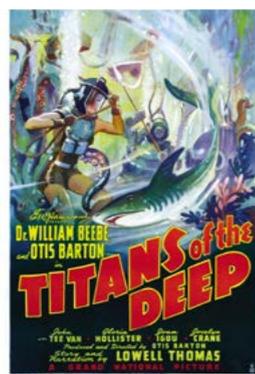
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Diving Goes to the Movies

by Dale Carlisle



1916

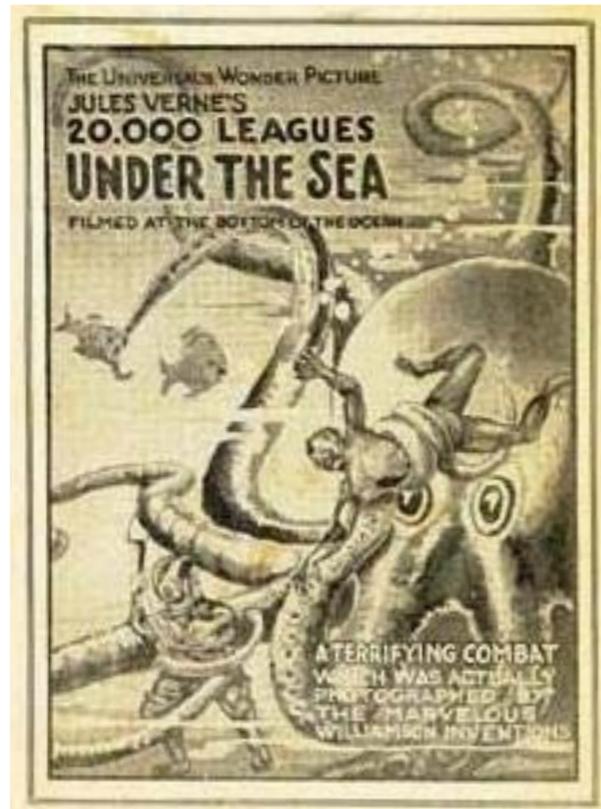


2016

As much as we enjoy getting out into the water every chance we have to practice our photographic and videography skills, there are practical limits to how often one can actually dive. Some of us try to push back on those limits by turning our pastime into a profession or by abandoning all pretense of a structured life whatsoever. All hail the diving bum!

For most of us, though, there are times when we dive and times when we just think about diving. During those latter moments, when the boss is not around, one avenue of escape might be the movies, and fortunately, there are some interesting ones where diving is both vehicle of expression and dominant subject matter. I would like to explore the evolution of diving as it is portrayed by the silver screen.

1916



20,000 Leagues Under the Sea - 1916

The one that started it all.

As many of us may know, the first underwater photographs taken by diver were from Louis Boutan in 1893, using existing helmeted diving technology and a waterproofed camera. The first underwater film, however, was not made until 1916 by John Ernest Williamson and his brother George and then only after several technological hurdles were overcome.

These two enterprising men were fortunate in having a seagoing father who had already invented a mechanism for penetrating the ocean surface. This device, called the deep sea tube, descended down into the water while secured to a ship. Open to the air and constructed of fabric-covered concentric rings of iron that acted like a dam against the sea, it could be safely expanded more than 100 feet below the surface.

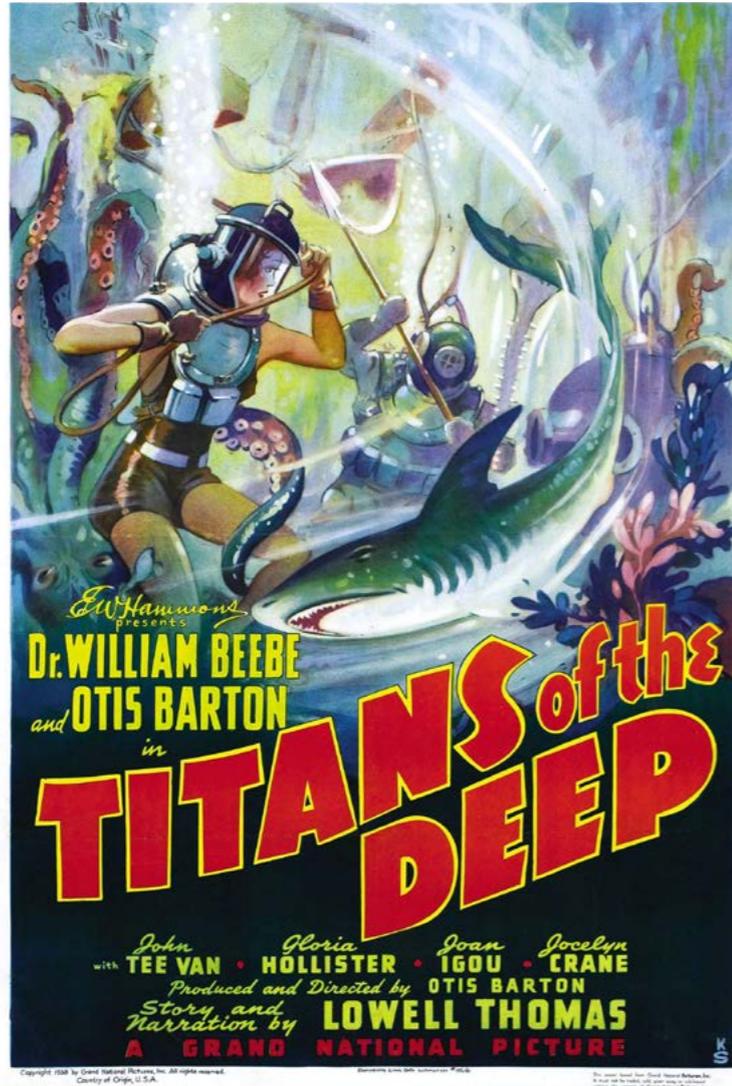
Originally intended by their father for salvage work, John (or JE as he was known) a journalist by trade, recognized its usefulness for taking underwater photographs and soon after, even greater potential in the new field of motion pictures. He refined the tube by inventing a windowed chamber called the “Photosphere”. This was needed to house the motion picture camera of the time, a large brass hand cranked affair and its operator. With the machinery in place for their plans, John and his brother George formed the Submarine Film Corporation.

After making an initial short promotional film to gain interest and funding, the two took the photosphere (and a specially made barge to support it) to the Bahamas and began shooting what would eventually become an adaptation of Jules Verne’s 20,000 Leagues Beneath the Sea.

The film, which was a mishmash of the original story and another by Verne “The Mysterious Island” left most of the aquatic scenes on the cutting room floor. Still, what scenes there were amazed audiences by introducing them to an otherwise unknown underwater world, which until that time only a handful of salvage divers had ever seen.

The story of the Williamson’s career is a tumultuous one, with booms and busts, studio lawsuits and George’s eventual exit, but J E Williamson continued to make films for many years afterward and was well respected for his craft and ingenuity.

1938



Titans of the Deep - 1938

Another early movie that captures man's evolution in underwater exploration was produced in the 1930's by Otis Barton, inventor and co-operator, along with naturalist William Beebe of the diving bell "Bathysphere". This film, intended as a sort of documentary but morphed with campy horror window dressing to sell better, followed their exploits by revealing animals and scenes of their epic deep-sea penetration.

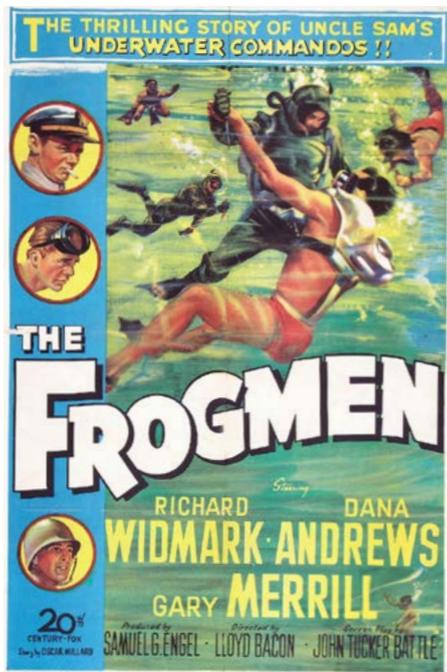
The story of the Bathysphere's half-mile deep descent is one of cooperation, inventiveness and extreme courage on the part of both Barton and Beebe. William Beebe, a naturalist and zoologist who's work initially involved birds, also ventured into marine biology where he conducted several expeditions observing marine life using shallow water diving helmets. Ever curious, he wanted to further expand his observations by constructing a diving bell, which he wrote about in the New York Times.

Otis Barton, an engineer, read about Beebe's plans and was intrigued. However, he also realized Beebe's plan would not work as intended and through arranged meetings struck a deal with the naturalist to work together on the project. Barton would build the bell, which he envisioned as a strong steel sphere capable of withstanding enormous pressure. Beebe would fund the expedition. Together they would descend in it.

This began a program of construction and testing and refinement that continued right until the day of the intended dives. The final Bathysphere design included a one-inch thick shell with a single small opening, covered by a 400-pound hatch secured by ten bolts. Inside the occupants breathed bottled oxygen scrubbed by caustic soda and viewed the outside scene via three small windows of thick fused quartz. On an unmanned test, the bell was lowered and raised only to reveal a leak through one of the windows intended for filming. When the hatch was removed, highly pressurized water shot forth like a fire hydrant. Undaunted, the fault was corrected, and Beebe and Barton carried on with manned dives, eventually attaining a depth record of just over 3000 feet.

Barton was intrigued with shooting underwater film scenes, which eventually became the footage used in Titans of the Deep. In a case of strange synchronicity, Beebe shared the 1933 Chicago World Fair stage with Auguste Piccard, who at the time held the record for highest altitude in a hot air balloon. A discussion between the two led Beebe to find the funding needed for the Bathysphere's record deep sea dives, and Piccard's own son Jacques Piccard would go on years later to break that record using the deep-sea vehicle "Trieste" in the Challenger Deep at a depth of over 35,000 feet.

1951



The Frogmen - 1951

While not a diving movie perse, The Frogmen represents an important era in diving development through its depiction of the Navy UDT (Underwater

Demolition Team) program during the second world war. At this time, the major navies of the world were experimenting with various means of underwater warfare. SCUBA had not yet been invented, and the British, Italian and, to a lesser degree, German navies engaged in attacks using oxygen rebreather equipped divers on scooters or manned torpedoes. All navies used both shallow and deep divers for salvage and repair work, and the Americans developed the UDT teams. These were labeled underwater swimmers and would be considered snorkellers or free divers today. Their primary role was to penetrate enemy coastlines for reconnaissance and demolition work, often preparatory to seaborne invasion. These swimmers would be dropped by boat offshore and slowly work their way in, where they would observe defensive structures, place charges or take beach measurements and samples for later analysis. Entirely exposed and often unarmed, they would brave the enemy defenses and then swim back offshore where they would, hopefully, be picked up by boat again.

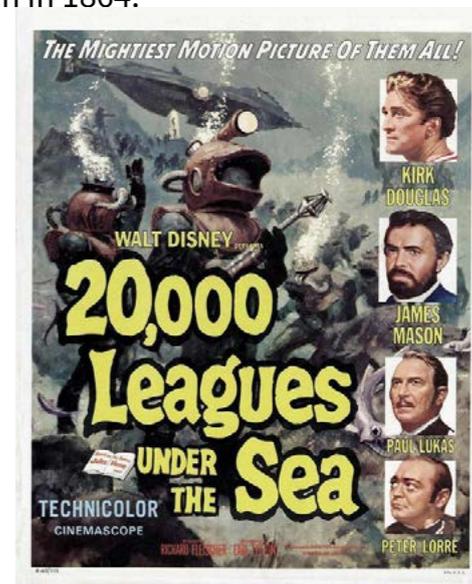
20,000 Leagues - 1954

20,000 Leagues Beneath the Sea, by Jules Verne, is considered the first underwater novel and as such, has inspired people to make multiple film adaptations of it. Walt Disney being no exception, he released his version in 1954.

Understandably, the latter version has far better production values than its 1916 predecessor due to technological advances and a studio skilled in story telling. Disney none the less used J E Williamson himself as one of the consultants for the film and shot on location in the Bahamas in the same setting as the original.

Underwater cinematography had advanced quite a bit in 30 years. Disney used helmeted divers both in front of and behind the camera, which was more manageable and shot in colour. An interesting note regarding technology is the diving dress used by some of the characters in the film. The breathing units were specially crafted for visual effect but represented a device described in the novel. It was called the Rouquayrol-Denayrouze diving apparatus and was invented by two Frenchmen in 1864.

At the time, this apparatus was a surface supported helmet that also contained a back mounted low-pressure cylinder and one of the first functional underwater regulators. With this combination of helmet, tank and regulator a diver could make short, unsupported dives at shallow depths. In the book and film, of course, artistic license makes the depth and duration of these dives grossly overexaggerated, but Disney can be credited for faithfully recreating prototypes of this device.



1954

1955

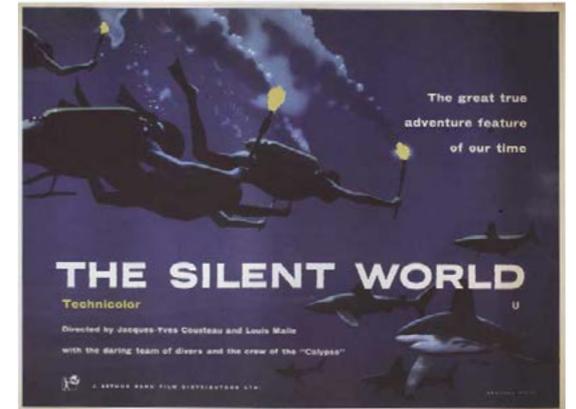


Underwater - 1955

By the mid-1950's, SCUBA diving was gaining a foothold in the public consciousness, and the first of a series of "Hollywood" movies was made starring Jane Russell. The story loosely follows a well-worn plot in which a group of intrepid adventurers seek sunken treasure and meet with pirates and dangers from the deep. What makes this film unique is that it employs SCUBA gear instead of helmeted diving dress. This adaptation allowed Pin Up girl Jane Russell to wear her revealing two-piece bathing suit to the delight and shock of movie-going fans. The same basic premise has carried on ever since with various versions such as The Deep - 1977 starring Jacqueline Bisset (voted best wet T-Shirt ever), Into the Blue - 2005 starring Jessica Alba and Fools Gold - 2008 with Kate Hudson.

The Silent World - 1956

In 1956 this underwater film won the Academy Award for best documentary and the Palme D'Or at the Cannes Film Festival, culminating the early exploits of Jacques Cousteau and his team aboard Calypso. Based on his 1953 book of the same name, Le Monde du Silence took two years to make and chronicles adventures and exploration in the Mediterranean, Red and Indian Oceans. Viewed as controversial today for JYC's apparent lack of concern for the welfare of its subject matter, the film is best understood in the context of its time. Later, Cousteau himself would change his viewpoint and become increasingly focused on a more conservation based model of exploration.



Jacque Yves Cousteau represents a perfect example of someone who crafts a life around his passion, in this case, diving and filmmaking. As a member of the French Navy he and his friends took up spearfishing and freediving. During the war, Cousteau labeled himself a filmmaker so the occupying forces would overlook his exploits. He also formed a partnership with Emile Gagnan to create the Aqualung, or modern SCUBA unit. Later Cousteau established the French URG (Underwater Research Group) so he could continue diving and filming, and eventually forming the Cousteau Society. He used his position at the Monaco Oceanographic Museum to fund further expeditions and sell books, film, and even television rights to finance his exploits. His was a case of art representing man creating that art.

The Silent World was followed by World Without Sun - 1964 which also won an Academy Award in the same category.

1956

1961



Sea Hunt 1958 - 1961

While technically not a movie, Sea Hunt can easily be added to any list of moving pictures that both represented and shaped diving. Along with The Undersea World of Jacques Cousteau, it introduced a generation to SCUBA and was responsible for the mainstreaming of it as a pastime in America.

The story follows the exploits of retired UDT frogman Mike Nelson as he operates his own small "Diving for Hire" business.

Every episode would find Mike embroiled in some sort of adventure and, by using his wits and underwater skill, save the day for himself and others.

Ivan Tors, the producer, had his idea for the show rejected several times because the effort of filming underwater was considered too difficult and costly. Eventually, he found a backer and cast Lloyd Bridges as Mike Nelson. Lloyd had recently been blacklisted in Hollywood and before the show had no diving experience. Two pioneering icons, Zale Parry and Courtney Brown, taught Lloyd how to dive and did stunt work for the show, though, by the end of the series keen-student Lloyd could do much of the close-up work himself.

The show ran for 155 episodes and is still referenced by many vintage equipment divers for depictions of early era diving gear. Fans even hold a somewhat annual Sea Hunt re-creation event at Silver Springs Florida. Many such divers still, when faced with a dilemma, are often heard to murmur "What would Mike Nelson do?"

Lloyd Bridges also starred in a movie produced by Ivan Tors based somewhat on his Sea Hunt character called The Daring Game - 1968.

Thunderball - 1965

Cue Bond theme song. In this installment of the series, Sean Connery as James Bond battles the evil forces of SPECTRE led by Emilio Largo both above and below the water. Nearly 25% of the movie is shot underwater, and it would win the 1966 Academy Award for best visual effects. For diving/adventure buffs the show is a gold standard as it has a variety of scooters, sleds and breathing apparatus involved. To

keep the characters apart in your mind, the good guys use single hose regulators while the bad guys use double-hoses. Watch for deadly hose cutting scenes but note they always attack the exhaust side, producing lots of dramatic bubbles but allowing the actor to breathe.

Sean Connery almost became an unintended victim in one of his own scenes when the plexiglass cage he was contained in during a shark attack sequence failed to keep the sharks out. His exit from the pool made some wonder if he had not had an ejection seat secretly implanted by Q.

Other Bond movies use diving sequences in them, but none come close to the primary setting explored here, mostly just short shots of breathing gadgets and submarine cars. A later remake Never Say Never Again - 1983 attempts to retrace the ground of Thunderball but pales in comparison.



1965

1989

The Abyss 1989 / Sphere 1998

Both of these movies explore the challenges of deep sea diving. Both also revolve around the discovery of alien life forms underwater - apparently a hot topic in Hollywood studios at the time. While many facts of diving are distorted for artistic reasons, the movies do introduce a number of associated topics like habitats, submersibles, moon pools, one-atmosphere suits, mixed gas and HPNS. The scenes were too difficult to shoot in their actual settings obviously so much of the action is conducted in large pools.

James Cameron, who is an avid diver himself, would go on to film actual images of the HMS Titanic and even retrace the epic descent of Trieste to the depths of the Challenger Deep.

Men of Honor - 2000

Cuba Gooding Jr and Robert DeNiro help to tell the story of men training as US Navy Divers, loosely based on a true story about Master Diver Carl Brashear. In the story, Carl (Cuba) faces institutional racism yet eventual acceptance as he tries to become the first black US Navy Diver. While the story is compelling in itself, divers also get a good look at the Mk V Standard Diving Dress and techniques used by the USN for deep work from 1915 to 1985.

1998

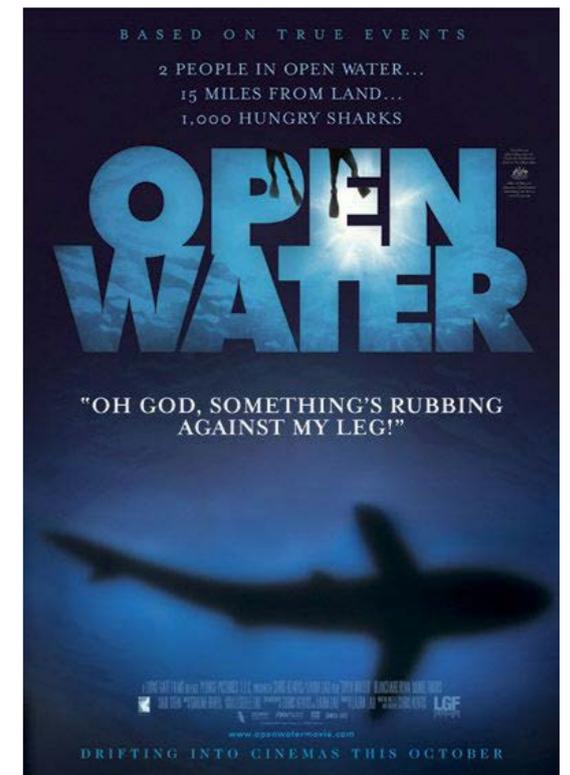
2000

Carl eventually wins out in his quest to become a diver while DeNiro's character, Billy Sunday, descends into alcoholism and dysfunctionality. A diving accident costs Carl his leg, and the two reunite as Carl tries to again overcome the odds by remaining a diver with a prosthetic leg. With Sunday's help, Carl succeeds and remains an active diver for several more years.

Open Water - 2004

A movie that has very little to do with diving itself yet involves a question every diver ought to be able to answer: Open Water asks: "What happens if you can't get back into the boat?"

A movie that could probably be shot with a Go Pro, it still intrigues the viewer (like it's relative The Blair Witch Project) by delving into the psychological stress created by a seemingly simple situation that can't be resolved. A live-aboard favorite I'm sure!



2004

2011



Sanctum 2011

Okay, substitute the boat for a cave and you have Sanctum, though I will give props for setting and production value. This was a movie highly anticipated by the cave diving community as a reflection of their unique off shoot of adventure and, like many movies before it delivered a mix of inspiring imagery and sometimes cheesy artistic license.

There are a couple of things that stick out in my mind when I think of Sanctum. One should never be too quick to administer a compassionate “Coup de Grace” to a fellow diver, no matter how much

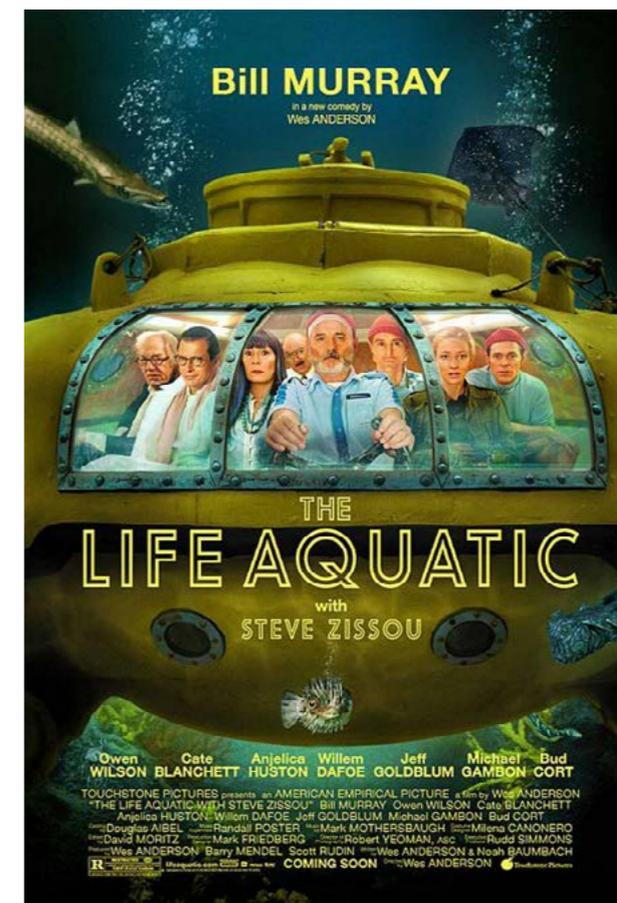
they request it. And, why wasn't breathing off a bottle without the regulator a skill I was taught in OW class?

The Life Aquatic with Steve Zissou - 2004

Perhaps the culmination of all diving knowledge past and present, compressed and contained into a perfect distillation of artistic expression, The Life Aquatic is more of a Life Anthem or Codex to live by than movie for some. Nerds have their Star Wars. Drivers have their French Connection. And divers have Bill Murray as Steve Zissou. Part spoof on Jacques Cousteau, part comedic vehicle for cameo's by Angelica Houston, Willem Dafoe, Jeff Goldblum, Owen Wilson and many others, the Life delivers a quirky look at what a

group of divers might accomplish if they were to suffer from hydrogen psychosis, while armed with Glock's, while seeking revenge for the consumption of their friend by an endangered species. Everyday stuff really!

The picture is perfectly sublime in its mix of emotional and humorous contradictions, and the only mistake anyone could make in watching it would be to take any of it too seriously. Some say it is best to be viewed while intoxicated as many of the actors appear to have performed in it that way.



That's it. Enjoy diving and if you can't do that try enjoying one or two diving films from the list above. Perhaps you may take inspiration from them and set off next time to make a diving movie of your own!

Northwest Rockfish:

A Photographic Panoply

by Andy Lamb

DISCLAIMER: Paramount with this submission is the fact that I am not an underwater photographer. Much to the chagrin to the co-authors of Coastal Fishes of the Pacific Northwest and Marine Life of the Pacific Northwest, I frequently receive credit for their outstanding work. Phil Edgell and Bernie Hanby are clearly listed as the photographers for those publications.

However, over the last forty plus years, it has been my good fortune to dive with these two and many other outstanding underwater image makers – a few of whom are featured in the following article. While acting as a spotter/assistant and constant eavesdropper, I have “sponged” up considerable insight. This special situation provides me with a unique perspective and one to be shared via the following presentation.

ROCKFISHES: A FAMILY BACKGROUND

Rockfishes are members of a large, almost entirely marine family known as the Scorpionfishes (*Scorpaenidae*) that has representatives worldwide. Virtually all species have venom of some sort associated with fin spines (particularly the dorsals). While our resident rockfishes have relatively benign variations, many tropical kin possess very powerful versions. The horrific, lethally documented Reef Stonefish *Synanceia verrucosa* and the ornate but severe pain inducing lionfishes *Pterois spp.* are tropical denizens to be very wary of.



Image A: Reef Stonefish
Synanceia verrucosa



Image B: Red Lionfish *Pterois volitans*

DISCLAIMING THE DISCLAIMER – sort of. Images A & B were taken by the author in Indonesia using a Canon Power Shot ELPH 300HS camera in a WP DC41 waterproof case. A couple of years ago, I was bitten by the bug and began taking digital snapshots while diving in the tropics. I submit this qualifies me only as a part time novice with point and shoot equipment – and not an underwater photographer.

A MAGNIFICENT VARIETY

The many species of rockfish are included in the genus *Sebastes*, a Greek word meaning magnificent. As an unrepentant Sebastophile, I find this an apt term for each as well the total array.

The cold and temperate North Pacific Ocean is home to the vast majority of rockfishes – a total close to 100 species. Narrowing this perspective to the Pacific Northwest still provides an impressive 40 or so *Sebastes* inhabitants. Unfortunately, while many of these colourful creatures swim at depths well below safe diving limits, a remaining twenty-three cruise locales accessible for underwater photography. And at least two-thirds of that number are common targets for the serious camera-toting fraternity.



Copper Rockfish *Sebastes caurinus* ©Kent Forsen at 60mm, f13, 1/50sec

This image features a Copper Rockfish *Sebastes caurinus* from Egmont, B. C., taken by Kent Forsen using a Seacam Silver housing, Seaflash150 digital strobe, Nikon 60 mm lens. The attractive and typically coloured specimen is nicely shown, not completely side on. Kent's slow careful approach was just close enough to encourage the fish to erect and extend all of its fins but not flee.

IMAGE INSIGHTS

All of the contributing photographers are very accomplished and experienced working in the difficult conditions presented by the marine environment of the Pacific Northwest. The basic quality of their work is superb. It requires no comment from me concerning the basics of focus, lighting, exposure, framing etc. Rather my commentary will narrowly deal with each image as it relates to its rockfish subject matter. In many instances, my comments concerning one image will apply to others that follow but repetition will be avoided. Unless otherwise noted with "film and a date", all images are of the digital age.



Copper Rockfish congregate on a ledge ©Bruce Kerwin at 16mm, f11, 1/250sec

This image shows a group of lounging adult Copper Rockfish in Hood Canal, Washington. It was taken by Bruce Kerwin using a Nikon 300D camera in a Subal30 housing with 2 Sea & Sea YS-DI strobes, a Nikon 16 mm Fish Eye lens, at F11, 1/250. This is an unusual situation with nine fish resting on the sea floor and one just above, captured by Bruce's careful stalking combined with the fortuitous availability of a wide angle lens.

ROCKFISH



Tiger Rockfish *Sebastes nigrocinctus* ©Marc Chamberlain at 35mm, f13, 1/160 sec

This image is of a Tiger Rockfish *Sebastes nigrocinctus* that Marc Chamberlain found in the San Juan Islands, Washington. Marc used a Nikon 300 camera in a Subal housing and Subal 150 400 flat port, with two Sea & Sea YS 250 strobes and a Tokina 35 mm lens. Marc's mantra is "it's all about the background" and together with patient positioning, it created this superb "ID" portrait.



China Rockfish *Sebastes nebulosus* ©Marc Chamberlain at 35mm, f13, 1/160sec

Another Marc Chamberlain image illustrates a China Rockfish *Sebastes nebulosus* taken in Browning Pass. This species has a dark base colour with lighter markings making it a challenge concerning the background. But Marc has nailed it and the fish stands out beautifully from its light surroundings.

ROCKFISH

FOREVER FAVOURED

Some photo opportunities are timeless, repeatable and appealing. The following two photographs, each feature a juvenile Quillback Rockfish *Sebastes maliger*, peeking out from the security of a cloud sponge, are examples of one subject's continued popularity.



Juvenile in a Cloud Sponge ©Lou Lehman

Taken on film in the early 1970s by Lou Lehman, in Agamemnon Channel, B.C. Lou used a Rolleimarine 6X6 format camera and Rolleimarine Hans Haas housing, #5 Sylvania blue flash bulbs, F11, 60th of second.



Juvenile in a Cloud Sponge ©Marc Chamberlain at 35mm, f9, 1/200sec

A digital era image by Marc Chamberlain, with a dome port, Nikon 16-35 lens and diopter added to his equipment and taken in the same area as Lou's.

ROCKFISH

LIKELY NEVER AGAIN

Some opportunities are once in a lifetime and produce images that will probably never be duplicated. In the case of Pacific Northwest rockfish photographs, the overfishing that has resulted in severe stock depletions is the primary reason for this situation. The following two images speak to this sad fact.



Yelloweye Rockfish ©Phil Edgell

This image features a very large adult Yelloweye Rockfish *Sebastes ruberrimus*, likely 90 years old or more and a former resident of Hunt Rock, at the north end of Vancouver Island. In the mid-1970s, Phil Edgell used Kodachrome 25ASA film, with a Nikon F2 camera, 55 mm macro lens, in an Oceanic housing for this shot. Look closely and notice the swollen belly – this female was pregnant and carrying between one and two million young.



Yelloweye Rockfish ©Bernie Hanby

In 1984, Bernie Hanby and Dr. Chris Pharo were diving Nelson Rock, near Pender Harbour, B.C., when they encountered a small school of sub-adult Yelloweye Rockfish drifting off the bottom. In and of itself, this was a sight neither of them had seen before or since. Using a Kodachrome ASA 25 film in a Nikon 2 camera, 60 mm macro lens, in an Aquatica housing with an Ikelite 250 strobe, Bernie obtained this “double” – a feat he challenges anyone to match.

ROCKFISH

FREE SWIMMERS AND SCHOOLERS

While many rockfish species hunker down, on or close to the bottom, numerous others form schools, containing a few too many hundreds of individuals. These assemblages may be totally of one species or a mixture of several. Such behavior creates additional difficulties for the photographer in his or her quest for quality pictures. Not the least of which is excellent buoyancy control as being “accepted as one of the school” is paramount to the process.



Yellowtail Rockfish at Renate Reef ©Neil McDaniel

Biologist/photographer Neil McDaniel was delighted to be surrounded by schooling rockfish in Barkley Sound, B.C., in the summer of 2015. At this point, he was armed with Sony EXIR video camera in a Gates housing and the accompanying image is a “still grab” from considerable footage. Careful examination of this shot shows a few Black Rockfish *Sebastes melanops* amid an overwhelming number of Yellowtail Rockfish *Sebastes flavidus*. Selecting frames from video has become more practical in the digital age.



Yellowtail Rockfish and Black Rockfish ©Kent Forsen at 60mm, f14, 1/60sec

Kent Forsen was also drifting about in the aforementioned Barkley Sound school, toting his NikonD600 camera, in a Seacam Silver housing with a Seafash150 digital strobe and 60 mm lens. This exceptional portrait of the two species present resulted from an f/16 1/60 sec ISO 100 setting.



Deacon Rockfish *Sebastes diaconus* ©Kent Forsen at 60mm, f13, 1/60sec

During another “schooling encounter” at a different Barkley Sound local, Kent encountered the Deacon Rockfish *Sebastes diaconus* in a single species grouping. Another fine portrait resulted but in this instance, a second specimen face on in the upper left corner, adds the view of the species’ forehead banding. This is a key identification characteristic.

ROCKFISH



Adult Canary Rockfish *Sebastes pinniger* ©Neil McDaniel

Adult Canary Rockfish *Sebastes pinniger* generally form small schools and Neil McDaniel was able to full frame this individual. Equipment used was a Nikon D100 camera in a Subal housing, with twin Ikelite 150 strobes and a 12-14 mm zoom lens, at 1/68 sec, f 11-16, ISO 200. The canary is one of the rockfish species less frequently encountered by divers, with Barkley Sound representing a good location to try.



Vermilion Rockfish *Sebastes miniatus* ©Kent Forsen

While rockfish move about, they usually do not swim quickly and generally allow encumbered underwater photographers to keep pace. Such behaviour allowed Kent Forsen to capture a partial “head on” image that also suggests motion by this Barkley Sound Vermilion Rockfish *Sebastes miniatus*.



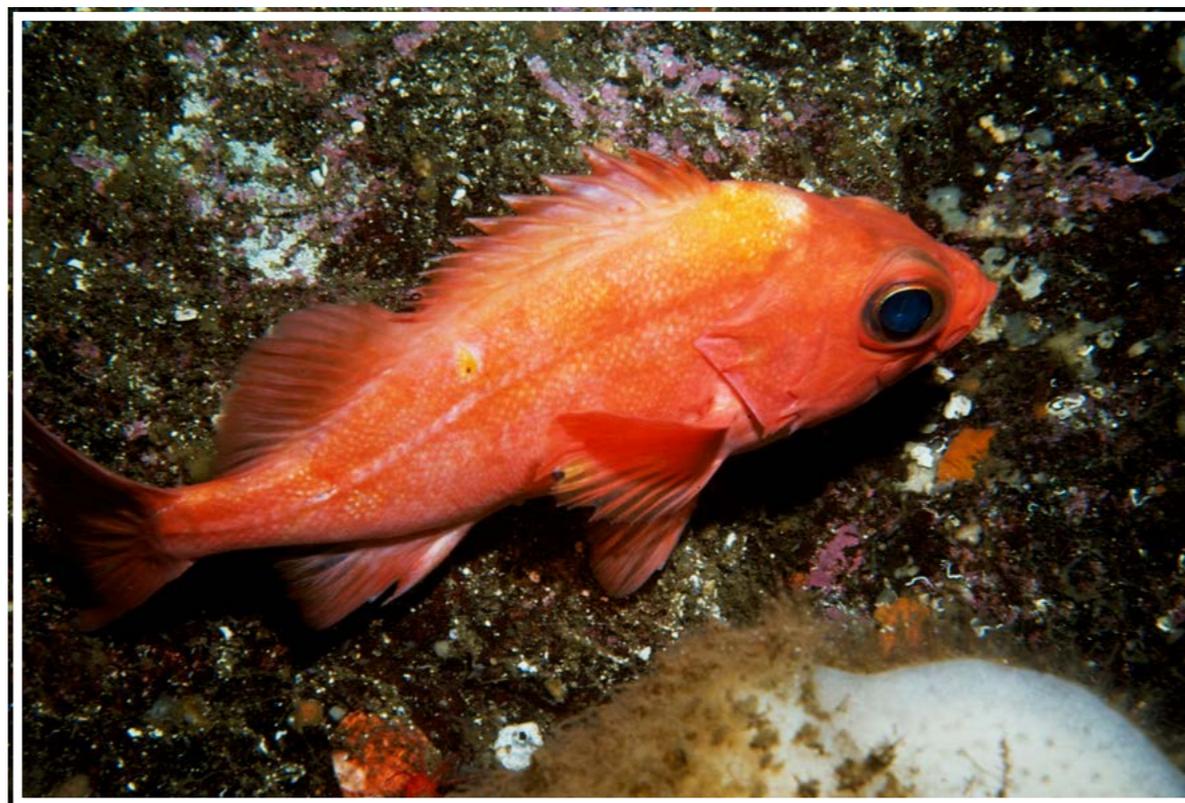
Dark Dusky Rockfish *Sebastes ciliatus* ©Neil McDaniel

Schooling rockfish will often circle around vertical topography which provides excellent background oriented options. In this image, Neil McDaniel was equally intrigued by the Dark Dusky Rockfish *Sebastes ciliatus* and the beautiful Orange Gorgonian *Primnoa pacifica*. A match made in photography heaven.

ROCKFISH

ROCKFISH PHOTOGRAPHY CHALLENGE FOR THE FUTURE

While at 130 ft. (40 m) in Agamemnon Channel, in the early 1970s, Lou Lehman hurriedly photographed this Splitnose Rockfish *Sebastes diploproa*, sensing it was different while acknowledging his depth and diminishing bottom time. Indeed, this rockfish is one of many, often colourful red species that inhabit depth greater than those frequented by most recreational divers. However, with the ever-increasing range of the techie aficionados, photographic depth barriers are now being adjusted. Hopefully, this exciting opportunity to document “un-shot” rockfish will stimulate this generation of image makers and I look forward to seeing their work.



Splitnose Rocksh *Sebastes diploproa* ©Lou Lehman at 60mm, f8, 1/60sec

FINAL THOUGHTS FROM THIS DIVE BUDDY/SPOTTER

Over the years, I have enjoyed diving with many underwater Pacific Northwest photographers and acted as a spotter – looking ahead for potential creature models. From the feedback I have received, the feeling has been mutual. A kind of symbiosis.

With respect to rockfish spotting, once a specimen is noticed (optimally, at a goodly distance), a backtrack before spooking the creature is critical. Keeping the rockfish in view and pointing it out as the photographer approaches can definitely improve chances for success.

Chasing rockfish (or any fish) really does not work. It is usually better to let it swim away and search for another. However, I have had some success “herding” schooling rockfish toward a stationary and aptly positioned photographer. The trick seems to be making a very wide circle ahead of the individual or group of rockfish and then slowly moving it/them toward the critical site.

Of course, familiarity between photographer and spotter is important –likely via an established buddy pair.

A special thank you to Lou Lehman, Neil McDaniel, Marc Chamberlain, Phil Edgell, Bernie Hanby and Kent Forsen for all their images to be used in this article.

Featured Photographer: *Chad Tamis*



In 2012 I was able to start diving. I was backpacking through Thailand at the time. Within a week of my first open water dive, I became a rescue diver, and I quickly pursued becoming a Divemaster. By the time I came back to Canada, I knew that I wanted to pursue marine biology and moved to Vancouver Island to finish my degree at the University of Victoria. After

getting a handle on my first drysuit dive, I picked up a point-and-shoot camera and started taking photos of the local marine life around Victoria. I learned quickly that a simple camera would not satisfy what I felt I could capture of underwater life. Nevertheless, my time at UVic increased my ability as a biologist and cold water diver.



*Spanish Shawl (Flabellina iodinea) in Barkley Sound. A rare find around Vancouver Island. I spent as long as I could with this fantastic little slug. Taken with the super macro wet lens Nauticam SMC-1. © Chad Tamis
Nikon D800, 105mm, f40*

The big moment that pushed me into the realm of DSLR cameras was while showing one of my professors a picture of a nudibranch. I needed for him to confirm my attempt at identification. He assured me that my guess was as accurate as it could be, but it would not be confirmed unless I could get further detail on the morphology of the animal. This 5mm slug convinced me that I needed to move on to bigger and better things so that I would no longer be limited by my camera and only my ability as a naturalist and diver.

After graduating in 2014, I picked up a Nikon D800 with a Nauticam housing. I took the giant leap into teaching myself all the techniques of using a DSLR as well as all the challenges associated with using it underwater. From that point on I haven't looked back. I have used my camera to enhance my diving experience as well as my understanding of the diversity and ecology of the animals that flourish in the waters of the Pacific Northwest.

I started studying and shooting a lot of marine invertebrates; this was useful as I completed a Directed Study on nudibranchs at Bamfield Marine Sciences Center. Since then I have been fortunate to work at the marine station as a marine educator and CAUS Scientific Diver. These positions allowed me to use my ability as a photographer in a very practical way, showing students and researchers animals and interactions that they had never seen before.

While shooting macro subjects has been my primary interest, I have begun shooting more wide angle subjects and environments. While I feel macro photography is excellent to catalogue diversity and provide charismatic images of macro-fauna, I wanted to be able to give a larger sense of environment to some of the animals I was photographing.



*A small dorid (Limacia cockerelli) on some kelp in Victoria. This 5mm nudibranch held my attention for quite some time. © Chad Tamis
Nikon D800, 105mm, f32, 1/200*



*Super macro shot of a Vermilion Star in Victoria. Shooting close ups of sea stars gave me a different perspective for using patterns and textures to provide an unusual yet beautiful image. © Chad Tamis
Nikon D800, 105mm, 32, 1/250*

While living in Victoria, my favourite dive site would easily be 10 Mile Point. The strong currents at this site make the life abundant and diverse but can also create potentially dangerous diving conditions. It is a macro haven for shrimps and nudibranchs and has an extensive range of filter feeders and grazers.

Since being based on the west coast of Vancouver Island, my new favourite location would be Tahsis, in Nootka Sound. The area has stunning walls, beautiful pinnacles, and an array of life that I have not seen elsewhere around Vancouver Island.

For all the personal benefits of pursuing my passion, I think it is important for photographers to share their images and messages with the public. While hosting a gallery with some of my early work, most of the general public had thought all my pictures were from tropical locations.

As divers, we sit in somewhat closed circles, and in talking with like-minded people, we forget that much of this life is unknown to the people around us. With environmental issues like plastic, sound, waste pollution, over-fishing, and even climate change, we should be pro-active in reminding others of the beautiful life we see off our shore. For those that do not have the means or the fortune to see the underwater world, our images allow them to create a connection to the sea in hopes of encouraging all people to conserve and spread the message of ocean protection and conservation.

This is where I have found the most meaning in my work, and I hope to continue along this avenue. Most recently I have been able to assist on the next BBC Blue Planet series because of my knowledge of local marine life and ability with a camera. My biggest hope is to create a meaningful shift in perception of the people around the Pacific Northwest to focus on protection of our marine environment. There is much more to be gained in the long term from ecosystem-based services as well as eco-tourism for the local communities, than from the destructive resource extraction or waste-causing cruise ships.



*On a dive where nothing was going right, I took this image with a focus light only. It gained a lot of attention due to the colour and shapes provided by this Denronotus albus trying to feed on some hydroids. © Chad Tamis
Nikon D800, 105mm, f14, 1/160*



*Super macro of a sculpin, the colouration patterns are fascinating to me and when a subject pauses long enough for me to get close, I can't resist the urge to take a shot © Chad Tamis
Nikon D800, 105mm, f36, 1/200*

Equipment: Nikon D800. Nikkor 105mm F2.8, Nikkor 16-35mm F4. Nauticam Housing. YS-D1 Sea & Sea Strobes, Sola 1200 Focus Light. Nauticam Super Macro Converter (SMC-1).

Post Processing: Adobe Lightroom on Macbook Pro.

Contact Information:

chadtamis@hotmail.com

ctamisphotography.com

[Instagram](#), [Facebook](#), [YouTube](#)



*Dirona albolineata in Nootka Sound. The White Lined Dirona is one of the more beautiful nudibranchs in the Pacific Northwest and can be found from the shallows all the way down to the limits of recreational divers. © Chad Tamis
Nikon D800, 105mm, f9, 1/250*



Polycera tricolor in Nootka Sound. These nudibranchs are generally found on kelp feeding on bryozoan colonies. © Chad Tamis
Nikon D800, 105mm, f16, 1/250



*A Quillback Rockfish in Nootka Sound above a sea of crinoids. Tahsis has a massive population of these crinoids, a simple type of echinoderm that is capable of swimming up into the water column. © Chad Tamis
Nikon D800, 16mm, f8, 1/125*



*Floating in Barkley Saund, I found this ctenophore (Leucothea pulchra) in open water at 15 feet. I floated with it as it fed, experiencing for a brief moment the life of plankton. © Chad Tamis
Nikon D800, 105mm, f20, 1/250*

Featured Photographer: *Marc Damant*



My name is Marc Damant, and I live in Port Alberni, on Vancouver Island, British Columbia, Canada where my wife and I do the majority of our scuba diving. In a way, learning to dive was inevitable because I have always loved the water. When I was young, we had a pool which provided an escape from the heat and a place to play and then when I got older I discovered snorkeling which allowed me to see nature in my favorite medium. After a trip to Cuba, my wife suggested that we try scuba diving, and I was ecstatic.

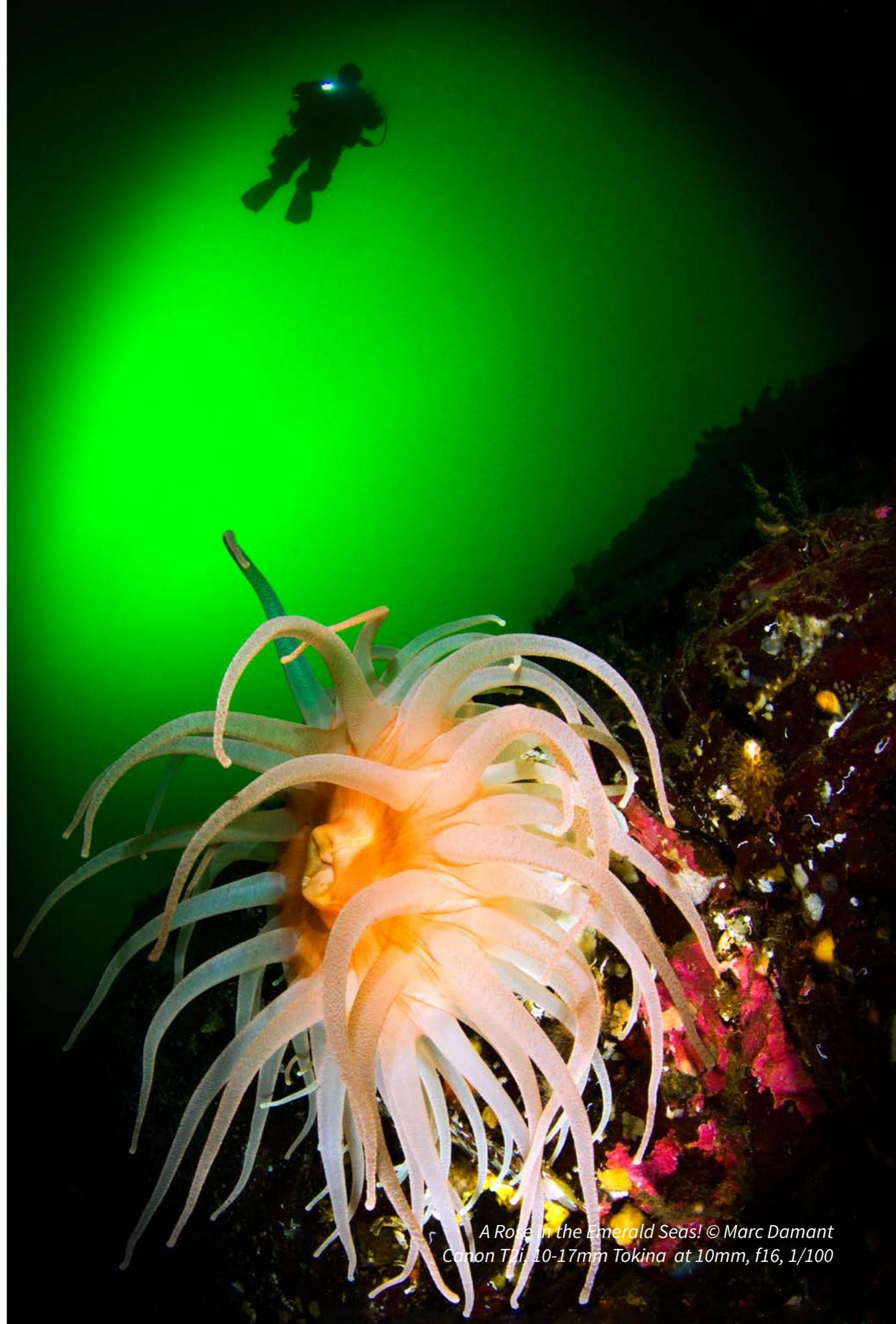
That was in 2009, and I can still remember sitting on the bottom at Finn Beach in Nanaimo on our first excursion into the ocean. As we waited to demonstrate our required open water skills to the instructor we were surrounded by marine life and I was hooked, feeling instantly at home. Years of snorkeling never prepared me for the way that wildlife interacts with you under the water or the serenity and bliss that you feel as you float along in neutral buoyancy. The joy and wonder from that very first dive have stayed with me over the years, and it is the reason why I continue to dive to this day.

Fortunately living on Vancouver Island has allowed me to scuba dive year round and I am always amazed to witness the tremendous seasonal changes in the wildlife at our dive sites. We do a lot of diving around home, and some of our favourite places are Tyee in Nanoose Bay, Madrona in Parksville, Charlaine in Nanaimo, and China Creek outside Port Alberni, which are shore dives that are accessible in all tidal and weather conditions. When we get a chance, we love to go out to Barkley Sound and dive Tyler's Rock, Renata's Reef (both which are accessible by boat) and the House Reef of Rendezvous Dive Outfitters in Rainy Bay. This area never disappoints a photographer because it has some of the best cold-water diving in the world, featuring truly spectacular marine species and diversity.

With all the bizarre and beautiful creatures in the ocean, I couldn't help but want to photograph them. I describe my photography like that of an avid hobbyist and use it to show people the colour, texture and variety of life close to home spreading the message of conservation with my art. I focus mostly on cold water subjects because most people have no idea that the Pacific Northwest contains ecosystems that rival those of warmer climes in both colour and abundance.



*A Lion's Mane on Green ©Marc Damant
Canon T2i with 18-55 lens at 18mm, f7.1, 1/100sec*



*A Rose in the Emerald Seas! © Marc Damant
Canon T2i, 10-17mm Tokina at 10mm, f16, 1/100*

As you can see, wildlife has always interested me, and I started shooting pictures on land with an old Canon film camera so it was very natural for me to transition to capturing underwater images when I began scuba diving 6 years ago. At first, I had an Olympus in an Ikelite housing with a Sea & Sea 110 strobe and while this little system allowed me to capture moments and memories it left me wishing for more. Seeing the photos in dive magazines motivated me to switch to an SLR camera so I purchased a Canon T2I and put it in an Aquatica housing with twin Sea & Sea 110a strobes and an I-Torch Videopro 4 focus light. Depending on visibility and subject, I use a Tokina 10x17 Fisheye lens for wide angle, a Canon 18x55 kit lens for subjects at intermediate distances, Canon 100mm for macro or Plus 10 and Plus 5 diopters for super-macro photography. For post production, I use Photoshop Elements Program on a PC computer.



*Colourful and Cute © Marc Damant
Canon T2i with 100mm macro lens, f11, 1/100sec*

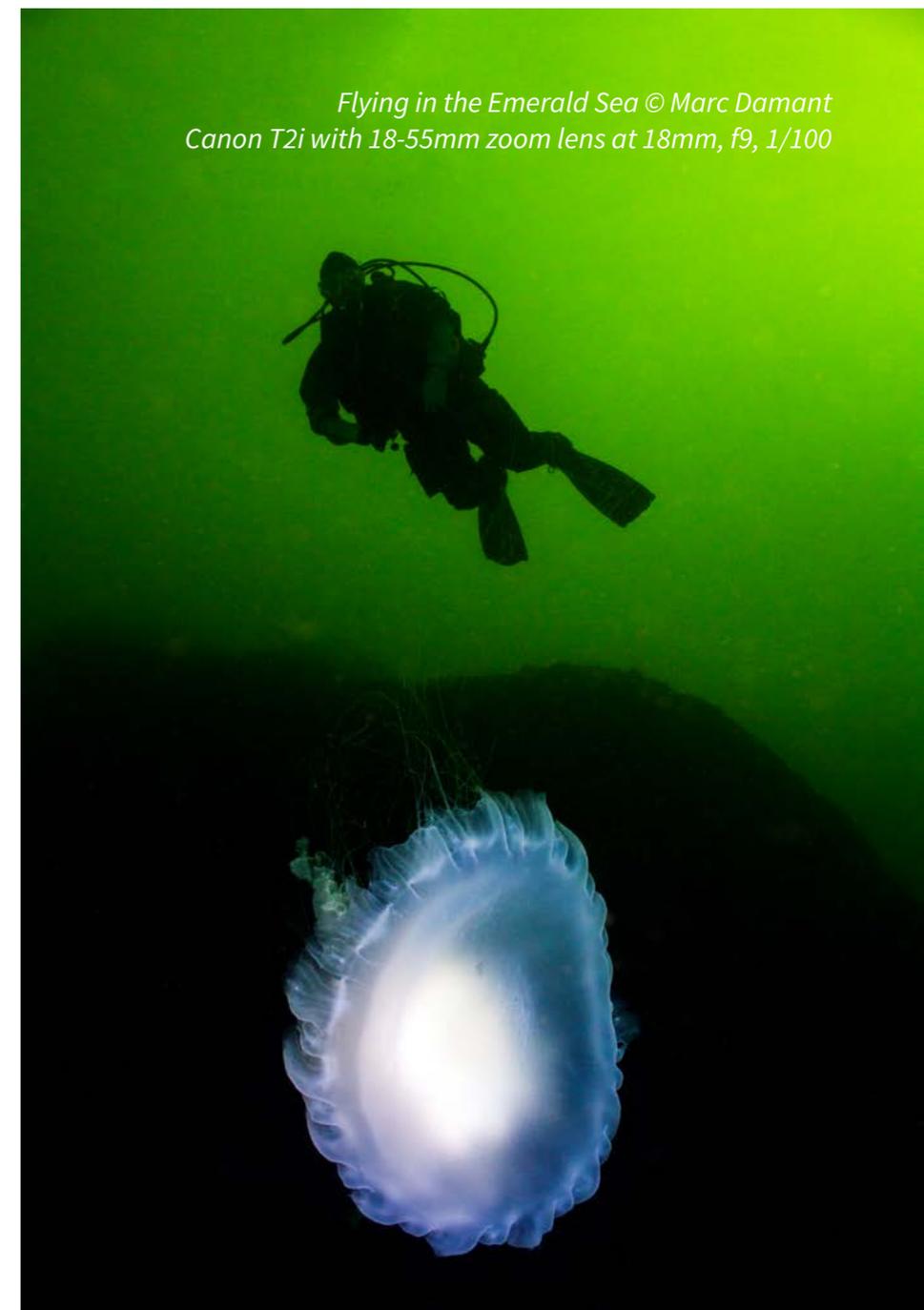


*Puppies of the Sea! © Marc Damant
Canon T2i with a 10-17 Tokina at 10mm, f10, 1/100*



*Hooded Nudibranch © Marc Damant
Canon T2i with 100mm lens, f10, 1/125*

Of course, it does not matter what gear you use if you never get in the water! When I think of all that I have learned about underwater photography from magazines, books, mentors, friends and my own trial and error the most important thing that I would like to pass along is this; be a good diver first! Proper trim, excellent buoyancy and getting comfortable in the water will make everything so much easier when you have a camera in your hand.



*Flying in the Emerald Sea © Marc Damant
Canon T2i with 18-55mm zoom lens at 18mm, f9, 1/100*

Once you have mastered the basics of diving, take your time to slow down and really look. Too often I hear people say that they “saw nothing” when I have just seen myriads of life on the same dive. Sites vary from month to month and day to night but if you take your time there is always something, big or small, waiting to be found.

If you are lucky enough to live where you dive, then take advantage of this privilege by diving a site repeatedly. This will allow you to learn the habits of the critters you want to photograph and the conditions in which you will be taking pictures. If you are unsure where to start at home or on holidays, you can always ask guides or local divers to show you the animals that you are interested in. By following and asking questions of other divers is how I learned to navigate and find critters on my own.

Lastly, when people ask “how do you get such great pictures?” I tell them the truth. I dive a lot, 2 to 4 dives a week year round, and an average dive lasts 60 minutes or more. So I spend lots of time taking subaquatic pictures, and I will stay with a subject for 20 minutes if I have to get the perfect shot. I also go to the same spot over and over again just to perfect my method. There is no substitute for practice and repetition if you want to improve your results. Many photographers are much more technical than I am and can describe which lens to use, strobe angle to set, F-stop and shutter speed to find and while this is important the one thing that technical knowledge can't replace is simply being in the water and being there for the special opportunities!



*Entangled Mating GPO © Marc Damant
Canon T2i with 100mm macro lens, f13, 1/125 sec*



*Peek A Boo! © Marc Damant
Canon T2i with 100mm macro lens, f13, 1/160*

My pursuit of the perfect picture has allowed me to experience some amazing once in a lifetime natural events. As a photographer in the Pacific Northwest, I have seen mating giant Pacific octopuses, been surrounded by a sardine bait ball hundreds of yards long, swam languidly with a six-gill shark and played with octogenarian wolf eels. None of that would be possible without scuba diving or my love of capturing that unique picture. So I would encourage anyone who is thinking about diving or taking up photography don't wait! It is a hobby that will change your life.

For more information about my work, to view more pictures, or to ask a question you can contract me through Facebook at Damant's Diving Digital Photography.



*All the World in the Eye of a GPO ©Marc Damant
Canon T2i with 100mm macro, f11, 1/100sec.*



*I am Sexy and I Know It ©Marc Damant
Canon T2i with 18-55mm lens at 55mm, f14, 1/100sec*

©Damant's Digital Photography

Featured Photographer: *Rick Waines*



I am a freediver who loves photography. I have taken the Advanced Freediver and Safety Supervisor courses with Performance Freediving International. If you are a snorkeler or freediver who has never taken a course, please do. It could save your life or the life of your buddy; it also has the bonus of making you a much better diver.

I first fell in love with photography, at 15 years old, traipsing around the small Gulf Island we had a cabin on. I would walk for hours every day; I took photographs of logs, rocks, trees, and birds: Seagulls, Great Blue Herons, Oystercatchers, and Green Heron.



I thought this meant that I should become a professional photographer, and so I went to Langara College and graduated from the Photographic Technician program. As it turned out, my love of photography didn't mean I should be a professional photographer. Professional photography sucked the life out of my passion and so I moved on to other work.

I learned to SCUBA in the early 90's but taking photographs underwater never once crossed my mind as I was pretty firmly entrenched in my belief that taking photographs made me an observer. I wanted to be immersed in the underwater environment as a participant, unmediated by the lens and flash I had come to see as a barrier to experience.

©Rick Waines
Olympus TG4 at 4.5mm, f2.8, 1/125 sec

In 2001, I was planning a trip to Haida Gwaii and was looking for a dive guide. I stumbled across a blog from a fellow that mentioned taking a freediver out into Hecate Strait to freedive with Dolphins; this caught my attention (the word “free” as much, or more, than Dolphin). Six months later I was in Hawaii learning to freedive with Carlos Eyles, a former spearfisherman, and author who had traded his gun for a camera. Carlos reacquainted me with the sensations of being in nature with a camera without it being a barrier; feelings I hadn’t had in a long time. But it took another ten years for freediving and freediving photography to finally take hold. While learning to freedive with Carlos, I met Wayne Levin, an underwater photographer based on the big island. His work continues to inspire me.



©Rick Waines
Olympus TG4 at 4.5mm, f2, 1/125 sec



©Rick Waines
Olympus TG4 at 5.5mm, f3.2, 1/160 sec

These days I get in the water once a week or so and have just bought a 19-foot zodiac to get me a bit further afield. I am using an Olympus TG-4, without a strobe. Freediving is difficult enough without dragging along extra gear, so I have done my best to keep it simple. The TG-4 shoots in Raw, if one wishes. I have found I can get pretty great images if I keep it simple and don't, for example, try to shoot a Warbonnet at 70 feet in December. Photography using available light has limitations in our cold dark waters, but it is also extraordinarily beautiful. The TG-4 is a waterproof camera to 15 meters but I have it in a housing as I feel safer about it that way.

Find me in Victoria and we can shoot together sometime.

rickwaines@gmail.com

<http://carloseyles.com/>

<http://waynelevinimages.com/>



©Rick Waines
Olympus TG4 at 4.5mm, f2.8, 1/500 sec



©Rick Waines
Olympus TG4 at 4.5mm, f2.8, 1/500 sec

Featured Photographer: *William L. McKinnon*



I have been fascinated and attracted to water in its variety of states and forms since my first memory. I grew up on the B.C. coast spending all my summers on, in and around the water. I then spent 20 some years living in the interior of B.C. reveling in fresh water multi-state pursuits while my working life kept me close to the salt water on the coast.

A work accident precipitated a major life change in 2002 that included moving back to the ocean full time and settling in Powell River in 2004. I was able to better access, experience and document the diversity of the coast and its marine life. I still love to gaze into tide pools at the teeming life within them while wandering local beaches with my

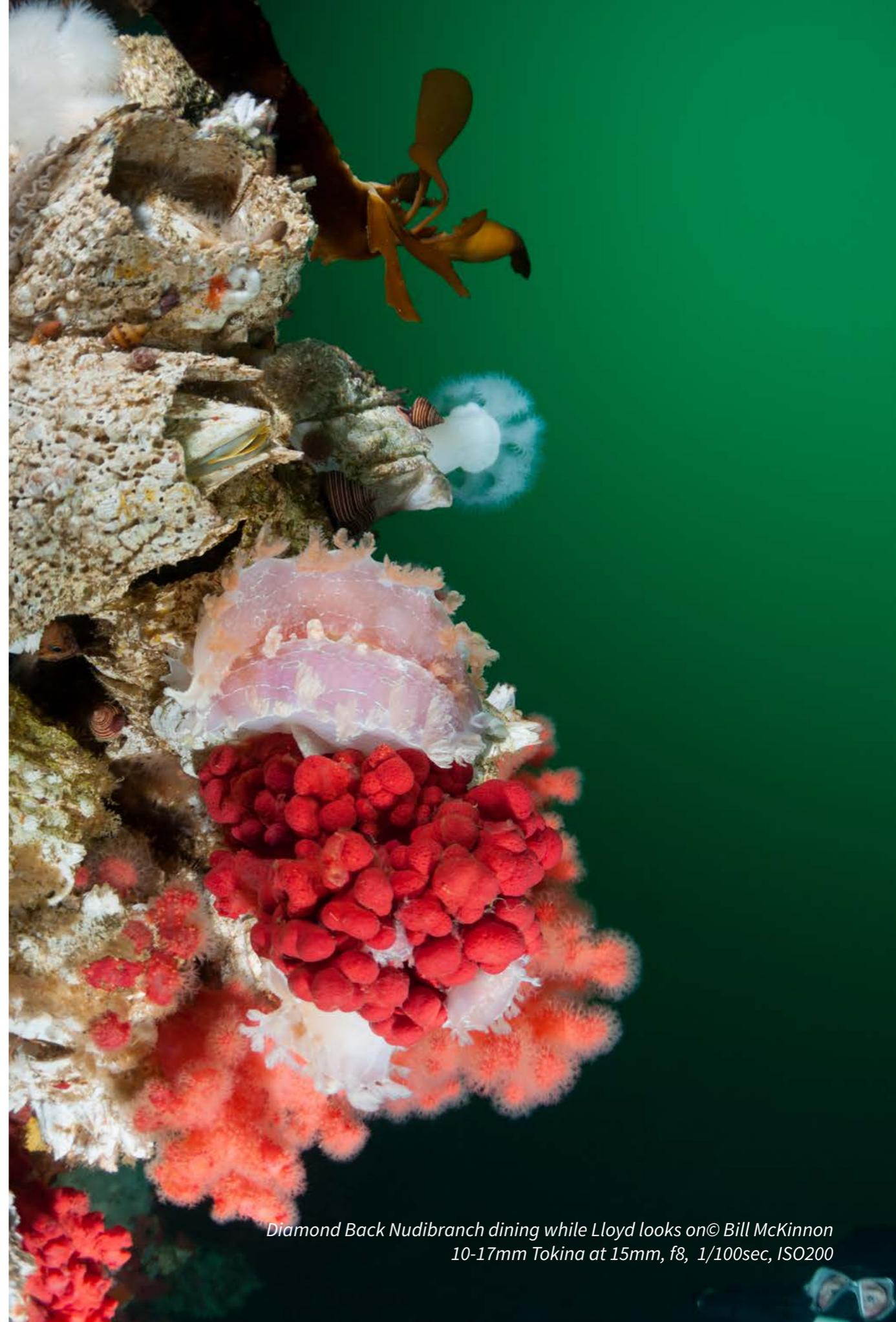
grand daughter Brea, as much now as when a child. Throughout the water column, from local shore dives to remote boat-access technical dives on the rebreather, I experience the same excitement and awe at the life I encounter and sometimes am lucky enough to photograph as when I first looked into a tide pool. Every dive a new experience.

I transitioned from open circuit diving to a rebreather three and a half years ago. This change in technical diving skill sets proved a good fit for shooting still images in all depth ranges. Part-time employment as a commercial diver and charter operator allows me to spend much of the rest of my time exploring the coast by boat, diving and taking photos.

As a teenager, I learned about SLR cameras using a beat up Spotmatic Pentax on land but started underwater using single-use film cameras in Hawaii in the 90s. I was first exposed to underwater digital cameras while diving with my friend Jim Rossi, and holding lights for him on the Agamemnon wall corals. This prompted me to into my first investment of a Fuji E900 with an Ike housing and Inon strobe that could go deeper than 130 ft.



My friend, Jim Rossi. We were out at the remains of the Malahat and under the YOGN 82 which is no longer at work as a breakwater. It currently sits at Catalyst Paper Corps docks in Power River under preparation for sinking as the first of four hulks to be sunk as artificial reefs.



*Diamond Back Nudibranch dining while Lloyd looks on © Bill McKinnon
10-17mm Tokina at 15mm, f8, 1/100sec, ISO200*

I now shoot a D90 Nikon housed in a Nauticam housing with a pair of Inon z-240 strobes. I use either a Tokina 10-17mm fisheye zoom with a Zen mini dome or a 60 mm Nikon macro with a flat port. I have recently acquired an Aquatica 8" dome and a 105mm Sigma macro lens with Aquatica ports and a +5 wet diopter adapted to the Nauticam. While dated, the main components of this rig have been very reliable.

I'm also looking forward to spending time when the visibility is poor exploring, experimenting with and learning snoot photography.



*Sun, Surge and Surf Grass© Bill McKinnon
Tokina 10-17mm at 14mm, f5.6, 1/100sec, ISO200*



*Blue Wavelet trailing the Gradient at the North end of Queen Charlotte Strait© Bill McKinnon
300mm, f5, 1/1600sec, ISO250*



*Large Lunch for a Red Irish Lord© Bill McKinnon
Tokina 10-17mm at 14mm, f10, 1/100sec, ISO200*

Like most folks I love new equipment but am also constrained by a budget. It's most important to get out there diving and taking photos, learn from ones mistakes, seek guidance when needed and to keep at it. I would encourage new photographers to use and become adept with what they have by using the gear often. Experiment with various settings, both on the camera and with the strobe to learn the camera's full potential. I found that slowing down, stopping, taking the time to look around



*GPO at Gods Pocket© Bill McKinnon
Tokina 10-17 mm at 10mm, f8, 1/125sec, ISO200*

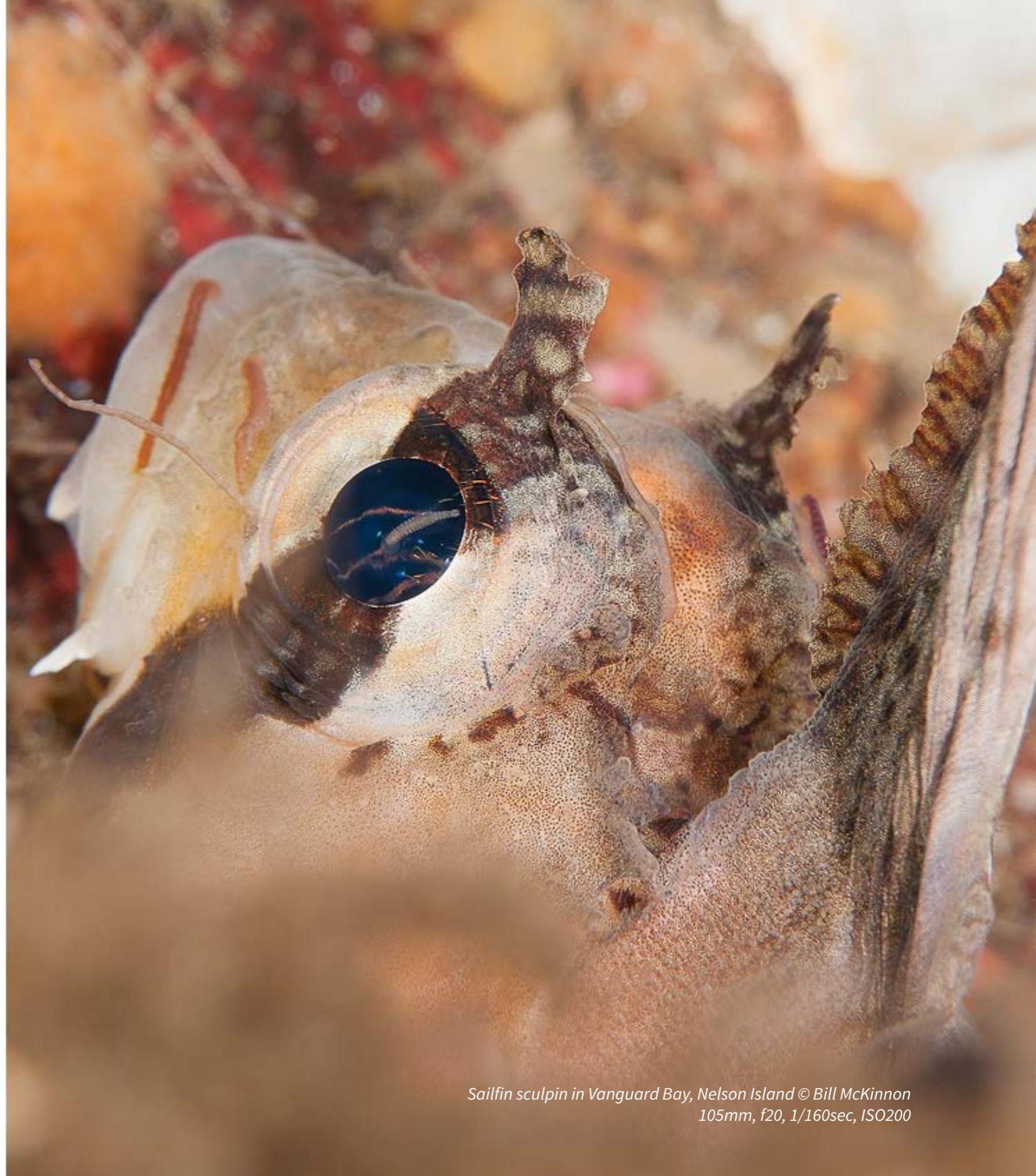
for the creatures and then studying their habitats, all while being relaxed and ready to shoot, a beneficial habit.

One of my largest struggles has been post-processing as I am a bit of a Luddite when it comes to computer technology. Lightroom, Alien Skin ExposureX, and ongoing mentoring by some very patient people has helped my images tremendously.

I hope you enjoy these images showing a bit of what I see and a nanoscale amount of the life that exists beneath the waters of coastal B.C.



*Grunt Sculpin © Bill McKinnon
105mm, f22, 1/160sec, ISO200*



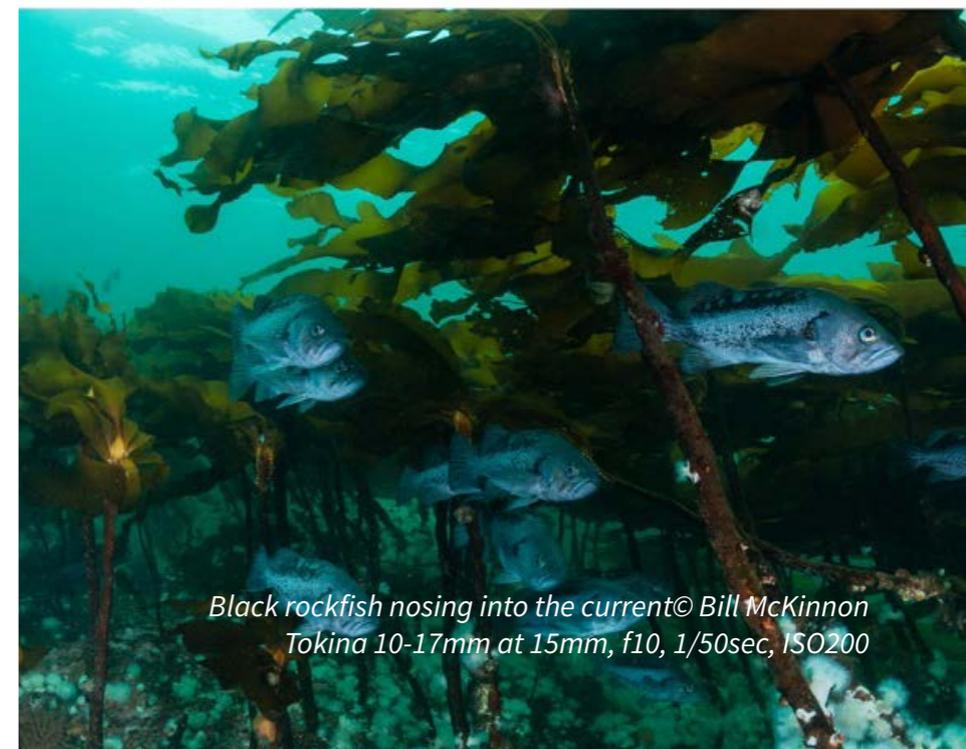
*Sailfin sculpin in Vanguard Bay, Nelson Island © Bill McKinnon
105mm, f20, 1/160sec, ISO200*



*Kelp Greenling at Tahsis Mozingo Point © Bill McKinnon
Tokina 10-17mm at 15mm, f8, 1/60sec, ISO200*



*Red Flabellina © Bill McKinnon
105mm, f18, 1/160sec, ISO200*



*Black rockfish nosing into the current © Bill McKinnon
Tokina 10-17mm at 15mm, f10, 1/50sec, ISO200*



*Gorgonian Coral at Agammemnon © Bill McKinnon
14mm, f11, 1/125sec, ISO500*

Oh Solo? Me? Oh!

Some considerations when diving by yourself

by Bob Bailey

I received an e-mail from a friend who wanted an instructor's perspective on solo diving. He asked, "How do I determine if I'm ready for solo diving"? It's a good question, but difficult to answer, especially for an instructor representing a training agency that mandates diving with a buddy. But I gave it some thought, and I'd like to use this column to share some of those with you.

All of us were trained to dive with a buddy. Virtually all of the training agencies hold to the premise that it's just safer, and therefore something we should do. But more and more people are looking at going solo as an alternative approach to diving. For some, it holds a particular attraction either for specific activities like spear fishing or photography, or simply because it allows a degree of freedom that one cannot attain by diving with a buddy. Whatever the reasons, the decision to dive solo should not be made lightly. As with my friend, you should ask yourself whether you're ready. You should carefully consider the risks, skills, training, and equipment you would need to go it alone.

Why Solo?

The logical first step would be to ask yourself why you want to dive solo. Perhaps it's because you've had a bad experience with a buddy, or you are having trouble finding dive buddies. Is solo diving the right response to that issue? Or perhaps you have a schedule



Diver with pony bottle and SMB. Photo by Eric Askilrud

that makes it difficult to find dive buddies when you're available to dive. Whatever the reason, it's important to assess whether or not solo diving is the right approach.

Am I Ready?

Solo diving is very much about making an honest assessment of both your skills and your mental strengths and weaknesses.

- Can you function with your mask off or flooded?
- Can you doff and don your BCD underwater?
- Can you recognize the onset of stress, or the beginnings of a panic cycle, and take steps to stay in control of yourself?
- Would you know what to do if you were bent or injured and alone?

When you're solo diving, you won't have another diver to help you out of any difficult or unexpected situations, so you need to plan accordingly and be able to respond to any emergency in a calm and rational manner. The mantra 'Stop, Breathe, Think, & Act' is far more important when diving solo than with a buddy. You have to be able to anticipate the risks, be extra vigilant to avoid them, and be methodical to resolve the ones you can't avoid.

What Skills Do I Need?

First and foremost, you need to be very comfortable with your basic diving skills – you should have good buoyancy control, be able to function with a flooded (or lost) mask, and be able to recover a lost regulator.

Dive planning becomes crucial. Pre-dive preparations need to be made with more emphasis on risk-avoidance. During the dive, it is essential to maintain an awareness of where you are and stick to your dive plan. After the dive, guess what? You're still alone.

Make sure you've thought through how to end the dive safely and exit the water. This planning is of particular importance if you're diving from a boat or in the surf because there isn't anyone available to help you.

Good gas management skills are essential. Never plan on your redundant air source as part of your gas supply; it's there strictly for emergencies. You also need to account for the fact that it may take you longer to solve a problem than it would with a buddy, and plan your gas reserves accordingly.

You should be able to remove comfortably and replace your gear underwater because in the event of an entanglement there won't be anyone around to help you. And finally, you should be comfortable with your ability to do a Controlled Emergency Swimming Ascent (CESA). Because if all else fails, you may have to abandon your rig and swim for the surface.

How Much Redundancy Is Enough?

The primary logic behind diving with a buddy is so that if some piece of equipment fails, you have your dive buddy there to assist you. Dive buddies provide each other with redundancy; if a piece of equipment fails you can still end the dive safely. When solo diving, you have to bring your redundancy with you. At a minimum, this means an entirely independent source of air such as double cylinders or a pony bottle. A second cutting device is also something you should take with you. EMT shears are highly recommended in addition to a standard dive knife. At least one of your cutting devices should be attached to a lanyard, so that if necessary you can attach it to your wrist to avoid accidentally dropping it. Another important consideration is a spare mask so that you do not lose your sight if something happens to the one you're wearing. Less fundamental, but also necessary, will be some type signaling device, such as a deployable surface marker buoy and a reel or spool, as well as a Dive Alert or other audible device. Of course, you should be proficient in the proper use of all of your gear.

And remember that redundant gear doesn't include the extra brain of a dive buddy. You always need to keep your mind focused and alert.

OK, So Am I Good To Go?

As with any aspect of diving, proper training is essential. At least one agency currently offers a solo diving class for recreational divers. It may also be possible to get training through the judicious choice of a diving mentor – someone who has the experience and is prepared to work with you to assure that you have the requisite skills to dive solo.

There are some “Rules of Thumb” that can be applied to solo diving:

- Distribute your weights in such a way that both you and your rig can be independent of each other. In other words, if using an integrated BCD, consider putting some of your weights in a harness or weight belt that you wear. Remember, if you have to remove the BCD underwater you want to be able to maintain control of both yourself and your doffed rig without one sinking while the other tries to rocket to the surface.
- Manage stress and anxiety by maintaining an awareness of your pulse and breathing rate. Be on the alert for signs of narcosis or any other condition that would lead to distorted thinking. And adopt stricter criteria for when it's time to consider aborting the dive.
- Dive at sites you are familiar with. Avoid sites with known entanglement hazards, currents, or other risks that may become unmanageable without help.
- Always let someone know where you will be diving, when you expect to be done, and what to do if you are overdue. It's always a good idea to contact that person as soon as you have safely exited the water.

Finally, recognize that there are quite a few things that no amount of gear will help you with, such as injuries or medical problems. So put some thought into what you would do in an emergency. Use good judgment to conduct your dive in a way that minimizes risks. In other words, a solo dive isn't a good time to try pushing personal limits or trying out new gear for the first time.

Snoot Photography:

Why You Should Consider Shooting with a Snoot

by Steve Taylor



Like most people, when I started taking underwater photos I was advised to use diffusers on my strobes so as to soften the lighting (i.e., remove harsh shadows) and to broaden the strobe beam. I was able to get passable shots with this approach but too often the soft lighting made the images look flat or two dimensional. I wanted shadows in order to bring out the texture of the photographic subjects; that is, to make the subject “pop” from its background.

Shadows also can make the image more interesting. Consider, for example, the image of the Warbonnet above. The photograph would have looked flat and boring if there had been no shadows. This shot was taken with a single strobe, without a diffuser, making the creature stand out. The strobe was angled so that the light glanced across the Warbonnet’s body, highlighting its scales and cirri. This is how I do most of my macro photography; a single strobe, no diffuser. This is not to totally dismiss diffusers; they have their place but if you want dramatic shadows and shading, then it is sometimes better to shoot without diffusers.



What if I had just wanted to light the Warbonnet, rendering the background into darkness? That might have been a good photographic goal if the background was visually unappealing, such as a bland, sludgy or muddy bottom, or a background cluttered with distracting objects. A subject highlighted against a black background can make the image look quite dramatic. This is where snoots can be useful.

Snoot photography is a logical extension of the single-strobe-no-diffuser approach. The goal of snoot photography is to gain precise control over the breadth and direction of strobe lighting. The photograph of the Orange Peel Nudibranch pictured above, is an example of snoot photography, using a fast shutter speed (1/250 sec.) so that image was lit by the strobe and not by ambient light. The snoot was angled so that the beam of strobe light glanced down the length of the body of the creature, highlighting its color, shape, and texture, while leaving the distracting bottom in darkness.

What are Snoots?

Snoots are simply light-channeling devices, fitted over strobes, in order to narrowly focus the beam of light. The example shown here to the right is one of the commercially available snoots (from Reefnet.ca). As you can see, the snoot consists of a mounting bracket that fits over the head of the strobe along with a bendable fiber optic cable, which channels the strobe light. Screw-on nozzles can also be used to further narrow the beam of light. This type of snoot is suited for macro photography.

There are various ways of making your own snoots. Do-it-yourself snoots can be useful if you have a particular photographic goal that can't be readily addressed with commercial snoots. For example, I wanted a snoot with a broader beam than is available from commercial manufacturers, and I wanted a snoot that I could readily remove underwater when not needed. Accordingly, I made a snoot from an old neoprene dive glove. The fingers on the glove were cut off and the remainder was fitted over the strobe to create a crude but useful way of channeling the strobe's light. The neoprene can be folded back over the strobe when I want to shoot without a snoot. This kind of snoot can be used for close-focus wide angle photography, where you might want to highlight some mid-sized object (e.g., a Rockfish) while rendering the background dimly lit or in silhouette, illuminated only by ambient light.



Steve Taylor



Steve Taylor



Steve Taylor

Applications and Challenges

Snoots are most often used to highlight a subject against a black background. Snoots can be used to produce a spotlight effect, where the subject is illuminated as if on stage, lit from above by a spotlight. This can produce some nice images but too often it looks contrived. I prefer to use snoots for cross-lighting purposes; that is, light skimmed across the subject as in the example of the Orange Peel Nudibranch.

Multiple snoots can be used, just like in portrait photography with human subjects, where there is a primary (key) light and one or more filler lights. The challenge with this approach, and with snoot photography in general, concerns the correct positioning of snoots. If you're using a fibre optic cable snoot, which has a small circle of illumination, then your image won't be properly exposed unless the snoot is correctly positioned. At the start of a dive I try to calibrate my snoot(s) by finding a small rock or other object that resembles the thing I'll want to photograph and then angle the snoots until they are



properly positioned to illuminate the object. Fine-tuning the angle of the snoots is typically required throughout the course of the dive. This is fine for sedentary creatures such as nudibranchs. It can be challenging for more flighty creatures such as Painted Greenlings and Gobies, but it can be done. Cabezon are more patient. Despite their size, a portrait snoot shot is possible, as illustrated by the photograph of a Cabezon's head, photographed using a fibre optic snoot. This type of snoot, with its narrow beam of light, was sufficient to provide a detailed photograph of the Cabezon's head.



Snoots are also useful for backlighting in macro photography. In the photograph of the anemone, two fiber optic snoots were angled back and behind the creature, cross-lighting it from behind.

Snoot-Like Alternatives

The alternatives to using a snoot depend on your photographic goals. If you want to simply highlight your subject in a spotlight, you could spotlight the subject by applying a radial filter in Lightroom or Photoshop. But the problem is that a radial filter can look like an artificial spotlight and lacks the subtle play of dark and light that can be achieved when a snoot is used to paint light and shadow across a subject.

Conclusions

Snoot photography can produce dramatic images, particularly for creatures that don't mind hanging around while you position and reposition your snoots as you try to find the best angles for lighting. If you're going to try snoot photography then you need to be patient; cultivate a Zen mindfulness for snooting. Most of your images will be totally black (underexposed) until you properly configure the snoots. The type of image that you plan to take is an important consideration. Snoots are most often used in macro photography. For small subjects, a fibre optic snoot is useful. For larger subjects, you could use a snoot with a larger beam or consider using a single strobe, without diffuser or snoot.

Camera Sensors:

Does Size Really Matter?

by Mazyar Jalayer



The sensor in your digital camera is a photoelectric chip that converts light coming from the lens into electrical current. When investing in a new camera and housing, amongst other factors, should you also consider the size of the sensor? The answer will come as a surprise as I try to explain the different sizes of the sensors and their benefits. By writing this article, I hope I can arm my readers with the knowledge that will enable them to make the right selection.

I should note that when investing in a new camera, the sensor size is one parameter amongst many to consider. This talk focuses on the sensor size only.

The Inner Workings of a Camera

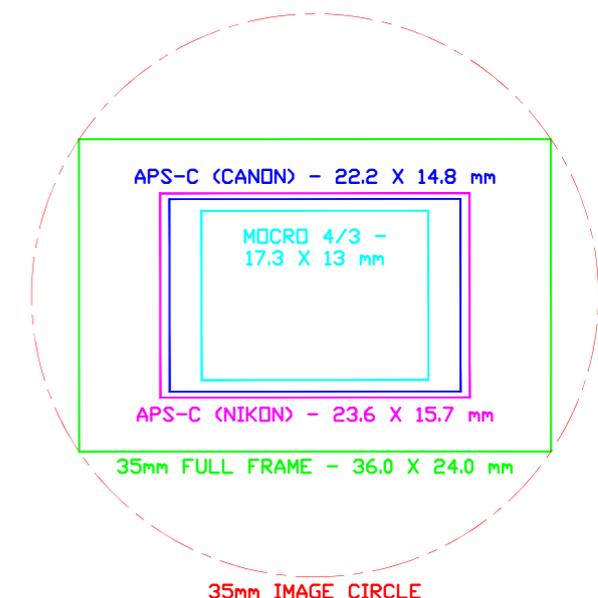
Before we can start the discussion on the sensor sizes, we should understand the basic inner workings of a camera. A camera consists of an optical lens or an assembly of

lenses that produces a picture on the image plane. The image plane can be a film or a digital sensor chip. The digital chip consists of individual photoelectric pixels that produce a current when exposed to light. Just like film that comes in different sizes, camera manufacturers also produce digital cameras with different formats (sensor sizes).

The Common Sensor Sizes

In general, there are four common sensor sizes: 35mm full frame, APS-C for Nikon, APS-C for Canon and Micro four-thirds for Olympus and Panasonic. There are many other sensor sizes available on the market, but for the purpose of this discussion as it relates to underwater photography we will limit our discussion to those listed above. I should also point out that many of the compact cameras (those without interchangeable lenses) also have a variety of smaller sensor sizes. Many of the

principle discussed in this article also apply to those sensors. The relative sizes of the common sensors are illustrated in the diagram below. The largest sensor shown is commonly designated as the 'full-frame' sensor and any sensor smaller than this is designated as a 'crop sensor'. Sensors that are larger than full-frame are sometimes called medium or large format.



Crop Factor or Magnification

The image circle is the projection of the image that is formed by the lens on the image plane where the sensor is located. Each camera manufacturer will design lenses that are appropriate for their sensor size.

If a lens that is designed for a crop sensor is used on a camera with larger sensor, the image produced from this combination will suffer from severe vignetting. This is because the image circle produced by that lens is designed for the smaller sensor and will only be large enough for that sensor.

In contrast, if a lens designed for full frame sensor is mounted on a camera with a crop sensor, the image circle formed by the lens will be larger than the sensor, resulting in magnification. The amount of magnification is designated by what is we call the 'Crop Factor'. For example, the Nikon APS-C has a Crop Factor of 36mm / 23.6 mm, or 1.52. Manufacturers typically round the crop factors to the nearest decimal point. In the case of Nikon APS-C the crop factor is 1.5. Canon APS-C with a slightly smaller sensor will have a crop factor of 1.6. Micro four-thirds systems will have a crop factor of 2.0. Some compact camera such as Canon G15 will have a theoretical crop factor of 4.7, provided a full-frame lens is mounted on the camera.

It is important to note that image magnification is a function of lens design, the distance from the subject to the lens and the sensor size. However, if all parameters being equal, the image produced by the crop sensor will be magnified by its Crop Factor. To illustrate this concept I have taken three images, as shown below. The first image

was taken with a Nikon full-frame camera, the second with a Nikon D7200 DX-crop camera and the final image using an Olympus EP-3 Micro 4/3rd camera. The same Nikon 105mm f2.8 macro lens was used on all cameras. In the case of the Olympus, a special Nikon-F to Olympus adaptor was used to mount the lens. The cameras were placed at the same distance away from the subject to illustrate the degree of magnification.

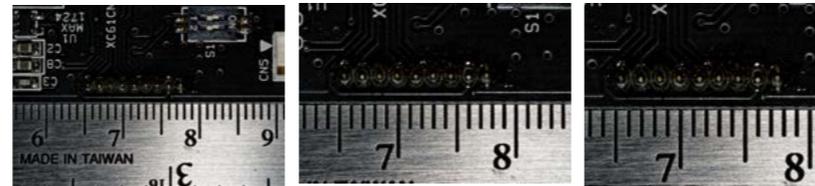


Figure 1 - Images produced from different sensor sizes, from right to left: Full-Frame, 1.5x APS-C DX and Micro 4/3rd

It is beneficial to use a crop sensor camera over a full-frame camera for macro photography where higher magnification is desirable. However, this will only work if a lens designed for a full-frame camera is mounted on a crop sensor camera.

As you may have already realized, the same magnification effect can be achieved if one were to crop the image produced from a full-frame sensor. As a matter of fact, many full-frame DSLRs have the ability to produce RAW cropped images by utilizing information from the portion of the sensor that can produce an image similar to one created on a crop camera. This feature is particularly useful for competition macro photography where rules do not allow excessive cropping of the image. The drawback of cropping an image to obtain higher magnification is at the expense of a reduction in numbers of pixels of the final image. Low pixel count might limit the maximum print size. I should also note that higher magnification can also be achieved using wet lenses and extension tubes. These techniques, however, are beyond the scope of this article.

Sensor Aspect Ratio

The aspect ratio of a sensor or the aspect ratio of the final image produced by the sensor is the ratio of the image width to the image height. Most sensors utilize the classic 3:2 aspect ratio. Micro four-third systems, as the name implies, utilize a 4:3 aspect ratio. The 4:3 aspect ratio has some benefits over the traditional 3:2 aspect ratio. Since, 4:3 utilizes more of the area from the image circle, more of the image is captured by the sensor then it would have otherwise if the image was taken by a 3:2 aspect ratio sensor.

Depth of Field (DOF)

The Depth of Field is the effective focus range of an image. It's the distance between the nearest and farthest objects in an image that appears to be in focus. The use of shallow (or small) DOF can be effective in emphasizing the subject while de-emphasizing the foreground and background. However, in most cases, but not always, increased DOF is desirable for underwater photography.



Figure 2 - A photo demonstrating the shallow depth of field



Figure 3 - a photograph with large depth of field

DOF is related to the lens aperture (f-stop), focal length, the distance from the lens to the focus point and the sensor size.

If all parameters, such as the f-stop and lens angle of view, are equal, the final image DOF will be inversely

proportional to the sensor size. This characteristic can easily be demonstrated in Figure 4. For an image from a crop sensor to generate the same angle of view as an image from a full-frame sensor, the crop sensor camera has to be placed further away from the subject as it is shown in the diagram. As we know, the closer the object to the lens the smaller the DOF.

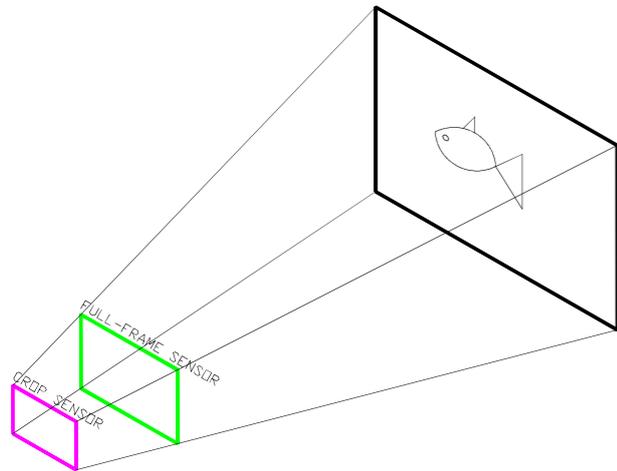


Figure 4 – Sensor distance from subject and field of view.

Compact cameras have substantially more depth of field compared full-frame cameras. To achieve the same depth of field realized by a small compact camera with an aperture set of f5.6-f8, an aperture of f18-f22 is required on a full frame format. See Figure 5.

I should also point out the effect of a larger DOF can also be achieved by simply cropping an image produced on larger sensor cameras with the lens set at lower f-stop and allowing more distance between the camera and the subject. The further the lens is from the subject the larger the DOF.

Since the DOF is also related to the focal length of the lens, increased DOF can also be realized by cropping the image and using a lens with smaller focal length (larger angle of view).

Camera Overall Size

The camera's physical size is influenced by the size of the sensor. One of the advantages of the Micro 4/3rd systems is the compactness of the system. Due to the small size of the sensor, the image circle is smaller and therefore the lenses designed for smaller sensors are more compact and weigh less.

The overall size of the camera/lens is also related to sensor size. Larger sensors cost more to manufacture. Lenses designed for larger sensors are bigger and require more glass and coatings to be manufactured. All these parameters add to the overall cost of the system.

Image Quality

With today's improvement in digital sensor technology, most sensors, small or large, produce exceptional image quality that is perfectly acceptable for both large prints and posting online. However, full-frame sensors have the advantage of having a larger area which in turn means larger individual pixels. Larger pixels allow more light gathering capability which translates to better noise reduction at higher ISOs and greater dynamic range. Moreover, the larger pixel allows lower pixel density and sharper image due to a higher diffraction limit.

Recap

To summarize, here is a recap of what we learned so far about the different sensor sizes while emphasizing on their advantages.



Figure 5 – The image on the left taken by Eli Wolpin using a Canon G15 compact camera set at 24mm f8. The image on the right taken by Mazyar Jalayer using a full-frame camera with DX-Crop mode using a 105mm lens set at f22

Benefits of Full-Frame Format

- Low noise, higher performance sensor
- Ability to use variety of lenses both designed for crop and full-frame with wider field of view (wide angle photography)
- Shallower depth of field for bokeh shots
- Brighter viewfinder because of larger lenses

Advantage of Crop Format

- Cheaper camera body and lenses
- Lighter and smaller
- Crop factor magnification for microphotography when sensor used with full-frame lenses.
- Increased depth of field

Freediving Photography:

Challenges and Opportunities

by Rick Waines



Image by Kerry Enns

First, my disclosures. I am not an expert in any way on freediving or freediving photography, but I would love to share what I have noticed, or perhaps more accurately, the challenges and opportunities for the freediving photographer.

Challenges

Freediving presents a few challenges to the underwater photographer and here are a few of them in no particular order.

Neutral buoyancy: In freediving, weighting is a very delicate balance. You want to carry enough lead to be neutrally buoyant around 10 metres. We weight this way in case of shallow water blackouts. One would prefer to be buoyant when one becomes unconscious in the water. Most of the photography we will do as freediving photographers will be within the first 10 metres or so.

This creates a problem. I'm sure you have figured it out on your own. Imagine taking a photo at 7 metres and having to kick to keep where you



Image by Rick Waines

want to be in the water column. One of my friends, when faced with this problem, found a work around by doing a partial exhale when at the depth he wanted to photograph at. This does solve the buoyancy but it creates increased risk for shallow water blackout so I don't employ it.

This buoyancy conundrum is one of the reasons I have decided macro photography isn't ideal for freediving. Macro photography might best be left to the SCUBA divers. Now, before you send me all your amazing macro photography done on breath-hold – wait, please do, I should say

I have seen many fantastic macro photographs done on breath-hold. My point is simple; I'm not sure that freediving photography is best suited for it. The problems of regulating buoyancy, the weight and drag of strobe units, and the limited time at depth make macro and huge challenge for the freediver – or this freediver anyway.

Gear is heavy: Find a setup that is as compact as possible. You will sacrifice some image quality and you won't be able to take that killer macro shot of a warbonnet in a tube sponge at 70 feet (go ahead, send



Image by Rick Waines

me the photo's). Carrying a DSLR, in a housing with a strobe setup is not a recipe for a great day of freediving. What you will gain, however, is fewer first-hand experiences with "blow, tap, talk" (an abbreviation of how we bring back to consciousness a freediver that has had a blackout). You will have images that have a little less information, but you will have safer dives. Not exactly an endorsement for freediving photography, I know, but what you will maintain is as much of the free in freediving as possible. I think it is probably safe to say that we freedive, in large part, for the mobility underwater and the sensation of falling through the water column with only the drag of our body. Every piece of gear you add takes a little bit more of the free out of freediving.

Opportunities.

So far, it seems like there may not be any advantages to freediving photography. It can seem that there are only limitations. I think what I am finding, however, is that



Image by Kerry Enns

with these limitations are opportunities. A friend of mine calls them beautiful fences. The obstacles in life that lead us to places we wouldn't have thought of going without them: beautiful places.

Underwater landscape photography: Freedivers cover a lot of ground. We are typically on the move. We see a lot of the ocean on one dive session. Therefore we see a lot of

the seafloor's structure, and some of it is stunning. One of the benefits of shooting underwater landscapes is that it is a subject that typically stays put. You are less likely to have a blurry shot of a dramatic canyon than you are of a school of perch, particularly as a freediving photographer.

Natural Light: I have decided not to carry a strobe for the reasons mentioned earlier, so that means using natural light. No small task in our waters regardless of the time of year. I happen to love images shot with natural light. One just has to make sure you have your settings geared toward what it is you are hoping to shoot and then, don't be shy with the trigger finger. We don't have time to set up, or wait for the perfect shot. My tactic is to shoot tons. Low light and a smallish camera will render many of the images I shoot useless due to the low shutter speeds and wide apertures, but if I take enough, I will often find one shot that works.

I realize that this last tactic is a bit of a hackneyed approach but it is the only way I know how to deal with the low light, limited bottom time, and small camera rigs most of us mortal freedivers can pack back and forth to 15 or 20 meters in our cold dark waters.



Image by Kerry Enns



Image by Cali Parkin

Creating Great Underwater Videos

Part 7 - Shot Blocking

by Mike Meagher

In this final section in our series, we'll give some consideration to putting it all together and getting that "shot". Video and film are different from still images in several respects. In this article, we will discuss the unique aspect of multi-dimensionality.

Video = Still Imagery + Time

A still image is static in time; it's unchanging. However, video or film gives you the ability to connect a series of images into a meaningful message over time. This time-richness allows a short film take to convey potentially much more information to the viewer than any still image.

Sequence, Scene and Shot

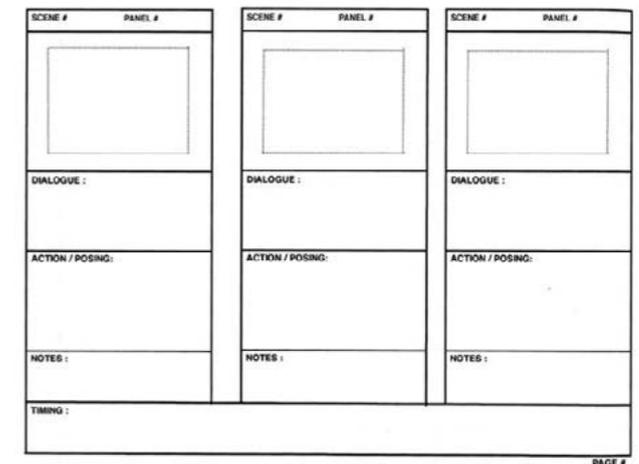
Let's define some basic terminology related to the idea of multiple images. A Sequence is a high-level portion of a film that has a related theme or message. For example, in the recent blockbuster film Star Wars: The Force Awakens, an example of a sequence is the opening sequence where the Storm Troopers land, invade the camp on Jakku, destroy the camp and capture Poe Dameron. That opening few minutes is all one sequence.

It is composed of several Scenes. Think of a scene as the set. There were several Scenes. The opening scene showing the landing party's 'landers' leaving the mother ship that is one scene. Another scene occurs inside the tent where the protagonist is receiving the hidden plans from the old, wise man. Then another scene occurs outside the tent where a battle occurs and our hero is captured.

For any particular scene, there may be one or more Shots covering the action of that scene. A shot is the actual camera recording of a few seconds or more story. A take, is one or many attempts by the director to get the desired shot. Sometimes they have to try it over and over, and it may take a terrestrial director multiple takes to get that ideal shot. We underwater filmmakers often get only one take, especially when dealing with the elements. Now that you know these basics, let us move on.

Shot Blocking is Moving Composition

In the still image world, we control composition: the placement and arrangement of the subjects, and the background in the image conveying the story. Good composition will draw the viewer's eye to the subject and



Example of how a storyboard could be set up.

control what the viewer looks at. There are many books and internet articles on this topic and we won't dwell on the basics of composition here.

But for video or film, for any particular shot lasting a few or many seconds, you can make use of moving composition. This is called blocking. When the director blocks the shot, they decide what the camera initially sees and how the camera moves. The director may change perspective, composition and ending of the take or leave everything as is. The director also blocks where the talent starts at, what the starting point is, their motion, and where they end up. The locations where the talent starts and ends are called 'marks'. You've heard the comment by a director or

actor that they “hit their marks” meaning that the talent properly executed the directors planned moves and positions during the take.

A skilled director uses blocking to convey a unique perspective on the subjects, to set the mood, and also transforms time and expresses space, or action and tempo during a single take using effecting blocking.

Study some of the works by Steven Spielberg, as he is a modern day master at classical composition and shot blocking.

Let’s study one small shot blocking example from the movie Jaws. The scene is when the marine biologist Hooper is preparing to dive into the shark cage. The shot is of the scuba tanks that he will be wearing, a significant prop in the film. This whole scene serves to foreshadow the importance of the scuba tank in the movie.

The shot begins with a close-up of two scuba tanks on the table inside the cabin. We see two hands pick up a tank, and the camera pans up and reveals a broad view on the deck as Captain Quint holds the tank for the suited up diver, Hooper, to don. Then from outside the cabin, Chief Brody enters the same cabin and the camera pans back down to the table as Brody picks up a dive weight. The camera dwells for a few seconds on the remaining scuba tank before cutting.

In that one take the camera and talent moved from inside the cabin, to outside, and back again, from close up to wide, back to close up, with the three different imageries combined into one fluid take. If this were shown as a still image slide show, you would have to show three separate

images, but the beauty of video and film is that by combining camera moves, changing perspective, selective focus and by having the subjects move about the image in a planned manner the story is told fluidly.

Blocking your underwater videos doesn’t have to be as elaborate, but do try to keep the concepts in mind – a little pre dive-planning will pay dividends. Take a look at some simple blocking during a recent promotional film Exploring the Hilma Hooker (Link below) where most of the shots in this dive were planned and blocked in advance with my buddy Jim.

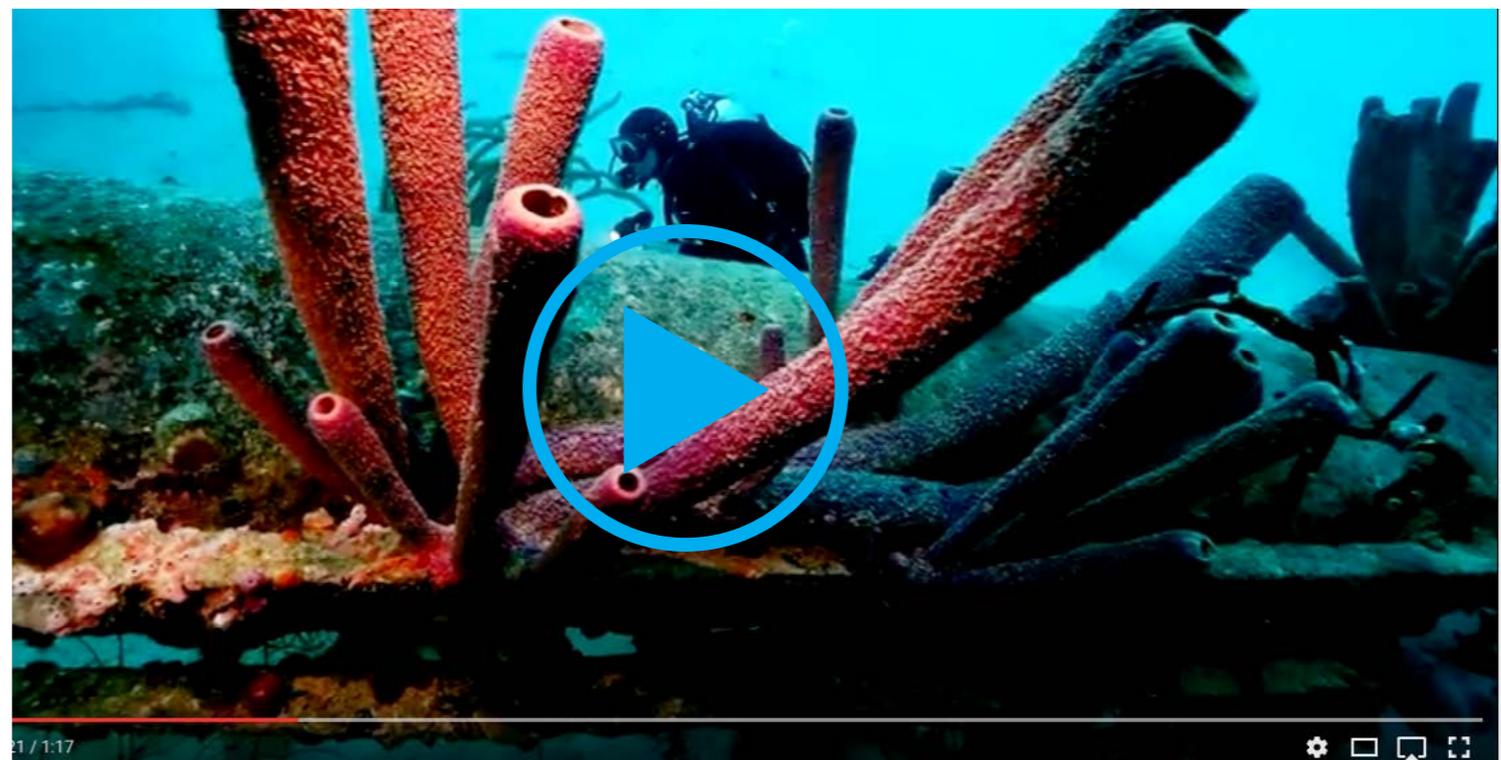
The very opening shot at time 0:01 shows some simple blocking with a diver swimming on top of the wreck, the camera point of view is straight down, the camera is held fairly static, and the divers cross from the bottom of the frame vertically to the top of the frame. Another shot blocking example begins at 0:17 as the diver is swimming

horizontally along on the other side the ship’s mast with the camera tracking the diver. Yet another example of shot blocking occurs at 1:01 where we see the diver swim around the bow.

Pre-dive planning and some simple sketches and planning allowed us to get these shots all on just one shore dive. Of course, it helped that I had been on this wreck prior and knew its layout and features. If you plan your shots and block in advance, you’ll be more productive during your limited bottom time. Enjoy, and good luck with your video.

<https://www.youtube.com/watch?v=NP01Cz-ILag>

Editor’s Note: We would encourage our readers to post a link to their videos to the PNW Diver’s Facebook page. What fun it would be to see the applications of Mike’s concepts. Don’t be shy. We all need to start somewhere.



Apple & Adobe's New Tablet Tools

Part 1

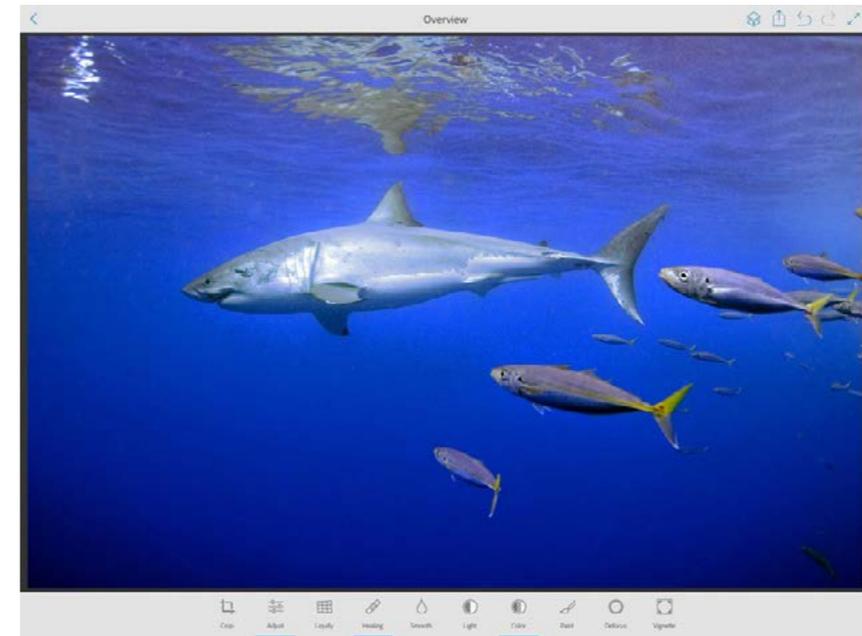
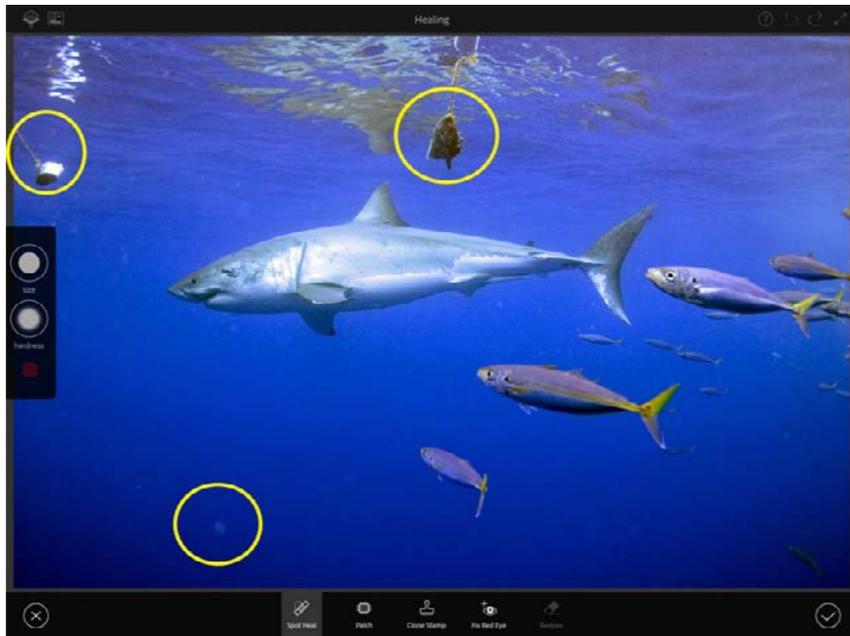
by Dan Clements

For the past six months, I have been trying out processing photos on an iPad Pro with an Apple Pen and Adobe's new photo editing tools. The results have been pretty good. However, for high-quality editing, you will probably want to use full versions of Photoshop or Lightroom on your desktop or laptop.

IPad Pro & Apple Pen

First, a little bit about the Apple hardware. I have the large, 12.9 inch iPad Pro, and very much like it. While it does not have the horsepower of Microsoft's Surface Pro, it will run the apps I use daily, many of which are not available on the Surface Pro.





While I like the tablet, the Apple Pen is not up to the Cupertino company's typically high engineering and design standards. While it has a very comfortable feel, the cap and charging system are quite lame.

In the photo above, for example, the cap covers the lightning charger. It is held in place by a magnet. If dropped, the cap generally goes flying. It frequently separates when stored in a bag for a flight. Worst of all, it is very easy for a young child to remove and swallow.

Then there is the charging system. The cap has to be removed (be sure not to lose it!), and replaced by an adaptor where one end fits on the end of the Pen, while the other plugs into a lightning charger. Very clumsy, but the Pen works very smoothly once it is charged.

Adobe Tablet Software

Now that we have talked a bit about hardware let's review Adobe's new tablet software. Since the iPad Pro will not

run full versions of Photoshop or Lightroom, Adobe has written "lite" versions of these two products, and separated them into different apps.

There are Lightroom and Photoshop Express apps, plus Photoshop Fix and Photoshop Mix apps. So let's see how this worked on an actual photo.

Initially, I downloaded a great white shark photo shot in RAW. The photo had two pieces of chum and some backscatter that I wanted to remove (see circled items).

Then I loaded the photo into the iPad tablet app, Photoshop Express, then into the Photoshop Fix app. I used the clone and stamp tools to replace the unwanted elements in the photo. This process was very seamless and quite easy. The Apple pencil works very nicely and is every bit as good as my Wacom tablet for photo editing.

Conclusion

From my perspective, the results are good enough for social media posting and public presentations. I would not use them in print media without further processing. Additionally, the workflow using the tablet applications is nowhere near as clean and easy as the full version of Lightroom or Photoshop. I would use the Content Aware Fill command to correct the images in much less time. And if you are processing lots of images from a shoot, I have not been able to find any batch operations that work successfully on a tablet.

From my perspective, the iPad Pro and Apple Pen do not replace a laptop. It is getting very close, but still not quite there. While Microsoft's Surface Pro is a tablet that runs full-computer versions of Adobe software, there is a lack of applications, so I still need an Apple or Android tablet. But it is close! Check out the Part 2 article for a pretty clever work around.

Running Photoshop on an iPad

Part 2

by Dan Clements

As noted in Part 1, my iPad Pro does not have the power to run a full version of Photoshop. However, there is a pretty neat workaround that will enable you to edit RAW images with an Apple Pen on this device.

The key is an app called Duet. This application is installed on your desktop or laptop, and also on your tablet (Micro-

soft or Apple). It turns your tablet into a second monitor. And, in the case of Apple, allows you to use the Apple Pen to edit RAW images on the iPad Pro. This is a much easier way of editing images in the field on a laptop.

Below is a photo of a lion's mane jelly in Photoshop running on my iPad Pro.



It took some technical support from Duet to get this to work. I have a new iMac optimized for photo and video editing, and the graphics card presented some problems. We resolved it by disabling the graphic processor booster in Photoshop (Photoshop > Preferences > Performance, Deselect Use Graphics Processor).

One of the practical applications of this approach is that my Wacom tablet became surplus. While this has been a great help in editing photos, it has now been replaced by my iPad Pro and Apple Pen.

Adobe CC 2016 Release

Photoshop, Lightroom and Bridge See Big Changes

by Dan Clements



On June 21 Adobe released 2016 versions of Photoshop CC, Photoshop CS6, Lightroom, and Bridge. This major upgrade has several significant changes. Let's look at a few that I have noticed in the few days I have had to work with the new products. Thus far, I like what I see!

Photoshop

Adobe has really improved the speed of many tasks by more fully utilizing the processing power of a computer's graphic processing unit (GPU). Processes like content aware fill are up to 30% faster, for example.

There is a significant change to Photoshop's interface. The default is a darker background more similar to Lightroom.

One of the features in Photoshop CC that I really like is a new Content Aware Crop. If you crop and rotate an image, there are often blank corner areas. Content Aware Crop automatically fills in these spaces with remarkably good results.

Another significant change in Photoshop CC is a full-featured video editor that very much resembles Premier Pro. Activate the Motion Panel to see how this works.

For those of you who have not migrated to the Cloud, Photoshop CS6 also saw some major enhancements beyond the interface and better use of processing power. Content Aware Move, which has been in the CC version, has been added. The Blur tool has been much expanded, and video editing has also been included.

Lightroom

Aside from the improved processing speed, I have not found new features that would greatly benefit underwater photographers. There are some powerful new tools for

straightening subjects like buildings, which will find more use in landscape and city photography.

Bridge

For those of us who prefer a Photoshop/Bridge combination over Lightroom, Bridge also saw some upgrades. The darker interface option has been included, as has the more efficient use of GPU processing power. Thumbnail generation is now very, very rapid.

Many of us use our smartphones to capture images and video. There is now a new import feature for iOS and Android mobile devices.

Adobe has still not reincorporated Export Panel into Bridge. Users have the option of Photoshop's batch routine or Lightroom's Export to disk or CD.

Mooring Renovation Project

Artificial Reef Society of British Columbia

by Alan Wong, Director Special Projects ARSBC

In August 1989, the Artificial Reef Society of British Columbia (ARSBC) completed its pilot project with the sinking of the 178-foot coastal freighter, G.B. Church at Princess Margaret Marine Park at Portland Island near Sidney BC. At that time, the Church was the largest ship to be sunk as an artificial reef in British Columbia. With the aim of creating stable long-term marine habitats, seven more much larger ships were converted to reefs over the next 26 years.

Once a ship is prepared to international environmental standards and sunk, it becomes available to the public for eco-adventure diving. To provide access for divers to these artificial reefs, it is necessary to mark the ship location on the surface with floats and associated lines / hardware. Due to the harsh environment in the areas where these ships are located, this equipment requires



constant maintenance and replacement. The cost of maintenance can be expensive for operators and too often, the replacement equipment can fall short on durability demanded by the demanding ocean settings. Ship buoys, lines and associated hardware do wear out and require a consistent source of standardized replacements, something that is lacking at present. The ARSBC has launched a mooring renovation project to address this issue.

British Columbia is known to be a world class dive destination for many reasons including an impressive fleet of man-made reefs, so it makes sense to retrofit the buoy systems on a priority basis. Divers will benefit and appreciate improved buoy systems for their dive experience.

Soon after the successful sinking of the former HMCS Annapolis in April 2016, the ARSBC studied the problem and developed a solution whereby the diving public could individually donate \$20 annually to the renovation program and receive a commemorative dive tag. This is being done in cooperation with the Dive Industry Association of B.C. and other parties who provide support by distributing the tags to the diving public. It is worn by the diver and indicates that they have supported the renovation fund. The tags are good for all the ARSBC wreck sites and are available through local charter operators or scuba shop retailers.



Each year, a new tag will be produced with a new colour and graphic as part of the collectible tag series. The 2016

embossed tag is blue and made of heavy duty plastic and features the former HMCS Annapolis ship crest. This will be an on-going program with the goal of retrofitting all ARSBC artificial reefs in the coming years. Currently, plans are underway to install a new system on the G.B. Church (Sidney) and the former HMCS Columbia (Campbell River).

Visit the web site at www.artificialreef.bc.ca for more program details as well as our current list of charter and retail supporters.

Industry Partners

Abyssal Dive Charters, www.abyssal.com
406-555 W 28th St., North Vancouver, BC V7N 2J7

International Diving Centre, <https://diveidc.com>
2572 Arbutus St., Vancouver BC V6J3Y2

Nanaimo Dive Outfitters, www.nanaimodiveoutfitters.ca
2205 Northfield Rd., Nanaimo, BC V9S 3C3

New World Diving, www.newworlddiving.com
467 Kelly St, New Westminster, BC V3L 3T8

Ocean Pro Divers, www.oceanprodivers.com
3189 King George Blvd. Surrey, BC V4P 1B8

Ocean Quest Dive Centre, www.diveoceanquest.com
#107 - 3790 Canada Way, Burnaby BC V5G 1G4

Ogden Point Dive Centre, www.divevictoria.com
199 Dallas Rd., Victoria, BC V8V 1A1

Pacific Pro Dive, www.pacificprodiver.com
101-2270 Cliffe Avenue, Courtenay, BC V9N 2L4

Rockfish Divers, www.rockfishdivers.com
3945B Quadra Street, Victoria, BC V8X 1J5

Sea Dragon Charters, www.seadragoncharters.com
6409 Bay St, West Vancouver, BC V7W 3H5

Sunshine Kayaking, www.sunshinekayaking.com/
35Box 35, Molly's Lane, Box 35, Molly's Lane, Gibsons, BC V0N 1V0

About the Author

Alan Wong, is the Director of Special Projects for the ARSBC. He is a technical diver and videographer who not only dives extensively locally, but has also enjoyed diving in Mexico, Hawaii, Cuba, Key West, and Bonaire. Recently, Alan was a member of the team that worked on the former HMCS ANNAPOLIS, which was involved with material removal, site surveys, clearance diving, and diver up-line installations.

Top Island Econauts Host Extravaganza

by Kerry Enns



For more than 30 years, Vancouver Island's Top Island Econauts have been hosting an event that not only celebrates diving but raises money for socio-environmental efforts. The May Long Weekend Dive Extravaganza is one of the biggest and most longstanding scuba diving events in British Columbia. The event takes place from Telegraph Cove.

This year more than 80 divers gathered, representing several British Columbian dive clubs: Aquarius Scuba Club (Esquimalt/Victoria); Duncan Divers; Coquitlam Scuba Club; Vancouver Pescaderos; Campbell River Tide Rippers; and the Top Island Econauts (Northern Vancouver Island). President Jackie Hildering commented, "What brings this many avid cold water divers together? The extraordinary marine life of this area and wanting to learn about it; camaraderie; and some pretty serious fun. The theme of "pirates" certainly added to the merriment this year."



More than 45 sponsors contributed prizes for the raffle from small Mom & Pop businesses to well-known corporations such as Overwaitea.

Participants did a minimum of four dives during the weekend at local sites such as Bob's Spot, Plumper Wall, Warbonnet Wall, Marg's Wall, Gumboot Wall, Plumper Rock, Stubbs Island, and NE Pearse. Dives were timed for optimal slack.

The Top Island Econauts Dive Club is a non-profit society aimed at facilitating safe and ecologically sound recreational diving on northern Vancouver Island. www.econauts.org

Photo credit group photo: Jackie Hildering

Photo credit pirates: Jacqui Engel

Halkett Marine Park Expansion:

Many Hands Make Light Work

by Adam Taylor



On May 26, 2016, the BC Minister of Environment announced the expansion of Halkett Provincial Marine Park on Gambier Island to include the neighbouring glass sponge reef.

This increase comes as a result of a proposal submitted by members of the Underwater Council of BC, Marine Life Sanctuary Society of BC and Vancouver Aquarium. With the traditional marine protection process through Department of Fisheries and Oceans stalled the group sought the advice of Mel Turner, a retired BC Parks Planner to try a different approach.

The 100% volunteer effort pooled the resources and data from each of the organizations, outlined the importance of the unique sponge reef ecosystem and the habitat and recreational values of the area. The working group successfully gained support from local, regional, and First Nations governments, as well as local MLA Jordan Sturdy, who championed the proposal in the Legislature. This sponge reef and neighbouring sponge garden both occur within Recreational Diving limits.

Further meetings will be held with BC Parks and Ministry of Environment staff to outline the various ecosystems

and develop a Management Plan for the expanded park. This plan will focus on conservation, research and recreational values. Based on these meetings, BC Parks will be approaching DFO regarding fishing closures to prevent impact damage to the fragile sponge reef, and will be looking to the dive community to ensure any negative impacts caused by dive activities are mitigated.

The rocky pinnacle where the reef is located comes to within 75 feet of the surface, the sponge reef itself begins in 110 feet of water on the shelf alongside the pinnacle. As divers, this provides a unique opportunity

to not only visit a globally unique habitat but help study it. We must view this opportunity as a privilege, not a right, and if noticeable damage is being caused by visiting divers, the site will be closed to divers to protect the unique environment.

Based on initial discussions, fundraising has begun for the installation of a Divers Mooring Buoy and Citizen Science stations on the site. To ensure divers do not damage the delicate glass sponge reef, a Sponge Diver Specialty Course has been developed.

This course was developed by Greg McCracken of Oceanquest Dive Centre and includes information specific to sponge reefs, advanced buoyancy and deep diving skills. Instructors from other shops will be the first group through the course. This ensures the dive community has multiple options for participating in future Citizen Science initiatives.

Keep watching the UCBC and MLSS websites and Facebook Pages for further details on how the dive community can become involved. There will be a Divers Social at the Vancouver Maritime Museum on September 14th which will focus on the Halkett Park Expansion and is being hosted by the Underwater Council of BC and Marine Life Sanctuary Society of BC. Divers are encouraged to attend.

For further information please visit:

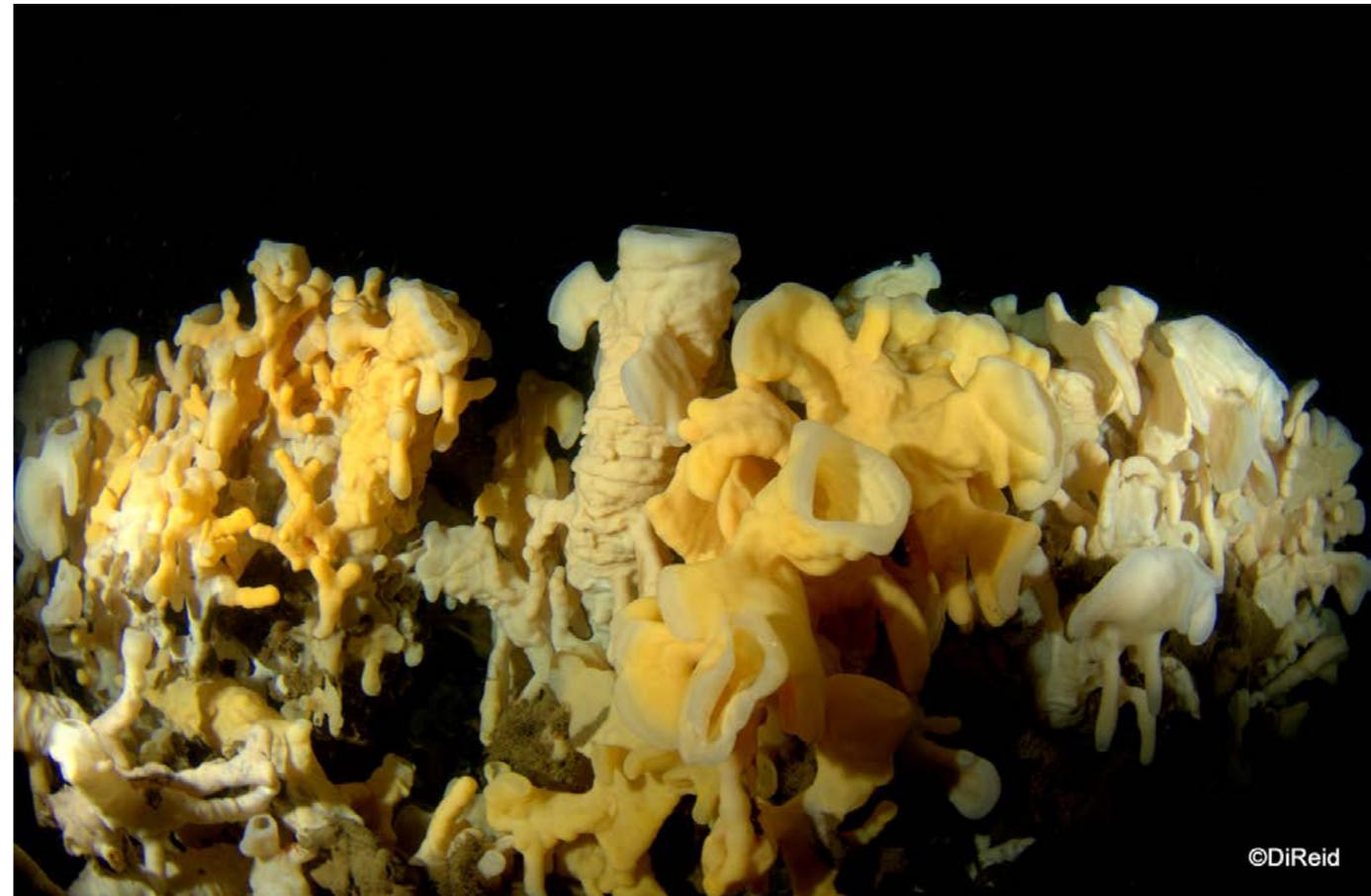
UCBC <http://underwatercouncilbc.org/projects/citizen-science.html>

MLSS <https://mlssbc.com/programs/sponge-research/>

Cradles of Glass <https://www.youtube.com/watch?v=yLVsmBf5pVQ>

Images by Diane Reid

Video by Roy Mulder



Avoiding Dive Travel Anxiety:

How to Take the Plunge into Overseas Travel

by Marli Wakeling



“By failing to prepare, you are preparing to fail.”

- Benjamin Franklin

Many divers in the Pacific Northwest spend their first few years after certification diving locally. With the cost of dive travel spiraling upwards and the expense of dive and photography gear, overseas dive travel is often dismissed by keen cold water divers without a substantial lottery win in their bank account. Right about November, some of us start to think that it would be great to escape the rain and cold and travel somewhere exotic, wear a 3mm wetsuit and ditch the hood and gloves. We look longingly at photos of clear

blue water and big pelagic animals or soft corals or strange critters from macro photography destinations.

Considering a dive trip abroad can feel a bit overwhelming, particularly if one hasn't traveled overseas before. Some find it so intimidating that they never dive anywhere outside their own local area. This is a real pity, given the wondrous experiences one can enjoy while diving around the world.

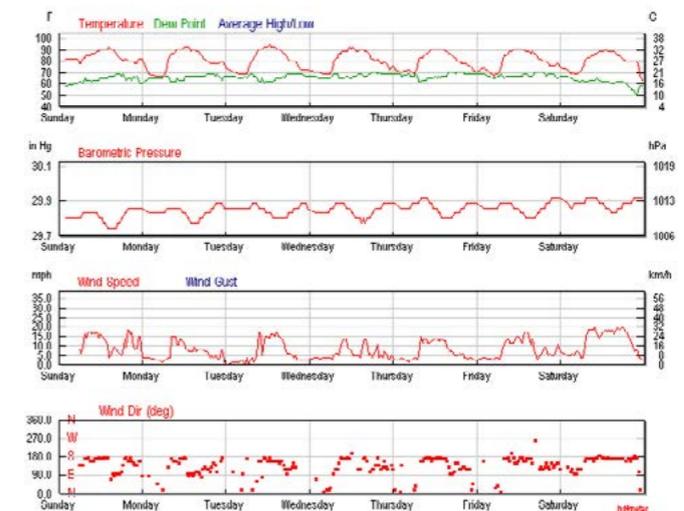
After 20 years of dive travel, one would think it would be easy and stress-free for me to take a dive trip. It was a bit easier years ago when I could take 140 pounds of checked luggage to the South Pacific! Now, the organization of dive and photography gear while staying within baggage allowances is a challenge. However, cold water photographers and videographers tend to be detail oriented, which is an advantageous asset for dive travel planning.

When to Travel

The dream of traveling in dreary November is appealing. I learned quickly (when Typhoon Hainan struck the

Philippines two weeks before my departure) that there are few places for great tropical diving right about the time of year we want to get away the most! Hurricanes, cyclones and typhoons have a nasty habit of appearing during our autumn in many spots on the globe, so check the weather for the region that you are considering.

Weather Underground has historical weather data on their website for any destination: <https://www.wunderground.com>. Undercurrent.org also has a dive calendar that highlights the best time to dive in a given destination: <http://www.undercurrent.org/UCnow/planner.shtml> Assess the water temperature and visibility for your



Historical Weather for Lembeh Strait Aug.9th-15th. 2015

desired destination, by a particular area, rather than by country, as conditions can vary greatly over a short distance. The best times for diving may not be when you had planned to travel; perhaps another option is a better choice. It's also not a bad idea to check the lunar cycle as it can significantly affect currents. A full moon can look pretty from land, but may bring forth ripping currents that will limit your photographic opportunities.



For big mantas, head to Socorro

Choosing a Destination

If you are thinking about exploring a foreign dive destination, the best things that you can do are to research the destination and to plan your budget. Some destinations have a narrow window of prime dive time, due to weather. This makes availability limited, so you have to plan far in advance. This applies especially to liveaboards in places like Raja Ampat and Socorro that are booked years in advance. Certainly cancellations occur, but flights tend to increase in price as departure dates loom. If you are thinking about a high-end liveaboard trip, plan far in advance. Sign up for liveaboard company

newsletters, as there are often special rates offered. Obviously, your work schedule may necessitate a little negotiating with your boss. The further ahead your travel planning, the better in attaining your desired dates.

Don't obsess about language issues. Most dive operations have English speaking staff. However, it does go a long way with the locals to learn "thank you", "good day", "excuse me", and a compliment in the language of your chosen destination. If you try, then most will double their efforts in return. The app Duolingo is a great place to start.

If your budget is limited, then consider destinations that are lower in cost like Cozumel, Roatan, or the Philippines. Flights to Asia from the Pacific Northwest and British Columbia are often similar in cost or even less than flights to the Caribbean, while prices for accommodation and diving once there tend to be lower, except at the very high-end resorts.

Dive magazines promote Caribbean dive areas more than Pacific destinations due to their proximity to Eastern North American residents, and U.S. based companies doing business there. Due to the popularity of these destinations they can be pricey unless offseason, or you could choose to shore dive as you can do on Bonaire.

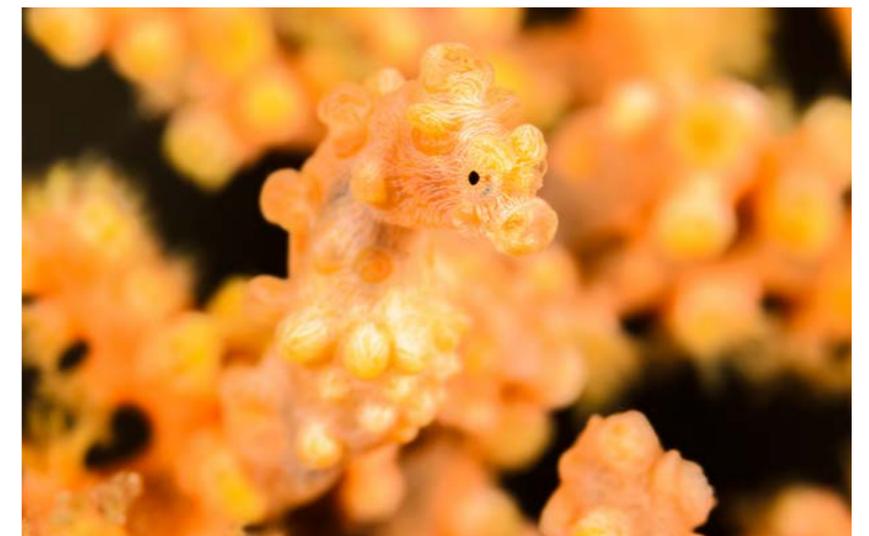
You will find that many excellent dive resorts in Asia are owned and run by Europeans and are rarely advertised in the North American dive press. Choosing a destination that is known as a dive destination, rather than a general tourist destination, in most instances means more competition amongst dive operators, which helps to keep costs down and the quality up. If you want nightlife, then choose a tourist destination known for more than just diving and

only plan on two dives per day so that you can enjoy the evening's entertainment. Never assume the critters that an area is famous for are a guarantee: neither the famous Minke Whales in Australia nor the Psychedelic frogfish in Ambon showed up for me! Certainly, I was disappointed, but there are always other interesting things to see and photograph.



If you enjoy nightlife, you may wish to limit your daily dives

Finally, in choosing your destination, think about what you enjoy photographing. If you relish super-macro subjects, you might prefer Lembeh Strait or Anilao to Socorro. If your eyes won't focus on the small stuff, buy a prescription mask and head to Bonaire to check out the hilarious tube blennies or if the little stuff doesn't float



If you dream of Pygmy seahorses, then take a trip to Anilao

your boat, head to the Sea of Cortez for sea lion and whale shark photography, or the Maldives for mantas.

If wrecks are your thing, think of Truk, Vanuatu or Coron in the Philippines. There's no sense in setting yourself up for disappointment if you are very selective – aka picky – like me. You might also see what topside attractions may be nearby, and plan an afternoon of sightseeing.



My day trip to Oslob to dive with whale sharks was expensive, but money well spent



If you like big animal encounters, choose a destination like The Sea of Cortez



Bonaire is a great destination for both macro and wide angle photography



There are great shore dive sites on the island of Bonaire

Choosing a Resort

I am a big fan of TripAdvisor: <https://www.tripadvisor.com>. It is an excellent source for the lowdown on dive resorts and non-dedicated resorts. People write in about their experiences. Look at all of the reviews; one disgruntled client should not make or break a decision. TripAdvisor will not quote dive package rates, only nightly room rates. You will have to check with a dive travel agency or contact

the resort directly for dive packages. Some resorts will only book through agents; others will take direct bookings. Ask for a discount if you book direct or are going with a group of friends.

Do not base your choice solely on price. Some resorts may be out of your budget; however, once you find a resort that fits your budget, check what is actually included in your package, so there are no surprises. Many dive resorts do not include any meals, or only breakfast. A dedicated dive resort usually offers a meal and diving package; it is generally more economical than paying for meals separately. If I am diving three or four dives per day, I don't wish to think about where I am going to eat; I am too busy dealing with the photo gear and checking my images. The dress code at dive resorts is more casual as well, so you'll have fewer clothes to pack! If you don't do well in tropical temperatures, make sure that your room has A/C rather than a fan or nothing at all.

Park fees are charged at some locations for taking a camera or to support Marine Parks. Other resorts will provide a weekly rate for Nitrox, while others charge per tank, which



A good dedicated dive resort caters to the needs of underwater photographers

can add up. Ask for a weekly rate if you plan on doing numerous dives per day. Some resorts provide one or more night dives in a package while others will charge extra. Some will provide free tanks for shore diving, while others charge. What is the Guide/DM to guest ratio? How many divers are on each boat? As a photographer, I do not wish to be in a large pack of divers. How far are the dive sites from the resort? What other amenities are at the dive resort? Is there a camera room? Will someone meet me at the airport? These pointers are simply a starting point for your questions and research.

I recommend creating a list of questions and sending them all at once to the dive operator or resort, rather than pestering them every time you think of a question. The more you know ahead of time, the less anxiety you will have. If there are extra charges for excursions or special dives, always put them into perspective: if it is an opportunity that you may only have once, perhaps the extra cost is worth it. I will always remember my very expensive whale shark dive in the Philippines; I am so glad that I decided to go! It was terrific.



For biodiversity, the Coral Triangle is the hot spot on the planet

Independent or Group Travel?

I heartily recommend group travel for the uninitiated and those traveling solo. There are agencies, dive clubs, underwater photo stores and individuals that take the worry out of planning; they organize the bookings, provide you with flight information and answer all of the questions that you might have in advance, saving you the trouble of



A liveaboard is a great option for solo travelers and those that want to maximize their dives

researching everything yourself. I have met some great people from all over the world this way by booking with agents in other countries.

Some photographers and naturalists also lead trips to favorite destinations, providing an educational component to your dive trip. Another option for the solo diver is a liveaboard dive holiday. The bonus in booking liveaboard travel is that you won't pay a single supplement if you are willing to share and you'll meet someone new; the downside is that you don't know your roommate until you arrive. Consider it all part of life's great adventure!

The Unstable World

Sadly, there are places in the world where horrible things happen. It is the world in which we live in today.

You dive to the bottom of the ocean, and want to hang out with sharks, so it is all relative regarding safety if you educate yourself.

Check out your government's policies on travel to your desired destination. You can also register your trip details and contact information with your government, before traveling. There are lots of destinations, so check the current political situation in your destination of choice.

USA: <https://travel.state.gov/content/passports/en/country.html>

Canada: <https://travel.gc.ca/>

Insurance

You are spending a whole chunk of change on your trip. Why would you want to skimp and risk losing it all due to a political problem, natural disaster or health issue of a loved one? Get serious! If you want to relieve any travel anxiety, Trip Cancellation, Excess Medical, Baggage and Trip Delay Insurance is a no-brainer. Yes, it's not cheap, about 10% of your trip cost. The older you are, the higher the premium. Baggage insurance will not cover the entire value of your dive gear or photo equipment, so insure anything expensive that is in your checked baggage on your home policy, or through Diver's Alert Network *if you are a U.S. resident*. You also need at minimum Emergency Evacuation insurance, available from Diver's Alert Network or Dive Assure. Peace of mind for you and your travel buddies is well worth the premium.

I use Travelguard, but there are other travel insurance companies as well. You can book a travel policy online. If you are planning multiple trips in one year, Diver's Alert Network and Dive Assure have policies that will cover you more economically than paying for each trip separately.

Documents and Visas

Your Passport should have a minimum six months' validity past your planned date to exit the country that you are visiting. You may have to renew early. Check whether a Visa is required for your destination. Some countries allow a Visa upon entry for a fee, while others require it in advance, by applying to the Embassy or Consulate in your country. Others do not require one at all. You can find this information online by visiting the website of the Embassy or Consulate of the country situated in the USA or Canada.

Health Concerns

I travel with a basic First Aid kit. I do this as I am often traveling solo, or have unprepared guests in a group that I have organized. Be sure to include cold and sinus medication and drops for ears to avoid being sidelined, and iodine for treating scrapes and cuts.

I recommend visiting a Travel Clinic at least a month ahead of departure for expert advice if you are traveling off the beaten path. Some of your vaccinations probably need a booster anyway, and they may recommend a "just in case" prescription for foodborne illness. For short dive trips, where you do not venture outside the resort, few precautions should be necessary.

The biggest threat to one's health while traveling is the mosquito, wherever you may travel. Bring DEET insect repellent and use it. If you are in an area where mosquitos are obviously prevalent, ask for mosquito coils to be lit at night. If there are mosquito nets over your bed, use them. Check to see if malaria prophylaxis is needed. If so, take it.

Tipping

Tipping is always a delicate subject, and I suggest asking the dive operators what would be reasonable for good service. Most will be honest, but some suggest tips based on a percentage of your package price. I do not recommend tipping on a credit card, as staff may not see the proceeds. Use U.S. cash, with newer bills, or the local currency.

Tipping is more prevalent in areas frequented by North Americans and run by North American companies. Some people feel that tipping shouldn't be necessary. The reality is that the staff use tips to house and feed their large extended families. Always tip a special guide privately so as not to cause ill will amongst employees. Remember that many people work to make your trip enjoyable.

Many work behind the scenes, manning the compressor, repairing and maintaining the boats, cleaning your room and preparing your meals. To only tip your guide is unfair. However, if you are doing guided diving (as opposed to a dive master watching you), the tip should be reflective of the time and energy spent on satisfying your photographic objectives. Always ask the management how they prefer tips to be distributed. Some operators collect all of the tips and give them out at specific times of the year.

Packing

What is essential for you to dive, given that rental dive gear is available? That should be in your carry-on. If you have a prescription mask, it should be in your carry-on. Pack a bathing suit, any necessary medications, toiletries, everything that you need

to do a basic photo dive, and perhaps a change of clothes, within carry-on limits. Check your airline's website for what can be in your checked baggage; what is the maximum weight allowed, and what must be in your carry-on as opposed to checked luggage? This is particularly important for focus and video light lithium batteries. U.S. airlines serving the Caribbean and Mexico have a generous carry-on policy. To travel anywhere else, you are extremely limited.

For those of us that shoot a DSLR or large Video system, you will probably not be able to bring all of your gear as carry-on. My advice is to ditch the big waterproof hard case for your carry-on bag. Most hard cases are hefty, except the new Pelican Air cases. Consider using a regular, non-descript small roller board case, or a backpack. I install the dividers from my hard case in my lightweight carry-on bag. I can include my housing within North America and the Caribbean, but not when traveling to Asia. I bring a compact backup set-up in my carry-on instead and check my housing.



Photograph your packed carry-on bag



Try a prescription mask to enjoy the small stuff if your eyes are aging

For your checked baggage, sturdy, high-quality duffels on wheels are a good choice, particularly for liveaboards, where space is limited. Make a list of what you have packed in each bag. Pack delicate gear wrapped in clothing into plastic totes, and add a bungee cord or duct tape to secure the lid. Once you have packed your gear, weigh it. There are small digital scales available. I bring mine along, in case there is a disagreement, and to help pack properly when coming home. It can also help to have it along when

having to pay excess baggage charges on domestic routes within Asia or Central America. Once you have packed your carry-on, photograph it while open. After a lot of diving, I am fatigued, so I have a labeled print-out of my carry-on packing and photograph in the bag. If traveling through the USA, I attach a list of equipment to the inside of each checked bag, with a thank you to the T.S.A. for respecting my gear! Keep a list of your equipment and serial numbers with your important documents.

So many things to consider – but if well prepared, your trip will be a breeze, and you can concentrate on your diving and photography! Relax and Enjoy!

There are amazing dive opportunities both here and abroad. Just as one prepares for a cold water dive trip, one has to prepare for a warm water trip. Be sensible. Be practical and prepare yourself for an incredible adventure! The memories that you will earn will well outweigh the hassles.

About the Author:

Marli Wakeling is a stock photographer and underwater photography instructor based in New Westminster, BC. After many years of cold water drysuit diving, she traded it all for warmer waters and her teaching career for the joy of retirement. She now enjoys organizing group travel for underwater photographers and nudibranch fiends to destinations in the Coral Triangle. Her favorite dive destination is Lembeh Strait, Indonesia. www.marliwakeling.com



If super-macro photography is your thing, head to Indonesia



Topside sights can be just as exciting as those below the surface

Featured Operator: *Mike's Beach Resort*

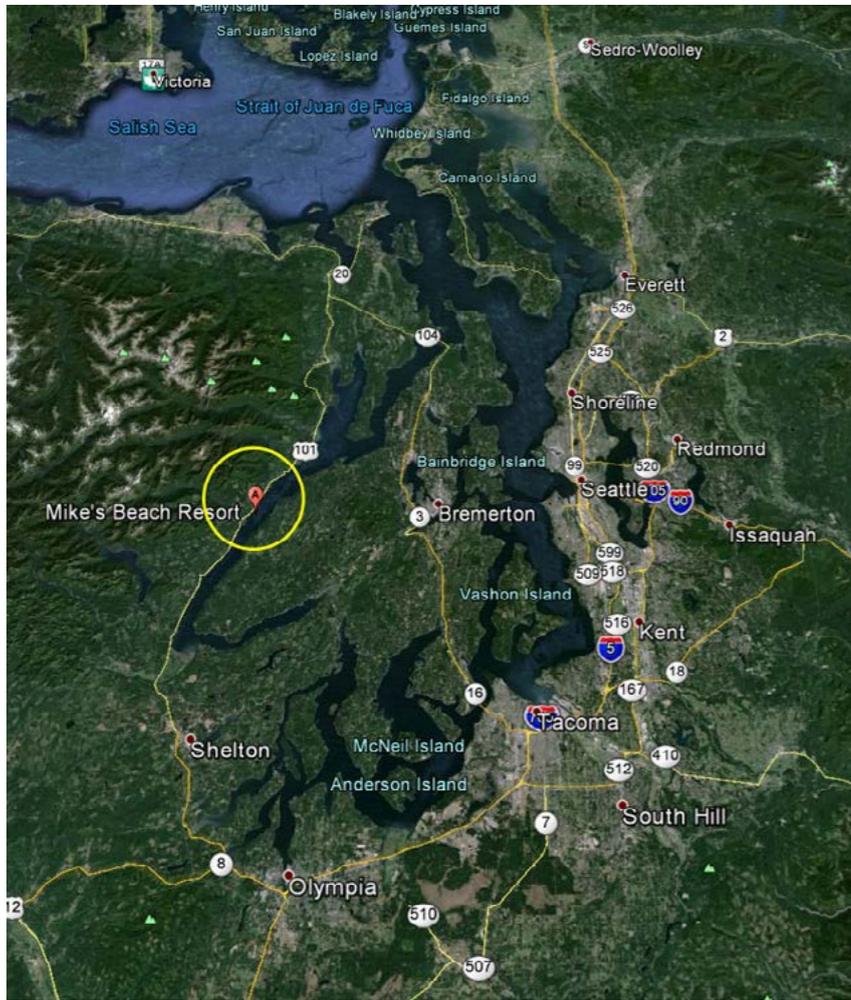


The Schultz family has owned the resort since 1951. Mike took over the operation in May 1988, and today runs it with Iliana, his Columbian-born wife. It is one of the oldest resorts on Hood Canal with a rustic Northwest feel. Beside waterfront cabins, there are RV and tent sites at the resort. See the picture gallery on their website.

Located on the west side of the Canal, Mike's Beach Resort has long been a SCUBA diving destination. Shore diving is accessible almost directly from all rooms. Artificial and natural structures in the water support a wide variety of sea life.

Most of the structure is within a 40-foot depth. A canyon off the north end of the dock gives quick access to waters over 100 feet deep. Marine life in this area includes anemones, rockfish, perch, and octopus on structures around 60 feet.

The two extensive south reefs offer interesting diving for photographers. Access is from shore, by boat, or by dive kayak. The reefs are stepped, with abundant life around 20 feet, at 40 to 50 feet, and at the cloud sponge gardens around 100 feet. Rockfish abound, as do Lingcod and perch. Plumose Anemones cover the rocks, and Wolf-eel and Giant Pacific Octopus are plentiful.



In addition to diving at the resort, access to the nearby Flag Pole Site is free to guests, while non-resort guests must pay \$15 per person for beach access to the site.

Further to the south is another great dive locale: Sund Rock. And just north in Brinnon is Don Coleman's Pacific Adventure: an outstanding operator with superb dive locations.

The resort contains a waterfront air-fill station. Another nice amenity for photographers is a large commons area and theater for post processing and viewing photos and videos.

So, if you are looking for some excellent diving on Hood Canal's west side, consider Mike's Beach Resort as an operations base.

Mikes Beach Resort

38470 N US Hwy 101

Lilliwaup, WA. 98555

360-877-5324

<http://www.mikesbeachresort.com>



Featured Operator: *Sunshine Kayaking*



Sunshine Kayaking has been in business for 25 years operating out of Gibson's Landing. Captain Greg Suidy, the owner and manager, has a wealth of experience being on the water. Sunshine Kayaking has now expanded their operation to provide diving charters throughout the Howe Sound. This fills a void especially on the west side of the sound. Sunshine Kayaking Dive Charter provide service to the west side of the Howe Sound. Their location makes traveling to dive sites quick, taking only 5 - 12 minutes to get to Pasley

Islands, Keats Island, Hutt Island, Gambier Island and the Annapolis with their cruiser. Some of these dive locations are unknown and have never been promoted as excellent diving sites.

The boat is a 32 foot Eaglecraft Cruiser with a large cabin for warmth. From the back entry, the diver can immediately enter the cabin. The boat is also Transport Canada Compliant to carry up to 12 passenger, but diving charters only take 6 people due to weight, safety

and comfort. The back area has a deck wash down hose with a fresh water tank for rinsing gear. The dive ladder at the stern leads to a walk-through transom for easy access to the deck. The boat can get to any dive sites in all of Howe Sound with 25 minutes.

Divers can book the boat privately by the hour or individuals can book a spot on a charter. If 4-6 people are booked, then the charter is \$135 per person. This rate includes two boat dives, two filled tanks and



weights, a DM on board and hot beverages and snacks during the surface intervals. Discounts are available for those providing their own tanks.

Hotel packages are available for divers. Since Gibsons Harbour can only be accessed by boat, it is a quaint little harbour town waiting to be explored with hiking, kayaking, cycling, restaurants, shopping, etc.

Sunshine Kayaking works in partnership with Seadog Divers Den, which is the only Diving Shop on the Sunshine Coast located in Sechelt (20 minutes from Gibsons) for rentals and air fills. Sea Dog Divers Den, now operated by Jaime Mackinney, was formally Suncoast Diving Center for many years. Jamie has over 30 years diving on the Sunshine Coast.

Some of the Howe Sound Dive Sites available from Gibson's Landing:

Pasley Island Group Reefs:

- Ragged Islet Reef
- Balfleur Passage Deep Reefs
- Home Islet
- Popham Island East and West Reefs
- Worlcombe Island Reef

South Sound Reefs:

- Passage Island Reefs
- Bird Islet
- Grebe Islets Reefs

Gambier Island:

- Bridage Reef
- Various Halkett Bay sites
- Carmelo Point Reef
- Hope Point

Keats, Bowen & Hutt Islands:

- Keats Island Eastbourne Reef
- Hutt Island North End Reef
- Hutt Rock South Reef
- Collingwood Channel Reefs
- Bowen Western Day Marker Reef
- Fairweather Bay Reef
- Millers Landing

Bowyer Island:

- North and South Reefs
- South East Finger Reefs
- East Shore Wall

North End of the Sound:

- Ellesmere Creek Reef
- Defense Island
- Porteau Deep Dive
- Anvil Island Wst Wall
- Christie Islet
- Pam Rocks

Sunshine Kayaking - Fishing & Diving Charters - Sailing & Harbour Tours

Mollys Lane, Box 35, Gibsons Landing Harbour, BC, V0N 1V0
 Phone 604-886-9760
 Toll Free 1-855-566-9760

<http://www.sunshinekayaking.com>



Your Lens. Your Story.



This is our readers' turn to shine and to show what they have learned or experienced. Please submit entries to editor@pnwups.com.

Spotted Rat Fish Laying Eggs

By Jim Mendria

This shot was taken in Barkley Sound on Renate Reef last July. We were diving with Rendezvous Diving and Adventures in Rainy Bay, Barkley Sound.

This female Spotted Ratfish is in the process of laying her two fertilized eggs. The female will release these eggs into the sandy bottom every 10-14 days. This process of extrusion can last 18-30 hours and the laying for a few days. These leather-like egg sacs will be connected to the ocean floor. Once the eggs are laid, she may hover around them to prevent predators. Sadly, these eggs are occasionally mistaken by divers for debris. When the young hatch, they will be about 14cm long.

Camera is an Olympus E-PL 3, 1/80sec, F/8, 17mm (which is equivalent to 28mm on a full frame camera).





Steve Taylor

Fluorescence Photography at Port Hardy

By Steve Taylor

In a recent article in PNWD, Kerry Enns and I wrote about the challenges and rewards of fluorescence photography in the Pacific Northwest. All the images in that article were taken at dive sites around Howe Sound. I had not seen fluorescence images from the Port Hardy region, which has world class cold water diving sites such as Browning Pass. Accordingly, on a recent trip to God's Pocket Resort near Port Hardy, I was interested in doing a fluorescence night dive. The two images shown here were taken from a night dive off the dock at the resort. In terms of daytime diving everything in the Port Hardy area is bigger, brighter, and more plentiful than what we see in Howe Sound. The same applied to underwater fluorescence. Big hermit crabs fluoresced brilliantly, as did large (8 inch diameter) anemones, which were too large to photograph with my 60 mm macro lens. The images shown here were taken at the house reef. It would be very interesting to do a fluorescence night dive at the best dive sites in the region, such as Browning Pass wall and Seven Tree Island.



Steve Taylor



Dan Clements

Washington, USA
Founder/Columnist

Dan is an adventurer who has a deep appreciation and respect for the world's natural wonders and life in its many varied forms. He has climbed, skied, sailed, SCUBA dived, and traveled throughout the world. He has made first ascents in North and South America, and run major white water rapids in Africa and the Western Hemisphere. He wrote the now sold out *Critters, Creatures, and Kelp* in 2009.

He was fortunate to have parents who exposed him to Hopi, Navajo, Seri, and Lacandon First Nations populations. Later in life he was privileged to be able to spend time among the Bushmen (San) of southern Africa, and Qechua and Aymara in the Andes. He is working to try and increase knowledge and appreciation of Pacific Northwest indigenous populations.

He holds an MBA in international finance and has sat on boards for United Way, Housing Hope, Cayenta Systems, Eden Systems, Snohomish County Public Facilities District, and Ibis Publishing.

When he is not underwater photographing he enjoys cooking, back country skiing, distance running, mountain biking, and opera. Everett, Washington is home base and where he and his wife Karen raised two sons.



Kerry Enns

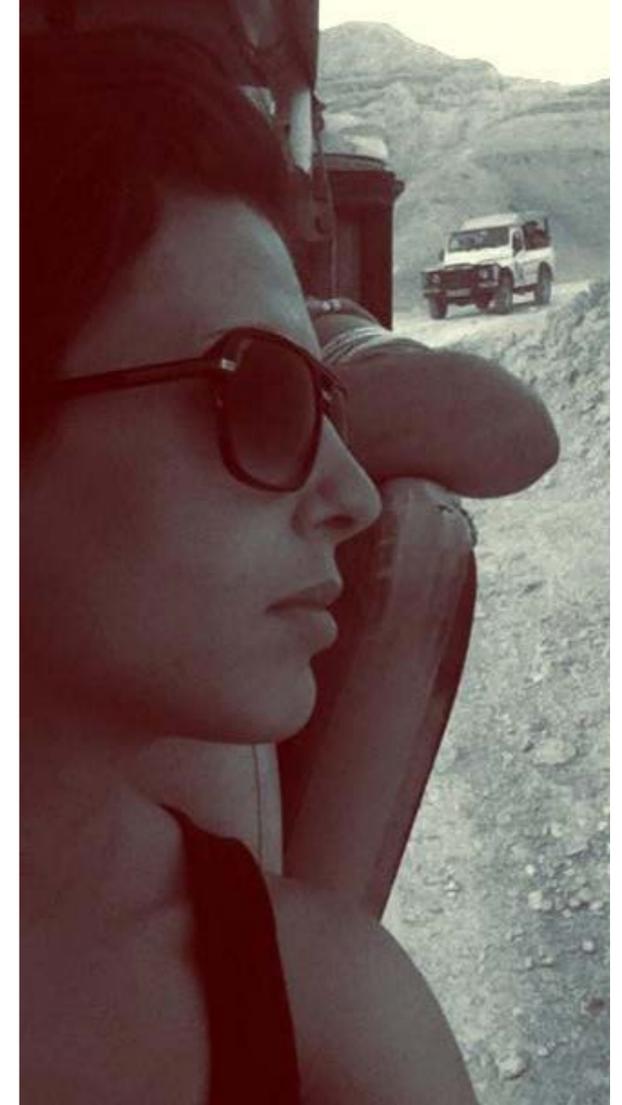
British Columbia, Canada
Editor/Publisher

Kerry grew up in Brazil as a missionary's child and moved to Wisconsin at the age of 10. While her father worked on his studies, she entertained herself by cycling, swimming and fishing and earned spending money by delivering papers and babysitting. Her family moved to Winnipeg during her high school years. After graduating, she found herself heading to British Columbia to go to Trinity Western University. She married and stayed in BC raising 2 children.

She holds a degree in Geography and is certified to teach elementary and middle school students. She currently works part-time as a Teacher on Call in order to fund her diving, photography and travel.

She enjoys traveling and has had recent visits to the India, the UK/Ireland and Maui. She hopes to continue to travel as much as her finances allow it and would like to someday dive the beautiful tropical waters world wide. She particularly wants to visit Brazil, not only to dive but to work on her fluency of the Portuguese language.

She has recently taken up freediving and hopes to learn photography in that new venue.



Talia Cohen

British Columbia, Canada
Creative Consultant

Talia grew up in South Africa, and has lived in Missouri, Rhode Island, and New York. She now calls Vancouver her home with her husband and 2 dogs.

She is a Creative Director, and has attended the Rhode Island School of Design, Brown University, MIT and Babson. Talia has produced work for some of the world's leading companies and organizations including Unilever, General Mills, SportChek, and The BC Dairy Foundation.

Since a young age she has been enchanted with the world below the surface. And, when not at the studio, she takes every opportunity to explore the underwater world, camera in hand.



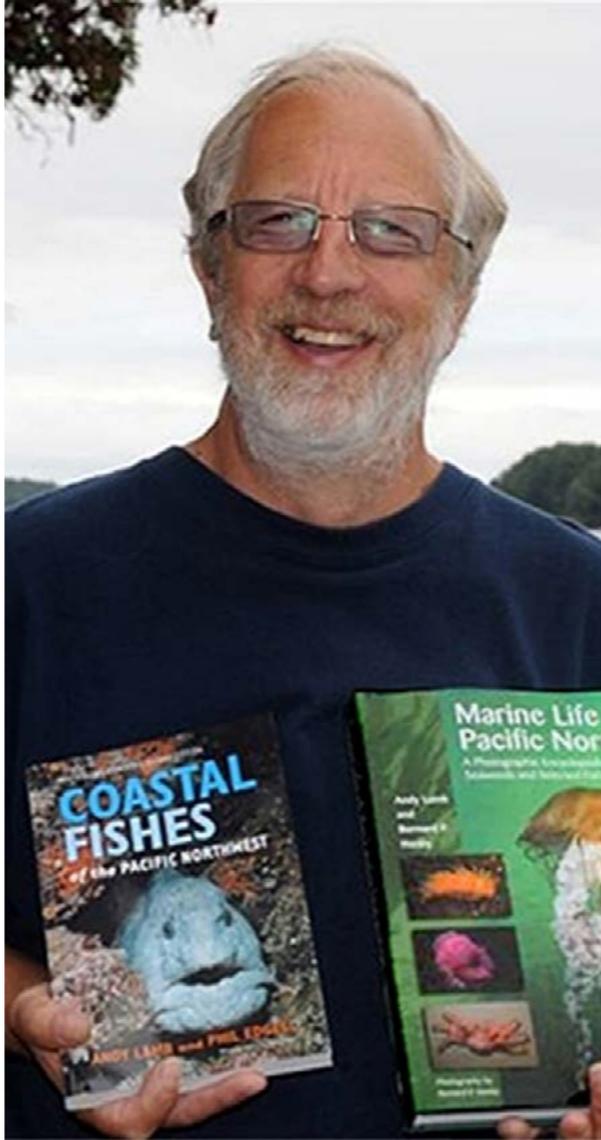
Dale Carlisle

British Columbia, Canada
Columnist

Certified in 2007, Dale is interested in several facets of diving. As a long time fishkeeper and naturalist, he loves being able to access the aquatic realm in order to better observe fish habitat and behavior. In 2010 he began a long term study of a local lake (The Cultus Lake Project) in order to learn more about an endangered species of fish that resides there.

Out of that interest, he began learning how to capture images of his subjects and continues to develop his underwater videography as both a vehicle of communication and art form.

Dale also enjoys researching the historical aspect of diving and often uses vintage era gear and techniques himself, which he shares with others at www.manfish.ca.



Andy Lamb

British Columbia, Canada
Scientific Consultant and Columnist

Andy Lamb is a marine naturalist and educator who has worked as Chief Collector at the Vancouver Aquarium and as a fish culturist with Fisheries and Oceans Canada. He is the co-author of *Coastal Fishes of the Pacific Northwest* and *Marine Life of the Pacific Northwest: A Photographic Encyclopedia of Invertebrates, Seaweeds and Selected Fishes*, both are found in almost every diver's library of the region.

Andy has served as the team for PNWDiver since the beginning and helps members identify marine life and keeps us abreast of news in the scientific community. <http://www.cedar-beach.com/about.shtml>
andy@cedar-beach.com



Mazyar Jalayer

British Columbia, Canada
Guest Columnist

Maz is driven by his passion for photography, the environment and cultures. He enjoys cold water diving, and he loves to capture the bizarre and wonderful creatures and landscapes of the underwater world. Maz's love for photography began at the age of 16 when he first learned to capture images on film. Since then over the years he has shot topside images which have made their way into travel guide books, science and physics textbooks. Until recently he fell in love with scuba diving and has continued his passion for photography underwater. He strives to create images that are artistic, and he is continuously looking forward into implementing creative photographic techniques underwater.



Bob Bailey

Washington, USA
Guest Columnist

Taking that first breath off a scuba regulator in February 2001, I knew I had discovered something very special. I've since logged more than 2,500 dives most of them here in Puget Sound, the San Juan Islands, and several places along the coastal waters of the Olympic Peninsula, British Columbia and Vancouver Island. I have also dived in California, Florida, Belize, Cozumel, Roatan, Bonaire, Hawaii, and Indonesia.

In 2003 I became a NAUI divemaster and spent the next year and a half working with several instructors learning how to teach classes, manage students, and help people improve their diving skills. In 2004 I became a NAUI instructor, and in 2006 a DAN instructor.

Besides teaching scuba, I enjoy underwater photography and technical diving. I am a NAUI Trimix 2 certified diver, and have explored many of the deep wrecks found in Puget Sound and Lake Washington. I have also pursued my passion to Florida, where I learned cave diving. When I'm not teaching classes, I am usually either planning my next diving trip or just enjoying a local dive with my friends.

Diving for me isn't just a recreational activity ... it's a way of life.