

PNW

Winter 2016

DIVER

M A G A Z I N E

Featuring:

Bob Webb
Chelsea Cameron
Jesse Miller

and more...

including several articles on diver safety

01 About the Magazine

WINTER 2016 PNWDiver



Cover photo by Chelsea Cameron

Canon EOS Rebel T3i, f/6.7, 17mm, 1/90sec

The Pacific NorthWest Diver Magazine is published quarterly and is a publication of the Pacific Northwest Underwater Photographic Society (PNWUPS), 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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Crimson Sea Anemones ©Bob Webb

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This is a safety issue. Dan Clements started it all off with his study surrounding the circumstances of recent diving deaths among us and relating his findings to his own health as he entered retirement age. Bob Bailey wrote a series of articles on his website, and agreed to allow us to reprint them in the interest of furthering the safety of our sport. Dale Carlisle then chimed in with his take on safety while diving with vintage gear. And finally, we got some valuable advice from our local Search and Rescue Team. It is our hope that a concerted focus on safety will push some of us from complacency to pro-activeness when it comes to our health. Editing these articles has encouraged me to step up my own fitness regime from weight lifting once per week with a trainer to adding a couple more days at a gym for ladies, as well as using the ever-popular FitBit to increase my daily activity. After all, our families want us around for a while. My husband reminds me of this every time I head out for a dive. So please, be safe out there!

You'll also notice something a bit different about this issue. Instead of January 2016 as the issue date, it says Winter 2016. This is because we are moving to a quarterly format. Since this publication is fueled on volunteer time, I felt it necessary to pare back a bit. The issue has nearly doubled in size in the last year and a half: twice the size, twice the effort. Nevertheless, the amazing people I am meeting makes it worth every second, not to mention the stuff I'm learning! Just the other day I was able to try one of Dale Carlisle's double-hose rigs. So fun!

Finally, I am happy to see that you, the readers, are beginning to contribute your own adventures. Thank you!! Steve Taylor and Ahmed Baghat share their squid encounter at Kelvin Grove, and Chris Sherwood shares his trip with Andy Lamb on Porpoise Bay Charters in Egmont. Keep those stories coming, folks!

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Rethinking Safety

A reflection on how Vintage Equipment Diving changed my outlook

by Dale Carlisle

Diver practicing using double-hose in a shallow pool. photo ©Dale Carlisle

In 2007 I began a chapter of my life (diving) that still continues to expand and change as I pursue different avenues within it. Like many of this era, I was trained in the modern way and might have maintained the “status quo” in regards to diver safety if it were not for an unforeseen foray into Vintage Equipment Diving. To the outsider it may seem hard to understand how simply using some old gear could change a person’s whole approach to diving, so in this article I hope I can illuminate part of the why and how by sharing a few of my experiences.

Through many on-line exchanges I have come to see that some of my views may initially appear to run counter to those of the dive industry; but upon closer examination, many of the core concepts should be a part of every training regime, even if it involves only modern era equipment. The foundation is basic common sense. It is also not my intention to “unteach” or “retrain” anyone anything – I am not an instructor. Rather I only share how my mind has

been opened by taking a slightly different path than the one initially embarked upon. I also hope to express my surprising discovery that the gear actually plays a very small part in having a safe diving mindset. Lastly, all of the concepts expressed here need to be taken in the context of a gradual and comprehensive approach to diving and not as a quick “read that- done that” philosophy.

Taking Personal Responsibility

Perhaps the greatest change that I encountered on the vintage pathway was **an overwhelming onus placed upon myself to take personal responsibility for my own experience in the water.** This was due to the simple fact that no one around me dove with the equipment or in the style of the past nor did they want any part of it. I was told by more than one person to throw that stuff away! As a result I had to read older books and ask many questions on-line within the vintage community. Prior to this, the relationship I had with diving was via my local dive shop and dive professionals and it was very easy to rely on them to do much of the thinking for me to ensure I was being safe.

When I bought my first double-hose and began diving with it I stepped outside of the confines of what my peers knew to be safe. Others did not know exactly how my regulator worked so I had to take care of that myself. Instructors, used to teaching with BCD's and SPG's, could offer very little in the way of advice in regards to neutrally weighted diving or J-valves. For the first time I could not simply take a course and passively pay for my education; I had to earn it.

Learning styles

This might be a good place to mention that vintage equipment diving, the way I experienced it, may not be for everyone, though there is hope on the horizon with such new

products as the Kraken from VDH.com. With the exception of a few instructors offering specialty courses, learning to vintage equipment dive is a Do-It-Yourself proposition. Over the last few decades modern recreational diving has experienced an explosion of popularity due in no small part to the ease and availability of instruction. While I will not debate whether this has led to a watered down learning experience, it has created a paradigm in which safe diving, and continuing formal education is seen to go hand in hand. A safe diver is always learning and the proscribed way to learn is by taking the next course. If you're doing that you ought to be safe. Right?

Vintage equipment diving does not fit well with this approach for two reasons. The first is that most of the techniques required are not taught in widely available formal courses and the second is that much of what needs to be learned is gained from repetitive exposure to diving itself. The basic dive, in all its overlooked and underrated glory, is the greatest classroom of its kind for vintage equipment divers.

And so, the sort of diving I became attracted to appeals mostly to the informal or self-directed learner. This is the sort of diver who is comfortable sifting through books, seeking out mentors, on-line communities, old films and other non-codified sources in order to find the information they need. The antithesis of this style of learning is encapsulated in the oft used phrase: “You don't know what you don't know” and while there is an idea to it, it seems fairly obvious (to me at least) that nobody knows what they don't know. The question is: Can you learn any safer by gathering source material yourself rather than passively having someone prepare it for you.

My experience has been yes 'I' can. In my case, the active

searching out of information and its application led me to take a greater sense of responsibility for my education and taught me a particular style of practice that tends to be (for me) a safer learning experience. My personal diving library contains a large number of both new and old training materials and my search for answers has led me to find far more information than if I had constrained myself to formal courses. The saying “You don't know what you don't know” or “You don't know what your instructor doesn't know” can also apply to trainers who may have only been exposed to a narrow pathway of learning themselves.

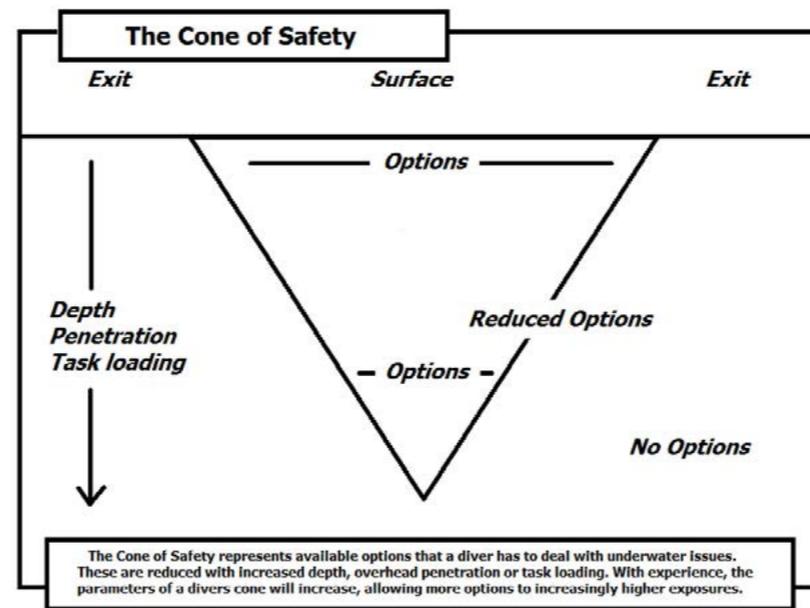
Taking a step back in order to move forward

After my initial Basic Open Water diving course it was suggested that it would be a good idea to continue on with my Advanced Open Water Course, which I did beginning on dive #6. On dive #20, I had completed my Dry suit and Basic EAN course and was therefore qualified, according to my training, to do cold water dives up to 130' using a mix that allowed extended NDL times. I was set to then take my Rescue Diver course and then proceed with Master Scuba Diver when things went a little off the rails. Thank goodness. While there is nothing in modern training that suggests a diver needs or ought to dive beyond their capabilities, **I found the implied pressure to continue taking increasingly complex courses without internalizing the content almost too hard to resist.** This was partly because of the suggestion that continued education and safety go hand in hand and that most of my diving peers, up until that point as a new diver, were instructors or staff. When I began vintage diving I had to rethink my approach to learning. No longer could I simply sign up for a course and there was no one locally to lead me through the

motions of using older equipment or techniques. I had to progress in smaller increments and dial back the depths and conditions I was exposing myself to. In a case of unintended consequences my choice of equipment put me back in the kiddie pool of basic open water diving where I could experiment and grow without fear of being at undue risk from my environment. Relatively shallow depths, hard bottoms and conservative dive times go hand in hand with beginning vintage equipment diving yet I did not feel short changed because every dive contained the feeling of personal growth that comes from mastering a new skill or learning how to use a new (old) piece of equipment.

One concept that I came to understand and believe in was that of the 'Cone of Safety' as some divers call it. This is a visual representation that describes the relative degree of safety that exists as a diver progresses through the aquatic environment. The cone, larger at the top (or surface) becomes increasingly narrower with depth. Depth can also be replaced with other concepts like overhead penetration or task loading. Staying within the cone represents the diver's ability to resolve issues and attain the surface without delay. As we go deeper the circumstances and ability to do this effectively decrease until, at a certain depth, it does not exist at all. The same applies to overheads that progress from open water through cavern to full cave or wreck penetrations and simple through to complex task loading.

The basic diver should always strive to remain within the cone itself. Whether it be shallow depth, no overheads or reduced task loading. While a more advanced diver may move slightly outside the cone's parameters (yet be able to move back into the cone easily) or slightly deeper, cavern



or perhaps moderate task loading. The experienced technical diver is really the only one who can move with relative safety far outside the cone, or abandon the concept of it all together, because they have the skill and equipment to do so. **The problem with modern diving, I see in retrospect, is that people move very quickly beyond the basic diver level while adding task loading and even overhead challenges before they cement basic diver skills.** Without the commensurate experience, they are often operating outside the cone without even knowing it and it takes very little to tip them over the edge towards unrecoverable tragedy.

When I took up vintage equipment diving I took a step backwards in skill, or rather, I became aware of the skills I did not have. Without a computer, I had to revisit premeditated dive planning and think about where I was going instead of splashing and following the leader. I now told myself I would dive this deep, for this long, and had to work at holding myself to it. Without a BCD I had to learn how to become neutral in the water and to use my breath to manage small adjustments and, because a

double-hose is orientation dependent, I had to learn how to maneuver myself within the water column. All of this was an increase in task loading and so, even at shallow depths, I was far enough into my cone of safety not to try and push further. As a result I spent a lot of time at the basic diver level trying to learn and integrate diving skills.

Gear-centric vs skills-centric diving

As some older diver's may remember, vintage era gear was pretty darned rudimentary by comparison to today's technology. Rugged, but rudimentary. A lot of what a vintage era diver used while diving was not equipment centric (or equipment reliant) but rather skills centric. Often coming out of a skin or spearfishing background, they usually had an apprenticeship of sorts developing basic waterman ship skills like swimming, remaining buoyant on the surface and repeatedly submerging themselves for lengths of time. In many ways, compressed air diving simply extended the submerged portion of the dive. Swim down. Swim around. Swim up. Reading older accounts, one often sees divers sharing the same set of equipment among each other or simply grabbing what was available at the time.

Comparatively, today's diver is increasingly equipment centric in their approach to dive safety and thinks they need things just so. This in itself is not a bad thing; every generation has sought ways to improve its capability. **But when technology replaces skill or common sense it can become a problem.** BCD's were originally developed to make small adjustments for suit compression at depth, not compensate for gross overweighting. SPG's were developed to better aid divers to track their air, not abandon dive planning. Computers made more accurate real time calculations than tables, but were not intended

for pushing NDL limits. All of these aids, intended to improve safety, can decrease the same when misused.

Divers today are also encouraged to take courses, some quite advanced, without having any previous skin diving or even swimming skills. When these basic waterman-ship skills are lacking it is no wonder why some become completely equipment dependent. The BCD becomes a life preserver instead of a convenience. People drown on the bottom with quick release weight belts still attached and bolt to the surface when their masks let too much water in.

What I discovered, via vintage diving, was that I had to return to, and enhance, the skills that were used before those equipment solutions came into effect. Neutral weighting, conservative dive profiles, pre-planning and comfort in the water. I had to dive repeatedly to become comfortable enough so that I could use the rudimentary equipment that went along with them.

Optimal vs sub-optimal diving

The dirty little secret that many vintage-equipment-era divers try keep quiet is that a lot of the old gear we are using doesn't really work all that well. I say we, probably I should say me.

Of course I am joking (maybe), and I would not want to diminish the efforts of the many enthusiasts that work tirelessly to develop better equipment choices, and I also recognize that some are pretty sensitive about anyone speaking ill of their pride and joy possessions, but there is a small grain of truth contained in that statement. A lot of original equipment is getting quite old; one set of fins I have were made between 1945-55 dating them to at least

60 years. I'm sure that real gum rubber will fail some time, perhaps on my next dive. The point is that many vintage equipment divers have learned to expect glitches as part of the game and to be able to recover from them easily. I sometimes swim with one fin for practice, just in case!

Many of my old masks leak so I am quite used to having partial floods, my double-hose free flows when oriented vertically or on the surface and the J-valve may fail, I'm told, so I dive in a way that I can surface easily if it does so. Over time I have become quite comfortable diving with what I call 'potentially sub-optimal equipment' so that potential failures become non-stressed events. This again has to do partly with spending a lot of time in the kiddie pool learning, and partly because I try to dive in a skills, not equipment, dependent manner.

The opposite point of view is to attempt to secure the most optimal equipment for the job and to insist on maintaining its perceived proper working condition. Not a bad strategy when combined with skill but perhaps not so good when used to replace or buttress those important compensating skills. Oddly enough, the two times a regulator is most likely to fail is when it needs servicing, and just after servicing – take your pick.

The one philosophy expects a failure to occur and has a plan for safety should it do so; the other seeks to preserve safety by ensuring a failure never occurs. To me, at the recreational level, dive equipment should be seen as aids to an activity, not life support equipment. If that is the case one really needs to rethink whether it is in fact, a recreational activity at all. The real world lesson that vintage equipment diving has taught me so far is to be prepared for when – not if – a failure occurs and the best

way I have learned to do that is by not placing myself in positions that diving skills themselves won't allow me to recover from.

Understanding and respecting personal limitations

As noted before, the concepts I have discussed are not limited to vintage equipment use and should be a part of every diving regime, modern or otherwise. For myself, as a new diver firmly entrenched on the formal dive education treadmill, its introduction allowed a second sober moment to re-evaluate my approach and exposure to risk. Because the equipment was so technologically simple I had to accept that I needed the skill to implement a plan that would allow me to learn to use it instead of needing more equipment to compensate. It was what I should have been doing with a good mentor right after Basic Open Water. Lots of dives, at simple depths, with lots of consideration for what to do to always allow unrestricted and easy access to the surface and exit if needed.

It was also my good fortune that my next passion in diving, videography and photography, would also offer so much at those same depths and profiles. Today I know who I am (most days) and it is pretty hard to knock me off my diving game into something I feel uncomfortable doing. Since very early on, I have not lost the sense of exploration, challenge and fulfillment that I originally sought by increasing my exposure to risk. Instead, I have found it by remaining a recreational diver and exposing myself to opportunities to increase skill, an area some of my dive buddies might say I still have a long way to go in.

Happy and safe diving!

We Have Winners Among Us!

Laura Tesler and Adam Taylor place in 2015 Ocean Art Underwater Photo Contest. Congratulations!!



Ocean Art Competition 2015 | Laura Tesler

The story: I rarely shoot freshwater... however on this day I was diving in Battle Ground Lake to get my PADI certification to teach Digital Photography with my instructor. I saw these pond lilies underwater and decided they would make a nice place to demonstrate over and under shooting techniques and swam closer with my instructor

to focus up through the stems to the sky. As I had been shooting a very wide angle fisheye prime lens, I thought this would be perfect for shooting into the clump of lilies to get the shot I wanted. The lighting was very good for shooting that day, overcast yet bright and I was shallow enough to go with ambient lighting. I took several shots

Laura Tesler

as I really liked the red stems, the lighting, the shapes of the leaves floating on the water and the snails climbing up the stems. Later, while I was reviewing my shots, this picture reminded me of the famous Monet painting with the same name. This picture also spurred me to begin shooting freshwater more after this shoot...!

Location: Battle Ground Lake, Washington, USA

Camera: Olympus OMD-E5, Nauticam Housing, two Sea and Sea YS01 strobes, Panasonic Lumix G 8mm fisheye lens

Laura won a 3-night dive package at Siladen Resort in Indonesia!



Adam Taylor

multiple fast moving subjects and it was often challenging to properly frame your subjects.

The sea lions obviously enjoyed the interaction as much as the divers, some even followed us back to the boat and waited impatiently for us to fill our tanks and return for a second dive. After spending well over an hour interacting with these playful puppies I didn't want to get out of the water, it was truly magical. But unlike them, the strong surge tired me out forcing a return to the boat, and reality...

Location: Landing Cove, Santa Barbara Island, California

Camera: Olympus EM-5 with 12-40 f2.8 lens at 12mm in Nauticam Housing with two YS-D1 Strobes and a Sola 800 photo light

Settings: ISO 800, f/7.1, 1/250

Adam won a gift certificate from Bluewater!

The story: For me this image captures the curiosity and playfulness of juvenile California Sea Lions. The long interaction we had with well over a dozen of his / her friends was the highlight of an amazing six day live-aboard trip to California's Channel Islands.

After discovering their scuba diving playmates the sea lions would raft up in the shallows just outside the breaking waves, wrestle and play fight as a group then dive bomb divers in pairs or small groups. With each pass they would

become bolder until those brave enough would tag our camera strobes or even a body part with their nose. The sea lion in this image was coming in to tag my left strobe before darting off to rejoin his friends.

Water conditions were great, but with bright sunlight behind the sea lions on the surface. As they descended the amount of available light changed greatly depending on the angle and direction faced. Add strong surge, occasional bubble curtains from waves breaking on shore and

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Royal Canadian Marine Search & Rescue

Advice for Divers

By Kerry Enns



photo ©Kerry Enns



In keeping with the theme of diver safety, several of us had the opportunity to interview some volunteers from the Royal Canadian Marine Search & Rescue. We gathered at the government dock in Horseshoe Bay to take a tour of the facilities and to have a look at one of the vessels.

The Craig Rea Spirit ([click here](#) for profile) requires a minimum crew of three to operate the craft, but a crew of 5 is more standard and preferred. When a call comes in that involves a diver, most of the time they operate with the minimum crew – when the first three volunteers show up, they go as usually time is the most important factor and minutes can make a difference. Each crew member has a task. One of the crew is responsible for steering the vessel. His eyes never leave the waters, constantly searching and maintaining safety of the crew on route. Right beside the driver

is one of the navigators, who has several monitors in front of him, including a GPS. The crew member behind also uses monitor equipment to ensure the driver is navigating correctly. They communicate using headsets. The use of life vests are mandatory on the vessel, and attached to these is a pocket mask, knife, whistle and other safety tools necessary.



On-board Navigation Equipment

The most urgent call, as mentioned before, is one that involves a diver. “The best thing a diver can do, is to secure something reflective to the hood”, said Ian Grantham, Deputy Station Leader-Coxswain. This allows him to quickly spot something on the surface that doesn’t belong. A simple reflective tape sewn on will do the trick. Some communication device, such as a whistle, is another basic piece of equipment that all divers should carry. These two things will aid in a diver’s rescue. Of course, a

Surface Marker Buoy (SMB) would help, but most divers don’t carry these and it requires further training.

Dr. Gerard McKenzie, one of the volunteers, talked about the two most common rescue situations. The first is POPS, or Pulmonary Over-Pressurization Syndrome, which is when a diver ascends while holding their breath. The compressed air in the lungs expand on the ascent which causes the lungs to rupture unless the diver exhales during the ascent. This is a basic skill taught in the first lesson of SCUBA training. Symptoms can include shortness of breath, pain when breathing, coughing, coughing up blood, and shock.

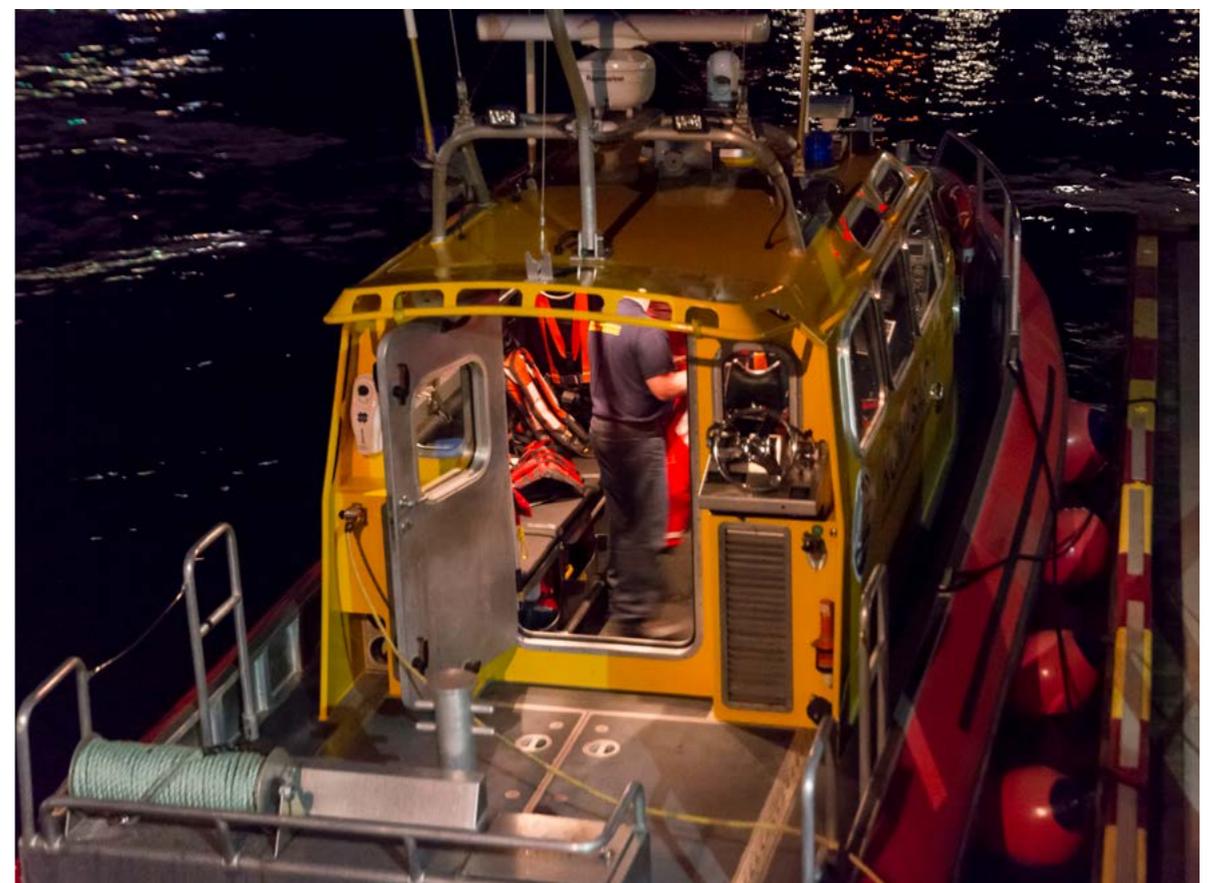
The second common reason for the emergency call is related to the heart. SCUBA diving puts the heart under pressure, says Dr. McKenzie, and as we age the heart might be more sensitive to this pressure. DAN (Divers Alert Network) has a [list of FAQs](#) regarding various cardiovascular situations.

When calling in an emergency, Grantham suggested the coordinates, latitude and longitude, be given if at all possible, or failing that a pretty good idea as to the proper named geographic location as many dive sites are given local names by divers that may or may not be known to the responding crews. This helps the navigators to get to the exact spot of the emergency. Some divers have been carrying the

[Nautilus Lifeline](#), which is a VHF marine rescue radio with GPS. It sells for roughly \$300 and is used at the surface. Its container, however, is rated to 425’ depth when the cap is closed. This use of this piece of equipment was responsible for the speedy rescue of the divers at Race Rocks back in November 2015.

If you are interested in learning more about the Royal Canadian Marine Search & Rescue, or want to donate some money or time, please visit their website at [www.rcm-sar.com](#). As part of the Canadian Coast Guard Auxiliary system RCM-SAR receives some funding from the Coast Guard for mission expenses and on-water training but relies on fundraising to keep its volunteer crews safe with proper vessels and equipment.

To donate, go to [www.rcmsar.com](#).



Crew preparing to head out on a call (which was canceled - a positive outcome)

Diving Safely While We Age

by Dan Clements



photo by Kerry Enns

The recent deaths of two well known Pacific Northwest underwater photographers within a month (a 61 year old female off Duncan Rock, and a 69 year old male in Nootka Sound) started me thinking about diving as we age. Both divers had many years of experience in a variety of conditions. This motivated me to check into three related topics: looking at how age impacts divers; reviewing my personal dive protocols; and seeing if there are any lessons to be learned from the two deaths.

Since I am 66 years old and an underwater photographer myself, this review was of more than passing interest. Hopefully the following write-up will be of assistance to older divers when they consider where and how they dive. And by older divers, we are talking about individuals in their 50's, 60's, 70's, and beyond.

Aging Impacts on Older Divers

The good news is that, according to DAN, there is no theoretical age limit to diving. The bad news is that as we age, there are definite physiological changes taking place in our bodies. Another important

point to remember is that there is a difference between chronological age and physical age. Dr Ernest Campbell (aka: The SCUBA Doc), lists four conditions that impact many older divers:

- 1. Conditioning:** Most older divers do not exercise regularly or adequately. This can lead to exhaustion on dives, or an inability to self rescue in an emergency situation.
- 2. General Health:** General health, agility, and strength decrease with age. Maximum heart rate, oxygen uptake, and lung compliance decrease with age. This also can contribute to exhaustion on dives.
- 3. Hypothermia:** The older diver is more prone to hypothermia and getting cold due to a slower metabolism.
- 4. Decompression Sickness:** Older divers are more susceptible to decompression sickness, and when it strikes it is more severe than in younger divers.

To counter these impacts, Dr Campbell makes **six recommendations for older divers to successfully continue their underwater pursuits.** These include: 1) Passing regular checkups with a physician; 2) Good physical conditioning; 3) Absence of cardiovascular-pulmonary disease; 4) Mental alertness; 5) Diving experience; and 6) Dive profiles with shallower, shorter dives, longer and deeper safety stops, and longer surface intervals.

With respect to chronological aging, he goes on to say “Chronological and physiological age can differ markedly, and each individual ticks to their own genetic clock. This having been said, most elderly divers are not capable of sustaining the work load required by all but the least physically demanding dives.”

Personal Dive Protocols

After reviewing Dr Campbell’s observations, and those of Dr Michael Strauss, I compared my personal training and dive protocols against their recommendations. Here is the result:

- 1. Regular checkup.** Each Spring I have a physical and checkup, and my physician issues a fitness to dive recommendation. I have also tracked my workouts, blood pressure, VO2, and weight for decades, so I have personal base-lines to review and share with my doctor.
- 2. Physical Conditioning.** On most days I run 2-5 miles on trails through the forests, lift weights in a gym 2-3 times per week, and swim a half mile 2-3 times per week.
- 3. Cardiovascular-Pulmonary Disease.** This is assessed annually as part of my yearly physical.
- 4. Mental Alertness.** So far this does not seem to be an issue (although my wife of 45 years might disagree!)

5. Diving Experience. I have logged approximately 1,200 dives in a variety of conditions around the world.

6. Dive Profiles. In the past few years I have modified my dive protocols. Since underwater photographers are often diving solo, even if other divers are present, I carry a 19cf pony bottle, limit solo dives to approximately 60’, have set a 100’ depth limit when diving with a buddy, set a 5 minute safety stop at half the depth of the dive, and another 5 minutes at 15 feet.

My training routine is not just for diving. I also like to ski, mountain bike, and hike. Since I put dive trips together, I try to be in shape to be able to rescue swim another individual at least a half mile to a boat or shore, and not be exhausted. In the past ten years I have rescued 7 individuals.

With one exception (August, 2013, the 69 year old male who recently passed away), rescuees were all in their 30’s and 40’s, and were not associated with a trip I was leading. Five were exhausted and had to be swum back to a boat or shore, while the sixth was a BCD inflater malfunction at 95’ in the Cabo San Lucas area.

All in all, my personal dive protocols seem to mesh well with Dr Campbell’s recommendations. That said, I have consciously moved my dive habits to more conservative settings as I have aged.

If you have a chance, compare your current dive fitness with Dr Campbell’s six criteria. If you are interested in a more thorough discussion, and one which you can share with your non-diving physician, you might check out [SCUBA in Older Aged Divers by Drs Michael Strauss, Jeremy](#)

[Busch, and Stuart Miller](#). There is an excellent discussion of chronological vs physiological age, and how to determine your physical age.

Lessons from Recent Fatalities

So what lessons might we learn from the two recent deaths? From what I have seen, the 61 year old female’s disappearance remains a bit of a mystery, so there is not much information with which to compare to Dr Campbell’s six points. She disappeared within the first ten minutes of her dive. I believe the 69 year old male’s passing, on the other hand, offers some sobering insights.

By way of background, I started diving with with this individual in July, 2013. He was a recreational, non-technical diver. He also traveled on two dive trips I sponsored: one to Monterey and one to La Paz. On a dive in Whalers’ Cove in Monterey on August 6, 2013, he noticed he was low on air, so we surfaced.

Because of surface kelp and exhaustion, he was unable to surface swim back to the launch area. So I stabilized him on the surface in a kelp forest, swam both our large DSLR camera rigs the 300 yards back to shore, dropped off the cameras, swam back out and brought him to shore.

He was the consummate photographer, and really worked his subjects. His results were stunning. But what I noticed at Whalers’ Cove, and on a later trip to La Paz, was that this concentration on photography came at a price and led to what I call “lack of situational awareness.” In California it was not watching his air closely. In La Paz it was not fully connecting equipment that had to be retrieved from the bottom. For photographers, it is all too tempting to try and take the perfect shot or video at the expense of being aware of our dive surroundings or dive comput-

er readings. So now let us examine Dr Campbell's list and see how it pairs up with the recent Nootka Sound Dive off Mozino Point:

- 1. Regular checkup.** No information available.
- 2. Physical Conditioning.** He was unable to self-rescue in Whaler's Cove. To my knowledge his physical training was limited to SCUBA.
- 3. Cardiovascular-Pulmonary Disease.** No information available.
- 4. Mental Alertness.** He was extremely sharp. However, like many fellow underwater photographers, would suffer from lack of situational awareness (Whalers' Cove and La Paz examples).
- 5. Diving Experience.** He was a very experienced diver. However, the situational awareness factor again looms large.
- 6. Dive Profiles.** From what I have been told, the dives at Mozino Point violated Dr Campbell's recommendations in the extreme. Not only was the "shallower dives" not followed, there was a 150' dive on September 19, followed by the over 120' dive where he disappeared on September 20.

Of the six items on Dr Campbell's list, we have no information on two, possible questions on Mental Alertness and Diving Experience, and negative aspects associated with Physical Conditioning and Dive Profiles.

One aspect of the Mozino Point dive where he disappeared were the depths the party were diving for coral shots. In the DAN medical safety advice article titled [How Deep is Too Deep](#), one paragraph stood out:

"On the other hand, there is the "occasional" deep diver. These divers are generally less experienced than regular deep divers, are on a dive trip with a group, and are drawn into diving deeper than they normally do because of the more relaxed holiday atmosphere and because "everyone's doing it." Such divers are often not sufficiently trained, mentally prepared and appropriately equipped to deal with a problem should it occur on a deep dive."

Perhaps the possibility of photographing a unique gorgonian coral is another draw for the occasional deep diver.

The DAN article also references a micro-bubble issue associated with deep dives, a special concern for older divers making repetitive deep dives:

"Certain studies suggest that micro-bubbles are often present after dives, particularly deep dives, especially if ascent has not been appropriately executed but even after what is generally considered to be a safe ascent."

There are many deep divers in our area. Rebreathers and mixed gasses have done much to advance deep diving among technical divers. There are also experienced compressed air deep divers. Bret Gillam, in his [A Practical Discussion of Nitrogen Narcosis for Deep Diving](#) article for TDI Divers' News, discusses the history of compressed air deep diving, dive limits and opinions, predisposing factors, and underwater awareness. If you are going to deep dive, he recommends that:

"Buddy teams need to be more aware of each other in deep dives. Just as frequent scanning of in-

struments is mandated, so is confirmation of your buddy's status. Generally, you should look for him/her about every three breaths and observe them for any overt signs of impairment. Quick containment of a problem situation in its development is vital to prevent a stressful rescue event that may be difficult to perform at depth."

Closing Comments

So, after comparing the Muzino Point dive with Dr Campbell's six tests, DAN's observations on deep diving, and Brett Gillam's buddy team recommendations, what lessons can we learn from this tragedy for older divers and underwater photographers?

1. Dive within your ability and physical conditioning, and **be honest with yourself and dive buddies.**
2. Dive conservative profiles with more opportunities to off gas during and after the dive.
3. If you are going to make a deep dive, or a dive in challenging conditions, be part of a buddy team that is in very close proximity to one another, and is actively monitoring each other.
4. On every dive, regardless of its depth, **make certain that safety is the number one item on the agenda**, not getting the perfect shot.

If these rules are followed, many of us will still be diving in our 70's, 80's, and possibly beyond. Should we decide to push the envelope for that special photo or video, the results might be fatal.

Note: follow the links on the underlined text for more information

Hey! Where'd My Buddy Go?

By Bob Bailey

I've watched it happen. Standing on the beach at one of my favorite dive sites and looking out I saw a lone diver surface. Watching to see what he's up to, I watch him look around for a couple of minutes and then submerge. A few seconds later another lone diver surfaces 100 feet away. He does the same thing. A few seconds later the first diver pops back to the surface again. I holler out and tell him to wait on the surface – his dive buddy will be right back. He waits, and in a few minutes the two are reunited.

We've all heard horror stories about the buddy of circumstance: aka the "buddy from hell". Or the guy who gets in the water without a clue or a care, doesn't follow the dive plan, and quickly gets separated from his dive buddy. Such divers are the bane of a dive vacation, in particular, because they frequently end up causing you to cut your dive short, or spend some stressful minutes underwater at a time when you're paying big bucks trying to have a good time and maximize your bottom time.

And sometimes, perhaps, we are that buddy, even though we may not want to be.

So why does it happen? What can we do to make sure we're NOT that buddy? What can we do to help assure that the person we get paired up with on the dive boat isn't either?

I like to think that most divers WANT to be good dive buddies, but perhaps they never got the skills to know how to be one. Perhaps they covered the skills, but aren't in the water often enough to be comfortable using them. The reasons are as diverse as the knowledge, skills, and motivation of the individual divers themselves.

Let's start by looking at what I believe to be the biggest single contributor to poor buddy skills: awareness. Diving isn't 'natural' to us as human beings. Besides the fact that it puts us in a physical orientation we're not used to (horizontal vs the vertical position we spend most of our waking time in), it also removes one of our most important feedback loops – our vision. We're used to being able to perceive things that are going on around us by using our peripheral vision; essentially a 180-degree field of view in which we can see and respond to things going on around us. **Putting a dive mask on our face reduces our field of view to less than a third of what we're used to. By narrowing our visual range we inhibit our awareness, and therefore our ability to respond to what's going on around us.** We have to learn a new behavior – that of turning our head from side to side to see what's in our peripheral view, rather than simply moving our eyes. At first it takes conscious effort. Eventually it becomes more natural, and our ability to extend our awareness improves. So our skills as a diver must include teaching ourselves to look around more often than we're used to doing.

Now that we're looking around, what are we looking FOR? Well, our buddy, obviously. Are they in a position where we can see them easily? Are we in a position where they can see us easily? In Open Water class most of us learned the "lead-follow" style of diving where one buddy swims behind the other. This is great for the person in the back

where they can keep constant vigilance on their dive buddy quite easily. But it's not so good for the person in front, as they haven't yet invented a dive mask with a rear-view mirror. The diver in the front constantly has to turn around to check on their dive buddy, which is a pain. Because it's a pain, the diver in the front is unlikely to be doing it very often. We develop a "trust" that our dive buddy will be there when we turn around to look, and that's not always a good assumption to make. Suppose the dive buddy stops to look at something. Will you know to stop also? Or will you keep swimming, assuming that your buddy is still behind you? For this reason, in most open water situations it's better for two divers to swim shoulder-to-shoulder or as we like to say, swim to be seen.

When swimming side-by-side, two divers can easily and continuously keep track of each other simply by turning their head to look at each other. Even wearing a dive mask you will have a wide enough field of view to be able to see your buddy and if they are suddenly not in your field of view when you turn your head you will know to stop and look around before swimming very far. Because of this, your chances of losing each other are reduced dramatically.

Now we're in a position to be seen, what else can we do? Or what if we're diving a wall or a wreck where side-by-side isn't really practical? Well, in many situations, that's where a good dive light comes in handy. A dive light can be an "extension" of the diver. Shining it where it's easily seen by your dive buddy tells him you're there; if your buddy can see your light shining on the bottom or on a surface nearby, then they know you are not very far away. We call that "passive communication", giving your dive buddy a visual clue as to your whereabouts. Dive lights can also be

used for active communication, using signals analogous to those you normally provide with your hands.

There are other things we can do to be good dive buddies. **Slow down! Many divers, especially newer ones, tend to swim pretty fast. Sometimes it's because swimming fast makes buoyancy control (seemingly) easier.** Sometimes it's just what we were taught to do. One of the selling points for many of the more expensive models of fins on the market is the "speed test". But what's the hurry? You may not even see that octopus or sea horse that's sitting right there in plain sight because you just blew right past it. Going slow has a lot of benefits. It improves your air consumption, it helps you see more and it gives your dive buddy a better opportunity to share your dive with you. Consider that the faster you go, the quicker it's possible to lose your dive buddy. I've seen it happen time and again where one buddy sees something, stops to take a look, looks up to show their buddy, and the buddy is nowhere in sight. He kept going and didn't even realize that his dive buddy had stopped.

So these are some simple things that every diver can use, practice, and make an every-dive part of their routine: look around, swim to be seen, make use of a dive light when possible and slow down. There are other aspects of diving that can also be used to avoid buddy separations such as making, discussing, and sticking to a dive plan, descending and ascending while facing each other, communicating with each other during the dive and myriad others. By knowing and using these techniques, most diver separations that occur would never happen leaving you and your dive buddy with a more relaxed dive.

Featured Photographer: Bob Webb



An underwater photograph showing a vibrant coral reef on the left side, with a large school of small, dark fish swimming in the clear, turquoise water. The scene is illuminated by natural light, creating a bright and clear underwater environment.

Bob Webb currently resides in Nanaimo, British Columbia and is originally from Calgary Alberta. Several years ago, Bob became hooked on diving after taking a Discover Dive Scuba course while on vacation in the US Virgin Islands. Soon after returning home, Bob completed his Open Water Certification. Over the span of three years he continued to complete certifications. Most recently he has completed his PADI Divemaster certification.



Already an avid amateur dry land photographer, Bob took his passion for photography underwater. The desire to show non-divers the underwater world that he loved so much drove Bob to purchase a Canon G11 and an underwater housing. During many of Bob's dives over the next few years he had camera in hand searching for the next great photo. Apart from the elation of finding a rare fish, or seeing a large octopus out of his den, Bob finds some of the biggest joy in sharing his photos of the life and spectacular landscapes that reside below the surface. In 2015, Bob upgraded his camera set up to a Canon SL1 hoping to further improve the quality of his photos.

Bob's favorite local dive sites include the Big Wall at Madrona, any of the surrounding area's ship wrecks, and Dodds Narrows. Big Wall being his top choice because of the abundance of octopus living along the wall and the awe inspiring vertical wall. The wall is also home to wolf eels, and the occasional stubby squid or grunt sculpin. On occasion sea lions have come to check out and play with divers visiting the wall.



Not only are the wrecks an impressive part of history, they also provide an abundance of substrate to host new life. Being accessible only by boat, it ensures that the wrecks are usually very quiet sites. As a bonus who doesn't love a boat dive?

Dodds Narrows is a superb drift dive that treats divers to a richness of sea life while riding the current through the channel. Massive fields of sea stars, huge barnacles, and shelves coated in anemones are just a few of the things awaiting the divers who drop into the narrows.



One thing Bob would suggest about underwater photography equipment is to provide lots of light. If you think you have enough light, get more light. Underwater photography requires good strong light to stop the motion and bring out the vibrant colours. More light, better photos.

His current photo gear includes a Canon SL1 with EFS 18-55 in an Ikelite housing. The main source of light is Bigblue VTL2500. All post processing is completed on a Macintosh using Lightroom. Future gear purchases include strobes, and additional lenses for macro photography.



© Bob Webb
Canon G11, 6.1-30.5mm f/2.8-4.5 IS, f/6.3, 1/60sec 15.6mm ISO100

Featured Photographer: Chelsea Cameron



Heber River © Chelsea Cameron
Canon EOS REBEL T3i, 10mm, f/8, 1/180sec, ISO100

I grew up in southern Alberta, but I learned to dive during a family holiday one year in Jamaica. I always joked saying that it was because my parents were golfers and they didn't know what else to do with me. I loved it so much and it was all I could talk about for months. After that, every holiday we went on, I would do another certification. Eventually I ended up in Thailand for 7 months completing my Divemaster and Instructor course.



*Not-So-Giant Pacific Octopus © Chelsea Cameron
Canon EOS REBEL T3i, 60mm, f/11, 1/125sec, ISO100*

It wasn't until I moved to Vancouver to work at a local dive shop, that I did my first dive with a camera in my hand. My pictures were awful at first. In fact, I look back at my pictures now and I'm embarrassed! I am also proud, at the same time, that I've grown so much. Once the photo bug took over, I was doomed, and facing a very expensive, addicting hobby! It was worth every penny though, and you'll have a hard time getting me to do a dive without my camera!



*Pacific Spiny Lumpsucker © Chelsea Cameron
Canon EOS REBEL T3i, 60mm, f/9.5, 1/125sec, ISO100*

I have met some amazing people through this sport, and I love being a part of such a fantastic community of divers. For local diving, my go-to site is Kelvin Grove and sometimes Whytecliff Park. I also travel to Vancouver Island as much as I can. Ten Mile Point and Race Rocks are tied for second place, but Campbell River takes first place! I haven't been lucky enough to venture up to Port Hardy yet, but it's definitely on my bucket list!





I've spent many hours going through underwater photography websites, reading tips and how-to's, trying to absorb as much information as I can. I think what helped me the most was getting out and practicing with my camera on land. I really got to know all of the settings and functions. Playing around in the pool has helped a lot too! I've also found diving with other photographers helpful – not only do we have a mutual understanding that the dive is going to be slow, and we will be bending the limits of the buddy system a little bit, but we have someone to compare photos with afterwards!

Sea Star in Kelp © Chelsea Cameron
Canon EOS REBEL T3i, 17mm, f/6.7, 1/90sec, ISO100



I still consider myself an amateur, but I hope to one day put my skills to good use! Until then, I will continue my expensive hobby, and enjoy capturing the underwater world for people that might never get a chance to see it for themselves.

Contact Info:

Chelsea Cameron

www.inspirationalseas.com

Equipment I use:

Canon Rebel T3i : go to lenses are Canon 60mm macro & Tokina 10-17mm Fisheye

Sea and Sea Housing

Dual Sea and Sea YSD1 strobes with a Sola 1200 Focus light

Adobe Lightroom / Photoshop for PC



Heber River Buddy© Chelsea Cameron
Canon EOS REBEL T3i, 10mm, f/5.6, 1/125sec, ISO400

Featured Photographer: Jesse Miller



*Puget Sound King Crab © Jesse Miller
Canon EOS 5d Mark II, 100mm Macro, f11.0, 1/200sec, ISO 200*



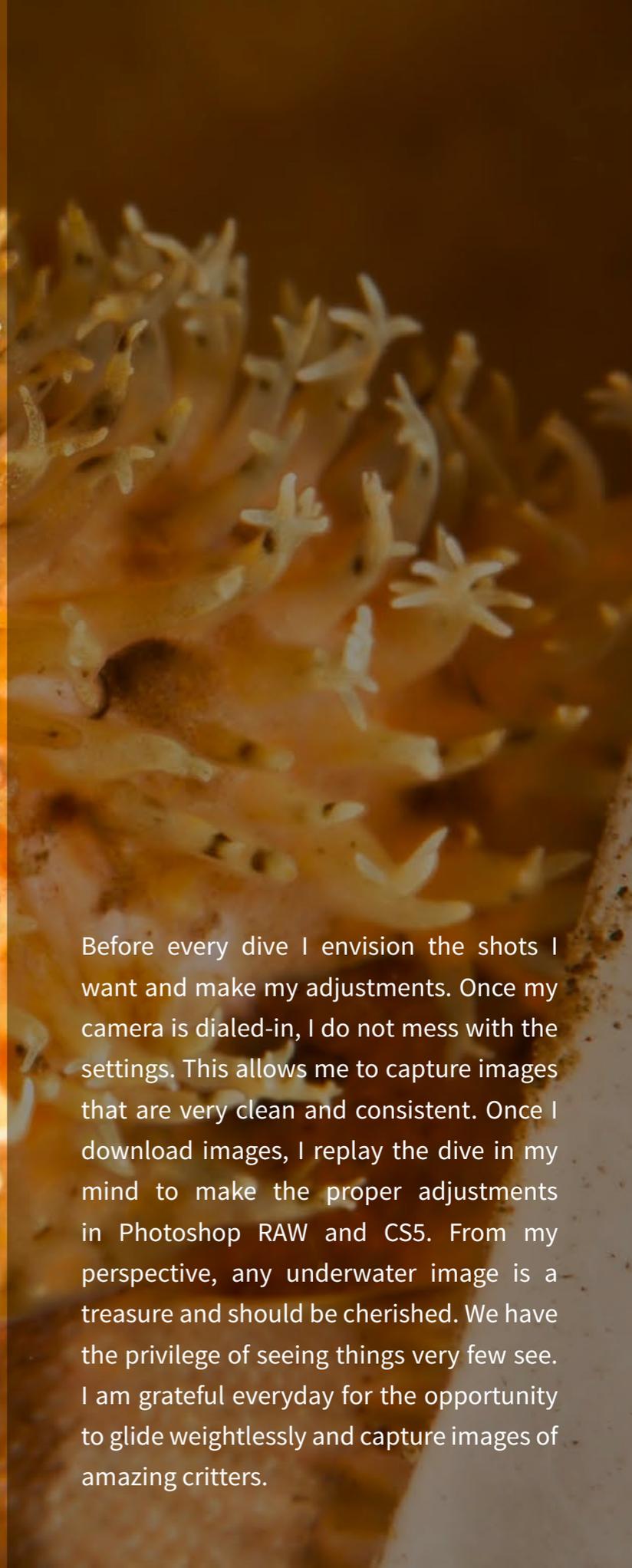
I've always dreamed of breathing underwater and seeing all the awesome wonders of the underwater world. In 2009, I earned an incentive trip to Turks and Caicos Islands, located in the mysterious Bermuda Triangle. As a gift to myself, I became certified so I could dive there. I also purchased a Reef Master Mini camera to capture the amazing moments I was going to experience. Armed with my first underwater camera, dives 4-7 were everything I had dreamed. However, my little camera did not snap the amazing photos I had hoped for. When I returned to Seattle I continued to shoot, but remained frustrated with the results. I'm not sure why I expected better results, I only owned one small point and shoot prior to diving, so I started with almost zero photography experience. I finally gave up for a while and focused on improving my dive skills.

At dive #50 I moved to a Canon G10 and my life changed forever. I got home from a dive at Redondo in Des Moines, Washington, downloaded my pictures, and I could actually see what they were. I was very excited to capture some photos that I could share. Soon after, I added strobes. Over the next 5 years my gear expanded to a Canon 5d Mark II with a variety of lenses and strobes. As people commented on my photos, I began to gain confidence. Although I enjoy wide angle, my passion is macro photography. I enjoy capturing images of critters that many people swim over. My favorite subjects are Pacific Spiny Lumpsuckers, Stubby Squid, and Decorated Warbonnets. For some reason, these critters seem to pose for my camera. I also enjoy the patience and focus it takes to capture these beautiful critters.





People often ask me for tips when it comes to underwater photography and I often feel like I do not provide adequate advice. I know many photographers that are more experienced than I will ever be. I understand the basics, but still lack deep understanding of the technical aspects of photography. As I develop as a photographer, my key advice is to shoot what you want, the way you want. I remember talking to a photography instructor and we were discussing a photo. I asked about a color adjustment and he said, "I don't know, you were there. This is your image." That resonated with me and I think about the statement often.



*Decorated Warbonnet © Jesse Miller
Canon EOS 5d Mark II, 100mm Macro, f22.0, 1/125sec, ISO 200*

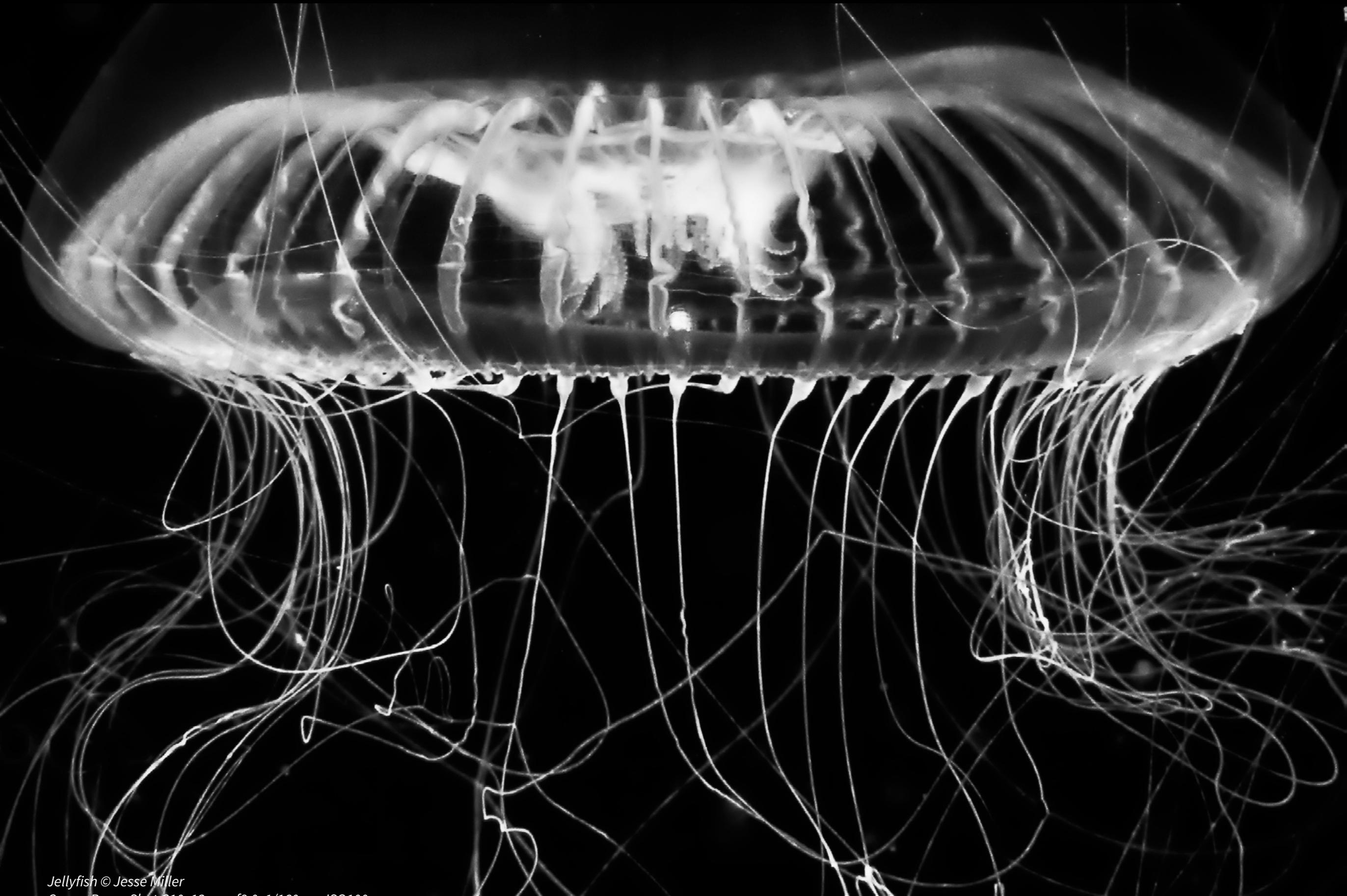
Before every dive I envision the shots I want and make my adjustments. Once my camera is dialed-in, I do not mess with the settings. This allows me to capture images that are very clean and consistent. Once I download images, I replay the dive in my mind to make the proper adjustments in Photoshop RAW and CS5. From my perspective, any underwater image is a treasure and should be cherished. We have the privilege of seeing things very few see. I am grateful everyday for the opportunity to glide weightlessly and capture images of amazing critters.



Pacific Spiny Lumpsucker © Jesse Miller
Canon EOS 5d Mark II, 100mm Macro, f11.0, 1/200sec, ISO 200



Red Irish Lord © Jesse Miller
Canon EOS 5d Mark II, 100mm Macro, f11.0, 1/200sec, ISO 200



Jellyfish © Jesse Miller
Canon PowerShot G10, 13mm, f8.0, 1/160sec, ISO100

Egmont Diving

A trip report and photos from Chris Sherwood, one of our readers.

Egmont Trip Report: September 2015

Lying about 1.5 hour drive North of the ferry terminal at Langdale lays the small village of Egmont. When most people think of diving on the Sunshine Coast places like Cooper's Green and Tawanek come to mind. The best diving, I think, lies at the North end of the Sechelt Inlet around the Egmont area. The interaction between convoluted geography and ocean produces some tremendous tidal exchanges, the most famous being the Skookumchuk narrows – where there is current there is life. Lots of it!

I have had many excellent dive trips to this area and in September was fortunate to join a trip to Egmont led by the renowned underwater naturalist Andy Lamb. Our host and dive coordinator was Kal Helyar. Kal and his wife Ann Beardsell run the first class dive resort [Porpoise Bay Charters & Strong Water Retreat](#). After parking your car at the government dock in Egmont, Kal picks you and your gear up in the dive boat, the Devilfish, to take you to the resort, which takes only five minutes. There is road access to their place but the road is too rough for most vehicles. The accommodation is very comfortable and the food great. There is a hot tub and the best drying shack I have ever seen.



Kal runs two to three dives a day depending on conditions, with plenty of food in between. The Devilfish is a sturdy and powerful craft – very reassuring when the tide may be running at 16-20 knots. There are dozens of dive sites around this area including; walls dripping with big cloud sponges, drift dives in anemone festooned narrows, wrecks, boulder fields and an old midden. Above the waterline there is spectacular scenery, petroglyphs and lots of wildlife.

The star of the show is the large, staggeringly beautiful and rare Pink Candelabrum gorgonian hard coral. Found deep on a dive site known as the Powerlines, not many B.C. divers know of their presence let alone have seen this magnificent coral. It is found at depths starting at about 120 feet and gets larger with depth. These deep pink beauties, which can

exceed two meters in height, can be found mixed in with big cloud sponges, and it is jaw dropping. If you want to do this dive keep in mind that these corals, like cloud sponges, are EXCEEDINGLY FRAGILE!! Please be careful. If you are shooting, you will need a wide-angle lens (I used a 9-18mm) and lots of air. Kal can supply a 120 cu. ft. cylinder. I also carry a pony bottle and limit my time at depth to just a few minutes. If you are not comfortable at these depths there are smaller Red Dwarf gorgonians, Sea Pens, sponges and fish above.

Another signature dive at Egmont is Observation Wall at the Skookumchuk narrows at “slack” tide. This is a drift dive par excellence and features gaudily colored anemones packed together by the thousands. Other filter feeders here include Giant Acorn barnacles, tan, yellow and orange cup corals.

The rocks are covered with whelks and tritons. If the slack is slow enough and the visibility is half-decent, photography is workable. I used a 14-42mm lens with a 7x r wet diopter here.

One of my favorite things to shoot is the Candy stripe shrimp that live commensally with the Crimson anemone and is quite common at many of the dive sites around Egmont. After following these little guys around the base of the anemone for a few laps, my 60mm macro worked well to capture some shots.

The surprise dive site of the trip was at Nemo’s Leap. So named for one of Kal’s dogs named Nemo who has a penchant for jumping into the water and chasing after sea lions. This was the site of the town garbage dump ‘back in the day’. The bottom is littered with all sorts of stuff from



bottles to buckets and is packed with life. Here you can find Decorated warbonnets, Tiger rockfish, Opalescent nudibranchs, Pearl and Dentronotid nudibranchs, to name just a few of the creatures.

Diving with Andy Lamb was a real eye opener. I stayed near to him on several dives and watched as he turned up critters from the most unlikely of places. A Sailfin sculpin on the underside of a chunk of wood half buried in muck, or a Mosshead warbonnet perfectly camouflaged against the algae-covered rock substrate. Sometimes he would collect a fish or crab or nudibranch in a clear plastic bag and bring it

onboard for analysis and discussion. He always made sure to return it to its place of collection unharmed.

There are several wall dives here where one can find healthy large cloud sponge colonies. The lobes and folds packed with juvenile rockfish, warbonnets, Grunt sculpins, and an assortment of crab species.

In six days of diving we got in sixteen dives and didn't even get to the Tzoonie narrows or the wreck of the HMCS Chaudiere. The only downside to this trip was the incessant rain, but who cares when the diving is great. Can't wait to get back to Egmont!

A side note: If you prefer shore diving, then I recommend staying at the Back Eddy Resort and Marina also in Egmont. They have reasonably priced accommodation, a great little pub and a compressor for fills. The dock dive at their marina is a very good dive day or night or you can drive to some of the other great shore dives that are found up and down the Sunshine Coast.

I shoot using an ancient Olympus EPL2 mirrorless camera with an Olympus housing, two Sea & Sea YS-01 strobes and an iTorch video light.

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.

Opalescent Squid Spawn at Kelvin Grove, British Columbia

by Steve Taylor & Ahmed Bahgat

On a night dive in the shallow sandy bay at Kelvin Grove we could clearly see that something unusual was happening. Opalescent squid (*Loligo opalescens*) are a rare sighting at Kelvin, but on this November night, with a bright full moon, there were dozens of them, with the larger males clasping their female partners in a spawning embrace. In their book, *Marine Life of the Pacific Northwest*, Andy Lamb and Bernard Hanby aptly described the carnal activities of opalescent squid as “massive spawning orgies” (2005, p. 274). In the midst of all this activity, the non-fornicating females were busily tending to a large egg mass that they had anchored to a mooring line.

Steve Taylor



These squid carried their sausage-like sacks of eggs to the mass, where they attached the sacks by excreting a sticky substance. When we returned to Kelvin the following night it was clear that the party was virtually over. There were fewer squid, and those present were mutilated and ragged, presumably due to grasping suckers having ripped off their skin. These squid also were lethargic. Opalescent squid expend a great deal of energy in their spawning ritual and do not survive long thereafter.

Further reading:

<http://www.thecephalopodpage.org/Lopal.php>

<http://sanctuarysimon.org/species/loligo/opalescens/california-market->

Correspondence: steven.taylor@ubc.ca

Steve Taylor



Steve Taylor



Steve Taylor



My IR Conversion Journey

How I wrecked my camera

by Kerry Enns



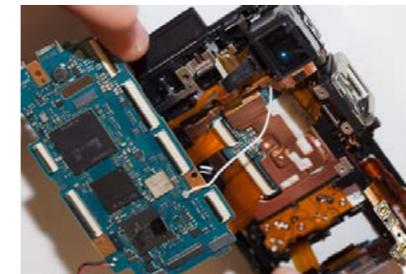
photo by Kerry Enns

Mary Bess Johnson was my inspiration. Her image was featured on the fourth issue of PNWDiver way back in March 2012. When I met her in Edmonds at some time later chat about putting one of my images into the local gallery, we got talking about Infrared photography. I was intrigued by this concept but knew absolutely nothing about it. I just loved the surreal effect of her photographs.

I started on my camera journey about five years ago with a Canon Powershot A610 in a proprietary housing. I saved my pennies for a Sony NEX 5N which I put into an Aquatica housing and this worked well for a while. However, my dear camera and housing were outdated almost the instant I bought them. My paranoia set in and I decided to buy an extra body for my NEX in case the housing ever flooded. And this is when the seeds of conversion began to take hold.

Fast forward to last summer when I contacted Mary Bess to see if she would write an article specifically about infrared photography. Armed with her article and her inspiring images, I set off to dismantle my camera. I was prepared to take pictures of the dismantling process, but lucked out by finding two websites that would guide me, each in their own way. **I had parts everywhere; paper marked with circles containing screws and other bits.** My big worry was that my cat would decide to take that moment to explore the table top (she's not allowed up there, but chooses moments like these to push the limits).

Everything came apart famously, all the way down to the actual sensor. Then the instructions were fuzzy. Click on the parts image to see the instructions. It seemed I had to remove the filter that blocked infrared light, but there was an electronic ribbon attached and I didn't know its purpose.

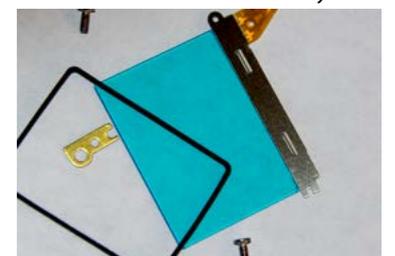


It turns out that the filter sits in front of the sensor and has a vibration gizmo attached to shake off the dust. This is good to know if you are going to tackle this. The

removal of this filter left my sensor exposed to dirt. Classic avoidance – I need to clean it but am a bit worried, so I'm cloning out the spots until I gather the courage.

Obviously, I successfully removed the glass filter with only a minimal amount of parts leftover. It's not ideal, but the camera is working, so I'm happy.

This began my journey of understanding light itself. Sure,

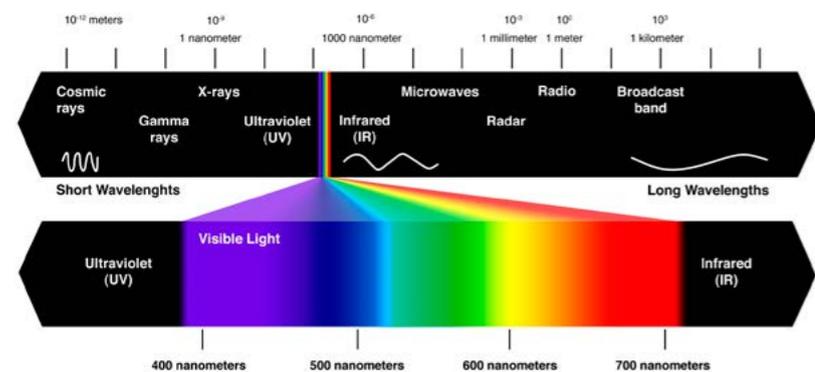


I've heard of UV or ultraviolet light, that made our white shirts glow purple at the joke store. Remember that? Or that IR light was used to help the camera focus in dark conditions. But did I truly understand it? Absolutely not. After I took my IR blocking filter out, what I had was a full spectrum camera. The sensor was now picking up ALL light. Modifications were becoming apparent but I didn't know how.



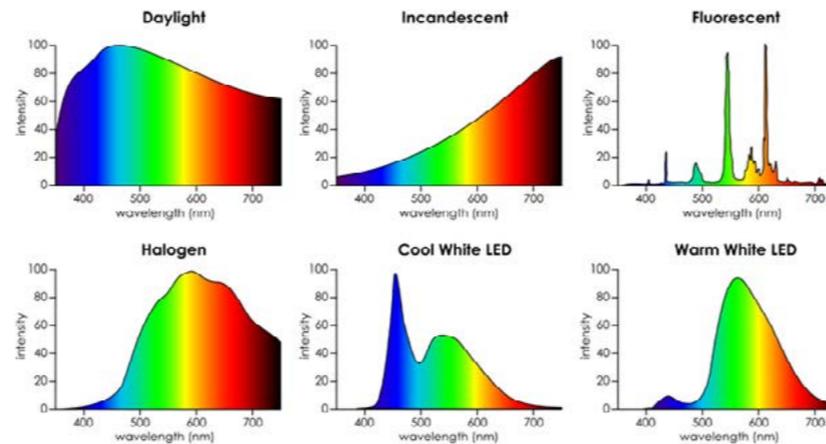
Full spectrum image with no adjustment and then with white balance. The problem is that there is still color visible. Visible light is overpowering the IR light.

After a tons of Googling, it realized that I needed to get a filter that would block visible light. Apparently this light, measured in nanometers (uh...I have no idea what that measurement means) is between 400nm and 720nm. So my filter had to block light below 720nm. I found one on Amazon for \$40. Meanwhile, I went for



a dive to see what full spectrum light would be like underwater – not much different.

Once the filter arrived in the mail, I was excited to continue this science experiment. It was evening, and the Christmas tree lights were on. I spun the filter on my lens, looked through it and saw no difference. What? Back to Google. This time I learned that different lights emit different



spectrum. My tree has both incandescent and LED lights. What I didn't notice was that the LED lights were not showing up in my picture, only the incandescent one were. OK. Now it's making sense. But now I had another problem. My underwater focus lights were LED. How was my camera going to be able to focus?

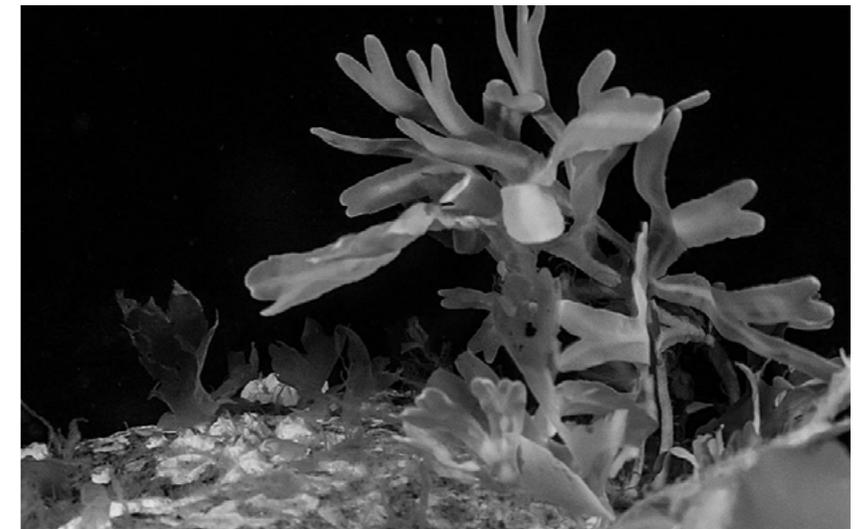
One sleepless night I got up and started playing with the LED light and flash on the camera. The camera was, in fact, able to pick up some light from the LEDs and the flash most certainly was able to emit enough IR spectrum to illuminate the subject. All that was left was to wait for the weather to improve to go diving.

Meanwhile, I tried some daylight photography in my neighbourhood. What I noticed was that the color of red changed as it moved from near-infrared to infrared. In or-



der to get the blue sky and the white trees that is so typically seen in land photography, I had to switch my blue and red channels. There are lots of tutorials on how to do this online. But it's fun!

Although it was a rainy day, I decided it was time to test my system underwater. I set my rigging up for my 18-55mm zoom lens, my iTorch focus light and one Ys-D1 strobe. My first test shot of kelp was great at 18mm or so. Super



happy. Then I zoomed out to a 55mm focal length and my camera would not focus no matter how much light was on the subject. I even had my buddy light up the subject with his light, but with no success. I changed to an 18mm focal length and my camera was able to focus and the strobe was able to do its job. My camera settings were 1/40, f6.3 and ISO1600. These are considerably different than my standard setting, but I needed my sensor to have a chance to capture light. I also put my viewfinder screen on black

and white, since the red colour was hard on my eyes.

We were fortunate to come across a nice Giant Nudi-branch. I feel badly about this, but my camera and lights were so close to it in order to capture the IR light that it started swimming away. But that's when I got some really nice images.



I took my camera set up on another dive to Kelvin Grove with far more success. **That dive led me to the conclusion that my LED Focus light is nearly useless. There simply isn't enough light for the camera's auto-focus to function well.** I had far more success with my 30mm macro lens, than my kit lens mentioned earlier. Perhaps because it has an extremely close focus range. My most successful shots were in the extreme shallow waters, under 10', where some natural sunlight would illuminate the subject. I believe that my success can be attributed to my strobes, though. Although I don't know the light spectrum they fire, I'm quite convinced that they give off IR light. And that reflected off the subjects to give that white look. The images on the right are a result of that second dive.

So, if you are considering converting an older camera, here's what to do:

1. Find a site that will guide you through it or con-

tact the manufacturer to see if they'll remove the IR filter for you. If you can, replace that glass with a visible light filter (dark red). Removing the glass and not replacing it can affect the focus point in some cameras. I was lucky; It didn't on mine.

2. Order a visible light filter that blocks light below 720nm to fit your macro lens. You are going to need to be very close to your subject.
3. Consider using a diopter to reduce the space between you and the subject.
4. Know that the chances of capturing fish images will be next to none.
5. Change your view finder to black and white, if possible. A red screen is hard to look at.
6. Change to manual focus if you can. I couldn't.
7. Your RAW image will import in a magenta colour and you'll need to do some post processing for that. Black and white conversion is the easiest.

This has been a super interesting journey and I most certainly am not done. I'm looking forward to experimenting further. Perhaps when my Nikon D7100 is affordable in the used market, I'll destroy that body too.



photo by Kerry Enns



photo by Kerry Enns



photo by Kerry Enns



photo by Kerry Enns

Anything On Canvas

An acrylic option for printing

by Kerry Enns

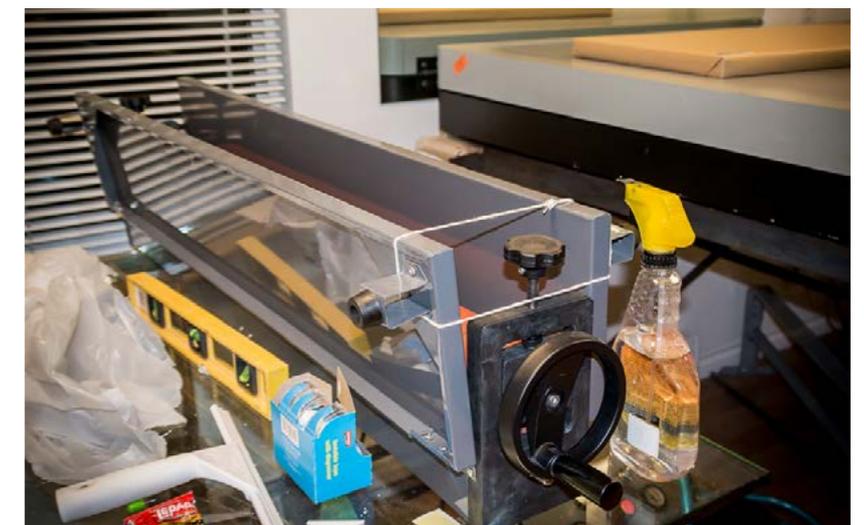
As its name implies, Anything On Canvas has been focusing on printing photographs onto canvas. But that's not all they do. Acrylic prints are gaining in popularity and for underwater images and they are stunning. I learned about Anything On Canvas through our local photo arts club, and even saw some of our members' work there. Dave Hannah, the owner/operator of his small business, showed me around his shop one evening and gave me some helpful tips to pass on.

I saw some amazing acrylic prints, that were ready for pickup, and the depth was incredible. Clean, crisp images. Hannah commented that the optics of an acrylic print is actually quite superior over glass: the way it refracts light due to the lamination causes the image to appear clearer. The edges of the acrylic he uses are flame polished for a clean, soft look. Hannah also pointed out that he uses archival materials for his products.

The process of creating an acrylic print is quite finicky,

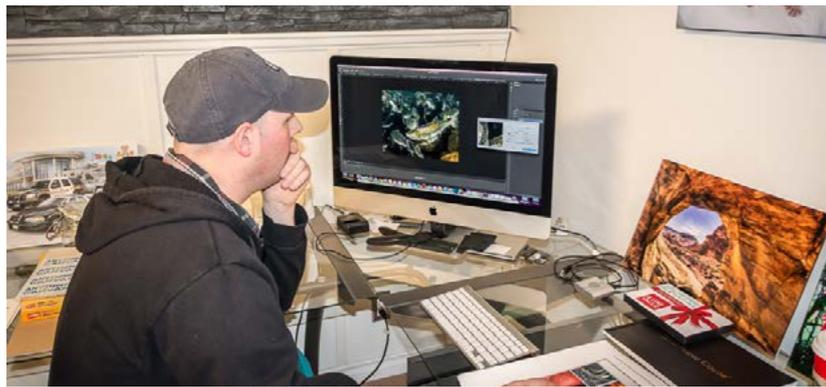
which is why the cost is more. The main challenge is to prevent flecks of dust from adhering to the adhesive. Since it is nearly impossible to prevent entirely, he says that busier prints work much better than big spaces of solid color. The process first involves printing the image onto a metallic paper. Then a double sided optically clear adhesive is applied to the surface using a cold roll laminator. The next step involves adhering the print to the 1/4" acrylic, again by the use of the roll laminator. The acrylic print is then finished off with either an aluminum or sintra backing for added support and protection. He uses either MDF cleats for hanging or a wood frame, the same as he uses for his canvases. The latter works well for gallery style hanging.

I asked what tips he could provide for us when we send him files. Again, busy images are better due to the process of the application. **Calibrating your monitor is also very important.** If needed, he could provide an ICC file, for those wishing to calibrate the colors using Lightroom. He also suggested lightening up the image by 10 - 15%,



and to zoom in to the actual size to ensure clarity. He can use any file type, but jpeg works well with an sRGB or Pro-Photo color space. These tips are reviewed in detail on his [Blog](#). The largest acrylic print he is able to do at this time is 30x40” and that will run you \$400CAD. He can, however, do much larger canvas or metallic prints at 40x60”.

His website is really nice, too. **Once you upload your file, you can see how your print will look on a generic couch or café scene.** You can even change the wall color. This is very helpful to visualize scale. If your image does not meet the minimum standard, you will not be able to move to the next step. I tried to upload a Facebook formatted image, and it would not accept it. Good to know.



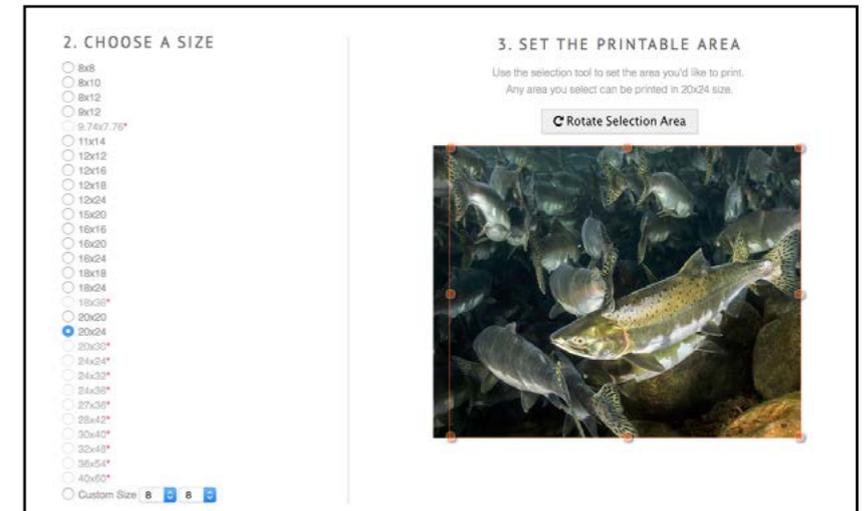
Dave Hannah working on my print

Dave Hannah is a busy guy. By day, he works for a large fast food distribution company as well as volunteering as a reserve member with the local police force. But this business is his passion, and he clearly loves what he does. He hopes to expand to offer sublimation onto metal, wood and other substrates as well in the near future. Although at the moment he can only ship to Canada, if you are from the US, please contact him and he will begin the paperwork process to allow international shipping.

Check it out! <http://www.anythingoncanvas.ca>

For our readers, Hannah has offered at 15% discount code: PNWDiver. Thanks, Dave!

ANYTHING
on
CANVAS



Screen Shot of canvas choices and cropping guides



Some Screen Shots of my potential order. You can even change wall colour!



Travel Corner



SLUGFEST

Photo by Marli Wakeling



August 12-22, 2016: Lembeh Strait

Join other “Nudibranch Nerds” for the Nudibase Facebook group SLUGFEST at NAD-Lembeh Resort, North Sulawesi, Indonesia. We will focus our attention on Sea Slugs and Nudibranchs as well as the other underwater wonders of the muck diving capital of the world, Lembeh Strait. Dive Guide ratio is 1 superb guide per buddy team! Learn about the natural history of the area, sea slug and nudibranch biology and macro and super-macro photographic techniques from photographer and veteran “brancher” Marli Wakeling and the NAD-Lembeh dive staff.

Prices start at \$1774USD and include 3 dives per day, all meals and roundtrip airport transfers, based on double occupancy. Free shore dives and 50% off Nitrox, if pre-booked. Spaces are filling up, so don't hesitate.

Contact nudibasegrouptrip@gmail.com for details and to book your spot.



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

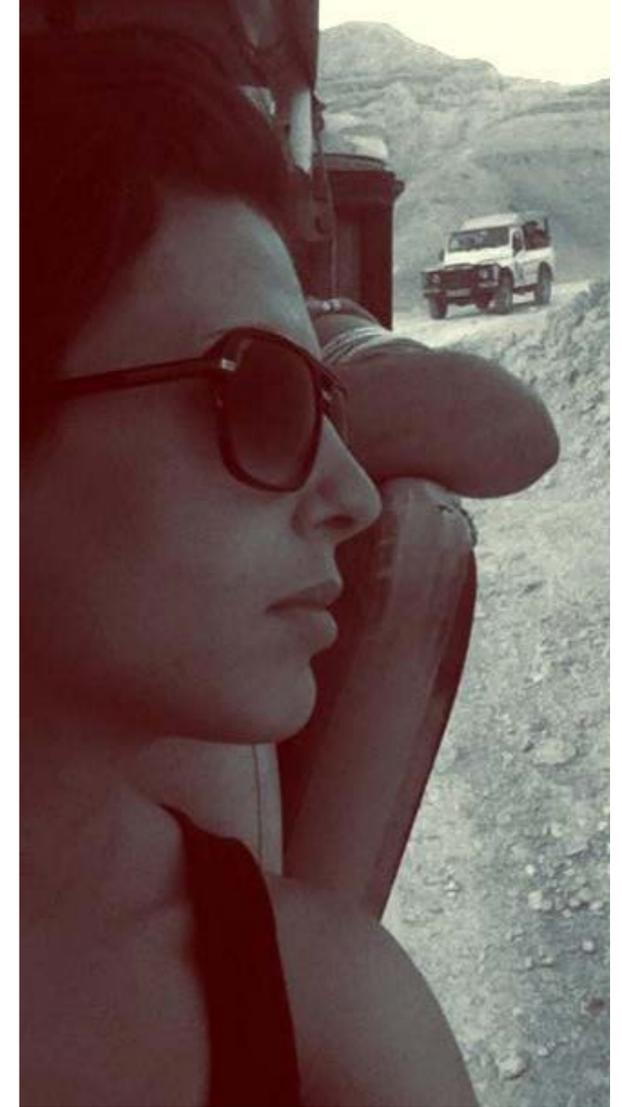
British Columbia, Canada
Editor/Publisher

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.



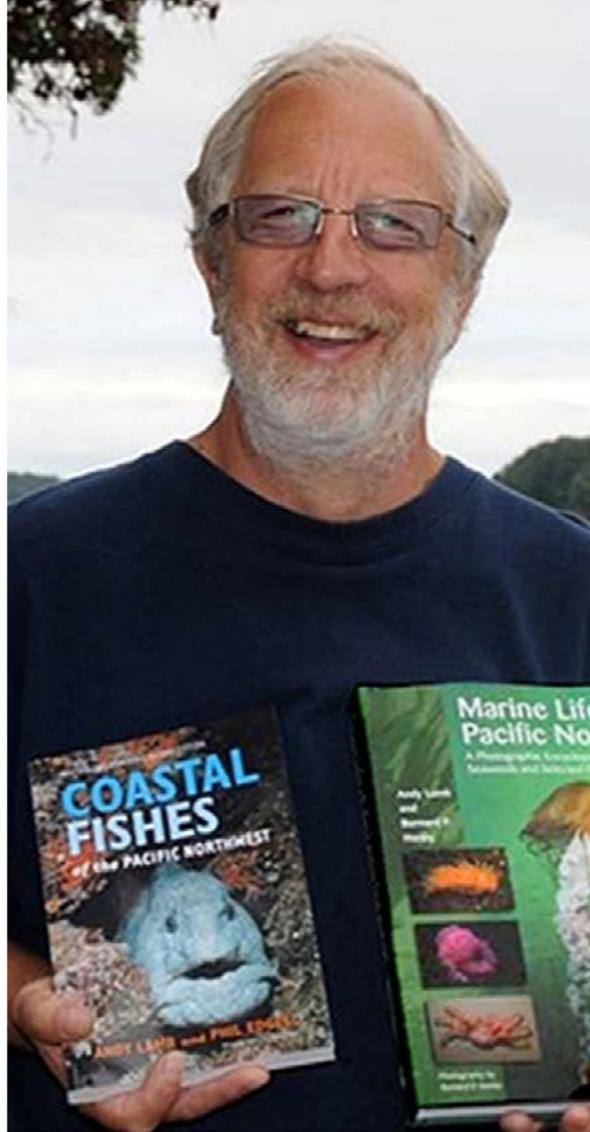
Dale Carlisle

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

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



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.