My Favorite

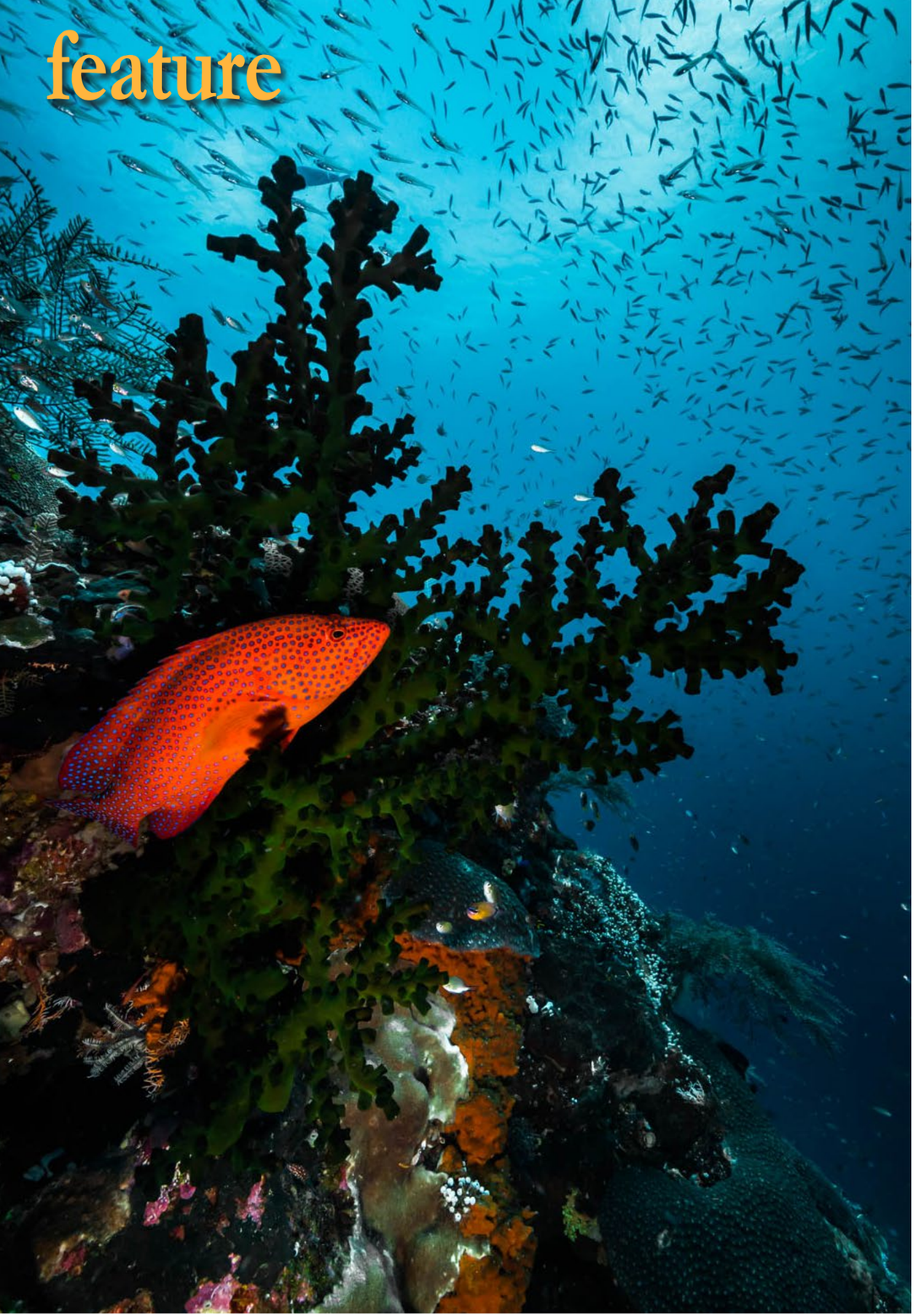
Color Contrast Pix

Contributors' Picks from Around the World

Text and photos by John A. Ares, Scott Bennett, Larry Cohen, Anita George-Ares, Jennifer Idol, Matthew Meier, Brandi Mueller, Gary Rose, Mike Rothschild and Olga Torrey

We asked our contributors what their favorite images of color contrasts were, and they sent back photos and stories revealing the diversity of color contrasts found under the waves. From brilliant sponges and corals against deep blue waters in Raja Ampat, Papua New Guinea, Bonaire and the Red Sea to contrasting primary colors of marine life in Socorro, Fiji and Cuba, from vivid hues of macro life in Indonesia, the Maldives and the Philippines to contrasting pinks and greens on wrecks in San Diego and New Jersey, *X-Ray Mag* contributors share their favorite images from near and far.

JENNIFER IDOL



A bright orange grouper in Raja Ampat hides behind some coral to wait for prey. Exposure: ISO 800, 14mm, f/14, 1/100s

Gear used for all images: Nikon D5 camera, Nikkor 105mm lens, Nauticam housing. Blue and orange define this Anna's Chromodoris from Raja Ampat, Indonesia (above). Exposure: ISO 500, 105mm, f/22, 1/200s; An orange elephant ear sponge such as this one (see previous page) on a wall in Bonaire are vivid filter feeders on coral reefs. Exposure: ISO 400, 14mm, f/11, 1/250s

Naturally Complementary

Text and photos by Jennifer Idol

I am addicted to contrast and find no better match than in blue and orange, a surprisingly rare combination underwater. These complementary colors pop underwater.

I create photos in a number of aquatic environments, most of which are variations of green to teal waters. When they appear, blue and orange seem to collide in coral reef systems in sponges, on wildlife, and against blue water backdrops.

The biggest challenge with shooting such a vibrant combination is to avoid overexposing the oranges. Orange often exceeds the color bandwidth of camera sensors. When editing, the oranges may need to be lowered in saturation to reveal full details of their subject.

These colors are often seen independently underwater, perhaps on an orange shrimp or as an abundance of blue in our oceans. Finding them together and in a way that creates an interesting composition is a challenge I enjoy meeting.

Sponges are the most common form of orange I see on our reefs and vary from the deep orange that I seek to other warmer tones including fuchsia and purple. Bright colors often indicate dangerous wildlife, but many orange species are not venomous. Perhaps some of these innocuous creatures use orange to pretend to appear dangerous so predators will avoid them.

Although I shoot orange in other non-natural settings such as in a historical diving suit or at a pumpkin carving contest, it is the naturally occurring combination I find the most compelling. Looking at shooting through color combinations is an intriguing perspective. Visit: **uwDesigner.com**

Broadclub cuttlefish, Bunaken, North Sulawesi, Indonesia (above). Exposure: ISO 100, f/8, 1/125s. Gear: Canon 10D camera, Sigma 50mm f/2.5 macro lens, Ikelite housing

Underwater Color

Text and photos by John A. Ares

Cuttlefish are translucent and change color frequently. This broadclub cuttlefish was intrigued by my presence, and our encounter lasted maybe five to ten minutes. I took my strobes and pointed them toward the middle of the cuttlefish. With the strobes facing each other, it allowed a "glow" to pervade the subject in the image. This increased the contrast and darkened the background.

Fire urchins are so named for their painful sting. However, their purple and blue iridescence is truly revealed by bouncing the strobes off their test (body) by placing them above the urchin and at a 45-degree angle. Fire urchins are tricky due to their reflectance. Bracketing exposures in manual mode resulted in this image having the right degree of saturation.

The flatworm (*Pseudoceros ferrugineus*) stood out from its sandy background. Purple and orange are near complementary colors on the color wheel. This image was shot with one backlit strobe. The other strobe had stopped working due to a dual connecting cord failure. Having a backup plan is important.

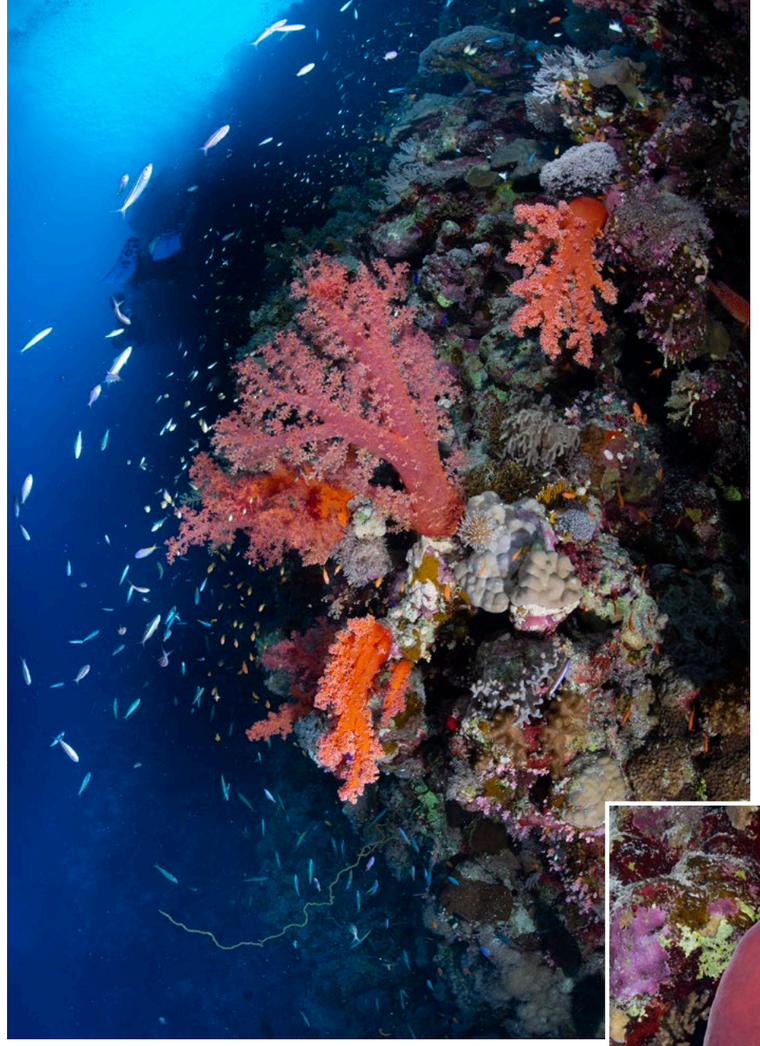
For most people, Cassiopea (upside-down) jellyfish have a mild sting, so can be safely photographed in close quarters. This one was about a foot in diameter. Cassiopea have very short tentacles. I shot the jellyfish looking straight up to get the blue background. I aimed one strobe through the top of the jellyfish, and another aimed at the bottom, so the orange color could be seen in contrast to the blue. Please visit: **johnares.com**

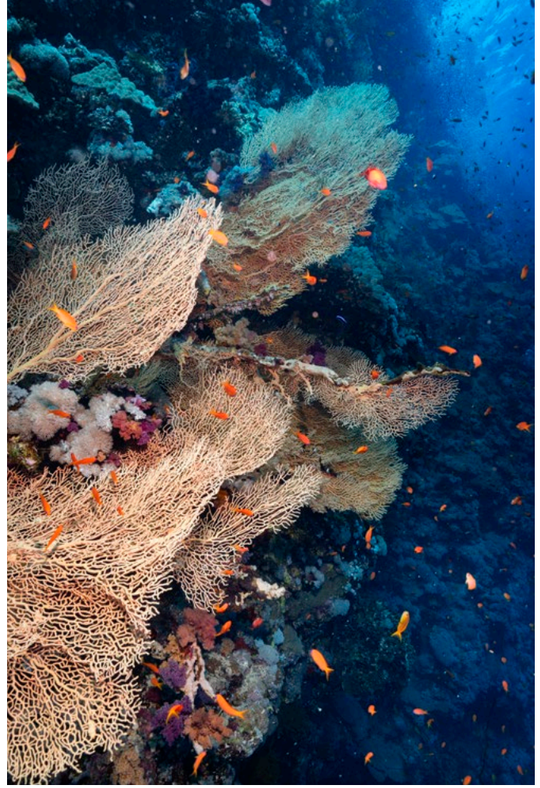
Contrast

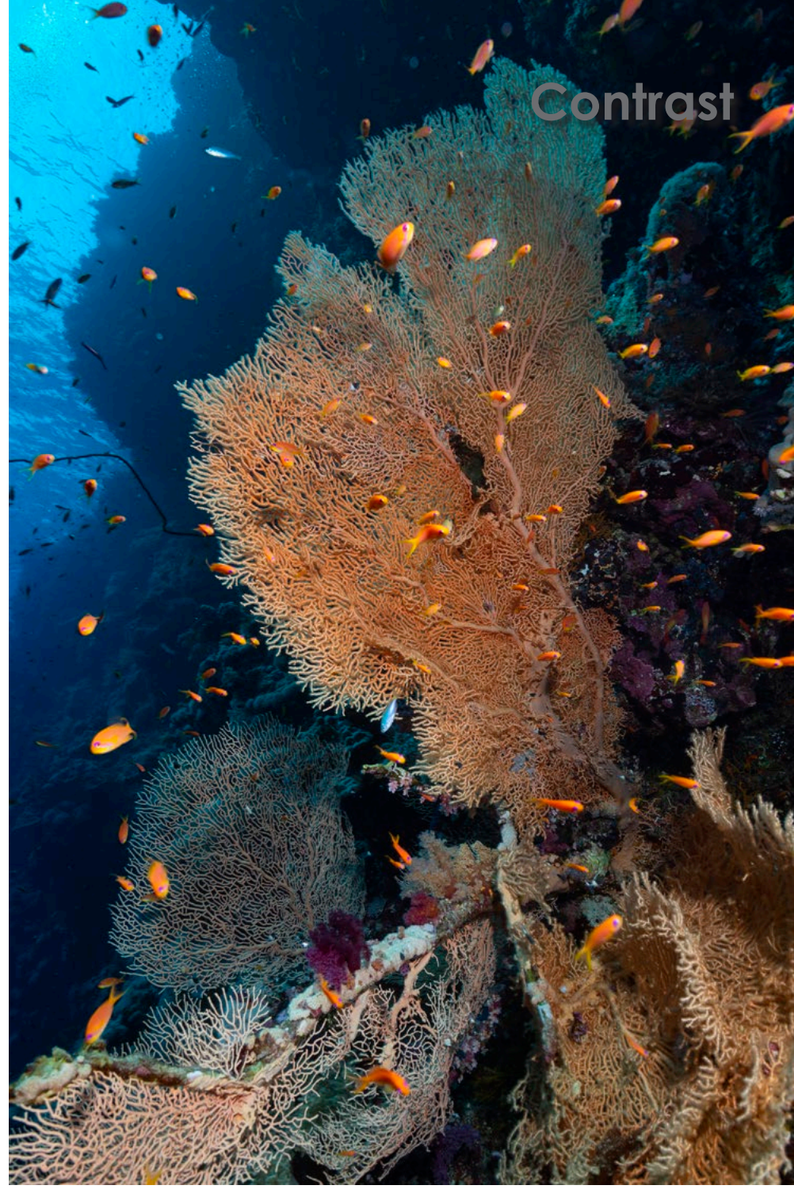
Fire urchin, Bunaken, Indonesia (left). Exposure: ISO 400, f/13, 1/200s. Gear: Canon 10D camera, Canon 100mm f/2.8 macro lens, Ikelite housing, twin Ikelite 125 strobes

Flatworm, Apo Island, Philippines (center). Exposure: ISO 400, f/16, 1/160s. Gear: Canon Rebel T1i camera, Canon 100mm f/2.8 macro lens, Ikelite housing, twin Ikelite DS-161 strobes, only one fired. Manual exposure mode.

Cassiopea (upside-down) jellyfish, Dumaguete, Philippines. Exposure: ISO 400, f/16, 1/160s. Gear: Canon EOS Rebel SL1 camera, Canon EF-S 18-55mm f/3.5-5.6 IS STM lens set at 18mm, Ikelite housing, twin Ikelite 161 strobes







Elphinstone Reef, Southern Red Sea. Exposure: ISO 200, f/13, 1/60s (far right) and ISO 200, f/13, 1/60s (top centre). Sponge at Rocky Island (bottom centre). Exposure: ISO 320, f/11, 1/125s. Gear used for above images: Nikon D850 camera, Nikon 16-35mm lens, Seacam housing, two Inon Z-330 strobes; Rocky Island wall (right). Exposure: f/16, 1/125s, ISO 160. Gear: Nikon D850 camera, Sigma 15mm lens, Seacam housing, two Inon Z-330 strobes

Red Sea Contrasts

Text & photos by Scott Bennett

Despite years of diving, I had never been to the Red Sea and a week-long liveaboard trip quickly showed what I had been missing. Elphinstone's far offshore location in Egypt's south guaranteed spectacular visibility, which was easily in the range of 50m. The lack of sediment virtually ensured non-existent backscatter, making wide-angle photography an absolute joy! Elphinstone is also home to some gigantic fan corals. Thrusting outwards from the precipitous walls, their warm tones and graceful patterns provided a sharp contrast to the intense blue of the adjacent sea. I liked composing the shot with the bottom of the image anchored by partial and smaller corals and the main subject echoing the shape of the reef wall behind it. Swarming anthias numbers add dynamic splashes of contrast and colour.

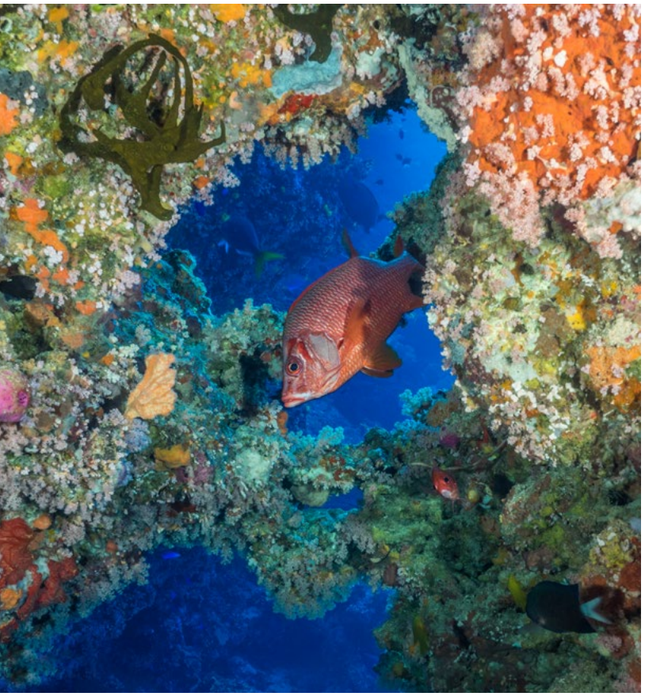
Large fan corals combined with steep walls are especially well suited to a vertical format. As the corals are light in tone, care must be taken not to blow out the highlights with the strobes. To avoid this, I positioned one strobe set at one-half power aimed toward the foreground corals with the other strobe set at full power aimed towards the most distant fan corals. The intense blue of the water provides contrast, while ever-present schools of anthias add additional splashes of colour. Although the strobes cannot light up the distant wall, the exceptional visibility reveals detail all the way to the rear of the image.

With the Red Sea renowned for its reefs and visibility, I purchased a full-frame 15mm fisheye lens before leaving for my trip. This proved to be a very good decision, as both were spectacular!

Rocky Island

Situated at the southern end of the Egyptian Red Sea, Rocky Island features a stunning wall that is home to a dazzling assembly of corals and fish. The soft corals were especially prolific, providing a visual bombardment of colours, forms and textures. For the image, I set the strobe arms as far out as possible and set both strobe's power output at half. Doing so ensured even lighting and not blowing out the foreground elements, providing a complementary colour contrast of the red-orange foreground to the blue/blue-green background. Although the background recedes darker, the water is so clear it allows distant fish to be illuminated by the strobes.

During a dive at Rocky Island in Egypt's Southern Red Sea, my eyes discerned a vibrant jolt of pink on the wall ahead. Moving closer revealed a magnificent elephant ear sponge. I had seen a few specimens during the trip, but none as colourful as this. As well as being photogenic, there were several elements of contrast at play. I wanted the sponge to be the dominant feature of the image but allow enough space to show its surroundings. The intense uniform hue juxtaposed alongside the surrounding sponge-clad rocks and hard corals created a striking tonal contrast that made the subject pop. To further the impact, the smooth organic folds and curves provided additional contrast to the irregular patterns of the surrounding wall. To complete the picture, a tiny fish added a minute sliver of blue.
Visit: **xray-mag.com/Contributors/Scott-Bennett**



Papua New Guinea Blues

Text and photos by Larry Cohen

The blue waters of Papua New Guinea are the perfect background to contrast with the brilliant colors of the marine life and the transportation of the locals. When diving with Walindi Plantation Resort, I looked up and noticed how magnificent an outrigger canoe looked silhouetted against the blue water. The problem was I had a macro lens on my camera! So, the following week, we were diving at Tufi Resort, and I asked if we could stage the scene. The manager arranged for us to tow an outrigger canoe offshore so we could get clear blue water. Then, using my Olympus 9-18mm wide-angle lens, I used ambient light to capture the canoe.

Since blue is a cold color, it is good to have a warm color for contrast. Diving the site Lana Shoal, the small yellow coral damselfish on the exquisite reef, added color contrast with the blue water. Likewise, the red color of the sabre squirrelfish in the crevice at Gabriella's Fish Point stands out against the blue water background.

In the case of the yellowtail fusilier photographed on Veale Reef, different shades of blue could add contrast. I used a fast 1/250th shutter speed to darken the blue background to contrast with the light blue color of the fish. The yellow tail adds a color accent.

Using a neutral color could also be effective. When diving off the liveaboard, the *Febrina*, we expected to get close to silvertip sharks at Norman's Knob. So, I decided to use my Panasonic 8mm fisheye lens. When the shark came over my head and turned, the distortion of using a fisheye lens added to the image's composition. The dark blue background allowed the gray shark to stand out. Visit: **liquidimagesuw.com**

Sabre squirrelfish at Gabriella's Fish Point (above). Exposure: ISO 200, f/5.6, 1/15s. Gear: Olympus OM-D E-M1 Mark II camera, Olympus 9-18mm lens, Aquatica housing, Sea&Sea YS-D1 strobes; Yellowtail fusilier photographed on Veale Reef (top left). Exposure: ISO 200, f/5.6, 1/200s. Gear: Olympus OM-D E-M1 Mark II camera, Olympus 9-18mm lens, Aquatica housing, Sea&Sea YS-D1 strobes

Reef at Lana Shoal (above). Exposure: ISO 200, f/8, 1/180s. Gear: Olympus OM-D E-M1 Mark II camera, Olympus 9-18mm lens, Aquatica housing, Sea&Sea YS-D1 strobes; Silhouette of an outrigger canoe (top right). Exposure: ISO 200, f/11, 1/250s. Gear: Olympus OM-D E-M1 Mark II camera, Olympus 9-18mm lens, Aquatica housing; Silvertip shark at Norman's Knob (top center). Exposure: ISO 200, f/5.6, 1/250s. Gear: Olympus OM-D E-M1 Mark II camera, Panasonic 8mm lens, Aquatica housing, Sea&Sea YS-D1 strobes

ANITA GEORGE-ARES

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Tomato anemonefish, Masaplod North dive site, Negros Island, Philippines (left). Exposure: ISO 200, f/11, 1/200s. Gear: Canon EOS Digital Rebel XTi camera, Canon EF50mm f/2.5 compact macro lens, Ikelite housing, two Ikelite DS161 strobes

Blueface angelfish, Five Rocks dive site, Maldives (right). Exposure: ISO 200, f/11, 1/160s. Gear: Canon EOS Rebel SL1 camera, Canon EF-S 10-18mm f4.5-5.6 IS STM lens, Ikelite housing, two Ikelite DS161 strobes

Janolus nudibranch, Lembeh Strait, North Sulawesi, Indonesia (bottom right). Exposure: ISO 200, f/8, 1/200s. Gear: Canon EOS Rebel SL1 camera, Canon EF-S 60mm f/2.8 macro USM lens, Ikelite housing, two Ikelite DS161 strobes

Ring-tailed cardinalfish, Sahara dive site, Negros Island, Philippines (bottom left). Exposure: ISO 200, f/11, 1/200s. Gear: Canon EOS Digital Rebel XTi camera, Canon EF50mm f/2.5 compact macro lens, Ikelite housing, two Ikelite DS161 strobes

Water Colors

Text and photos by Anita George-Ares

Why are reef species so beautifully colored? Colors may aid both in crypsis (ability to avoid detection) and communication (Marshall et al., 2018).

With their constant motion, anemonefish make you work to get the image that you want. Yet, I never get tired of photographing anemonefish. I like the warm colors of the anemonefish nestled among the tentacles. The fish and the anemone both appear to glow.

The ring-tailed cardinalfish (left) were hovering above a small wooden boat, which was part of an artificial reef. The striking blue lines through the cardinalfish eyes draw one's eyes to theirs. The complementary colors of blue and orange (in the RYB color model) provide a nice contrast.

Lembeh Strait never disappoints with the color and biodiversity of its marine life. The Janolus nudibranch (right) sports contrasting warm and cool colors. The orange background highlights the purple tips of the respiratory structures (cerata) and the purple lines on the rhinophores (sensory tentacles on the head).

In the image taken in the Maldives (top right), contrasting complementary blue and yellow colors (in the RGB color model) are exhibited by the bluestreak cleaner wrasse and the blueface angelfish. Blue and yellow color patterns are a common occurrence in reef organisms. These colors transmit well in marine waters and may serve as advertising or warning coloration (Marshall et al., 2018). Please visit my Facebook page at: **facebook.com/profile.php?id=100016947967639**

ANITA GEORGE-ARES

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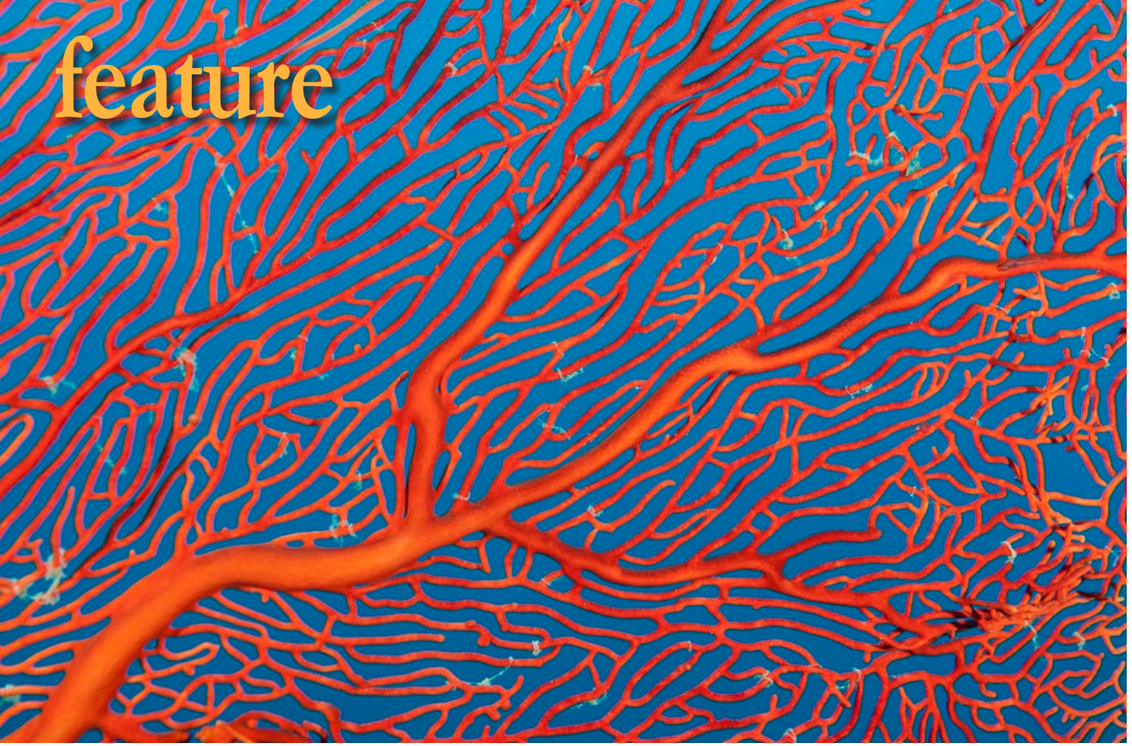
REFERENCE:

MARSHALL, N.J., CORTESI, F., DE BUSSEROLLES, F., SIEBECK, U.E., CHENEY, K.L. (2018). COLOURS AND COLOUR VISION IN REEF FISHES: PAST, PRESENT AND FUTURE RESEARCH DIRECTIONS. *J FISH BIOL*. 95:5-38. HTTPS://ONLINELIBRARY.WILEY.COM/DOI/FULL/10.1111/JFB.13849



Pattern detail of a red sea fan against a blue water background, Bligh Waters, Vatu-i-Ra Passage, Fiji. Exposure: ISO 400, f/5.6, 1/125s. Gear: Nikon D3 camera, Nikon 24-70mm lens, Subal housing, Sea&Sea YS-250 strobes

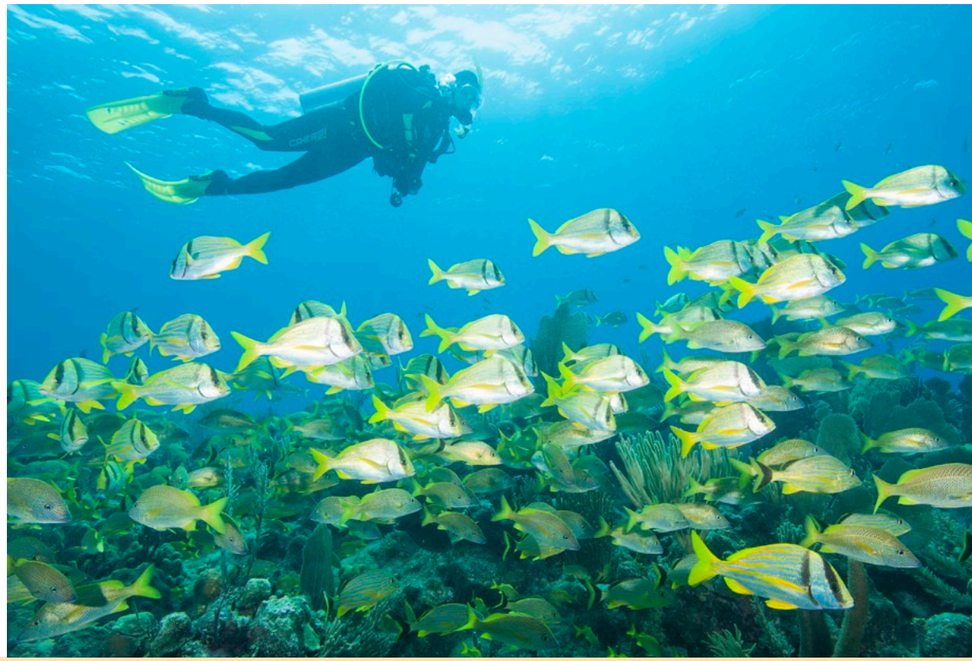
Topside photo of a yellow Socorro chub (*Kyphosus lutescens*) just below the surface, San Benedicto Island, Revillagigedo Islands, Mexico (above). Exposure: ISO 400, f/5.6, 1/1000s. Gear: Nikon D2x camera, Nikon 70-200mm lens, 2x Teleconverter

An aggregation of golden damselfish swimming among large colonies of dark-green black sun corals and colorful sea fans, Bligh Waters, Vatu-i-Ra Passage, Fiji (top right). Exposure: ISO 400, f/6.3, 1/250s. Gear: Nikon D3 camera, Nikon 16mm fisheye lens, Subal housing, Sea&Sea YS-250 strobes

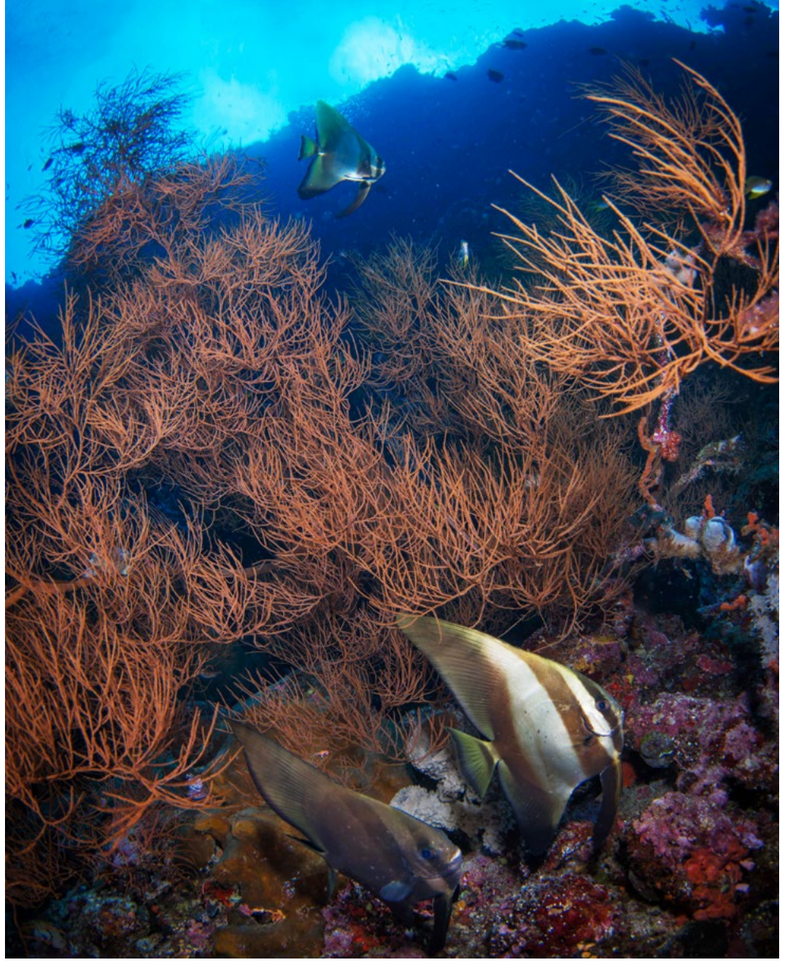
Primary Contrasts

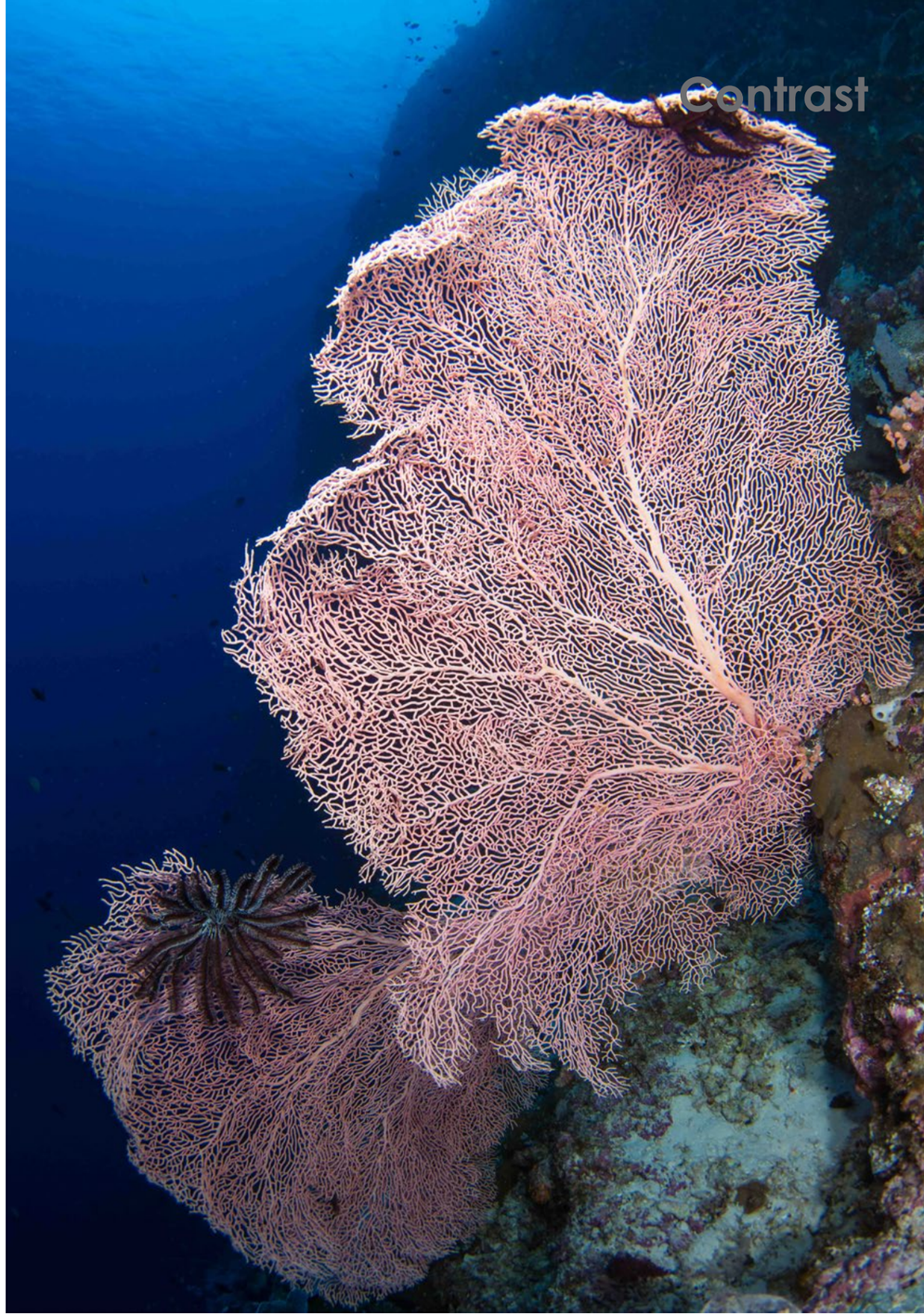
Text and photos by Matthew Meier

My favorite color contrast photos are composed of a simple design with a bold use of primary and secondary colors. When possible, I prefer to limit the composition to just two or three principal colors but will include other hues as long as they do not distract and tend to fade into the background. The turquoise blue of tropical waters is an easy primary color to juxtapose with the other primary colors of red and yellow or secondary colors such as green and orange. I especially like the interplay of patterns to help accentuate color differences. The close-up detail of the red gorgonian sea fan is a perfect example of strong primary colors arranged into a striking configuration. As a graduate of the University of Michigan, the primary color combination of maize (yellow) and blue has special meaning for me, and I will often gravitate to scenes where I can include this grouping, as evidenced by the other images I have included for this series. Visit: **MatthewMeierPhoto.com**



A scuba diver swimming over an aggregation of French grunts, bluestriped grunts and porkfish, Gardens of the Queen, Cuba (right). Exposure: ISO 200, f/7.1, 1/100s. Gear: Nikon D3 camera, Nikon 17-35mm lens, Subal housing, Sea&Sea YS-250 strobes





Corals and Sponges

Text and photos by Brandi Mueller

I love the way some corals and sponges reveal bright, vibrant colors that contrast with the blue of the water when lit up with strobes or video lights. In places like Bunaken National Park in Indonesia, huge barrel sponges are deep purple and black coral bushes are bright orange (it does not turn black unless it is taken out of the water). Powder-puff pink gorgonian sea fans extend out away from the reef, usually in deeper water (and sometimes are the home to equally colorful and tiny pygmy seahorses).

Anemones of all colors can be found in the park, including those with brilliant purple sacs and yellowish green tentacles or bright orange anemones with clownfish residents. These colorful corals and sponges contrast with the dark blue water that becomes darker as the depth increases. As a diver goes deeper without light, the human eye will see them as drab blues and greens, blending in with their backgrounds, but with a little light, a whole new scene is exposed. Please visit: **brandiunderwater.com**

Powder-puff pink gorgonian sea fan in Bunaken National Park, Indonesia (above). Exposure: ISO 200, f/10, 1/125s; Black coral bush that is bright orange, with batfish in Bunaken National Park, Indonesia (top center). Exposure: ISO 200, f/9, 1/125s; Deep purple barrel sponge with a yellow damselfish in Bunaken National Park, Indonesia (top left). Exposure: ISO 200, f/7.1, 1/125s; A brilliant purple, balled-up anemone in Bunaken National Park, Indonesia (bottom left). Exposure: ISO 200, f/13, 1/200s. Gear used for all images: Nikon D850 camera, 8-15mm fisheye lens, Ikelite housing, dual DS161 strobes

Experimental Interpretation of Color and Contrast

Text and photos by Gary Rose, MD

When asked, "What are your favorite color contrast underwater photos?" my initial thought (as I would assume any underwater photographer would have), was to think of the vivid contrasts and enriched colors of shooting in deep blue water with strobes. We have all seen spectacular photos of walls resplendent with colorful and scintillating gorgonians, sponges and impossibly colorful schools of fish. It is for this reason that I chose not to repeat the same art that we have all become accustomed to.

I have chosen to share with you a few of my fun color, contrast and interpretation experiments. Playing with my camera and strobe settings has borne luscious fruit. From time to time, we all need to step out of our underwater photography comfort zone—and PLAY. It is during these creative and imaginative times that some of our most unusual and fabulous art is created.

By combining strobes and natural light, painting light near and far, upwards, downwards and sideways, I was able to produce these photos that I am sharing with you. Light is the source of all visual information. It stimulates the retina, creates electrical stimulation that is transmitted along neuronal pathways, and then these impulses are sent on to the brain where interpretation takes place. Sometimes, it takes a little while for the brain to process what one is actually looking at. On other occasions, the infinite combinations of color and contrast are more obvious.

The next time you go out for an underwater photoshoot, experiment and give your brain the freedom to interpret the magnificence of what it is witnessing. Then, remember to depress the shutter release. My goal with this group of photos was to create color, contrast, and experimental interpretations. Visit: **garyrosephotos.com**

Lemon sharks approaching the surface (above). Exposure: ISO 200, f/11, 1/125s; Lemon shark emerging into the light (top center). Exposure: ISO 200, f/11, 1/125s; Great white shark under the rainbow (top left). Exposure: ISO 320, f/8, 1/125s; Lemon shark with a following (left). Exposure: ISO 200, f/11, 1/125s. All photos were taken with Nikon D500 camera, Tokina 10-17 lens, Nauticam housing, Inon Z330 strobes

Dive buddy on the anchor line over a local shipwreck in New Jersey, USA (above). Exposure: ISO 250, f/9, 1/160s. Gear: Canon EOS 7D camera, Tokina 10-17mm fisheye (11mm) lens, Nauticam housing, dual Inon Z-240 strobes; Black sea bass on the wreck of the *Pinta*, night dive (top left). Exposure: ISO 320, f/14, 1/100s. Gear: Canon EOS 7D Mark II camera, Tamron 60mm macro lens, Nauticam housing, dual Inon Z-240 strobes

Blue crab arm in the Manasquan River (above). Exposure: ISO 125, f/22, 1/200s. Gear: Canon EOS 7D Mark II camera, Tamron 60mm macro lens, Nauticam housing, dual Inon Z-330 strobes

Hydroids on the wreck of the McGurr Tugboat (left). Exposure: ISO 100, f/22, 1/250s. Gear: Canon EOS 7D Mark II camera, Tamron 60mm macro lens, Nauticam housing, dual Inon Z-330 strobes

Contrasts in New Jersey, USA

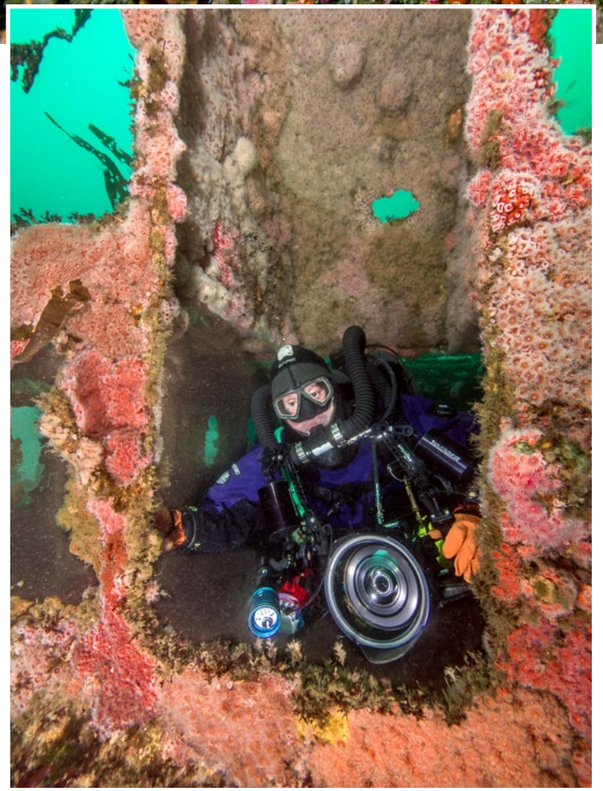
Text and photos by Michael Rothschild, MD

The waters along the New Jersey shore provide striking contrasts—the inky black of a night dive, the emerald green over historic shipwrecks—and the vibrant marine ecosystem means that the stars of the show are dressed to impress in their colorful outfits.

The image (top right) is one of my favorite diver portraits. Not only is the contrast between the diver's red drysuit and the green background striking, the angular element of the anchor line drives the image, while the graceful curves of the hoses soften the composition. And of course, a great model really grabs the viewer's attention!

The image of the black sea bass (top left) is a favorite because the intricate scales and facial markings of the fish work with the brown and orange rust of the wreck behind it. The image (bottom left) shows the detail and beauty of hydroids—it is hard to take a bad photo of these creatures. I love how the pink and green work together.

Finally, the business end of the little crab's arm (center) looks great against the dark riverbed. The blue topped by the red and white reminds me of a gas flame. Visit: **dive.rothschilddesign.com**



Pink and Green in San Diego

Text and photos by Olga Torrey

Color contrast is a great tool to use as a design element in any photograph, especially one captured underwater. The waters off San Diego in the US state of California are green and make an exquisite background for the vibrant and colorful marine life.

To adjust the density of the green background, I used my shutter speed. A fast shutter speed produced a dark background, and a slow shutter speed created a light background. I used strobes to bring out the color in the foreground and subject. I adjusted the aperture on my lens and the strobe's power to get the correct exposure.

Diving with Marissa Charters, I visited several wrecks, including the HMCS *Yukon*. The wreck structures were covered with beautiful marine growth, including strawberry anemones. I used the guns blanketed with vivid hues of pink on the *Yukon* to frame my dive buddy, Larry Cohen. His purple drysuit added a color accent to the photograph. I used the same technique with a larger frame when I photographed him inside a doorway on the wreck.

The photo of the California sheephead was also captured on the *Yukon*. The colorful fish stands out, framed by the *Yukon*'s wreckage. Most of the negative space is black and allows the color of the fish to stand out. The green water on the right side of the image adds interest.

The California sheephead photographed under the overhang was at the Ingraham Street Bridge dive site. The colors of the fish stand out against the green background. The composition is enhanced with the colors on the overhang. Please visit: **fitimage.nyc**

California sheephead inside the HMCS *Yukon* (left). Exposure: ISO 800, f/7.1, 1/100s

Rebreather diver Larry Cohen framed between the guns on the HMCS *Yukon* (right). Exposure: ISO 640, f/5.6, 1/80s

California sheephead at the Ingraham Street Bridge dive site (bottom right. Exposure: ISO 400, f/8.0, 1/100s

Rebreather diver Larry Cohen is inside a doorway on the HMCS *Yukon* (bottom left). Exposure: ISO 400, f/7.1, 1/60s

Gear used for all images: Olympus OM-D E-M5 camera, Panasonic 7-14mm lens, Nauticam housing, Sea&Sea YS-D1 strobes