

Oh, the Places You'll Go!
Oh, the Things You'll See!
Oh, the Money You'll Spend!

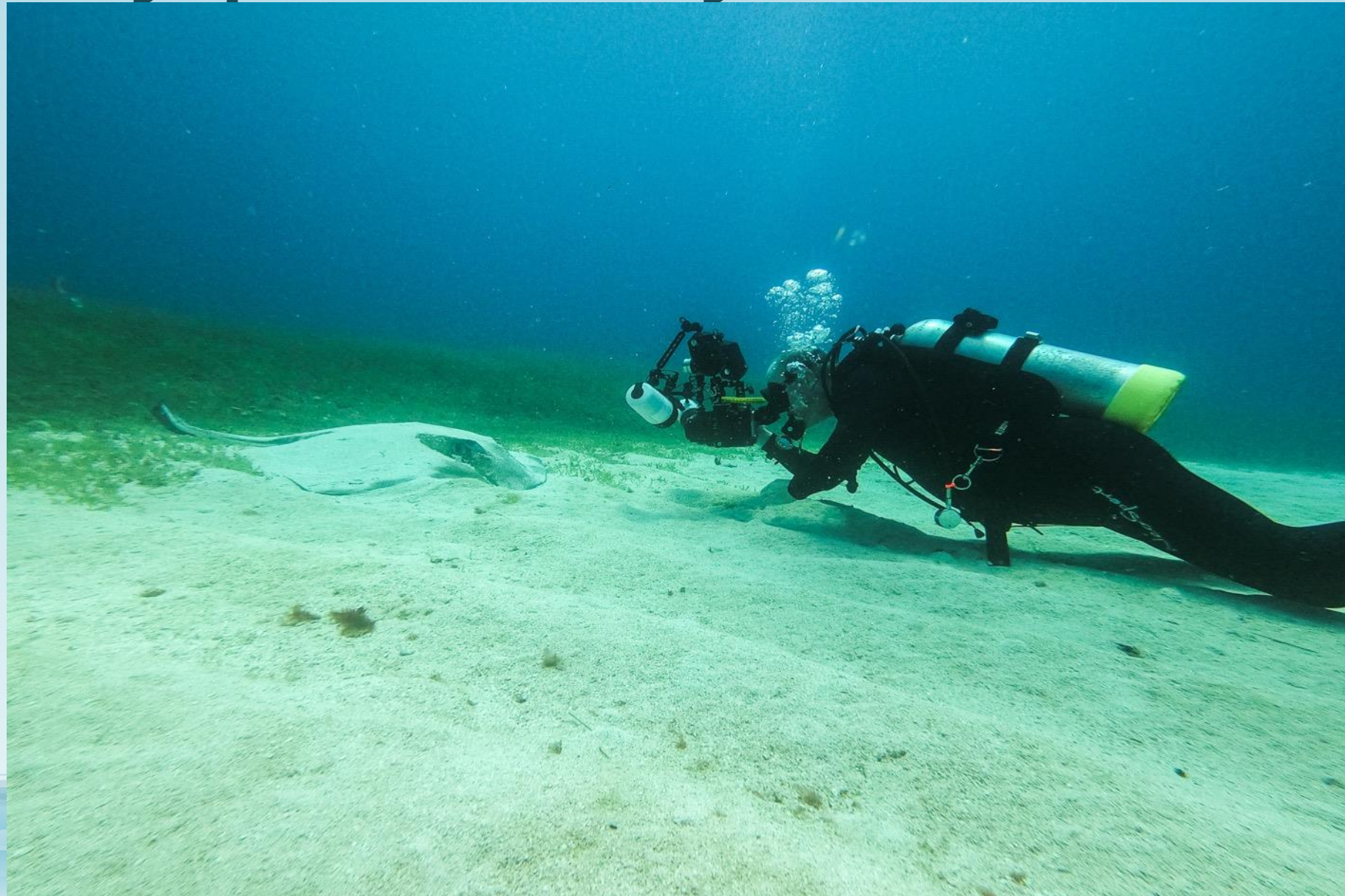
My journey in the world of underwater photography

Let the Journey Begin

Selfie: Bonaire 2015
Nikon D7100
Tokina 11-16
13 mm,
1/160, f11, ISO 200



Diver or Photographer? How did I get here?



Right place, wrong lens
Trying to get close to a stingray
Sint Maarten 2019

Oh, The Places You'll Go!



Oh, the Things You'll See!

Blenny
Utila, Honduras 2010
Nikon D90
60 mm Macro
1/60, f/13, ISO 100



Oh,
the
Money
You'll
Spend



**You don't
need a "great
camera" to
make "good"
images**

Nemo
Anilao, Philippines 2019
Olympus TG 5
18 mm
1/100, f/14, ISO 100



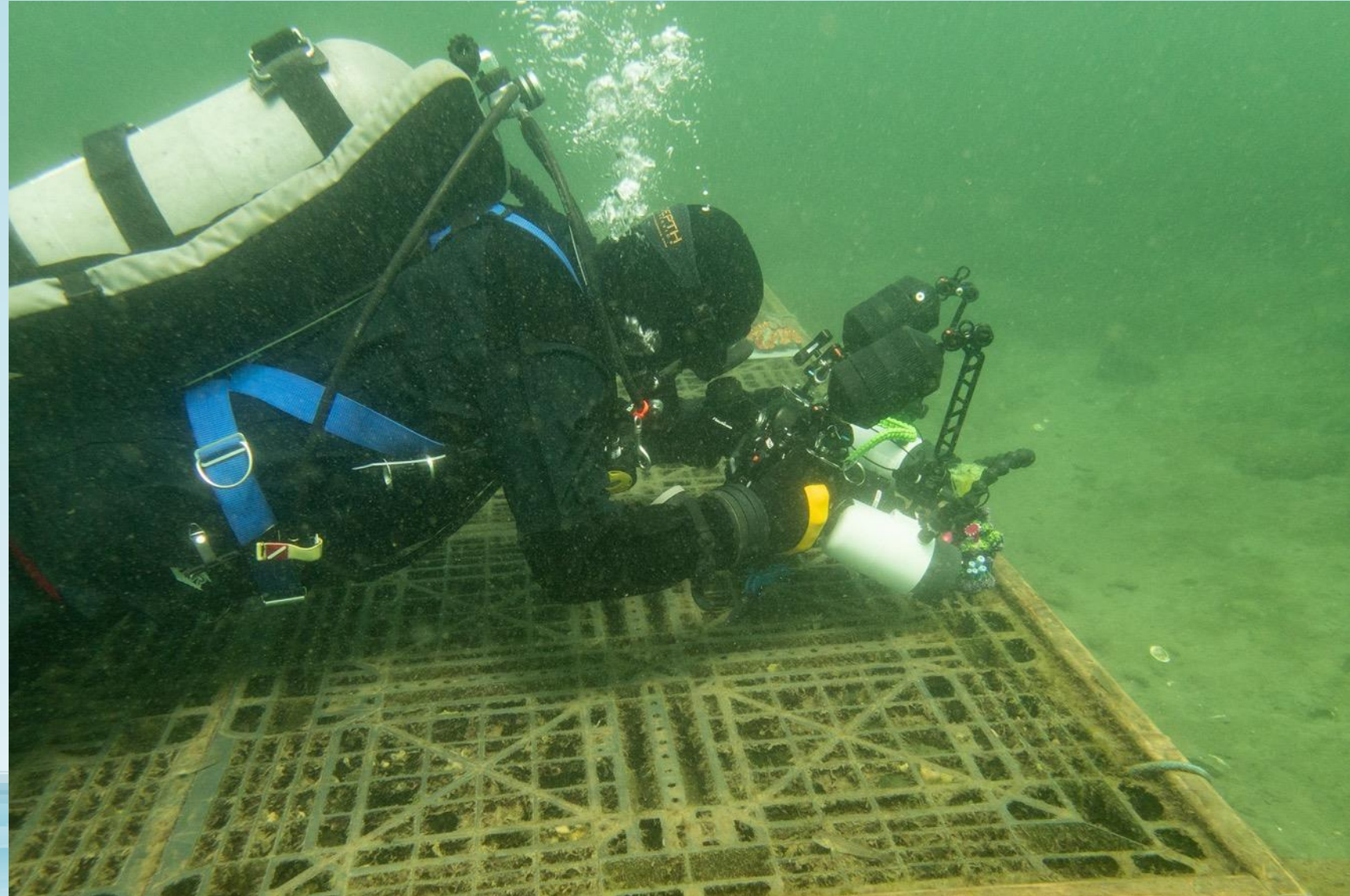
Oh,
the
Money
You'll
Spend



To be a good underwater
photographer you first need to
be a good diver

“Get close, now get closer, now
get closer”

- U/W Photo Pro Advice



Don't just learn what your gear can do

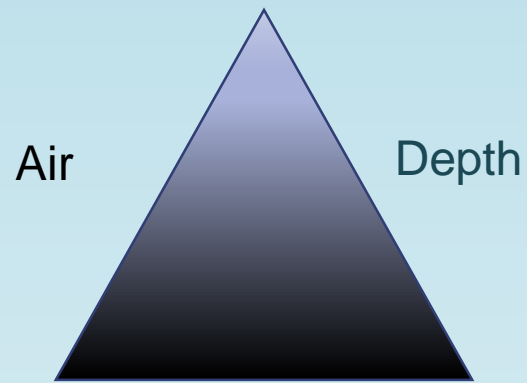
Learn what you can do with your gear

**But the right
gear can get
you closer**

Shaun the Sheep Nudibranch
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/200, f/32, ISO 320

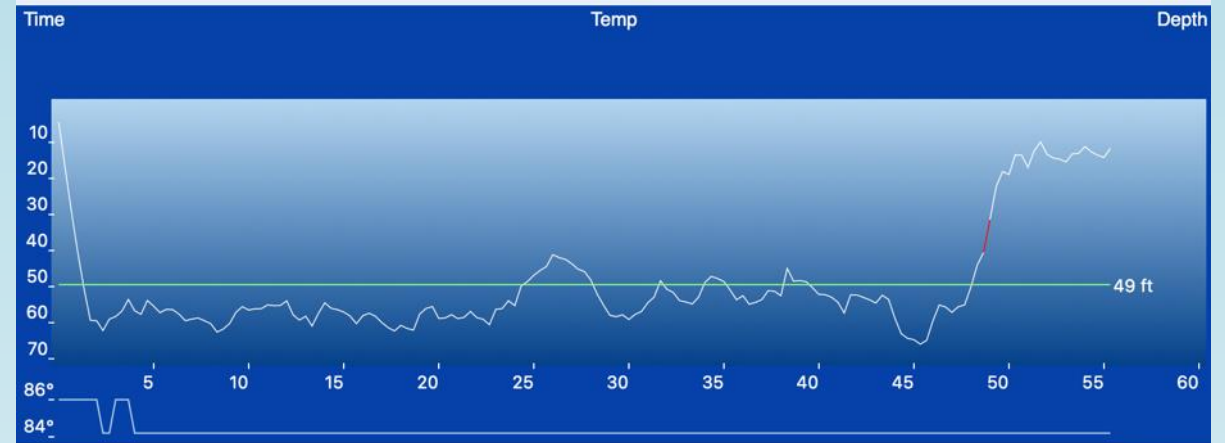


The Triad of Exposure Triangles



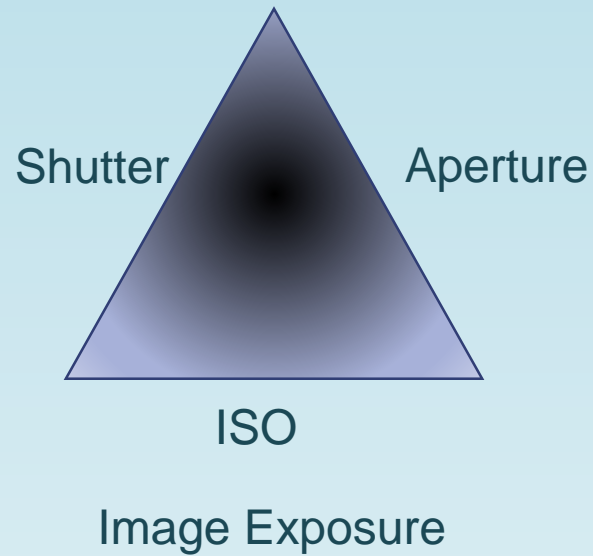
Time

SCUBA Exposure



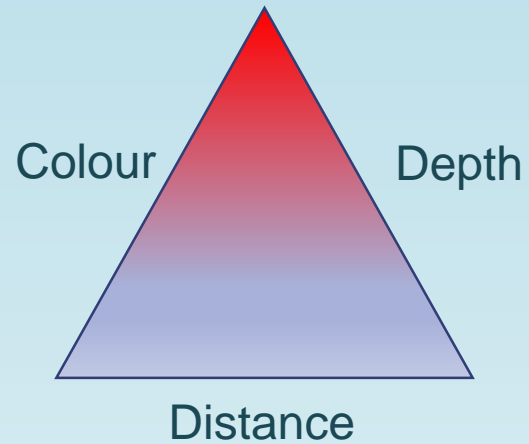
- Typical recreational diving profile
 - Descend ~2 minutes
 - Ascend ~2 minutes
 - Stop at 15'/5m 3 minutes
 - Total dive time ~60 minutes
 - Depth 60-80'/18-24m

The Triad of Exposure Triangles



- Same rules apply as on land
- Available light is diffused; no true directional light
- No “golden hour” or “blue hour”
- Just add water, and lots and lots of gear

The Triad of Exposure Triangles



Underwater Image Exposure

- Water is ~1000 times denser than air
- Water is not clear
 - Small particles create backscatter
 - Light position is important

Underwater Considerations

Backscatter

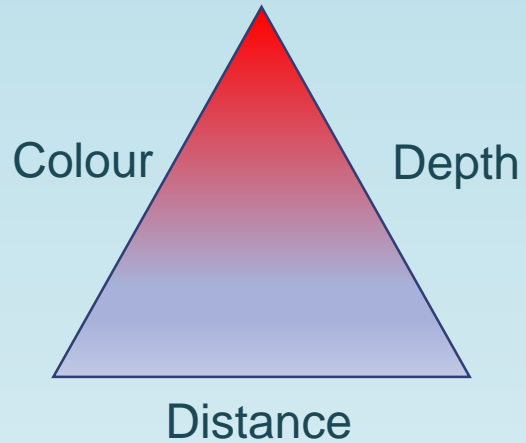
Strobe positioning to light the subject and minimize lighting water

Expose for the place, light for the face

Bobtail Squid
Blackwater Dive,
Lembeh Indonesia 2018
Nikon D90,
60mm macro
1/250, f/32, ISO 200



The Triad of Exposure Triangles

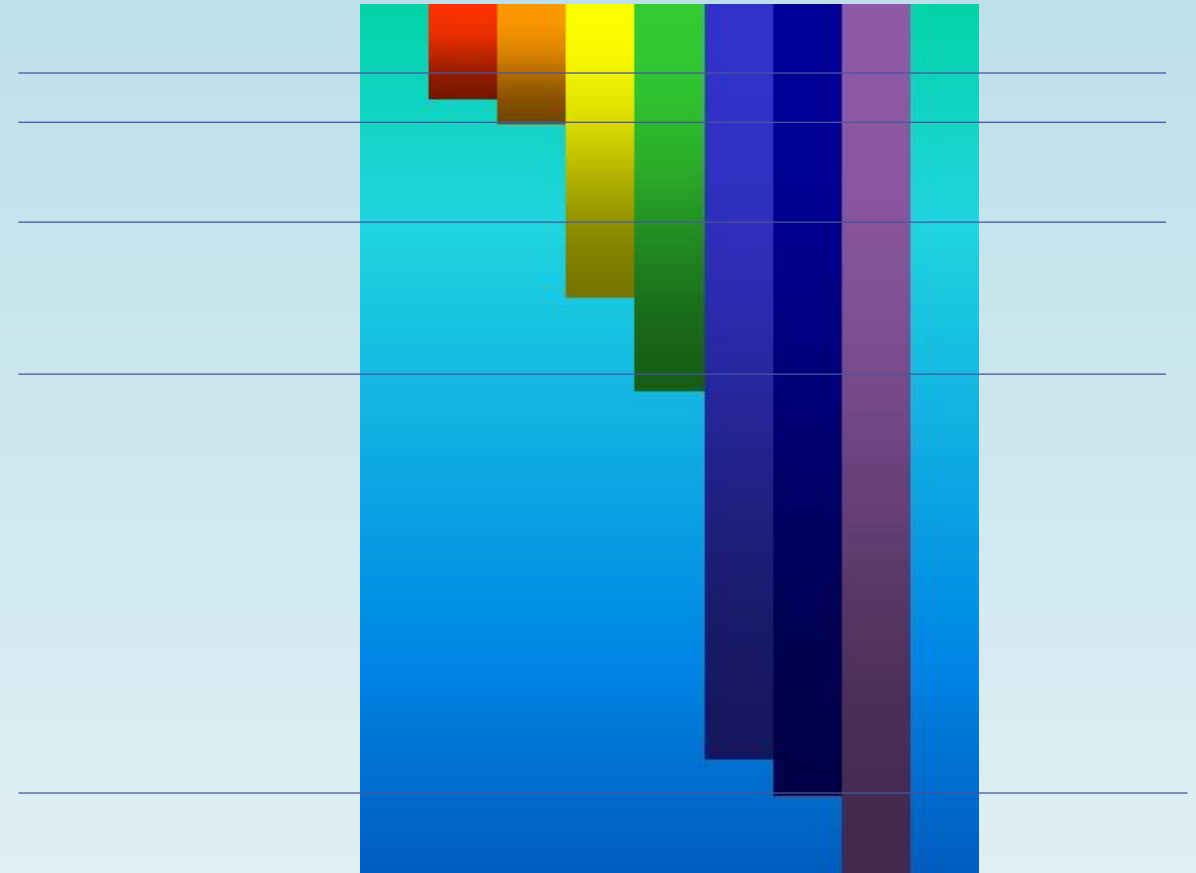


Underwater Image Exposure

- Water absorbs light and colour
- To regain colour
 - Adjust white balance
 - Filter (typically red or maroon)
 - Artificial light
 - Post processing (may not be possible)

The Effect of Depth and Distance on Colour

700 nm	5 m – Red nearly disappears
	10 m – Orange is lost
600 nm	
	20 m – Yellow disappears
500 nm	
	30 m – Bye Bye Green
400 nm	
	60 m – Blue light absorbed



Water diffuses light and absorbs colour

Underwater Considerations

Effect of depth

Natural light

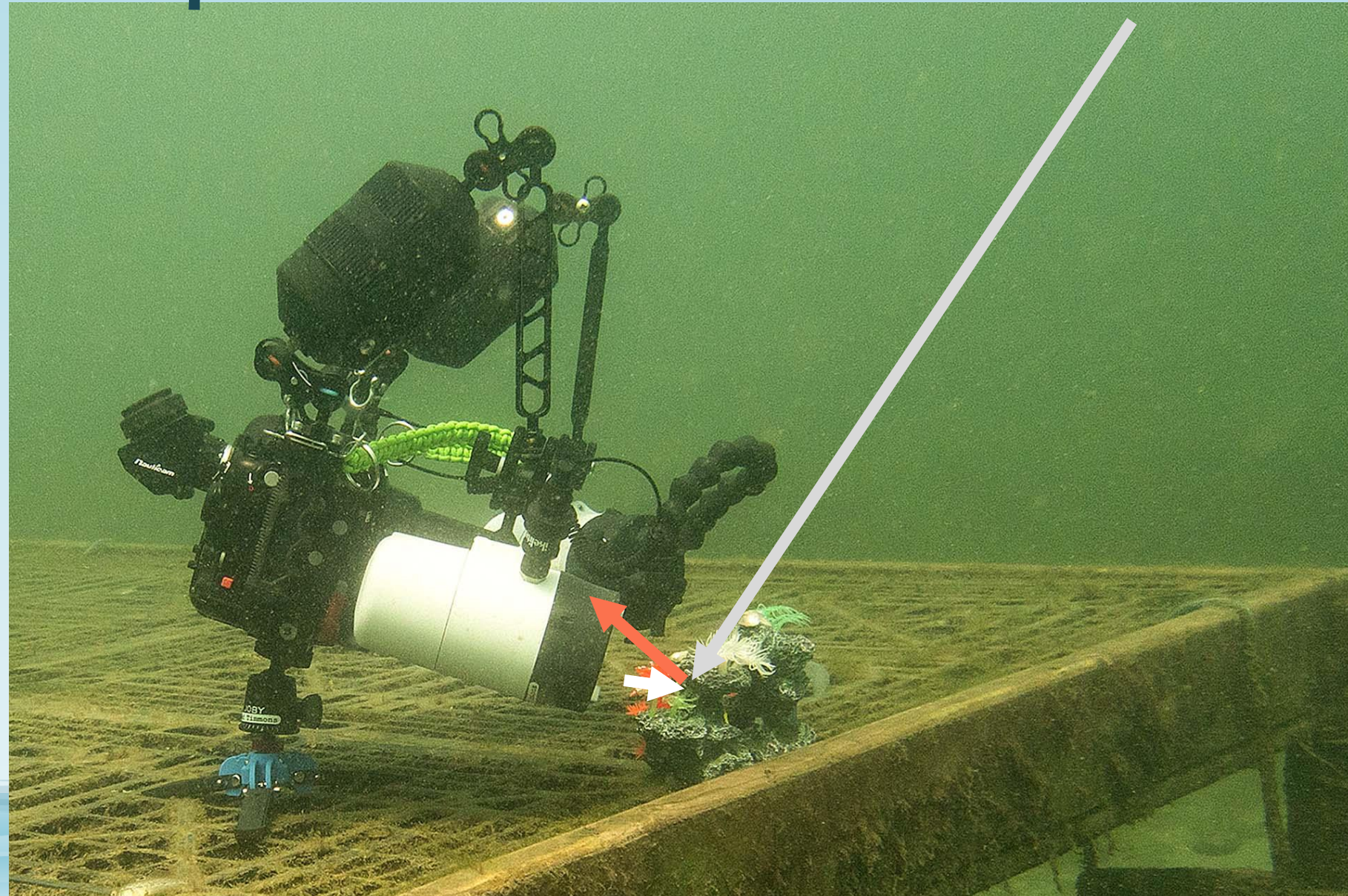
Depth \leq 5m

Dolphins,
Kona, Hawaii 2016
Nikon D7100
Tokina 11-16 mm
16 mm
1/320, f/5.6, ISO 800



The Effect of Depth and Distance on Colour

The light reaching the camera is a combination of depth and distance to the subject



Underwater Considerations

Critters are timid

Freeze, fight or flight response

Patience is required

You can't see me
Anilao, Philippines 2019
Nikon D7200
105 mm
1/320, f/16, ISO 100



*Images
by Ted*

Underwater Considerations

Critters are timid

Freeze, **fight** or flight response

Patience is required

Blue-ringed Octopus
Lembeh, Indonesia 2012
Nikon D90
60 mm macro
1/200, f/11, ISO 100



*Images
by Ted*

Underwater Considerations

Critters are timid

Freeze, fight or **flight** response

Patience is required

Coconut Octopus
Anilao, Philippines 2019
Nikon D7200
60mm macro
1/320, f/13, ISO 200



Underwater Considerations

Critters are timid

Freeze, fight or **flight** response

Patience is required

Coconut Octopus
Anilao, Philippines 2019
Nikon D7200
60mm macro
1/320, f/13, ISO 200



Underwater Considerations

Critters are timid

Freeze, fight or **flight** response

Patience is required

Coconut Octopus
Anilao, Philippines 2019
Nikon D7200
60mm macro
1/320, f/13, ISO 200



Underwater Considerations

Scale

Wonderpus
Lembeh, Indonesia 2018
Nikon D90
60mm macro
1/200, f/16, ISO 200



Underwater Considerations

Decisive moment

Rob
Chinchurro Banks, Mexico 2021
Nikon Z6
8-15 mm
15 mm
1/160, f/5.6, ISO 100



People

Joanne
Bonaire 2015
Nikon D7100
Tokina 11-16 mm
11 mm
1/200, f/16, ISO 200



People

Wreck and Diver
Sint Maarten 2021
Nikon Z6
8-15 mm
8 mm
1/100, f/8, ISO 100



People

Rob
Chinchurro Banks, Mexico 2021
Nikon Z6
8-15 mm
15 mm
1/200, f/5.6, ISO 100



Landscape

Coral
Komodo, Indonesia 2012
Nikon D90
Tokina 11-16
16 mm
1/60, f/5.6, ISO 100



Landscape

Tube Sponge
Bonaire 2015
Nikon D90
Tokina 11-16
16 mm
1/60, f/5.6, ISO 100



Landscape

Underwater Sun Beam
Kona, Hawaii 2016
Nikon D7100
Tokina 11-16
16 mm
1/60, f/8, ISO 100



Neither Landscape nor Wreck

Aquarius Under Sea Lab
Key Largo, Florida 2015
Nikon D7100
Tokina 11-16
11 mm
1/60, f/5.6, ISO 100



Wrecks

Jab Jab Wreck
Sint Marteen 2019
Nikon Z6
8-15 mm
8 mm
1/200, f/5, ISO 100



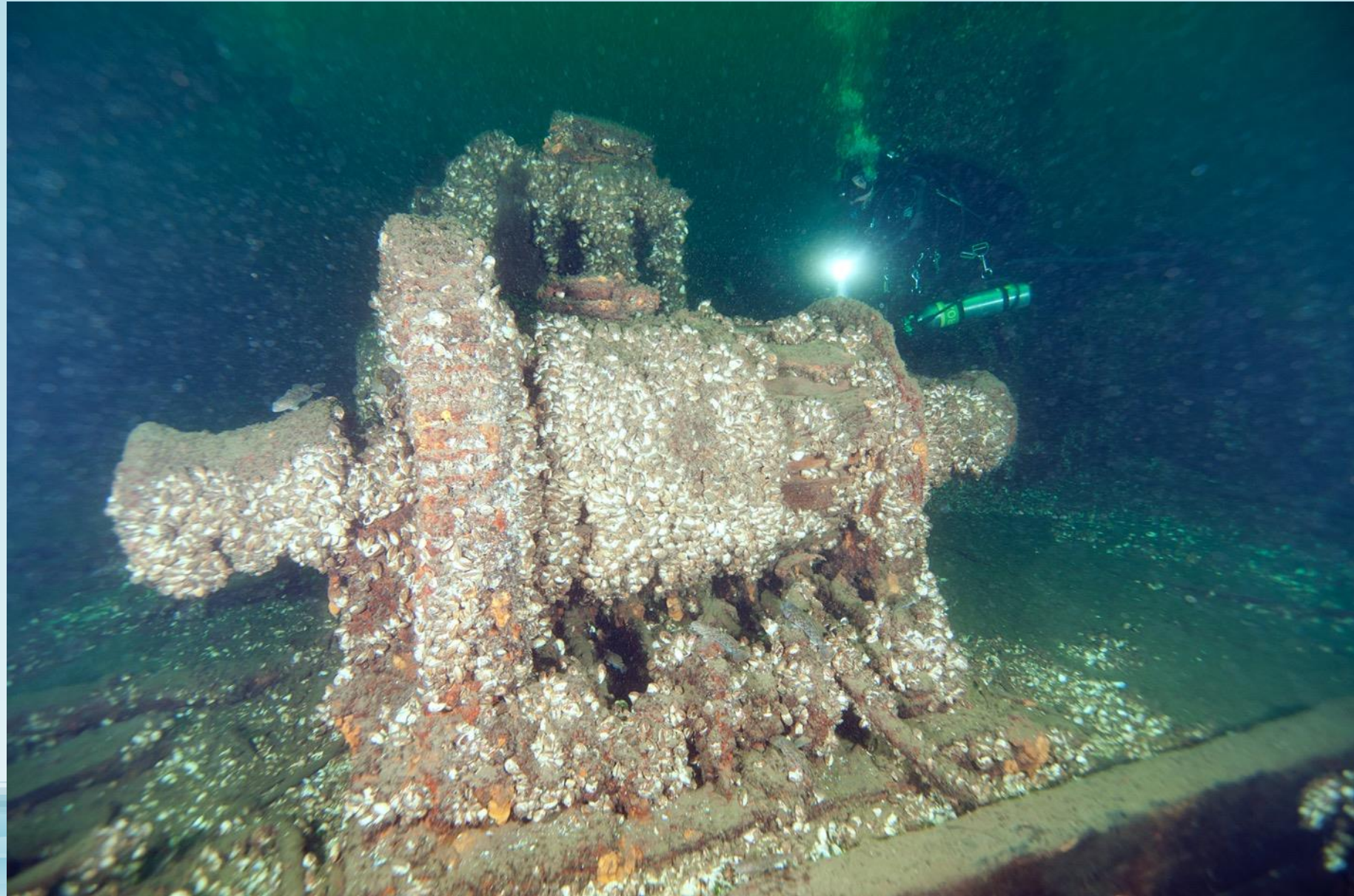
Wrecks

Plane Wreck
Morrison's Quarry
Chelsea, Quebec 2012
Nikon D90
Tokina 11-16 mm
12 mm
1/200, f/9, ISO 400



Wrecks

City of Sheboygan
Lake Ontario 2013
Nikon D90
Tokina 11-16 mm
11 mm
1/200, f/9, ISO 100



Creatures Great and Small

Manta
Kona, Hawaii 2016
Nikon D7200
Tokina 11-16 mm
13 mm
1/60, f/2.8, ISO 800



Creatures Great and Small

Trumpetfish
Bonaire 2007
Nikon D70
18-70 mm
56 mm
1/80, f/10, ISO 200



*Images
by Ted*

Creatures Great and Small

Sea Turtle
Anilao, Philippines 2019
Nikon D7200
Tokina 11-16 mm
13 mm
1/125, f/8, ISO 100



Creatures Great and Small

Sea Turtle
Sint Maarten 2021
Nikon Z6
8-15 mm
15 mm
1/200, f/8, ISO 200



Creatures Great and Small

American Crocodile
Chinchorro Banks, Mexico 2021
Nikon Z6
8-15 mm
15 mm
1/200, f/13, ISO 250



Creatures Great and Small

American Crocodile
Chinchorro Banks, Mexico 2021
Nikon Z6
8-15 mm
15 mm
1/200, f/13, ISO 250



*Images
by Ted*

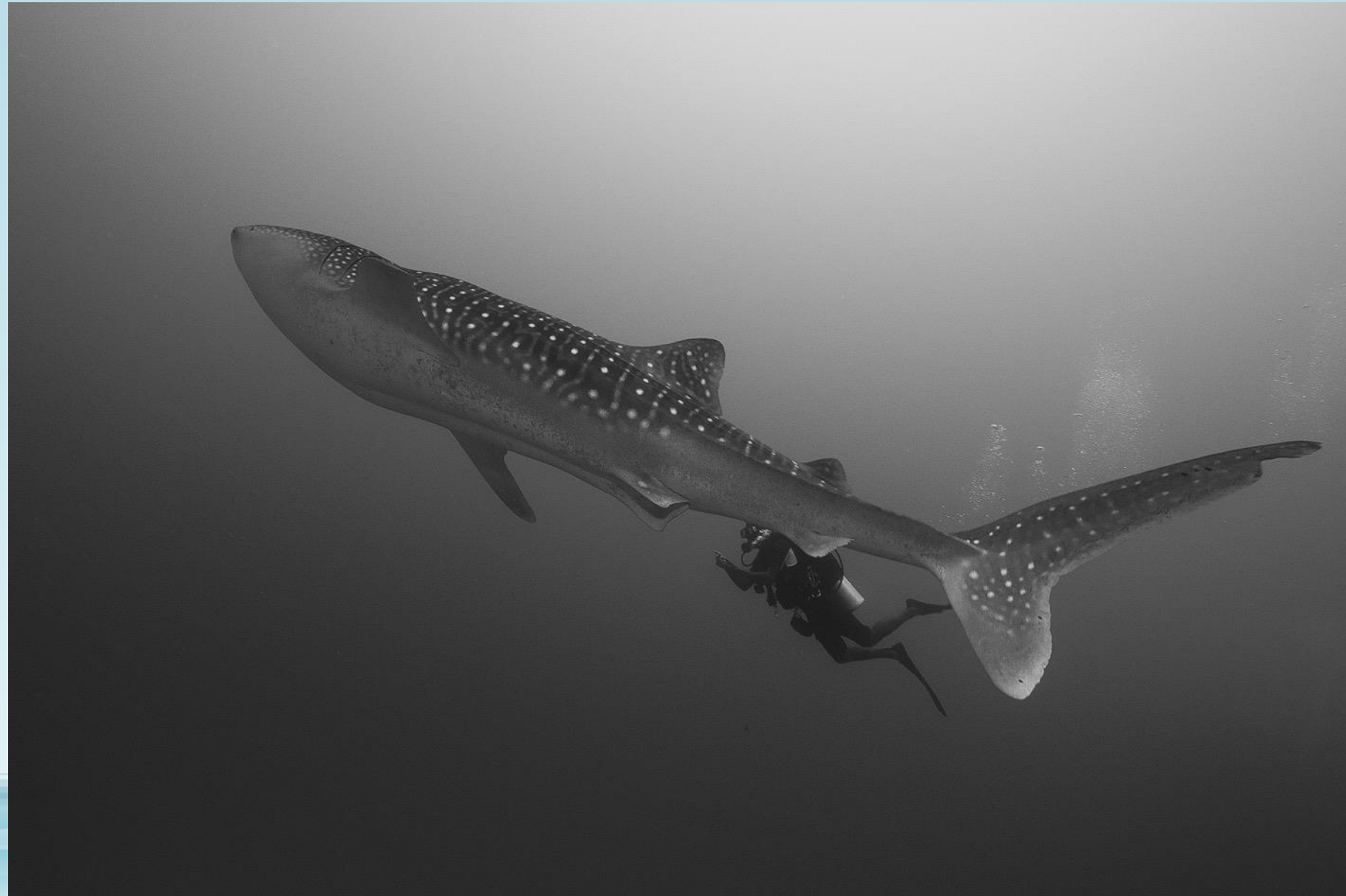
Creatures Great and Small



Reef Shark
Bahamas 2011
Nikon D90
Tokina 11-16 mm
16 mm
1/100, f/14, ISO 100

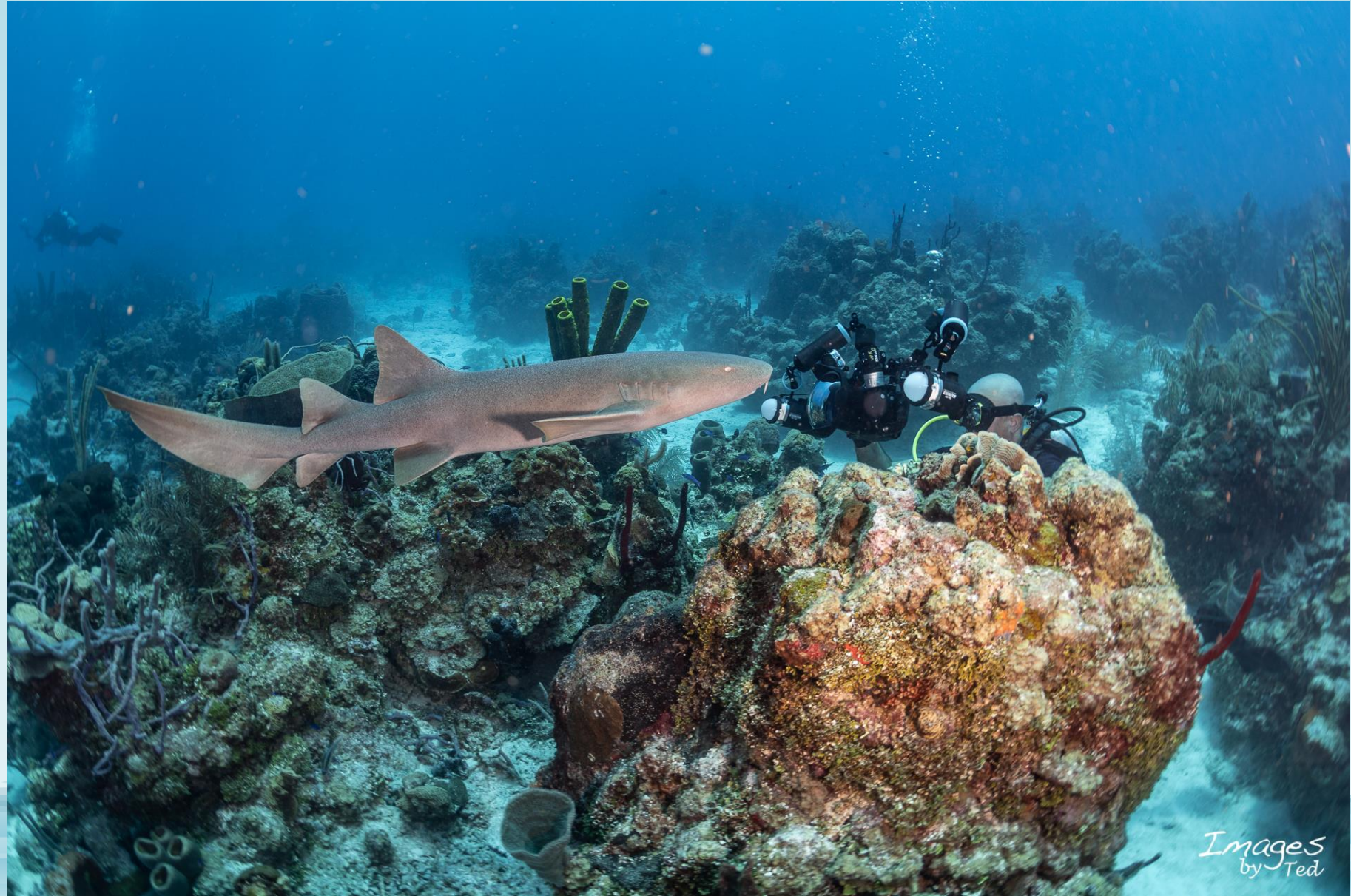
Creatures Great and Small

Whale Shark
Maldives 2010
Nikon D90
Tokina 11-16 mm
11 mm
1/60, f/10, ISO 400



Creatures Great and Small

Nurse Shark Face to Face
Chinchorro Banks, Mexico 2021
Nikon Z6
8-15 mm
15 mm
1/200, f/5.6, ISO 100



Creatures Great and Small

Sea Lion Colony
La Paz, Mexico 2022
Nikon Z6
8-15 mm
15 mm
1/160, f/8, ISO 100



Creatures Great and Small

Sea Lion
La Paz, Mexico 2022
Nikon Z6
8-15 mm
15 mm
1/160, f/13, ISO 200



*Images
by Ted*

Creatures Great and Small

Moray Eel
Bonaire 2008
Nikon D70
18-70 mm
70 mm
1/100, f/11, ISO 100



*Images
by Ted*

Creatures Great and Small

Moray Eel
Roatan, Honduras 2015
Nikon D90
60 mm macro
1/100, f/11, ISO 100



*Images
by Ted*

Creatures Great and Small



Shrimp
Bonaire 2008
Nikon D70
18-70 mm
70 mm
1/100, f/11, ISO 100

Creatures Great and Small

Coleman Shrimp
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/320, f/16, ISO 100



*Images
by Ted*

Creatures Great and Small

Harlequin Shrimp
Lembeh, Indonesia 2012
Nikon D90
60 mm macro
1/200, f/22, ISO 100



*Images
by Ted*

Creatures Great and Small

Juvenile Trunk Fish
Lembeh, Indonesia 2012
Nikon D90
60 mm
1/200, f/22, ISO 100



*Images
by Ted*

Creatures Great and Small

Spotted Trunkfish
Bonaire 2005
Nikon D70
18-70mm
60 mm
1/100, f/11, ISO 200



*Images
by Ted*

Creatures Great and Small

Anemonefish
Komodo, Indonesia 2012
Nikon D90
60 mm macro
1/200, f/11, ISO 100



*Images
by Ted*

Creatures Great and Small

Reef Octopus
Bonaire 2007

Nikon D70

18-70 mm

65 mm

1/200, f/5.6, ISO 200



*Images
by Ted*

Creatures Great and Small

Coconut Octopus
Anilao, Philippines 2019
Nikon D7200
60 mm macro
1/250, f/22, ISO 100



*Images
by Ted*

Creatures Great and Small

Seahorse
Roatan, Honduras 2015
Nikon D90
60 mm macro
1/60, f/22, ISO 100



Creatures Great and Small

Pygmy Seahorse
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/250, f/22, ISO 100



*Images
by Ted*

Creatures Great and Small

Pair of Gobys
Anilao, Philippines 2019
Nikon D7200
60 mm
1/250, f/32, ISO 100



*Images
by Ted*

Creatures Great and Small

Goby in a bottle
Anilao, Philippines 2019
Nikon D7200
60 mm macro
1/320, f/16, ISO 100



*Images
by Ted*

Creatures Great and Small

Serendipity fish
Lembeh, Indonesia 2018
Nikon D7200
60 mm
1/250, f/16, ISO 200



*Images
by Ted*

Creatures Weird and Wonderful

Nudibranch
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/320, f/16, ISO 100



*Images
by Ted*

Creatures Weird and Wonderful

Mating Nudibranchs
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/200, f/22, ISO 100



*Images
by Ted*

Creatures Weird and Wonderful

Peacock Mantis Shrimp
Komodo, Indonesia 2012
Nikon D90
60 mm macro
1/200, f/11, ISO 100



*Images
by Ted*

Creatures Weird and Wonderful

Cuttlefish
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/320, f/16, ISO 100



Images
by Ted

Creatures Weird and Wonderful

Pygmy Cuttlefish
Anilao, Philippines 2019
Nikon D7200
105 mm macro
1/320, f/16, ISO 100



*Images
by Ted*

Creatures Weird and Wonderful

Nautilus and Jellyfish
Anilao, Philippines 2019
Nikon D7200
60 mm macro
1/320, f/14, ISO 100



Images
by Ted

Creatures Weird and Wonderful

Mating Mandarinfish
Lembeh, Indonesia 2012
Nikon D90
60 mm macro
1/200, f/11, ISO 100



*Images
by Ted*

Creatures Weird and Wonderful

Scorpionfish
Lembeh, Indonesia 2012
Nikon D90
60 mm macro
1/200, f/16, ISO 100



*Images
by Ted*

Creatures Weird and Wonderful

Hairy Frogfish
Anilao, Philippines 2019
Olympus TG5
18 mm
1/100, f/14, ISO lowest



Creatures Weird and Wonderful

Frogfish with eggs
Anilao, Philippines 2019
Nikon D7200
60 mm macro
1/250, f/20, ISO 100



*Images
by Ted*

Oh, the Places You'll Go!
Oh, the Things You'll See!
Oh, the Money You'll Spend!

To be continued...