
Water Column

AUGUST 2024 | ISSUE 23

Western Australia Underwater Photographic Society's Bi-annual Underwater Journal

**Malapascua
threshers**

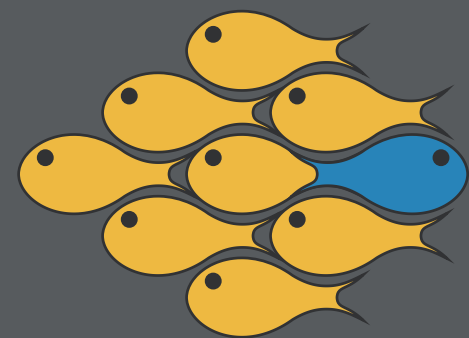


Bokeh!

**Creature feature:
brittle-stars and basket-stars,
crinoids and cucumbers**



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Cover, Leafy seadragon, WAUPS Image of the Year 2024, by Jason Milligan

FROM THE PRESIDENT

A big thanks to all club members who attended the AGM in person and for the two that we called to be present via their mobiles so we could achieve the defined quorum.

Both Gary Browne and Tammy Gibbs stepped down from committee. Gary was a general committee member and organised various outings - a weekend away in Dryandra and BBQs after the club dives. Tammy was given particular thanks having been on committee for over 15 years, and many many hours of service and dedication to the club. She most recently has been coordinating competitions and the magazine editor, and is a past president.

We elected six committee members, with myself taking over the president role and managing the enews communications, Ross Gudgeon as vice president, Leanne Thompson as treasurer and Pat Swallow as secretary. Mary Gudgeon is continuing as a general committee member and Matt Smith as membership coordinator and magazine coordinator. The competitions coordinator will be split between Ross and Leanne.

Over the next year the committee will review how the club operates, and also take on board the good feedback received from the member survey issued in April this year.

Amanda



Above: The Wayne Storrie Humour Award 2024 winning image by Ross Gudgeon
Left: WAUPS Image of the Year 2024 by Jason Milligan

PIXELS 2024

Congratulations to those who have received a Gold award in the first half of PIXELS 2024:

- Leanne Thompson
- Vonny Hoppe
- Gary Browne
- Isla Cath





MORE ECHINODERMS

BRITTLE-STARS AND BASKET-STARS, CRINOIDS AND CUCUMBERS

Sea urchins and sea stars have been covered in the previous two issues (21 & 22). The echinoderm group has three more classes of spiny relatives - the ophiuroids (brittle stars & basket stars), the crinoids (feather stars & sea lilies) and the holothurians (sea cucumbers/beche de mer/trepang).

Although they appear very different in shape, all five classes of echinoderms share some common features that put them in the same phylum. These are a five-fold radial symmetry, a water vascular system (that hydraulically operates the tube feet or podia) and small bony plates (ossicles) in the skin.

Ophiuroids - Brittle Stars, Basket Stars and Serpent Stars

Ophiuroids have an obvious central disc and five thin arms that are branched in some species.

Brittle stars have five long, slender, muscular arms that they use for locomotion, rather than tube feet. If they do have tube feet, they are usually reduced and lack suckers. The tube feet are used for respiration, feeding and as sensory organs. The arms usually have many lateral spines making them appear very prickly. The gut and gonads are confined to the central disc, there being no space for them in the thin arms. The mouth (with five teeth) and opening of the water vascular system (madreporite) are on the underside of the disc.

The central part of the arms contain huge ossicles called 'vertebrae' connected by four longitudinal muscles running the length of each arm. If a brittle star is threatened, it can contract all four muscles and break off part of the arm. The



Main image: Brittle star, Ophiotrix species. Above, left to right: Brittle Star, Ophiotrix species; Brittle Star, Ophiomastix variabilis; Brittle Star, unknown species.



brittle star can make a quick escape while a predator grapples with a squirming broken off arm! Most species can quickly regenerate arms and also parts of the disc. Typical brittle stars move their arms mainly in a horizontal direction.

Brittle stars are abundant, but often well hidden under rocks, plants and animals. Most species are carnivores and capture small organic particles that are transported along the arms to the mouth by the tube feet. Some species, typically found on soft sediments in deeper water, are filter feeders that trap plankton by waving their arms about in the water column.

Basket stars can be easily recognised by their branched arms – they often appear to have many more than five! The arms are extremely flexible (due to different-shaped 'vertebrae' in their arms) and can move vertically as well as horizontally, enabling them to twine around objects. A thick skin covers the body and arms with some spines on the sides of the arms.

They are hard to find during the day as they curl their arms up in a tight ball, attached to reefs and plants. At night however they are transformed as they open up their branched arms into a spectacular lacy 'basket' to trap plankton.

Serpent Stars or Snake Stars are similar to basket stars but have unbranched arms. The arms are usually long, thin and lack spines. They are often found wrapped around the stems of black corals with only parts of the arms visible.



Above clockwise: Pink Basket Star, Astroboa ernae, with arms curled up in daytime; Basket Star, unknown reddish species, with arms extended at night; Basket Star, unknown pale species, arms extended at night; Serpent Star, Astrobranchion adherans, feeding on black coral; Serpent Star, Astrobranchion adherans, feeding on black coral; Basket Star, Astroboa nuda, detail of extended arm.

Crinoids – Feather Stars and Sea Lilies

Feather stars have 10 or more very fine, long arms bearing feathery side-branches (pinnules) with reduced tube feet along the pinnules. There is a small central body with a mouth and offset anus on the top side. The arms are held out in the water column which enables the tube feet to trap plankton in a mucus secretion that is then passed down a ciliated groove in each arm to the central mouth.

Feather stars attach themselves to reef, plants or other animals by small claw-like calcareous appendages (cirri). They can move slowly over the substrate using the cirri. Some species can detach from the substrate and swim very gracefully using the arms.

Sea lilies are crinoids with long stalks that are permanently attached to the seabed. Most sea lilies are found in deep water. There are many thousands of extinct species in the fossil record.



Clockwise from top: Orange Feather Star holding onto coral with cirri; Feather Star arm showing pinnules bearing simple tube feet; Feather Star upper body showing central mouth; Feather Star with many arms; Feather Stars and Sea Cucumbers on sponge; Tiny Feather Star on soft coral



Holothurians - Sea Cucumbers

It is difficult to see the five-fold radial symmetry in sea cucumbers as they just look like a long sausage! However, if you think of them as a sea urchin on its side that has been stretched out with a mouth at one end and anus at the other, there is a resemblance. The body wall has become very muscular and embedded with numerous small ossicles and no external spines. A secondary bilateral symmetry has developed in some species, resulting in tube feet for locomotion developing on the 'sole' of the body. The tentacles around the mouth are modified tube feet and can be flattened or branched. Those with highly branched tentacles trap plankton in their sticky mucus and systematically wipe each tentacle in turn through the mouth, extracting the food particles. Some of these species live on top of the reef, while others can bury themselves in soft sediment with only the tentacles visible. Other species 'hoover' the seabed ingesting large quantities of organic debris from the sediment and excrete cleaned sediment. Consequently, they are a very important part of the marine ecosystem.

Sea cucumbers are mainly active at night and hide under rocks, plants and animals during the day. A curious defence feature in some *Holothuria* species, is the ability to extrude sticky threads (Cuvierian tubules) via the anus. The threads wriggle actively once extruded and some are thought to be toxic! If seriously disturbed many sea cucumbers extrude their entire gut— again a very sticky material for predators to deal with. It can take a few weeks for complete regeneration.

Clockwise from top left: Beachball Sea Cucumber, *Pseudocolochirus violaceus*, filter feeder; Sea Cucumber, *Bohadschia argus*; Sea Cucumber, *Colochirus* species, feeding tentacles extended; Sea Cucumber, *Thelenota anax*, rear view, can grow to one metre in length; Sea Cucumber, *Neothyonidium magnum*, feeding tentacle in mouth; Sticky Sea Cucumber, *Synaptula lamperti*, usually associated with sponges; Sea Cucumber, *Eupta godeffroyi*, deposit feeder



Thresher Sharks of Malapascua

by Janet O'Brien



We headed to Malapascua in the Philippines in early April for the chance to see the Thresher Sharks. The best time to dive there is usually between January to April, however, it is possible to dive in Malapascua all year round (apparently there can be worse conditions in November and December). They call April to May the Dry season and August to November the Wet season.

On most dive sites the visibility is between 15-30m during the year (aside from November & December where, if rougher conditions arise, it can reduce quite drastically to approximately 5-10m).

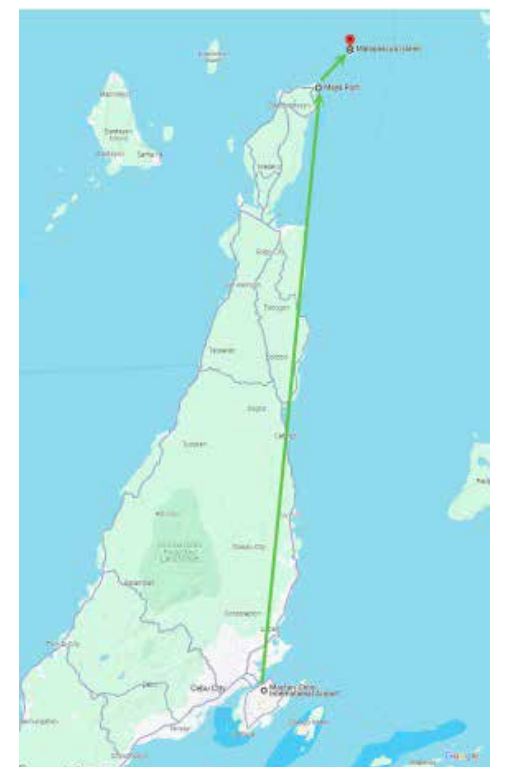
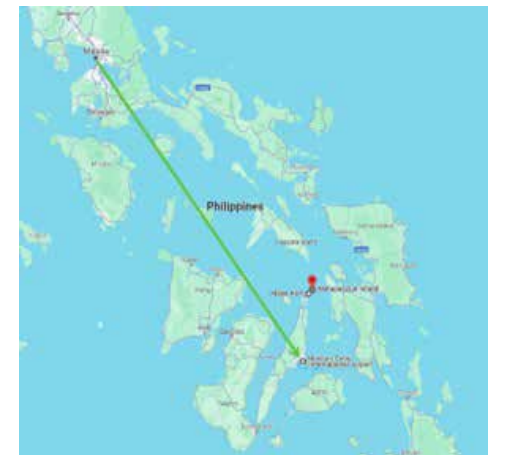
Malapascua is a tiny island, and at roughly 1km wide and 2.5km long, it takes just two hours to walk around. In November 2013, Typhoon Yolanda hit and the town of 3000 was almost fully destroyed, and many coral reefs were also devastated. However, the infrastructure has been restored, and the local and dive community appear to be back on their feet.

How to get there

We flew into Cebu-Mactan International Airport directly from Manila (1hr 25 min domestic flight) and we overnighed in the Waterfront Airport Hotel (a two minute walk from the airport). If you arrive in Cebu before midday, it would be possible to transit on the same day to Malapascua but otherwise an early start on day two is advisable.

Through the company we dived with, we arranged for a driver to meet us at the hotel in Cebu very early on day two and they transported us to Malapascua Island by private taxi and then private boat.

The total travel time from the airport to Maya Port and then onto Malapascua is approximately four to five hours depending on traffic.





When you are there

The dive schedules get finalised a day in advance as they are weather dependent so you always know what time you are starting and can plan your lenses and camera set up in advance.

Thresher sharks were always previously seen at the nearby Monad Shoal but now they are not often seen there and have moved to Kimud Shoal, a "sunken island" similar to Monad, but shallower and further away. The dives to Kimud generally see the boats leave at 6am and the dive shops offer two-dive or three-dive day-trips where you are back at Malapascua early afternoon. This gives you the option to do a dusk or night dive around 5pm also. The local dives were varied and interesting but nothing spectacular (primarily because you are in groups of five or six divers with no focus on photography).

The Thresher Sharks

There were five boat moorings on Kimud, but each boat on the mooring has others tethered to it, so each day there were at least 15 boats on the dive sites which means a lot of divers. We didn't find it too crowded though as there is a fair amount of ground to cover.

The minute we dropped in on each occasion we saw a thresher shark and often as we were on the line to go up we had Threshers around the area to watch.

The top of the island has a lot of hard coral with hiding spots for moray eels and frogfish. The sides of Kimud are covered in soft coral growth. The east side has rock formations and overhangs. Because of the drop off, at any point on the island there is the chance of seeing other pelagics such as sharks, rays or dolphins. The guides will generally take you on a pathway along the front of the drop off. At certain points you will see shadows of the Thresher Sharks coming in and then the guides will signal for you to drop lower in the water column and wait. If you are lucky you will get the Threshers coming in very close to you and often overhead. The small fish who are there to clean them appear from nowhere and do their job efficiently.

Flash photography is not allowed with the Thresher Sharks and a wide angle lens would be recommended as they do come in quite close if you are well positioned on the edge of the drop off.



Let's get technical

Bokeh

by Ross Gudgeon

Bokeh comes from the Japanese word boke (ボケ), which means “blur” or “haze”, or boke-aji, the “blur quality.” Bokeh is pronounced BOH-Kə or BOH-kay.

What is Bokeh?

Bokeh is defined as “the effect of a soft out-of-focus background that you get when shooting a subject, using a fast lens at the widest aperture.” Simply put, bokeh is the pleasing or aesthetic quality of out-of-focus blur in a photograph.

How to Achieve Good Bokeh

Use the Right Lens

- Bokeh starts with lens choice. Go for a lens with a wide maximum aperture (ideally, f/2.8 or wider, but f/4 can work, too).
- If possible, pick a lens with a high number of aperture blades (the more circular the aperture shape, the better!).
- And go with a standard or telephoto focal length, not wide angle.

Select A Large Aperture

- Bokeh is only affected by one camera setting: the aperture. So, make it count!
- For the strongest bokeh effect, dial in your lens's lowest f-number. (Though if your lens goes to f/1.2 or f/1.4 and you're shooting from up close, you may want to narrow the aperture just a bit to prevent your subject from going out of focus.)
- Underwater with a macro lens I normally shoot



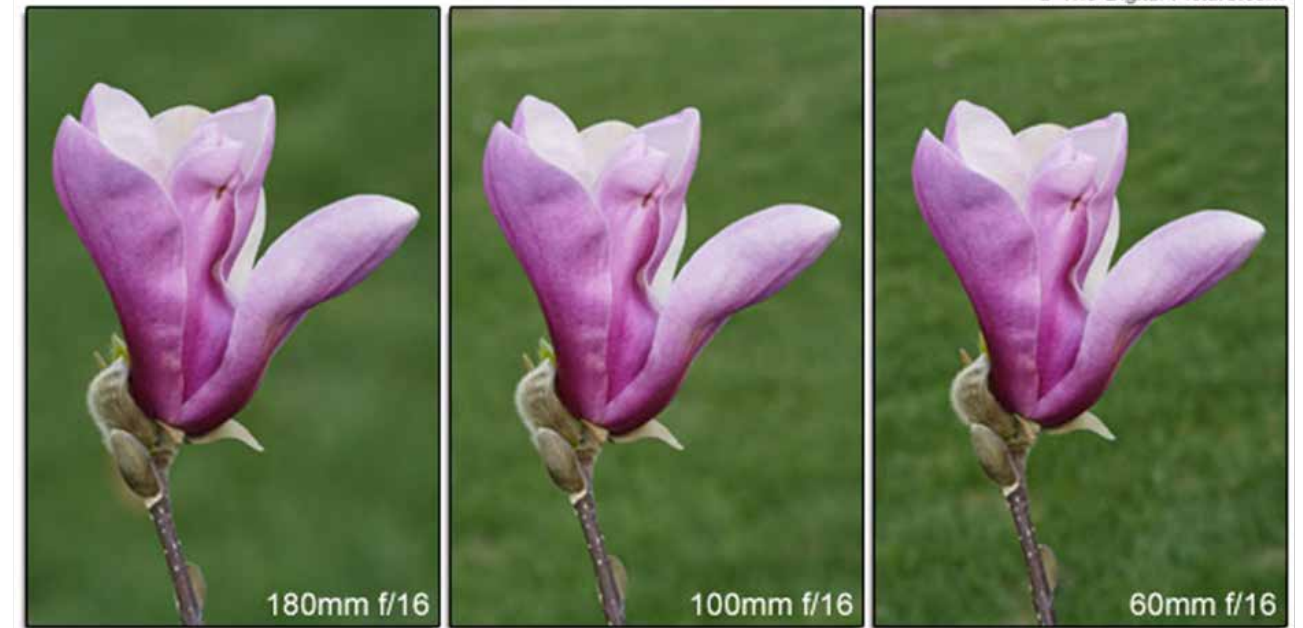
at f11 or smaller but to achieve good bokeh I will shoot at f8 or wider

Get Close to Your Subject

- Determine the subject you want to photograph, then get close. Remember, you can either move close physically, or you can use a long lens for a tighter perspective

Background Blur Comparison

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- If you have the time, try both; the effect will be slightly different in each case (longer lenses compress the background, which gives smooth bokeh, but you may lose a bit of intimacy), and you may find you prefer one look over the other
- Underwater I have found that adding a closeup lens will allow you to get a lot closer than using the lens alone

Position Your Subject for The Best Background

- If you can move your subject (or, in the case of portraits, if you can ask your subject to move), then put them in front of a uniform, non-distracting background.
- And bring them far away from the background, so the bokeh effect is more pronounced.
- If you can't move your subject, then try to adjust your perspective. By getting down low, you can remove distracting background details from the frame; by moving to the side, you can increase subject-background distance; and so on.

Dial In Your Remaining Settings for A Good Exposure

- At this point, you've done everything you can for the best-possible bokeh.
- So determine the remaining settings you need for a good exposure (e.g., your shutter speed and your ISO). Focus on your subject. Check one last time to ensure the background doesn't include any distractions.
- And take your photo!



WAUPS PINBOARD

WAUPS AGM

A few snaps from our AGM held in June



A few stills taken from Rusty Geller's winning video in the WAUPS video competition. Scan the QR code to watch it!



The WAUPS 40 year anniversary chocolate cake, enjoyed by members at the February meeting





2024 PRINTWEST FINALIST IMAGES



PARTING SHOT



Thresher Shark by Jason Milligan

It's not very often you capture the subject and a photographer and it not be a photo bomb destined for the bin but this shot popped into my viewfinder and worked. My friend and travel buddy Mark Green face to face with a Pelagic Thresher Shark. It's ended up being my favourite shot from our trip to Malapascua and Greeny's profile pic.

Nikon Z6ii, 14-30mm lens, Ikelite housing
f8, 1/200 sec, ISO360



WESTERN AUSTRALIA UNDERWATER PHOTOGRAPHIC SOCIETY

waupsnews@gmail.com

The Western Australia Underwater Photographic Society (WAUPS) is a non-profit organisation, which was established in January 1984.

The aims of the Society are:

-  To promote an improvement of underwater photography amongst its members.
-  To promote underwater photography in the community.
-  To encourage an understanding and preservation of the marine environment.
-  To promote an exchange of skills and ideas from within the society and from external bodies.
-  To have fun and enjoy socialising, diving and photography.

WAUPS holds monthly meetings which include guest presenters on a range of photography and diving topics along with a digital show-and-tell of images from members.

We hold regular competitions including an annual day dive shootout, annual open and novice portfolios and image of the year competition, and a range of trips and social events during the year including monthly photo dives.

WAUPS members also get membership to the WA Photographic Federation and can participate in their events and trips.

Anyone interested in underwater photography is welcome any time including all levels of experience.

**WAUPS meetings are conducted at 7:30pm
on the FOURTH TUESDAY of every month.**



Find us on Facebook

www.waups.org.au

