

Drifters

by Mike Bartick

Our oceans are packed full of so many curious subjects and behaviors that something new can be experienced on almost each and every dive. One of my main drivers for exploring is looking for the unanswered questions that i'm continuously left with. It seems each time one question is answered, two more pop up behind it. On a reef or a sandy habitat many questions can be answered purely out of the reliability of seeing the same subject matter then observing them. However in the open ocean this type of experience is vastly different as many of the encounters are purely through chance and often brief.

Sadly, many divers only think of jellyfish in the context of being stung or as an inconvenience but the truth is that jellyfish have a huge story to tell too. Yes, jellies can and will sting the heck out of humans but hey, no one is asking you to go out and hug a jelly.

Jellyfish are a soft bodied class of sea faring gelatinous creatures, akin to living fossils and can be traced as far back as 600 million years. Jellyfish inhabit our oceans from the surface to the deepest measured dark zones, they are heartless, have no brain and generally speaking have no eyes. Yet these seemingly simple creatures have a complex life that ranges from a period of being sedentary to pelagic hunters and have persevered through the most extreme conditions that our planet has ever experienced.

When we think of jellyfish for the most part we basically think of an umbrella shaped glob with



Large Jellyfish act as a protective oasis for many subjects. Some take up a temporary residency there while others make it a more permanent. Jellyfish are photogenic and often times colorful making them a perfect target for underwater photography.

trailing tentacles that pulsates along through the water aimlessly, stinging things. For the most part this might be true but they are also quite beautiful in their own right. Like sea anemones, jellyfish are from the family of cnidarian and possess the stinging cells of nematocysts. These hair triggered cells are stored in the tentacles of the jellies and involuntarily discharge when coming into contact with anything, including other jellyfish.

Nevertheless that doesn't hold true for all sea faring creatures. Some animals have grown immune to their venom and use them as shelter or feeding on them whenever possible. Various types of fish, turtles, anemones on the substrate even other jellyfish feed on jellies as a food source, while other animals have actually learned to live in harmony with these alien like beings.

Despite their dangers Jellyfish seem to be a



Jackfish are a common companion of jellyfish. At first these observations seemed random but in time i've realized that the jacks select very specific types of jellyfish.

favorite place for larval and adult fish to seek shelter. Its not uncommon to see different types of fish swimming alongside of them, resting on the bell or even swimming amongst their tentacles. Some larger jellyfish even act as drifting bio dome's with multiple subjects seeking shelter on them, crabs, shrimp even cephalopods.

Jackfish generally speaking, have a lengthy larval stage spending most of their lives alone. This makes them especially vulnerable to larger fish. To survive, many Jacks rely on speed and cunning, some have even adapted a very effective strategy of forming

a temporarily symbiotic relationship with various jellyfish and are some of the more common fish to be seen drifting with them.

There are a couple of different theories surrounding the relationship between jacks and jellyfish due to different growth rates. One theory supports the idea of Jacks nomadically finding jellyfishes and spending a brief period of time together before moving on, while another theory is that a larval Jack selects the jellies at a very young stage then spend's a lengthier period of their lives with it as a partner.



Jackfish and a Thysanastoma jellyfish form long lasting bonds that mutually benefit each other.

Post larval Cotton Mouth Jack select specific type's of jellyfish when they are both still very small. In this image, the jelly is hardly large enough to cover the jacks chin, if it had a chin. The jack directs and pushes the jelly through the water which ultimately helps them both to feed.

The jelly makes better water contact, increasing its ability to kill more prey while the jack benefits from eating the scraps. This keeps the jelly fish healthy, boosts its ability to grow and in turn provides the perfect shelter for the jackfish. It also appears that some (Thysanastoma sp.) jellyfish

have even developed a small flap on the underside of its bell that the jackfish use to their benefit for hiding and resting.

To see this partnership working in person is quite a spectacle. The jellyfish pulsates but moves rapidly through the water and out of synch with its own movements, like its turbocharged. Approaching from darker water, the jackfish seem to be attracted to our downline lights and the cloud of plankton that forms there. However, they don't like to be photographed very much and will tuck in and hide amongst the jellies



tentacles to avoid the bright flashing of our strobes. The jack definitely takes ownership of the jelly and is in full control of its direction and speed forcing us at times to fin at full power just to keep up. Often times the jack will quickly roll the jelly over using it to protect itself, like a pelagic Armadillo with stinging tentacles attached.

Thysanastoma jellyfish actually form a flap under their bell that can accommodate the jackfish and allow it to rest.

Filefish are also observed quite often with jellyfish however their relationship isn't quite as friendly nor are they as selective as the jacks. The filefish actually sustain themselves by



consuming the jellyfish over a period of time and are a natural predator. Filefish will also bully other less aggressive fish away from a jelly with repeated attacks, driving them off to fend for themselves. Driftfish on the other hand are an entirely different family of fish that very little is actually known about, mainly due to the difficulty of collecting them for study. Trawling is somewhat effective but doesn't really offer an accurate window into the behaviors of the subjects in the pull, particularly mutually beneficial behaviors such as this one.

Some of the smaller driftfish spend a longer period of time if not their entire lifecycle with jellyfish. The driftfishes roll is more passive then the jacks as for the most part they are unable to move or direct the jelly through the water however that doesn't mean their presence isn't mutually beneficial. Some will live just under the bell or move about the jellies tentacles acting as a lure and attracting would be predators that are then subdued and stung by the jellyfish and consumed, leaving scraps for the driftfish.

Cubazoid's like box jellyfish can be extremely dangerous to humans and fish alike. So when I saw the combination of the driftfish living in harmony



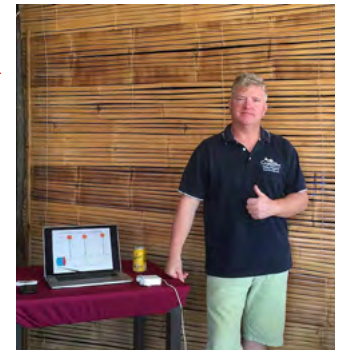
with this box jelly I was quite surprised, normally even the slightest contact with this type of jelly would spell out a painful death for the little fish but somehow these two driftfish seem getting along just fine.

Both were swimming in and out of the body of the bell probably picking out the fish scraps from the interior somehow avoiding contact and grabbing a free meal. This was my only experience seeing this combination together so once again, i'm left with more questions then answers.

The jellyfish family is huge and includes

ctenophores or comb jellies not discussed above but should be recognized. For further reading check out "Jellyfish, A natural history" by Lisa-Ann Gershwin.

Mike Bartick
www.divecbr.com





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