'Eggcellent' Local Sharks and Skates

Learning Level All
Run Time 9.08 minutes

Welcome to another in the Catch My Drift mini talks series, my name is Lauren Smith and I'm a marine biologist who specialises in shark research.

Today I am going to be telling you a bit about some local shark and skate species on display here in the aquarium. There are currently over 1200 known species of cartilaginous fish, so that's sharks, skates, rays, guitarfish, sawfish and chimaeras! Although very diverse, they all have their cartilaginous flexible skeleton in common, which sets them apart from bony fish species like cod, salmon or haddock.

We have a number of different cartilaginous species that are present in Scottish waters, including the second largest shark on the planet – the basking shark! If you're very lucky during the summer months you can sometimes spot them in the moray firth, they can reach a length of more than 10m / 30ft. So, it's absolutely enormous! As you can imagine that would be a little bit impossible to keep within a small local aquarium like Macduff. So instead, we have a lot more suitable species that are a lot smaller and better suited to captive tank environments. These include the small spotted catshark, also known rather confusingly as the lesser spotted dogfish, the Bull Huss, also a catshark, and the thornback skate.

The small spotted catshark is a small, maximum size of less than a metre, bottom dwelling shark that predates on crabs, langoustine, squid and small fish. Often found by divers and snorkelers resting on the seabed, they are usually pretty chilled out and don't mind a few pictures being taken of them!

The Bull Huss is kind of like a larger cousin to the small spotted catshark. This one reaches around 1.6m, also a benthic predator that feeds on small fish, crustaceans, crabs, shrimp and lobsters and cephalopods, squid and octopus. Unfortunately, due to increases fishing pressures numbers of bull huss have declined substantially over recent years.

The thornback skate can reach around 1m in length, now you'll notice that I can calling it a skate whereas quite often it's referred to as a ray, only this is a little bit of misnomer. It is actually a skate, and we know that because all skates lay egg cases, whereas all rays give birth to live young. Thornback skates are also benthic predators that feed on small fish and crustaceans.

Now it's the laying of eggcases that all of these species have in common. The laying of eggcases is also known as reproductive oviparity. The eggcases are primarily made of a substance comparable to collagen, it's pretty tough and protective and creates a great environment for a developing embryo.

I have some examples here of the eggcases for each species; this is the small spotted catsharks, this larger one is the bull huss and this one is the thornback.

All of these species do very well here at Macduff Aquarium, so well in fact that their egg laying is pretty prolific! When eggs are laid in the various tanks they are moved to special nursery tanks, some of which are on public display and if you look very carefully you can see the yolks and developing embryos of the small spotteds and the bull huss.

The catsharks eggcases are supported vertically in the water column and this mimics how they are found the wild, which is wrapped around kelp stypes

The thornbacks are too dark to see through, but the eggcases are placed on the base of the tank similar to how they would be in the wild – although not buried because there are no currents or predators to worry about.

These eggcases create the perfect protected environment for the embryos to develop in, over time they use up their yolk provisions until there is none left and the young fill the space inside the eggcase. This can take a varying amount of time depending on the species and also the water temperature. For example, the small spotted catshark takes around 10 months to develop and hatch out in the waters around Scotland but in the Mediterranean they only take around 6 months as the water is so much warmer!

An interesting thing to note is that during embryonic development a couple of splits will occur in the top of the eggcase near the edge, this allows for an exchange of surrounding seawater to essentially flush into the eggcase removing waste materials. And potentially also allow the developing embryo to activate its immune system with the presence of any low-level pathogens in the sea water (note this is kind of a conjecture on my part!)

Once the pups or neonates have emerged the eggcases in the case of the thornback are more positively buoyant and so will often be washed ashore in stormy seas.
The catshark eggcases can also be washed ashore although as they are normally attached to the kelp stypes this can take a while for the tendrils to break down so they become detached from the kelp or for a very harsh storm to rip up some of the kelp and wash them in still attached!

If you are out and about on the beach it's always a good idea to keep a close eye on the strandline, in amongst the seaweed very well camouflaged you can often find eggcases that have been washed up.

If you want some help being able to identify these eggcases the shark trust do an eggcellent – see what I did there, eggcase guide so you can work out what species of eggcase it is that you have found. And you can upload your findings via their website or their smartphone app, any information gathered about what washes up where gives a really good indicator of what species we have where along our coastline.

And there we have it! A little bit about some of the amazing shark and skate species we have in our waters. I hope you enjoyed this talk, thanks for listening!