**Introduction**

The marine environment differs from our own in a myriad of ways and surviving it requires an equally different set of sensory adaptations. Many marine species have adapted their sensory systems to this environment in ingenious ways that help them to stand out from the crowd, navigate the ocean currents and detect prey at long range.

**UV Vision**

Many fish have extended visual range into the UV portion of the spectrum. This is thought to provide a means for these fish to simultaneously stand out to potential mates and remain inconspicuous to predators.

Until recently it was thought that only large bold UV patterns would be discernable, due to the small proportion of UV cones and the large amount of scatter of UV in water. However, the damselfish seems to be able to identify others by their intricate facial patterns. Work carried out by [4] showed that male Ambon damselfish can discriminate between individuals from their own species and those of other species. The work showed that males are more likely to attack members of their own species as they pose more competition for mates (see graph to the left).

**Electroreception**

Many marine vertebrates, including sharks and rays, possess the ability to detect electrical stimuli generated by muscle and nerve activity [2]. This sense assists passive location of hidden prey in conditions that are problematic for vision and smell. Consequently, the signals emitted have evolved in some species to be harder to detect by becoming more complex or consisting of higher frequencies.

**Magnetic Field Navigation**

Given the vastness of the oceans and the apparent lack of visible navigational cues, a method of sensing location and direction is crucial for many marine animals embarking on long-distance migration routes or simply looking for home.

Loggerhead sea turtles can distinguish between the intensities and angle of inclination at which geomagnetic field lines intersect the Earth’s surface. This information varies with location enabling them to build a navigational map of their migratory route.

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**References**


