

Underwater sound and lights show considered to repel sharks

February 6 2014, by Michelle Wheeler



Dr Kempster says one of the main ideas relating to sounds and sharks is the effectiveness of changing sounds, such as using different frequencies and volumes. Credit: Willy Volk

Shark biologists deployed bubbles, chemical repellents, electric fields, lights and underwater sounds off the WA coast last month as part of a study into shark deterrents.

The research team, mostly from UWA, tested the deterrents on a field trip from January 8 to 20 and wrote a blog sharing their work with the public.

They observed the response of hammerheads (*Sphyrna Sphyrnidae*), [tiger sharks](#) (*Galeocerdo cuvier*), bronze whalers (*Carcharhinus*

brachyurus), [blacktip reef sharks](#) (*Carcharhinus melanopterus*) and nurse sharks (*Ginglymostoma cirratum*).

The scientists observed the shark's responses from a boat and from the beach, to determine which deterrents warrant further investigation.

Bubbles

In the lead up to the field trip the research team heard conflicting views on the subject, with some aquarium staff reporting that sharks avoided [bubbles](#) in a tank while others believed sharks were happy to swim through bubbles.

UWA shark biologist Ryan Kempster says bubbles affect several different sensory systems in sharks because they create a sound, displace the water (which can be detected by sharks) and can be felt and seen by the animal.

"To a wild shark, bubbles should be quite an unnatural thing that they're not familiar with," he says.

Audio deterrents

UWA PhD student Lucille Chapuis tested an array of audio deterrents on the field trip including killer whale noises and sounds with varying frequencies, pitches and tempos.

Dr Kempster says one of the main ideas relating to sounds and sharks is the effectiveness of changing sounds, such as using different frequencies and volumes.

"Sharks generally don't like anything that is unnatural and different,

something that they're not familiar with," he says.

"Generally, whether it's an electric field, a sound, a light, if it's something that changes quite frequently it's something that you would assume that they would avoid and try and stay away from."

Chemical repellents

Dr Kempster says there is evidence that sharks will avoid the smell of dead sharks—the idea being that the "necromones" given off by the dead animal warns others of danger.

"Some work done in Florida has shown great success with that and using cans they will spray this chemical in water and the [sharks](#) in the area will swim away," he says.

But the biggest problem with chemical repellents, according to Dr Kempster, is that it is difficult to commercialise.

"When we think about shark attacks, it's generally not something that you're prepared for and waiting for that you can spray a load of chemical and go 'right, I'll be safe'," he says.

Provided by Science Network WA

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