Shark brains could hold key to attacks: study

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Shark brains have been found to share several features with those of humans, a discovery which Australian researchers believe could be crucial to developing "repellents" for the killer great white species.

Great white sharks, otherwise known as white pointers and made famous by the horror movie "Jaws", have killed an unprecedented number of surfers and swimmers off Australia's west coast in the past year.

The government last month announced a new catch-and-kill policy for sharks that stray too close to beaches after five fatalities in 10 months. But it is also funding research into other measures, including technology to repel them.

University of Western Australia shark researcher Kara Yopak, who has dissected the brains of more than 150 species, said new studies of the great white shark's brain had revealed important similarities to human brains.

"Great white sharks have quite large parts of the brain associated with their visual input, with implications for them being much more receptive to repellents targeting visual markers," Yopak told AFP of the research, published in a special edition of the journal Brain, Behaviour and Evolution.

Most repellents now on the market target the electrosensitive pores on a shark's head which are used to detect the weak currents emitted by prey, by sending a strong electrical signal to drive them away.

Yopak said studies found this technology could be effective but failed to repel great whites in all cases. Understanding how their brains work could be vital to developing new deterrents, which could be something as simple as marking patterns on surfboards and wetsuits.

"A shark may recognise a poisonous sea-snake's markings and swim away, for example, and we can use this information to cue a response," she said.

"It's about understanding how their neurobiology affects their (behaviour)."

Yopak is part of a multidisciplinary team at the university's Oceans Institute working towards new commercial repellents.

Most sharks had been found to have brains of the same relative size as mammals or birds, she added, debunking any idea they are "tiny-brained eating machines".

Sharks are common in Australian waters but deadly attacks have previously been rare, with only one of the average 15 incidents a year typically proving fatal.

Experts say the average number of attacks in the country has increased in line with population growth and the popularity of water sports.