



Whales smarter than previously thought

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Whales, it seems, could be worth more alive than dead, with the first peer-reviewed assessment of whale tourism's global value predicting the \$US2.1 billion (\$2.3 billion) industry could easily grow by 10 per cent each year over the next decade.

Some 13 million eco-tourists paid to see the animals in their natural element last year, generating 13,000 jobs for people across hundreds of coastal regions worldwide, the study found.

"We can have our whales and still benefit from them, without killing them," said the study's co-author, Ussif Rashid Sumaila, a researcher at the University of British Columbia.

The study coincides with a decision on Thursday by the 88-nation International Whaling Commission meeting in Morocco, to adopt a "five-year strategic plan" to explore both the economic benefits and ecological risks of whale-watching.

The move comes as some scientists say the marine mammals are not only smarter than previously thought but also share several attributes once claimed as exclusively human.

Self-awareness, suffering and a social culture along with high mental abilities are a hallmark of cetaceans, an order grouping more than 80 whales, dolphins and porpoises.

"We now know from field studies that a lot of the large whales exhibit some of the most complex behaviour in the animal kingdom," said Lori Marino, a neurobiologist at Emory University in Atlanta, Georgia.

A decade ago, Dr Marino conducted an experiment with bottlenose dolphins in which she placed a small mark on their body and had the mammals look at themselves in a mirror.

By the way the dolphins reacted to the image and then looked at the spot, it was clear that they had a sense of self-identity, Dr Marino determined.

For Georges Chapouthier, a neurobiologist and director of the Emotion Centre at Pierre and Marie Curie University in Paris, self-awareness means that dolphin and whales, along with some higher primates, can experience not just pain but also suffering.

Unlike nociception - a basic nerve response to harmful stimuli found in all animals - or lower-order pain, "suffering supposes a certain level of cognitive functioning," he said.

"It is difficult to define what that level is, but there's a lot of data now to suggest some higher mammals have it, including great apes, dolphins and, most likely, whales."

As for intelligence, cetaceans are second only to humans in brain size, once body weight is taken into account.

More telling than volume, though, are cerebral areas which specialise in cognition and emotional processing - and the likelihood that this evolution was partly driven by social interaction, according to several peer-reviewed studies.

Some scientists suggest this interaction can be described as culture, a notion usually reserved for humans.

"Evidence is growing that for at least some cetacean species, culture is both sophisticated and important," said Hal Whitehead, a professor at Dalhousie University in Nova Scotia.

If culture is learnt behaviour passed across generations that is different from one community to the next, then humpback whales, to cite one example, are rather cultured indeed.

"At any time during the winter breeding season, all the males in any ocean sing more or less the same elaborate song, but this communal song evolves over months and years," Professor Whitehead noted in a study in the journal *Biological Conservation*.

Scientists have also observed orcas, or killer whales, learning from other orcas from a geographically separate group how to steal fish from longlines used by commercial fishing boats.

Two orca communities that rarely intermingle despite sharing the same waters off the coast of Vancouver Island, meanwhile, have learnt to divide their natural bounty: and one group eats fish and the other mammals, especially seals, Professor Whitehead reported.

Such findings are disturbing factors in the calculus of conservation.

"If we wipe out a subgroup, it is more than killing a certain number of individuals. It could actually wipe out an entire culture," Dr Marino said.

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This story was found at: <http://www.smh.com.au/environment/whale-watch/whales-smarter-than-previously-thought-20100625-z9s6.html>