

Not Finding Nemo becomes a reality

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(PhysOrg.com) -- Three Simon Fraser University biologists and an International Union for Conservation of Nature (IUCN) scientist say it's no longer fiction but fact. No one will be able to find Nemo if conservation action isn't taken soon.

Extinction threatens one in every six [species](#) related to the characters in the movie Finding Nemo, according to a [study](#) co-authored by SFU's Loren McClenachan, Andrew Cooper and Nick Dulvy, and the IUCN's Kent Carpenter.

The marine scientists have analyzed the extinction risk and reviewed successful conservation programmes for Nemo, the charismatic clownfish, as well as more than 1,500 other species related to characters in Finding Nemo.

The study revealed widely distributed animals like turtles and [sharks](#) are at most risk, and hunting and fishing pose the greatest threat to these species' survival.

“Putting Nemo in office aquariums, making soup out of Anchor the shark's fins, and selling Sheldon the seahorse as curios has taken a toll,” says McClenachan, the study's lead author. The SFU National Science Foundation International Postdoctoral Fellow adds: “Our research highlights how very little we know about many of these animals. It's unthinkable that the characters in Finding Nemo could become extinct, but this is the reality unless we pay more attention to the diversity of marine life.”

All species of marine turtles in the movie (Squirt and Crush) and more than half of all hammerhead sharks (Anchor), mackerel sharks (Bruce and Chum) and eagle rays (Mr. Ray) are threatened. Seahorses (Sheldon) are the most threatened group of bony fish in Finding Nemo, with two in five species at risk of extinction.

Despite a demonstrated need for conservation action, regulation of trade in endangered [marine species](#) is severely deficient for those with high economic value such as sharks.

“Our study found that threatened sharks and rays lacked needed protection against international trade, compared to all other groups. Fewer than one in 10 species of threatened sharks and rays considered in the study were protected by the CITES (Convention on International Trade of Endangered Species),” says Dulvy.

The SFU professor of biology co-chairs the IUCN Shark Specialist Group. He adds: “For sharks and rays this is particularly concerning, as these species are highly vulnerable to overexploitation.”

Conservation relies on strong, well-founded science, but knowledge shortfalls exist for the majority of marine species. Small species and invertebrates, such as Pacific cleaner shrimp (Jacques) suffer the most. Small species could face local and regional extinction without the conservation community being aware, as a result of sparse data.

One ray of hope though is that protecting turtles against entanglement in commercial fishing gear and from hunting has helped reverse their decline in some locations.

“We have the tools to save marine species, particularly through international treaties such as CITES,” says Carpenter, a professor at Old Dominion University in Virginia and the manager of the IUCN Marine

Biodiversity Unit. “Implementation of coordinated international conservation initiatives is necessary as charisma alone is not enough to ensure these species’ survival.”

Provided by Simon Fraser University

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