



## ITALY: Thousands of Scuba Divers Make Seahorses Count

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Many of the world's 32 seahorse species, including this *Hippocampus erectus*, are facing decline from human activities.

Photo: Paul Malcolm

The first step in protecting biodiversity is figuring out what species live where, but limited time and funds can make this an overwhelming task. A new report, which describes how recreational scuba divers quickly and cheaply monitored seahorses in Italian waters, shows that volunteers can help on both counts.

"Volunteers can collect a considerable amount of information over a relatively short period of time and save the public and scientific communities precious financial resources because the divers directly incur part of the costs needed for research projects," said Stefano Goffredo of the University of Bologna in Italy, who reported this work with Corrado Piccinetti of Fano University of Bologna and

Francesco Zaccanti of the University of Bologna in the December 2004 issue of *Conservation Biology*.

There are 32 species of seahorses worldwide and many have declined drastically due to habitat degradation and overfishing. Some populations have dropped by half in just five years. Seahorses are fished for the aquarium and curio trades, and are used in traditional Southeast Asian and Chinese medicines for respiratory problems and impotence. There are two Mediterranean species of seahorses (*Hippocampus hippocampus* and *Hippocampus ramulosus*) and they had not been comprehensively assessed in Italian waters.

To see if volunteers could help researchers monitor seahorses, Goffredo and colleagues established the "Mediterranean Hippocampus Mission." This three-year project entailed using scuba diving schools to recruit and train recreational scuba divers, who learned how to distinguish the two seahorse species (*H. ramulosus* has a 'mane,' while *H. hippocampus* does not) and filled out questionnaires reporting the depth, habitat, number and species of the seahorses they saw. To encourage divers to monitor less popular sites, such as those with cloudy waters, the project offered incentives including subscriptions to recreational diving magazines and discounts on room and board.

During the three-year project, more than 2,500 volunteers dove for more than 6,000 hours and submitted nearly 9,000 questionnaires, about 900 of which reported seahorse sightings. Goffredo and his colleagues calculated that it would have taken a professional researcher 20 years and \$1.3 million (U.S.) to collect these data.

Among other things, the findings show that seahorses are rare in the northwestern Mediterranean, where the seagrass meadows favored by *H. hippocampus* have been diminished. Threats to the seagrass include an invasive tropical seaweed as well as industrial pollution, port construction and other human disturbances.

The success of the seahorse project led Goffredo and his colleagues to expand their volunteer monitoring effort to include 61 plant and animal species. Their current project is called "Diving for the Environment: Mediterranean Underwater Biodiversity Project" and volunteer scuba divers have submitted nearly 13,000 questionnaires reporting sightings over three years.

"We calculated that a professional researcher would have taken 30 years to compile this impressive amount of information," said Goffredo, "and that the sampling missions would have cost over \$2 million."

Source: [Journal of the Society of Conservation Biology](#)

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