

SUNKEN TREASURE

A recently completed Conservation International survey has revealed a treasure trove of new marine species in Indonesian Papua

AVIVA WEST IN BANGKOK
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Conservation International, a non-profit organisation dedicated to protecting the earth's biodiversity, has uncovered a treasure trove of extraordinary marine life, some never seen before, in a remote region of Indonesian Papua known as the Bird's Head.

Scientists have surveyed two locations in the northwest region of Papua and found more than 50 new species, including sharks, shrimp and reef-building coral. The 69,709 sq.mi marine region is home to more than 1,200 varieties of fish and nearly 600 species of coral. In addition, experts discovered whales, sea turtles, crocodiles, giant clams, manta rays and dugongs, indicating the area may be the richest marine seascape on earth.

"Five years ago we ran our first expedition to Raja Ampat [islands off the Bird's Head], and this revealed what we felt to be the epicentre of ma-

rine biodiversity on the planet," said Mark Erdmann, a CI scientist.

Unlike the untouched wilderness of the Foja Range, also in Papua, the Bird's Head reefs already show signs of human impact and are under increasing threat from a proposed programme to increase the development of commercial fisheries, reported Erika Kranz, a staff writer for CI.

The sites are located at two corners of the Bird's Head – named for the distinctive shape of the peninsula. The region has been highlighted as a global priority for protection and for sustainable management of its fisheries.

Led by Mark Erdmann, the team of scientists began the survey five years ago. In fewer than six weeks they recorded eight mantis shrimp species, 24 fish species and 20 species of coral most likely new to science. Many are believed to be found nowhere else on earth. Among the new species were two kinds of epaulette shark – a small, slender-bodied bottom-dweller that uses its pectoral fins to "walk" across the seafloor, swimming away when danger looms.

Also discovered were new species of 'flasher' wrasses, named for the brilliant displays of yellows, purples and blues the normally drab males put on to entice females, as well as new species of fairy basslets, damselfishes and a new jawfish.

"We were simply blown away by what we found," Dr Erdmann told the BBC News website.

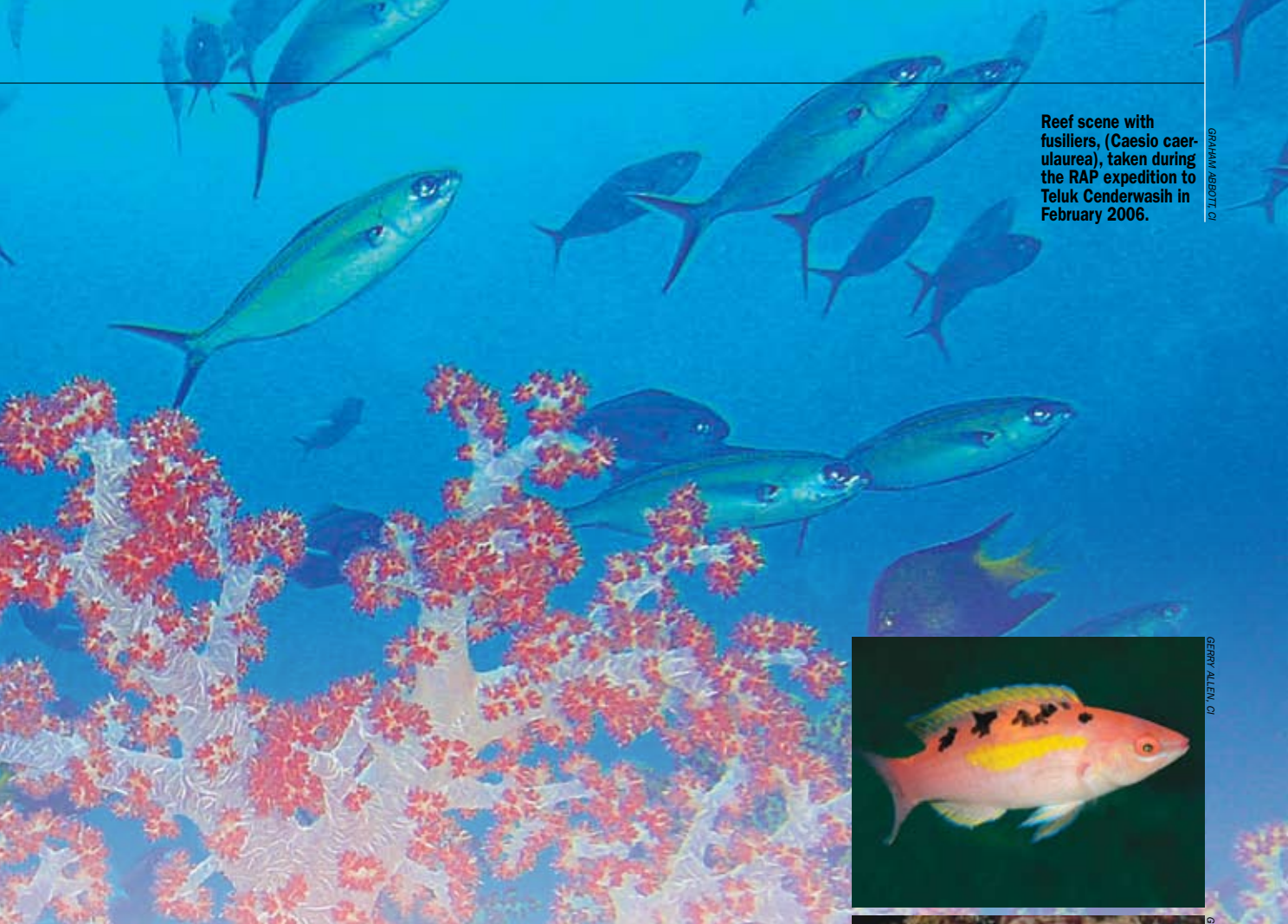
Of the more than 600 known species of coral in the region, nearly all were found within the survey sites. The sites proved to have the highest diversity of coral ever recorded, each with more than 250 species within a single hectare.

"That's more than four times the number of coral species in the entire Caribbean Sea in an area roughly the size of two football fields," said Erdmann. "These reefs are literally 'species factories' that require special attention to protect them from unsustainable fisheries and other threats."

While the coral reefs in the Bird's Head remain in relatively good shape, there is evidence that explosives have been used for fishing. "On several

Reef scene with fusiliers, (*Caesio caerulea*), taken during the RAP expedition to Teluk Cenderawasih in February 2006.

GRAHAM ABBOTT, CI



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FROM TOP TO BOTTOM: *Cirrhilabrus cenderawasih*, a new species of flasher wrasse discovered during Conservation International surveys. (*Genicanthus bellus*), a species normally found extremely deep, but observed in shallow waters in Cenderawasih Bay. (*Pseudochromis* sp.) just one of over fifty likely new species discovered during the recent CI-led surveys of the Bird's Head Seascape.

dives, we heard reef-shattering explosions in the vicinity," said Erdmann.

Cyanide is also used to catch live lobster, grouper and Napoleon wrasse for export to Asian markets, further threatening marine ecosystems. Additionally, mining and logging in nearby coastal regions threaten water quality.

A plan to transfer fisheries from Indonesia's over-fished western seas eastward toward the Bird's Head could exacerbate the threats, writes Kranz. "While human population density is low in the area, the residents of the Bird's Head are dependent on the sea for their livelihood."

"The coastal villages we surveyed were mostly engaged in subsistence fishing, farming and gathering, and require healthy marine ecosystems to survive," explained Paulus Boli, a researcher from the State University of Papua who led a socioeconomic element of the expeditions. "We are very concerned about the potential impact of planned commercial fisheries expansion in the region, and urge a precautionary approach that emphasises sustainability over exploitation."

Only 11 per cent of the area is protected under law, most of it in the Teluk Cenderawasih National Park supported by the World Wide Fund for Nature-Indonesia (WWF-Indonesia). The CI survey is likely to increase awareness of the need to protect the unique and valuable ecosystem.

"We are closely examining the recommendations and may support the development of a network of fisheries reserves in the region to safeguard this national heritage," said Yaya Mulyana, head of the Indonesian Ministry of Fisheries and Marine Affairs' Marine Conservation Department.

"We are delighted that these results have succeeded in drawing much deserved attention to the Bird's Head Seascape and its incredible marine biodiversity," added Ketut Sarjana Putra, director of CI's Indonesian Marine Program. "We are committed to working closely with both the national and local Papuan governments to help manage this globally significant asset for the benefit of future generations."