

Long Recovery For Reef Fish

Study finds that it takes decades for fish to recover from overfishing.

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The recovery rates of fish in reef systems, such as the blue tang, may need decades to recover to pre-fishing levels.

Overharvested populations of fish can make a comeback, but they need time, according to a recent Wildlife Conservation Society (WCS)-led study. For some populations, it takes decades to recover from heavy exploitation.

The study of coral reef fish is the longest running one of its kind—using nearly continuous data spanning 37 years. The scientists compiled the information gathered from four national marine parks off the coast of Kenya, which were closed to fishing at different times. Most fish recovery studies are conducted with small data sets over short periods of time.

The researchers found that species such as parrotfish, wrasses and surgeonfish can take 25 years to fully recover. The recovery rates for different families of fish species vary, in part due to competition among the species. Overall, the time needed by surgeonfish, tangs, triggerfish, rabbitfish and coral-building algae to completely rebuild their populations to pre-fishing levels may exceed the length of the study. And a healthy, ecologically balanced reef system—which relies on the interplay of many fish, invertebrates and plants—takes even longer to achieve.

The study also demonstrated the value of a diversity of fish species to the balance of coral reef ecosystems. For example, triggerfish feed on sea urchins, which in turn feed on reef-building algae. When fishing eliminates urchin predators, reef productivity diminishes.

“Decisions made by managers to close areas to fishing in an effort to save fish populations can be unpopular but necessary,” said Tim McClanahan, the lead author of the study. “What this study has shown us is that many fish populations take long periods of time to recover fully and that permanent bans on fishing in some parks are necessary if we’re to conserve healthy coral reef systems.”

The full study appears in the journal *Ecological Applications*.