

ENVIRONMENT

China's island building is destroying reefs

Land creation and dredging in the South China Sea come at the expense of corals and fisheries

By Christina Larson, in Beijing

The geopolitical maneuvering in the South China Sea (SCS) is taking a heavy toll on the marine environment, scientists believe.

The Spratly, or Nansha, Islands, a cluster of coral reefs and atolls, has become the focus of a territorial dispute between China and its neighbors. To the dismay of other countries bordering the SCS—Vietnam, Malaysia, the Philippines, and Brunei—China claims most of the sea, and it is bolstering its claims with a massive landfilling effort to transform some of the atolls into full-fledged islands. The scale and speed of the effort emerged earlier this month, when the Center for Strategic and International Studies (CSIS) in Washington, D.C., released high-resolution satellite photos showing that over the past 2 to 3 years, China has created 13 square kilometers of island area—about a quarter the size of Manhattan.

That is not just a challenge to its neighbors, which also claim some parts of the sea. By piling sand, gravel, and dead coral onto reef flats to create new land and dredging shipping channels nearby, China has destroyed large areas of biodiverse reef that served as nurseries for fisheries throughout much of the SCS. “This is the most rapid permanent loss of coral reef in human history,” says John McManus, a marine biologist at the University of Miami in Florida. “It’s a terrible, terrible thing to do this.”

The waters around the Spratly archipelago are home to “some of the most beautiful and biodiverse coral in the world,” McManus adds. Roughly equidistant between Vietnam and the Philippines, they are “like an oasis in the desert,” says Ed Gomez, a marine biologist at the University of the Philippines, Manila.

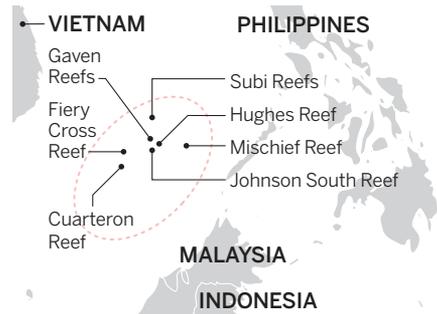
The reefs are economically important, too, as McManus realized roughly 2 decades ago when he faced a puzzle. Overfishing had depleted fish stocks in the SCS; some fish species had apparently disappeared entirely from the coastal regions his team studied. Then, after several years, unexpectedly, the fish all reappeared. By analyzing ocean currents, McManus discovered that larvae from

coral reefs in the Spratlys and the nearby Scarborough reefs were likely replenishing the sea. The reefs “serve as nursing grounds for a lot of species,” Gomez says. “They are important sources of larvae for all kinds of marine life.”

Now, China “has deployed one of the world’s largest dredging fleets,” says Andrew

Terraforming at sea

To secure its claim on the Spratly Islands, China has developed reefs like Fiery Cross, where satellite images reveal new features including a 3000-meter runway and a port.



Erickson, an associate professor at the U.S. Naval War College’s China Maritime Studies Institute in Newport, Rhode Island. The area of newly built land—where buildings, concrete plants, and three airstrips have been built or are under construction, according to CSIS—is more than 10 times the total area that other SCS nations cumulatively have built up, Erickson notes. “Whether in scale or sophistication, there are simply no grounds for comparison.”

Perhaps the most extensive ecological damage comes from dredging. In creating shipping lanes near the islands, the Chinese cut through reefs. As the lanes will most likely be dredged frequently to remain navigable, “that’s near permanent damage,” McManus says. And at Fiery Cross Reef in the Spratlys, they’ve dug a huge harbor, Gomez says. “We don’t know how much area has been destroyed underwater by deep dredging,” he says. But digging a deep harbor, he notes, destroys corals, seaweeds, and seagrasses. “No productive ecosystem can survive.”

The dredging takes a toll on nearby ecosystems as well. “Plumes of sediment that flow from the construction work will have an impact on whatever life relies on photosynthesis to survive,” says Youna Lyons, a marine scientist and expert in marine law at the National University of Singapore. “If you don’t have sunlight, nothing can grow. This impacts all the bottom of the food chain, including coral and algae.”

The island building was expected to be on the agenda last week when Chinese President Xi Jinping visited Washington, D.C., given the U.S. government’s concern about a military buildup in the SCS as well as its interest in ensuring freedom of navigation through one of the world’s busiest shipping channels. Yet convincing China to reverse course will not be simple. “The Nansha Islands have been China’s territory since ancient times,” Xi told *The Wall Street Journal*. “China’s development and maintenance of facilities on some of our garrisoned islands and reefs in the Nansha Islands does not impact on or target any other country.”

Scientists have little hope that environmental concerns will make a difference. “China keeps saying it cares about the environment,” Lyons notes, but it has not published an environmental impact assessment for any of its island building activities in the SCS.

In spite of Xi’s reassurance, other countries will feel the consequences. “For centuries, many of the countries surrounding the SCS have been dependent on fishery resources from these chains of reefs and islands,” Gomez says. Now, he says, key reefs are “forever gone” beneath the landfill and concrete. ■