



Commentary:

## Managing the South China Sea Commons through Science Policy

By James Borton / *Perspectives 10* / 2016

**Environmental degradation remains at the center of scientific conversation on the South China Sea as more marine scientists sound the alarm about the environmental consequences of China's island-building activities there. The problems facing the sea are as vast, deep, and seemingly intractable as the sea itself, and the need to address issues of acidification, biodiversity loss, climate change, and the destruction of coral reefs is urgent. The key is international scientific cooperation and for scientists from around the world to come together to provide policymakers with the information they need to make informed and responsible decisions in the South China Sea.**

The South China Sea (SCS) is home to some of the most biodiverse coral reefs in the world, yet recent satellite images of the area show the rapid destruction of such reefs. The cause of this ongoing destruction, which amounts to nothing less than a widening environmental crime scene, is the land reclamation activities conducted by the People's Republic of China (PRC) as it attempts to turn rocks into islands and bolster its expansive claims. The result of this reclamation work is less biodiversity and fewer fish left to feed the growing populations of claimant nations.

At the US Department of State and Department of Defense, analysts are assessing China's present course of accelerated militarization of the reclaimed atolls and rocks in the contested South China Sea. While the issue of militarization remains an important one, it is environmental security that is shaping new conversations about the stakes and challenges that are surfacing in these troubled waters.

Paul Berkman, an oceanographer and former head of the Arctic Ocean Geopolitics Program at the Scott Polar Research Institute, provided his own definition of environmental security: "It's an integrated approach for assessing and responding to the risks as well as the opportunities generated by an environmental state-change."

The marriage of policy and science is essential to navigating these perilous geopolitical waters. The concept of science diplomacy is not a new paradigm. It embraces collaboration and adroitly addresses problems related to environmental protection where they arise. Thus, international scientific cooperation can effectively provide a bridge between scientific research and policymaking, and serve as a soft-power resource.

Only through joint development will there be any hope of realizing a blue economy, which would tackle scarcity through the effective leveraging of scientific solutions, thus distributing to all concerned the many benefits to



be derived from the South China Sea. The success of any such endeavor depends on science communication to both the political leadership and the people of all SCS claimant nations. Our oceans are part of the global commons and should be managed and protected by all parties.

### Collective Knowledge

This is particularly true about the collective knowledge to be gained about coral reefs—knowledge that already spans more than 150 years, from the work of Charles Darwin to the recent studies conducted by marine scientists such as Nguyen Chu Hoi and Edgardo Gomez, who credit the health of coral reefs as a key factor in such public-policy matters as food availability, storm protection, and preserving the cultural identity of coastal communities. Both of the aforementioned scientists hail from countries with SCS claims challenged by China—Vietnam and the Philippines, respectively—and their work raises awareness of how coral reefs foster a diversity of species that surpasses even that of tropical rain forests. Reefs provide shelter, food, and breeding grounds for an estimated 35,000 to 60,000 species worldwide. Without coral reefs, fish are homeless and left with no place to propagate.

It is clear, therefore, that destructive reclamation activity translates into less fish to feed the growing populations of claimant nations. Every day, an increasing number of trawlers and fishermen venture out to find food for their countrymen, but they are also increasingly being used as tools by their governments to test sovereignty claims in the disputed waters. As a

result, fishermen find themselves on the front lines of this new, ecological battle. The maritime disputes between China and its neighbors are being fought by trawlers forced to range further out to sea because of the depletion of coastal fisheries.

There is a looming food crisis, and any effort to balance economic benefit with security in the South China Sea will require a coordinated, multi-level response from scientists, who have historically engaged in collaborative research and are already addressing the issues of sustainable productivity and environmental security in the region.

### Coordinated Response

At a symposium held recently at the East-West Center in Washington, DC, the University of Miami's Professor John McManus, a marine biologist who specializes in the coral reefs of the South China Sea, called for a joint scientific declaration to demand an environmental moratorium on dredging. He has completed environmental surveys among the degraded Spratly reefs, the results of which reinforce the necessity for scientific intervention.

"There are global security concerns associated with the damage," said McManus. "It is likely broad enough to reduce fish stocks in the world's most fish-dependent region."

This indefatigable coral reef specialist has long argued for the establishment of a "peace park" in the sea, and the brokering of a joint resource management agreement which would include a code of conduct and a freeze on



territorial claims. McManus believes this will protect the vital ecosystems currently at risk.

The destruction and depletion of marine resources in the Spratlys harms all claimant nations. Citizens from the region, who are directly impacted by the environmental attack on their sea and their fragile coral formations, must band together to create something like a Coral Reef Action Network, similar to the global Rainforest Action Network.

It is time to bring together the most qualified scientists who have experience studying SCS marine biodiversity and environmental sustainability to participate in a science policy forum. Their collaborative work may lead to the successful development of a South China Sea Science Commission. The model for such a body might appropriately be the Arctic Council, which was established in 1996 to coordinate Arctic policy among relevant nations and is viewed as a platform for scientists to share research. This proposed science-led body should also be formed outside the aegis of the United Nations in order to allow it more freedom of operation and protect it from China's veto power.

As a result, this august body of SCS marine scientists may inspire the member states of the Association of Southeast Asian Nations (ASEAN) to cooperate in regional marine resource management by issuing a formal call for a moratorium on further damaging reclamation work. McManus clarified the steps needed to bring these scientists together so that scientific facts can be enunciated jointly.

"I think rather than putting together a Commission right away, it would be better first

to encourage PRC to invite international researchers to a workshop on one of their new islands," McManus suggested in personal correspondence. "If that does not work, it could be done on Taiping (Taiwan), Spratly (Vietnamese) or Thitu (Philippines) islands/reefs."

### **Interfering in ASEAN**

While ASEAN cooperation on a regional marine resource management initiative based on solid scientific data would be a step forward, the possibility that such an endeavor could be embarked upon anytime soon was dealt a blow recently when Chinese Foreign Minister Wang Yi announced April 23 that China had reached a four-point consensus on the South China Sea issue with Brunei, Cambodia, and Laos. Representatives from the four nations averred that the territorial disputes were "not an issue between China and ASEAN as a whole," it was reported by China's state news agency Xinhua. The deal was made to keep the South China Sea issue off the ASEAN agenda and ensure that that the topic was not discussed at the multilateral forum.

According to former ASEAN Secretary-General Ong Keng Yong, speaking at the ASEAN Community forum in Jakarta April 25, the deal amounted to the four nations interfering with the domestic affairs of ASEAN. Ong expressed surprise, since neither Cambodia nor Laos is a claimant state in the South China Sea disputes. China has, however, become a dominant foreign player in both countries,



wielding significant financial and political influence in Phnom Penh and Vientiane.

## Chinese Efforts

Another impediment to the establishment of a science-based regional marine resource management initiative is that such an initiative would appropriately include scientists from China, many of whom are aligned with their government's island-building efforts in the South China Sea and in stark disagreement with scientists like McManus about the alleged damage being done. Dr. Wu Shicun, for example, who is president and senior research fellow at the National Institute for South China Sea Studies in Haikou, claims that, in order to protect the region's ecology, Beijing has adopted green engineering measures for use before, during, and after the reclamation work in the South China Sea.

When asked about the impact that dredging has on the SCS coral reefs, Wu stated in an email interview that, "China carries out its construction projects on the inner reef flat where corals have basically died. China gathers loose soil for its land reclamation on the flat lagoon basin, which is not fit for coral growth.

"China has adopted 'natural simulation,' applied a new type of 'cutter-suction dredging and land reclamation method,' and has paid attention to the spread of sediment floating in its construction," said Wu.

This assertion, however, is inconsistent with what has been witnessed to be taking place, with Chinese fishermen having been seen using large, extended propellers affixed to utility boats to

chop up the reefs in preparation for the construction of artificial islands.

Marine science policy demands conservation and sustainable practices to protect coral reef formations. According to Jon Barnett, "the causes and consequences of 'resource conflicts' are traditional concerns of international relations and these powerfully inform the environment-conflict thesis," he wrote in his book, *The Meaning of Environmental Security*.

This is not to say that China does not have many excellent coral reef scientists of its own, who surely recognize that it is in the best interests of Beijing to protect coral reefs, maintain sustainable fisheries, and to eventually avail themselves of eco-friendly tourism once tensions decline. However, for such environmental advocacy to have any impact on policymaking, scientists must be free from intimidation by the State and able to present fact-based findings, even if these findings conflict with the official government position. Scientists in China are simply not at that stage yet.

## Caught on Film

A recently aired BBC film featured video of the highly destructive activities of Chinese fishermen harvesting giant clams at a reef between Thitu Island and Tieshi Jiao. There was no identifiable name for this reef; hence it was referred to it as Checkmark Reef, based on its shape.

Writing in *The Diplomat*, Victor Robert Lee was the first to reveal that these Chinese fishermen were anchoring small boats and pulling them in wide arcs with their propellers



turning so as to dig into the sand and uncover giant clams. Satellite imagery confirmed the activity of hundreds of such “cutter boats” on Checkmark Reef, resulting in large areas where sand and dead coral were left piled into arc-like ridges.

At the East-West Center program held on May 3, McManus presented slides and videos taken while free diving only two months prior across reef flats at Thitu, Checkmark Reef, and Tieshi. This photographic evidence confirmed that sand and dead coral were indeed piled in ridges, with no signs of life.

Moreover, revisited satellite imagery of the Spratly Islands reveals that for each of China’s newly constructed rocks, the cutter boats had been operating on the reef prior to construction. These cutter heads grind up living and dead coral and their underlying substrates. Thus, it seems likely that when the coral reef scientists had been asked to assess each potential site, they truthfully reported that the coral was dead. This deadly dredging is what scientists believe constitutes an or environmental crime scene that is tantamount to ecocide.

“These areas of living coral reef would have been killed as the sand and silt from dredging and island construction leaked out to envelop them, just as is happening around the cutter boats,” McManus opined. “It can take a reef in these areas a thousand years to create a meter or so of gravel, sand and silt, and so places from which they have been removed are essentially permanently altered.”

While the damage from giant clam cutter boats is eventually recoverable, in the shorter term, the sheer volume of this activity threatens to reduce the supply of fish larvae and risk local extinctions along most of the overfished coastlines of the South China Sea. This environmental damage translates into fewer fish to feed the region’s people, exacerbating an already growing food security problem.

Coral reefs are the cathedrals of the South China Sea. It is time for more citizens to join the chorus and rally around marine scientists so that they can engage in regional cooperation and ocean stewardship to benefit all before it is too late.

**James Borton** is a faculty associate at the Walker Institute at the University of South Carolina and a non-resident fellow at the Saigon Center for International Studies at the University of Social Sciences and Humanities in Ho Chi Minh City.

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