

with β -emitters, your cells inside are being exposed,” says Richmond.

TEPCO says fishing is not routinely conducted in an area within 3 kilometres of where the pipeline will discharge the water. But Richmond is concerned the tritium could concentrate in the food web as larger organisms eat smaller contaminated ones. “The very chemistry of dilution is undercut by the biology of the ocean,” Richmond says.

Shigeyoshi Otsuka, an oceanographer and marine chemist at the Atmospheric and Ocean Research Institute of the University of Tokyo says that the organically bound form of tritium could accumulate in fish and marine organisms. “I think it is important to evaluate the long-term environmental impact of these radionuclides,” Otsuka says.

A spokesperson for TEPCO said that the company has raised marine organisms in seawater containing ALPS-treated water. “The tritium concentrations in the bodies of marine organisms reach equilibrium after a certain period of time and do not exceed the concentrations in the living environment,” the spokesperson said. Tritium concentrations then decrease once the organism is returned to untreated seawater.

TEPCO will continue to compare the health of organisms reared in diluted treated water with those reared in seawater.

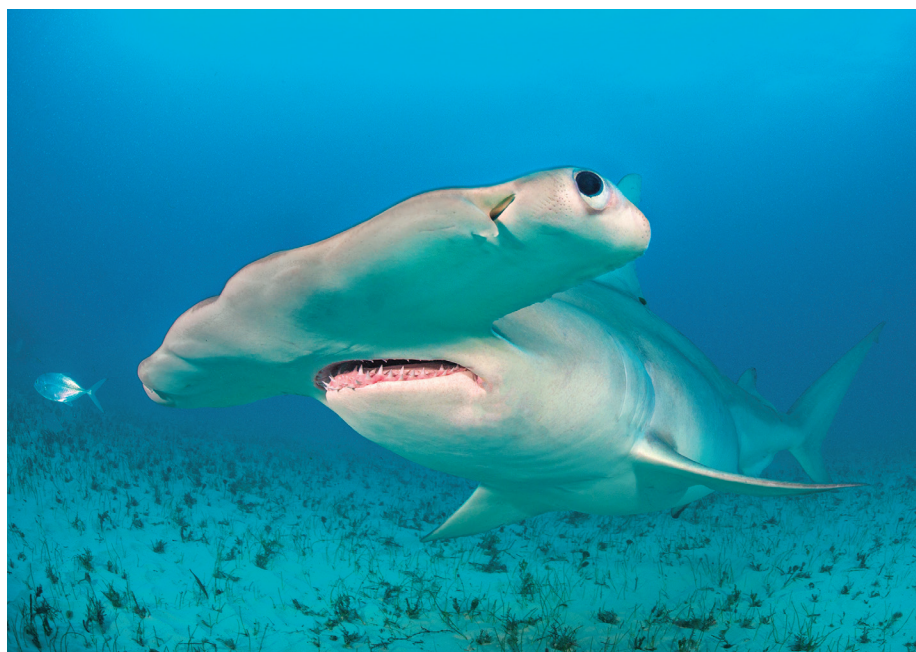
Has this been done before?

Smith points out that releasing tritium-contaminated water is common for nuclear power plants. He says that, in the United Kingdom, both the Heysham nuclear power station and the Sellafield nuclear-fuel-processing plant in release between 400 and 2,000 terabecquerels of tritium into the ocean each year.

Otsuka says that this is also the case in Japan: “More than 50 terabecquerel of tritium was discharged annually from each nuclear power plant in regular operation before the accident,” he says. TEPCO says that less than 22 terabecquerels of tritium will be released from the pipeline each year.

The International Atomic Energy Agency, which has been supervising the clean-up and management of Fukushima, is expected to release a final report on the site and the plan for the wastewater soon.

By Bianca Nogrady



Hammerhead sharks (*Sphyrna mokarran*) are critically endangered.

ALEX MUSTARD/NATURE PICTURE LIBRARY

BATTLES OVER FUNDING THREATEN GLOBAL EFFORT TO SAVE SPECIES

In the wake of last year’s historic biodiversity deal, nations are arguing over how to finance conservation.

By Natasha Gilbert

Disputes over how to finance conservation of the world’s plants and animals have resurfaced between countries – threatening their ability to meet goals laid out in a historic plan signed late last year, sources have told *Nature*.

At the COP15 biodiversity summit in Canada in December, more than 190 countries agreed to the Kunming-Montreal Global Biodiversity Framework, a deal including targets such as nations protecting and restoring 30% of the world’s land and seas by 2030. To ensure that all countries – particularly low- and middle-income nations (LMICs) – can meet these targets, those that signed the deal agreed to establish a trust fund by the end of this year and that, by 2030, wealthy nations should collectively be contributing US\$30 billion per year.

Several times during those negotiations, however, arguments erupted and threatened to derail the deal. Those disputes are now rearing their heads again.

During COP15, LMICs that are rich in biodiversity called for a new, independent fund

for species conservation. The current fund, run by the Global Environment Facility (GEF) within the World Bank in Washington DC, is difficult to access and slow to distribute funds, LMIC representatives said.

“We need real money from donor countries.”

But high-income nations, including some in the European Union, disagreed, and eventually it was decided that a newly established fund would be run by the GEF – although the deal set out provisions to continue discussions about an independent biodiversity fund.

This week, the GEF is set to start the process of establishing the biodiversity trust fund. But fissures have appeared that threaten to delay the proceedings, according to sources involved in the discussions, who asked not to be named to maintain diplomacy.

At the meeting, GEF council members – including representatives from 14 high-income

News in focus

countries and 18 LMICs – are slated to review a proposal, posted to the GEF’s website, to establish the fund with at total of at least \$200 million from at least three donors by December. But sources say that donor countries are reluctant to agree on any initial budget for the GEF, preferring to set up the trust fund first and then discuss funding pledges. LMICs, by contrast, say that the initial amount proposed is not enough. Researchers have suggested that the amount needed to fully safeguard and restore nature is around \$700 billion.

Brian O’Donnell, the director of Campaign for Nature, a conservation advocacy group based in Durango, Colorado, says that the success of the framework depends on donor countries making good on their pledges to increase biodiversity funding. In addition to agreeing to contribute \$30 billion annually by 2030, wealthy countries said that they would help to find \$200 billion per year from private and public sources by 2030. But the countries have not yet started to deliver on these promises.

“We need real money from donor countries,” O’Donnell says.

In a statement to *Nature*, a spokesperson said that the GEF is “optimistic” that this week’s council meeting will approve the trust fund. The ongoing discussions are “typical in multilateral environmental diplomacy”, they said.

Biodiversity delays

LMICs are keen to see whether establishing the trust fund in the GEF is a “genuine” move by donor countries to avoid the logistics and costs of an independent fund, allowing for faster money transfer, as they stated during COP15 negotiations, says Paul Matiku, executive director of Nature Kenya, a conservation organization in Nairobi.

Daniel Mukubi, a negotiator of the biodiversity-framework deal for the Democratic Republic of the Congo (DRC) who is based in Kinshasa, told *Nature* that some nations are not happy and are holding out for an independent fund. LMICs don’t have an adequate say in how the GEF funds are spent, he says. The DRC and other LMICs will not agree to the trust fund until after discussions on an independent fund, he adds. “We will not give up.”

These tensions could stall the trust fund’s adoption, which was planned for a GEF assembly in August, delaying biodiversity action even more – as it is, the Kunming-Montreal framework was agreed two years late, owing to the COVID-19 pandemic. Meanwhile, the clock is ticking: researchers have estimated that one million species are under threat of habitat loss because of factors such as climate change and agriculture.



DOUGLAS MAGNO/AFP VIA GETTY

Laboratories in countries such as Brazil sequence the genomes of SARS-CoV-2 variants.

‘PANDEMIC TREATY’: NATIONS WRESTLE WITH SHARING VIRUS DATA

Researchers say a global plan is needed if the world is to prevent the next pandemic.

By Mariana Lenharo

Earlier this month, negotiators met to discuss the latest draft of a ‘pandemic treaty’ – an agreement among countries worldwide about how to best respond to the next massive disease outbreak. One sticking point in the draft is how to compensate countries fairly for sharing viral genome sequences.

During the COVID-19 pandemic, researchers in countries from Brazil to South Africa to India kept tabs on how SARS-CoV-2 was evolving by determining the genetic sequences of viruses collected from infected people. They then uploaded those sequences to online data-sharing platforms, enabling the development of vaccines. But many of the countries that uploaded sequences were slow to receive the shots that were produced, if they got them at all.

This disconnect sets up a situation in which disease-affected countries might one day decide to keep information to themselves – an outcome that could be disastrous globally. To rein in a future pandemic swiftly, an equitable system for sharing data is needed, researchers and officials say.

The hope is that the pandemic treaty will

establish such a system, but, as negotiations have shown, it will be difficult to get countries to agree on what it should look like. “There’s room for agreement, because all countries want a reliable system,” says Suerie Moon, a global-health-policy researcher at the Geneva Graduate Institute in Switzerland. But “hammering down the details is not easy”.

A global-health controversy

Countries have decided not to share viral information for free before. In 2007, Indonesia stopped sharing samples of the avian influenza virus H5N1 with the World Health Organization (WHO), which monitors influenza globally and makes recommendations for vaccine composition. At the time, H5N1 was spreading globally and Indonesia had the highest number of infections in humans.

The nation made its decision because a pharmaceutical company in Australia intended to use a viral sample provided by Indonesia to develop an H5N1 vaccine – a product that the middle-income country would probably have struggled to afford. Withholding samples was Indonesia’s way of protesting against what it saw as an unfair system.

The controversy eventually led to the development of the Pandemic Influenza