



RESOURCE SECURITY WATCH

The American Foreign Policy Council's Review of
Changes to the Global Strategic Environment

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Related Categories: Energy Security; China; South Asia; Southeast Asia

A SLOWDOWN IN THE ATLANTIC

Two recent oceanographic studies have found that the Atlantic Ocean's circulation has declined by 15 percent since the mid-1900s. The phenomenon, formally known as Atlantic meridional overturning circulation, or AMOC, is a vital part of the Earth's climate regulation, and transports warm water from the Equator into the northern Atlantic and brings cold water back down to the Antarctic through the deep ocean. The dynamic, however, has been disrupted by the melting of Arctic sea ice, which has deposited more fresh water into the ocean. The system has a significant impact on Atlantic fisheries, and its recent decline has led to the collapse of cod fisheries and the explosion of lobster populations in the northeastern United States. But the most serious potential consequence could be sudden rise in sea levels on the eastern U.S. seaboard; research from 2009-2010 indicates that a similar slowdown in ocean circulation raised sea levels by five inches within that timeframe. (*Washington Post*, April 11, 2018)

JAPAN'S MINERALS FIND TILTS THE BALANCE WITH CHINA

Japanese researchers have discovered over 16 million tons of rare earth oxides in a 965 square mile patch of deep-sea Pacific Ocean mud, near Minamitorishima Island. The discovery, which is so large as to have been dubbed "semi-infinite," is strategically significant for Japan's technological potential, because rare earth minerals are essential for most modern technologies. But it also augurs a shift in the country's relations with rival China.

Currently, China dominates the rare earth metals industry, producing over 80 percent of all rare earth metals in the world - giving it enormous control over a resource vital to modern life. Beijing has used this position aggressively; in 2010, the Chinese government withheld shipments of rare earth metals to Japan due to a territorial dispute, and separately slowed production to increase prices. This, in turn, prompted Tokyo to begin its own quest for rare earth minerals. (*CNBC*, April 12, 2018)

PAKISTAN'S DEADLY WATER WOES

A extensively drug-resistant (XDR) strain of typhoid has infected over 800 people in Pakistan since 2016. The strain, which has killed four people so far, is believed to have originated in the sewers of Hyderabad, and spread to the population through Pakistan's ailing water infrastructure. Before the current outbreak, only four cases of an XDR strain of typhoid had been recorded globally. The Pakistan strain is resistant to five types of antibiotics, with only one oral antibiotic remaining that works effectively against the bacteria. But a single mutation could render that antibiotic ineffective as well. Doctors expect this stronger strain of typhoid to spread throughout the world, replacing weaker strains in other regions - and in the process making Pakistan's illness a global problem. (*New York Times*, April 13, 2018)

RISING SEAS THREATEN ATOLL INFRASTRUCTURE

A recent study indicates that rising seas will not have to completely submerge coral atoll islands to render them uninhabitable. Coral atoll islands are prevalent in the Pacific and Indian Oceans, hosting nations such as the Marshall Islands and the Maldives. As seas rise, however, "overwashing," or wave-driven flooding, increases. Overwash can significantly contaminate groundwater supplies, and persistent flooding would leave aquifers with no time to recover in between overwash incidents. The study suggests that overwashing could become an annual phenomenon for thousands of coral atolls by as early as 2030. In that event, maintaining civilian and military infrastructure in such places would become extremely difficult and prohibitively expensive. (*Science Advances*, April 25, 2018)