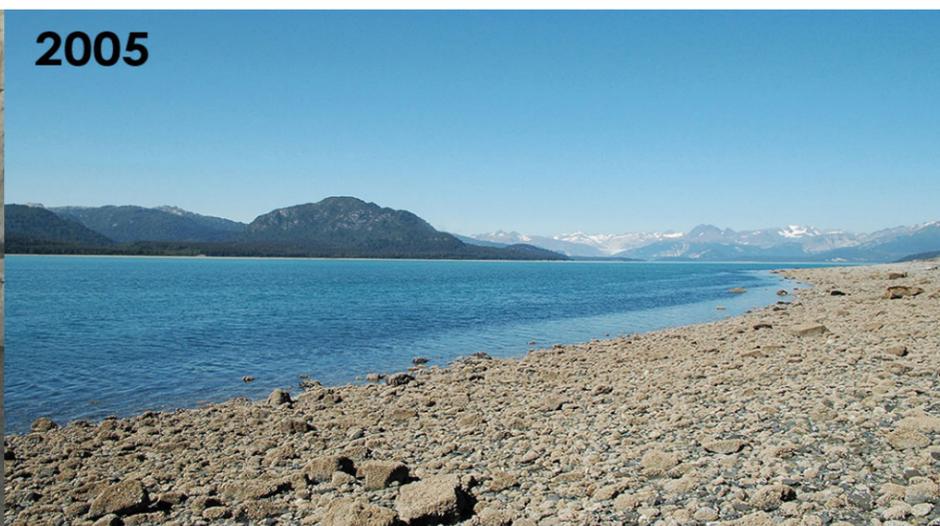




1880



2005

The Muir Glacier, in Glacier Bay National Park in Alaska, has undergone well documented and very rapid retreat. According to Wikipedia, from 1892 to about 1980, it retreated nearly 20 miles; and from 1941 to 2004, it retreated over 7.5 miles and thinned by over 800 meters or 2,600 feet. Ocean water has filled the valley, replaced the ice, and created Muir Inlet at right. Photos by United States Geological Survey, at: www.demilked.com/global-warming-climate-change-photographic-proof-united-states-geological-survey/

Bomb Test Fallout Spread Farther and Deeper Than We Knew

By Kelly Lundeen

From the South and North Poles, to the deepest ocean trenches, human-made radioactive material is being discovered in new places. Two recent studies reveal the distances that radioactive effluent and fallout have been dispersed. One international research team found radioactivity in all 17 glaciers they tested in both of the Earth's hemispheres.

Another global study found the first evidence of fallout from bomb tests in marine life in the deepest place on Earth. With unabated production of radioactive waste, runoff, gases, and accidents, it's no surprise to find it farther away and deeper than ever.

Fallout Found from High Glacier to Deep Ocean

The first study found measured amounts of radioactive cesium-137 and americium-241 in glacial sediments thousands of times greater than expected. "Our samples are exceptional in terms of the levels of fallout radionuclides that we find outside of nuclear exclusion zones" (contaminated "no-go" areas), said Caroline Clason, a member of the study team and a lecturer in Physical Geography at the Univ. of Plymouth, UK. "We're talking about weapons testing from the 1950s and 1960s onwards, going right back in the development of the bomb," Clason told Agence France-Presse. "If we take a sediment core you can see a clear spike where Chernobyl was [in April 1986], but you can also see quite a defined spike in around 1963 when there was a period of

quite heavy weapons testing." While most of the fallout from Fukushima has yet to return to land, evidence is already appearing.

After an accident or explosion, radioactive particles travel through the atmosphere and fall to Earth as radioactive rain or snow. Radioactive particles in snow fall on glaciers settling into the temporarily stable environment. However, Clason warned, "we all know that glaciers are increasingly melting and that material has to go somewhere." The study did reveal some good news: the unique glacial sediment where radioactive particles settle is very efficient at accumulating those contaminants and may provide opportunities for bioremediation.

As radioactive glacial sediments enter the ocean, it will affect marine life which has already been doused with radioactivity. That is the subject of "Penetration of Bomb Carbon-14 into the Deepest Ocean Trench," published in April by the American Geophysical Union (AGU). (If carbon-14 sounds familiar, you may remember that it is used to determine the age of geological samples using carbon dating.) An AGU news release explains, "Thermonuclear weapons tests conducted during the 1950s and 1960s doubled the amount of carbon-14 in the atmosphere when neutrons released from the bombs reacted with nitrogen in the air." Bomb test carbon has been recorded in marine life at the ocean's surface since the late 1950s. As these animals die and fall to the ocean floor, deep sea crustaceans as far as seven miles (11 kilometers) below the surface

of the Pacific Ocean in the Mariana Trench, feed on their remains and the radioactivity is passed through the food web. "However, the penetration of bomb [test] carbon-14 into the deepest fauna has not been reported until now," the study said.

The amount of human-made radioactivity moving into the Pacific is mushrooming. New concern is being raised by the United Nations Secretary-General António Guterres over a leaking concrete dome built in the Marshall Islands. The concrete covers a large volume of radioactive debris that was collected from the detonation of 67 bomb tests done by the US, contaminating the islands and their people. Radioactive materials from the testing were pushed into an unlined pit and capped with the concrete. Mr. Guterres recently visited the islands, amplifying the voices of Marshall Islanders worried about radioactivity leaching into the ocean through the bottom of the hole, and the increasing potential for damage to the concrete dome by tropical storms.

From the depths of the oceans to the polar regions, more areas are being impacted by the radioactive legacy of humans, impacts accelerated with climate change which itself is rapidly accelerating.

—Sources: The *London Sunday Express*, May 19; American Geophysical Union, May 8 & 18; Agence France-Presse, May 16 & Apr. 10; CNN, May 13; Live Science online, Apr. 15; and European Geosciences Union, April 10, 2019.

US Halts Disclosure of Nuclear Weapon Totals, Afghan War Facts, Missile Defense Data

By John LaForge

The Trump administration has halted, without explanation, the routine practice of reporting the current number of nuclear weapons in the US arsenal, the AP and United Press International report. The new secrecy will make it nearly impossible to estimate the true cost of nuclear weapons, to show adherence to arms control treaties, or to pressure others nuclear weapons states to disclose the size of their arsenals.

The secrecy decision was revealed in an April 5 letter from the Department of Energy's Office of Classification to the Federation of American Scientists (FAS). Hans M. Kristensen, director of the group's Nuclear Information Project, said the FAS regularly asks for the information and that it's been made public for decades.

"The decision walks back nearly a decade of US nuclear weapons transparency policy—in fact, longer if including stockpile transparency initiatives in the late 1990s," Kristensen wrote in an April 17 memo, according to the AP.

There is no national security rationale for keeping the number secret, Kristensen told the AP, adding that it is "unnecessary and counterproductive." "This is curious," he reportedly said, "since the Trump administration had repeatedly complained about secrecy in the Russian and Chinese arsenals. Instead, it now appears to endorse their secrecy."

Military Classifies News of War in Afghanistan

In April, the Pentagon halted its public disclosure of how much of Afghanistan is controlled by the Tali-

ban, adding to a long list of progress reports from the war that are now being kept secret.

John Sopko, US Inspector General for Afghanistan Reconstruction, said to the *New York Times*, "We're troubled by it." Keeping Sopko's reports secret means, "The only people who don't know what's going on and how good or bad a job we're doing are the people paying for it," he said. Sopko and Congress have access to some of the classified materials.

The additional restrictions on public information about the 18-year-long war comes on top of the October 2017 end to reporting Afghan military casualties, performance assessments for the Afghan military, and anti-corruption efforts by the Afghan Ministry of Interior, David Zucchini reported May 1st for the *Times*. Anthony Cordesman at the Center for Strategic and International Studies told the *Times*, "There is no reliable way to know who is 'winning' or the level of stalemate."

Pentagon Secrecy Hides Missile Defense Program

Today's increased military secrecy follows the March 2018 announcement by the Pentagon's Missile Defense Agency (MDA) that it would no longer post the public calendar of upcoming missile tests and will keep the testing schedule classi-

fied. The schedule will only be made available to Congress the *Seattle Times* reported April 11, 2018. Lt. General Samuel Greaves, director of the MDA which spans 14 time zones and employs over 9,000 military and civilian workers, reportedly said his test results will be made available after launches.

Expanding military control of information continues a pattern. Since June 8, 2002, the Pentagon has been allowed to keep secret all key missile defense test results. The military's blanket classification of performance data was imposed following the disclosure of scientific evidence of a string of failed or faked tests and fabricated results, and after the FBI began an investigation into fraud and cover-ups inside the program. Then Secretary of Defense Donald Rumsfeld also waived all procurement oversight rules for the agency, laws designed to keep federal programs on budget.

Bruce Gagnon of the Global Network Against Weapons & Nuclear Power in Space wrote in June 2017 that, "Many of the tests are scripted, what [physicist] Michio Kaku calls 'strap down rabbit tests.' They can't afford to release [details]. They would sink their boat."

With secret test data, secret schedules, and an unaccounted, bottomless budget, the MDA's impossible mission—the effort to "hit a bullet with a bullet"—has cost over \$200 billion since 1983 and is guaranteed to gobble up billions more.

