



National Association of Marine Laboratories

Position Paper

Scientific opposition to Japan's planned release of over 1.3 million tons of radioactively contaminated water from the Fukushima-Daiichi Nuclear Power Plant disaster into the Pacific Ocean. -December 2022

The National Association of Marine Laboratories (NAML), an organization of more than 100 member laboratories, opposes Japan's plans to begin releasing over 1.3 million tons of radioactively contaminated water from the Fukushima-Daiichi Nuclear Power Plant into the Pacific Ocean commencing in 2023. This opposition is based on the fact that there is a lack of adequate and accurate scientific data supporting Japan's assertion of safety. Furthermore, there is an abundance of data demonstrating serious concerns about releasing radioactively contaminated water.

The Pacific Ocean is the largest continuous body of water on our planet, containing the greatest biomass of organisms of ecological, economic, and cultural value, including 70 percent of the world's fisheries. The health of all the world's ocean ecosystems is in documented decline due to a variety of stressors, including climate change, over-exploitation of resources, and pollution.

The proposed release of this contaminated water is a transboundary and transgenerational issue of concern for the health of marine ecosystems and those whose lives and livelihoods depend on them. We are concerned about the absence of critical data on the radionuclide content of each tank, the Advanced Liquid Processing System, which is used to remove radionuclides, and the assumption that upon the release of the contaminated wastewater, "dilution is the solution to pollution."

The underlying rationale of dilution ignores the reality of biological processes of organic binding, bioaccumulation, and bioconcentration, as well as accumulation in local seafloor sediments. Many of the radionuclides contained in the accumulated waste cooling water have half-lives ranging from decades to centuries, and their deleterious effects range from DNA damage and cellular stress to elevated cancer risks in people who eat affected marine organisms, such as clams, oysters, crabs, lobster, shrimp, and fish. Additionally, the effectiveness of the Advanced Liquid Processing System in almost completely removing the over 60 different radionuclides present in the affected wastewater—some of which have an affinity to target specific tissues, glands, organs, and metabolic pathways in living organisms, including people—remains a serious concern due to the absence of critical data.

The supporting data provided by the Tokyo Electric Power Company and the Japanese Government are insufficient and, in some cases, incorrect, with flaws in sampling protocols, statistical design, sample analyses, and assumptions, which in turn lead to flaws in the conclusion of safety and prevent a more thorough evaluation of better alternative approaches to disposal. A full range of approaches to addressing the problem of safely containing, storing, and disposing of the radioactive waste have not been adequately explored, and alternatives to ocean dumping should be examined in greater detail and with extensive scientific rigor.

NAML calls on the Government of Japan and International Atomic Energy Agency (IAEA) scientists to more fully and adequately consider the options recommended by the Pacific Islands Forum's Expert Panel. We believe public policy decisions, regulations, and actions must keep pace with and make use of relevant advancements in our scientific understanding of the environment and human health. In this case, we believe policy makers have not fully availed themselves of the available science and should do so before making any final decisions on releasing this contaminated water into the Pacific. NAML members are unified in our concern about use of the oceans as a dumping ground for radioactively contaminated water and other pollutants because such actions can negatively affect the long-term health and sustainability of our planet.

We urge the Government of Japan to stop pursuing their planned and precedent-setting release of the radioactively contaminated water into the Pacific Ocean and to work with the broader scientific community to pursue other approaches that protect ocean life; human health; and those communities who depend on ecologically, economically, and culturally valuable marine resources.

Adopted by the NAML Board of Directors, December 12, 2022.