

Compatibility Determination

Title

Compatibility Determination for Commercial Ash Scattering, Mariana Trench National Wildlife Refuge.

Refuge Use Category

Other Uses

Refuge Use Type(s)

Cemetery

Refuge

Mariana Trench National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

Presidential Proclamation 8335 (6 Jan 2009) established the Mariana Trench Marine National Monument in an area of 95,216 sq. miles, under the authority of the Antiquities Act of 1906 (54 U.S.C. 320301). The Secretary of the Interior has management responsibility, except that the Secretary of Commerce has primary responsibility for the fishery related activities. Secretary's Order 3284 (16 Jan 2009) directed the Director of the Fish and Wildlife Service to manage the Trench Unit (Mariana Trench NWR) as a unit of the National Wildlife Refuge System. Therefore, the following are purposes of the Mariana Trench NWR:

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) (Fish and Wildlife Act of 1956).

"... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956).

"... conservation, management, and ... restoration of the fish, wildlife, and plant resources and their habitats ... for the benefit of present and future generations of Americans..." 16 U.S.C. § 668dd(a)(2) (National Wildlife Refuge System Administration Act).

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 (Refuge Recreation Act).

"... the Secretary ... may accept and use ... real ... property. Such acceptance may be

accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

No.

What is the use?

Commercial (for-profit) scattering of cremated human remains (cremains) over the Mariana Trench. "Cemetery" use type includes the spreading of ashes.

Is the use a priority public use?

No

Where would the use be conducted?

The Mariana Trench National Wildlife Refuge (NWR) is comprised of submerged lands (sea floor). The Refuge is approximately 940 nautical miles (NM) long, and averages 38 NM wide and encompasses the outer trench swell, inner slopes, and steep walls of the Mariana Trench; and the adjacent abyssal plain. The Refuge lies along the convergent plate boundary where the denser Pacific Plate plunges beneath the lighter Philippine Sea Plate. The outer trench swell marks the area on the abyssal plain at about 20,000 feet below sea level where the subducting plate begins its descent into the Earth's mantle. The deepest feature of the Refuge is 90 miles south of Guam at Sirena Deep - the third deepest point on Earth at about 35,000 feet below sea level (Figure 1).

The most likely location for scattering ashes would be over Sirena Deep. The ocean floor at such depth consists of a biogenous ooze composed of microscopic shells from both animal and plant plankton. Other locations in the Refuge will be evaluated on a case-by-case basis. All locations will meet federal ash scattering requirements to be more than 3 miles from any shoreline.

When would the use be conducted?

Ash scattering may occur any time of the year over Sirena Deep. The USFWS in consultation with NOAA and others, as applicable, will evaluate each new proposed location and may put limits on the activities to ensure that negative impacts to resources are avoided or limited.

How would the use be conducted?

A specially designed sift-proof urn that releases ashes at depth (33,000 feet) while allowing pressure equalization with sea water will be mounted to a descent structure on board a platform vessel. The release will be filmed at-depth using the onboard camera and lighting powered by the onboard battery. After release, container will remain open, and the descent structure ascends back to the vessel.

The typical volume of cremation ashes is 200 cubic inches per individual (1 cubic inch per pound). With a projected target of up to 30 individuals per year, the maximum volume of ash potentially dispersed in the water column 2,000 feet above the trench floor each year is estimated at 3.47 cubic feet. This is approximately the size of a mini-fridge (Figure 2). This CD may be re-evaluated if the projected total volume changes.

An approved Special Use Permit will be needed for each expedition offering commercial (for-profit) scattering of cremated remains. The permit application shall include platform vessel type, dates in which the expedition will be within the monument, and number of individual cremains to be scattered during the expedition. Casual, individual, non-commercial scattering of cremated remains will not require an SUP. The definition of casual use is “any short-term non-commercial activity which does not cause appreciable damage or disturbance to the public lands, their resources or improvements, and which is not prohibited by closure of the lands to such activities.” “Appreciable damage or disturbance... to... resources” would include potential effects to listed species.

In addition to the SUP, the Environmental Protection Agency (EPA) also regulates ash scattering through a general permit under the Marine Protection, Research and Sanctuaries Act, also known as the Ocean Dumping Act. Release of cremated remains at sea must occur at least three nautical miles from shore and in ocean waters at least 600 feet deep. Additionally, the EPA requires notification within 30 days following the release.

Why is this use being proposed or reevaluated?

A commercial entity has requested permission to advertise and provide a commercial service to scatter ashes over Sirena Deep. The world-famous mystique of the Mariana Trench as “*the deepest place on Earth*” is the anticipated draw for this economic venture. There are no other areas outside the Refuge within the U.S. exclusive economic zone that provide this unique opportunity.

Availability of Resources

In general, the Refuge will incur no expense except administrative costs for review of the application and issuance of Special Use Permits (SUP). The Refuge currently has adequate budget and staff to support reviewing applications and issuing up to three SUPs annually for the proposed commercial activity. The administrative cost to review the permit requests, coordinate with applicants, and issue up to three SUPs annually is estimated at \$4,700.00 annually. If more than three applications are received in a given year, applicants will be charged a cost recovery fee of \$1,500 per SUP to reimburse the United States for processing and issuing the SUP.

Permits are not required for casual, individual, non-commercial ash scattering.

Permittees would pay the cost of all their actions related to the Refuge. Permittees working in the Refuge would have to be self-sufficient for safely accessing the Refuge and would be required to obtain any additional permits needed for their actions. Any accidents or responses involving the permittees will be their sole financial responsibility. Any funds expended by the USFWS above general SUP administration, or as a result of an accident or response, will be reimbursed by the permittee. At this time, the Service does not require liability insurance or bonds for commercial ash scattering. However, permittees would be liable for damages to Service resources during activities related to commercial ash scattering.

Anticipated Impacts of the Use

The effects and impacts of the proposed use to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use. This CD includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” Air and water quality, geology and soils, and refuge management and operations will not be more than negligibly impacted by the action and have been dismissed from further analyses.

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

This use contributes to the monument and refuge goals by providing opportunities for economic ventures that are compatible with the ecosystem and marine resources, as described in the Mariana Trench Marine National Monument's Management Plan, Goal 5: “Assess and provide opportunities for tourism, recreation, and economic ventures that are compatible with the Monument's ecosystem, marine resources, and other objects of scientific interest” (NOAA, USFWS and CNMI DLNR 2024).

Short-term impacts

The water column is not part of the Refuge. The ocean floor at the bottom of the Mariana Trench consists of a biogenous ooze composed of microscopic shells from both animal and plant plankton.

Human ashes, or cremains, are primarily composed of tricalcium phosphate (TCP), a naturally occurring mineral in the ocean, and are considered environmentally safe. Fish and marine life are not attracted to them as a food source, and there are no known negative impacts on the marine ecosystem. When released 2,000 feet above the trench floor, the ash is expected to completely disperse before settling to the bottom and be indistinguishable from the biogenous ooze and other marine sediment.

Providing for economic ventures that are compatible with the ecosystem and marine resources may have a minor positive local economic impact through revenue generated from vessel charters, associated services (maintenance, insurance, etc.), and job creation (vessel crew).

Long-term impacts

TCP is a natural component of various marine organisms and in marine sediments. There are no anticipated long-term negative impacts on the marine ecosystem. A successful economic venture could lead to potential positive long-term economic impacts by encouraging development of new innovative business ventures that are compatible with Refuge resources. This CD is scheduled to be re-evaluated in ten years.

Public Review and Comment

The draft compatibility determination was made available for public review and comment for 16 calendar days, from July 9-July 26, 2025. The public was informed of this comment opportunity through a news release to local media in the Northern Mariana Islands and Guam. Territorial partner agencies and the Mariana Trench Monument Advisory Council members were asked to review and comment on the draft compatibility determination. A hard copy of this document was posted at the Visitor Contact Station at American Memorial Park on Saipan. It was made available electronically on the refuge website (www.fws.gov/refuge/mariana-trench). No comments were received on the Draft Compatibility Determination.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

1. Applicants for conducting commercial ash scattering over the Refuge would be required to obtain a USFWS SUP for each expedition that offers commercial ash scattering. The permit application shall include platform vessel type, dates in which the expedition will be within the monument, and number of individual cremains to be scattered during the expedition. These permits may stipulate more detailed access restrictions and regulations to protect wildlife or Refuge integrity from anticipated site-specific negative effects caused by the project.
2. Permittees are responsible for acquiring and/or renewing any necessary additional permits prior to commencing each commercial ash scattering expedition.
3. Permittee would be responsible to cover all Refuge costs associated with the commercial ash scattering beyond what is predicted in this CD.
4. The Refuge Manager/ Superintendent or designated representative can suspend or modify conditions or terminate commercial ash scattering that is already permitted and in progress should unacceptable, unforeseen, or unexpected impacts or issues arise or be noted.
5. Up to three SUPs would be authorized each year free of charge, subject to availability of staff to process the applications. Applicants will be charged a cost recovery fee of \$1,500 per application if more than three applications are received.
6. Cremains must be fully processed, not visibly distinguishable, and completely dispersed. (Dental and other medical metal implants will be removed and separated from the ashes)
7. Ash scattering is only allowed in non-thermal areas, well away from hydrothermal features, mud volcanoes, and Shinkai Seep Field. The approved location for ash scattering will be included in the SUP.
8. Design of sift-proof urn that releases ashes at target depth must be approved by Refuge Manager/ Superintendent.
9. Since the urn and release mechanism will be experimental due to the extreme environment, any non-anticipated disturbance would immediately be brought to the attention of the Refuge Manager/ Superintendent.
10. Deployment of urn(s) would be postponed when whales are within 100 yards of the platform vessel, or when other protected species are within 50 yards of platform vessel. The activity would recommence only after the animal(s) depart the area.
11. No memorial items (plaques, urns, etc.) may be left in the Refuge.
12. The permittee will file required EPA reports for cremains burial at sea within 30 days after each expedition (<https://burialatsea.epa.gov/Form>).

Justification

The EPA has issued a general permit under the Marine Protection, Research and Sanctuaries Act to authorize the burial of human remains at sea, including release of

cremated remains, beyond 3 nautical miles from shore. The general permit is published in the Code of Federal Regulations at 40 CFR 229.1.

Commercial ash scattering as outlined in this compatibility determination, would not conflict with the national policy to maintain the biological diversity, integrity, and environmental health of the refuge. Based on available science and best professional judgement, the Service has determined that ash scattering over the Refuge, in accordance with the stipulations provided here, would not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the refuge/monument. Rather, appropriate commercial ash scattering would be a use of the Mariana Trench NWR through which the public can engage in economic ventures that are compatible with the Monument's ecosystem, marine resources, and other objects of scientific interest.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2035

Literature Cited/References

Marine Protection, Research, and Sanctuaries Act. 16 U.S.C. § 1431 et seq. and 33 U.S.C. §1401 et seq. Available at: [U.S.C. Title 16 - CONSERVATION](#) and [U.S.C. Title 33 - NAVIGATION AND NAVIGABLE WATERS](#)

National Oceanic and Atmospheric Administration (NOAA), U.S. Fish and Wildlife Service (USFWS) and Commonwealth of the Northern Mariana Islands Department of Land and Natural Resources (CNMI DLNR). 2024. Mariana Trench Marine National Monument ~ Management Plan. 284 pp. Available at: <https://www.fisheries.noaa.gov/s3//2024-06/Mariana-Trench-Marine-National->

[Monument-Management-Plan-202405-FINAL.pdf](#)

Code of Federal Regulations. 40 CFR 229.1 Burial at sea. Available at: [eCFR :: 40 CFR 229.1 -- Burial at sea.](#)

Code of Federal Regulations. 43 CFR 2920.0-5 – Public lands-Interior--Leases, permits, and easements--Definitions. Available at: [eCFR :: 43 CFR 2920.0-5 -- Definitions.](#)

Figures

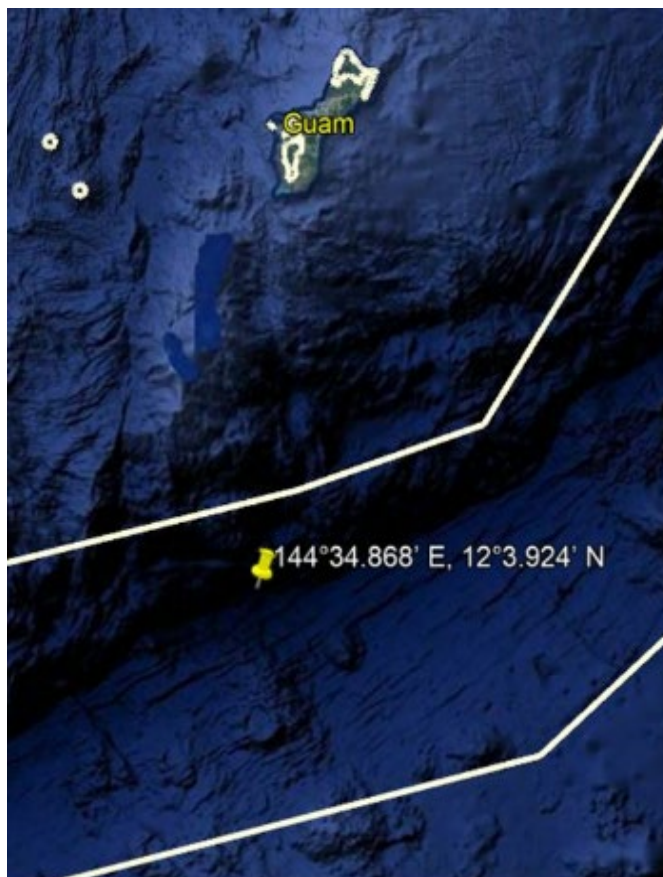


Figure 1. Location of Sirena Deep

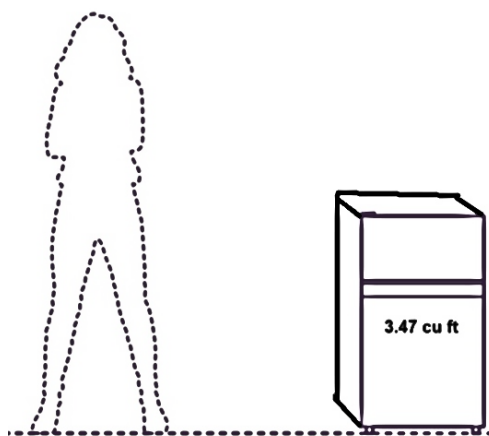


Figure 2. Maximum annual volume visualization