ENVIRONMENTAL POLICIES

Policy and Designations

Environmental stewardship and protection in Antarctica are essential. The U.S. is a signatory to the Antarctic Treaty (1959) and the Protocol on Environmental Protection to the Antarctic Treaty (Antarctic-Environmental Protocol; 1991). These agreements are implemented under the "Antarctic Conservation Act of 1978" (ACA; 16 U.S.C. 2401 et seq.).

The Antarctic Treaty sets Antarctica aside for peaceful purposes, primarily scientific research, cooperation and the exchange of information. The Antarctic-Environmental Protocol commits to comprehensive protection of the Antarctic environment, including a ban on commercial mineral exploration. Through its six annexes, it requires an environmental impact assessment of all proposed actions and the conservation of native fauna and flora, including management activities to limit introduction of non-native species. The Antarctic-Environmental Protocol also establishes procedures for waste disposal and waste management, prohibits marine pollution and establishes a process for area protection and management. USAP participants' adherence to it relies on educational programs in each of these areas.

U.S. federal regulations implementing the ACA can be found in 45 C.F.R. §§ 640, 641, 670–674. For more information, contact ASC Environmental at Environmental@usap.gov.

Antarctic Specially Managed Areas

Antarctic Specially Managed Areas (ASMAs) are areas in which careful planning and coordination are required to avoid activity conflicts, improve coordination among field parties and reduce the risk of cumulative environmental impacts.

Three ASMAs are located in the Peninsula region: Admiralty Bay, King George Island (ASMA 1), Deception Island (ASMA 4) and Southwest Anvers Island and Palmer Basin (ASMA 7). Before entering or conducting research in any of these ASMAs, ensure you understand the management objectives and requirements for working there by reviewing the ASMA

management plans on the Antarctic Treaty website at https://www.ats.aq/devph/en/apa-database.

Antarctic Specially Protected Areas

Antarctic Specially Protected Areas (ASPAs) are areas designated to protect outstanding environmental, scientific, historic, aesthetic or wilderness values. This includes protecting ongoing scientific research from inadvertent disruption or contamination. ASPAs require an ACA permit to enter. Numerous ASPAs are located along the Peninsula. Management plans for each one, including the values to be protected and an environmental code of conduct, can be found at https://www.ats.aq/devph/en/apa-database. Several ASPAs are also located within ASMA 7 or can be accessed from Palmer Station, including ASPA 113 – Litchfield Island, ASPA 117 – Avian Island, ASPA 139 – Biscoe Point, ASPA 176 – Rosenthal Islands and ASPA 182 – Western Bransfield Strait and Eastern Dallman Bay.

The region surrounding Palmer Station (ASMA 7) contains 14 restricted zones on islands and points, with the aim of protecting breeding birds, seal haul-outs and vegetation. All restricted zones, except for Bonaparte Point, include a 50-meter (~165 feet) marine buffer. Restricted-zone entrance does not require a permit but does require prior authorization from the NSF environmental program manager. Details of the restricted zones and site-specific guidance can be found in the management plan.

In addition to ASPAs and ASMAs are Historic Sites and Monuments (HSMs) designated by the Antarctic Treaty. **You are responsible for knowing the latest restrictions and guidelines for all locations you plan to visit.** Discuss your field plans with the Boathouse, the Palmer Station manager or Antarctic Support Contract (ASC) project implementer to ensure all protected area requirements are met.

Visitor Site Guidelines

Visitor site guidelines provide specific instructions for conducting activities at frequently visited Antarctic sites. This includes practical guidance on visiting the sites, considering their environmental values and sensitivities. Permission to conduct recreational visits to sites with visitor site guidelines must be requested from NSF, and if approved, reported in your environmental end-of-season (EOS) report. For more information and a list of sites, visit https://www.ats.aq/devAS/Ats/VisitorSiteGuidelines. For more information on ASMAs, ASPAs or HSMs, visit the Antarctic Treaty website at https://www.ats.aq or contact the ASC Environmental team at Environmental@usap.gov.

ACA Permits

Without an ACA permit, it is illegal to (1) take native mammals, birds or terrestrial plants, (2) engage in harmful interference of native mammals, birds or terrestrial plants, (3) enter ASPAs, (4) introduce non-native species to Antarctica, (5) introduce substances to Antarctica designated as waste, (6) discharge designated waste or (7) import certain Antarctic items into the U.S. or export them to another country. It is important to know that the term "take" also applies to dead mammals or birds, including parts (e.g., teeth, feathers, bones) or eggs.

The processing time for an ACA permit averages three months. Violations of the ACA or conditions of a permit can result in fines. Research with marine invertebrates, marine plants or fish does not require an ACA permit if it does not occur within an ASPA.

An ACA permit is not needed for entry into an ASMA. However, personnel entering or working in an ASMA are required to know and follow the code of conduct specified in the applicable ASMA management plan. If there are questions regarding ASMAs, ASPAs or ACA permits, refer to the permit language, consult with the field supervisor or commercial project coordinator or contact the NSF ACA permit officer at ACApermits@nsf.gov.

Specimen Collection and Permits

Teams should refer to the project's permit regarding specific specimen collection. The following applies to all research conducted in the Antarctic:

- Collecting souvenirs is not allowed. Do not remove any specimens from Antarctica, including feathers, rocks or shells, without an ACA permit from NSF. This includes historical evidence of humanity's presence (e.g., whale bones from early whaling expeditions).
- Do not take, handle or remove items that could potentially be historic artifacts. The Antarctic Treaty guidelines state "[i]f there is uncertainty as to the age of a newly discovered historic artifact/site it should be treated as a pre-1958 artifact/site until its age has been established." If a USAP participant finds something that may have historical significance, they must note the location with GPS coordinates, take a photo of the artifact and notify the ASC Environmental team of the artifact's presence at Environmental@usap.gov. The "Marine Mammal Protection Act of 1972" prohibits U.S. citizens from taking or importing marine mammals or parts of marine mammals into the U.S. without a permit. The take or harmful interference of marine mammals requires permits from both the National Oceanic and Atmospheric Administration and NSF.

Environmental Training

All personnel deploying to, or conducting field work along, the Antarctic Peninsula are required to attend environmental trainings provided by the field supervisor or designee to ensure they understand what is expected under the ACA and the Antarctic Treaty.

Wildlife

Personnel must not interfere with wildlife unless they have an ACA permit to do so and are specifically trained for the activity

being conducted. In general, always maintain a distance of at least three meters (15 feet) from animals. If an animal's behavior is altered or disturbed, increase that distance. Incidental disturbance of wildlife is not allowed unless specifically permitted. This means that if your project is not wildlife focused, you may not disturb wildlife while conducting your project, including on any routes to access your field sites.

Highly Pathogenic Avian Influenza

Highly pathogenic avian influenza (HPAI) H5N1 outbreaks were first detected in the Antarctic Peninsula region in December 2023. Outbreaks in the Peninsula spread in the 2024–2025 season, including a confirmed outbreak around Palmer Station. There continues to be a high risk that HPAI will spread in Antarctica. In response, USAP requires enhanced biosecurity protocols in Antarctica, including prelanding surveillance, decontamination of boots and gear between wildlife colony visits, use of appropriate personal protective equipment when in contact with potentially infected animals, reporting of suspected HPAI outbreaks to the NSF Office of Polar Programs (OPP) Environmental team at OPP-ENV@nsf.gov and enhanced management of areas impacted by HPAI. The status of HPAI outbreaks in the Peninsula may change rapidly, and certain USAP field activities may be impacted by HPAI outbreak status.

Non-native Species

No non-native plant or animal species may be introduced onto land, on ice shelves or into water in the Antarctic Treaty area, except in accordance with an ACA permit. To avoid introducing non-native species, personnel must clean all science gear and personal equipment before arriving in Antarctica.

Use boot washing stations before departing a USAP support vessel for field sites and when moving between field sites. To avoid cross-contamination, personnel must also clean all gear and personal equipment before transiting between Antarctic field sites. If a suspected non-native species is observed in

Antarctica, immediately report it to the camp manager or daily check-in POC.

Sample Site Markings and Equipment Installation

If a research group need to mark sample sites, it must use reusable, recoverable flags. If flags cannot be used, the only acceptable paint marker is chalk paint, which can be washed or worn away. Prior approval for using paint markings must be obtained from the OPP Environmental team. If a group needs to install equipment with the use of mechanical fasteners (e.g., bolts drilled into rock), prior approval from the OPP Environmental team is required and use of such fasteners must be minimized.

Spill Prevention, Cleanup and Reporting

All fuels, chemicals and hazardous liquid wastes must be stored with secondary containment. Where secondary containment is not feasible, employ best management practices to protect the environment from a release. These practices include regular inspections of all liquid stores during transport, using absorbent materials, using two people for transfers, ensuring spill response capabilities are available and using any other means as necessary or prudent.

Primary storage containers must be of durable construction and sealed when not in use. Appropriate secondary containment and spill kits must be available for any fueling operation to reduce the occurrence of spills. All spills of designated pollutants (e.g., fuel, glycol, transmission fluid) must be immediately reported upon discovery, regardless of the volume spilled. At camps with a camp manager, report spills directly to the camp manager. At camps without a camp manager, report spills to the Palmer Station manager or the POC for daily check-ins. All spills must be cleaned to the greatest extent practicable and disposed of through the hazardous waste system.

Waste Management

Discuss waste management with the field supervisor or project implementer before camp personnel deploy to the field. Protocols may vary by camp type and location (e.g., if the camp is in or near an ASPA). In general, everything taken into the field must be brought out.

Waste generated at field camps is removed by camp staff and grantees and transported to supporting stations or ships for disposal. Peninsula field camps dispose of gray water into the intertidal zone, though in some cases everything must be packed out (e.g., when camps are in or near ASPAs). To expedite the camp takeout process, consolidate or compress items to make packing easier.

Raw chicken products are not allowed at field camps due to the potential for avian byproducts to contain pathogens and microorganisms that may threaten indigenous wildlife communities. Avian products (e.g., eggshells, meat) must be incinerated on vessel or at Palmer Station or disposed of in Punta Arenas, Chile.

Packing for Incineration

All camp solid waste must be properly sorted and bagged for return to the USAP support vessel. Most non-hazardous waste will be incinerated on vessel. The following items cannot go in the incinerator and must instead be separately bagged for disposal in Punta Arenas or to be sent to Palmer Station. For more information, contact Palmer Hazardous Waste at Palmer.HazWaste@usap.gov.

- Any and all glass, including broken glass
- Metal
- Wire or wire rope
- Electronics
- Batteries

- Aerosol cans
- Hazardous waste items (see next section)

Hazardous Waste

The ACA has strict guidelines on hazardous waste, which requires special handling and labeling. Remove all hazardous waste from the field at the end of each season. Questions about hazardous waste management can be directed to the Palmer Station lab manager at Palmer.LabManagers@usap.gov or to Palmer Hazardous Waste at Palmer.HazWaste@usap.gov. The following are examples of hazardous waste:

- Fuel and fuel-contaminated material
- Lab waste
- Chemical containers
- Aerosols
- Radioactive material
- Batteries
- Biohazardous waste

Human Waste

Human waste must not be discharged onto ice-free land, onto sea ice or in blue-ice areas. Discharge can occur only in the intertidal zone and only if planned in advance. If working in an ASPA, review the specific ASPA management plan to determine if discharging human waste in the intertidal zone is acceptable.

Discharging urine on land is not allowed anywhere in Antarctica. Field participants must carry and use a pee bottle when bathrooms or tidal areas are unavailable. Urine in pee bottles must be disposed of when returning to the field camp or vessel, or it may be disposed of in a tidal area, where it is easily dispersed in the marine environment.

Typically, human waste is collected in five-gallon buckets lined with biodegradable bags. The bags are disposed of in the intertidal zone, and the buckets reused. Discuss bathroom setup with the Peninsula field supervisor.

Bucket Use Rates

Waste	Container	Persons/Days
Human Solid Waste	one 5-gallon bucket	5 people for 5 days (minimum)
Urine	one 5-gallon bucket	1 person for 5 days
Gray Water	one 5-gallon bucket	1 person for 5 days

Environmental EOS Report

At the conclusion of field activities, all USAP-supported science groups must submit an environmental EOS report to Environmental@usap.gov. (Email Environmental@usap.gov to obtain a copy of the Microsoft Excel template for the report.) To ease the process and increase accuracy, populate the report with information throughout the season.

The following information must be tracked and quantified in the EOS report: camp site location and information, fuel use, hazardous materials used, waste disposition, scientific equipment installed, materials remaining and any spills. See the template for specifics.

Report Instructions

Thoroughly fill out the EOS report and email it as an Excel file to the ASC Environmental team at Environmental@usap.gov. Each science group and environmental ASC work center is required to complete the form. All EOS reports are ultimately submitted to NSF, and data in the reports are compiled in the USAP Master Permit report.

- All principal investigators (PIs) or their designated environmental POC must complete the form. Field camp managers must complete their own form.
- Use the dropdown menus in the Excel template for consistent reporting.
- All field parties must submit GPS coordinates of any science equipment installations, sampling or coring

locations, temporary camps, planned and unplanned releases, equipment left in the field over the winter and past or present disturbances of any kind.

- Report GPS data in decimal degrees to five decimal places.

Field parties operating in an ASMA or ASPA must submit GPS coordinates for each of the following environmental disturbances:

- Sample sites
- Soil pits
- Non-established helicopter landing sites
- Tent sites outside facility zones (i.e., remote camps; report GPS coordinates of camp perimeter)
- Fuel storage locations outside facility zones
- Waste handling and storage sites outside facility zones
- Any intentional or unintentional releases of fuel, equipment or any other material

For details, see the most current ASMA or ASPA management plan provided by the ASC Environmental team. Contact Environmental@usap.gov with any questions or comments about the EOS template or any other environmental issue.