



SCIENTIFIC DIVING POLICY

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1. PURPOSE

This directive establishes required policies for the Smithsonian Institution (SI) to maintain a scientific diving program and conduct scientific diving in pursuit of scientific research and education.

2. BACKGROUND

In 1982, the Occupational Safety and Health Administration (OSHA) exempted scientific diving from commercial diving regulations, with the final guidelines taking effect in 1985. Accordingly, both this directive and the Scientific Diving Program's (SDP) *Scientific Diving Safety Manual (SDSM)* draw on the regulations and guidelines established for the scientific diving exemption from OSHA commercial diving standards: 29 *Code of Federal Regulations* (CFR) 1910 — Subpart T, and the *Federal Register* (FR) 47(228): 53357–53365, November 26, 1982; and FR 50(6): 1046–1050, January 9, 1985.

Since its establishment in 1983, the American Academy of Underwater Sciences ([AAUS](#)) advances and facilitates safe and productive scientific diving, utilizing Self-Contained Underwater Breathing Apparatus (SCUBA) to support a common interest in diving as a research tool and a commitment to the health and safety of scientific divers. Standards for training and certification set by the AAUS allow a working reciprocity between the Smithsonian Scientific Diving Program (SDP), other AAUS Organizational Members, and other scientific diving programs or individuals with equivalent or greater standards. Reciprocity between AAUS-

compliant programs allows certified scientific divers from different AAUS-compliant programs to dive together under shared standards and confirms that a diver meets the host organization's requirements and facilitates safe, collaborative research across institutions.

Adherence to the OSHA requirements and AAUS standards has proven both feasible and effective in protecting the health and safety of Smithsonian scientific divers.

3. APPLICABILITY

The policy in this directive is applicable to all scientific divers conducting scientific diving operations utilizing SCUBA where the Smithsonian Institution takes responsibility for the divers, the operations, or both, and/or grants access to Smithsonian research platforms and life support equipment.

4. POLICY

The Smithsonian shall maintain a Scientific Diving Program (SDP) that meets, at a minimum, the requirements of AAUS. The SDP shall serve as a central resource for all SI units that conduct scientific diving. The SDP is made up of the Scientific Diving Control Board (SDCB), the Central Diving Office (CDO), including the Scientific Diving Safety Officer (SDSO), and Smithsonian diving units, including Unit Diving Officers (UDOs).

The SDP shall ensure all scientific diving conducted by the Smithsonian Institution is performed in a manner consistent with applicable regulations and prevailing accepted practices and procedures for scientific diving in the United States, following AAUS guidelines and the policies outlined in this directive and contained in the current version of the Smithsonian's [Scientific Diving Safety Manual](#) (SDSM), which is available online at <https://dive.si.edu/>.

Employees who do not comply with this directive may be subject to scientific diving restrictions and/or disciplinary action. Any person who does not comply with this directive may be barred from any future diving activities under the authority of the Smithsonian.

4. a. Scientific Diving Control Board and *Scientific Diving Safety Manual*

Per OSHA regulations and guidelines for scientific diving, the Smithsonian shall maintain (1) an independent Scientific Diving Control Board and (2) the *Scientific Diving Safety Manual*.

Scientific Diving Control Board

The Smithsonian establishes the SDCB and charges it with autonomous and absolute authority in ensuring the proper execution of this directive and the safety of all scientific diving under the authority of the Smithsonian (see subsection 4.c). The SDCB shall consist of a majority of active divers. While independent, the SDCB shall report to the Under Secretary for Science and Research (USSR) and the Director of the Office of Safety, Health, and Environmental

Management (OSHEM) as delegated by the Under Secretary for Finance and Administration.

The SDCB shall maintain a charter outlining its operations with the goal of ensuring all Smithsonian scientific diving operations meet, at a minimum, parameters set forth by OSHA and the AAUS, the safety of Smithsonian employees and other approved scientific divers is protected, and the SDP supports and advances scientific research at the Smithsonian.

The SDCB shall serve as the absolute authority for all Smithsonian scientific diving operations. The SDCB shall have the authority to:

- review and approve dive plans;
- review and revise the *SDSM* and this directive;
- assure compliance with the *SDSM* and this directive;
- determine the depths to which a diver is authorized to dive;
- take disciplinary action for unsafe practices;
- assure adherence to the buddy system and other regulations for SCUBA diving;
- delegate their authority to qualified personnel, including the SDSO;
- establish additional standards, protocols, and operational procedures beyond those of the AAUS to address specific needs and concerns of the SDP;
- issue, reissue or revoke diving authorizations;
- take corrective action for unsafe diving activities, including suspending diving operations when considered unsafe or unwise;
- investigate diving incidents related to diving under the responsibility of the Smithsonian or other violations of the *SDSM* or this directive;
- act as a board of appeal for issues related to divers, dive plans, or decisions rendered by the SDP; and
- appoint member(s) to serve on the selection committee for the role of SDSO.

Scientific Diving Safety Manual

The Smithsonian *Scientific Diving Safety Manual (SDSM)* shall be maintained by the SDP through reviews and revisions by the SDCB. The *SDSM* should be reviewed at least every two years. The SDCB may delegate authority for the review and revisions to the CDO so long as new versions are submitted for final approval by the SDCB.

The *SDSM* shall include:

- procedures covering all diving operations specific to the program;
- procedures for emergency management, including recompression and evacuation;
- criteria for diver training and certification;
- standards for certifying and authorizing divers;
- standards for medical clearance to dive;
- qualifications and duties for the Scientific Diving Safety Officer (SDSO), Unit Diving Officers (UDOs), Lead Divers, Divers, and Dive Buddies;

- standards and protocols used when conducting dives for the Smithsonian and the equipment and breathing gas used;
- process for the approval of dive plans and in-the-field adjustments to activities in approved plans;
- standards for establishing reciprocity with the SDP; and
- additional standards and guidelines as deemed necessary by the SDCB.

4. b. Central Diving Office and Smithsonian Units with Diving Operations

To ensure compliance with applicable law and Smithsonian policies and to foster consistency and continuity across SI units and facilities, the Smithsonian shall establish a Central Diving Office (CDO), which shall be led by the Scientific Diving Safety Officer (SDSO). The CDO provides centralized leadership and administrative management of the SDP in support of Smithsonian units with diving operations and the Unit Diving Officers (UDOs).

The CDO shall ensure proper record keeping, training, and budgeting; represent SI at AAUS and other scientific diving meetings and organizations; provide guidance and advice on scientific diving safety protocols for scientific diving practices and equipment; and provide other logistical and administrative support to units that conduct scientific diving.

UDOs function simultaneously as an extension of the authority of the SDSO while also enabling diving operations at their units and representing their units' diving activities on the SDCB. UDOs will have full accountability to their unit directors and the CDO in all scientific diving operational and safety matters within their units.

Units with scientific diving operations will employ, or appoint for collateral duty, a UDO who is sufficiently trained and qualified, with sufficient access to unit leadership in accordance with the *SDSM*. The SDCB shall recommend the appropriate level of safety oversight for each unit. If a UDO is recommended but not appointed, additional consultations with the unit's Under Secretary and the SDCB are required to determine appropriate alternatives.

Units that do not have sufficient diving activity to warrant a UDO may request services from the CDO and may be assigned to another UDO by the SDSO in concurrence with the SDCB.

4. c. Smithsonian Responsibility (Auspices¹) for Scientific Divers and Diving Operations

Scientific diving operations are those where “diving [is] performed solely as a necessary part of a scientific, research, or educational activity by [researchers] whose sole purpose for diving is to perform scientific research tasks” (29 CFR 1910.402).

¹ AAUS commonly uses “auspices” to mean responsibility for divers and operations. In this directive, the Smithsonian chooses to use more exact language to describe our organizational responsibilities and how they relate to our employees, reciprocity, and operations.

Smithsonian Responsibilities for Scientific Divers

Scientific divers are scientists or researchers who use their scientific expertise in the underwater environment to conduct scientific research, including observing, photo documenting, and/or collecting data as a necessary part of a scientific, research, or educational activity.

The Smithsonian shall be responsible for SI employees (including employee Fellows), volunteers, and interns authorized to dive by the SDP on any scientific dives related to the Smithsonian's scientific research. Smithsonian employees, volunteers, and interns may be authorized to participate in scientific dives operated by the Smithsonian or with an approved third-party entity via a Letter of Reciprocity with the third-party entity.

For a non-Smithsonian diver, the Smithsonian may accept a diving authorization provided by the diver's home institution (e.g., employer, university, granting agency). A non-Smithsonian diver is any scientific diver who is not a Smithsonian employee, volunteer, or intern. They can include, but are not limited to, contractors, independent Fellows, visiting scientists, and temporary divers. In these cases, the responsibility for ensuring the proper training and qualifications of the non-Smithsonian diver ultimately resides with the diver's home institution. The non-Smithsonian diver's home institution must have a recognized scientific diving program that meets, at a minimum, AAUS standards and must have granted their diver authorization to take part in Smithsonian diving operations. Before participating in Smithsonian scientific diving operations, a non-Smithsonian diver must provide proof of such authorization to the SDP and complete any required documentation.

For non-Smithsonian divers who are unaffiliated with an institution or entity or are from institutions/employers that do not have a recognized scientific diving program that meets, at a minimum, AAUS standards (or is affiliated with similar international oversight bodies), the SDP shall individually assess each diver's eligibility. The SDP may authorize a diver for a clearly defined and time-limited project that benefits the Smithsonian, during which the diver shall be part of the SDP. Before participating in Smithsonian scientific diving operations, a non-Smithsonian diver must provide any documentation required by the SDP.

Smithsonian Responsibilities for Scientific Diving Plans

Except as set forth in this section, the Smithsonian Institution shall be responsible for governing any scientific diving plans led by Smithsonian Scientific Divers.

Additionally, the Smithsonian may choose to be responsible over a scientific diving plan where Smithsonian Scientific Divers are not in lead positions but are otherwise involved as scientific divers or the diving activities take place at Smithsonian facilities or research platforms.

Conversely, the Smithsonian may designate a third-party entity to govern a scientific diving plan where a Smithsonian Scientific Diver is participating. The third-party entity must, at a minimum, meet Smithsonian standards and establish reciprocity with the Smithsonian. In these cases, the Smithsonian ensures that the parameters of the diving operations meet the standards of the

Smithsonian, as laid out in this directive, and grants authorization for any Smithsonian Scientific Diver engaged in the operations through documentation with the third-party entity.

4. d. Access to Smithsonian Research Platforms and Use of Smithsonian Diving and Life Support Equipment

The Smithsonian may grant access to its research platforms and/or permit use of its diving and life support equipment to third-party entities with self-contained scientific diving groups through a written agreement with such third-party entity.

A self-contained scientific diving group is a group with a third-party entity that is authorized to perform scientific diving as part of an internationally recognized accredited scientific diving program, such as AAUS or equivalent, where the third-party entity assumes all responsibility for the diving operations and the divers.

As Smithsonian research platforms (e.g., research vessels, piers and beaches, long-term monitoring locations) and diving and life support equipment (e.g., oxygen, automated external defibrillators [AEDs], SCUBA tanks, regulators) can be owned and/or operated by SI units or the Central Diving Office, the SDP shall maintain a master catalogue of platforms and equipment.

In accordance with AAUS standards and the Smithsonian's rules and requirements for facilities and infrastructure oversight, the Smithsonian maintains all scientific diving and other life support equipment owned by the Smithsonian as directed by the manufacturer or industry best practices. Records of required maintenance, testing, and other quality control measures shall be kept in a manner that facilitates the sharing of records with individuals who use the equipment.

5. RESPONSIBILITIES

This section outlines the primary responsibilities of Smithsonian personnel who hold positions that participate in the implementation of the SDP, including the Under Secretary for Science and Research (USSR), the Director of OSHM, the Smithsonian Scientific Diving Control Board (SDCB), the Scientific Diving Safety Officer (SDSO), Unit Diving Officers (UDOs), and individual scientific divers. Further details can be found in the *SDSM*.

The **Under Secretary for Science and Research** is the senior-level official with oversight of the Smithsonian's SDCB and is responsible for:

- providing oversight of matters relating to the SDCB;
- ensuring that effective and adequate support is provided for the SDCB to conduct its official responsibilities;
- ensuring units with diving operations are providing appropriately trained personnel and budgets to adequately resource their activities;
- reviewing briefings from the SDSO and Chair of the SDCB on SDP activities and provide guidance as needed; and

- ensuring that the performance plans of SDCB members reflect their SDCB duties during their tenure on the SDCB.

The **Director of OSHEM** is the senior-level official with authority over the Smithsonian's Central Diving Office and is responsible for:

- providing administrative oversight of matters relating to the CDO, including appointing a full-time SDSO;
- ensuring effective and adequate support is provided for the CDO to conduct its official responsibilities; and
- reviewing briefings from the SDSO and Chair of the SDCB on SDP activities and provide guidance as needed.

The **Scientific Diving Control Board** is the Smithsonian's formally constituted body in charge of diving policy, operations, and diver certifications; **SDCB members** ensure the SDCB exercises its authorities as outlined in subsection 4.a (on pages 2–4), plus:

- overseeing the work of the CDO, with the Director of OSHEM;
- recommending, based on operational capacity and need, the level of diving safety staff support for each unit and working with the unit and the CDO to allocate those resources;
- reviewing and reporting at least annually to the USSR and the Director of OSHEM, the activities of both the SDP and the SDSO; and
- meeting at least quarterly to facilitate the oversight and business of the SDP.

The **Scientific Diving Safety Officer (SDSO)** is the individual accountable for all operational, diving, and safety matters of the SDP. The SDSO is responsible for the following:

- as delegated by the SDCB, conducting the routine operational activities of the SDP, including:
 - implementing all policies and decisions as prescribed by the SDCB;
 - overseeing training and certifications, diver authorization, and diving operations with concurrence of the SDCB;
 - authorizing dive plans, with input as needed from UDOs and the SDCB;
 - ensuring compliance with scientific diving policies and procedures;
 - maintaining diving records; and
 - maintaining standards for scientific diving equipment, with input as needed from UDOs and the SDCB;
- managing the SDP, including planning, management, and budget;
- serving as a voting SDCB member and Smithsonian official representing the SDP to external constituencies;
- submitting an annual evaluation report on each UDO to the UDO's supervisor; and
- with the approval of the SDCB, delegating some duties and responsibilities to be carried out by a qualified delegate.

Unit Directors having employees or affiliated personnel participating in scientific diving operations shall ensure adequate resources are available for effective and compliant scientific divers and diving operations, and ensure those activities are consistent with applicable federal regulations and SI policies, standards, and procedures. These responsibilities include:

- hiring, or appointing in writing, a unit staff member who meets the qualifications outlined in the *SDSM* to serve as UDO, who has direct access to the unit director or the director's designee on issues related to scientific divers and scientific diving operations;
- providing financial support to supply personal protective equipment, annual SCUBA gear maintenance, other safety equipment and supplies, and required training for the unit's employees and others who participate in scientific diving operations; and
- establishing, maintaining, and/or ensuring representation on the SDCB to ensure the effective implementation of the SDP.

The **Unit Diving Officers (UDOs)** are the personnel in charge of overseeing scientific diving activities for their units (or areas of responsibility), and have full accountability and responsibility to their unit director and the SDSO in all operational, diving, and safety matters, as follows:

- ensuring that the diving activities of their units (or areas of responsibility) comply with the policies and procedures described in the *SDSM*;
- maintaining unit-level inventories of scientific diving equipment;
- ensuring that diving equipment (including purchases and maintenance) used meets the requirements as described in the *SDSM*;
- maintaining the diver certification records and dive logs of all SI scientific divers (and those diving under the responsibility of the Smithsonian) for their unit;
- performing diver training courses and check-out dives on behalf of the SDSO;
- suspending diving operations or scientific divers they consider unsafe, and reporting such action to the SDSO;
- reviewing and approving dive plans and noting any concerns to the SDSO prior to their authorization;
- making time-sensitive decisions related to active dive plans to facilitate safe and successful completion of the plans;
- ensuring a competent Lead Diver is in charge of operations at the dive site; and
- submitting reports to the SDSO, in a timely fashion, on the status of diving activities and diver certifications.

Individual **Scientific Divers** who are diving under the responsibility of the Smithsonian must:

- contribute to a culture of safety and mutual respect by adhering to all policies and procedures described within this policy and the *SDSM*;
- when named as the Lead Diver on a dive plan, serve as the onsite representative for the SDP and take responsibility for the overall safety and compliance of the dive team;

- refuse to dive, or terminate diving activity immediately, when conditions or other problems related to personnel or equipment create a situation that would violate the precepts of training or the requirements of this directive or the *SDSM*;
- serve as a dive buddy to uphold the system of mutual assistance when named as part of a dive plan;
- maintain the proper certifications, diver training courses, and in-water time needed to meet the requirements of the SDP, including the annual maintenance of their scientific diving equipment; and
- consider serving as a unit representative to the SDCB.

6. REFERENCES

The Smithsonian Scientific Diving Control Board Charter: a governing document that outlines the responsibilities, structure, and functions of the Smithsonian Scientific Diving Control Board (SDCB), which is required of the Smithsonian Institution to meet the Occupational Safety and Health Administration's (OSHA) Scientific Diving Exemption.

The Smithsonian [Scientific Diving Safety Manual](#): a living document that is periodically updated to reflect current changes in regulatory guidance and safety standards, provides procedures for implementation and technical guidance, and contains detailed information about the following:

- General Policy;
- Diving Regulations;
- Diving Equipment;
- Scientific Diver Certifications and Authorizations;
- Medical Standards; and
- Specialty Guidelines.

SUPERSEDES: SD 120, January 18, 2012.

INQUIRIES: Office of Safety, Health and Environmental Management (OSHEM).

RETENTION: Indefinite. Subject to review for currency 36 months from date of issue.
