



From the Accreditation Commission

How Breath-Hold Diving Fits into AZA's Diving Standards

By Maylon White

Association of Zoos and Aquariums-accredited facilities with dive programs have long been familiar with the numerous regulations set forth by the federal Occupational Safety and Health Administration (OSHA) and duplicated by most of the 22 State OSHA plans. Whether from a scuba tank or surface-supplied air source, breathing underwater imposes risks that must be understood in order to be done safely. But what if one is not breathing underwater (i.e. breath-holding)? Federal OSHA regulations do not specifically address breath-hold diving in the workplace. Is it safe?

In the past few years, the Accreditation Commission learned that some AZA-accredited facilities were practicing questionable breath-hold diving activities.

Many of these facilities were unaware of the potential hazards that are associated with this type of diving. Although drowning is the most obvious potential hazard when working in the water, other dangers are present as well. For example, shallow water blackout can strike without warning during repeated breath-hold dives (see www.shallowwaterblackoutprevention.org/ for a more detailed discussion). OSHA covers potentially dangerous work activities not specifically addressed in the OSHA regulations in its "General Duty Clause". Under this clause employers are required to provide their employees with a place of employment that "is free from recognizable hazards that are causing or likely to cause death or serious harm to employees."

In 2017, AZA's definition for "underwater diving" was expanded to include breath-hold diving (Section 11.7) to emphasize the need for safe protocols when engaging in this activity. A risk assessment should be performed which identifies the hazards, determines how best to mitigate the risk associated with those hazards, details the training required to perform the activity safely, and documents the process. This action should help meet AZA standard 11.7.1 ("meet minimal operational safety standards" and "comply with applicable laws and regulations"). In this case, the "applicable laws and regulations" would be the OSHA General Duty Clause.

Institutions with active dive programs may choose to include breath-hold diving as part of their scuba diving program. In California, the state-run OSHA ("Cal/OSHA") already requires this. However, the AZA standard is not intended to equate a breath-hold dive with a scuba dive. Consider, hypothetically, a small zoo that only uses breath-hold diving to clean the acrylic on a polar bear habitat (its only water exhibit). Its Breath-Hold Dive Manual

(standard 11.7.3) might consist of the risk assessment, protocols for performing the activity safely, staff qualifications and training, safe practices and an emergency action plan. The dive safety officer (DSO) that oversees the operation (11.7.2) would not be expected to have the same level of qualifications as a DSO for a scuba diving program. A live action emergency drill would be required (11.7.4) and an emergency plan for each tank would need to be developed (11.7.5).

The intention is not to necessarily require a dive-person-in-charge, stand-by diver or tender (positions used in commercial dives) for breath-hold dives, but to encourage a thoughtful examination of the work being done in the water that doesn't fit in the traditional scuba diving program.

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