
**Recreational diving services —
Requirements and guidance on
environmentally sustainable practices
in recreational diving**

*Services relatifs à la plongée de loisirs — Exigences et
recommandations relatives aux pratiques écoresponsables en plongée
de loisirs*

STANDARDSISO.COM : Click to view the full PDF of ISO 21416:2019



STANDARDSISO.COM : Click to view the full PDF of ISO 21416:2019



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Conduct of diving activities	1
5 Operation of dive boats	2
6 Interaction with aquatic life	2
6.1 Removal of aquatic life	2
6.2 Feeding aquatic life	3
7 Conservation and pollution control	3
8 Operation of shore-based facilities	4
9 Conservation of underwater heritage sites	4
10 Aquatic parks, reserves and marine protected areas	4
Annex A (informative) Guidance on sustainable practices	5
Bibliography	8

STANDARDSISO.COM : Click to view the full PDF of ISO 21416:2019

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 228, *Tourism and related services*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The diving community has a unique capability and therefore responsibility in observing and reporting on the condition of the aquatic environment. This document elaborates on how the recreational diving community can make use of this capability while ensuring that full consideration is given to environmentally sustainable interaction with the aquatic environment. It provides guidance on how divers can positively affect the aquatic environment through activities such as underwater cleanups and aquatic surveys.

In diver training and diving activities divers must have an awareness of their environmental impact. This should include actively minimising any negative aspects, both potential and actual. Such training should encourage awareness of positive actions.

This document is intended to benefit the following stakeholders:

- divers and snorkellers;
- diving instructors and guides;
- dive centres, schools or clubs;
- dive boat operators;
- diver training organisations;
- tour operators offering diving holidays;
- governmental and other bodies seeking information on diving and the aquatic environment.

STANDARDSISO.COM : Click to view the full PDF of ISO 21416:2019

[STANDARDSISO.COM](https://standardsiso.com) : Click to view the full PDF of ISO 21416:2019

Recreational diving services — Requirements and guidance on environmentally sustainable practices in recreational diving

1 Scope

This document specifies requirements for service providers with regard to responsible practices for the provision of their services.

This document applies, but is not limited, to recreational-diving-related activities, for example:

- scuba diving;
- snorkelling;
- free diving (breath hold diving).

Further, this document provides guidance to all stakeholders involved in recreational-diving-related activities on best practice to minimize negative impact on the aquatic environment and to optimize positive outcomes.

NOTE In this document the term “aquatic” refers to all bodies of water.

This document helps stakeholders to identify and compare service providers who follow environmental best practice.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

service provider

entity (individual or organization), including any individual acting on behalf of such an entity, which offers diving services in accordance with ISO 24803 or ISO 13289

4 Conduct of diving activities

Service providers shall ensure that:

- a general briefing is conducted for participants on environmental best practice with pre-dive briefings covering advice on specific local environmental factors (such as flora and fauna);
- entry and exit points are chosen to minimize impact on the environment;

- pre-dive safety checks include streamlining gear (e.g. no dangling equipment);
- participants are encouraged to maintain good buoyancy control and trim;
- dive sites are selected according to participants' competency;
- a non-sensitive site is selected if it is anticipated that participants might make contact with the bottom during the activity;

NOTE 1 This applies particularly to the conduct of training dives.

- participants do not step on corals, do not stir up sediment, and do not feed, touch or harass aquatic life;
- ascent and/or descent lines are used to protect the environment where necessary.

NOTE 2 For examples, see [A.1](#).

5 Operation of dive boats

Service providers offering boat diving in accordance with ISO 24803 shall ensure, wherever possible, that:

- anchors are not used on sensitive seabeds (e.g. corals, seagrass, seaweed);
- mooring buoys are used in preference to anchoring;
- launch and recovery sites for small boats are chosen to minimize impact on the environment;
- propellers are not operated in close proximity to sensitive aquatic life/seabed;
- contaminated bilge water is not discharged into the water;
- engines are well maintained to reduce pollution;
- boat toilets (marine heads) vent into holding tanks and not directly into the water;
- waste water and organic waste is disposed of responsibly. If venting into open water is inevitable, this shall be done in deep water and never over reefs, sea grass or other sensitive sites;
- participants and staff are instructed not to drop any litter or dispose of waste into the water;
- waste receptacles (i.e. bin with a lid, closed ashtrays) are provided;
- aquatic life is not harassed (e.g. chasing after dolphins or whales).

6 Interaction with aquatic life

6.1 Removal of aquatic life

Any interference with aquatic life will usually have a negative impact on the aquatic environment. The removal of living creatures (e.g. by hunting or collecting shells and corals) should be actively discouraged and service providers shall ensure that all participants are made aware of the importance of this issue.

Although there are some cases where the properly regulated collection of aquatic life may be conducted in a sustainable way, it still frequently has negative consequences, such as causing aquatic life to fear divers or upsetting the natural balance of an ecosystem.

An exceptional situation may be the scientifically sanctioned collecting or removing from the ecosystem of invasive or harmful species (e.g. lionfish, crown of thorns). However, these cases are rare and only apply in specific situations.

Service providers shall have a policy incorporating a responsible approach for removal of aquatic life where such removal is permitted by local legislation. Consideration should be given to the following points:

- a) advising participants of any relevant local laws and regulations;
- b) explaining why removal has a negative impact, for example:
 - making remaining aquatic life afraid of divers;
 - overfishing;
 - removing apex predators;
 - disrupting the ecosystem.
- c) explaining that even the collection of supposedly inanimate items is likely to be negative (e.g. empty shells are potential habitats for other creatures, such as hermit crabs, and have the potential to break down and replenish sand and substrate).

6.2 Feeding aquatic life

Although the feeding of aquatic life might appear harmless, it has very negative consequences and therefore should be discouraged.

The service provider shall:

- a) advise participants of any relevant local laws and regulations;
- b) explain why fish/invertebrate feeding is likely to have a negative impact, for example:
 - changing the behaviour of aquatic life;
 - providing unnatural and probably unhealthy diets;
 - creating dependency on feeding;
 - making aquatic life aggressive towards divers;
 - algal overgrowth on reefs.

7 Conservation and pollution control

Service providers shall take into account the following precautions with respect to site conservation and pollution control:

- a) considering a site's overuse or "carrying capacity" (i.e. how many divers can an area support – over time and space – without causing degradation of the resources/site);
- b) selecting anti-fouling paints for boats to produce minimal impact on the aquatic environment;
- c) disposing of used engine and compressor oil and lubricants at designated depositories and not where they could leak into the environment;
- d) minimising boat exhaust gases where possible (e.g. by using electric or four-stroke engines rather than two-stroke engines);
- e) avoiding excessive acoustic emissions:
 - from boats;
 - from compressors.

- f) using underwater light sources responsibly:
 - night dives;
 - flash photography and video lights.
- g) disposing of or recycling solid inorganic waste responsibly (e.g. batteries, CO₂ absorbents);
- h) avoiding the use of cosmetics and sunscreen products that are considered to be harmful to aquatic life as much as possible.

8 Operation of shore-based facilities

Service providers shall take into account the following precautions regarding the operation of shore-based facilities:

- ensuring responsible waste disposal from shore-based facilities;
- using biodegradable or recyclable goods whenever possible;
- reducing energy consumption and using renewable energy sources whenever possible;
- encouraging the use of reusable items rather than disposable ones and avoiding single-use plastics (e.g. china cups vs. plastic cups);
- ensuring that in-water structures have minimal impact on the environment (e.g. piers, landing stages, mooring facilities).

The service provider shall consider the sustainable management and efficient use of natural resources (e.g. drinking water).

9 Conservation of underwater heritage sites

Service providers shall abide by and brief participants on the proper precautions for preserving aquatic heritage sites, including:

- conservation of historic sites, wrecks or other historical structures;
- following regulations set by authorities;
- reporting possible sites in need of protection to the relevant authorities;
- reporting violations observed;
- treating possible war graves and/or other sites involving loss of life with respect.

10 Aquatic parks, reserves and marine protected areas

Service providers shall:

- support aquatic parks, reserves and marine protected areas;
- abide by the rules of aquatic parks, reserves and marine protected areas;
- ensure that underwater guides are trained with respect to park rules and requirements;
- brief participants on the existence and regulation of local parks and their ecological importance.

NOTE For examples on how service providers can have a positive influence on sustainable practices in recreational diving see [Annex A](#).

Annex A (informative)

Guidance on sustainable practices

A.1 Guidance to divers for positive interactions with the environment

A.1.1 Careful diving to protect fragile aquatic ecosystems

Many aquatic organisms are delicate and can be harmed by the bump of a camera, the swipe of a fin or even the gentle touch of a hand. Some aquatic organisms like corals grow very slowly and breaking even a small piece can destroy decades of growth. By being careful, divers can prevent long-term damage to dive sites.

A.1.2 Awareness of body and equipment placement when diving

Divers should keep gauges and alternative air sources secured so they do not drag over the reef or other habitats. Divers should control buoyancy, taking care not to touch any organisms with their body or equipment. By following this guidance divers can prevent harmful contact with aquatic life.

A.1.3 Maintaining skills through ongoing training

Before heading to open water, divers should refresh their skills, preferably with a service provider, in a swimming pool or other environment that will not be damaged. Divers should seek an orientation to any new environment.

A.1.4 Interactions affect aquatic life

Divers should avoid touching, handling, feeding or riding on aquatic life. These actions can stress the animal, interrupt feeding and mating behaviour or provoke aggressive behaviour in normally non-aggressive species.

A.1.5 Understanding and respecting underwater life

Playing with animals or using them as food for other species can leave a trail of destruction, disrupt local ecosystems and rob other divers of their experiences with these creatures. Divers should consider enrolling in a training course covering best environmental practices to better understand how they can ensure that their interactions are sustainable.

A.1.6 Divers and ecotourism

Divers should make informed decisions when selecting a destination and choose service providers and operators dedicated to sustainable business practices. They should understand the effect of local laws and regulations on the environment. Divers should not collect or buy souvenirs like corals or shells. Instead, divers should take underwater photos and just observe.

A.1.7 Respecting underwater cultural heritage

Divers are privileged to access dive sites that are part of our cultural heritage and maritime history. Wrecks can also serve as important habitats for fish and other aquatic life. Divers should help preserve these sites for future generations by diving responsibly and treating wrecks with respect.

A.1.8 Reporting environmental disturbance or destruction

Divers are in a unique position to monitor the health of local waters. If unusual depletion of aquatic life, injury to aquatic animals or strange substances in the water are observed, these should be reported to the appropriate authorities or the service provider.

A.1.9 Role model for others when interacting with the environment

Divers are in a position to observe the underwater results of diver carelessness and neglect. Divers should set a good example in their own interactions so that others can learn from them.

A.1.10 Involvement in local environmental activities

Divers can have a great effect on dive sites. Divers should actively support healthy aquatic environments through conservation and data-collection activities such as beach and underwater clean-ups and dive-site monitoring.

Divers should support positive environmental initiatives and make responsible seafood choices.

A.2 Guidance for other stakeholders

A positive and proactive approach towards environmental issues is needed from all stakeholders. Stakeholders are therefore encouraged to participate in best environmental practices, such as:

- adopting a green approach to business and lifestyle activities (e.g. carbon footprint awareness, waste disposal, recycling);
- surveying, monitoring and reporting on dive sites;
- aquatic and coastal clean-ups, collecting underwater debris (e.g. removal of discarded nets, other fishing gear and plastics);
- education on awareness of the aquatic environment;
- education of the general public with regard to pollution which affects the aquatic environment (e.g. plastic waste, microbeads, chemical pollution);
- conservation projects;
- aquatic research;
- installation and maintenance of permanent mooring points;
- volunteering and/or fundraising to support such activities.

Stakeholders should proactively engage in the following issues:

- overfishing prevention;
- promotion of sustainable, locally available aquatic species as a source of food;
- avoidance of endangered, rare or threatened species as a source of food;
- interactions with local fishing communities.

A.3 Value of diving tourism

Stakeholders should promote the following:

- the positive effect of diving tourism on local employment (e.g. in diving centres, accommodation);