



 **DAN**
DIVERS ALERT NETWORK **EUROPE**

PROTECTING OUR WATERS

Above and below

BY DR SERENA LUCREZI, PHD

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Diving businesses depend heavily on the quality and sustainability of the diving environments they offer their clients: Ecology affects their economy. Therefore, divers and diving businesses all have a vested interest in preserving these environments. This guide provides guidance on how diving businesses can develop and implement ecologically sound and sustainable management practices.

An easy approach

There are four key areas that require attention if a diving business is to operate in an ecologically sound and sustainable way.

1.

Ecological awareness:

What is at risk and why?

2.

Activities:

How can the diving business conduct its activities in an environmentally sustainable way

3.

Staff:

How can staff be made more aware about the importance of the environment?
How can they be better trained to monitor and improve the overall sustainability of their diving operations?

4.

Your clients:

How can customers and clients be made fellow protectors of the ecology by promulgating responsible diving practices?

Ecological awareness

An ecosystem is a physical environment and the variety of life it sustains. Ecological awareness, in simple terms, is a genuine understanding of and concern for the importance of preserving and prudently using these physical environments – including the natural resources they provide and the life they support. With greater awareness comes greater appreciation: This can shape the behaviour of people and influence it in a positive way. With diving, there are several studies which show a direct relationship between ecological awareness and proper underwater behaviour amongst divers (Musa et al, 2011). However, to raise awareness, one must first pinpoint the present, relevant issues, contextualise them and identify what implications they have.

Relevant ecological issues

Generally speaking, it can be said that all ecosystems are under threat. Typically, those environments which are dived the most (such as local dams or quarries), or those which are well-known (such as popular coral reefs) are the most negatively affected. However, all aquatic ecosystems are at risk – whether marine or freshwater. Marine environments include tropical coral reefs, intertidal rocky shores and even artificial reefs such as wrecks. Freshwater and brackish systems are made up of inland quarries, dams, lakes, caves, rivers and estuaries. These environments are all threatened to varying degrees.

Ecosystems are vulnerable to a variety of threats. Their essential substrates of air, water and sediment may be modified or damaged in various ways, some which are listed below.

- | Climate change and consequent changes in air and water temperature
- | Ocean acidification: This is caused by increasing levels of carbon dioxide that reduce the pH levels of the water
- | Eutrophication: Excessive nitrogen compounds are added to the water, leading to hazardous algae blooms. This leads to the depletion of oxygen in the water, the poisoning of aquatic life forms and reduced visibility
- | Pollution: This includes industrial effluent, gas discharges, sewerage works, littering, airborne toxic chemicals and aesthetic destruction of the environment
- | The construction of roads, groins and beach nourishment projects: This can lead to the physical removal of habitats and the alteration of natural drainage patterns, sediment and water movement
- | The extraction of resources, whether organic (such as harvesting or fishing), or inorganic (such as sediment mining); the latter can change the topography of a location and remove habitats
- | Diving can result in the disturbance of sediment, the pollution of water due to sunscreen and other substances, and air pollution from boating, air compressing and electricity generation.

Ultimately, both inorganic and organic parts of the ecosystem are affected by the factors above. Fishing and harvesting have a direct impact on aquatic life, but indirect damage often results from boat or propeller strikes or anchors, or the touching, kicking, standing or grabbing of divers. These actions can result in injury, disease, behavioural changes (for animals), migrations, changes in ecosystem richness and diversity, death or even extinction of species.

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Implications of these issues

The degradation or loss of water ecosystems can have devastating effects. Divers and diving businesses can be severely impacted by the results, some of which follow hereafter.

- Health hazards: These can be caused by pollution or toxins in the air and water
- Physical hazards: Unstable substrates could present danger
- Aesthetic impact: A loss of natural beauty of the environment makes it less attractive to visitors
- Imposed preservation: This can include mandatory closure of dive sites for safety and health reasons or to allow ecosystem recovery
- Desolation and deprivation of the ecosystem: Short-term loss of resources can include water and food, as well as a loss of income from tourism and recreational activities. Long-term loss of resources will affect quality of life for future generations

These are all things that can affect diving activities negatively, with socio-economic repercussions such as the loss of business, tourism, and jobs.

Activities

Various top-down measures can improve awareness and responsibility, and promote sustainability in diving activities and operations. Local governments, governmental agencies, certifying agencies, tourism organisations, research entities, small enterprises, NGOs and private citizens can all drive responsible business activities. Campaigns can take various forms, but the ultimate purpose is to support environmentally-sustainable and eco-friendly practices in diving businesses. Some initiatives are based on education and monitoring programmes. Others focus on recognition or certification for good practices, encouraging diving businesses to adhere to a set of criteria. The common principles for basic actions to enhance business responsibility follow.



- | Proper training and education: This starts with basic diving skills training, particularly buoyancy control. Some experimental work has shown that learning skills in buoyancy imparts a sense of independence from the substrate, which reduces the risk of contact for the diver and the environment. Formal, thorough training to internationally-accepted standards by professional certifying agencies provides superior outcomes. Finally, diving businesses should commit to receiving and providing environmental education as part of their training programmes. They should also create and adopt codes of conduct and best practice
- | Reducing the carbon footprint: Simple measures such as using four-stroke instead of two-stroke engines and switching to methane, diesel, electric, or solar power rather than petrol can assist with this
- | Active promotion of environmental awareness: Establishing a culture of awareness, top-down, from staff to clients, is important
- | Reducing pollution and litter: This can be achieved through recycling; providing an adequate number of bins; reducing or avoiding the use of heavy chemicals for cleaning and maintenance; regularly inspecting boats for oil or fuel leaks; and properly disposing of waste and engine oil
- | Actively protecting dive sites: Simple measures include not using anchors; engaging in clean-up or litter-removal initiatives; formal dive site monitoring and reporting; and properly managing dive groups, including both the size and the conduct of the group
- | Prohibiting the sale of endangered species: This includes sale as food or as souvenirs
- | Promoting sustainable businesses: Collaboration with local businesses can help promote responsible aquaculture and the sale of sustainably harvested seafood resources
- | Partnering with local authorities and governance bodies: The knowledgeable implementation and enforcement of rules and regulations will improve the sound and sustainable nature of your diving business. Other measures include creating and adopting codes of practice, and implementing peer-based self-governance. Conservation goals should be understood as a shared responsibility by adopting effective means of reporting and acting on reports of illegal activities. Collaborations can extend to NGOs and institutions, some of which freely offer support, guidelines, and monitoring of the success of eco-friendly initiatives. Others, such as public schools, offer opportunities to educate future generations, and stimulate their interest in diving and related environmental matters

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Staff

Staff constitutes a critical link between the client, the environment, and the diving business; their role is fundamental. So, businesses need to train and inform their staff properly so that they are aware of their environmental responsibility, and are more capable of imparting this awareness to their clients. The eco-friendly standards and practices which follow represent ways in which staff can minimise the destruction of the diving environment.

- | Dive training: Staff should have exemplary diving skills, especially buoyancy control, whether they are trained locally or employed after receiving training elsewhere. Both appropriate qualifications and competence should be confirmed before engaging staff in duties that impact the environment
- | Environmental education: Depending on the resources available, staff may attend courses on marine or freshwater ecology and conservation, receive relevant local updates or refreshers if they already have basic knowledge, and receive free learning material from dive centres, NGOs, institutions and so on
- | Active promotion of environmental awareness: Staff should be well aware of the rules, regulations, codes of practice, penalties, fines and disciplinary consequences of illegal, irresponsible or negligent actions. The working environment should be fully understood, from the dive shop to the boarding stations, marinas and harbours. Staff must adopt and enforce the code of conduct applicable to the dive business and dive sites
- | Client-relations training: Staff should be competent to provide a thorough dive briefing, and know how to interact with clients on the surface and underwater by providing guidance, first aid and timely intervention to avoid negative impact
- | Managing infractions and violations: Systems should be in place for dealing with misconduct of staff as well as clients. Complaints or reports of egregious behaviour should be dealt with promptly and appropriately. This may include corrective training, disciplinary action, dismissal or even criminal prosecution
- | Motivation and empowerment: Inappropriate employment practices, such as employing illegal workers

or underpaying professional staff, are both demeaning and self-defeating. Ultimately, they have negative repercussions on the business, clients and the environment. Keeping staff motivated and empowered is critical to a successful diving business. However, following good labour practices is only the minimum. Whilst many dive locations do have a high turnover of itinerant staff, it is worth investing in them through continuous education, training, updates, rewards, and active participation in conservation (for example, litter-removal campaigns or reef-monitoring campaigns) and education (such as school campaigns)

- | Role models: The person responsible for the dive business also needs to be a role model for the staff. In turn, staff can then be role models for the clients. Staff should embrace the philosophy of the business. Small things can make a big difference, such as agreeing not to spearfish, or participating in active recycling

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Your clients

Dive businesses and staff often underestimate the positive impact they can have on their clients. By following some basic steps they may foster long-lasting environmental awareness. This will not only have a positive effect on the environment, but will also improve the sustainability of the diving business, environmentally, socially and economically. Simple measures, such as eco-labels, can establish positive branding of the diving business and can be used as a powerful marketing tool. Diving businesses and staff have various responsibilities to create or increase awareness of ecological issues among clients. Some of these are explained below.

- | Transparency and visibility: It is important to display all rules, regulations, codes of conduct and the philosophy of the diving business clearly. This can be done by displaying codes of conduct in marine protected areas and listing eco-certification protocols where these are being followed
- | Education and briefing: Whether the business trains divers or only leads dives, by effectively teaching, verifying, and praising critical dive skills (like buoyancy control), divers and dive sites are protected. Ongoing education should be offered through verbal communication of rules, codes of conduct and key ecological aspects of

relevant dive sites. This information is normally a part of the dive briefing, which means that it takes on additional significance: Apart from being a requirement by dive training and certification agencies, this is also a critical preparatory phase for the dive from a conservation perspective. Accordingly, it should not be rushed or unduly prolonged. Providing dive briefings is a skill and an art-form; they should be well prepared and well presented

- | Intervention and correction: Inexperience, inattentiveness, carelessness and recklessness each require different corrective actions. These may include suspending further diving activities until the necessary skills have been mastered, awareness has been ensured, egregious actions have been addressed and wilful misconduct has been disciplined appropriately. Politely correcting divers underwater, in the presence of other divers, is often a powerful incentive for long-term changes in divers' ways
- | Eco-friendly marketing: By overtly promoting an environmental-friendly, eco-sensitive ethos, your business will attract clients who share those values. Organising activities at various nearby sites, with smaller dives groups, also reduces pressures on any given dive site and promotes other eco-friendly industries in the immediate area, such as seafood restaurants which practise sustainable fishing
- | Personal involvement and ownership: Divers should be encouraged to join and participate in knowledge exchange, eco-friendly groups, such as Citizen Science, or recognised NGOs. Various other initiatives can have the same effect, including monitoring, membership, clean-ups and clubs
- | Role modelling: Dive businesses and staff should lead by example to encourage the same behaviour in their clients. People are more likely to follow actions that are consistent with instructions
- | Comments and critique: Asking clients for feedback can be constructive for businesses and staff. Data collected from clients, through brief surveys for example, can provide details on staff behaviour, customer satisfaction, complaints and requests that can lead to the improvement of the business



Final thoughts

Diving businesses have a unique opportunity to conserve and preserve water-based environments. By following the EASY approach, the key areas can be addressed effectively. Everything starts with awareness and education is the way to improve awareness. There are many benefits to embracing eco-friendly philosophies, including securing the sustainability of the diving business itself. Without healthy and functioning ecosystems, dive sites cannot attract tourism and cannot sustain the livelihoods of people who depend on the diving industry. Our ecology is everyone's responsibility.