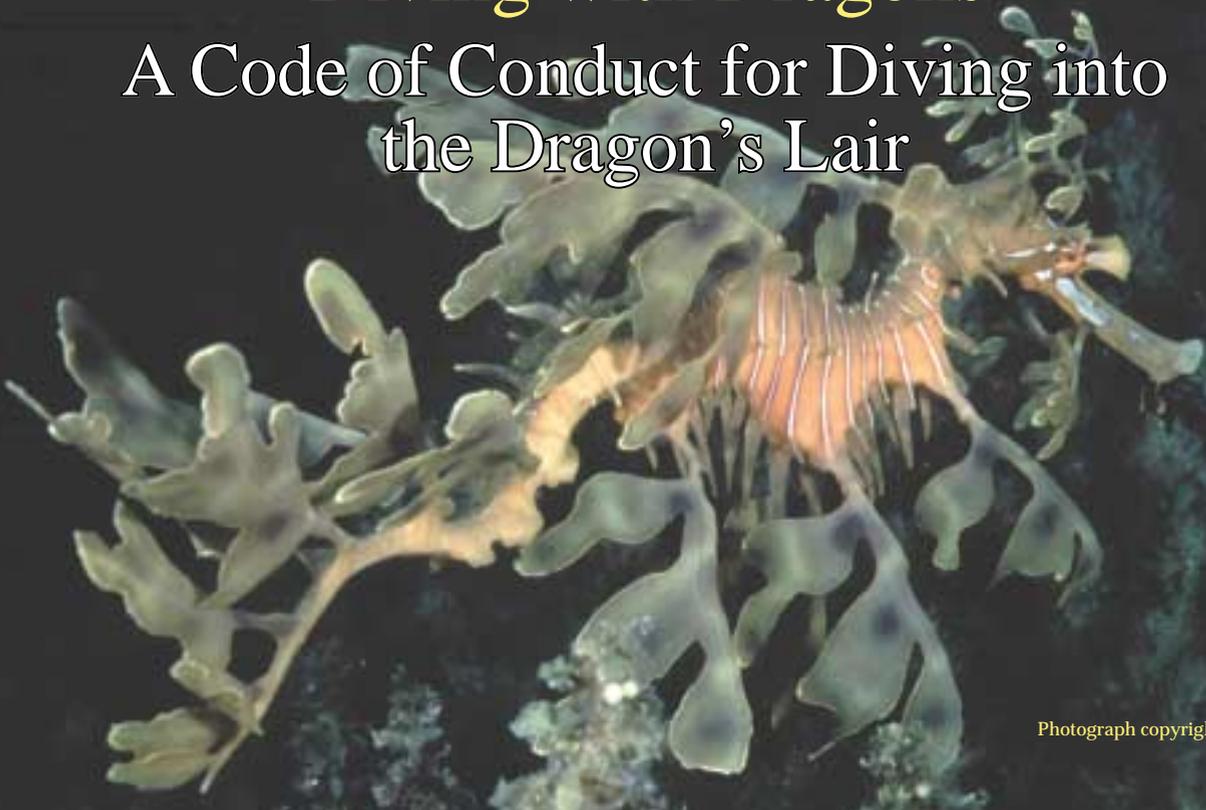


Diving with Dragons

A Code of Conduct for Diving into the Dragon's Lair



Photograph copyright Stuart Hutchison ©

Seadragons are so popular that they attract a lot of attention, which is not necessarily welcome. This brochure sets out a few simple guidelines that divers can follow to reduce their impact on these marvellous animals.

1 Leave them where they are

Do not attempt to take seadragons from the wild. Leafy seadragons are protected and may not be taken without approval of the SA Government.

2 Look but don't touch

Do not try to touch seadragons as handling may injure or stress them.

3 Home on the range!

When interacting with seadragons do not surround them or attempt to "herd" or chase them. Seadragons have a "home range" and herding may move them out of their familiar areas, causing stress. You may also be interrupting important feeding or courtship activities.

4 No ups and downs please

Do not attempt to move seadragons up and down through the water column. Under stress seadragons are sensitive to quite small changes in pressure due to depth. This may injure or even kill the animal.

5 Sea lice are fine in moderation

Do not attempt to remove isopods (sea lice) from seadragons. Divers are likely to damage the seadragon trying to remove isopods. You should not handle seadragons for any reason.

6 Watch your feet

Turbulence from divers' fins may disturb seadragons and other marine life.

7 Take care, male mother!

Take special care with egg-carrying male seadragons. Egg-bearing males move more slowly and are more easily stressed than animals without eggs.

8 Turn the lights down

Do not expose seadragons to bright light over an extended period, especially at night. This includes bright torches, excessive use of strobes, and video lighting systems. Some photographers recommend limiting flash photography to 3-4 shots per encounter.

9 Clean up after others

If you find discarded or snagged fishing line please collect it and dispose of it thoughtfully. Seadragons can become entangled in discarded fishing line and be injured or killed.

10 Dive right and watch your gear

Dive gear should be rigged and operated to prevent damage to the seadragon's habitat. Dangling gauges and equipment should be secured. Divers should maintain neutral buoyancy to minimise disturbance of the seafloor by fins and also avoid gripping objects for support or to prevent drift.

11 Respect the marine environment

Do not damage or break off plants and marine life. Collection of 'souvenirs' should be avoided.

12 Remember the 'regs'

Know the laws relating to taking other marine organisms. If you choose to take marine animals observe all current regulations and take only what you need.

13 Appreciate marine reserves

Marine reserves are declared to protect special areas and important species. Be aware that special regulations may apply in marine reserves for the taking of fish and other marine life.

Seadragons are spectacular fish found only in southern Australian waters. There are only two species of seadragons in the world - the leafy seadragon (*Phycodurus eques*) and the weedy seadragon (*Phyllopteryx taeniolatus*). Along with seahorses and pipefish these remarkable fish belong to the family Syngnathidae. Syngnathids are long, slender fish with bony plates surrounding their bodies.

Both species of seadragon have many leaf-like appendages on their heads and bodies. Both inhabit rocky reefs, seaweed beds, seagrass meadows and structures colonised by seaweed. They are most often seen in shallow coastal waters and feed by sucking around plankton, larval fishes and small shrimp-like crustaceans, called mysids, into their small mouths.

The leafy seadragon – a protected species in South Australia – is a stunning example of the unique marine life found in southern Australian waters, and is South Australia’s marine emblem.



Leafy seadragon (*Phycodurus eques*)



Weedy seadragon (*Phyllopteryx taeniolatus*)

Guidelines for Diving with Dragons explained

1 Leave them where they are

Leafy seadragons are protected under the SA Fisheries Act 1982 and may not be taken without Ministerial approval. Report anyone taking seadragons to FishWatch SA on the 24 hour hotline 1800 065 522.

2 + 3 Look but don't touch Home on the range!

Seadragons will almost certainly see you before you see them. If the seadragon is hiding in seaweed or kelp it is most likely uncomfortable with your presence. Divers should avoid touching or altering a seadragon's natural behaviour in any way, as this kind of harassment can disturb important feeding and breeding activities. Seadragons are delicate and handling may injure or stress them. Groups of divers should take care to never surround a seadragon, but allow it to move away freely if it appears to be uncomfortable with the divers' presence. If it does move away don't 'chase' it. Seadragons appear to have a small home range (especially while bearing eggs) – following them may move them out of their home range or away from cover, causing undue stress. As stress progresses it is likely that seadragons will flee to the surface. During the breeding season seadragons are often found in pairs. Make sure that pairs of seadragons are not caused to separate as a result of your presence.

4 No ups and downs please

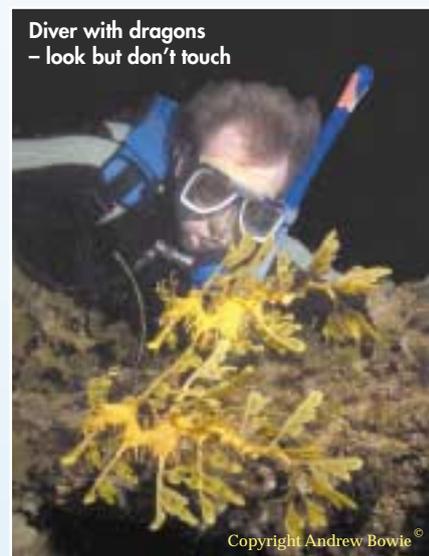
Do not attempt to move seadragons up and down through the water column. Under stress seadragons are sensitive to even small changes in pressure due to depth. Although seadragons may change depth voluntarily quite quickly, problems occur when they are stressed. Seadragons, like other bony fish, have a swim bladder. The swim bladder is a gas-containing sac present in the gut that allows them to maintain their position in the water column. If the seadragon is being touched or herded by a human then the resulting stress may cause its swim bladder to cease functioning properly and the animal may not survive. Just as a breath-holding diver ascending to the surface will damage their lungs – due to the change in pressure – the swim bladder in the seadragon may be damaged, which means that the animal is less likely to survive. If the seadragon is carrying eggs, the eggs may also be lost.

5 Sea lice are fine in moderation

Do not attempt to remove isopods (sea lice) from seadragons. Isopods are part of the seadragon's natural environment. Trying to remove isopods from a seadragon may cause undue stress. Egg-carrying males are particularly susceptible to sea lice. Trying to remove sea lice from an egg-carrying male could possibly stress it so much that the eggs will be lost. Handling a seadragon to remove isopods may also cause it physical harm as isopods latch on to seadragons with curved hooks and these hooks tear the seadragon when the isopods are removed. Wounds caused in this way may become infected.

6 Watch your feet

When diving in the vicinity of seadragons be aware that the turbulence your fins create can disturb any seadragons in the area. As seadragons are very well camouflaged you may be unaware of how many are nearby. As a precaution it is recommended to minimise the power of your kicking action, utilising any available current to drift away rather than actively swimming.



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Juvenile leafy seadragon



Copyright Stuart Hutchison ©

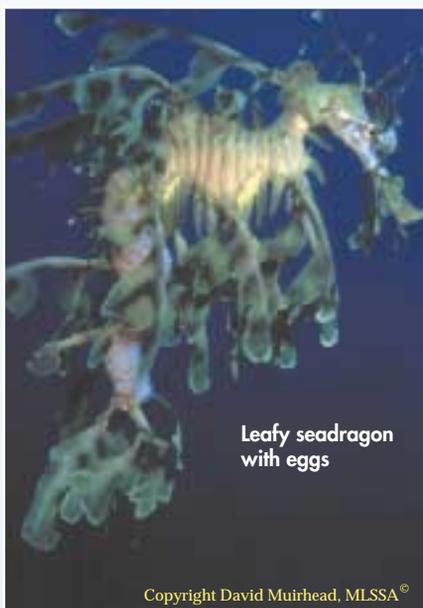




7 Take care, male mother!

Female seadragons produce eggs that are transferred to the underside of a male seadragon's tail. The eggs are fertilised and carried until they hatch. Take special care with egg-carrying male seadragons. Egg-bearing males move more slowly and are more vulnerable to stress than seadragons without eggs. The male will be at his most sensitive and cautious during this period. Any trauma may have severe repercussions for the unborn juveniles. Many males keep to a very small area while carrying eggs, and may not welcome the intrusion of divers.

Male weedy seadragon brooding eggs



Leafy seadragon with eggs

8 Turn the lights down

Do not expose seadragons to bright light over an extended period, especially at night. This includes bright torches, excessive use of strobes, and video lighting systems. Seadragons have no eyelids and are thought to be sensitive to bright lights. It has been shown that seahorses appear stunned after exposure to bright dive lights for a few minutes. Light wattage should be kept low. In any case, night divers have more success finding seadragons with low power torches than bright ones. A good test is to open your eyes in the beam of your lights and/or flash and see if you are comfortable. While there is no evidence of direct detriment due to flash cameras, in the interest of keeping stress to a minimum, thoughtful divers will keep the number of flashes low (3-4 shots per encounter).

9 Clean up after others

If you find discarded or snagged fishing line please collect it and dispose of it thoughtfully. There have been a number of reports of seadragons being entangled in discarded fishing line and becoming injured or dying. Other forms of litter should be removed at the diver's discretion. Many items such as bottles provide habitat for a wide variety of marine organisms, such as blue-ringed octopuses. If you do choose to remove litter make sure there is nothing living on or inside it.



Detail of leafy seadragon eggs



Guidelines for Diving with Dragons explained

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Dive right and watch your gear

Respect the marine environment

Habitats such as seagrass meadows, seaweed beds and sponge gardens provide shelter and food, not only for seadragons but countless other marine organisms. A lot of these organisms and their associated habitats are very fragile. Dive gear should be rigged and operated to prevent damage to this habitat. Bumps from tanks, cameras, torches or fins can cause a lot of damage. Juvenile seadragons often shelter beneath fronds of seaweed and kelp, and so are vulnerable to diver disturbance, especially divers with poor buoyancy control. Divers should maintain neutral buoyancy to minimise disturbance of the seafloor by fins and should avoid gripping objects for support or to prevent drift. Do not purposely damage or break off plants and marine life. Collecting souvenirs such as shells should be avoided as this not only removes habitat for some marine creatures but also decreases the beauty of the dive for the next person.



12

Remember the 'regs'

Know the laws relating to the taking of other marine organisms. If you choose to take marine animals observe all current regulations and take only what you need. All animals contribute to the functioning of a healthy ecosystem. Specifically targeting and removing certain species may impact upon the ecosystem as a whole. Heavily dived locations are particularly vulnerable. Fishing Regulations related to diving in SA can be found on the PIRSA Fisheries website (www.pir.sa.gov.au).

13

Appreciate marine reserves

Marine reserves are important places. Be aware that regulations may prohibit the taking of fish and other marine organisms from these areas. South Australia's unique marine environment supports a rich diversity of habitats, plants and animals. Marine reserves protect special creatures and plants that may live in or use certain areas. Marine reserves are also used to protect fish from human disturbance in important nursery areas, and help them spawn and grow.



This Code of Conduct is supported by:



Due to the limited targeted research on these species the information presented in this code is based on the best current knowledge of experts and people that have been working with seadragons and related species.

Dragon Search is preparing a database of all reported sightings of seadragons to try and establish a more complete picture of the distribution, and some understanding of the basic ecology of seadragons. This information will be used to determine research and management priorities for these little-known species.

Seadragon sightings can be reported to Dragon Search by phoning (08) 8223 5155 or via the Dragon Search website: (www.dragonsearch.asn.au).

The content of this Code of Conduct has been supported by the Scuba Divers Federation of South Australia.