

15 August 2004

Occupational Underwater Diving RIS
Legislation Development & Review
Workplace Health and Safety Queensland
Department of Industrial Relations
GPO Box 69
Brisbane, Qld 4001

Submission on Proposed Regulation of Occupational Underwater Diving Work

Thank you for the opportunity to comment on the Regulatory Impact Statement (RIS) concerning the proposal to regulate occupational underwater diving work.

This submission is by the Lizard Island Research Station (LIRS), which is a facility of the Australian Museum, Sydney. Established in 1973, it provides facilities for scientists and educational groups on the northern part of the Great Barrier Reef.

During the last five years (1999-2003), 14405 dives were done at LIRS with the average length of each dive being just over one hour. Of this total, 82% of the dives were to 10m or less, 12.5% from 11m to 15m, 5% from 16m to 20m and 0.5% from 21m to 29m. Most of the diving occurred around the Lizard Island Group although some was conducted at other nearby mid-shelf reefs and at outer barrier and inshore reefs. Diving at the Station is done in a cost-effective and safe manner, as attested by its outstanding safety record.

Our comments relate specifically to diving by scientists and educational groups, which are the Station's primary user groups. A summary of our major recommendations follows and detailed comments are attached.

Summary of Major Recommendations

1. Option 1 for managing occupational diving risks is supported, provided suggested amendments are implemented.
2. Separate legislation for scientific diving is recommended if suggested changes herein are in conflict with practices of the other industries covered by this RIS.
3. Minimum competency requirements under Option 3 should be changed from recreational scuba diver supervisor certificate (i.e. Divemaster) to Rescue Diver plus a minimum of 20 hours of logged diving experience.
4. Changes to Option 4 competency are required to remove ambiguity concerning an exemption and the inclusion of a diving qualification.

5. A fifth competency option (restricted scientific diver) is added for divers undertaking scientific diving but who have limited experience or who only occasionally undertake scientific diving.
6. Acknowledgement is required that some scientific diving may only require an annual Risk Management Assessment, similar to that provided for media, aquaculture, and harvest diving.
7. Dive safety logs should be signed as soon as is practicable after each dive.
8. Requirement for the master of the boat to sign the dive safety log to be at the discretion of the Diving Officer.
9. Proposed site brief to be replaced with an on site pre-dive plan and risk assessment similar to that outlined in AS/NZS 2299.2:2002.

The RIS does not assess adequately the impact of the proposed legislation on the scientific diving community in Queensland. We contend that it will have a significant impact on that industry. Consequently, we request the opportunity to review any changes that may be made to the proposal as a result of the current round of consultation. We will also welcome the opportunity to provide input into the scientific code of practice which is proposed to follow legislation, especially in relation to topics like dive tables and computers.

Regards,

Drs Lyle Vail and Anne Hoggett
Directors

Detailed Comments

Occupational Underwater Diving RIS

July 2004

Regulatory Options

This RIS outlines three options for managing occupational diving risks (p. 23).

We support the concept of Option 1 over Options 2 and 3. However, important changes to Option 1 are required to remove ambiguities and to make it more cost-effective for scientific divers without sacrificing safety. We strongly suggest that scientific diving be covered under separate legislation if it is not practical for other industries to implement the changes recommended below.

Scientific divers

The RIS states (page 6) that other occupational diving work includes: “Diving work that is performed for scientific, research, natural resource management or educational purposes (from hereon referred to as scientific diving).”

Because the definition includes the terms “scientific” and “educational”, it applies to a diverse section of the diving community, including:

- Scientists who undertake diving as part of their profession (i.e. employees at Universities, AIMS, CSIRO, Museums, GBRMPA, and DPI);
- Post-graduate students who dive to conduct research for their degree;
- Undergraduate students who dive as part of a tertiary course;
- Divers taking scientific specialty courses run by recreational training agencies (e.g. PADI AWARE Fish identification specialty course);
- Divers participating in activities like Reef Check, Earthwatch, or scientific expeditions run by dive companies.

The latter two categories comprise people who are not professional scientists, nor are they training to become scientists. They are divers drawn from the general public who choose to do some low-risk scientific activities underwater at certain times. Nonetheless, they fall into the occupational diver category because they are undertaking “scientific” or “educational” activities while diving. For instance, the PADI AWARE Fish identification specialty course advertises that: “You’ll also learn basic fish identification and scientific survey techniques ...”. Undergraduate students and even postgraduate students may only do scientific diving for a short time in their lives. However, all these people conduct occupational diving as defined in the RIS and would fall under the proposed Regulations.

Most of the non-professional scientists and students captured by the proposed Regulation will have to undergo additional training to attain competency under Options 1 to 3 (p. 14). The RIS incorrectly states (p. 28) that “This cost [to achieve competency] is an upfront cost with minimal ongoing costs for industry”. However, the RIS does

acknowledge later (p. 29) that “These groups of scientific divers are often transient in their employment arrangements, including research students or visiting international divers.” It does not recognise that a proportion of divers who conduct scientific work are not employed to do that work at all. The number of scientific divers in Queensland at any one time may well be about 500 people, but the level of turnover is high so the cost of meeting the competency requirements is much greater than estimated in the RIS.

The proposed regulation will impose a huge financial burden on the tertiary student sector, it will discourage recreational divers from furthering their knowledge of the marine environment, and it will probably make it impractical to run programs like Reef Check. To help mitigate these impacts, we propose that a fifth training option covering restricted scientific diving (described below) be included.

Competency requirements

The RIS proposes four options (p. 14) by which scientific divers can gain competency. We commend the provision of a range of options and have no comments regarding Options 1 and 2. Recommended changes to Options 3 and 4 are outlined and we have proposed a fifth option to create a category for Restricted Scientific Divers.

Competency Option 3

Under this option, two levels of competency need to be attained (p. 14). First, the person must acquire training, qualifications or experience in relevant parts of the AS 2815 series. The parts that are relevant will vary between industries and according to the tasks to be undertaken. Second, the person must also hold a recreational scuba diver supervisor certificate (i.e. minimum of Divemaster).

A large component of a Divemaster Course is learning the skills needed to guide groups of less experienced divers. Such skills are generally not necessary for conducting safe scientific diving since most teams are generally small (4 or fewer divers) and the other divers in the team are better trained and more experienced than the newly-certified recreational divers who are supervised by Divemasters.

We propose that a Rescue Diver qualification be listed in Option 3 rather than a dive supervisor certificate for two reasons. Firstly, Rescue Diver is the highest level of recreational training available that does not include skills unnecessary for scientific diving (i.e. supervising novice divers). Secondly, many such courses (e.g. PADI) provide evidence of training in most of the skills required to satisfy the relevant parts of AS2815. In our experience (19 years supervising scientific diving by research institutions), divers with recreational training and practical experience are sufficiently well-trained to carry out most kinds of scientific diving that are conducted in Queensland. For this reason, we propose that Option 3 also requires divers to demonstrate substantial relevant diving experience (say 20 hours, the level required of a PADI Divemaster candidate).

Consequently, we propose that Option 3 be altered to: “- a person who has acquired relevant training, qualifications or experience outlined in relevant parts of the AS2815

series, and holds a recreational diving certificate at the level of Rescue Diver or higher, and has 20 hours of relevant underwater experience”.

Competency Option 4

Under this option (p. 14), a person qualifies as a scientific diver provided they have “spent at least 15 hours performing similar work in similar conditions and has a sound knowledge of diving physics, physiology, first aid, equipment maintenance and other relevant topics”.

We suggest the following word changes since the RIS doesn’t refer to any diving qualification:

“A person who has at least a recreational open water diver certificate and who has spent a minimum of 15 hours

This option expires on 31.10.07, except for certain groups. However, the wording of the exemption is ambiguous. If we understand the intention correctly, it (p. 14) should be changed to “It is proposed that option 4 expire on 31/10/2007, unless the diving being performed is *being carried out by divers visiting from overseas* and is: ...”

We strongly support the exclusion of international scientific divers from the 31.10.07 cut-off date.

Competency Option 5

There is a great need for competency of people engaged in scientific diving to be recognised at a lower level than that provided by Options 1 to 3 in certain circumstances. We propose the addition of Option 5 to address this need and thereby establish a new Restricted Scientific Diver category.

Restricted Scientific Divers would typically be students, persons enrolled in specialty courses run by recreational training agencies, persons involved in scientific expeditions run by recreational dive companies, and persons participating in programs such as Reef Check and Earthwatch. There is substantial support in existing standards and codes (such as AS2299.2:2002, Appendix A, A4, p. 47, Restricted Scientific Diver and the UNESCO Code of Practice for Scientific Diving, 3.1.9 Trainee Diver, 3.1.10 Temporary Diver, pp. 23-24) for allowing such divers to undertake scientific diving with lower levels of training but with more restrictions than fully-qualified scientific divers.

This option will be critically important for Australian scientific divers after Option 4 expires on 31.10.07. It will enable Australian undergraduate students to undertake courses that involve diving and postgraduate students to conduct research projects under a restricted set of diving conditions. Students can go on to acquire competency to dive under less restricted diving conditions (Options 1 to 3) at a later time if they choose to pursue that career. Just as importantly, it will enable persons who are usually recreational divers to participate in low risk scientific diving activities such as some specialty courses and Reef Watch programs.

We propose that Option 5 recognises Restricted Scientific Divers with the following minimum qualifications and restrictions:

- be at least 18 years of age
- hold an open water diver certificate from a recognized SCUBA training and certifying organization
- have at least 15 hours of logged underwater diving experience after certification
- not dive using SSBA equipment unless trained in SSBA diving
- not dive deeper than 18 m
- not use powered tools or lift bags and possibly other equipment as directed by the Diving Officer.
- Not valid for any other “Occupational Diving Work”, except scientific diving.

Risk management

We object to the implication that Risk Management Assessments for scientific divers should, on average, be done ten times more often than for other industries (i.e. Harvesting; p. 32 table & paragraph 2). From our experience, multi-day repetitive dives done by many scientists are often very similar with regard to depth, conditions, and tasks. Consequently, it is important that scientific diving also be included in the paragraph that says “one risk assessment may be completed each year” (p. 32, paragraph 2).

Dive safety logs

This section states that “the signature (in dive safety logs) needs to be made as soon as the diver has removed necessary gear and dried the diver’s hands” (p. 18, para 7). We agree with the Indigenous Representatives (Appendix 1, page 43) that filling in a dive safety log at the end of each dive is too onerous. In addition, it is impractical for much of the time when diving out of small dinghies in unfavourable conditions.

Much scientific diving is done in small teams from small boats and thus members of the team are immediately aware if someone has not returned from the dive. Therefore, the need to immediately sign off on the dive safety log to ensure that a diver has returned is not a valid argument for much scientific diving. Likewise, the requirement that the master of the boat sign the safety log (p. 18, para 6) is not required for similar reasons.

Consequently, we propose that the following changes be made to the dive safety logs section:

- Dive safety logs are to be filled in at the end of each day, at the latest.
- The requirement for the master of the boat to sign the dive safety log is at the discretion of the Diving Officer.

Site Brief

We consider the site brief (pp 19-20) primarily to be a review of the risk management process and, as proposed, it is not practical or particularly useful in increasing diver safety for scientific diving. For scientific diving, we feel that the On Site Pre-Dive Plan

and Risk Assessment as outlined in AS/NZS 2299.2:2002 (section 3.4, page 19) is a much safer and practical approach to pre-dive briefings.

The requirement that scientific divers “sign-off” on yet another piece of paper before entering the water is not necessary for increasing safety, often impractical when working from a small dive boat in wet conditions and it is a fine example of “paper burden”. Consequently, we strongly recommend that this section be deleted and replaced with the following provisions that are based, in part, on Section 3.4 of AS/NZS 2299.2:2002:

At the dive site before every dive, all divers and any non-diving support personnel shall discuss in detail and agree upon the pre-dive plan and update the risk assessment as appropriate.

The pre-dive plan shall include –

- Location of the dive
- Consideration of surface and underwater conditions and hazards
- Maximum depth and time
- Tasks of all members of the diving team
- Residual inert gas status of dive teams members
- The breathing gas supply appropriate for the dive
- Procedures to be followed in the event of an emergency

Diving from vessel underway

It is not clear whether this section (p. 20) applies only to SSBA or also to SCUBA. Please clarify.

Associated Costs

In our opinion, the wage estimate of \$14.32 per hour is too low for scientific divers (p.28, top table) and thus the cost to the scientific community resulting from Regulations is underestimated. In addition, we consider the King Fisher Bay Resort and Village Award a curious choice on which to base wages for scientific diving. Surely, it would be more appropriate to use the wage structure of an organisation that does considerable scientific diving such AIMS, James Cook University or the University of Queensland.

On page 30, the last column of the table should read: Total cost per annum (per diver).