

Recommendations for SCUBA Diving

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1. General policy

Purpose of diving activity:

- Data collection in the underwater environment by master students and employees at the Department of Biology that have obtained the *Commercial SCUBA diver certificate* (Erhvervsdykkercertifikat). For more information see the homepage of the [Danish Maritime Authority](#) (Søfartsstyrelsen)
- For master student projects, objectives and procedures for the diving operations must be described in the project description and must to be approved by (1) the main academic supervisor of the student and (2) an employee at the Department of Biology holding a commercial SCUBA diver certificate before the final approval by the Study Board.

Operational control (Organisation and responsibilities)

- During diving operations, the commercial divers have the overall responsibility (in accordance with the diving legislation (see Section 2) that all under and above water activities run safely and in accordance with regulations for all involved personnel.
- In addition, the academic supervisor (with or without a valid commercial diving certificate) should always be involved together with the students in the planning procedures and execution of the diving operations. The purpose is to ensure that both scientific and diving activities are carried out in an overall sensible, responsible and safe way. To be clear, the main responsible person regarding diving responsibilities will always be the diver holding the commercial diving certificate.

Diving legislation in Denmark

- All diving activities must be conducted in accordance with the latest version of the Danish Diving Legislation which must be consulted for all points in Section 2.

Consequences of violation of the regulations

- If a violation of the stated regulations occurs the student and supervisor will receive a warning from the internal diving coordinator and Head of Department and be demanded to consider changing diving procedures. Furthermore, they will be supervised by the internal diving coordinator during the following diving operations until sensible, responsible and safe diving is re-established.
- If violation of the regulations keeps occurring the part of the project involving diving will be terminated.

2. Diving regulations

All types of SCUBA diving activities in relation to projects at the Department of Biology must be planned and conducted as commercial dives.

The following points must be checked and carried out by the responsible diver/supervisor before any diving is carried out:

- **Planning:** A detailed plan with focus on the scientific purpose must be conducted in writing and must include: scientific purpose, methodology description, equipment used for data collection, execution procedures, responsibilities of involved personnel, dive project plan (DPP) and risk assessment. If multiple dives are conducted at same location the same plan can be used, but risk assessment must be re-evaluated for every dive by using the *Standard Risk Assessment Form* (See Appendix A).
The student's dive plan must to be approved by the academic supervisor if he/she holds a commercial diving certificate. If not, then the student (and academic supervisor) must seek approval from the Diving Committee at the Department of Biology.
- **Certifications:** Validity of commercial diving certificate, diving first aid and medical certificates of all personnel directly involved in the diving operations.
- **Equipment:** The dive team must be familiar with all the equipment used for the diving operation. The equipment must be functional and within the time limit for next required service check. In addition, the dive team must be familiar with the research equipment that has to be used or implemented under water.
- **Roles and responsibilities:** There must be a clear understanding within the dive team of role and responsibilities of each member. This must appear in writing in the DPP/Risk Assessment.
- **Diving Project Plan (DPP):** For all diving projects, a Diving Project Plan must be made by the student/diver and approved by the supervisor and responsible internal diving coordinator.
- **Risk Assessment:** For all diving operations, a detailed Risk Assessment is required. For multiple diving in the same location the *Standard Risk Assessment Form* (see Appendix A) must be used to re-evaluate conditions.
- **Health and safety on site:** This part must be considered and implemented in the Risk Assessment.
- **Emergency procedures:** This part must be considered and implemented in the Risk Assessment.

Diving procedures

- Diving must be carried out in a team of minimum three persons consisting of a commercially certified diver (acting supervisor), a tender and an assistant. If diving is demanding a supervisor and/or standby diver can be implemented.
- The commercial diver is acting as the responsible dive supervisor on the site.
- The tender is required to hold either a commercial diving certificate or at least a tender certificate.

- The assistant should optimally also hold a commercial diving certificate, but can be assisting if well introduced and comfortable with the diving procedures, specific tasks to carry out, emergency procedures and should optimally also hold a 1st aid certificate.
- Diving must be performed in accordance to the Danish Diving Legislation
- At all times, there must be a clear understanding within the dive team of roles and responsibilities of each member. This must appear in writing in the DPP/Risk Assessment.
- The dive operation must be performed under safe and non-stressful conditions
- The diver must have had sufficient rest and sleep and can refuse to dive if feeling unwell.

Post dive procedures

- The dive team must make an evaluation of the diving procedures and tasks performed to discuss improvements for safety, sampling, etc.
- All equipment must be handled carefully and maintained after the diving
- Dive logs (*Standard Risk Assessment Form*, Appendix A) must be kept and stored for five years.

Accident/Incident reporting

- Accidents must be reported to the Danish Maritime Authorities plus malfunctions, or divers feeling unwell

3. Equipment and plant used for the diving operations

A description of all the diving gear used as well as a description of the support equipment, e.g., compressor, must be stated and available.

As required by the authorities a record must be kept of all diving equipment and plant providing information about inventory, serial numbers and status for service checks.

4. Diving under foreign regulations:

- National rules of the country where diving activities take place must be followed. It is the responsibility of the diver and the principal investigator (PI) of the project.
- If diving activities are performed from a Danish vessel diving must be carried out in accordance with Danish diving legislation.
- It must be clear how the personnel involved in the diving activities are insured. To make sure personnel is covered the university's insurance company should be contacted to get a written statement. Contact information to Europæiske Rejseforsikring: info@europaeiske.dk

5. Appendix

Appendix A – Standard Risk Assessment Form

DATE: / /	LOCATION:	DIVE #:	TASK/PROJECT:
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Dive Team (Full Name)

Divers	1	2	3	4	5	6	7	8
Tenders	Dive							
Supervisor	Dive							
Stand-by	Dive							

Checks

	1	2	3	4						
Diver	Cylinders fastened	Jacket cylinders	Jacket, harness, lifeline	Mask and octopus	Open air supply and read contents	Knife, tools, instruments	Operate flotation aids	Release weight belt	Mask secure, reserve	Attach comms and video and check
	<ul style="list-style-type: none"> • Are the cylinders properly fastened? • Visual and physical check • 1st stage securely attached? 	<ul style="list-style-type: none"> • Are all jacket cylinders filled? • Is the vent closed? Do NOT open! 	<ul style="list-style-type: none"> • Jacket intact and properly fastened? • Harness fastened? • Lifeline attached and karabiner secured? 	<ul style="list-style-type: none"> • Mask and spider intact and correctly assembled? • Nose piece? Disinfected? • Mask and octopus securely attached to LP hoses? 	<ul style="list-style-type: none"> • Open cylinders, quarter turn back • Note content • TRY 2nd stage and taste air! 	<ul style="list-style-type: none"> • Does diver have knife, tools and depth gauge/ timer? • Can the knife be reached? • Half mask? 	<ul style="list-style-type: none"> • Can the diver operate all flotation aids? (jacket, suit inflation and deflation) 	<ul style="list-style-type: none"> • Can the diver release weights? NO weights in jacket or drysuit pockets! 	<ul style="list-style-type: none"> • Attach mask. Make sure mask seals and is comfortable • Check back of neck and chin • Operate reserve? 	<ul style="list-style-type: none"> • Securely attach ear pieces • Check communication and video
1										
2										
3										
4										
5										
6										
7										
8										
Stand-by										

Record of Dive

Diver	N ₂ IN	Left Surface	Made Bottom	Left Bottom	Made Stop 1	Stop 1 Depth	Left Stop 1	Made Stop 2	Stop 2 Depth	Left Stop 2	Reached Surface	Max Depth	Bottom Time	DECO Time	Total Time	N ₂ OUT	AIR OUT
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	

Emergency numbers: **SOK: +45 7285 0000** **ALARM: 1-1-2**

Supervisor's name:Signature:.....Date:

DATE: / /	LOCATION:	DIVE #:	TASK/PROJECT:
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CHECK: Supervisor must notify all personnel location of: oxygen kit , first aid kit , decompression tables , and brief about dive plan

Environmental factors / on-site risk assessment

Weather <small>Risk?</small>	Wind strength/direction <small>Risk?</small>	Sea State <small>Risk?</small>	Surface Visibility <small>Risk?</small>	Breathing Apparatus	Breathing Mixture	Decompression Table
					AIR	
Tides/ Currents <small>Risk?</small>	Traffic <small>Risk?</small>	Air Temp <small>Risk?</small>	Water Temp <small>Risk?</small>	Line Signals		
				One pull: OK? / I am OK More than four pulls: Emergency!		
Water Quality <small>Risk?</small>	Water Visibility <small>Risk?</small>	Underwater Hazards <small>Risk?</small>	Other Risks?			

Additional Notes

Record of any DCS, other illness, discomfort or injury	
Record of any emergency	
Defects in plant or equipment	
Other factors relevant to safety or health	

Remarks (Equipment exceptions, problems, etc.)

Supervisor's name:Signature:.....Date: