



Australian Government

AHCMAR305 Monitor ocean conditions and marine environmental quality

Release: 1

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Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 6.0.

Application

This unit of competency describes the skills and knowledge required to monitor ocean conditions using sensors, sampling and laboratory analysis, and to monitor biological markers in marine environments. It does not include diving for scientific purposes (see AHCLPW307 Perform restricted diving for scientific purposes).

The unit applies to individuals who work in a marine conservation and management role under broad supervision and take responsibility for their own work. They use discretion and judgement in the selection, allocation and use of available resources and for solving problems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Marine (MAR)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan marine water monitoring operations	1.1 Determine marine water and environment monitoring objectives and applicable operating procedures from monitoring plan 1.2 Determine sensors, sampling equipment, support equipment and materials required for monitoring operations 1.3 Identify personnel required for monitoring operations, and source

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	of expert advice 1.4 Determine schedule for monitoring activities within operational constraints 1.5 Identify and resolve logistical issues for monitoring activity 1.6 Identify partner organisations and clarify requirements for transporting, processing and analysing samples 1.7 Prepare a plan and timeline for a marine water monitoring program
2. Prepare to monitor ocean conditions and marine environmental quality	2.1 Confirm permission for marine monitoring program has been approved and notify stakeholders 2.2 Assemble, check and test monitoring and support equipment prior to deployment 2.3 Maintain, repair or replace faulty equipment 2.4 Prepare equipment and materials for transport to sampling site 2.5 Identify and source consumables required for monitoring program 2.6 Identify hazards, assess risk and implement controls according to workplace health and safety procedures 2.7 Review operating and emergency procedures for the marine monitoring work plan, and brief personnel
3. Monitor ocean conditions and marine environmental quality	3.1 Transport equipment and consumables to monitoring location 3.2 Prepare marine water monitoring equipment for deployment according to workplace and biosecurity procedures 3.3 Deploy equipment and implement monitoring procedure 3.4 Record marine water monitoring data 3.5 Monitor program and implement and record adjustments according to program requirements
4. Conduct post-monitoring operations	4.1 Secure and download recorded data 4.2 Secure, label and store samples for transport 4.3 Clean, service and maintain marine water monitoring equipment according to workplace and biosecurity procedures 4.4 Organise repair or replacement of faulty equipment 4.5 Store marine water monitoring equipment 4.6 Conduct a debrief session on performance of monitoring program

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.7 Maintain records and report activity and incidents according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Writing	Accurately record monitoring data and information using industry specific language following workplace formatting
Numeracy	Use basic computations to determine scheduling and timing of ocean monitoring activities

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCMAR305 Monitor ocean conditions and marine environmental quality	Not applicable	The unit has been created to address an emerging skill or task required by industry	Newly created

Links

Companion Volumes, including Implementation Guides, are available at VETNet: - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHC MAR305 Monitor ocean conditions and marine environmental quality

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has, on at least one occasion, planned and implemented an ocean monitoring program for conditions and environmental quality using sensors, sampling and laboratory analysis according to workplace procedures.

There must also be evidence that the individual has:

- scheduled monitoring activity within operating constraints, including:
 - seasonal effects
 - prevailing weather conditions
 - tides and currents
 - human impact
- obtained and assembled equipment and consumables for monitoring ocean conditions and marine environmental quality
- assembled, checked and tested monitoring and support equipment
- conducted a risk assessment prior to monitoring activity
- monitored ocean water quality, including:
 - temperature
 - salinity
 - turbidity
 - contaminants
 - flow
- monitored biological indicators and markers in marine environments, which must include sediment quality and indicator species
- cleaned, maintained, repaired or replaced water monitoring equipment
- briefed and de-briefed personnel on monitoring ocean conditions and marine environmental quality
- transported equipment and consumables for monitoring ocean conditions and marine environmental quality

- stored equipment and consumables for monitoring ocean conditions and marine environmental quality
- recorded, secured and stored data
- secured, labelled and stored samples for transport according to partner organisation requirements.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- drivers of local and regional ocean circulation and conditions, including:
 - ocean current systems
 - weather patterns
 - tides
 - seasonal changes, including freshwater inflows
 - extraordinary storms, temperature events and sources of marine pollution
- factors that impact on local and regional ocean conditions, including:
 - season
 - weather
 - tides
 - currents
 - human impact
- the basic physics of the underwater environment and the interplay of factors such as depth, pressure, temperature, water chemistry, flow and light penetration
- biological markers and indicators of marine system health
- equipment and techniques used for monitoring ocean conditions and marine environmental quality
- techniques and processes used for taking, storing, processing and transporting ocean water samples
- sampling risks associated with contamination and storage
- planning monitoring operations for ocean conditions and marine environmental quality
- computer hardware and software systems that support monitoring
- techniques for cleaning and maintaining marine water monitoring equipment
- maritime regulations for commercial survey work on vessels
- risk assessments and safety considerations for conducting marine monitoring
- biosecurity measures for marine monitoring techniques and equipment
- operating and emergency procedures for marine monitoring work
- types of contaminants affecting water quality, including:
 - hydrocarbons
 - plastics and microplastics.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in an ocean environment
- resources, equipment and materials:
 - a vessel for transport to an ocean environment
 - tools and equipment for monitoring
 - personal protective equipment
- specifications:
 - workplace procedures and processes for monitoring in an ocean environment
 - manufacturer operating instructions for monitoring equipment
 - workplace instructions
- relationships:
 - team members
 - supervisor
- timeframes:
 - according to timeframes specified in monitoring program schedule.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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