



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **ACMSPE306A Provide basic care of marine fish**

**Revision Number: 1**

## ACMSPE306A Provide basic care of marine fish

### Modification History

Not applicable.

### Unit Descriptor

<p><b>Unit descriptor</b></p>	<p>This unit of competency covers the process of identifying marine fish and their behavioural and physical needs, providing daily care requirements and assisting with behavioural requirements and preventative health measures.</p> <p>Licensing, legislative, regulatory or certification requirements may apply to this unit. Therefore, it will be necessary to check with the relevant state or territory regulators for current licensing, legislative or regulatory requirements before undertaking this unit.</p>
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### Application of the Unit

<p><b>Application of the unit</b></p>	<p>The unit is applicable to those working in animal care industry sectors where marine fish are reared and cared for. This may include aquariums, pet stores, zoos, animal technology facilities, catchers and distributors or similar workplaces.</p> <p>In addition to legal and ethical responsibilities, all units of competency in the ACM10 Animal Care and Management Training Package have the requirement for animals to be handled gently and calmly. The individual is required to exhibit appropriate care for animals so that stress and discomfort is minimised.</p>
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## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify commonly available marine fish	<p>1.1. Profile of <i>marine fish</i> commonly held in facility, including habitat, nutrition, health and <i>behavioural characteristics</i>, is defined.</p> <p>1.2. External features are described using industry terminology.</p> <p>1.3. Marine fish are classified using industry- specific terminology.</p> <p>1.4. <i>Colours, markings and other identifying features</i> are defined, interpreted and documented.</p>
2. Identify and evaluate behavioural and housing needs	<p>2.1. <i>Water quality</i> is monitored and <i>adjustments</i> made as required to maintain optimum water quality appropriate for the species being housed as directed by supervisor.</p> <p>2.2. Indicators of animal comfort and normal behaviour are identified and <i>signs of distressed marine fish</i> are recognised and reported to supervisor.</p> <p>2.3. Industry standards and guidelines for <i>housing design, environmental factors</i> and appropriate stocking densities are identified.</p> <p>2.4. <i>Enrichment needs</i> are identified and evaluated for specific fish species.</p> <p>2.5. Current animal housing design is evaluated in relation to the <i>welfare of animals</i> kept and legislation requirements.</p>
3. Catch, handle and restrain marine fish	<p>3.1. <i>Occupational health and safety (OHS) risks</i> associated with handling and restraining marine fish are identified and methods used to minimise risks are demonstrated.</p> <p>3.2. <i>Equipment used to catch, handle and restrain</i> marine fish is prepared and evaluated.</p> <p>3.3. Marine fish are <i>approached and caught</i> while minimising risks to animal and others.</p> <p>3.4. Marine fish are restrained using a range of approved animal welfare management procedures.</p>
4. Assist with health care needs	<p>4.1. Signs of good health in fish are identified and recorded in animal health and treatment records.</p> <p>4.2. <i>Common health issues</i> are identified and signs of disease or other conditions are reported to supervisor.</p> <p>4.3. <i>General health maintenance and preventative treatment procedures</i> are identified and implemented</p>

ELEMENT	PERFORMANCE CRITERIA
	<p>in accordance with level of job responsibility, regulatory requirements and supervisor guidance.</p> <p>4.4. Options for activity and enrichment are identified, evaluated for impact on marine fish health and implemented as directed by supervisor.</p>
5. Feed marine fish	<p>5.1. <i>Digestive system features</i> are identified and related to marine fish specific feeding routines and diets.</p> <p>5.2. Preferred food sources are identified and food samples are assessed for quality and suitability.</p> <p>5.3. Potential <i>feeding hazards</i> are identified and risk control options defined.</p> <p>5.4. Feed is prepared in accordance with dietary needs.</p> <p>5.5. Animal and plant species commonly used to feed marine fish are cultured.</p> <p>5.6. Feed is distributed and consumption, including abnormalities, is reported in accordance with workplace routines.</p>
6. Maintain records	<p>6.1. <i>Documentation</i> on the care and management of marine fish is completed in accordance with workplace procedures and legislation requirements.</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

- complete relevant work-related documents and maintain accurate animal records
- comply with OHS, animal care, ethics and industry codes of conduct, regulations and legislations
- culture live food species for marine fish
- employ safe and environmentally responsible organisational systems and procedures when working with, restraining and handling marine fish
- maintain the highest standards of personal and workplace hygiene and infection control at all times to reduce the risk of infection and cross-infection
- measure, interpret and record marine fish weight, length and other relevant objective indicators of change in physiological status
- monitor marine fish health, condition and behaviour and recognise normal and abnormal signs
- monitor water quality parameters using physical and chemical assessments and tests
- prepare doses for treatments as directed and verified by supervisor
- provide basic first aid to marine fish as required under supervision
- use equipment and materials correctly and in accordance with manufacturers' specifications
- literacy skills to read and follow organisational policies and procedures, including OHS and animal welfare; follow sequenced written instructions; and record information accurately and legibly
- oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor
- numeracy skills to estimate, calculate and record routine workplace measures
- interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities
- problem-solving skills to assess appropriate practices and prioritise daily tasks
- use safe manual handling techniques and/or equipment
- use safe waste handling and disposal procedures.

#### Required knowledge

- anatomical and physiological terminology and glossary of terms
- anatomical structures and physiological features related to basic care requirements for marine fish
- awareness of natural marine fish behaviour relating to the characteristics of the species, age, health and reproductive status, behavioural and social needs and the

**REQUIRED SKILLS AND KNOWLEDGE**

- signs of distress, illness and undesirable behaviours
- basic marine fish care and hygiene principles
- basic marine fish first aid techniques
- basic water chemistry parameters and physical indicators of water quality relevant to the care and husbandry of marine fish
- biology and culture of common food species used to feed marine fish
- common aeration and filtration systems
- housing, social and activity needs of marine fish and environmental impacts on health and wellbeing
- methods of transmission of disease and infection
- organisational policies and procedures regarding the care and health maintenance of marine fish
- personal protective clothing and equipment and when and how it should be used
- physical conditions and vital signs of marine fish
- potential hazards and risks to animals and staff during feeding and cleaning of housing
- relevant legislation, regulations and codes of practice, including OHS, animal welfare and ethics
- safe marine fish handling techniques and procedures, potential hazards and control measures
- terminology and language variations used by workplace staff and the public to describe marine fish, their behaviour, status, health and treatments
- terminology used to describe and document health and behavioural signs, including desirable and undesirable features
- types of food and food supplements and their role in marine fish diets
- types of information that has to be reported and recorded in animal care workplaces
- workplace hygiene standards, disinfectants, cleaning agents, cleaning techniques and cleaning equipment and materials.

## Evidence Guide

### EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

#### Overview of assessment

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit. Assessors should ensure that candidates can:

- identify the specific characteristics and needs of marine fish and apply these to the best practice industry standard of housing, socialising, feeding and health management
- classify and identify marine fish by age, sex, reproductive status, condition, colours, markings and other identifying features using industry terminology
- assess water quality for suitability for maintained species
- safely and humanely catch, handle and restrain fish
- report and document treatments, behaviours and other information on individual fish where relevant in accordance with animal welfare regulations, industry standards, workplace protocols and procedures.

The skills and knowledge required to provide basic care of marine fish must be transferable to a range of work environments and contexts and include the ability to deal with unplanned events.

#### Context of and specific resources for assessment

Assessment of this unit is to be practical in nature and will most appropriately be assessed against the types of processes required in the industry sector in which candidates are working or in a situation that reproduces normal work conditions. Workplaces can include aquariums, pet stores, zoos, animal technology facilities, catchers or distributors or similar workplaces.

There must be access to a range of animals as well as relevant information, equipment and/or resources to enable one to demonstrate competence. Assessment must

<b>EVIDENCE GUIDE</b>	
	cover a minimum of three commonly available marine fish species.
<b>Method of assessment</b>	<p>To ensure consistency in one's performance, competency should be demonstrated, to industry defined standards, on more than one occasion over a period of time in order to cover a variety of circumstances and responsibilities over a number of assessment activities.</p> <p>The assessment strategy must include practical skills assessment. Suggested strategies for this unit are:</p> <ul style="list-style-type: none"> <li>• written and/or oral assessment of candidate's required knowledge</li> <li>• observed, documented and first-hand testimonial evidence of candidate's application of practical tasks</li> <li>• simulation exercises that reproduce normal work conditions</li> <li>• third-party evidence</li> <li>• workplace documentation</li> <li>• portfolio.</li> </ul> <p>This unit may be assessed in a holistic way with other units of competency relevant to the industry sector, workplace and job role.</p>
<b>Guidance information for assessment</b>	Assessment methods should reflect workplace demands (e.g. literacy and numeracy demands) and the needs of particular target groups (e.g. people with disabilities, Aboriginal and Torres Strait Islander people, women, people with a language background other than English, youth and people from low socioeconomic backgrounds).

## Range Statement

### RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p>Commonly available <i>marine fish</i> may include:</p>	<ul style="list-style-type: none"> <li>• Anemone Fish, Angels and Anthias</li> <li>• Bannerfish, Basslets, Boxfish and Butterflies</li> <li>• Chromis and Damsels</li> <li>• Eels and Filefish</li> <li>• Gobies and Groupers</li> <li>• Lionfish and Puffers</li> <li>• Seahorses and Dragons</li> <li>• Sharks, Snappers, Stonefish and Surgeons</li> <li>• Tangs, Tasse and Trigger Fish</li> <li>• Wrasse.</li> </ul>
<p><i>Behavioural characteristics</i> may include:</p>	<ul style="list-style-type: none"> <li>• behaviour characteristics can vary according to:             <ul style="list-style-type: none"> <li>• the breeding season</li> <li>• the species, breed, age and sex of the animals</li> <li>• the time of day or night</li> </ul> </li> <li>• behaviour characteristics associated with different species:             <ul style="list-style-type: none"> <li>• activity levels at certain times of day or night</li> <li>• feeding and foraging</li> <li>• fight or flight</li> <li>• social interaction</li> <li>• reproductive behaviours</li> <li>• the environment being kept within</li> <li>• the other marine animals in that environment</li> </ul> </li> <li>• defensive behaviour:             <ul style="list-style-type: none"> <li>• biting</li> <li>• defending territory, other fish or food.</li> </ul> </li> </ul>
<p><i>Colours, markings and other identifying features</i> may include:</p>	<ul style="list-style-type: none"> <li>• age, sex, sexual maturity and size</li> <li>• body shape and fin modifications</li> <li>• eye colour</li> <li>• markings, patterns and permanent scars</li> <li>• microchip, tattoos and markings</li> <li>• skin and scale colours and texture</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>tail and fin shape, size and location.</li> </ul>
Indicators of poor <i>water quality</i> may include:	<ul style="list-style-type: none"> <li>colour</li> <li>odour</li> <li>unsuitable water chemistry parameters.</li> </ul>
Water quality <i>adjustments</i> may involve:	<ul style="list-style-type: none"> <li>correcting chemical imbalances</li> <li>partial water change</li> <li>raising or lowering pH or hardness.</li> </ul>
<i>Signs of distressed marine fish</i> may include:	<ul style="list-style-type: none"> <li>aggressive behaviour</li> <li>altered respiration rate</li> <li>any change in normal behaviour, including swimming patterns</li> <li>discolouration</li> <li>erratic swimming patterns</li> <li>fins clamped against body</li> <li>floating</li> <li>hiding</li> <li>ill-thrift</li> <li>immobility</li> <li>inappetence</li> <li>presence of external disease organisms</li> <li>subdued behaviour</li> <li>aggressive behaviour.</li> </ul>
<i>Housing design and environmental factors</i> may include:	<ul style="list-style-type: none"> <li>environmental: <ul style="list-style-type: none"> <li>aeration rates and supply</li> <li>biological control of waste</li> <li>cleaning routines and methods</li> <li>drainage and weather protection</li> <li>electrical safety</li> <li>escape proofing</li> <li>fundamentals of the biological process</li> <li>general animal housing security</li> <li>filtration requirements to maintain the water quality and optimum environmental conditions for target species</li> <li>heating and lighting</li> <li>housing furniture and compatible plants</li> <li>outdoor predator protection (e.g. protection from fish eating birds)</li> <li>water flow rates and currents</li> </ul> </li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• housing design:               <ul style="list-style-type: none"> <li>• housing options:                   <ul style="list-style-type: none"> <li>• aquaria</li> <li>• indoor</li> <li>• outdoor</li> </ul> </li> </ul> </li> <li>• housing requirements:               <ul style="list-style-type: none"> <li>• compatibility of species housed together</li> <li>• food distribution</li> <li>• security considerations</li> <li>• longevity and sturdiness of materials</li> <li>• plants, features and substrate materials</li> <li>• suitability for specific species</li> <li>• species-specific options for animals to hide or rest</li> <li>• designs that allow for enrichment activities or species-specific feeding or socialising</li> <li>• social options:                   <ul style="list-style-type: none"> <li>• solitary</li> <li>• pairs</li> <li>• single sexed groups</li> <li>• polyandrous/polygamous groups</li> <li>• mixed species.</li> </ul> </li> </ul> </li> </ul>
<i>Enrichment needs</i> may include:	<ul style="list-style-type: none"> <li>• food or food-related enrichment:               <ul style="list-style-type: none"> <li>• creation of currents during feedings</li> <li>• creation of feeders such as cone/film canisters with holes for brine shrimp to swim out of</li> <li>• feedings at different times of day</li> <li>• feedings at different places in tank environment (if possible)</li> <li>• providing opportunities to scavenge, graze and forage for food</li> <li>• sinking feeders</li> <li>• variations for types and styles of food and activities (e.g. live animal or plant species)</li> </ul> </li> <li>• physical enrichment:               <ul style="list-style-type: none"> <li>• diverse and varied environment for animals to pick their comfortable spot plus open swimming areas as required</li> <li>• periodic changes of lighting intensity</li> </ul> </li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• seasonal change of lighting photoperiod</li> <li>• periodic changes to exhibit décor (e.g. changing logs, plants and branches)</li> <li>• random addition of novel items (e.g. shells, rocks, leaves and plants)</li> <li>• social enrichment may include:               <ul style="list-style-type: none"> <li>• animals of the same species housed with same to encourage species-specific behaviors</li> <li>• mixed species exhibits to encourage positive inter-species interactions.</li> </ul> </li> </ul>
<b>Welfare of animals</b> requirements may include:	<ul style="list-style-type: none"> <li>• adequate housing, nutrition and stock levels</li> <li>• compliance to relevant state or territory legislation and regulations</li> <li>• enrichment opportunities</li> <li>• the absence of predators, pests and vermin</li> <li>• the compatibility of species, breeds and sexes.</li> </ul>
<b>OHS risks</b> when working with animals may include:	<ul style="list-style-type: none"> <li>• animal bites, envenomation, scratches and crush injuries</li> <li>• biological hazardous waste and sharps disposal</li> <li>• electrical hazards enhanced by the presence of water</li> <li>• handling of chemicals and medicines</li> <li>• gas leakage</li> <li>• inhalation of aerosol particles</li> <li>• intraocular contamination</li> <li>• manual handling, including carrying, lifting and shifting</li> <li>• needle pricks and cuts from other sharps</li> <li>• release of infective agents (animal and human)</li> <li>• slippery or uneven work surfaces</li> <li>• zoonoses.</li> </ul>
<b>Equipment used to catch, handle and restrain</b> marine fish may include:	<ul style="list-style-type: none"> <li>• buckets</li> <li>• damp towels or wet sponges</li> <li>• fish anaesthetics:               <ul style="list-style-type: none"> <li>• Aqui-S</li> <li>• Clove Oil</li> <li>• MS-222</li> </ul> </li> <li>• fish traps</li> <li>• plastic bags</li> <li>• soft gloves</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• soft, knotless hand nets.</li> </ul>
<b><i>Methods used to approach and catch</i></b> marine fish may include:	<ul style="list-style-type: none"> <li>• gradual approach to allow fish to adjust to human presence</li> <li>• prior introduction of capture equipment</li> <li>• removal of tank furniture and plants</li> <li>• use of clear plastic bags to reduce stress.</li> </ul>
<b><i>Common health issues</i></b> may include:	<ul style="list-style-type: none"> <li>• behavioural disorders</li> <li>• environmental hazards: <ul style="list-style-type: none"> <li>• contamination of the water due to the presence of toxins</li> <li>• exposure to extremes of water quality</li> <li>• exposure to the elements</li> <li>• inadequate activity</li> <li>• temperature extremes</li> <li>• ventilation</li> </ul> </li> <li>• infectious diseases caused by: <ul style="list-style-type: none"> <li>• bacteria, virus, fungus and protozoa</li> </ul> </li> <li>• internal and external parasites</li> <li>• non-infection diseases: <ul style="list-style-type: none"> <li>• nutritional imbalances and disruptions</li> <li>• genetic disorders</li> <li>• metabolic</li> <li>• neoplastic</li> <li>• physical traumas</li> <li>• chemical toxicities and allergies</li> <li>• zoonotic diseases.</li> </ul> </li> </ul>
<b><i>General health maintenance and preventative treatment</i></b> may include:	<ul style="list-style-type: none"> <li>• routine health check-up</li> <li>• control of parasites and insects</li> <li>• immunisation/vaccinations as required</li> <li>• quarantine and isolation procedures</li> <li>• routine water quality checks and analysis</li> <li>• use of 'aged water'</li> <li>• use of prophylactic and therapeutic water treatments.</li> </ul>
<b><i>Digestive system features</i></b> may include:	<ul style="list-style-type: none"> <li>• anatomical features: <ul style="list-style-type: none"> <li>• mouth size, shape and location</li> <li>• gill rakers, teeth types and locations and teeth structures</li> </ul> </li> <li>• digestive chemicals and bacteria</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• alimentary canal and stomach, pylorus and liver</li> <li>• intestines and cloaca</li> <li>• physiological features:               <ul style="list-style-type: none"> <li>• eating processes</li> <li>• nutrient requirements, absorption and storage methods</li> <li>• waste elimination</li> </ul> </li> <li>• feeding patterns and locations</li> <li>• potential digestive system malfunctions or problems.</li> </ul>
<b>Feeding hazards</b> may include:	<ul style="list-style-type: none"> <li>• animal movement and handling</li> <li>• shelf life of foodstuffs</li> <li>• manual handling and general food preparation, storage and distribution equipment</li> <li>• contamination of foodstuffs from vermin, bacteria, fungus, virus and other sources</li> <li>• organic and other dusts</li> <li>• excessive noise</li> <li>• possibility of zoonotic infection.</li> </ul>
<b>Documentation</b> on the care and management of marine fish may include:	<ul style="list-style-type: none"> <li>• accident and incident records</li> <li>• animal feeding, health and treatment records</li> <li>• animal identification and history</li> <li>• Australian Quarantine and Inspection Service (AQIS) compliance records, if required, such as:               <ul style="list-style-type: none"> <li>• Quarantine Approved Premises (QAP) Tank Charts</li> <li>• noxious species</li> </ul> </li> <li>• chemical and veterinary supplies register</li> <li>• diary, rosters and task completion and timeframe records</li> <li>• equipment use, damage and repair register</li> <li>• OHS safe work method statements, material safety data sheets (MSDS) and other records</li> <li>• provisions records of current stock and items used and items required</li> <li>• stock control records</li> <li>• water chemistry and quality records</li> <li>• water change frequencies and amounts.</li> </ul>

## Unit Sector(s)

Unit sector	Species specific
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## Competency field

Competency field	
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## Co-requisite units

Co-requisite units		