



Government of **Western Australia**

Department of **Primary Industries and Regional Development**
Department of **Transport**

Evaluating and Determining Categories of Marking and Lighting for Aquaculture and Pearling Leases and Licences

Guidance Statement

2019

This document has been developed by the Department of Primary Industries and
Regional Development the Department of Transport (Marine Safety)

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1. Glossary

Active area: The area(s) within the site that contain infrastructure. Only active areas within a site containing existing infrastructure may require marking and lighting as prescribed by the guidelines indicated on the following pages.

AtoN: Means an Aid to Navigation

IALA: The International Association of Marine Aids to Navigation and Lighthouse Authorities.

IHO Symbology: International Hydrographic Organisation Symbology.



Example: Symbols and Abbreviations. Chart 5011.

Infrastructure: Includes all surface and subsurface equipment, gear and apparatus contained within a site including lines, cables, cages, seabed frames, moored equipment (other than vessel moorings), surface and sub-surface floats, buoys, pearling or aquaculture equipment of any description. Note the *Fish Resources Management Act 1994* defines the above infrastructure as “aquaculture gear”.

LAT: The Lowest Astronomical Tide level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions.

MBS: Maritime Buoyage System.

Non-active (unused) area: The area(s) within the site that does not contain infrastructure.

Site: The total overall area of the proposed or existing area as defined by the site plan. A “site” may contain both active and non-active (unused) areas.

Site Plan: The pearling or aquaculture lease and, or, license site plan issued by DPIRD which provides details of the site’s lease and, or, license area including the location, overall perimeter and coordinates.

Special Marks: Those types of marks used for special purposes, the structure of which is described in the IALA Nave Guide. Refer to the [“IALA” NAV GUIDE 2018](#).

Subsurface infrastructure: Infrastructure sitting on the sea bed or in the water column at a height or depth, respectively, that has no obvious impact for the safety of vessels navigating within the site.

Surface infrastructure: Infrastructure of any sort located at or near the water surface in any active area within the site and may have an impact on the safety of vessels navigating within the site.

2. Background

Applications for new, variation, or renewal of aquaculture and pearling licences and leases to the Department of Primary Industries and Regional Development (DPIRD) must be accompanied by a Marking and Lighting form.

Applicants are required to provide information describing infrastructure; sea state and tidal information; atmospheric conditions; and vessel traffic within or near the proposed or existing site.

The Department of Transport, (DoT) uses the information to recommend a category, which specifies appropriate marking and lighting parameters for the site area.

Marking and lighting of a site is an essential safety measure to prevent vessels unnecessarily entering active areas of the site which contain infrastructure.

Marking and lighting categories for existing sites may be re-evaluated for variations and renewals where previous assessments may be out-dated or navigational safety conditions change.

3. Marking and Lighting Recommendations

The DoT evaluation and recommendation is guided by the [“IALA Recommendation O-139 - The Marking of Man-Made Offshore Structures”](#).

There are three designated categories of marking and lighting requirements, which are outlined in the next section. Upon evaluation of the information provided by the applicant, DoT will recommend the appropriate marking and lighting requirements to DPIRD for consideration. The determined category will be included as a condition on the proposed or existing lease or licence.

4. Marking and Lighting Requirements

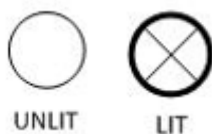
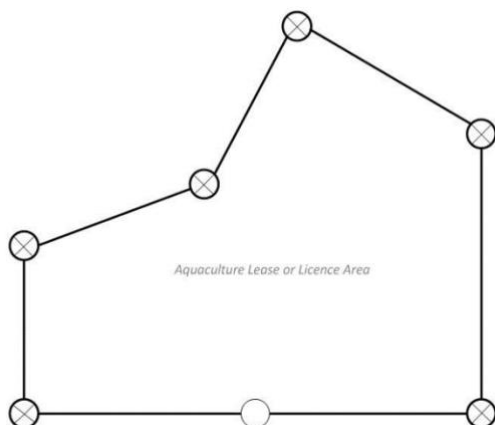
4.1 Category 1: Active Area Marked and Lit

This category is generally applicable, but not limited, to sites that have a medium-high traffic density and surface infrastructure.

Lit special marks must be placed to clearly define the active area including all change of direction extremities along the perimeter or the corners of the active area. All active areas must be contained within the proposed or existing site. These buoys / beacons must be:

- a) Of sufficient size and spaced such that the next buoy and, or, beacon is clearly visible during both hours of daylight and darkness;
- b) Fitted with a rhythmic yellow light visible over a horizontal arc of 360 degrees with a range that can be clearly seen at the next change of direction mark. The rhythm of light must:
 - i. be one of the those shown in the table for special marks below;
 - ii. be able to be referenced in IALA NAV GUIDE 2018, Section 6.2 & 6.3; and
 - iii. not be able to be mistaken for a cardinal, isolated danger safe water mark or other AtoN;
- c) Fitted with a single yellow 'X' shape top mark (optional) refer IALA;
- d) Fitted with an efficient radar reflector (optional); and
- e) Affixed with a readily visible plaque containing the details of the special purpose of the pearling or aquaculture site, together with a contact number for the operator.

Example of a Category 1 active area



Example of a Large Lit Special Mark



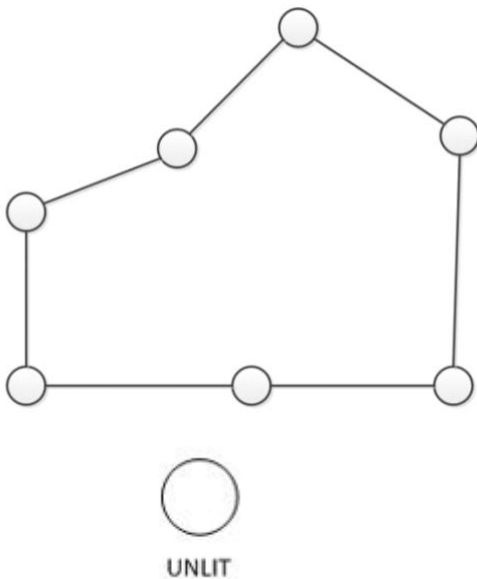
4.2 Category 2: Active Area Marked and Unlit

This category is generally applicable, but not limited, to sites in remote areas with a low traffic density and surface infrastructure.

Unlit special marks must be placed to mark all change of direction extremities along the perimeter or the corners of the active area. All active areas must be contained within the proposed or existing site. These buoys and, or, beacons must be:

- a) Of sufficient size and spaced such that the next buoy / beacon is clearly visible during daylight hours;
- b) Fitted with a single yellow 'X' shape top mark (optional) refer to IALA;
- c) Fitted with an efficient radar reflector (optional); and
- d) Affixed with a readily visible plaque containing the details of the special purpose of the pearling or aquaculture site, together with a contact number for the operator.

Example of a Category 2 active area



Example of an Unlit Special Mark



4.3 Category 3: Sub surface unmarked

This category is generally applicable, but not limited, to sites that have subsurface infrastructure only.

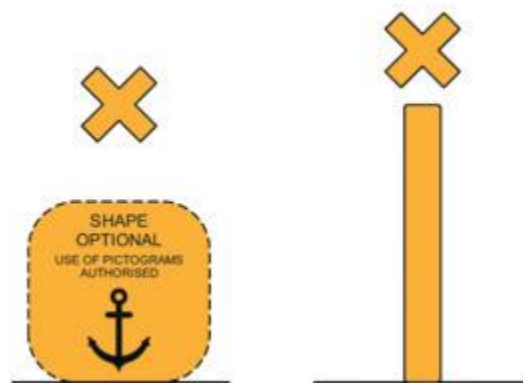
Active areas being used for sub-surface culture only may not require any marking or lighting provided the associated apparatus maintains a clearance such that it does not have any obvious impact for the safety of vessels navigating within the site, as assessed and specified by DPIRD and DoT.

5. Marking and Lighting Instructions

IALA Special Marks are used to indicate a special area or feature, the nature of which may be apparent from reference to a chart or other nautical publication. They are not generally intended to mark channels or obstructions where the Maritime Buoyage System provides suitable alternatives.

Special marks are yellow. They may carry a yellow “X” top-mark, and any light used is also yellow. To avoid the possibility of confusion between yellow and white in poor visibility, the yellow lights of special marks do not have the same rhythm used for white lights.

The shape of special marks must not conflict with that of navigational marks. This means, for example, that a special buoy located on the port hand side of a channel may be cylindrical but not conical. Special marks may be lettered or numbered, and may also include the use of a pictogram to indicate their purpose using the IHO symbology where appropriate.



SPECIAL MARKS	
Buoys/Beacons	
Colour	Yellow
Shape (Buoys)	Optional, but not conflicting with other navigational marks
Topmark (optional)	Single yellow “X” shape
Light (when fitted)	
Colour	Yellow
Rhythm	Any, other than those used for the white light of Cardinal, Isolated Danger and Safe Water Marks Example - Group Flashing 4 <i>Fl</i> (4) or Group Flashing 5 <i>Fl</i> (5)

6. Marking and Lighting Form

Applicant to complete and submit to DPIRD. For assistance in completing this form, please contact DPIRD at aquaculture@dpiird.wa.gov.au to be directed to the relevant regional officer.

1. Applicant Details

Applicant Name	
Position Title	
Contact Number	
Email	
Site Location	
Region	
Site Plan Number	
Type of Culture	
Type of infrastructure to be used within the site	(a) Surface only (b) Subsurface only (c) Both surface and subsurface

2. Please answer all criteria set out below.

RISK PARAMETERS		TO BE COMPLETED BY APPLICANT	
Criteria	Rating	Answer Rating	Please provide reasons
(a) Daytime Navigation If the active lease area is unmarked, what is the likelihood of vessels navigating near or within the active lease area of the site?	High Medium Low		<i>(i.e. natural obstructions such as shallow reef, land backing and limited vessel traffic).</i>
(b) Night Navigation If the active lease area is Unlit, what is the likelihood of vessels navigating near or within the active lease area of the site?	High Medium Low		
(c) Infrastructure What infrastructure is used within the active lease area? Clearance to be taken from the top of the infrastructure to the water surface at Lowest Astronomical Tide (LAT)?	Surface (visible on water surface) Sub surface (<2 m) Sub surface (2-5m) Sub surface (>5m)		

3. Based on the category descriptions in Part 4:
- (a) what category do you (the applicant) propose as appropriate for the site; and
 - (b) how do you (the applicant) propose to set up marking and lighting at the site (i.e. lights, no lights, intervals between markers, etc.)?

4. Are there any additional comments that may assist DoT and DPIRD in determining the marking and lighting requirements for the proposed site?

PLEASE NOTE:

1. The final designated category of marking and lighting assigned to the site will be dependent on recommendations by DPIRD regional officers and DoT.
2. In making their recommendations, DoT and, or, DPIRD may reconsider any designated categories at a later date, should the circumstances and navigational risk change at any time.
3. Should you wish to discuss the categories determined or any issues associated with the marking and lighting requirements of this site, please contact DoT at navigational.safety@transport.wa.gov.au and/or DPIRD at aquaculture@fish.wa.gov.au.

OFFICE USE ONLY

DEPARTMENTAL USE ONLY (DPIRD)							
I have reviewed the information supplied by the applicant and have no reservations for the installation/renewal of marking and lighting at the site.							
Category Recommendation	1. Marked & Lit <input type="checkbox"/> 2. Marked & Unlit <input type="checkbox"/> 3. Unmarked <input type="checkbox"/>						
Additional comments/ requirements	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> </table>						
Name:							
Position:							
Date:							

DEPARTMENTAL USE ONLY (Marine Safety Regional)							
I have reviewed the information supplied by the applicant and have no reservations for the installation/renewal of marking and lighting at the site.							
Category Recommendation	1. Marked & Lit <input type="checkbox"/> 2. Marked & Unlit <input type="checkbox"/> 3. Unmarked <input type="checkbox"/>						
Additional comments/ requirements	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> </table>						
Name:							
Position:							
Date:							

DEPARTMENTAL USE ONLY DoT (Marine Safety)

I have reviewed the information supplied by the applicant and have no reservations for the installation/renewal of marking and lighting at the site.

Category Recommendation	1. Marked & Lit <input type="checkbox"/>	2. Marked & Unlit <input type="checkbox"/>	3. Unmarked <input type="checkbox"/>
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Additional comments/ requirements	

Name:	
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Position:	
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Date:	
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