



# GUIDANCE STATEMENT FOR EVALUATING AND DETERMINING CATEGORIES OF MARKING AND LIGHTING FOR AQUACULTURE & PEARLING LEASES/LICENCES

This document has been developed by the Department of Transport (Marine Safety) and the Department of Fisheries

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## USE OF THIS NAVIGATION RISK EVALUATION GUIDE

When applying for a new pearling lease or aquaculture licence or lease in coastal waters of WA, or when varying or renewing a lease or licence, proponents are required to evaluate the navigation risk of actual and/or intended infrastructure on the proposed lease or licence area using this guide. **The completed evaluation form must be lodged with the lease or licence application form.** All applications for pearling and aquaculture leases and licences must be lodged with the Department of Fisheries.

Applications for new leases or licences, variations or renewals will be formally considered in accordance with the assessment process described in Ministerial Policy Guideline No. 8 "*Assessment of applications for authorisations for Aquaculture and Pearling in coastal waters of Western Australia*". As a part of this process, applications are referred to other government agencies for comment, including the Department of Transport (Marine Safety) for assessment and determination of marine safety requirements.

When Department of Transport consideration of the evaluation form and discussion with the proponent regarding marking and lighting requirements is complete, the Department of Transport will recommend to the CEO of the Department of Fisheries a category for consideration by the CEO for inclusion as a condition on the proposed lease or licence.

**Note: The Department of Transport may reconsider any designated categories at a later date should the navigational risk change over time.**

## AREA EVALUATION PROFORMA

*1. Please ensure that you answer all criteria set out below.*

| <b>Environmental Parameters</b>   |  | <b>RISK</b>                            |  |
|---|--|--|--|
| What is the average depth of water across the proposed site at latitude.                        | < 1 metre<br>1 - 5 metres<br>5 - 10 metres<br>10 - 20 metres<br>>20 metres   | 1 (high)<br>2<br>3<br>4<br>5 (minimal) |  |
| Tidal Range:  | > 9 metres<br>2-9 metres<br><2 metres  | 1 (high)<br>3<br>5 (minimal)           |  |
| Possible natural obstruction to vessels requiring anchorage or navigating through the site.     |  | 1 (high)<br>2<br>3<br>4 (minimal)      |  |
| What are the average visual conditions in the region of the proposed site?                      | High rate of haze, fog, sea-mist<br>Periodical occasions of rate of haze, fog, sea-mist<br>Rare occasions of haze, fog or sea-mist | 1 (high)<br>3<br>5 (minimal)           |  |
| <b>Human Use Parameters</b>   |  |  |  |
| How close is the nearest populated area i.e. such as ports, towns, cities?                      | < 1 nm<br>1 to 5 nm<br>5 to 10 nm<br>>10 nm  | 1 (high)<br>2<br>3<br>4 (minimal)      |  |
| How close to the site does other vessel traffic normally transit?                               | < 100 metres<br>100-200 metres<br>> 200 m  | 1 (high)<br>3<br>5 (minimal)           |  |
| How frequently does this vessel activity occur? (Not including your own vessels).               | > 50 boats per year<br>10-50 boats per year<br>< 10 boats per year   | 1 (high)<br>3<br>5 (minimal)           |  |
| What speed do vessels usually maintain when transiting near this area?                          | > 15 knots<br>~ 10 knots<br>< 5 knots  | 1 (high)<br>3<br>5 (minimal)           |  |
| Proximity of nearest other commercial activity (i.e. other working aquaculture or mining lease) | < 1nm<br>1 - 5 nm<br>5 – 10 nm<br>> 10nm   | 1 (high)<br>2<br>3<br>4 (minimal)      |  |
| Distance to nearest recreational activities such as tourist destinations                        | < 1nm<br>1 to 5 nm<br>> 5nm  | 1 (high)<br>3<br>5 (minimal)           |  |

**2. If the site abuts land you may not need to light or mark the landward side of the site. To determine if this is possible please complete the questions below.**

| Type   | YES/NO | Additional comments |
|--|--------|---------------------|
| Is the site within a clearly defined bay? (a bay is an indentation with an area that is as large, or larger than, that of a semi-circle whose diameter is a line drawn across the mouth of that indentation) |        |                     |
| Is vessel traffic access restricted in this area?  |        |                     |
| Are there boat launching facilities, tourist destinations or townships within this location that may result in vessel traffic transiting through the working parts of the site?                              |        |                     |

**3. Site Map – please attach a map of the site identifying areas of interest, boat/shipping channels, hazards etc.**



**Category One - this is the standard for marking all pearling and aquaculture lease and licence sites, unless an allowance has been made under another category; this category is generally applicable to areas that have a high traffic density with existing infrastructure and which are considered high risk.**

## **5.1 Category One Marking General Requirements**

1. Special marks must be placed to mark all change of direction extremities along the boundary or the corners of the active area containing the moored equipment which must be contained within the leased/licensed site area. These buoys/beacons must be:
  - Fitted with a flashing light that is yellow in colour and visible over a horizontal arc of 360 degrees for a distance of a minimum of three (3) nautical miles and have characteristic flashes that can not be confused with other types of navigational aids;
  - The light must be a minimum height of two (2) metres above the water level at high tide;
  - Coloured yellow with yellow retro-reflective tape;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Fitted with a single yellow 'X' shape that protrudes two (2) metres above the water;
  - Fitted with an efficient radar reflector; and
  - Affixed with a readily visible plaque containing the details of the special purpose of the leased/licensed site area together with a contact number for the operator.
2. Smaller Special Marks buoys without a flashing light must be installed, at intervals not exceeding 250 m, along each side of the active perimeter or the area containing the moored equipment, to ensure that such boundaries can easily be ascertained by approaching craft. These buoys must be:
  - Coloured yellow with yellow retro-reflective tape;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Must extend one (1) metre above the water level;
  - Affixed with a readily visible plaque containing the details of the special purpose of the leased/licensed site area together with a contact number for the operator.

**Category Two - this category is to be considered as the standard for marking lease/licence sites which may require less critical marking than those under Category One. This could apply in areas with lower traffic density or a lower likelihood of other craft navigating in the waters adjacent to the site. The area may have medium traffic density, moderate infrastructure or subject to seasonal variations in traffic (tourism).**

## **5.2 Category Two Marking General Requirements**

1. Special marks must be placed to mark all change of direction extremities along the boundary or the corners of the active area containing the moored equipment which must be contained within the lease/licence area, or as directed by the DoT. These buoys must be:
  - Fitted with a flashing light that is yellow in colour and visible over a horizontal arc of 360 degrees for a distance of a minimum of two (2) nautical miles and have characteristic flashes that can not be confused with other types of navigational aids.
  - The light must be a minimum height of two (2) metres above the water level;
  - Coloured yellow with yellow retro-reflective tape;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Fitted with a single yellow 'X' shape that protrudes two (2) metres above the water; and
  - Affixed with a readily visible plaque containing the details of the special purpose of the leased/licensed site area together with a contact number for the operator.
2. Smaller Special Marks buoys, without a flashing light, are to be installed at intervals not exceeding 350 m along each side of the active perimeter or the area containing the moored equipment to ensure that such boundaries can easily be ascertained by approaching craft. These buoys (where utilised) must be:
  - Coloured yellow with yellow retro-reflective tape;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Must extend one (1) metre above the water level at all times.

**Category Three - this category is to be considered for marking lease/licence sites located in inshore areas, in shallow waters where only small craft may navigate or in the tidal zone of littoral or reef areas. Individual applications for Category Three lease/licence sites will be separately assessed for their marking and lighting requirements, but general requirements have been included here. This category may include sites that abut the coastline, or are within shallow waters with tidal restrictions where boating access is limited.**

### **5.3 Category Three Marking General Requirements**

1. Special marks must be placed to mark all change of direction extremities along the boundary or the corners of the active area containing the moored equipment which must be contained within the lease/licence area, or as directed by the DoT. These buoys must be:
  - Fitted with a flashing light that is yellow in colour and visible for a distance of at least one (1) nautical mile, giving characteristic flashes that can not be confused with other types of navigational aids;
  - The light must be a minimum height of two (2) metres above the water level;
  - Coloured yellow with yellow retro-reflective tape;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Fitted with a single yellow 'X' shape that protrudes two (2) metres above the water; and
  - Fitted with a plaque containing details of the special purpose of the leased/licensed site, together with a contact number for the operator, at each extremity of the leased/licensed site.
2. Smaller Special Marks buoys without a flashing light shall also be placed, where stipulated by the DoT. In general these buoys shall be:
  - Coloured yellow with yellow retro-reflective tape;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Must extend one (1) metre above the water level at all times

Leases may have more than one area active at any given time within the total lease boundary. Areas that have mid water or surface water operations will require marking and lighting as outlined above.

**Category Four - this category is to be considered for marking lease/licence sites that are located in very remote locations; or areas that are subject to very low traffic density, often in unsurveyed or inadequately surveyed waters between Northwest Cape to the WA/NT border including the waters of Exmouth Gulf. Individual applications for a Category Four lease/licence sites may be separately assessed for their marking and lighting requirements, but general criteria include: very remote areas with low traffic density, no existing infrastructure and locations within unsurveyed or inadequately surveyed waters.**

#### **5.4 Category Four Marking General Requirements**

1. Special Marks must be installed at each change of direction extremity in order to ensure the operation boundaries can be ascertained by approaching craft. In general these buoys shall be:
  - Unlit
  - Coloured yellow with yellow retro-reflective tape;
  - Fitted with a yellow radar reflector with a surface area of not less than 0.54 square metres that protrudes 1.8 metres above the water; and
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)
  - Fitted with a plaque containing details of the special purpose of the leased/licensed site, together with a contact number for the operator
2. Where the distance between Special Marks positioned on change of direction extremities exceeds 0.5 nautical miles, additional Special Marks shall be positioned between these at intervals not exceeding 0.5 nautical miles around the perimeter of the area. In general these buoys shall be:
  - Unlit
  - Coloured yellow with yellow retro-reflective tape;
  - Fitted with a yellow radar reflector with a surface area of not less than 0.54 square metres that protrudes 1.8 metres above the water;
  - Buoy = Spar shaped (Recommended)
  - Beacon = pole (suitably secured so that will not move under tidal or normal sea conditions)



## **Other site-specific requirements/options**

In considering site evaluations for category 3 and category 4 sites, there may be occasions where it is appropriate and/or convenient to assign area specific site marking requirements. The following are examples of marking requirements that may be assigned to a lease or licence area under special circumstances.

### Bays

If a lease/licence area is located entirely within in a bay (as defined in question 2 of the evaluation form), the lease/licence holder may only need to place area markers between the headlands of the bay. Generally, the seaward boundary of the area will need to be marked and lit with 1.8m Yellow Spar or Pillar Buoys fitted with yellow “X” shapes at 0.5nM intervals. The marks will need to be fitted with radar reflectors, reflective tape, a special purpose plaque and Yellow rhythmic lights visible to 1nM as per IALA standards.

### Sub-surface gear and equipment only

Areas being used for bottom culture only may not require any marking provided the associated apparatus maintains a specified draft clearance (e.g. no less than 5 metres) between the highest point of the apparatus above the sea-bed and the sea surface at Lowest Astronomical Tide in the area. Surface marking and lighting requirements will immediately revert to the evaluated category level if the bottom gear does not meet draft clearance requirements.

### Unused sites

Unused areas must not be marked unless use of the site is imminent (i.e. within a few weeks). However, it is essential that any required navigation and marking equipment be in place prior to placing any surface infrastructure in the area. Similarly, when permanently or temporarily decommissioning an area, marking and lighting may only be removed when there is no surface infrastructure remaining, and must be removed within a few weeks of the surface infrastructure being removed.

## DESCRIPTION OF SPECIAL MARKS

|  |  |   |   |
|--|--|---|---|
|  | Colour<br>Shape<br>Topmark<br>Retroreflector | Yellow<br>Optional<br>Yellow ✕ – optional<br>Yellow |   |
|  |  |   |   |
|  |  |   |   |
|  | Retroreflector                               |   |   |
|  | †<br><br>or<br>                              |   |   |
|  |  |   | Light (when fitted): Yellow, and may have any rhythm not used for white lights.           |
|  |  |   | Examples  |
|  |  |   | <i>Fl.Y</i>   |
|  |  |   | <i>Fl(4)Y</i>   |
|  |  |   | If these shapes are used they will indicate the side on which the buoys should be passed. |

## DESCRIPTION OF LATERAL MARKS

|   |                        |   |
|---|------------------------|---|
| <b>PORT HAND</b>  |                        | <b>STARBOARD HAND</b>   |
| Colour: Red<br>Shape: Can, pillar or spar.<br>Topmark (when fitted): Single red can.<br>Retroreflector: Red band or square. |                        | Colour: Green<br>Shape: Conical, pillar or spar.<br>Topmark (when fitted): Single red cone pointed upward.<br>Retroreflector: Green band or triangle. |
|   |                        |   |
| Red light   |                        | Green light   |
| <i>Q.R</i>  | Continuous-quick light | <i>Q.G</i>  |
| <i>Fl.R</i>   | Single-flashing light  | <i>Fl.G</i>   |
| <i>LFl.R</i>  | Long-flashing light    | <i>LFl.G</i>  |
| <i>Fl(2)R</i>   | Group-flashing light   | <i>Fl(2)G</i>   |