

Macquarie Harbour Marine Farming Development Plan October 2005

(CONSOLIDATED VERSION INCORPORATING AMENDMENT
NO.1 TO THE MACQUARIE HARBOUR MFDP OCTOBER 2005
APPROVED ON 28 MAY 2012)

The Crown in right of the State of Tasmania gives no warranty, either express or implied, that the marine farming zones identified in the Macquarie Harbour Marine Farming Development Plan October 2005 are suitable for marine farming activities.

In particular, Macquarie Harbour suffers from episodic plumes of water polluted by acid mine drainage from the King River which can adversely affect fish health. The extent of the high-risk area for marine farming is based on limited historical measurements, and is thus not definitive. Future events cannot be predicted with confidence.

Persons considering marine farming within a zone contained within this Plan are solely responsible for establishing the suitability or otherwise of the zone for that purpose.

CAUTION: The maps shown throughout this document are not to be used for navigation. For navigation purposes appropriate hydrographic charts should be used. The coastline detail shown is reproduced from a 1:25000 scale giving a horizontal accuracy within 12.5 metres of true position.

For the purposes of this Plan "high water mark" means a line between State waters, as defined under section 5 of the *Living Marine Resources Management Act 1995*, and adjacent land, landward of that line.

For the purposes of this Plan the Secretary means the Secretary of the Department of Primary Industries, Parks, Water and Environment or an employee of the Department of Primary Industries, Parks, Water and Environment acting as the agent of the Secretary.

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Marine Farming Development Plan

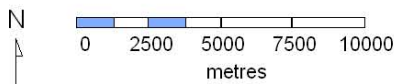
I The Plan Area

The area covered by the Macquarie Harbour Marine Farming Development Plan October 2005 is the physical extent of the harbour outside the Tasmanian Wilderness World Heritage Area (TWWHA) and consists of all that area bounded by the high water mark between a line drawn from Coal Head and Steadman Point across the harbour to the south-east (being the Western Boundary of the TWWHA) and the entrance to the harbour to the west at a line drawn between Braddon Point through Bonnet Island Light to the western shore.

The area covered in this Plan is depicted in Map I.1.



not validated for survey



Legend

Plan Area



2 Marine Farming Zones

The following Table summarises the zones identified in the Macquarie Harbour Marine Farming Development Plan October 2005.

Table 2.1 - Summary of Zones

| Zone | Location | Category of Fish | Zone Area (ha) | Maximum Leasable Area (ha) |
|--------------|-------------------------------|-------------------------|-----------------------|-----------------------------------|
| 1 | North-east of Hogan Cove | Finfish | 167.4 | 100.00 |
| 2 | North-east of Pelias Cove | Finfish | 51.46 | 30.00 |
| 3 part 3A | Table Head | Finfish | 167.6 | 104.00 |
| 3 part 3B | South of Liberty Point | - | 2.00 | 2.00 |
| 4 part 4A | Liberty Point | Finfish | 149.2 | 90.00 |
| 4 part 4B | North of Liberty Point | Finfish | 187 | 120.00 |
| 7 | Liberty Point Central Harbour | Finfish | 100.00 | 80.00 |
| 8 | South Central Harbour | Finfish | 100.00 | 80.00 |
| 9 | North-east of Bryans Bay | Finfish | 190.4 | 120.00 |
| 10 | North-east of Double Cove | Finfish | 169.7 | 100.00 |
| 11 | East of Butt of Liberty | Finfish | 169.7 | 100.00 |
| Total | | | 1454.46 | 926.00 |

The following information describes the marine farming zones in the Macquarie Harbour Marine Farming Development Plan October 2005.

Map 2.1 shows the marine farming zones in the context of Macquarie Harbour (1:250 000 scale). Maps 2.3 and 2.4 show the locations of the zones at a larger scale (1:25 000).

All points are described by eastings and northings and by latitude and longitude using Geocentric Datum of Australia 1994.

2.1 Zone 1 – (north-east of Hogan Cove)

2.1.1 Location

Zone I is located approximately 2.4 kilometres to the north-east of Hogan Cove in Macquarie Harbour.

Map 2.4 depicts Zone I.

Zone I consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 1 | 366467.23E | 5311788.01N | 42° 20.0826'S | 145° 22.7476'E | thence to |
| 2 | 367773.10E | 5313093.74N | 42° 19.3907'S | 145° 23.7163'E | thence to |
| 3 | 368420.57E | 5312449.12N | 42° 19.7455'S | 145° 24.1787'E | thence to |
| 4 | 367114.66E | 5311154.84N | 42° 20.4313'S | 145° 23.2102'E | thence to |
| 1 | 366467.23E | 5311788.01N | 42° 20.0826'S | 145° 22.7476'E | |

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2.1.2 Zone Area

The area of Zone I is approximately 167.4 hectares.

2.1.3 Maximum Leasable Area

The maximum leasable area within Zone I is 100 hectares.

2.1.4 Categories of fish

The categories of fish permitted for culture within Zone I, subject to the provisions of a marine farming licence, is finfish.

2.1.5 Management Controls

The management controls applying to Zone I are stipulated in Section 3 of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.1.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 213 to within the boundaries of an amended Zone I and expand the lease to 100 hectares.

2.2 Zone 2 - (north-east Pelias Cove)

2.2.1 Location

Zone 2 is located approximately 930 metres to the north-east of Pelias Cove in Macquarie Harbour.

Map 2.4 depicts Zone 2.

Zone 2 consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 25 | 364402.59E | 5311500.31N | 42° 20.2166'S | 145° 21.2405'E | thence to |
| 26 | 364056.73E | 5311898.72N | 42° 19.9978'S | 145° 20.9943'E | thence to |
| 27 | 364792.02E | 5312539.53N | 42° 19.6593'S | 145° 21.5386'E | thence to |
| 28 | 365139.22E | 5312141.05N | 42° 19.8782'S | 145° 21.7858'E | thence to |
| 25 | 364402.59E | 5311500.31N | 42° 20.2166'S | 145° 21.2405'E | |

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2.2.2 Zone Area

The area of Zone 2 is approximately 51.46 hectares.

2.2.3 Maximum Leasable Area

The maximum leasable area within Zone 2 is 30.00 hectares.

2.2.4 Categories of fish

The categories of fish permitted for culture within Zone 2, subject to the provisions of a marine farming licence, is finfish.

2.2.5 Management Controls

The management controls applying to Zone 2 are stipulated in Section 3 of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.2.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 216 to within the boundaries of an amended Zone 2.

2.3 Zone 3 part 3A – (at Table Head)

2.3.1 Location

Zone 3 part 3A is located approximately 560 metres north-east of Table Head in Macquarie Harbour.

Map 2.3 depicts Zone 3 part 3A.

Zone 3 part 3A consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 5 | 360000.87E | 5319108.06N | 42° 16.0606'S | 145° 18.1464'E | thence to |
| 6 | 361067.68E | 5318673.15N | 42° 16.3070'S | 145° 18.9160'E | thence to |
| 7 | 360523.97E | 5317321.38N | 42° 17.0313'S | 145° 18.5010'E | thence to |
| 8 | 359457.15E | 5317756.32N | 42° 16.7849'S | 145° 17.7313'E | thence to |
| 5 | 360000.87E | 5319108.06N | 42° 16.0606'S | 145° 18.1464'E | |

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2.3.2 Zone Area

The area of Zone 3 part 3A is approximately 167.6 hectares.

2.3.3 Maximum Leasable Area

The maximum leasable area within Zone 3 part 3A is 104 hectares.

2.3.4 Categories of fish

The categories of fish permitted for culture within Zone 3 part 3A, subject to the provisions of a marine farming licence, is finfish.

2.3.5 Management Controls

The management controls applying to Zone 3 part 3A are stipulated in *Section 3* of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.3.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 215 to within the boundaries of an amended Zone 3 and expand the lease to 106 hectares, 104 hectares in part 3A and 2 hectares in part 3B.

2.4 Zone 3 part 3B - (at Table Head)

2.4.1 Location

Zone 3 part 3B is located approximately 1.7 kilometres south-east of Liberty Point in Macquarie Harbour.

Map 2.3 depicts Zone 3 part 3B.

Zone 3 part 3B consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 37 | 361045.15E | 5315507.18N | 42° 18.0168'S | 145° 18.8540'E | thence to |
| 38 | 361154.96E | 5315496.25N | 42° 18.0239'S | 145° 18.9337'E | thence to |
| 39 | 361134.92E | 5315300.68N | 42° 18.1293'S | 145° 18.9163'E | thence to |
| 40 | 361040.76E | 5315312.91N | 42° 18.1217'S | 145° 18.8480'E | thence to |
| 37 | 361045.15E | 5315507.18N | 42° 18.0168'S | 145° 18.8540'E | |

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2.4.2 Zone Area

The area of Zone 3 part 3B is approximately 2.00 hectares.

2.4.3 Maximum Leasable Area

The maximum leasable area within Zone 3 part 3B is 2.00 hectares.

2.4.4 Categories of fish

The culture of fish will not be permitted within Zone 3 part 3B.

2.4.5 Management Controls

The management controls applying to Zone 3 part 3B are stipulated in *Section 3* of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.4.6 Special Management Controls

The use of Zone 3 part 3B is restricted to the mooring of vessels and equipment associated with marine farming activities. No fish may be farmed, held or moved within Zone 3 part 3B.

2.4.7 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 215 to within the boundaries of an amended Zone 3 and expand the lease to 106 hectares, 2 hectares in part 3B and 104 hectares in part 3A.

2.5 Zone 4 part 4A - (at Liberty Point)

2.5.1 Location

Zone 4 part 4A is located approximately 1.5 kilometres to the south-east of Liberty Point in Macquarie Harbour.

Map 2.3 depicts Zone 4 part 4A.

Zone 4A consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 21 | 361363.88E | 5314618.16N | 42° 18.5004'S | 145° 19.0731'E | thence to |
| 22 | 361624.99E | 5315739.59N | 42° 17.8975'S | 145° 19.2792'E | thence to |
| 23 | 362895.04E | 5315464.71N | 42° 18.0594'S | 145° 20.1994'E | thence to |
| 24 | 362631.17E | 5314344.51N | 42° 18.6617'S | 145° 19.9914'E | thence to |
| 21 | 361363.88E | 5314618.16N | 42° 18.5004'S | 145° 19.0731'E | |

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2.5.2 Zone Area

The area of Zone 4 part 4A is approximately 149.2 hectares.

2.5.3 Maximum Leasable Area

The maximum leasable area within Zone 4 part 4A is 90 hectares.

2.5.4 Categories of fish

The categories of fish permitted for culture within Zone 4 part 4A, subject to the provisions of a marine farming licence, is finfish.

2.5.5 Management Controls

The management controls applying to Zone 4 part 4A are stipulated in Section 3 of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.5.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 217 to within the boundaries of an amended Zone 4 part 4A and reduce the lease area to 90 hectares.

2.6 Zone 4 part 4B - (north Liberty Point)

2.6.1 Location

Zone 4 part 4B is located approximately 1.9 kilometres to the north of Liberty Point in Macquarie Harbour.

Map 2.3 depicts Zone 4 part 4B.

Zone 4B consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 17 | 360809.01E | 5320086.65N | 42° 15.5407'S | 145° 18.7482'E | thence to |
| 18 | 361928.80E | 5320903.54N | 42° 15.1114'S | 145° 19.5741'E | thence to |
| 19 | 362710.54E | 5319810.38N | 42° 15.7102'S | 145° 20.1269'E | thence to |
| 20 | 361584.93E | 5318984.62N | 42° 16.1443'S | 145° 19.2966'E | thence to |
| 17 | 360809.01E | 5320086.65N | 42° 15.5407'S | 145° 18.7482'E | thence to |

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2.6.2 Zone Area

The area of Zone 4 part 4B is approximately 187 hectares.

2.6.3 Maximum Leasable Area

The maximum leasable area within Zone 4 part 4B is 120 hectares.

2.6.4 Categories of fish

The categories of fish permitted for culture within Zone 4 part 4B, subject to the provisions of a marine farming licence, is finfish.

2.6.5 Management Controls

The management controls applying to Zone 4 part 4B are stipulated in Section 3 of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.6.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 133 to within the boundaries of amended Zone 4 part 4B and expand the lease area to 120 hectares.

2.7 Zone 7- (at Liberty Point Central Harbour)

2.7.1 Location

Zone 7 is located approximately 10.5 kilometres south-east of Bonnet Island Light and 1.4 kilometres north-east of Liberty Point.

Map 2.3 depicts Zone 7.

Zone 7 consists of all that area bounded by a line being from points defined by AMG co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|--------------|---------------|-----------|
| 13 | 362186.20E | 5318295.04N | 42°16.5231'S | 145°19.724'E | thence to |
| 14 | 362759.74E | 5317475.94N | 42°16.9716'S | 145°20.1295'E | thence to |
| 15 | 363580.02E | 5318050.28N | 42°16.67'S | 145°20.7343'E | thence to |
| 16 | 363006.46E | 5318869.37N | 42°16.2215'S | 145°20.3288'E | thence to |
| 13 | 362186.20E | 5318295.04N | 42°16.5231'S | 145°19.724'E | |

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2.7.2 Zone Area

The area of Zone 7 is approximately 100.00 hectares.

2.7.3 Maximum Leasable Area

The maximum leasable area within Zone 7 is 80.00 hectares.

2.7.4 Categories of Fish

The category of fish permitted for culture within Zone 7, subject to the provisions of a marine farming licence, is finfish.

2.7.5 Management Controls

The management controls applying to Zone 7 are stipulated in Section 3 of this Plan.

2.8 Zone 8 - (at South Central Harbour)

2.8.1 Location

Zone 8 is located approximately 12.4 kilometres south-east of Bonnet Island Light and 2.1 kilometres east of Liberty Point.

Map 2.3 depicts Zone 8.

Zone 8 consists of all that area bounded by a line being from points defined by AMG co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|--------------|---------------|-----------|
| 9 | 363379.21E | 5316717.52N | 42°17.3878'S | 145°20.5694'E | thence to |
| 10 | 363952.75E | 5315898.44N | 42°17.8363'S | 145°20.9751'E | thence to |
| 11 | 364773.00E | 5316472.77N | 42°17.5346'S | 145°21.58'E | thence to |
| 12 | 364199.46E | 5317291.86N | 42°17.0862'S | 145°21.1742'E | thence to |
| 9 | 363379.21E | 5316717.52N | 42°17.3878'S | 145°20.5694'E | |

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2.8.2 Zone Area

The area of Zone 8 is approximately 100.00 hectares.

2.8.3 Maximum Leasable Area

The maximum leasable area within Zone 8 is 80.00 hectares.

2.8.4 Categories of Fish

The category of fish permitted for culture within Zone 8, subject to the provisions of a marine farming licence, is finfish.

2.8.5 Management Controls

The management controls applying to Zone 8 are stipulated in Section 3 of this Plan.

2.9 Zone 9 - (north-east of Bryans Bay)

2.9.1 Location

Zone 9 is located approximately 2.5 kilometres to north-east of Bryans Bay in Macquarie Harbour.

Map 2.4 depicts Zone 9.

Zone 9 consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 41 | 369055.64E | 5312052.66N | 42° 19.9660'S | 145° 24.6356'E | thence to |
| 42 | 369787.93E | 5311597.54N | 42° 20.2192'S | 145° 25.1626'E | thence to |
| 43 | 368609.10E | 5309718.02N | 42° 21.2226'S | 145° 24.2787'E | thence to |
| 44 | 367885.54E | 5310189.83N | 42° 20.9604'S | 145° 23.7583'E | thence to |
| 41 | 369055.64E | 5312052.66N | 42° 19.9660'S | 145° 24.6356'E | |

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2.9.2 Zone Area

The area of Zone 9 is approximately 190.4 hectares.

2.9.3 Maximum Leasable Area

The maximum leasable area within Zone 9 is 120 hectares.

2.9.4 Categories of fish

The categories of fish permitted for culture within Zone 9, subject to the provisions of a marine farming licence, is finfish.

2.9.5 Management Controls

The management controls applying to Zone 9 are stipulated in *Section 3* of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.9.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention that Tassal Operations Pty Ltd be allocated a marine farming lease within the boundaries of Zone 9.

2.10 Zone 10 - (north-east of Double Cove)

2.10.1 Location

Zone 10 is located approximately 4.2 kilometres to the north-east of Double Cove in Macquarie Harbour.

Map 2.4 depicts Zone 10.

Zone 10 consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 29 | 364643.78E | 5315325.78N | 42° 18.1528'S | 145° 21.4699'E | thence to |
| 30 | 365382.49E | 5314443.14N | 42° 18.6372'S | 145° 21.9950'E | thence to |
| 31 | 366512.85E | 5315394.40N | 42° 18.1351'S | 145° 22.8308'E | thence to |
| 32 | 365773.11E | 5316275.28N | 42° 17.6516'S | 145° 22.3048'E | thence to |
| 29 | 364643.78E | 5315325.78N | 42° 18.1528'S | 145° 21.4699'E | |

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2.10.2 Zone Area

The area of Zone 10 is approximately 169.7 hectares.

2.10.3 Maximum Leasable Area

The maximum leasable area within Zone 10 is 100 hectares.

2.10.4 Categories of fish

The categories of fish permitted for culture within Zone 10, subject to the provisions of a marine farming licence, is finfish.

2.10.5 Management Controls

The management controls applying to Zone 10 are stipulated in *Section 3* of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.10.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention to vary marine farming Lease No. 220 to within the boundaries of an amended Zone 10 and expand the lease to 100 hectares.

2.11 Zone 11 - (east of Butt of Liberty)

2.11.1 Location

Zone 11 is located approximately 4.6 kilometres to the east of Butt of Liberty in Macquarie Harbour.

Map 2.4 depicts Zone 11.

Zone 11 consists of all that area bounded by a line being from points defined by Geocentric Datum of Australia (GDA) co-ordinates:

| ID | Easting | Northing | Latitude | Longitude | |
|----|------------|-------------|---------------|----------------|-----------|
| 33 | 365827.53E | 5313904.46N | 42° 18.9328'S | 145° 22.3114'E | thence to |
| 34 | 366566.24E | 5313021.82N | 42° 19.4172'S | 145° 22.8368'E | thence to |
| 35 | 367696.60E | 5313973.08N | 42° 18.9149'S | 145° 23.6726'E | thence to |
| 36 | 366956.86E | 5314853.96N | 42° 18.4315'S | 145° 23.1464'E | thence to |
| 33 | 365827.53E | 5313904.46N | 42° 18.9328'S | 145° 22.3114'E | |

GDA94-ZONE 55

2.11.2 Zone Area

The area of Zone 11 is approximately 169.7 hectares.

2.11.3 Maximum Leasable Area

The maximum leasable area within Zone 11 is 100 hectares.

2.11.4 Categories of fish

The categories of fish permitted for culture within Zone 11, subject to the provisions of a marine farming licence, is finfish.

2.11.5 Management Controls

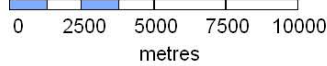
The management controls applying to Zone 11 are stipulated in *Section 3* of the Macquarie Harbour Marine Farming Development Plan October 2005.

2.11.6 Special Provisions

Subject to the provisions of the *Marine Farming Planning Act 1995* it is the planning intention that Huon Aquaculture Group Pty Ltd be allocated a marine farming lease within the boundaries of Zone 11.



not validated for survey

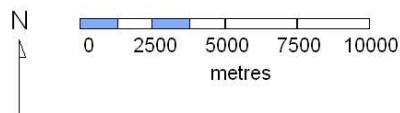


Legend

- Marine Farming Zone 
- Plan Area 



not validated for survey



Legend

Marine Farming Zone

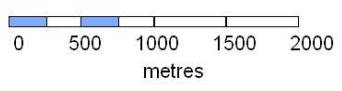
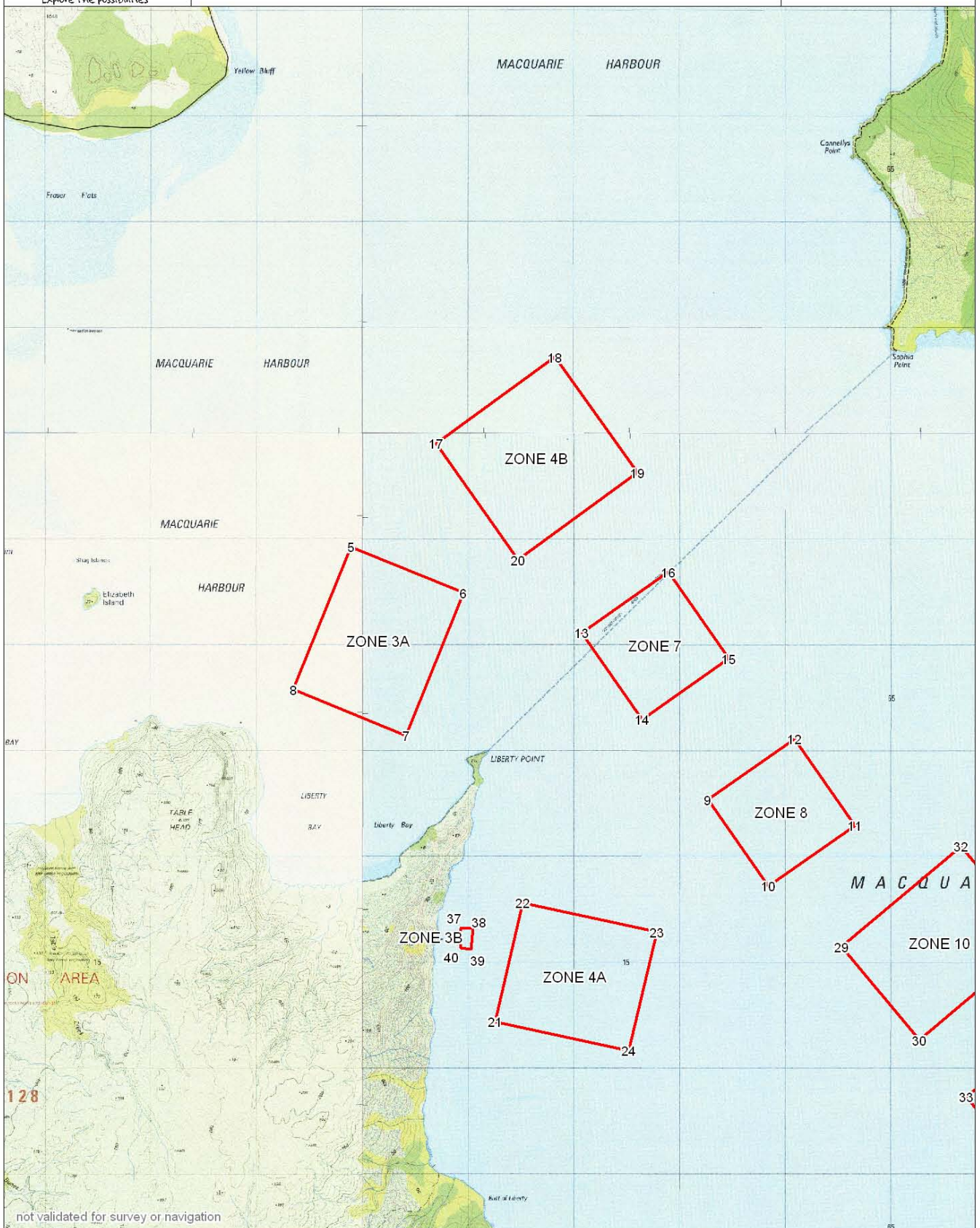




Tasmania
Explore the possibilities

Map 2.3 - Marine Farming Zones 3A, 3B, 4A, 4B, 7 & 8

Department of Primary Industries,
Parks, Water and Environment



Legend

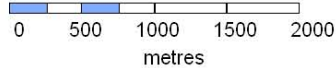
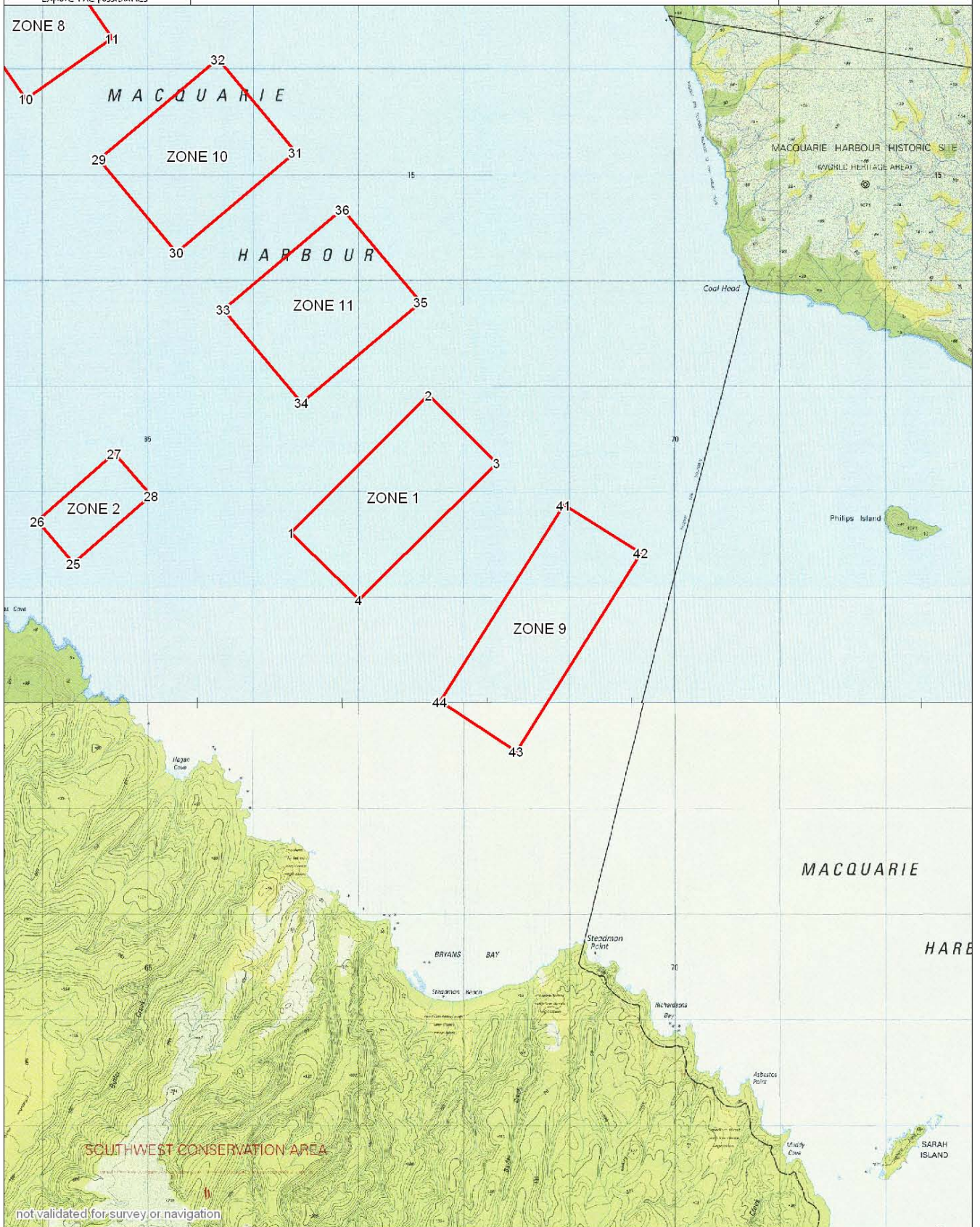
- Marine Farming Lease (Proposed)
- Marine Farming Zone (Proposed)



Tasmania
Explore the possibilities

Map 2.4 - Marine Farming Zones 1, 2, 9, 10 & 11

Department of Primary Industries,
Parks, Water and Environment



Legend

- Marine Farming Lease (Proposed)
- Marine Farming Zone (Proposed)

3 Management Controls

Prepared in accordance with section 24 of the *Marine Farming Planning Act 1995*, management controls must contain any measures necessary to manage and mitigate negative effects which marine farming operations may have within the plan area.

3.0.1 Lessees and sub-lessees must comply with any written notice or request given by the Secretary, and must not undertake or cause or permit another person to undertake an activity contrary to the Secretary's written notice or request.

3.1 General Controls for all Marine Farming Zones

There must be no significant visual, physio-chemical or biological impacts at or extending 35 metres from the boundary of the lease area, as specified in the relevant marine farming licence.

Environmental parameters must be monitored in the lease area, 35 metres outside the boundary of the marine farming lease area and at any control site(s) in accordance with the requirements specified in the relevant marine farming licence.

3.2 Management Controls Relating to Nitrogen Outputs

3.2.1 The Secretary may, from time to time, determine the total permissible dissolved nitrogen output, within specified periods, attributable to marine farming operations within a specified area covered by this Plan.

3.2.2 For the purposes of assessing quantities of dissolved nitrogen output attributable to marine farming operations the Secretary may use:

3.2.2.1 the proportion of expected dissolved nitrogen output from a unit of feed as used in Butler *et al.* (2000) at section 10.2.5; or

3.2.2.2 any other method that the Secretary is satisfied delivers a measure of total dissolved nitrogen output from marine farming operations equal to or better than that used by Butler *et al.* (2000).

3.2.3 If the Secretary makes a determination under clause 3.2.1, the Secretary is to apportion the total permissible dissolved nitrogen output between those lessees within the specified area.

- 3.2.4 The Secretary is to give notice in writing to lessees within the area specified in 3.2.1 of any determination the Secretary makes under 3.2.1 and 3.2.3.
- 3.2.5 Lessees must comply with any written notice given by the Secretary under 3.2.4.

3.3 Environmental Controls Relating to Carrying Capacity

- 3.3.1 The Secretary may from time to time, using whatever information the Secretary considers appropriate, determine the maximum permissible stocking density of finfish held within any fish cage, within the area covered by this plan or any other specified area within the plan area.
- 3.3.2 Maximum permissible stocking densities for other finfish species may be specified in licence conditions.
- 3.3.3 Lessees must ensure that farmed areas are fallowed as soon as practicable if bubbles of hydrogen sulphide and/or methane gases form in the sediment and rise to the surface without physical disturbance of the seabed.
- 3.3.4 Stocked finfish cage nets must be at least 1 metre clear of the seabed at low tide under normal growing conditions unless otherwise specified in the relevant marine farming licence.
- 3.3.5 The Secretary may from time to time, using whatever information the Secretary considers appropriate, determine the maximum permissible biomass (tonnes per hectare) of finfish that may be stocked within the area covered by this plan or any other specified area within the plan area.
- 3.3.6 The Secretary is to give notice in writing to any lessees, or if a lease is sub-leased, any sub-lessee, subject to a determination made by the Secretary under 3.3.1, 3.3.2 or 3.3.5 and specify the date from which the lessee or sub-lessee must comply with the Secretary's determination.
- 3.3.7 Compliance with 3.3.5 will be calculated for any point in time, according to the following formula, or any other method deemed by the Secretary to be equal to it, or better.
- Total Biomass (TB) = Total biomass in tonnes of finfish held by lessees or sub-lessees within the determined area at a single point in time.

- Total Area (TA) = Combined total lease area licensed for the farming of finfish held by lessees or sub-lessees within the determined area at that same point in time.
- TB/TA must be no greater than the maximum permissible biomass, in tonnes per hectare, as determined by the Secretary.

3.4 Environmental Controls Relating to Monitoring

Baseline environmental survey requirements

3.4.1 Lessees must provide a baseline environmental survey as specified by the Secretary. A baseline environmental survey must be undertaken prior to the commencement of marine farming operations on those areas;

- where a new lease area is being established; or
- when required as a condition of varying or expanding a lease area; or
- where a marine farming licence is varied to allow the farming of another species not addressed by the existing baseline survey for the lease.

Data to be collected may include but is not limited to video assessment, sediment particle size analysis, redox potentials, sulphides, current flows and composition of the benthic community.

Note: The Secretary will use the information from the baseline environmental survey, amongst other information, to assess whether the area to be farmed contains any rare or endangered species or any unusual habitat and to determine marine farming licence conditions.

Environmental monitoring requirements

3.4.2 Lessees must keep the following records for each lease area held by the lessee and retain these records for a period of 5 years:

3.4.2.1 Lessees or sub-lessees subject to determinations made by the Secretary under 3.3.1, 3.3.2, or 3.3.5 must maintain daily records capable of demonstrating the:

- maximum stocking density of finfish in each stocked cage;
- maximum biomass of finfish in each stocked cage.

- 3.4.2.2 The type, origin and dry weight of food placed into a lease area on a monthly basis.
- 3.4.2.3 The names and quantities and date of use of all chemicals which have been used on a lease area. This must include, but is not confined to, therapeutants, anaesthetics, antibiotics, hormones, pigments, antifoulants, disinfectants and cleansers.
- 3.4.2.4 Location (to a degree of precision to the satisfaction of the Secretary), size and stocking rates of all cages.
- 3.4.2.5 The duration that individual cages are held in a particular location.
- 3.4.3 Lessees must provide to the Manager, Marine Farming Branch, Department of Primary Industries, Water and Environment the records detailed at 3.4.2 at the request of the Secretary.
- 3.4.4 Lessees must notify the Manager, Marine Farming Branch, Department of Primary Industries, Water and Environment within 48 hours of using any therapeutants including antibiotics but excluding vaccines. Information provided to the Manager, Marine Farming Branch must include:
 - 3.4.4.1 The names of therapeutants.
 - 3.4.4.2 The date of use.
 - 3.4.4.3 The location (to a degree of precision to the satisfaction of the Secretary) and identification of the specific cage / cages in which therapeutants have been placed.
 - 3.4.4.4 The quantities of therapeutants placed into specific cages.
- 3.4.5 Environmental data is to be collected at each finfish lease area and analysed to specific standards and in accordance with the requirements for collection, reporting and analysis as specified in the relevant marine farming licence.

Note: The Secretary will use the information from the environmental monitoring surveys when determining marine farming licence conditions.

- 3.4.6 Lessees must comply with any environmental monitoring, data analysis, interpretation, audit and review requirements determined by the Secretary, and notice of which is given in writing, as amended by the Secretary from time to time, at the lessee's expense using such parties as are approved or nominated by the Secretary.

- 3.4.7 The Secretary may require from time to time, by notice in writing, a lessee, at the lessee's expense, or a sub-lessee, at the sub-lessee's

expense, to engage an independent auditor determined by the Secretary, to undertake an audit, as specified by the Secretary, of a lessee or sub-lessee's business records, and record keeping practices.

- 3.4.8 An audit undertaken under 3.4.7 may include an assessment of the accuracy and truthfulness of records with respect to the physical parameters being recorded under 3.4, for the purposes of determining compliance with any management control or licence condition.
- 3.4.9 The Secretary may require from time to time, by notice in writing, a lessee, at the lessee's expense, or a sub-lessee, at the sub-lessee's expense, to engage a consultant, scientific institute, or other entity acceptable to the Secretary, to conduct environmental modelling, for the purpose of reviewing or predicting the environmental effects of marine farming within the area covered by this plan.
- 3.4.10 For leases that have an associated marine farming licence authorising the farming of finfish, lessees or sub-lessees must provide to the Secretary on an annual basis, unless exempted in writing by the Secretary, a production planning report for three years in advance, by lease.

3.5 Chemical Controls

- 3.5.1 All chemical use must comply with the requirements of the *Agriculture and Veterinary Chemicals (Control of Use) Act 1995*.

3.6 Controls on Waste

- 3.6.1 Lessees must dispose of wastes from:
- harvesting;
 - processing of produce;
 - removal of fouling organisms; and
 - production,

in accordance with relevant Acts or regulations and tradewaste agreements and in a manner that the Secretary is satisfied will not cause an unacceptable effect on the ecology of the marine environment or nearby shorelines.

- 3.6.2 All marine farmed fish mortalities must be disposed of, according to relevant Acts, and local council by-laws.
- 3.6.3 The licence holder must ensure that blood resulting from the harvesting of fish is fully contained and not allowed to enter the marine environment unless authorised in writing by the Chief Veterinary Officer.

- 3.6.4 Lessees must follow or comply with limits upon the use of a lease area if unacceptable benthic impacts specified in the relevant marine farming licence are identified through routine monitoring.
- 3.6.5 Lessees must ensure that Black and Grey Water resulting from the servicing of marine farming operations is not released into the marine environment unless otherwise authorised in a marine farming licence.

3.7 Disease Controls

- 3.7.1 Lessees must notify the Department of Primary Industry, Water and Environment of any suspicion of a notifiable disease in accordance with the *Animal Health Act 1995*.
- 3.7.2 Lessees must remove dead fish from cages in accordance with any direction from the Secretary.
- 3.7.3 Lessees must ensure that all salmonid fish species introduced into the plan area by leaseholders are vaccinated in accordance with any vaccination protocol plan as specified by the Secretary.
- 3.7.4 Lessees must participate in any fish health management plan or fish biosecurity program as directed in writing by the Chief Veterinary Officer or Director Marine Resources.
- 3.7.5 Lessees must ensure that any introduction of smolt to the plan area is accompanied by documentation as specified or approved in writing by the Chief Veterinary Officer.

3.8 Visual Controls

- 3.8.1 Lessees must ensure that all marine farming structures and equipment on marine farming lease areas conform to the following controls:
 - 3.8.1.1 All fish cages, buoys, netting and other floating marine farming structures and equipment on State Waters, other than that specified for navigational requirements, must be grey to black in colour, or be any other colour that is specified in the relevant marine farming licence.
 - 3.8.1.2 Marine farming structures and equipment must be low in profile and be of a uniform size and shape to the satisfaction of the Secretary. The Secretary will determine what constitutes a low profile and uniform size and shape.
 - 3.8.1.3 Floating storage huts, grading facilities and shelters must not be located within a lease area unless authorised under the relevant marine farming licence.

- 3.8.1.4 Lessees are to ensure that light generated from marine farming operations does not create a nuisance. The Secretary will determine what constitutes a nuisance.

3.9 Access Controls

- 3.9.1 Lessees must mark the external boundaries of the lease area in whatever manner is required by the Secretary and by the relevant authority under the provisions of the *Marine and Safety Authority Act 1997*.
- 3.9.2 Lessees must identify the lease area in a manner specified by the Secretary.
- 3.9.3 Anchors and mooring lines that extend outside the lease area must be at least 5 metres below the surface at the boundary of the lease area and must not extend outside a marine farming zone.

3.10 Odour Controls

- 3.10.1 Lessees ensure that odour generated from marine farming operations does not create an odour nuisance. The Secretary will determine what constitutes a nuisance.

3.11 Fish Escapes

- 3.11.1 Lessees must not intentionally release into State waters fish of the species authorised in the relevant marine farming licence.
- 3.11.2 Lessees must report to the Manager Marine Farming Branch any significant incident of fish escapes within 24 hours of becoming aware of the escape. A significant escape is defined as any loss of licensed species to the marine environment in excess of 500 individuals at any one time.
- 3.11.3 Lessees must recover escaped fish when and in a manner as directed by the Secretary.

3.12 Other Controls

- 3.12.1 Lessees must comply with the *Marine Farming Planning Act 1995* and with any other Act or regulations that may affect the lease area or the marine farming operations in that lease area.
- 3.12.2 Lessees must comply with guidelines on noise emissions made pursuant to the *Environmental Management and Pollution Control Act 1994* for marine farming operations.
- 3.12.3 Lessees must maintain marine farming structures and equipment in a serviceable condition on lease areas held by them.

- 3.12.4 Lessees must remove fouling organisms from marine farming equipment, as directed by the Secretary, in a manner that the Secretary is satisfied will not cause an unacceptable effect upon the ecology of the marine environment or nearby shorelines.
- 3.12.5 Lessees must remove redundant, dilapidated or loose marine farming structures and equipment from the lease area as directed by the Secretary.
- 3.12.6 If any part or parts of marine farming structures or equipment break away from the lease area, lessees must take action as soon as is reasonably possible to recover those structures and equipment and return them to the lease area or otherwise dispose of them in an appropriate manner.
- 3.12.7 Lessees must permit the Minister, or persons authorised by the Minister, to enter into and inspect the lease area at all reasonable times.
- 3.12.8 Lessees must comply with all lawful written requirements of the Minister.
- 3.12.9 Lessees must notify the Nature Conservation Branch of the Department of Primary Industries, Water and Environment in the event that any marine mammals are found entangled in marine farming equipment.
- 3.12.10 Lessees must ensure that any predator control of protected wildlife (within the meaning of the Wildlife Regulations 1999) is conducted with the approval of the Manager of the Nature Conservation Branch of the Department of Primary Industries, Water and Environment or any other person acting on that person's behalf and in the case of seals in accordance with relevant seal interaction management protocols of the Department of Primary Industries, Water and Environment.
- 3.12.11 Where bird netting is deployed lessees must ensure that nets are made of netting of a maximum 115mm square mesh and conform to the visual controls at section 3.8. Existing marine farming lease areas must conform to this requirement by 1 January 2008. New lease areas must conform from the date of approval of this Plan.
- 3.12.12 Lessees must ensure that avifauna entangled in bird netting is removed as soon as is practicable following entanglement.
- 3.12.13 Feeding of seals must not occur in any marine farming zones or marine farming lease areas covered by this marine farming development plan.

- 3.12.14 Baited trap lines or “tease lines” may only be deployed by an officer employed in the Nature Conservation Branch, Department of Primary Industries, Water and Environment or officers or a person(s) who holds a permit to do so under the Wildlife Regulations 1999.
- 3.12.15 Lessees must ensure that bird netting is maintained clear of the water to ensure that it does not become a hazard to marine fauna.

3.13 Special Management Controls

3.13.1 Zone 3B (at Table Head)

- 3.13.1.1 The use of Zone 3 part 3B is restricted to the mooring of vessels and equipment associated with marine farming activities. No fish may be farmed, held or moved within Zone 3 part 3B.
- 3.13.1.2 Lessees engaging in marine farming activities within Zone 3B must comply with the following management controls;
 - 3.5 Chemical Controls
 - 3.6 Controls on Waste 3.6.1, 3.6.2, 3.6.3 & 3.6.5
 - 3.8 Visual Controls 3.8.1.1 & 3.8.1.4
 - 3.10 Odour Controls
 - 3.12 Other Controls;

in the same way as if the activity was being undertaken on a lease area.

4 Protected Environmental Values

Clause 10.8 (b) of the State Policy on Water Quality Management 1997 states that Protected Environmental Values for specific surface waters, coastal waters and ground waters shall be shown in any strategic planning study developed for marine farming and national parks and reserves. The Protected Environmental Values determined under Part 3-Water Quality Objectives 7.1 A, B and E of the State Policy on Water Quality Management 1997 relevant to the area covered by the Macquarie Harbour Marine Farming Development Plan October 2005 are:

Zone 2

- A: Protection of Aquatic Ecosystems
 - (ii) Protection of modified (not pristine) ecosystems
 - (a) from which edible fish and crustacea but not shellfish are harvested;
- B: Recreational Water Quality and Aesthetics
 - (i) Primary contact water quality
 - (ii) Secondary contact water quality
 - (iii) Aesthetic water quality
- E: Industrial Water Supply – Aquaculture (for those areas covered by the Macquarie Harbour Marine Farming Development Plan)

Zone 3

- A: Protection of Aquatic Ecosystems
 - (ii) Protection of modified (not pristine) ecosystems
 - (a) from which edible fish and crustacea but not shellfish are harvested;
- B: Recreational Water Quality and Aesthetics
 - (i) Primary contact water quality
 - (ii) Secondary contact water quality
 - (iii) Aesthetic water quality;

Zone 4

- A: Protection of Aquatic Ecosystems
 - (ii) Protection of modified (not pristine) ecosystems
 - (a) from which edible fish but not shellfish or crustacea are harvested;
- B: Recreational Water Quality and Aesthetics
 - (ii) Secondary contact water quality

(iii) Aesthetic water quality;

Zone 5

- A: Protection of Aquatic Ecosystems
 - (ii) Protection of modified (not pristine) ecosystems
 - (a) from which edible fish, crustacea and shellfish are harvested;

- B: Recreational Water Quality and Aesthetics
 - (i) Primary contact water quality
 - (ii) Secondary contact water quality
 - (iii) Aesthetic water quality;

- E: Industrial water supply – Aquaculture (for those areas covered by the Macquarie Harbour Marine Farming Development Plan)

NB: The zones identified above refer to specific zones in relation to Protected Environmental Values and not marine farming zones.

The location of specific zones (relating to Protected Environmental Values) can be found in the maps associated with the document *Environmental Management Goals for Tasmanian Surface Waters – West Coast Municipal Area December 2000*, prepared by the Department of Primary Industries, Water and Environment.

<http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/EGIL-53LUJX?open>

5 References

Butler, E., Parslow, J., Volkman, J., Blackburn, S., Morgan, P., Hunter, J., Clementson, L., Parker, N., Bailey, R., Berry, K., Bonham, P., Featherstone, A., Griffin, D., Higgins, H., Holdsworth, D., Latham, V., Leeming, R., McGhie, T., McKenzie, D., Plaschke, R., Reville, A., Sherlock, M., Trenerry, L., Turnbull, A., Watson, R., and Wilkes, L., 2000; CSIRO, Huon Estuary Study, Environmental Research for Integrated Catchment Management and Aquaculture, Project Number 96/284.