

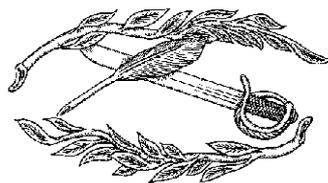
New South Wales Government

# Surveyor General's Directions

No 13

## **AQUACULTURE LEASE SURVEYS**

*(Specifications for Surveys)*



# DOCUMENT CONTROL SHEET

## Contact for Enquires and Proposed Changes

If you have any questions regarding this document, contact:

Designation: Document Sponsor

Name: Paul Harcombe

Phone: 02 6332 8201

Email: [Paul.Harcombe@lpi.nsw.gov.au](mailto:Paul.Harcombe@lpi.nsw.gov.au)

Designation: Author

Name: Les Gardner

Phone: 02 6332 8224

Email: [Les.Gardner@lpi.nsw.gov.au](mailto:Les.Gardner@lpi.nsw.gov.au)

## Record of Document Issues

Version No	Issue Date	Nature of Amendment
1.0	30/07/1999	Initial Release (Surveyor General's Directions no.7 – Appendix D2)
2.0	25/05/2015	Internal agreement of draft for industry feedback
3.0	9/07/2015	Minor changes from Industry feedback
4.0	Sept 2015	Second Release – Standalone Surveyor General's Direction.
5.0	11/11/2015	Minor changes to sample plans

## Document Distribution

Name	Organisation	Distribution Channel
General Public	–	LPI website

## Document Approval:

Approved By:

.....  
Des Mooney  
Surveyor General of NSW  
Date of Approval: November 2015



## Contents

### Table of Contents

1	Purpose of this document.....	1
1.1	Goals .....	1
1.2	Objectives .....	1
2	Introduction.....	1
3	When is an Aquaculture Lease Survey Required?.....	2
3.1	Field Survey .....	2
3.2	Compiled Plan.....	2
4	Survey Methods and Aquaculture Requirements .....	2
4.1	Quality assurance .....	3
4.2	Coordinate system.....	3
4.3	Survey Marks .....	3
4.4	Corner Marks .....	3
4.5	Boundaries .....	4
5	Rafts .....	4
6	Submission and format of Plans .....	4
7	Record Storage and Copies .....	5
8	Relevant Clauses of Surveying & Spatial Information Regulation 2012. ....	6
	Contacts.....	6
	References.....	7
	Appendix A.....	8



## 1 Purpose of this document

This document has been prepared to enable a surveyor who is providing a service to lease holders to undertake lease surveys that will comply with NSW Department of Primary Industries (NSW DPI) (Fisheries NSW), and the Surveyor General's requirements. This document outlines the specifications necessary for Aquaculture Lease surveys in New South Wales.

### 1.1 Goals

- To ensure that all surveys of Aquaculture Leases in NSW are made to a known and consistent standard.
- To provide a system for the reliable and accurate re-establishment of limits of aquaculture leases.
- To ensure that aquaculture lease surveys are cost effective and efficient.

### 1.2 Objectives

To have all aquaculture leases surveyed under standards that will provide a degree of accuracy, reliability and coordination acceptable to:

- The Minister for NSW DPI- under the [Fisheries Management Act 1994](#);
- The Surveyor General - under the [Surveying and Spatial Information Act 2002](#);
- The Registrar General - under the [Conveyancing Act 1919](#) to enable registration of aquaculture lease title under [Real Property Act 1900](#), and,
- The aquaculture industry and other stakeholders.

To have the positioning data (including quality assurance and control details) stored and available in a form which NSW DPI and other interests will be able to access efficiently and reliably. This information is available to other agencies to contribute to the efficient management of estuaries.

## 2 Introduction

The administration of aquaculture in New South Wales is subject to the [Fisheries Management Act 1994](#). Aquaculture leases are granted over a specified area of Crown land below mean high water (public water land) for growing various species predominantly oysters. Aquaculture leases are issued for various terms (a maximum of fifteen years) and conditions include a requirement for the area to be marked and maintained in a tidy condition.

Until 1994, the aquaculture lease boundaries were normally measured by prismatic compass and tape by Fisheries Officers. The method was not cost efficient and did not relate to a reference system or established coordinates.

Fisheries NSW identified the need for a more accurate and reliable method of recording the position of leases and in consultation with the Surveyor-General, undertook an initial survey of



all aquaculture leases in the State. This task was undertaken as the “Aquaculture Lease Survey Project” (the *Project*). The *Project* commenced in May 1996. This involved about 3,500 leases occupying about 4,500 hectares throughout the State. After the completion of the Project, new leases and lease amendments have been surveyed as required by independent surveyors and the plans have been registered with Fisheries NSW and the coordinates have been added to the Aquaculture Lease geospatial dataset. This information is available to other agencies and stakeholders for the inclusive management of estuaries.

An Aquaculture Lease Survey is a land survey pursuant to the Surveying and Spatial Information Act 2002.

### 3 When is an Aquaculture Lease Survey Required?

Lease surveys are required when new lease applications are being considered or when there is an adjustment to an existing lease boundary (e.g. part surrender, consolidation or subdivision). Surveys may be required for lease renewals, relocation of lost corner marks or to determine if cultivation is outside a prescribed lease boundary. Lease surveys and boundary marker placement must be carried out by a registered land surveyor (a land surveyor registered under the [Surveying and Spatial Information Act 2002](#).)

#### 3.1 Field Survey

Where there is no current adequate lease plan available for the area to be leased for aquaculture, a survey must be carried out by a registered land surveyor. When a structure is being excluded from a lease area, the boundaries around the structure must be surveyed and should provide an adequate clearance from the structures. Aquaculture Cultivation material is not considered a structure in this instance.

#### 3.2 Compiled Plan

A compiled plan may be used when there is a consolidation of leases and in some instances of subdivision and part-surrender of a lease.

Conditions that allow the use of a compiled plan are;

- There is an adequate survey in the NSW DPI register.
- The plan does not exclude or include any structures or reclamation.
- The lease changes show a clear intent by using existing corners of the lease.
- A survey certificate is completed for:
  - part b “partial survey” and signed by the registered land surveyor; or
  - part c “compiled” and signed by the registered land surveyor or NSW DPI authorised person.

### 4 Survey Methods and Aquaculture Requirements

These specifications describe the requirements for conducting an aquaculture lease survey to a suitable standard and lodging the plans with NSW DPI.



### 4.1 Quality assurance

MGA horizontal coordinates of fixed points should be determined within  $\pm 1$  metre. Field techniques used in determining position of any aquaculture lease corner must include adequate checks to ensure that all measurements are verified.

### 4.2 Coordinate system

The datum used is the current official horizontal datum of Australia (currently Geocentric Datum of Australia 1994, GDA94) and the map projection is MGA94 Zone 56 (which is the map projection that best represents the NSW coastline).

Coordinate datum	GDA94
Map projection	MGA94 (UTM projection) Zone 56
Units	Metres, rounded to the nearest 0.1 metre
Coordinate format	Easting/Northing

### 4.3 Survey Marks

Each survey, must connect from two or more survey marks, of class D or better, as defined in the [Surveying and Spatial Information Regulation 2012](#), and available from the Surveying Control Information Management System ([SCIMS](#)) within 6 months before the date of survey.

### 4.4 Corner Marks

If a resurvey shows the corner mark is greater than 2 metres distant from the original coordinates, and unless other information can show otherwise, the mark is considered to be incorrect and the coordinate shall prevail and the mark be repositioned.

Where practicable, all corners should be marked with a durable material in accordance with the [Fisheries Management Act 1994](#), [Fisheries Management \(Aquaculture\) Regulation 2012](#) and [NSW DPI "NSW Oyster Industry Sustainable Aquaculture Strategy" \(OISAS\)](#).

Where the depth of water or nature of the bottom substrate type (ie rock) prevents installation of a lease marker post, the lease holder may seek permission from the local Fisheries Officer to install an alternative mark.

Each corner of a lease should be assigned a unique identifier relative to the plan provided. These numbers should be consistent with any field notes and lodged plan numbers (if applicable).

When a resurvey finds an original corner mark that can be clearly identified as not having moved since the original survey and the current survey is a more accurate survey, the coordinates can be changed to the new survey's coordinates. Otherwise the original coordinates should prevail. If the coordinates are to be changed, then confirmation from the



## Surveyor General's Directions

---



Fisheries Manager, Spatial Planner Aquaculture needs to be obtained. This may require more surveying and/or evidence to satisfy Fisheries NSW of the new coordinates.

### 4.5 Boundaries

A boundary of an aquaculture lease is a straight line joining successive lease corners. Boundary line dimensions should not be expressed less than the nearest 0.1m for length and 1 minute for bearing.

Boundary lines should not be defined by features or structures. If a structure is to be excluded from a lease, then offsets showing the adequate clearance should be shown on the plan.

All boundaries must be within Public Water Land as defined at Section 4 of the [Fisheries Management Act 1994](#) as follows:

*public water land* means land submerged by water (whether permanently or intermittently), being:

- (a) Crown land, or
- (b) land vested in a public authority, or
- (c) land vested in trustees for public recreation or for any other public purpose, or
- (d) land acquired by the Minister under Division 1 of Part 8, [Fisheries Management Act 1994](#)

but does not include land which is the subject of an aquaculture lease or land of which a person has exclusive possession under a lease under any other Act.

### 5 Rafts

If a lease corner with raft cultivation is not indicated with a fixed marker (that is, rafts are the only indication of the lease) then the boundary is defined by coordinates that contain the raft's movement. The lease corner should be located to include those extremities of the raft's movement that maximises the lease area. Preferably, the survey should be conducted within one hour of low tide. Otherwise, suitable allowance must be made for the extremity of the raft swing area in selecting the lease corners.

Lease corners that include rafts must be noted as such in the field notes, the electronic record and the survey plan.

### 6 Submission and format of Plans

Plans to be lodged with the public authority, NSW DPI must be in the form set out in Appendix A. Surveyors are required to provide a table of coordinates and boundaries electronically (for example in spreadsheet form), in addition to the survey plan.

A survey plan may be submitted electronically or as a hardcopy.



## Surveyor General's Directions



The plan must comply with the following standards which generally follow the standards for Deposited Plans as found in the Registrar Generals Directions.

- Plans must be drafted in a manner and scale allowing for clear reproduction;
- Large variations in line and character thickness must be avoided;
- All plans should be submitted in electronic format as a TIFF file at 200 dpi and CCITT group 4 compression or manually on archival quality paper;
- North arrow should be directed pointing upwards;
- Colour must not be used on a plan;
- Adjoining information must be current at the date of the plan lodged;
- All words are to be in English, and letters, numbers and other symbols must be in a font that is dense and black in colour, in upper case (except for lowercase area symbols), open in format and construction, and in an upright style;
- The new lease number is available from Aquaculture Administration, Fisheries NSW;
- Surrounding Aquaculture Lease surveys can be obtained from Aquaculture Administration, Fisheries NSW for the checking of adjoining coordinates and details;
- The lease area, (or sub-areas if in two or more parts and total area) must be shown;
- MGA94 Coordinates are to be shown in Zone 56 with a statement outlining the Datum, Grid, Projection and Accuracy. (MGA Zone 55 is not to be used);
- A table showing the coordinates for each corner must be included on the plan. The coordinate values are to be shown to the nearest 0.1 metres and the nature of the corner mark also shown;
- A schedule of bearings and distances must be shown on the plan with bearings shown not less than the nearest 1 minute of arc, and distances not less than the nearest 0.1 of a metre;
- The area of the lease must be shown either in whole square metres or hectares rounded to 4 decimal places;
- The coordinates of all state survey marks used to determine the datum and orientation for the survey must be shown in a schedule;
- Closed connections from the datum marks to separate lease corners must be shown on the plan;
- Connections to 2 state survey marks;
- Adjoining aquaculture lease number details;
- Adjoining information including, Lot/deposited plan, road names, estuary name, and confluence details.

## 7 Record Storage and Copies

The surveyor may be required by Fisheries NSW to provide the original Field Notes or copies of the Field Notes or electronic records and an officer appointed by the Director, Fisheries NSW may take such copies of those records as the Director approves.



## 8 Relevant Clauses of Surveying & Spatial Information Regulation 2012.

The following clauses of the *Surveying & Spatial Information Regulation 2012* will apply to all Aquaculture Lease Surveys:

Part 1	including	5
Part 2		
	Division 1 including	6-9, 11
	Division 3 including	14, 15, 17, 19, 21, 22
	Division 4 including	33-35, 39, 43
	Division 6 including	52 -58
	Division 7 including	59, 60 (a-b), 61, 64, 68, 70
Part 4	including	86, 89

### Contacts

Fisheries Manager Spatial Planner, Aquaculture  
Fisheries NSW | NSW Department of Primary Industries  
Port Stephens Fisheries Institute | Taylors Beach Rd Taylors Beach  
Locked Bag 1 Nelson Bay NSW 2315  
T: 49821232 | E: [Antonia.Creese@dpi.nsw.gov.au](mailto:Antonia.Creese@dpi.nsw.gov.au)

#### [Aquaculture Administration, NSW DPI](#)

Phone: 49821232

Email: [aquaculture.administration@dpi.nsw.gov.au](mailto:aquaculture.administration@dpi.nsw.gov.au)



### References

*Conveyancing Act 1919*

<http://www.legislation.nsw.gov.au/maintop/view/inforce/act+6+1919+cd+0+N>

*Fisheries Management Act 1994*

<http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N>

*Fisheries Management (Aquaculture) Regulation 2012*

<http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+398+2012+cd+0+N>

*Real Property Act 1900*

<http://www.legislation.nsw.gov.au/maintop/view/inforce/act+25+1900+cd+0+N>

*Surveying and Spatial Information Regulation 2012*

<http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+436+2012+cd+0+N>

SCIMS

[http://www.lpi.nsw.gov.au/surveying/scims\\_online](http://www.lpi.nsw.gov.au/surveying/scims_online)

NSW DPI "NSW Oyster Industry Sustainable Aquaculture Strategy" (OISAS).

<http://www.dpi.nsw.gov.au/fisheries/aquaculture/publications/oysters/industry/industry-strategy>



## Surveyor General's Directions



### Appendix A

<b>AQUACULTURE LEASE PLAN ADMINISTRATION SHEET</b>	
<p style="text-align: center; font-size: small;">Office Use Only</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p><b>NOTE:</b> Overall dimensions of this form are the same as deposited plan form 6 with content modifications as shown. Only one sheet is to be used</p> </div>	AL
<p><b>PLAN OF</b></p>	<p>LGA: Locality: Parish: County:</p>
<p>Estuary Name: Location in Estuary:</p>	<p style="text-align: center;"><b>Survey Certificate</b> Certificate as to survey not requiring strict accuracy</p> <p>I, .....</p> <p>of .....</p> <p>a surveyor registered under the <i>Surveying and Spatial Information Act 2002</i>, certify that:</p>
<p>Location Map</p>	<p>a) the survey represented in this plan was made in accordance with clause 9 of the <i>Surveying and Spatial Information Regulation 2012</i> and the requirements of the Surveyor General's Direction No. 13 and is a survey to be lodged with a public authority as referred to in that clause and the survey was completed on .....</p> <p>b) The part of the land shown in the plan (*being/*excluding.....) was made in accordance with clause 9 of the <i>Surveying and Spatial Information Regulation 2012</i> and the requirements of the Surveyor General's Direction No. 13 and is a survey to be lodged with a public authority as referred to in that clause and the survey was completed on .....</p> <p>c) The land shown in this plan was compiled in accordance with Surveyor General's Direction No. 13.</p> <p>Signature: .....</p> <p>Dated: .....</p> <p>Surveyor ID: .....</p> <p>Datum Line: .....</p> <p>*Strike through if inapplicable.</p> <p>^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.</p>
<p style="text-align: center;"><b>Fisheries Approval</b></p> <p>I,.....(Authorised Officer) certify that this plan has been made in accordance with the Fisheries Management Act 1994 and the Fisheries Management Aquaculture Regulation 2012</p> <p>Signature: .....</p> <p>Date: .....</p>	<p>Plans used in the preparation of survey/compilation.</p>
	<p>Surveyor's Reference:</p>



# Surveyor General's Directions



PLAN FORM 1F (A3)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Sheet of Sheets

Datum: Geocentric Datum of Australia 1994 (GDA)  
Grid: Map Grid of Australia (MGA)  
Projection: UTM Zone 56  
Accuracy: +/- 1m

**Schedule of Lease Corners**  
Cor Easting Northing Mark Origin

**Schedule of Lease Boundaries**  
From To Bearing Distance

**Schedule of Datum Marks**  
Mark East North Class/Order Source

**NOTE:** dimensions of this form are the same as deposited plan form 1 for an A3 sheet.

Surveyor: Date of Survey: Surveyor's Ref:	PLAN OF	LGA: Locality: Estuary: <small>Lengths are in metres. Reduction Ratio 1:</small>	Approved	AL
---	---------	---	----------	----

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 Table of mm



# Surveyor General's Directions



PLAN FORM 1F (A3)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Sheet 1 of 1 Sheets

