



Surveyor-General's Direction

No. 13

Aquaculture Lease Surveys



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Aquaculture Lease Surveys**

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A Unit of the Department of Customer Service
346 Panorama Avenue
BATHURST NSW 2795
Tel: (02) 6332 8287

www.spatial.nsw.gov.au

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Photographer: Steve McOrrie

Enquiries

Any enquiries regarding this Direction should be forwarded to:

Phone:	02 4916 3900	02 6332 8287
Email:	aquaculture.administration@dpi.nsw.gov.au	
Mail:	NSW DPI NSW Department of Primary Industries Port Stephens Fisheries Institute Taylors Beach Road Taylors Beach Locked Bag 1 NELSON BAY NSW 2315	Spatial Services A Unit of the Department of Customer Service 346 Panorama Avenue BATHURST NSW 2795

To contact Spatial Services please visit the Spatial Services Customer Hub
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Document Control Sheet

Record of Document Issues

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2.0	May 2015	Internal agreement of draft for industry feedback
3.0	July 2015	Minor changes from industry feedback
4.0	September 2015	Second release - standalone Surveyor-General's Direction
5.0	November 2015	Minor changes - sample plans
5.1	November 2015	Approval by Surveyor-General
6.0	May 2019	Minor revision - formatting, removal of rafts section, and <i>Surveying and Spatial Information Regulation 2017</i>
7.0	November 2021	Adoption of GDA2020

Document Approval:

Approved By:



Narelle Underwood
Surveyor-General of NSW
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1. General

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), and the Surveyor-General's requirements. This document outlines the specifications necessary for aquaculture lease surveys in New South Wales.

1.1 Goals

The goals of this Surveyor-General's Direction are to:

- Ensure that all surveys of aquaculture leases in New South Wales are made to a known and consistent standard
- Provide a system for the reliable and accurate re-establishment of aquaculture lease boundaries
- 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](#)
- Surveyor-General - under the [Surveying and Spatial Information Act 2002](#)
- 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](#) (the Act). Aquaculture leases are granted over "Public Water Land", as defined in Section 4 of the Act. The leases are predominantly for growing oysters and granted for various terms, usually fifteen years. Conditions of the lease 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 NSW DPI Officers. The method was not cost efficient and did not relate to a reference system or established coordinates.

NSW DPI 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 commenced in May 1996 and involved about 3,500 leases occupying about 4,500 hectares throughout the State.

Since the completion of the Project, new leases and lease amendments have been surveyed as required by independent surveyors. Plans of these surveys have been registered with NSW DPI 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 (as defined in [Surveying and Spatial Information Act 2002](#)).

3.1 Field Survey

For any new lease or change of lease area, where the current lease plan does not meet the survey standards of this Direction, a survey must be undertaken 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 Partial Survey

Where the current format of a lease plan meets the requirements of this Direction, then a partial survey may be undertaken of a lease area. The residue of the lease area must be compiled from the parent lease plan.

3.3 Compiled Plan

Where the current format of a lease plan meets the requirements of this Direction, then a compiled plan may be prepared. A compiled plan may be used when there is a consolidation of leases. In some instances, a compiled plan may be used for subdivision when the new boundaries are easily redefinable in relation to current boundaries, and part-surrender of a lease.

Conditions that allow the use of a compiled plan are;

- The base survey plan(s) in the NSW DPI register are accurate and reliable
- The base survey plan(s) does not show structures or occupations close to or encroaching the boundaries
- The new lease boundaries are defined with respect to existing lease boundaries
- A survey certificate is completed for:
 - o part b “partial survey” and signed by the registered land surveyor or
 - o 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 Accuracy of Survey

Aquaculture lease surveys are to be undertaken in accordance with Clause 9 of the [Surveying and Spatial Information Regulation 2017](#).

The MGA2020 horizontal coordinates of lease corners and other surveyed points should be determined to an accuracy of +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 adopted for all surveys in New South Wales (NSW) is currently the *Geocentric Datum of Australia 2020*, (GDA2020).

The corresponding map projection used for surveys in NSW is the *Map Grid of Australia 2020* (MGA2020). Coastal NSW lies predominantly within MGA2020 - Zone 56 and the remainder of the coast (south of Bermagui) lies within Zone 55.

For simplicity, it has been determined that all aquaculture lease survey plans in NSW will be defined in MGA2020 - Zone 56, including those south of Bermagui.

Coordinate datum	GDA2020
Map projection	MGA2020 (UTM projection) Zone 56 (Easting/Northing)
Units	Coordinates in metres, rounded to the nearest 0.1 metre Distances in metres, rounded to the nearest 0.1 metre Bearing in Degrees, Minutes, Seconds, rounded to nearest minute.

4.3 Accurate MGA Orientation

The accurate MGA2020 using orientation of each survey, must be achieved by connection to two or more permanent survey marks, in accordance with Clause 5(1) [Surveying and Spatial Information Regulation 2017](#).

4.4 Survey of Lease Corners

In making a survey, the surveyor must adopt the original corner as marked unless there is sufficient evidence to show otherwise. If the corner mark is proven to be greater than 2 metres distant from the original coordinate position, then the corner mark shall be re-positioned correctly.

When re-establishing original lease corners, the coordinates used must be in the current survey datum (MG2020). As all original aquaculture lease surveys were defined in MGA94, then the coordinates must be converted to MGA2020 using [ICSM approved GDA transformation products & tools](#).

If the coordinates of a lease corner are to be changed, then sufficient survey evidence must be provided to the Fisheries Manager, Spatial Planner for approval.

Where practicable, all corners should be marked with a durable material in accordance with the [Fisheries Management Act 1994](#), [Fisheries Management \(Aquaculture\) Regulation 2017](#) and NSW DPI “NSW Oyster Industry Sustainable Aquaculture Strategy” (OISAS).

Where the depth of water or nature of the bottom substrate type (i.e. 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).

4.5 Boundaries

A boundary of an aquaculture lease is a straight line joining successive lease corners. Boundary line dimensions should be expressed to the nearest 0.1m for length and 1 minute for bearing.

Boundary lines should not be defined by features or structures.

The survey plan must show the description and location (including the age, nature, construction material and relationship to the boundary) of any substantial structure that is within 2 metres of the boundary of the land surveyed, or that is otherwise relevant to the boundary.

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.

Note: In surveying a new aquaculture lease, the surveyor must avoid creating overlapping titles or interests arising from erosion or accretion.

5. Submission and Format of Plans

Plans to be lodged with the public authority (NSW DPI) must be in the form set out in the [Reference Documents](#). Surveyors are required to provide a table of coordinates and boundaries electronically (for example in a csv or excel spreadsheet form), in addition to the survey plan.

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

The plan must comply with the following standards which generally follow the standards for Deposited Plans as found in the Registrar General's 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 a suitable high-resolution TIFF or PDF format 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, NSW DPI

- Surrounding aquaculture lease surveys can be obtained from Aquaculture Administration, NSW DPI 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
- MGA2020 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 permanent survey marks used to determine the datum and orientation for the survey must be shown in a schedule
- Closed connections from the permanent survey marks (used to define the MGA orientation) to separate lease corners must be shown on the plan
- Adjoining aquaculture lease number details
- Adjoining information including, Lot/deposited plan, road names, estuary name, and confluence details.

6. Record Storage and Copies

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

7. Relevant Clauses of the *Surveying and Spatial Information Regulation 2017*

The following clauses of the [Surveying and Spatial Information Regulation 2017](#) will apply to all Aquaculture Lease Surveys:

Applicable Clauses of S&SI Regulation 2017		
Part 1		5
Part 2	Division 1	6-9, 11
	Division 3	14, 15, 17, 19, 21, 22
	Division 4	33-35, 39, 43
	Division 6	52 -57
	Division 7	58, 59, 60 (a-b), 61, 63, 66, 67, 69, 71, 72
Part 4		88, 91

8. Contacts

Fisheries Manager Spatial Planner

NSW Department of Primary Industries
Port Stephens Fisheries Institute | Taylors Beach Road Taylors Beach
Locked Bag 1 NELSON BAY NSW 2315

Phone: 02 4916 3900

Email: aquaculture.administration@dpi.nsw.gov.au

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

9. References

Conveyancing Act 1919

<https://www.legislation.nsw.gov.au/view/html/inforce/current/act-1919-006>

Fisheries Management Act 1994

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/act-1994-038>

Fisheries Management (Aquaculture) Regulation 2017

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/sl-2017-0443>

Real Property Act 1900

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/act-1900-025>

Surveying and Spatial Information Regulation 2017

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/sl-2017-0486>

DCS Spatial Services SCIMS online

https://www.spatial.nsw.gov.au/surveying/scims_online

NSW DPI “NSW Oyster Industry Sustainable Aquaculture Strategy” (OISAS) 2016

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

End of Direction