

**INDUSTRY & INVESTMENT NEW SOUTH WALES
(FISHERIES CONSERVATION and AQUACULTURE)
and
LAND and PROPERTY MANAGEMENT AUTHORITY**

AQUACULTURE LEASE SURVEYS

**Specifications
for
Surveyors**

Purpose of this Document

This document has been prepared to enable a surveyor who is providing a service to lease holders to undertake aquaculture lease surveys that will comply with Industry & Investment NSW (Fisheries Conservation and Aquaculture) and the Surveyor General's requirements. The document outlines the measurement specifications necessary for Aquaculture Lease surveys.

Note: Industry & Investment NSW (referred to as I&I NSW in this document) was formerly NSW Department of Primary Industry and NSW Fisheries.

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.

OBJECTIVES

1. To have all aquaculture leases surveyed under standards that will provide a degree of accuracy, reliability and coordination acceptable to:
 - The Minister for I&I NSW - 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,
 - Aquaculture farmers and other interests.
2. To have the positioning data (including quality assurance and control details) stored and available in a form which I&I NSW and other interests will be able to access efficiently and reliably.

Introduction

The administration of aquaculture in New South Wales is subject to the *Fisheries Management Act 1994*. Lessees are granted a lease of a specified area of Crown land in an estuary 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 oyster 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.

These Specifications are for use in making aquaculture surveys. They are aimed at setting the standard for suitably accurate and reliable surveys and preparation of aquaculture lease plans or maps.

NSW Fisheries identified the need for a more accurate and reliable method of recording the position of leases. NSW Fisheries, in consultation with the Surveyor-General, then 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. **Project** surveys were completed in accordance with the provisions of the *Fisheries Management Act 1994* and the *Surveyors Act 1929*.

The **Project** produced results that were used to improve the quality of aquaculture lease spatial information held by I&I NSW and the Land and Property Management Authority (LPMA). This information has improved the management and administration of the aquaculture industry. This information is available to other agencies to contribute to the efficient management of estuaries.

When are Aquaculture Lease Surveys Required?

Lease surveys are required when new lease applications are being considered or when there is an adjustment to an existing lease boundary (eg. part surrender, addition or subdivision). Surveys may be required for lease renewals, relocation of lost corner marks or to determine the area cultivated outside a prescribed lease boundary. Details regarding this policy are contained in the I&I NSW "NSW Oyster Industry Sustainable Aquaculture Strategy" (OISAS).

Survey Methods

These specifications describe the requirements for conducting an aquaculture lease survey and lodging the plans with I&I NSW to a standard suitable for registration with the Land and Property Information NSW of the Land and Property Management Authority.

An aquaculture lease survey will meet the standards if the MGA horizontal coordinates of fixed points are determined within +/- 1 metre. In addition, the survey results lodged with the Aquaculture Unit, I&I NSW, must meet all the requirements and conventions of the Specifications set out in APPENDIX 1 (attached).

Plans to be registered with the Land Titles Office must meet the requirements of the Registrar-General under the *Conveyancing Act, 1919*.

Field techniques used in determining position of any aquaculture lease corner must include adequate checks to ensure that all measurements are verifiable.

APPENDIX 1

INDUSTRY & INVESTMENT NSW (FISHERIES, COMPLIANCE & REGIONAL RELATIONS) and LAND & PROPERTY MANAGEMENT AUTHORITY

Specifications

For the Survey of Aquaculture Leases

SURVEY PROCEDURE AND RECORDS

Part 1: GENERAL

Each survey of an aquaculture lease shall be conducted under conditions of a relevant approval by the Surveyor General under Clause 9(3) of the *Surveying and Spatial Information Regulation 2006*.

Notwithstanding, the provisions of any such approval, field notes and an electronic record of the survey must be completed according to these specifications. Where any conflict arises between the statutory requirements, including the terms of any approval under Clause 9(3) and these *Specifications*, the statutory requirements shall prevail. The surveyor shall duly note the matter in the Field Notes and report the matter to the Surveyor-General and to the Director, Fisheries Conservation and Aquaculture.

The electronic record of each survey is considered the primary source of positioning each point. Changes to the electronic record can only be made by the surveyor and then only when there is reasonable evidence that the electronic record misrepresents the true position of the relevant point.

Where the field notes or electronic record of the survey do not meet these requirements, the surveyor may be requested to provide further information. Surveys not meeting these specifications may not be approved and the aquaculture lease plans may not be approved or issued by the Minister for Primary Industries.

Definitions

Unless otherwise indicated, terms shall have the same meaning as they have in relevant statutes. The following meanings apply:

- | | |
|-----------------|--|
| Boundary | A boundary of an aquaculture lease is a straight line joining successive lease corners. All boundaries must be within Crown Land or land vested in a public authority. |
| GDA 94 | Is explained fully in the GDA Technical Manual available at www.icsm.gov.au/icsm/gda/gdatm |

MGA Is the Map Grid of Australia and is a transverse Mercator projection of GDA 94 coordinates, which is a Universal Transverse Mercator Projection (UTM).

Point Number Is the number assigned to each lease corner or survey mark relevant to the survey and must be numbered in the electronic record of survey and in the Field Notes with the same identifying number, unique for that estuary.

Survey Mark Is a permanent mark, reference mark, or survey mark as defined in the *Surveying and Spatial Information Regulation 2006*, and marks placed by I&I NSW being a rock mark or peg.(as available on SKMS).

Lease Boundaries and Encroachments

Lease boundaries should be defined as straight lines and it is important to consider the impact of any encroachment beyond the area being surveyed.

Boundary Definition: If cultivations encroach less than 2 metres over a lease boundary, then the encroachments may be ignored.

Encroachments of greater than 2 m should be surveyed by recording additional lease corners sufficient to contain the area occupied.

Where two lease corners occur less than two metres apart, the point that maximises the lease area must be occupied. This includes points on two or more adjacent leases.

Where a lease corner is found within 2 m of a I&I NSW / "Fisheries Department Mark" (FD) survey mark, in the absence of evidence to the contrary, the position of the survey mark should be adopted as the lease corner.

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 boundary) then the boundary defined by rafts movement may be surveyed.

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 and the electronic record.

Survey Marks

Each survey mark found relevant to the lease or leases being surveyed shall be occupied where practicable.

If the MGA coordinate values of the Survey Mark are known, they are to be shown on the lease plan. The source of the survey mark information must be recorded in the field notes and on the survey plan.

Each survey must connect to two or more permanent marks, one of which must be an established mark. To confirm agreement within these specifications, at least one established permanent mark must be occupied and shown in the field note.

Corner Marks

Where practicable, all corners should be marked with a durable material in accordance with the *Fisheries Management Act 1994* and *Fisheries Management (Aquaculture) Regulation 2007* and *OISAS*.

Part 2- ELECTRONIC RECORDS AND DATA MANAGEMENT

Submission of Survey Results and Plans

Where it is intended that a new aquaculture lease plan should be adopted, survey results and plans may be submitted to the Aquaculture Unit, either in hardcopy, or in a combination of Field Notes and Electronic Record.

Plans Submitted in Hardcopy

Where plans are submitted in hardcopy they must comply with the *Real Property Act 1900* and the *Conveyancing Act 1919*.

A table showing the MGA co-ordinates in Zone 56 for each point must be included on the plan.

The bearings and distances of each boundary must be clearly shown. In addition, coordinates of two or more survey marks, of which at least one must be a co-ordinated survey mark,¹ must be shown the plan.

All bearings on such a plan should be shown as grid bearings.

¹ a survey mark for which the MGA co-ordinates are recorded under the State Control Survey system.
Survey Specifications Approved by Surveyor General 10 March 2010

Electronic Data

An electronic record of a survey, if available shall be submitted to prove that the following specifications and quality assurance measures have been complied with.

An electronic record may contain data relevant to the survey of one or more leases but must not contain data related to points in more than one estuary in any one file. If the record contains data for only part of one lease, the Field Sketch should show where the record for the remaining part of that lease is held.

A copy of the raw data recorded during the survey must be retained by the surveyor at least until any aquaculture lease plan resulting from data is approved. No observations or other electronic data logged should be deleted from the raw data file including any considered "bad" or irrelevant. The raw data file need not be submitted to I&I NSW unless specifically requested.

File Names

Where an electronic record is to be submitted to I&I NSW for preparation of an aquaculture lease plan the consent of the officer administering the I&I NSW Aquaculture GIS must be obtained with regard to file naming protocols.

Record Storage and Copies

The original Field Notes and copies of raw electronic data and the submitted electronic record must be held by the surveyor or by a person acting on behalf of the surveyor. The surveyor may be required by the Director, Fisheries Conservation and Aquaculture to provide the original Field Notes or copies of the Field Notes or electronic records and an officer appointed by the Director, Fisheries Conservation and Aquaculture may take such copies of those records as the Director approves.

End of Specification.