

FISH HABITAT PROTECTION PLAN NO 2: SEAGRASSES

1. INTRODUCTION

The *Fisheries Management Act 1994* (the Act) was proclaimed and came into effect on 16 January 1995. The objectives of the Act are to conserve, develop and share the fisheries resources of New South Wales for the benefits of present and future generations, and in particular:

- i) to conserve fish stocks and protect key fish habitats;
- ii) to promote viable commercial fishing and aquaculture industries;
- iii) to promote quality recreational fishing opportunities;
- iv) to appropriately share fisheries resources between the users of those resources; and
- v) to promote ecologically sustainable development.

To assist in the protection of key fish habitats, the Act enables the Minister to make Habitat Protection Plans for the protection of any habitat of fish, "whether the habitat is critical for the survival of the species or required to maintain harvestable populations of fish".

Fish Habitat Protection Plans are one component of a broad strategic approach by NSW Fisheries to the conservation of biodiversity in marine areas. Developed in consultation with the community, Fish Habitat Protection Plans carefully balance the needs of fish and fishers, and those of the broader community, and provide a practical guide to the way fish habitat should be managed.

Once gazetted, the Minister and Public Authorities must have regard to any Fish Habitat Protection Plan that is relevant to the exercise of their functions.

This is the second Fish Habitat Protection Plan to be developed under the Act; it is specific to the protection of seagrasses.

The first Plan dealt broadly with dredging and reclamation activities, fish passage requirements, and the protection of mangroves, other marine vegetation and snags.

2. WHY ARE SEAGRASSES IMPORTANT?

Seagrasses play a pivotal role in the coastal ecosystems of Australia and the world. Seagrasses are particularly important in the sustainability of commercial and recreational fisheries, primarily because of their roles in maintaining sediment stability and water quality, and in providing shelter and food critical to the survival of a wide variety of aquatic biota.

Seagrasses generally grow quickly and produce a large amount of organic material which enters the estuarine food chain (Figure 1). Seagrasses are eaten directly by echinoderms, crustaceans, molluscs and some fish species. Many species of juvenile fish and crustaceans use seagrasses as nursery areas before moving to other habitats. The postlarvae and juveniles of some fish, such as yellowfin bream, luderick and leatherjackets recruit to, and live in, seagrass habitats. Because of their particular importance as shelter and habitat to the juvenile life history stages of marine fish and

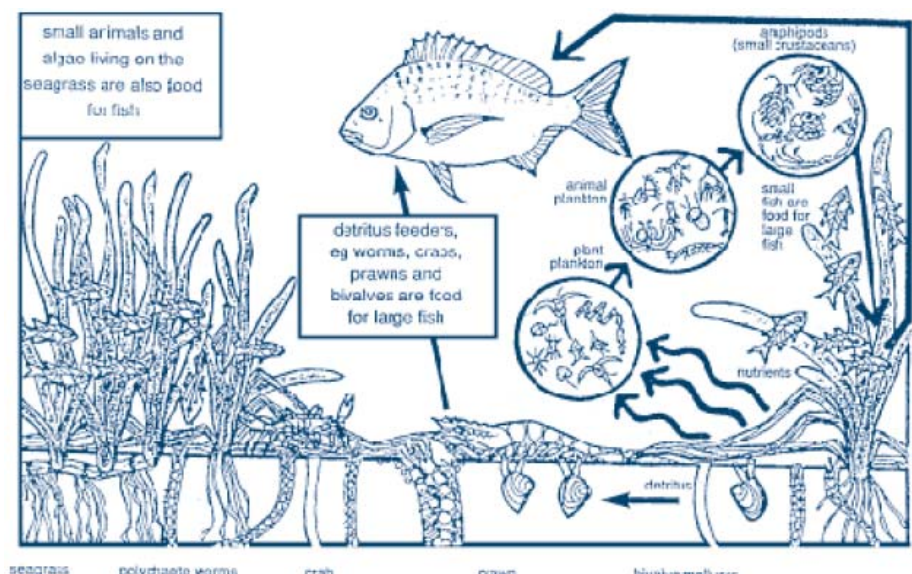


Figure 1: A simplified food chain in a seagrass community

crustaceans, seagrass beds are sometimes referred to as the “nurseries of the sea”.

Seagrasses are a fragile habitat, however. While some species of seagrass - such as eelgrass *Zostera* spp - are comparatively hardy and may recolonise areas after removal, others - such as the strapweed *Posidonia australis*- do not and are particularly susceptible to impacts. Some species, for example *Posidonia* spp, are also now comparatively restricted in their distribution.

Many major estuaries in NSW have lost as much as 85% of their seagrass beds in the past 30 to 40 years. This loss may contribute to declines in the abundance and diversity of fish and in vertebrates in some of these estuaries and the nearby coastal zone.

3. LEGISLATION

The *Fisheries Management Act 1994* states that “A person must not cut, remove, damage or destroy marine vegetation on public water land or an aquaculture lease, or on the foreshore of any land or lease, except under the authority of a permit issued by the Minister under this Part (205) or of an aquaculture permit.”

Seagrass is included in the definition of marine vegetation. The maximum penalty in the case of a corporation is \$50,000, or \$10,000 in any other case.

Seagrass may also be protected under other sections of the Act by placing appropriate conditions on permits granted for dredging and reclamation, for the commercial collection of marine vegetation, for aquaculture, and scientific collections and on commercial fishing licences. Seagrass can also be protected by inclusion within Marine Parks, Aquatic Reserves and in fishing closures.

Other agencies may also be able to influence seagrass management. For example, the Department of Land and Water Conservation, the National Parks and Wildlife Service, the Sydney Ports Corporation and the Marine Ministerial Holdings Corporation all have control of the substratum of some sub-tidal and inter-tidal lands which support seagrasses. A number of Departments may also have legislation (e.g. *Environmental Planning and Assessment Act*) that permits them to generate policies or plane impacts of activities on seagrasses.

4. OBJECTIVE OF THIS PLAN

The primary objective of this Plan is to ensure there is no net loss of seagrasses within the coastal and estuarine waters of NSW. The broad strategies for achieving this objective are:

- i) Protecting the distribution and quality of existing seagrass beds.
- ii) Declaring a number of representative and/or important seagrass beds as (or within) protected areas. Such areas would permit only a limited range of activities, but would be declared only after extensive community consultation.
- iii) Regulating developments/activities that cause direct and indirect damage to seagrasses including, but not limited to, moorings, dredging and aquaculture leases (see 7.0 for NSW Fisheries policy on a variety of such activities that may impact on seagrasses).
- iv) Restricting the issue of permits to damage or remove seagrasses. Applications to damage strapweed (*Posidonia* spp) will generally not be granted. Applications to damage other seagrass such as eelgrass *Zostera* spp, paddleweed *Halophila* spp or sea tassel *Ruppia* spp will be assessed on a case by case basis. If the circumstances justify it, and removal is the only practical option, then damage to seagrass should be minimised, and compensatory mechanisms (e.g. replanting of seagrass - guidelines on the replanting of seagrass are available from NSW Fisheries) and/or a monetary bond or payment (may be costed at \$250,000 ha) applied so that there is no net loss of seagrass.
- v) Repeating an inventory of seagrasses in NSW estuaries at regular intervals to enable changes to be assessed. The results of the last survey were published in 1985. Repetition of this survey will provide a quantitative assessment of temporal changes in the distributions of seagrasses and focus targeted protection and rehabilitation projects.

5. DURATION OF THE PLAN

This plan will be reviewed at intervals of five years from the date of gazettal.

6. HABITATS TO WHICH THIS PLAN APPLIES

6.1 Area covered by this plan

Seagrass communities are usually associated with intertidal wetland areas and shallow subtidal areas within estuaries and coastal embayments in NSW. This Plan therefore covers all of the coastal and estuarine waters (including lakes, lagoons, bays etc.) of New South Wales.

6.2 Species covered by this plan

There are approximately 10 species of seagrasses in NSW. They can be categorised into four easily recognisable groups: strapweed (*Posidonia australis*), eelgrass species (*Zostera* spp and *Heterozostera* spp); paddleweed (*Halophila* spp) and sea tassel (*Ruppia* spp). Figure 2 illustrates the main characteristics of the four main groups of seagrasses in NSW waters. This Plan covers all seagrasses known to occur in the waters of New South Wales.



Zostera capricorni (eelgrass or ribbonweed) in flower.



Halophila ovalis (paddleweed). Note the rhizomes

7. ACTIVITIES TO WHICH THIS PLAN APPLIES

A wide variety of activities may affect seagrasses detrimentally, either directly or indirectly. NSW Fisheries' role is to mitigate the impacts of those activities. Activities that are of concern to NSW Fisheries include:

- Collection or "trimming" of live seagrass
- Collection of dead seagrass from oceanic or estuarine beaches
- Dredging
- Reclamation
- Construction of groynes and breakwaters
- Construction of jetties, wharves, bridges, ramps and pontoons
- Moorings
- Boating and anchoring
- Fishing
- Construction and operation of aquaculture facilities
- Bait digging and collecting
- Point source pollution

While guidelines for the management of each of these activities are outlined below, all applications are assessed on a case by case basis. That assessment is, in general terms, dependent on the site, the extent of the activities involved, and the vulnerability and importance of the seagrass habitats in question.



Posidonia australis (strapweed)

7.1 Collection or “trimming” of live seagrass.

A permit is required from NSW Fisheries for any collection or trimming of live seagrass. Collection of live seagrass by hand, or cutting or “trimming” seagrasses using tools or mechanical methods (such as weed harvesters) will generally not be permitted except for authorised replanting projects and scientific research.

7.2 Collection of dead seagrass from oceanic or estuarine beaches.

A permit (under Clause 60 of the Fisheries Management Act (General) Regulations 1995) is required for the collection of dead seagrass for commercial purposes (more than 20 kg per day). The collection of small quantities of dead seagrass (less than 20 kg per day) for personal use (e.g. as mulch or fertiliser) does not require a permit, but approvals may still be necessary from the Authority controlling use of the beach (e.g. local Council, NPWS).

7.3 Dredging

Any dredging of areas containing seagrass beds requires a permit from NSW Fisheries. Applications to dredge areas containing *Posidonia* seagrass beds will generally not be approved. Applications to dredge areas containing other species of seagrass may be permitted for an essential public purpose (e.g. maintenance of navigation) but will generally not be permitted for private developments (including access to private property). Any permits issued will normally require that effective compensation is provided so that there is no “net loss” of seagrass. A dredging permit may also be required from NSW Fisheries.

7.4 Reclamation

Any reclamation of an area that contains seagrass beds, or that is likely to cover or smother seagrass beds, requires a permit from NSW Fisheries. Applications for such reclamations will generally not be approved.

7.5 Construction of groynes and breakwaters.

The construction of groynes and breakwaters can sometimes damage seagrasses either directly (due to reclamation) or indirectly (due

to changes to waves or current patterns or sediment stability). Where seagrass is likely to be damaged, a permit is required from NSW Fisheries. Applications will generally not be approved.

7.6 Construction of jetties, wharves, bridges, ramps and pontoons

The constructions of jetties, wharves, bridges, ramps and pontoons over seagrasses shades them and can cause irreversible damage. A permit is required from NSW Fisheries where seagrass is likely to be damaged. Applications for any new structures (such as jetties or pontoons) over *Posidonia* seagrass will generally not be approved. Applications for any new structures (such as jetties or pontoons) over *Zostera* seagrass will be assessed on a case by case basis. The assessment will be based in part on the regional importance of the seagrass bed. Any approvals might involve mitigation of possible impacts, e.g. by excluding a pontoon or use of a small pontoon; or by specifying a maximum length of structure (structures >15m will generally not be allowed in metropolitan estuaries, and structures >30m will generally not be allowed in other waters), or a minimum water depth (600 mm) at low tide at the end of the structure; or by optimising the height and/or orientation of the structure; or by requiring the use of mesh or similar material to allow increased light penetration through the pontoon and walkway; or by restricting the time for berthing at structures.

7.7 Moorings

Moorings can damage seagrass beds and, where damage is likely, a permit is required from NSW Fisheries. The Waterways Authority and NSW Fisheries will generally not approve any new or replacement moorings over seagrass beds. Existing moorings (except navigational aids such as port and starboard markers) in or adjacent to (i.e. within 10m) to seagrass may be required to be relocated over time. Where relocation is not possible, swing moorings may be required to be replaced with environmentally friendly mooring apparatus.

7.8 Boating and anchoring

Where there is a high risk of parts of a vessel (e.g. propeller, keel) causing damage to seagrass in shallow water, the person in charge of the vessel should avoid travelling in that area. All boats should also avoid anchoring in seagrass beds.

7.9 Fishing

Some fishing methods can affect seagrasses and, as a result, all commercial and recreational fishing gear need to be designed and operated so as to minimise damage to seagrass beds. The principal commercial fishing methods in seagrass are hauling, trawling, meshing and crab trapping. NSW Fisheries' research on the short-term effects of hauling on live seagrass suggest that it causes no significant damage. Mesh-netting, crab trap, line, and recreational fishing gear are generally non-destructive to seagrass.

Where a particular gear type is shown to damage seagrasses, its impact will be required to be ameliorated by phasing in gear modifications in the management plan for that fishery. Where gear modifications to prevent damage to seagrass cannot be implemented, the fishing technique will normally be phased out.

7.10 Construction and operation of aquaculture facilities

Applications to carry out intensive aquaculture operations (e.g. fish farms) over seagrass beds, or to carry out extensive aquaculture operations (e.g. oyster leases) over *Posidonia* seagrass beds will generally not be approved. Applications to carry out extensive aquaculture (e.g. oyster leases) over *Zostera* assessed on a case by case basis.

7.11 Bait digging and collecting

The use of a spade or fork or other implement, such as a yabbie pump, to collect bait (e.g. worms) or food organisms (e.g. cockles) in seagrass beds is not permitted.

7.12 Point source pollution

Discharges from sewage outfalls, drains and outlets can all affect seagrass beds and, for this reason, applications to construct new structures that will discharge within 50m of any seagrass bed will generally not be approved unless special circumstances exist,

and effective compensation is provided. This includes discharge of ballast water from vessels. Where existing sewage outfalls or drains impact on seagrass beds, NSW Fisheries will work with the relevant public authority to minimise their ongoing impacts.

8. WHAT TO DO

- 8.1 Where a development is proposed that may damage seagrass beds, consultation should take place with an officer of NSW Fisheries to determine if the proposed activity requires a permit.
- 8.2 If so, the applicant should complete an application form for a Marine Vegetation Permit and/or a Dredging and Reclamation Permit and forward it to NSW Fisheries together with any prescribed fee.

9. ASSESSMENT PROCESS

- 9.1 A completed application form seeking the Minister's consent for cutting, removing, damaging or destroying Marine Vegetation will be processed as follows:
- 9.2 On receipt, the completed form (and attached planning documents such as Review of Environmental Factors, Environment Impact Statement) will be assessed for completeness. If sufficient information is available, a response will be sent within 28 days of the application being received.
- 9.3 In some cases, site inspections may be needed before a decision can be made. Any inspections or advice necessary to assess an application will be carried out by NSW Fisheries at a time agreed with the applicant and following the payment of any inspection fee required.
- 9.4 The Minister may attach conditions to any permit given. These conditions may relate to the term, area, or method of the development, work or activity; to the suspension or cancellation of the consent; to any works required to restore or compensate for any loss of habitat; or to any other matter necessary for the Minister to give effect to the objects of the Act or this Plan.
- 9.5 The conditions attached may also include a requirement for monitoring of any increase or decrease in fish populations,

seagrasses distribution, density and shoot length or any other thing relevant to the consent. If the required monitoring is not carried out, or where monitoring indicates a significant impact on fish or fish habitat, the Minister may suspend or cancel any permit granted, and may require rehabilitation (or compensation) work to be carried out at the applicant's expense.

9.6 Any application, approval or refusal referred to in this Plan will be entered into a register which will be available for inspection at NSW Fisheries Head Office.

9.7 If you require any further information, please contact:

NSW Fisheries
PO Box 21, Cronulla NSW 2230
Telephone:(02) 9527 8411.

Penalties and rehabilitation costs

Note that if the requirements of the Act and Regulations are not satisfied, then the proponent may be liable for on-the-spot fines of up to \$500, penalties of up to \$50,000, and liability for costs of any rehabilitation works (Sections 204 and 205 of the *Fisheries Management Act 1994*).

10. REFERENCES AND FURTHER READING

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ACKNOWLEDGMENTS

This plan was developed by Adam Smith and David Pollard from the NSW Fisheries' Office of Conservation. Thanks are extended to the large number of people with a variety of interests – including fishing, aquaculture, boating, education, conservation and local and State Government - who provided useful comments on the draft plan, which was released for public comment on 31 January 1997.

The plan was gazetted on 26 September 1997.