



FACTSHEET

Marine Guide to Small Boat Moorage

Timing of Construction

To minimize the potential impacts on plant and animals, the construction may be restricted to certain times of the year. These construction windows are designed to a period of time when the impact on the fisheries resource will be the least. These timing windows are available from the local DFO staff. It is important to remember that even during a timing window there remain many other sensitive species in the immediate area that should be protected as much as possible.

Fish Habitat & the Law

The federal *Fisheries Act* protects fish and fish habitats, which includes all marine waters, from damage or pollution. Both proposed new structures and alterations to existing structures should be forwarded to DFO staff for review. Persons applying for approval to construct marine structures should locate and design the structure to minimise or avoid its impact on the marine ecosystem prior to application. DFO staff will review the proposals to ensure they comply with the *Fisheries Act* and the federal fish habitat policy. If the damage to fish habitat cannot be entirely avoided it may be necessary to provide fish habitat compensation. Sites where fish habitat is determined to be critical cannot be developed. Proceeding to undertake construction or alteration of marine structures without prior approval can lead to charges under the *Fisheries Act*.

Where to Apply

In most areas of the province the BC Assets and Land Corporation is the first contact for applications. Please contact Enquiry BC at 1-800-663-7867 to locate your nearest office.

Other Factsheets in this Series

- Marine Guide to Small Boat Launches*
- Marine Guide to Preventing Shoreline Erosion*
- Marine Guide to Stormwater Runoff*

Prepared by
Habitat & Enhancement Branch
Pacific Region
March 2001

Information Required for Applications

DFO staff require the following information to determine the potential impacts of the structure or gauge the changes on fish and fish habitat:

- General and specific location of the proposed structure, including name of waterway, latitude and longitude, and legal description for the parcel of land
- Detailed design drawings of the dock, float, and anchoring systems (plan and profile views) including depth soundings
- Extent of any shoreline alterations required and bank protection works
- Description of the construction details, materials and methods to be used (including any wood preservatives) in construction. Be sure to include timing
- Original colour photographs of the work site at low and high tide
- Description in general terms of the aquatic vegetation, shellfish, fish and mammals which are potentially affected by your structure. This information may need to be compiled by a professional biologist
- General description of the substrate materials within the construction zone
- Distance to the nearest freshwater stream or estuary
- Identify any shellfish leases, fish farms or net pens near the work site
- Number of boats to be moored and length of stay

For more information please contact your local DFO office:

- Nanaimo (250) 756-7270
- Lower Mainland (604) 666-6479
- Prince Rupert (250) 627-3448
- Port Hardy (250) 949-6422

Prior to submission of project proposals to DFO, you should check with your local government, Regional District or other regulatory agencies to ensure they have no objections to your project. They may also be able to identify if any plans are underway to provide shared dock and moorage facilities in the local area. Canadian Coast Guard reviews all moorage applications through the *Navigable Waters Protection Act* to ensure navigation is not impacted. Please call (604) 775-8867 for more information.

Marine shorelines are sensitive and productive fish and wildlife habitats. They are home to a multitude of plants and animals. Activities and structures along the shoreline can damage marine organisms, their habitats or the complex food webs that support them. Boat moorage structures, such as docks, can have direct, indirect and cumulative impacts on this sensitive fish habitat. This brochure provides advice on how to protect this fragile environment when considering moorage structures and also outlines the type of information needed for review by Fisheries and Oceans Canada (DFO) staff.

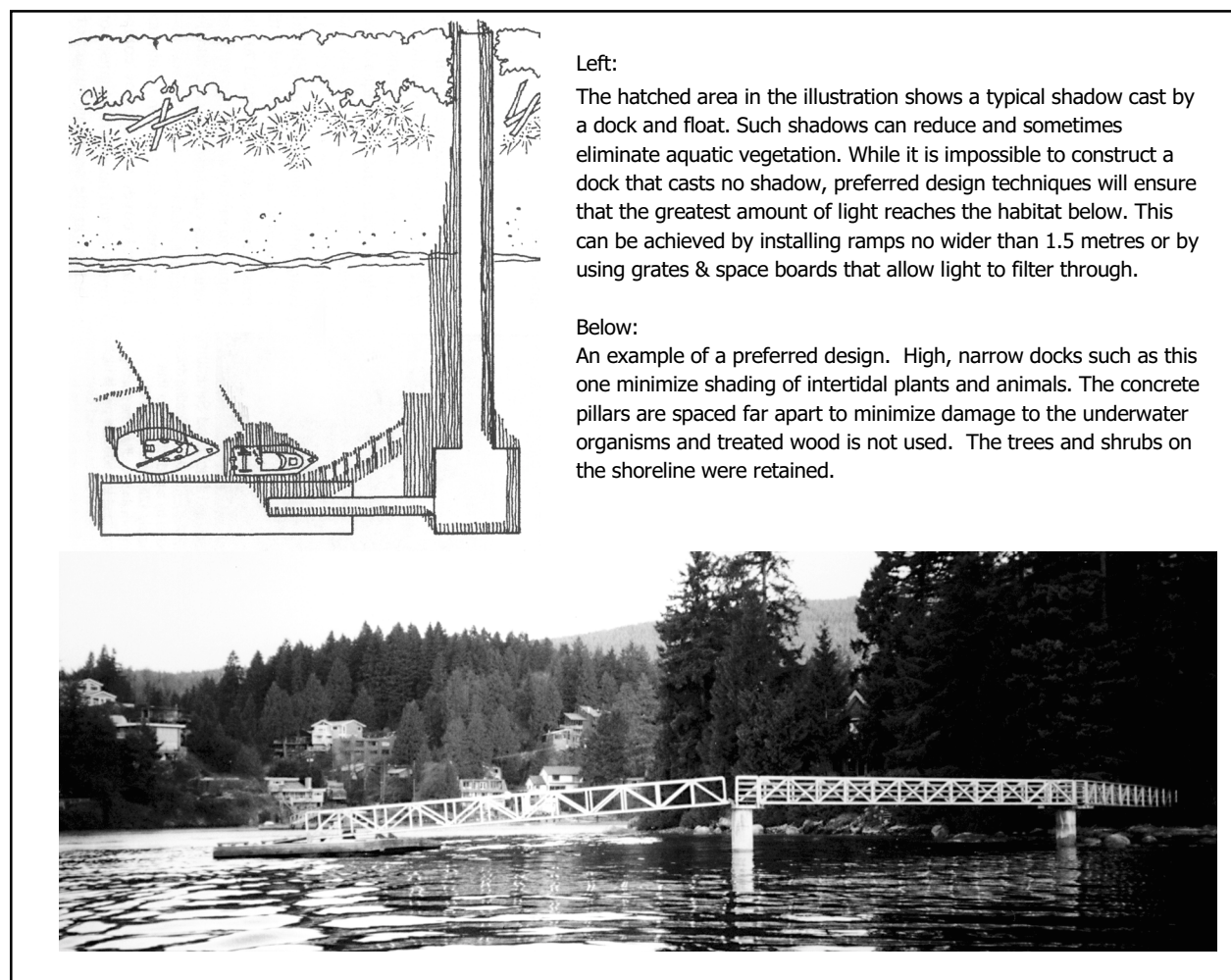
Impacts on the Marine Ecosystem

The increasing number of private docks along our coast has the potential to degrade sensitive intertidal habitats by making changes to the seabed, shading marine vegetation, introducing pollutants from motors and bilges or causing damage from boat propellers.

Placing fill into the ocean will smother bottom dwelling organisms, displace plants and animals that use the water column and alter local water currents and other important oceanographic conditions that these plants and animals

depend upon. During dock construction, activities along the shore may cause sediment and contaminants to enter the water column where they interfere with rearing fish and filter feeding animals, such as clams.

If docks and floats are not designed properly they increase shading, which reduces or eliminates the growth of aquatic vegetation that is an integral part of the food web. Preservatives may seep from treated wood into the water and sediments around docks and could cause the sediments to become toxic to aquatic organisms.



Left: The hatched area in the illustration shows a typical shadow cast by a dock and float. Such shadows can reduce and sometimes eliminate aquatic vegetation. While it is impossible to construct a dock that casts no shadow, preferred design techniques will ensure that the greatest amount of light reaches the habitat below. This can be achieved by installing ramps no wider than 1.5 metres or by using grates & space boards that allow light to filter through.

Below: An example of a preferred design. High, narrow docks such as this one minimize shading of intertidal plants and animals. The concrete pillars are spaced far apart to minimize damage to the underwater organisms and treated wood is not used. The trees and shrubs on the shoreline were retained.



Impacts cont.

Mooring watercraft and float homes may introduce other pollutants such as oils, fuel or sewage into the water, and for this reason shellfish harvesting is prohibited within 125 metres of any dock. In shallow water, even the wash from propellers can churn up enough sediment to damage fragile marine plants and animals.

Planning the Project


Before you decide to build your own private dock you should consider several things. Do you actually need a dock and float for your boat or would a mooring buoy, which has far less environmental impact, be sufficient? Could you use a public dock or share a neighbour's private dock instead? Does your local government have plans to develop a community dock in your area?

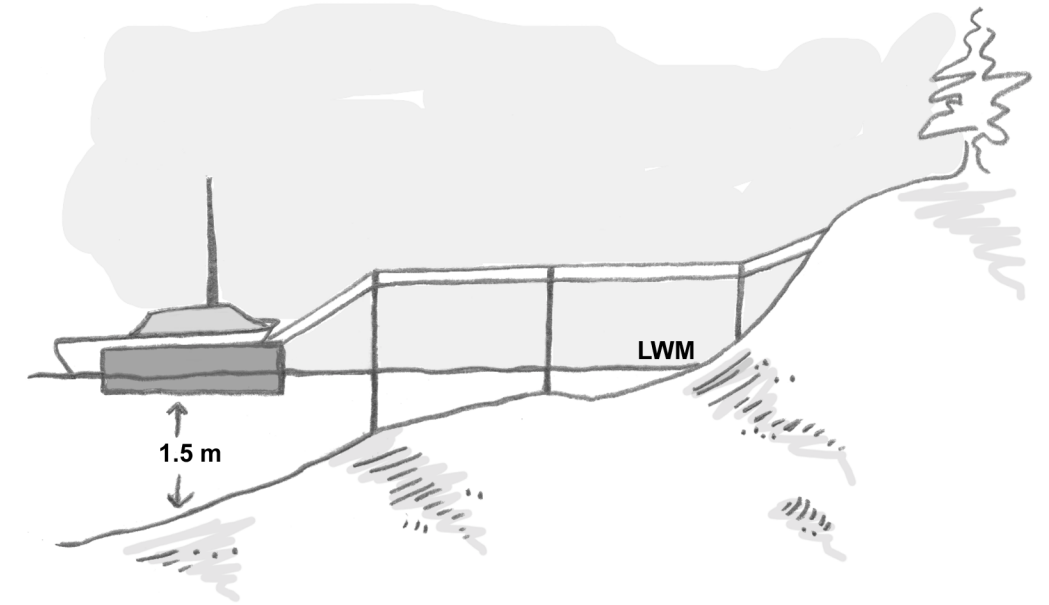


Some municipalities have developed bylaws to prevent the construction of privately owned structures on the shoreline. Prior to submitting your proposal to DFO, check for regulations with your local government. DFO fully supports these local government initiatives to limit such structures along our shorelines.

While you may design moorage to be accessible only during high tide, boats and floats should never rest on the seabed as shown below because it damages plants and animals that live in the intertidal zone.




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At least 1½ metres should be provided between the seabed and the float based on the low-water mark (LWM) to reduce damage from propeller wash and to prevent boat keels from damaging the seabed.

How to Build a Better Dock and Float

- ❑ When selecting a location for the dock and float consider what types of habitats are present and choose a site where it will cause the least impact. In general, hard surfaces (e.g. rocks and cobbles) are less sensitive to human activities than soft surfaces (e.g. mud) and all marine vegetation, particularly eelgrass, must be avoided
- ❑ The minimum clearance below the float at low tide (see diagram above) should be 1½ metres to avoid the wash from propellers disturbing the seabed
- ❑ Concrete, plastic or steel pilings are an environmentally sound alternative to treated wood pilings
- ❑ Until it fully hardens, concrete is very toxic to aquatic organisms. Use of pre-cast structures or isolating the wet cement from the surrounding water until it is dry are two ways to reduce this problem
- ❑ No dredging, blasting and filling below the high water mark should be considered
- ❑ Avoid the use of heavy equipment below the high water mark wherever possible. If intertidal work is necessary, work must occur only under approved conditions and when the site is not wetted by the tide
- ❑ Care must be taken to minimize the area disturbed by construction activities and to preserve trees, shrubs and grasses near the shoreline. Leaving the site natural will prevent interruption of ocean currents and reduce the potential for beach erosion
- ❑ Existing rocks and logs in the marine environment are important fish habitats and should not be used as building materials
- ❑ Docks and floats shade the seabed, and could reduce or eliminate the growth of aquatic plants that are an integral part of the food web. To reduce this impact:
 - ❑ Docks should be at least 2 metres above the highest high water mark. Keep ramps and docks to a width of 1.0 - 1.5 metres
 - ❑ Use grates or space boards on ramp and float decking to let light reach plants and animals below
 - ❑ If possible, try to align your dock to lie north to south to allow better light penetration under dock structures
 - ❑ Floats should be limited to 3 metres in width and 8 metres in length