DMR's Guidelines / Recommendations

for

Piers, Ramps and Floats

by

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The following is intended to assist permit applicants plan pier ramp and float projects (or docks as some call them) to avoid or minimize adverse impacts to coastal wetlands[1] and within water bodies that support diadromous fish[2], existing uses, and DMR and DEP Project Managers to evaluate those proposals. Another useful resource is Maine's Coastal Wetlands[3], volume I of which describes the functions and values of coastal wetlands. Volume II describes functional assessment guidelines. Proposed projects are evaluated on a "case-by-case" basis by DMR.

Required information of the applicant

- Project location and surrounding area on an 8½ x 11 copy of the appropriate section of a NOAA nautical chart, or on a topographic map.
- Easily understandable directions to the proposed project site, with the inclusion of a clearly marked road map (e.g., a marked copy of an appropriate page from a DeLorme® road atlas).
- Landward and seaward ends of pier and location of float(s) clearly indicted on site by stakes, buoys, or other devices.
- Plan and elevation (top and side view) scale drawings of proposed pier that include any proposed ramp(s) and float(s) with height of the pier decking and depth of water at the float(s) indicated. Plans should include an arrow indicting north, and Mean High Water, Mean Low Water and Spring high and low tide lines.
- A description of the proposed use of the structure(s) including a description of the boats that might use them.
- A set of high resolution color photographs of project area taken at low tide, in absence of ice or snow cover. (photo coverage should include both the proposed project area and adjacent areas considered as alternatives, as well as adjacent properties from the shore and the water body the pier would access). Photographs should be identified and located on an application site plan.
- An assessment of the resource[4] in the area of a proposed structure, best done in the months of May through October. By this time of year marine vegetation such as fringing salt marsh and submerged aquatic vegetation (SAV)[5] has had a chance to grow and is more visible.

DMR focuses on five primary **areas of concern**

- Habitat loss and degradation
- Water Quality impacts – including the potential need to reclassify shellfish growing areas to restrict harvesting for public health reasons
- Marine Organism impacts – physical harm, toxicity to, and adverse influences on behavior

- Impacts to Existing Uses including fishing activity and navigation
- Impacts from the Use of proposed structure(s) including boat traffic to and from the structure(s).

DMR evaluates each of the above areas of concern. If the proposed project does not avoid or at least minimize impacts to the extent possible, DMR will recommend alternatives. If these recommended alternatives are rejected DMR will expect a thorough alternatives analysis. In some cases an alternatives analysis might still be inadequate which could result in DMR recommending a permit denial. DMR and DEP will communicate closely during this process.

Standard Conditions

Alternatives to pier construction for access should be considered. For example: shared use of piers; a dinghy haul-out with mooring for larger boat offshore; or use of public access or marina if within a reasonable distance.

Pier location should be such that it avoids or at least minimizes potential adverse impacts to the resource (e.g., by choosing a site that has the narrowest fringing marsh, or least distance to water from the upland, or by minimizing the number of pier supports necessary).

Pier, ramp and float size should not be larger than what would meet legitimate needs. This reduces the potential for direct and indirect adverse impacts.

Construction should be done in a manner that results in the least adverse impact to the resource (e.g., use of protective mats if habitat warrants, working off a barge without letting the barge ground out, use of erosion/sedimentation controls where warranted).

Use of construction material that is untreated with chemical preservatives is preferred. This is of greatest concern where a large number of piles and/or a large deck area is proposed, where water circulation is low and/or where a pier is in close proximity to vegetation.

Winter storage of floats and ramps should be out of the resource (upland), or on bare ledge/ boulder or cobble/coarse gravel, never on vegetation or mudflat.

Habitat ranking

Habitat types likely associated with piers ranked (highest to lowest) in order of value:

1. marine vegetation – including submerged and emergent species (e.g., eelgrass, rockweed, kelps, salt marsh)
2. intertidal flats (particularly those with species of commercial value (e.g., clams and marine worms)
3. coarse substrate (coarse sands to cobble)
4. Bare ledge or bare boulder

Piers and floats proposed over vegetation or intertidal mudflats require a thorough justification of why alternatives were rejected and what measures will be taken to minimize impact.

Recommendations

to reduce adverse impacts to habitat from pier supports:

- Piers and pier supports over bare ledge present fewest concerns.
- Pier supports in the resource (piles or cribs) should be minimized to the extent possible by increasing span length between supports and/or by placing landward supports above Spring High Water.
- Pile supports are preferable to crib supports, particularly where there is soft-bottom habitat.
- When pile supports are not feasible "open" fashion cribs of granite are preferable to solid block pier supports which have no space between blocks. "Open" cribs provide interstitial space and increased attachment area for marine organisms and generally last longer than timber/stone crib work.
- If for some legitimate reason timber/stone crib work is deemed the best design solution, stone infill should be brought in from off-site and not taken from below Spring high tide.

to reduce impacts to marine vegetation:

- If avoiding areas of marine vegetation is not entirely possible the project should be located in areas that have less vegetation or the project should be designed to "bridge" those areas.
- Pier decking should be at least as high as it wide to reduce shading of marine vegetation below. This is particularly important if the pier has an east – west, or southeast – northwest orientation.
- If over marine vegetation spacing between decking boards is desirable (¾ inch spacing is typical, use of alternative decking material, such as grating, might also be considered). This allows increased air circulation and sunlight penetration to vegetation below.
- Float size and number should be the minimum needed.
- Impacts from boat traffic to and from the float where there is SAV should be considered. These might include direct impacts from propellers, and indirect impacts from turbidity from propeller wash. Navigational aids such as buoys and/or vertical stakes might be used to direct traffic away from areas of SAV.

to reduce impacts to intertidal flats from floats and associated boats:

- Float size and number should be the minimum needed.
- Floats on intertidal flats should be supported off the flat by float stops to reduce compaction and/or hydraulic pumping and loss of fine sediments from the float rising and falling. Generally 8 to 12 inches is considered adequate.
- Larger boats should be placed on a mooring rather than left to ground out at the float during low tides.
- Boats should approach and depart floats at slow speed during lower tides to minimize direct impacts from propellers where there is SAV and turbidity from propeller wash.

Water Quality

The annual landed value of Maine's soft-shell clam industry is roughly $13,000,000 directly supporting communities throughout the coast. Ensuring consumer safety and confidence is critical to this industry. This is done by complying with federal Food and Drug Administration (FDA) requirements under the National Shellfish Sanitation Program (NSSP). Concern for potential discharge of human waste or other deleterious substances from boats associated with piers in shellfish growing areas can require harvesting

restrictions or prohibition leading to significant economic impact to shellfish harvesters and their families. While a pier with one or two associated boats is not often a significant concern, DMR does consider this potential issue.

Pier proposals in or adjacent to shellfish harvest areas that appear to present a risk to water quality will be scrutinized in more detail. Materials used in construction that may result in toxicity is discussed below. Activities and associated infrastructure such as entertainment decks with hot and cold running water, showers, outdoor kitchens, etc. will have to be address incidental wastewater and debris disposal concerns.

Marine Organisms

- Toxicity concerns arise when antifouling paints and wood preservatives are used in or near the water. New generation pressure-treated wood has a greater concentration of copper to compensate for decreased amounts of arsenic and pressure-treated wood for marine use has higher level of preservatives than that used for typical upland use. Although these products and their applications are continually evolving, most rely on chemical poisoning as the primary mode of action. Non-target species, especially larval and juvenile forms are most sensitive. Direct contact in salt marsh by chemically treated wood has also been observed to result in areas of dead vegetation. In some parts of the country (e.g., Delaware and Chesapeake Bays), the area of toxic impact extends many yards beyond the structure. In Maine, with 8 foot plus tides, generally unrestricted flows, and a lower density of projects, this is not viewed as significant a problem related to private piers. Only approved preservatives that are labeled for use in water by the U.S. EPA are allowed. Creosote and tributyl-tin, for example, are prohibited.

- Direct impacts from construction, displacement and interference with behavior such as upstream migration of diadromous fish (those that spend some portion of their life in marine or estuarine waters and some in fresh waters) from noise generated from pile driving. These potential impacts are evaluated on a case-by-case basis. In riverine systems the period between March 15 and July 15 is when diadromous fish in Maine can be expected to migrate upstream. There is also a fall upstream salmon migration. Smaller projects of limited construction duration, those not in streams, or in streams with no known diadromous fish resource are generally not a significant concern in regard to fish migration.

Existing Uses in the area

Potential conflict issues -

- Traditional fishing activity includes clam digging, marine worm digging, mussel dragging, and lobster fishing. Other fishing activity such as scallop dragging, and trawling for ground fish occur further offshore where proposed piers would unlikely have an impact.
- Navigational concerns include the potential for interference with access to other piers and wharves in the area, and navigation through channels and passages where the project is proposed. Protecting navigational access related to commercial fishing is of particular concern to DMR.

Use of the proposed structure(s)

The following should be considered:

- Uses of the proposed pier ramp(s) and float(s) as to what would be temporarily stored (e.g., motor vehicles, fishing gear) or permanently situated on the pier (e.g., buildings).

- The potential impact boat traffic to and from the proposed structures, and the docking of boats.

- The potential impact from associated moorings.

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[1] "Coastal wetlands" are defined in 38 MRSA 480-B(2).
[2] Diadromous fish are those that spend some portion of their life in marine or estuarine waters and some in fresh waters. These include salmon, sea-run trout, sturgeon, rainbow smelt, alewives, blueback herring, shad, striped bass, and eels.
[3] Maine's Coastal Wetlands, Alison Ward, NOAA Coastal Management Fellow, September 1999. Volume I is available at the following web link: http://mainegov-images.informe.org/dep/blwq/doccoast/coastal3.htm.
[4] The resource of concern to DMR is that below Spring High Water.
[5] This includes eelgrass (*Zostera marina*).