# Management of Small Docks and Piers

# Environmental Impacts and Issues

# Forward—

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# Introduction—

Private docks have been implicated in a number of environmental impacts. Some of these have received scientific investigation and some remain anecdotal. In an attempt to clarify what is known about environmental impacts from docks, NOAA’s National Centers for Coastal Ocean Science convened a workshop in January of 2003. This session brought together scientists and a group of coastal managers from across the country to discuss the environmental impacts of small docks. The results of that workshop may be found in Kelty and Bliven (2003).

The workshop identified four general impacts:

Impacts to vegetation

Impacts from contaminants related to docks

Impacts from associated boating use

Impacts to sediments and substrate

Impacts to wildlife habitat were discussed as part of the topics above, as this is a significant cross-cutting issue.

# Impacts to Vegetation from Small Docks—

Marsh plants and submerged aquatic vegetation (SAV) are ecologically critical as a source of food and nursery habitat for fish, shellfish, amphibians, reptiles, birds and mammals that live in coastal waters or the adjacent marsh and uplands (Weigert *et al.,* 1981; Teal, 1962, 1969; Weinstein, 1996). Vegetated areas also stabilize shoreline and bottom sediments against erosion (Kearney *et al.,* 1983; Teal, 1986) and take up contaminants and excess nutrients from the water and sediments (Vernberg, 1996).

Impacts to plant health and productivity from docks generally occur in one of the following ways:

Short-term construction impacts,

Chronic impacts from shading,

Chronic impacts from storage of floats and boats and associated foot traffic, and

Impacts from boat use (covered later in this module as a separate topic).

## *Short-Term Construction Impacts—*

Activities during construction can destroy plants either above the tide line (*e.g.,* marsh grasses such as *Spartina* or *Distichlis*) or below (*e.g.*, sea grasses such as *Zostera* or *Halodule*) by pulling them from the substrate or destroying their root systems. The peat beds underlying salt marshes can be compacted through the improper use of heavy equipment leading to ponding of saline waters and a resultant loss or changing of marsh vegetation. Although these impacts are seemingly evident, limited research appears to have been done on the long-term effect of these activities.

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| Concentrations of CCA Wood TreatmentsRecommended for Various Uses | |
| Retentions *(lbs./cu.ft.)* | Uses/Exposures |
| 0.10 – 0.25  0.21 – 0.41  0.31– 0.61  2.50 | Above ground  Soil & Freshwater use  Permanent Wood Foundation  Saltwater use |





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