

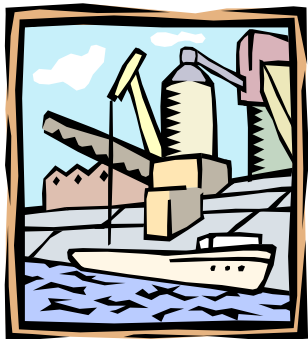
BALLAST WATER TREATMENT METHODS

Fact Sheet 5

Ballast Water Management *Intake Minimization*

Purpose

Ballast water intake minimization is an operational procedure that prevents or minimizes the intake of nonindigenous species (NIS) at the port of origin. For ballast water taken directly from the ocean, intake minimization can include specific operational procedures or equipment to limit NIS introduction as the ballast water is pumped aboard the tanker.

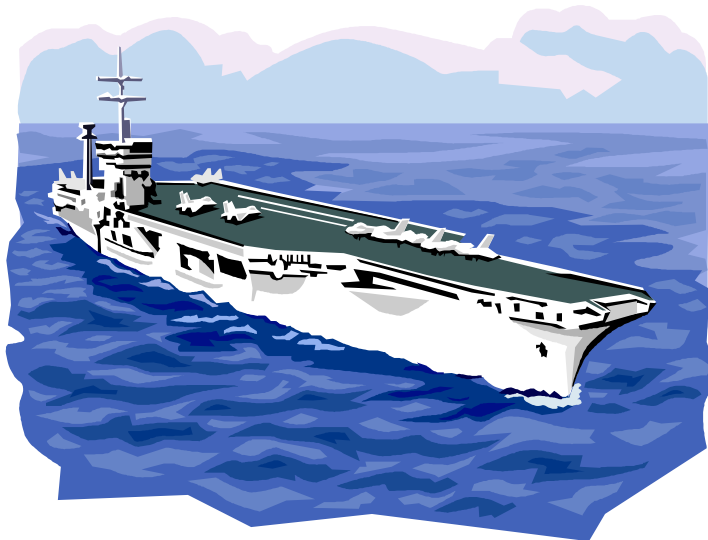


Ports can be equipped with onshore tanks of “clean” ballast water that can be pumped aboard the tanker to avoid taking on NIS contaminated ballast water from the port (see technical fact sheet titled “*Ballast Water Management – Clean and Recycled Ballast Water*”). The specific application of shore-based treatment for the Alaska Crude Oil Trade is also discussed in technical fact sheet titled “*Shore Based Treatment – Options for Prince William Sound, Alaska.*”

Technology Description

Ballast water intake minimization includes a series of practices that are conducted by the vessel master to reduce the likelihood of entraining NIS into the ballast water tanks when ballast is taken directly from the ocean. These practices may include:

- Avoiding ballasting operations where undesirable organisms are known to be present in the water column, in areas where sewage is discharged, during seasons when organisms are obviously thriving, and at night when some organisms migrate up the water column;
- Regular cleaning and flushing of ballast water tanks to reduce sediment build-up that harbors NIS;
- Minimizing sediment uptake during ballasting operations by avoiding highly turbid waters (e.g. fast ebb tides, low tides where clearance between intake ports and muddy sediment is small, or near areas where propeller wash stirs up sediments); and
- Limiting ballast water intake in port, finishing ballast water loading deeper at sea where NIS are less prevalent, but while still in calm waters.



Depending on the port, it may be possible to take on “clean” ballast water from a shore-based treatment facility. Ballast water could be pumped from holding tanks to the ship if the appropriate piping and transfer system is in place at the port. The water could be supplied by local municipal water treatment plants, or shipped in from deep open-ocean areas where NIS are not abundant.