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Considerations for Other In-water Uses of Obsolete Vessels

June 24, 2004

DIVING OPPORTUNITIES

The narrative goals set out under the section “Guidance for Preparing Vessels to Create Artificial Reef Habitat” also should be achieved while preparing a vessel for diver opportunities. For example, if preparation for diver use calls for the removal of wall paneling that will in turn expose any materials of concern that were identified in the aforementioned section, the respective narrative goals should be addressed (e.g. if asbestos is exposed once the panel is removed, the objectives of the asbestos narrative goal should be met).

Additional vessel preparation to support the in-water use of recreational diving may include:

- Removal of sharp and protruding objects along the divers' access path which could snag on divers' equipment or otherwise pose a danger to the divers.
- Removal of doors and access hatches and widening of openings to allow safe access for divers.
- Widening of corridors by removal of some wall paneling and provision of large openings in the exterior of the ship to allow light to penetrate and ensure safe diver access.
- Sealing entrances into restrictive compartments such as the boiler rooms and engine rooms to ensure diver safety.

When preparing the vessel for diver opportunities, careful consideration also should be given to vessel stability (for transport and sinking operations) as well as vessel integrity (for the life of the vessel once placed at the reef site).

BREAKWATERS/BARRIERS

Although the best management practices (BMPs) presented in this document are intended for use in preparing ships for artificial reef habitat, they are also applicable to in-water uses of vessels such as breakwaters or other types of barriers. It is recommended that the BMPs be used for preparing a vessel to serve as a breakwater; however, additional vessel preparations are most likely necessary. Placement of a vessel in a high energy environment (e.g., where there is significant wave, current, or tidal action) would likely result in more rapid degradation of a vessel structure than if placed at typical reef locations. If ships are to be placed in high intensity/energy environments, additional vessel preparation measures will be necessary.

Each project should be analyzed to determine what additional preparations are necessary beyond those recommended for preparing vessels to serve as reef habitat. For example, non-friable asbestos and intact/undisturbed or sealed friable asbestos deemed acceptable to remain on the vessel if used as reef habitat may need to be removed to prevent any release of asbestos that may occur when placed in a persistently high energy environment. For the same reason, it may also be necessary to remove negatively buoyant vessel debris as well as some affixed ship components and fixtures.

Water depth at a breakwater site may critically affect a vessel's stability and long-term structural integrity. In this case, average wave energy in large, open bodies of water as a function of water depth is the major concern. The vessel itself may break apart over time if placed in a high energy wave environment.

Wave interaction with a vessel serving as a breakwater can be destructive; however, the magnitude of such destruction to the vessel is difficult to predict. The wave interaction is primarily dependent on wave height, wave speed, depth of the breakwater, as well as the composition and configuration of the "vessel" breakwater itself. Wave energy can resuspend bottom sediments, causing siltation on the vessel or destabilization of the vessel's structure which could in turn move short distances or entirely off the original breakwater site. Planning for worst-case storms may be required at breakwater sites where movement of the vessel would be detrimental to various ecosystem components.