Procedures to Minimise the Risk of Transferring Aquatic Diseases through Diving and Fishing

The purpose of this procedure is to set out some simple procedures that will minimise or prevent the spread of diseases (including Abalone Viral Ganglioneuritis) in the marine environment, through activities associated with abalone fishing.

The key to any of the procedures described in this document is ROUTINE CLEANING OF BOATS AND EQUIPMENT. Ensure that all organic material including shell, weed and mucus is cleaned from surfaces. The viral cause of Abalone Ganglioneuritis is relatively short-lived outside the host or organic material. Removing organic material and thoroughly cleaning and drying surfaces reduces the survival of the virus.

**Areas and equipment requiring cleaning and disinfection include:**
- Diving equipment including wetsuits, fins, masks, weight vests, regulators, hookah gear and other abalone harvesting equipment (Ab Irons and knives etc.)
- Fish bins and catch bags
- Boats, including hulls and decks, deck equipment
- Abalone holding tanks and wet wells
- Pumps and pipe-work associated with holding tanks
- Deck areas
- Gumboots and wet weather pants etc.
- Transport vehicles and boxes

**ROUTINE CLEANING** is required at the end of each day of diving and/or prior to moving to a different location within the same region. The cleaning process involves a combination of physical and chemical procedures to remove soiling and inactivate any potential pathogenic organisms.

**DISINFECTION** is required when moving from one region to another region or back to port. Clean before you leave the area in which diving has taken place. Do not clean in transit. Full disinfection involves following the cleaning protocols before applying disinfectant to all equipment and rinsing with fresh water. **Disinfection is critical if you encounter sick or dead abalone.** Fisheries Biosecurity Abalone Wild Harvest Advice 3 “Dealing with Suspected Diseased Abalone” contains additional information for dealing with suspected diseased abalone.

**START AND FINISH YOUR FISHING TRIP WITH A CLEAN BOAT AND EQUIPMENT**

**Cleaning and Disinfection Equipment**
Most vessels will already have much of the necessary equipment on board for cleaning and disinfection such as brushes, brooms and scrapers. In addition the following items should be considered.
- Misters and low pressure sprayers – useful for applying detergents and disinfectants to surfaces.
- High volume pumps – particularly useful for rinsing, as they are good for thoroughly wetting equipment.
- High Pressure Water Cleaners (HPWC) – useful for all stages of cleaning and disinfection and highly efficient at dislodging most types of gross soiling.
Cleaning of Wetsuits and Other Dive Equipment

- **All equipment that has come into contact with abalone** such as catchbags, droplines, gloves, ab irons, knives and measuring devices should be soaked in a fish bin containing soapy freshwater for 30 minutes and then rinsed and hung out. The detergent mix should be refreshed daily.
- **Wetsuits** should be washed in freshwater with an appropriate cleaning agent (get into a warm shower and soap down in your wetsuit) or soaked as above.
- Tanks, weight vests, regulators and masks that have not come in contact with abalone can be washed down with soap-free freshwater.

Cleaning of People

- Ensure that all people who have come in contact with abalone wash their hands with soap and freshwater.
- Thoroughly clean waterproof clothing with soapy freshwater, rinse and leave in the sun to dry.
- On return home, ensure that work clothes, including gumboots and footwear, are washed.

Cleaning of Motherboats

- Decks, equipment and superstructures should be thoroughly cleaned from the highest point working down. Time should be taken to check the exterior of the hull after cleaning. If possible rinse with freshwater and a non-foaming detergent.
- Particular attention should be taken to areas where abalone are handled or packed to remove any fouling and organic material.
- Dinghies stowed on deck should be thoroughly washed with detergent to remove all organic material. On return, re-wash with fresh water and drain on land where wastewater will not return to the marine environment.
- **After unloading**: steel baskets and crates for holding abalone must be thoroughly cleaned and any traces of gross contamination removed. If possible allow all bins and crates to dry completely before re-use.
- All solid waste including shellgrit removed from holding tanks must be disposed of in landfill.
- Add detergent to the water and material left in the holding tank. Do not discharge this water until well clear of the coast and away from abalone habitat.

Cleaning of Dinghies

- **Decks and equipment** should be regularly hosed down to avoid the build up of dirt and organic material. The use of detergents and high-pressure sprayers will greatly enhance this process.
- **Dinghies** should be washed with fresh water and drained on land where wastewater will not return to the marine environment.

**FULL DISINFECTION INVOLVES FOLLOWING CLEANING PROTOCOLS BEFORE THE APPLICATION OF DISINFECTANT AND RINSING WITH FRESH WATER**

Appropriate Cleaning Agents

**Detergents** should be used for the removal of gross fouling and organic matter. Detergents will assist with removing the virus but may not kill or inactivate the virus. The following detergents are suitable for general cleaning purposes:

- **Boats**: Specialised truck wash or boats cleaning detergents are available from a number of suppliers. These compounds are not classified as hazardous and are normally bio-degradable;
- **Wetsuits and other diving equipment**: Specialised wetsuit wash preparations or a mild liquid soap or shampoo;
- **Fish bins, catch bags and nets**: Any of the above detergents used in freshwater should be suitable for soaking heavily soiled equipment; and
- **People**: Soaps should be used to wash hands, laundry detergents to wash clothes.

Appropriate Disinfection Agents

**Disinfectants** can be used specifically to inactivate pathogens such as viruses after the item has been cleaned (see above). The Tasmanian Environment Branch prefer the use of:

- Peracid disinfectants such as VirkonTM. Ensure that this product is washed off metal surfaces after disinfection.
- Chlorine based disinfectants containing sodium hypochlorite or calcium hypochlorite may also be used but have a higher impact on the environment.