



# WetLand

## Instructions for living with WetLand

**Welcome to WetLand! Make yourself at home. This is your space. Feel free to make it your own. Here are some basic instructions for taking care of WetLand so it takes better care of you!**

### Section 1. Areas on WetLand

- A) Cabins
- B) Main Space
- C) Hull
- D) Shower
- E) Bathroom
- F) Kitchen
- G) Gardens
- H) Solar

#### **A) Cabins**

1. There are two cabin-sized bedrooms on the second floor of WetLand, accessed by a folding ladder that can be pulled up to the second level to dissuade public access to the second floor. There is a small bunk in each cabin, and the main bedroom has a folding desk. There is an “Emergency Operations Procedure for Docked WetLand Boat” in each cabin. Feel free to make any alterations to the cabins, but make sure to leave this document inside each room.
2. The berth has been turned into an extra cabin sleep space, and can accommodate this until another permanent use is established.

#### **B) Main Space**

1. The main space doubles as a workspace and an event space. Workshops and classroom activities will be held here in conjunction with the University of Pennsylvania’s PPEH program. This area should be kept “ship shape” with everything having a contained spot so in the case of turbulent waters, objects won’t endanger passengers.
2. This area has a retractable screen for film screenings or slide presentations mounted to the ceiling.
3. This area has folding benches against the walls, which should be monitored in case repair is necessary.
4. In the center of the main space you will see two access points to the basement hull of WetLand. They are marked through the arrangement of wood paneling on the floor. These should be opened and checked on a weekly basis to make sure WetLand isn’t taking on water from rain.

### C) Hull

1. There are two access points to the hull. The larger access point is from the raised “mess” kitchen. This part of the hull contains storage. Here you can find general tools for repair as well as hardware. (Never make any screw/nail holes in the walls or ceiling which get anywhere near the outer layer of fiberglass, or water will find its way into the vessel.) The second access point is in the main space. This is smaller but easily accessible. This is generally the one that should be opened to check water levels in the hull.
2. As mentioned above, the hull should be checked weekly to make sure rainwater isn't finding its way into the vessel and collecting in the hull.
3. A vacuum pump is located in the storage hull, and this should be used to remove water from the hull. 1-2" is standard and okay, but more than that should be removed.

### D) Shower

1. The shower system is based on rainwater collection, and the 40 gallon cistern is above the kitchen roof. Water collects from gutters, shoots through a screen, and into the cistern. Turn the tap on in the tub and this water should be warm by virtue of the dark color hose and tank, as well as being encased in Plexiglass.
2. To use the shower, turn on the hose inside of the tub. Make sure that the tub's water is running to a planter bed, and that you are using a castile soap so as to not harm the plants.

### E) Bathroom

1. A dry compost system (Air Head) is WetLand's toilet: Air Head Environmental toilet works by separating liquids from solids the volume of solid human matter is significantly reduced. Much like a household toilet the Air Head Environmental Toilet has a bowl and an actuator that provides a “flush”. The main difference is the Air Head Toilet's *waterless* operation. A paper bowl liner acts as a carrier for solid matter on its way to the solids tank. The solid matter is separated and agitated thereby decomposing it into a non-offensive state inside the large tank. Additionally, the unit has an integral 12-volt fan that provides a constant negative pressure to pull moisture out of the living space. Liquids are collected in the smaller forward tank. Its wide mouthed aperture will keep the contents emptying smoothly into any standard commode. The large liquid tank will hold approximately four days use per person if used exclusively. A low profile bottle is also available that holds about half the volume of the larger. Additionally, the Air Head Environmental Toilet may be integrated with an existing holding tank system creating holding capacity for both solids and liquids far beyond what many medium and small boat owners are used to. This is because the tanks take on no flushing water and are free to hold just what they need to.
2. Instructions for Use/disposal: Using the toilet is also simple. Urine is diverted to a forward bottle for separate emptying. Solid waste is captured in the bowl and sent 'south' into the 'composting' tank via a manually operated trap/flap. A paper 'bowl liner' can be used to keep the bowl clean. Crank the side-mounted lever 1/2 turn to incorporate the matter into the core peat and composting is underway! Toilet paper and paper bowl liner all go into the composing tank. When full, you can empty the tank into a land based composting toilet or put the tank lid on and take the tank home and leave it in storage. In 3-4 months it'll be ready to use on non-edible plants.

Other options for disposal: Empty the full tank directly into another composting bin or worm farm. Empty the full tank into a biodegradable composting bag and add to your garbage bin.

#### **F) Kitchen**

1. WetLand's kitchen contains a sink, fridge, microwave and rocket stove.
2. Use the rocket stove when WetLand is well ventilated, or use it on the back deck. Add fuel in the form of scrap paper and scrap wood to the base of the rocket stove and light it. Patience is key but the rocket stove performs as a small, relatively quick to use wood stove.
3. Use the microwave, but monitor the amount of solar energy it uses and don't overextend the use.
4. WetLand's fridge is a pot-to-pot refrigerator. Keep it cold by making sure the sand between pots is moist.
5. Graywater from WetLand's sink drains into a holding tank that should be emptied every five gallons into the garden beds. Sink water is gravity fed from a rainwater collection tank on the roof. The water can be filtered for drinking through the slow filter in the kitchen. This water should be added to the filtration system manually.

#### **G) Gardens**

1. Gardens around the perimeter will provide some food. These gardens should be tended to and watered if need be. Sub-irrigated, the water collects in a cistern underneath the soil, for less watering.
2. One of the garden beds should be used for food compost. Meats should never be added to this bed. Only fruits, vegetables, grains, eggshells, coffee grounds, wood chips, ripped up papers, and small pieces of cardboard.

#### **H) Solar System**

1. The solar energy levels should be monitored. A monitoring device is located underneath the microwave cabinet, in the bottom cabinet. Battery levels should read  $\frac{1}{2}$  full or greater. Don't let battery levels sit lower than  $\frac{1}{2}$  full. The batteries will not last as long if they fall below  $\frac{1}{2}$  charge. Further instructions are taped inside of the cabinet door.
2. Don't unplug any part of the solar system as this could damage the panels.
3. Don't allow the batteries to get wet.