Dive Report 12/09/2018

Location: Independence Point Public Dock
Drone: Catfish
Purpose: This is the first dive since the communication module was returned from Gizmo and the first dive since the project lead changed from Adrian Beehner to Amanda Ward.

Previous to the dive, the repaired and newly designed communication module was tested at The Den to confirm that the tool chain was functional. Since the size and attachment style of the communication module changed, the drone needed to be rebalanced. Amanda Ward took the drone to Gizmo to learn how to balance it. Marty and Craig built a temporary tub with wood and a tarp to attempt to float the drone. The drone weighs one pound underwater.

Travel: Wheeling the handling gear to the lake is laborious and difficult. We had one person pulling and one person pushing. We will look into ways to make this less of an ordeal.

The launch process is cumbersome. It is hard to get the the handling gear to the edge of the dock safely without it falling in. the way the handling gear is designed, a person needs to be designated to stand on a metal pole sticking out of the bottom. The person acts as a counterweight to keep the gear from tumbling into the water. This is a highly inefficient use of a body. It is best to have two people to safely swing the drone over the water and lower it. It should also be noted that once the handling gear is lowered, it does not lock into place. Chains prevent it from lowering further, but nothing prevents it from swinging back into people operating it.

The drone was difficult to detach from the winch without throwing off the balance. Because the drone is not positively buoyant, if you make the drone uneven, it will sink immediately and quickly. We were not able to keep from bumping the drone when we unhooked the winch. This caused the drone to nosedive into the sediment below the dock. This made the the drone difficult to pilot due to the turbidity. We were also concerned for the safety of the drone since it hit bottom.

Piloting the drone was difficult. Amanda was not able to get the drone to stay even and stable. Upon further inspection from the dock, we noticed that the right thruster was not moving. This caused the drone to not be able to surface. We ended up guiding the drone to the surface with its tether (not advised).

Once the drone was back at The Den we noticed that a chunk of bark has been lodged in the non-responsive thruster. Once the bark was removed, we tested the drone in The Den and it appeared to be functioning properly once more.

Note: Diving from the dock in December is less than ideal. We need to talk to local gyms to see if we can use a pool.