

Deploying a Temperature Buoy

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Samson braided nylon rope. Used to attach the buoy to the anchor chain. This type of rope is ideal as it has some ability to compress when attaching instruments; this makes for a more secure attachment. These ropes can be found in most boating stores. Cost depends on length, approximately \$100.



This picture shows how to attach a temperature logger on to a buoy line. After setting up the logger with a computer, attach both the top and bottom of the logger to the rope with nylon zip ties. Afterwards, wrap the logger with rep “Tuck Tape”, this type of tape works the best. The reason we are measuring the temperature every meter from top to bottom is because we want a profile. As the water temperature decreases, it gets colder until at a certain depth it gets really cold very fast. At this depth it is called the “thermocline” and beneath it is cold dense water that can store more oxygen and provide habitat for fish, specifically cold water fish like lake trout. As climate change worsens, the deep cold water lakes are warming up and important food fish such as lake trout are losing their summer refuge.



Nylon cable ties (zip ties or zap straps). These are very handy to have around for use on many things, however for this work they are used to

attach temperature loggers or other small instruments to a buoy line. These can be bought for a few dollars at any hardware store.



This is a HOBO Logger system, which includes the Pro V2 Temp logger and Optic USB Base Station. In order to use these or other HOBO Loggers, they need to be set up using the Optic Base Station and a computer. Before setting up the logger you must go to the Onset website (<https://www.onsetcomp.com/hoboware-free-download/>) and download the HOBOware software. This software will allow you to set up a time and date to turn on, how frequently to measure the temperature and how long to run. The software will also allow you to download the collected data and graph it. The more frequent the temperature is measured, the more battery is used up. A HOBO logging system depends on how many loggers are needed, generally loggers should be placed every meter or two along the buoy line and each logger costs approximately \$190. The Hobo loggers and base station need to be purchased separately.



Heavy duty anchor. This is a type of anchor suitable for deploying an instrument buoy in a shallow, slow moving waterway or small lake. This anchor was handmade and weighs about 10 lbs, if you wanted to purchase an anchor to deploy in faster water or a deeper lake, a 16 lb Danforth anchor can be purchased from most boating stores.



Zinc coated, stainless steel chain, clip and anchor shackle. The chain should be as thick as possible so that the clip and shackle can still be used. These can all be purchased from a hardware store.



Cable cutters. These are used when working with the cables that are used to attach buoys and instruments to the buoy line.



1/4 inch thick cable and connector pieces. In order to use this cable on the buoy line, you need to make loops in the ends with the connectors. The cable cutters can then be used to crimp the connectors; two connectors should be used for each loop to make it more secure. Again, the cable and connectors can be purchased separately from a hardware store.