

Deploying your iButton to measure temperature at teabag site

Temperature is one of the most important factors governing life on earth. Aquatic life is particularly sensitive to temperature. The iButton is a small temperature logger that is programmed to record temperature every hour. Scientists are especially interested in following temperature development during summer, since this is the most productive time in the temperate zone. The deployment of iButtons in several European lakes will be very useful as additional data for the teabag experiment.

Please read the entire protocol before starting! Normal health and safety precautions should be taken at all times, for more information see website: www.nioo.knaw.nl/en/Netlake-Citizen-Science

Preparation and materials

The iButton is not waterproof. Please remember if the iButton gets wet, it will short circuit and all data will be lost! To waterproof your iButton you will need:

- two small plastic bags (e.g. a small sandwich bags).
- two aspirin or paracetamol tablets
- small (100 ml) plastic bottle
- PVC tape/duct tape or alike
- Cable tie
- Place the iButton in a small plastic bag along with one aspirin tablet that will act as a moisture indicator. Seal the four sides of the bag with PVC tape.
- Insert this bag and second aspirin into the second bag and seal this with PVC tape also (a double check!).
- Place the double packed iButton into the plastic bottle and close. The double packing also serves to fill the bottle so the iButton does not rattle.
- Put the cable tie around the bottle neck for attachment (tightly below the lid).

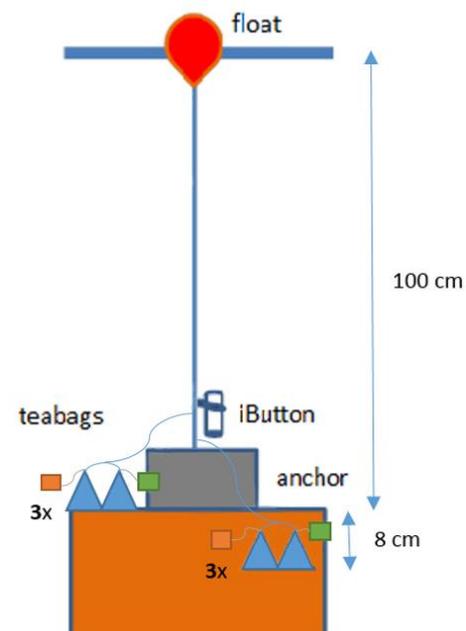


Method

- The bottle containing the iButton is attached to a line at the same level as the teabags. Prepare the line and float beforehand: use braided nylon rope as the anchor rope. The rope length will depend on the depth of your site but should be near the shore (in the littoral zone, in a location that does not attract much attention). You should have an estimate of this depth before you start to assemble your buoy. You should discuss proper deployment depth with your science partner.

Making the buoy and deploying

- Braided nylon rope (length depends on depth of your site plus an extra 1 m extra to tie to the anchor and float.)
- Float (A small marine buoy with eyelet is ideal but you can use a clean plastic 1L bottle).
- Weight (half of a concrete breeze block/cinder block, rock) to use as anchor
- Cable ties
- Tie one end of your rope to the block securely. This will act as your anchor.
- Tie a float to the other end.
- Thread another cable tie through the braided rope near the anchor. Connect the cable tie on the iButton bottle, and cable tie on the rope, using another regular cable tie.
- Note the exact time/date when the iButton is deployed in the lake, and when it is removed from the lake.
- Following deployment, remove your iButton housing (plastic bottle) from the lake and give it to your science partner for downloading the data.



If you want to deploy multiple iButtons in a chain to measure temperature at various depths see: www.lmvp.org/kayakswarm/LMVP/thermochron/Whitecliff-Thermocline-Study-Equipment.html