

How to Conduct a Field Temperature Check



*CTDEEP Volunteer Water Monitoring Program
Volunteer Stream Temperature Monitoring (V-STeM) Network*

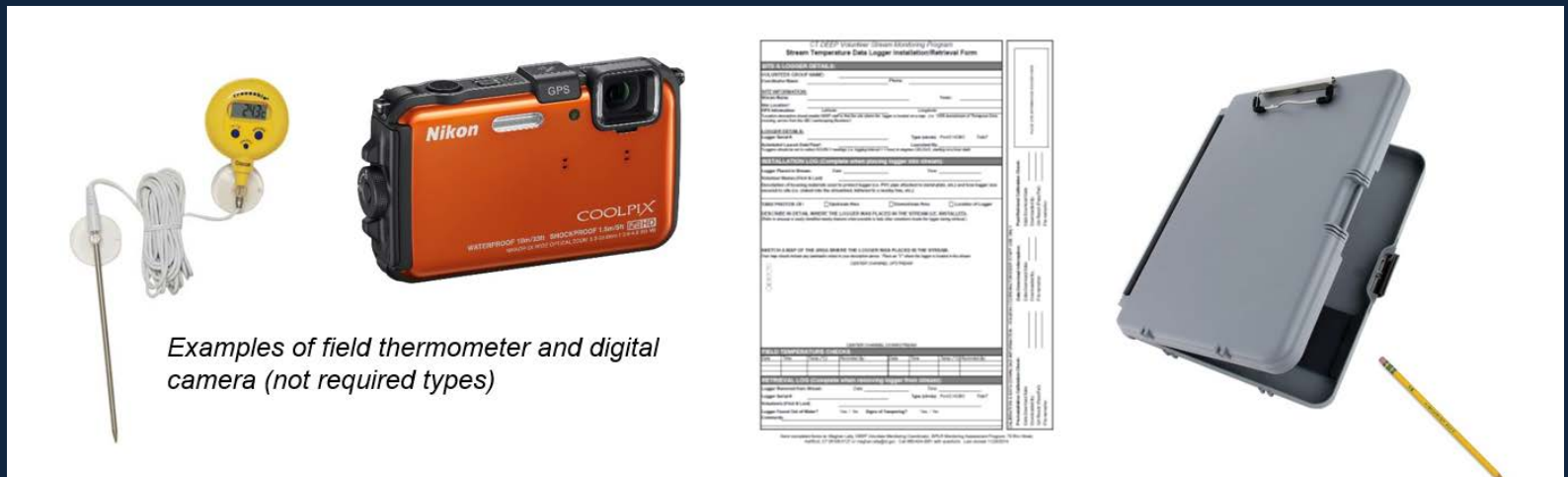
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Connecticut Department of Energy and Environmental Protection

Required Equipment

- Field Datasheet, pencil, and clipboard
- NIST certified, waterproof field thermometer (*digital preferred)
 - E.g. Traceable Waterproof Thermometer
- Digital camera



How to Conduct a Field Temperature Check



- To use field T as a QC check, field readings must be taken during the period that logger is recording (e.g. after launch and before retrieval)
 - NOTE: Field temperature readings taken at the time of deployment are good to record as it will give you an initial piece of information to compare all of your sites. Unfortunately however deployment field T information usually cannot be used as a QC check because the logger needs time to stabilize and therefore should be set to launch several hours later. (If the logger is already launched at deployment, it may still need time to stabilize, so these initial readings should be compared to field temperature readings with caution.)



How to Conduct a Field Temperature Check



- Take field T measurements as close to an hour mark as possible (e.g. 13:00, 14:00) to allow for best comparison to logger data
- Take temperature as close to installed logger as possible
 - Do not disturb the logger during field T check
- **Remember to accurately record the date, time and temperature on your field datasheet (Celsius, at least one decimal point)**
 - ***Use military time to avoid any AM/PM time confusion (e.g. 15:00 instead of 3:00p)*



How to Conduct a Field Temperature Check



Be consistent when taking field readings:

- Use an NIST certified thermometer if possible
- Use the same field thermometer...
 - At all sites on a given day (required)
 - Throughout 'field check season' (ideal)
- Allow the field thermometer time to stabilize (e.g. 10-20 seconds or until readings do not 'bounce around')

Note: While not required, digital thermometers will help eliminate visual bias



How to Conduct a Field Temperature Check



Question: How often should I do field T checks?

- Minimum:
 - One month after logger deployment
 - Allows opportunity to insure logger placement sufficient as well
 - Right before logger retrieval/field download – take field T before disturbing the logger
- Ideal:
 - Whenever you are at/near the site!
 - Monthly if volunteers are available
 - During extreme low flow events – double with check for out-of water conditions
 - After extreme high flow events – double with check for logger movement/disturbance

NOTE: take photos of unusual site conditions during field checks if appropriate (e.g. extreme low/high flows). If you have a waterproof shuttle you may wish to download your logger during the field visit, but do so *after* conducting your field temperature reading.



How to Conduct a Field Temperature Check

Common documentation errors that invalidate potential for using field temp as a QC check

- Not recording the date and exact time of the field temperature reading
 - If have only one piece of information (date or time) quality of the field temperature data is greatly reduced
 - Time must be actual time temperature is read – minutes count!
- Not recording a detailed temperature reading - e.g. writing “12” or “12C” instead of “12.0C”
 - Need to know the unit of measure and at least one decimal point value to compare to logger data
- Not accurately recording key information on the datasheet:
 - Logger deploy date/time (*Exact time placed in water!)
 - Logger launch date/time (*logger should be scheduled to launch at least several hours *after* it is placed in the stream or ‘deployed.’)
 - Field temperature check(s) date/time
 - Logger retrieval date/time (*Exact time removed from water!)
 - Date/time of logger download

Caution: poor quality field data will result in a poor QC check. Don’t assume/infer date, time, or units if they are not recorded – if all information wasn’t written down on the field data sheet, don’t use that reading to QC your logger data!



CT DEEP Volunteer Stream Monitoring Program
Stream Temperature Data Logger Installation/Retrieval Form

SITE & LOGGER DETAILS:

VOLUNTEER GROUP NAME: _____
 Coordinator Name: _____ Phone: _____

SITE INFORMATION:

Stream: _____ Site #: _____ Town: _____

Site Location*: _____
 GPS Information: Latitude: _____ Longitude: _____
 *Location description should enable DEEP staff to find the site where the logger is located on a map. (i.e. '100ft downstream of Thompson Drive crossing, across from the ABC Landscaping Business')

LOGGER DETAILS:

Logger Serial #: _____ Type (circle): ProV2 HOBO TidbiT

Scheduled Launch Date/Time*: _____ Launched By: _____
 *Loggers should be set to collect HOURLY readings (i.e. logging interval = 1 hour) in degrees CELSIUS, starting on a hour mark

INSTALLATION LOG (Complete when placing logger into stream):

Logger Placed in Stream (Deploy): Date: _____ Time: _____

Volunteer Names (First & Last): _____
 Description of housing materials used to protect logger (i.e. PVC pipe attached to metal plate, etc.) and how logger was secured to site (i.e. staked into the streambed, tethered to a nearby tree, etc.): _____

TAKE PHOTOS OF: Upstream Area Downstream Area Location of Logger

DESCRIBE IN DETAIL WHERE THE LOGGER WAS PLACED IN THE STREAM (I.E. INSTALLED).
 (Refer to unusual or easily identified nearby features when possible to help other volunteers locate the logger during retrieval.)

SKETCH A MAP OF THE AREA WHERE THE LOGGER WAS PLACED IN THE STREAM.
 Your map should include any landmarks noted in your description above. Place an "X" where the logger is located in the stream.

CENTER CHANNEL UPSTREAM

↓ FLOW ↓

CENTER CHANNEL DOWNSTREAM

FIELD TEMPERATURE CHECKS

Date & Time	Equipment	Temp (°C)	Recorded By:	Date & Time	Equipment	Temp (°C)	Recorded By:

RETRIEVAL LOG (Complete when removing logger from stream):

Logger Removed from Stream: Date: _____ Time: _____

Logger Serial #: _____ Type (circle): ProV2 HOBO TidbiT

Volunteers (First & Last): _____

Logger Found Out of Water? Yes / No Signs of Tampering? Yes / No

Comments: _____

Launch Information →

Deploy Information →

Field T Check Information →

Retrieval Information →

PLACE SITE INFORMATION STICKER HERE

Post-Retrieval Calibration Check:
 QC Date: _____
 QC By: _____
 QA Result (Pass/Fail): _____
 File name/loc: _____

Data Download Information:
 Download Date: _____
 Download Time: _____
 Downloaded By: _____
 File name/loc: _____

Pre-Installation Calibration Check:
 QC Date: _____
 QC By: _____
 QA Result (Pass/Fail): _____
 File name/loc: _____

Download Information ←