Eel monitoring methods

Monday:

Scoop out all eels from the Rubbermaid container into a bucket with river water. Count how many eels were in container and record on Header sheet. Note the time that you emptied the container along with the temperature in the container. Clean the PVC pipe with the white bristle brush to ensure no holes are clogged with debris. Dump the bucket with eels into the freshwater impoundment at the top of the ladder in the still water where the tree covered in bittersweet overhangs the bank. This step "begins" the sampling for the week by removing all the eels collected over the weekend. Then make a new batch of clove oil.

**To make a batch of clove oil (done every Monday)

Fill clove oil bucket to the 1 gallon mark with river water collected with bucket with rope attached. Place 7-8 drops of clove oil in the bucket and stir with a stick. One batch should last an entire week. Old clove oil should be dumped in grass to right of eel monitoring box. Please make a note on the Header data sheet that you have changed clove oil in the comments so the volunteers for the remainder of the week know it has been done.

Lastly, clean the Rubbermaid container by shutting the valve off to stop the water supply. An old yogurt container is in the box to scoop out the water and there are sponges for cleaning the sides and bottom. This should be done every Monday. Remember to turn valve back on before leaving and lock up box.

Finally, please remember to copy down the total number of eels caught and enter that number online on the sign-up sheet!

Tuesday through Friday:

Open the combination lock on the box and be sure to put the lock in a safe place (it can fit through the fish ladder grate!)

Fill out a header sheet. Note: You will need to fill out a header sheet each day, regardless of whether eels are caught or not.

Observe if water is flowing from the hose into the eel collection bin. If there is a steady flow of water down the PVC pipe into the water and down the PVC pipe into the Rubbermaid container circle 'good' on the header sheet. If more than 50% of the holes are clogged and flow is restricted to one side of the ramp, circle 'Fair'. If more than 90% of the holes are clogged and very little water is reaching the bottom of the PVC pipe where eels enter circle 'Poor'. If water is not flowing for some reason circle 'void' on the header sheet and call Robert (868-1095) to let him know.

Regardless of the condition, clean the pipe with the white bristle brush to ensure maximum water flow.

Take the water temperature in the Rubbermaid container where the eels are and record the value on the data sheet.

Turn off the valve on the hose so that you can see the eels more clearly. Fill a bucket with river water using the bucket with the rope attached to the handle.

Questions or issues? Contact Robert 603.868.1095 or Caitlin 603.862.6707

Use the small dip net to scoop all the eels out of the bin and carefully place them into the bucket of river water. Be sure to keep the bucket close to the sampling device since smaller glass eels can fit through the mesh of the net.

Next, move 5 eels at a time into the bucket containing **water and clove oil**. When these eels slow down and turn on their side, place them on the fish board and measure their total length (from the tip of the nose to the end of the tail) to the nearest millimeter. Record the length on the data sheet. (Note: keep a close eye on the glass eels and try to pull them out immediately after they appear anesthetized. They take a little longer to recover than the elvers so it's nice to get them out first.)

Refer to the pigmentation chart and evaluate the level of pigmentation for each eel. Record it on the data sheet. Place the eel in a recovery bucket that is filled with ambient river water being aerated with the battery- powered bubbler. Continue adding subsequent eels to the clove oil bucket.

Record the date, length and pigmentation stage on the data sheet for each eel. We will collect length data for 120 eels over the course of the week. The priority is to collect the data on glass eels (the eels that are not yet fully pigmented) although if you have elvers (pigmented juvenile eels) in the sample you can collect length data on them. It is better to have 120 lengths including elvers than less data with glass eels only. Record length data for no more than 60 eels in one day. Once you reach 60 eels in one day, or 120 for the week, simply count the remaining eels and record the total number on the header sheet. **Thus, only 2 sheets logging in lengths should be filled out each week**. If you only get 5 eels in the trap to measure fill out 5 lines on the length data sheet and the next day fill out the remaining lines of the started data sheet until there are 120 lengths in total.

Eel life stage and size

Life stage	Approximate size range (mm)
Glass eel	45-70
Brown eel or elver	65-100
Yellow eel	>100

****Do not just record life stage based on the approximate size ranges. They are just general guidelines for life stage. Visual identification of life stage is necessary.**

When the eels have resumed their normal activity level, return them to the river upstream of the fish ladder. Place them at the top of the ladder in the still water where the tree covered in bittersweet overhangs the bank. Do not return them where the water is flowing into the ladder or they will get carried back into the fish ladder.

Return all of the equipment and data sheets to the container. **Do not dump out the clove oil bucket!** Return the clove oil bucket, with the lid on, back to the container. **Make sure to turn the valve back on** so that the water is flowing into the eel collection bin. Close the sampling container, return the lock and make sure that the padlock is scrambled.

Finally, please remember to copy down the total number of eels caught and enter that number online on the sign-up sheet!

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