

Core splitting and logging procedures

You will need:

Lake sediment core
Dremel tool with mini saw bits
At least two meter sticks
Permanent marker
Duct Tape
Sponge and paper towels (it's a messy process!)
Utility knife
Thin metal wire
Two spatulas
A buddy to help hold the core
Eye and ear protection for both of you
Razor blades
Clean 8.5x11" printer paper
Scotch tape
Manila folder
Camera
Tripod
Natural light
Saran wrap
Core bags

Remember: Always keep the top of the core on your LEFT. This will avoid confusion!

1. Remove the duct tape and other caps from the core (the duct tape will melt and mess us the dremel tool if you leave it there).
2. Dry the core barrel with paper towels. Use a meter stick and a permanent marker to draw two lines on opposite sides straight down the length of the core barrel. These will serve as guides to cut the core exactly in half, so position them carefully.
3. Be sure that both halves of the core, when you split it, will be labeled with the core name (year, lake name, core number) and the up direction.
4. Prop the core barrel up between two meter sticks.
5. Use the dremel tool to cut along the lines you've drawn (see photo). After you cut the first side, place a few pieces of duct tape along the cut to hold it together while you cut the other side. This step is best done in the rock crushing lab, where the mess doesn't get all over the lab.
6. Remove the duct tape.
7. Use the utility knife to cut through any uncut parts.
8. Pull the thin wire through the core to slice it in half.
9. Carefully pry the two sides of the core apart, taking care to not damage the surface of the mud. It often helps to use the spatulas, and to have many hands.
10. Use a razor blade to clean the surface of one half of the core (draw the blade across the width of the core, parallel to any laminations, so no mud is dragged up- or down-core).



11. Tape several pieces of 8.5x11" printer paper end-to-end so that you have a piece of paper as long as the core. Make a to-scale core log, including: carefully measured cm marks along the length of the log, details about sediment appearance (color, texture, presence of macrofossils, laminations, etc.), core name, date the core was split, name of the people who split and logged the core.
12. Place the core log in a manila folder labeled with the core name. This goes in the drawer with other core files, and other data collected for this core will be stored here as well.
13. Set the camera up on the tripod.
14. Place the core in a windowsill or somewhere else with natural light. Place a meter stick, with zero lined up with the top of the sediment, along the same plane as the core surface (so both will be in focus).
15. The camera should be as zoomed in as possible to eliminate as much distortion as possible. The camera should be set to Av mode, with the f-stop as low as possible, and the timer should be on.
16. Place the camera and tripod so that the core and meter stick completely fill the field of view. You may have to play with the angle of the core to reduce the amount of glare. I normally prop it up on some wadded-up paper towels so the core face is leaning slightly away from the window.
17. Take photos of the core, so that there is ~60% overlap between photos.
18. Download the photos and retake any that are out of focus or that have too much glare.
19. Wrap the each half of the core in saran wrap and a core bag. Label the core bag with the core name, 'archive' or 'working' half and the up direction.
20. Place in cold storage.