

Surveying stream cross-sections

Surveying the cross-section of a stream channel can give a representation of the geology of the channel and if surveyed over an extended period of time can show the change in channel morphology.

Materials

Surveying tripod

Surveying level

Stadia rod

Measuring tape

Compass

Methods

Set up tripod on a level surface ensuring that it is secure and will not move during the course of surveying.

Secure level onto tripod.

Level the device using the 3 knobs around the base of the level (level until bubble is in the center of the circle).

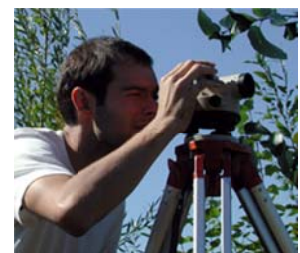
Rotate the level and adjust until it is relatively level in all directions.

Be careful not to bump tripod after it has been leveled!

Second person - string the measuring tape across the transect to be surveyed (from river left to river right) ensuring that it is pulled tight.

Second person - place the stadia rod on the surface that you want to survey ensuring that it is straight and tall enough for the other person to get a reading (you will probably need to extend the stadia rod depending on the height difference between the survey point and the surveying level).

Look through the eyepiece and focus using the knob on the right handside of the level.



Read height where the black line crosses the stadia rod to the nearest 100th of a meter.

Continue surveying all your points. If the survey point is too far away or you need to move the equipment, you will have to do a "turning point" so that all your data remain tied into one another.

You will also need to use a compass to record angles.

Notes

The Center has both English and Metric rods; make sure you know how to read the rod (and which rod you are using) before you start surveying.

References

Harrelson, Cheryl C., Rawlins, C. L., Potyondy, John P. 1994. [Stream Channel Reference Sites: An Illustrated Guide to Field Technique](http://www.stream.fs.fed.us/publications/PDFs/RM245E.PDF). Gen. Tech. Rep. RM-245. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 61 p. Available online at: <http://www.stream.fs.fed.us/publications/PDFs/RM245E.PDF>.

Fox, Richard. [Stream Geomorphology: Laboratory Exercises for Limnology](#). 17 May 2002. Contact Dr. Fox at: rsfox@lander.edu.