

ODF Stream Temperature Data Collection Parameters

The Oregon Department of Forestry monitors stream temperature on 4 basins and 7 reach-level areas through out the state of Oregon. At each study area data are collected at multiple stations on: water temperature, air temperature, stream flow, management practices, and vegetation and channel characteristics. The following is a list of those parameters and a brief description of the collection procedures.

- Hourly water temperature: Collected at multiple stations using continuously recording temperature probes. Griffith Creek has 6 stations (one is not available at this point for data sharing). See attached map. We have data from 1995 until present.
- Hourly air temperature: Some study areas have one or more continuously recording air temperature probe stations. Griffith Creek has one air station probe.
- Stream Flow is measured using a velocity meter and cross-sectional area at every water temperature station during the low flow period.
- GPS locations: Of each monitoring station and harvest unit, instream structure etc. (currently not having a lot of success with the precision of these data).

Vegetation and Channel Characteristics: The following data are collected at 11 stations spaced 100 feet apart, beginning at the water temperature station and moving upstream:

- Buffer width: Slope distance on each side of the stream. If it is unharvested then 100+ is entered.
- Buffer Height: Average height is estimated for each side of the stream.
- Forest Shade Angle: Using a clinometer, measure the angles to the highest vegetative source of shade orienting yourself in four directions (upstream, left, right and downstream).
- Forest and shrub canopy cover: Using a handheld densiometer measure the canopy cover orienting yourself in four directions (upstream, left, right and downstream).

- Topographic shade angle: using a clinometer measure the angle to the highest topographic source of shade orienting yourself in four directions (upstream, left, right and downstream).
- Wetted Width: Using a surveyors rod or tape measure the width of the wetted surface, subtracting mid-channel point bars that are out of the water.
- Bankfull Width: Using a surveyors rod or tape measure the width of the channel at the average annual high water mark,
- Thalweg depth: Measure the deepest part of the channel with surveyors rod or tape.
- Gradient: Measure the slope of the channel with a clinometer. One person stands at the top of a riffle or pool and another person at the top of an upstream riffle or pool. The downstream person looks upstream through the clinometer aiming at the other person, Before splitting up figure out the level where your eyes line up on the other person (i.e. at her hardhat, chin etc) and aim for that point.
- Azimuth: Measured with a compass by orienting yourself downstream and with the direction of the valley (not a meander).
- Substrate: Estimate the percent of channel bed composed of each size class of material (Bedrock, bolder, cobble, gravel, sand or fines).