**Large Side Channel** **Qualifying:** located within active bankfull channel, separated by an island for a length ≥ avg bankfull width and contains 25%-49% of flow. **Measure:** delineate channel units, collect channel unit attributes, measure avg wetted width at 5 locations evenly throughout channel. **Small Side Channel** **Qualifying:** located within active bankfull channel, separated by an island for a length ≥ avg bankfull width and contains <25% of flow. **Measure:** GPS points at boundaries, measure avg wetted width at 5 locations, estimate overhanging fish cover % and substrate composition %. **Off Channel** **Qualifying:** outside bankfull, streambed elevation above bankfull, non-defined bed or banks, discontinued flow but access to flowing water. **Measure:** collect boundary GPS points, max depth, estimate overhanging fish cover % and substrate composition %. **LWD** **Qualifying**: dead or new fallen trees that are uprooted, majority in bankfull prism (suspended by another LWD), b-axis ≥ 15 cm at midpoint (1/2 way between root collar and top), length ≥ 1.5 m. **Measure**: width at midpoint, length; if embedded measure part exposed, if cracked consider it 1 piece; record first 10 in unit, estimate the next 9 pieces and measure the 10th; measure first 10 LWD that are ≥ 15 m long; if spanning 2+ units assign to unit with majority; ≥ 20 cm portion intersects bankfull channel at TS/BS. Record length to 0.1 m and diameter to 1 cm. **Record also:** is the piece wetted, charismatic (disturbs the flow) or ballasted? **Wood Jams** **Qualifying**: 5 or more qualifying LWD. **Measure**: estimate length, width, depth of jam and # of qualifying pieces. **Undercuts** **Qualifying**: provide fish cover at time of sampling, width ≥ 20 cm, length ≥ 1 m, ceiling ≤ 1 m above water surface. **Measure**: length that meets width requirements, 2 or more qualifying undercuts separated by .5 m consider them 1 but do not account for distance between them; measure undercut width at 3 points: 25%, 50%, 75% of qualifying length (avg must be ≥ 20 cm); assign to bank (right, left, island); if undercut spans 2 units divide undercut into 2 (each must meet qualifying, if not assign undercut to unit with majority. **Pebble Cross Section** **Qualifying:** all riffle channel units. **Measure:** use cross-section at midpoint of riffle with 11 evenly spaced sampling points; record b-axis size using gravelometer- if particle fits through 180 mm but not 128 mm then particle is 128-180 mm; Silt and clay = .0002-.06 mm (smooth when rubbed between fingers); record bedrock when found;**do not measure stream bank particles**. **Ocular Substrate Estimates** **Qualifying:** pool, run and off-channel units. **Measure:** estimate the % of fines, sand, gravel, cobble and boulder composition within the wetted area that can be seen; round to nearest 10%, totaling 100%.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Boulder** | **Cobbles** | **Gravel** | **Sand** | **Fines** |
| **Basketball+** | **Tennis-basketball** | **ladybug-tennisball** | **< ladybug** | **< sand** |

**Max Depth Qualifying:** All channel units except small side channels. **Measure:** Single deepest portion of unit in meters. **Thalweg Depth Qualifying:** All channel units except small side channels and off-channel areas. **Measure:** Record depth in meters at the deepest, fastest flow at downstream extent of unit. **Wetted Fish Cover Qualifying:** Any material within the wetted channel (woody debris, aquatic veg, overhanging veg or artificial cover). **Measure:** record for each unit and small side channel; estimate % of channel covered by each type; if different types overlap treat them independently; total fish cover can be = or > 100% if types overlap; estimate % no fish cover independent of fish cover. **Discharge Qualifying:** Top and bottom of site and any location where a tributary, diversion or diversion return removes/contributes ≥ 25% of total flow. **Measure:** Locate channel cross-section in canal-like area (u-shaped) free of obstructions (move rocks if necessary); Do not measure in pools; pull tape from left bank; divide wetted width into 15 to 20 equal intervals spaced > 10 cm apart (even if this results in < 15 intervals); first measurement at left edge of water and last on right edge; if depth is 0 velocity is 0; record velocity if it’s negative.