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Data Collection Standards for FNESS – ISC Operational Fuel Treatment Projects

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Data Collection Process

The purpose of this guide is to establish standards for the collection of pre- and post-treatment data for ISC – Operational Fuel Treatment projects administered by FNESS. A certain level of data collection is required to ensure projects focus on priority treatment areas, to provide the basis for effective treatment prescriptions, to set project objectives, and to ensure objectives are met.

This guide sets forth what is considered by FNESS to be the minimum acceptable level of data collection. Data collection beyond this level may very well be valuable and justified but FNESS also wishes to express acknowledgment that exhaustive data collection may not be justified in many cases. For instance, exhaustive data collection may only provide a small incremental increase in data veracity while at the same time decreasing money that would otherwise be spent on operational fuel management activities that protect the communities. This guide attempts to strike that balance.

Standard Methodology for Survey Data Collection

- **Circular plot intensity**: 1 plot per 2 ha with a minimum of 5 plots total per stratum.
- **Field marking circular plots**: Mark plot center with a stick or rock, with a piece of ribbon tied to it. The ribbon should read '*Plot #, TU ID, assessor name and date, bearing used for line transect*' (and if the plot is a transect plot).
- **Circular plot size:** radius of 5.64m.
- **Field marking line transects:** Mark point of commencement (POC) and point of termination (POT) of 30m line transect in the field using a stick or rock with ribbon attached.
- **Fuel transect location**:
    - The starting point of the transect shall be outside the radius of the fixed area plot, to avoid interfering with surface fuels during plot data collection.
    - Fuel transect can go to any cardinal direction so long as the transect stays within the block.
    - A 30m fuel transect is to be completed at every second plot with a minimum of 3 transects per treatment unit.

Plot Data Collection

Circular Plots:

- 5.64m fixed-radius plots will be used for gathering stocking information of treatment units, both pre- and post-treatment. Data will be collected using either Excel plot card or paper notes. All stems will be recorded by layer and species as follows:

  - Tally L1 stems into L1 'sub-merch' (12.5-<17.5 cm) and merchantable (≥17.5 cm),
  - L2 (≥7.5cm - <12.5cm dbh),
  - L3 (≥1.3m height and <7.5cm dbh) and
  - L4 (<1.3m height).
- Crown Base Height (CBH) for all stems to be tallied on plot card; for both pre- and post-treatment surveys. Note: CBH is measured from the lowest point on a limb to the top of the surface fuel (i.e. to the top of standing grass) and includes full whorls of dead branches, not just live limbs. This information is critical to determine the efficacy of pruning treatments conducted in relation to stated objectives.
- Plot representative photographs: A minimum of four photos are to be taken in each cardinal direction from plot centre and labeled with treatment unit and plot number. A photo straight up from plot centre to show crown closure and straight down to show surface fuel are also recommended.

Line Transects:

- For transects, complete a 30m woody fuel transect plus two $1m^2$ micro-plots. The first micro-plot is to be located at the 5m mark on the transect line, and the second is to be located at the 25m mark on the transect line. These micro-plots are to be completed after tally of the transect line since it involves destructive sampling that will disturb surface fuels. For these micro-plots, record surface litter weight (cured grass, needles, cones, and bark flakes) by use of a digital fish scale and a bag/sack to collect the material. Only 'L' layer fuels are to be tallied, not 'F' and 'H' layers as they are decomposed and less likely to contribute to surface fire behaviour. Only 'non-woody' materials are sampled in this manner due to the 'woody' materials having been sampled in the line transect.
- Collect surface fuels according to '*BCWS Fuel Management Survey Data Collection Standard*' and compile with '*BCWS Line Intersect Calculator*' found on the '*BCWS Tools for Fuel Management*' website.

Wildfire Threat Assessment Worksheets:

- Complete a *Wildfire Threat Assessment Worksheet – Fuel Assessment (Site Level)* at a minimum intensity of every second sample plot with a minimum of 3 threat plots per treatment unit. These worksheets are found in Appendix B of *2020 Wildfire Threat Assessment Guide and Worksheets* found on the '*BCWS Tools for Fuel Management*' website.