Prescribed Fire Workshop thermocouple deployment protocol

The purpose of this document is to describe the steps necessary to deploy thermocouple dataloggers ahead of a prescribed fire. The protocol assumes data are being collected within the nested triangular microplot framework used in the workshop.

Materials checklist

- Thermocouple datalogger (with thermocouple leads and case)
- Battery and SD card for each FeatherFlame system
- Deployment apparatus–triangle hub + 3 arms, ½" conduit
- HVAC cap
- Hand tools–hammer for pounding conduit, scraper for clearing vegetation

NOTE: Try to minimize trampling of vegetation while deploying thermocouples

1. Identify the plot to be sampled, and locate the three 1 m microplots.
2. Ensure each microplot has the following materials: Datalogger with battery and card; apparatus; cap
3. Push or pound the conduit into the soil until it is stable and perpendicular to the soil surface. Ensure at least 30 cm remains above the ground.
4. Ensure all arms are screwed into the hub; slide onto conduit. Tighten at designated height (20 cm?). Determine North and point one arm that direction.
5. Affix thermocouple (TC) leads so that the beads extend 3 cm (1") straight out. Start at the North-facing arm with TC 1 and proceed clockwise (SE, SW) with TC 2 and 3.
6. Remaining TC leads should be placed along the ground, under litter, with the beads as close as possible to mineral soil surface. If more than one are available, distribute evenly within the 1 m triangle.
7. Establish a location for the datalogger that will minimize its heat exposure. If possible, find a patch of bare ground or low fuels. Scrape away surface fuels to mineral surface with the scraper as necessary.
8. Cover the datalogger with the HVAC cap, with no vegetation or litter trapped underneath, no vegetation touching the cap, and all vegetation pushed away from the cap.
9. Nestle the TC jump wires and junction box down through the litter as close to the soil as possible. If possible, avoid areas of heavy fuels, and judiciously move vegetation aside as necessary.
10. Determine if the microplot has been recorded via GPS. Verify this is true. If it isn't, log it!