

Protocol for FERP litter trap collection

Updated 13 June 2011 by JPS

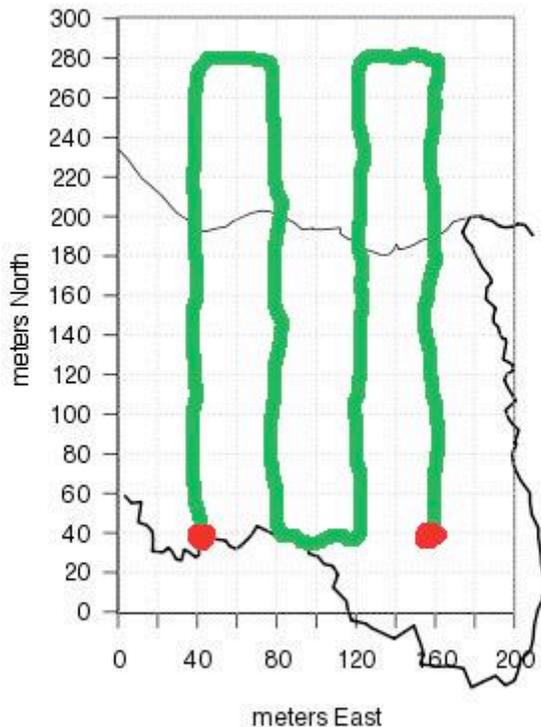
Modified 29 March 2012 JLR

Litter trap collection is to be done once every two weeks, plus or minus a day or two if absolutely necessary.

1. **Datasheet** Print out a copy of the data sheet found in: Gilbert lab projects - FERP - LitterTraps - LitterTrapDataSheet. Make sure to print the datasheet on *Rite in the Rain* paper if it's wet out, found in the cabinet above the printer. Write your name and the date in the appropriate fields and grab a clip board and pencil.

2. **Field Equipment** Gather any other needed supplies and put them into a field pack along with the data sheet (**compass, map, tyvek, gloves, seed envelopes, field guides, pepper-spray, water, lunch!**). If it is raining, or if you anticipate that the litter in the field will be soaked from previous rain, you may want to bring the set of plastic collection bags (see Wet Collection below); make sure there is one for each trap. If you are also collecting met-station data, grab the items required (see met station protocol).

3. **Map / Locations** Head up to the plot. The plot is easier to traverse moving south-north, so plan on moving up or down each column of traps, and then moving east-west between them.



<u>Litter Trap Locations</u> (n=42)	
160_040 (2)	080_040
160_080	080_080 (2)
160_120 (2)	080_120 (2)
160_160	080_160 (2)
160_200	080_200
160_240	080_240
160_280 (2)	080_280
120_040	040_040 (2)
120_080	040_080
120_120	040_120
120_160 (2)	040_160 (2)
120_200 (2)	040_200 (2)
120_240	040_240 (2)
120_280	040_280 (2)

Depending on which side you want to finish on, you may want to choose your starting point strategically so you can more easily go home when you are finished.

4. Collection Make sure to note your name and the date on the datasheet. In the field, you will use the six-letter species codes and other shorthand (for non-species related items) to take data. On the datasheet, each trap has a row, where its physical coordinates and trap number are denoted. Also noted in each row is the trap's direction and distance from the coordinate post (white PVC pipe with yellow flag); use these to determine which trap is which at locations with two traps. Each time an item is found in a trap, the species code or shorthand abbreviation for that item should be written in the box under the appropriate column, in the appropriate row for that particular trap. Write small, but legibly in case there are many items, or take an extra datasheet if you write large.

What goes where on the data sheet (category columns):

There are columns for leaves, flowers, fruits, seeds, and other. All plant material is identified to species, when possible. Items that can be identified to genus but not species should be noted as such (e.g. QUER? for *Quercus* spp.) Leaves, flowers, and "other" objects are recorded simply on a presence/absence basis, but fruits and seeds each get counted. Tally up fruits and seeds however is easiest for you, but make sure that when you are done the final count is obvious to any one that may enter your data.

Leaves: leaves and needles

Flowers: flowers and conifer pollen-buds

Fruits: fruits (multi-seeded) and cones (COUNT THESE)

Seeds: seeds, acorns, and achenes (COUNT THESE)

Other: twigs, bark, lichens, scat, and oak galls. Twigs, bark, and oak galls should be ID'd to species if possible.

Anything that cannot be identified needs to be collected for identification back in the lab. Collect one or more of the unknown object and place them into a seed envelope; note which trap it was found in, what the item might be (leaf, flower, Genus if known, etc.), a total count if it is a fruit or seed, your name, and the date. Make sure to note on the datasheet that you found something that was not identified (category, count) so that it can be accounted for later during data entry.

General Guide:

For each trap, scrape all of the litter from the corners and sides into the bulk of the net. It is helpful to settle the litter by shaking it a bit. Begin identifying the leaves and large items (twigs, cones, etc.); take them out once you do so the other litter is more visible. Check for flowers, fruits, bark, lichens, and scat. Then remove everything except the fine material that could contain seeds. For the fine-grained litter, it is helpful to use the datasheet as a white background (the material can be easily knocked up from the bottom with your hand). After everything is recorded, empty the trap for the next cycle.

Wet Collection (special case):

Use Rite in the Rain paper for the datasheet and remember to bring the plastic collection bags (check to make sure there is one for each trap)

When the litter is wet it sticks together somewhat, making the search process more difficult and increasing the likelihood that objects will be overlooked (e.g., seeds may stick to leaves). Therefore, extra effort and scrutiny are required. Identify the things that are obvious and do not require a count (leaves, flowers, bark, twigs, lichens). For the rest of the litter, particularly things that are small and become amorphous when wet (fruits, seeds), you have two options. You can either 1) go through it as usual, making an extra-detailed search, or 2) scrape the material into a plastic collection bag for drying and processing back in the lab. Either way, make sure the trap is empty before you continue on.

5. Data Processing (back to the lab)

Storage boxes for various litter trap things can be found in the lab bookcase (insects, references, unidentified items, wet-collection bags, etc.)

All unidentified items should be identified (or attempted) using the reference box, seed books, guides, the internet, or other botanists. If identified, the item should be filled into the appropriate field on the datasheet. If left unidentified, place the entire collection envelope with any notes into the storage box for unidentified items.

If you do not intend to enter the data immediately, place the data sheet in the bottom drawer of the filing cabinet by the door in 490.

Wet Processing (special case)

Drying: Take all collection bags and their associated datasheet to the 414B lab. Clear off the white counter, open up and roll back all bags to expose the litter as much as possible. Leave the datasheet next to the litter in case some one else finishes processing. Check back every few days to see if the litter has dried; for heavy bags, shake up the litter every now and then to allow for complete drying.

Processing: Once the litter has dried, set up a station for going through each bag to note what was missed in the field. It's easiest to dump the litter on a large piece of paper or herbarium folder, go through it, and then dump it in one of the lab compost bins. Return collection bags to their shelf on the bookcase in 490.

6. Data Entry (FileMaker Pro)

Open: In the Dropbox Folder, find the folder FERP LitterTraps. Find the file with the FileMaker extension titled "LitterTrapsFERP_database.fmp12" and open it.

About FileMaker:

FileMaker is somewhat similar to Excel, but has several important differences, and it can be strange if you've never used it before. Unlike Excel, FileMaker does not have an "undo" function, and it automatically saves every change that is made. Therefore, you must take care in using the file, because if information is unintentionally deleted or overwritten, there is no way to retrieve it.

On the spreadsheet, notice in the upper left corner the pencil tab that is selected. These tabs all display the same data, but show it in different ways; the paperclip is the typical spreadsheet view that we will use. If once you accidentally click something that changes everything, don't freak out (yet), it's probably something to do with these tabs.

In FileMaker, rows are their own entities, which are called entries or records. To make new records, you can click on the button in the top middle-right toolbar that has a piece of paper with a green plus sign on it (it will say "add new entry" when you hover over it), or press Command N. When moving across rows, use TAB to leave cells.

Entering the Data

For the litter trap data, each item found in each trap is considered an entity and will get its own row in the spreadsheet. Column 1 is for the trap number and also happens to be the first column on the datasheet used in the collection, enter it. Column 2 is for the date - follow the format used previously (use the copy/paste commands for entering the date). Column 3 is the item's species code or shorthand abbreviation. A drop-down menu will appear when you move to this cell; all possibilities should already exist. Type in the first few letters of the item to highlight the appropriate entry and press ENTER. Column 4 is the item category, enter it. The only other columns of concern are those for "Count" (for fruits and seeds) and "Collector" (first and last names of the collector on the datasheet). Use UNKNOWN for unidentified items. You may notice that FileMaker will add a bunch of data to the entry without your command – these data are linked to the trap number and species codes.

Once you have completed your data entry, write "Data Entered **DATE** by **NAME**" in red at the top of the datasheet, and place it with the other entered data sheets in the bottom drawer of the file cabinet by the door in 490.

FileMaker saves automatically, so just close the file and you are done.

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