**SCBI 2010-2011 Seedling Surveys**

**Last Update:** 11/28/2011

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**Project Description:**

We completed an annual survey of woody (tree, shrub, and vine) seedlings (stems < 1 cm DBH) from June to September 2010 and 2011 in the SIGEO plot. We identified all seedlings to species (when possible), measured their height, and mapped their location within 1 m2 quadrats. Additionally, we estimated % leaf litter and % combined woody and non-woody invasive species cover in each 1 m2 quadrat.

**File Locations/Information:**

There are two folders within the general Seedling Plots folder. A graduate student from the University of Indiana, Dan Johnson, installed seedling survey plots throughout the SIGEO study area in 2011. Their corners are marked with yellow bottle brushes. All of the data/information he has sent us is in the folder labeled “Dan\_Johnson\_seedling\_plots”.

The folder labeled “spatial\_data” contains a shape file of the seedling plot locations and a .mxd file called “SIGEOSeedlingPlotLocations.mxd” which is a map of the SIGEO plot with the location of all of the seedling plots. The map should be fairly self-explanatory, but there are 120 groups of three 1 m2 seedling plots oriented around randomly-selected leaf litter baskets across the SIGEO study area.

See diagram below for the dimensions of the seedling plots. Hollow circles represent the stakes to be placed at the diagonal corners of each seedling plot. One PVC pipe stake of each seedling plot should be placed 2 meters from the central grid stake.

1.44

1 m

**Plot Stake**

**N**

1 m

1 m

1 m

1 m

1 m

2 m

2 m

2 m

The datasheet we used for both seasons is in the file “Datasheet\_draft.xls”. The trap column refers to the orientation of the quadrat relative to the plot stake (West, East, or South), the plot column to the stake number, tag to the tag # on each round-tagged seedling stem, and the other columns are self-explanatory. The number of cotyledons (if any) per seedling is included in the notes column. The squares on the right side of the page are for mapping the approximate location of the tagged seedlings in the quadrat. A note about tagging and mapping methodology: in 2010, all stems < 1 cm DBH were tagged, no matter their height. This task was very time-consuming due to the abundance of small first and second year *Fraxinus americana* throughout the study area. To speed up surveys in 2011, only stems >10 cm in height were tagged and mapped. All stems <10 cm were identified to species, had heights measured, and leaves counted. To save money, we re-used old tags that were no longer attached to any seedlings by stamping a “00” onto each of them. Seedling tags may be found on the bookcase with the other tree tags in radio-tracking. Heights were measured to the length of the longest woody stem of the seedling. In the case of woody vines, such as *Lonicera japonica*, we measured the length of the longest vine. Estimates of % leaf litter (%L) and % invasive species (%I) may be written next to the plot map. For all estimates of %L or I <5%, write <5%.

Seedling plots will inevitably lose tags and/or PVC pipes throughout the winter season, and must be re-installed and checked for tag retention every spring. The document “FIXING SEEDLING PLOT CORNERS.docx” describes how to re-install PVC pipes. Unfortunately, there was some disconnect between the 2010-2011 field seasons, and so the quadrat locations may vary slightly from year to year. The file “seedling retention2010.xls” is the estimated retention of both seedling tags attached to stems and those attached to the stem plus the unattached tags found within the plot following the 2010/2011 winter. We looked at a random subset of the seedling plots in wet (along the creek) and dry (everywhere else) parts of the SIGEO plot for this estimate. While it might not be necessary to check retention in following years, it may be of interest to see how much it varies year by year.

“SCBI Seedling ID.ppt” is a PowerPoint document created by Chris Lewis in 2011 which includes photographs and some descriptions of the most common woody seedling species found in the SIGEO plot. It is incredibly useful and should be used for identification in future sampling.

Each year of seedling data gets its own access file, labeled “Seedling2010.accdb” and “Seedling2011.accdb”. These two files are the same, with a few exceptions. For both files, the “SeedlingInfo: Table” contains all of the individual seedling data and the “PlotInfo: Table” contains all of the plot info. All of this information may be all entered through the “SeedlingInfo” subform under the larger PlotInfo group. When using a new seedling tag, be sure to enter it as “new tag” in the notes column. The biggest difference between the 2010 and 2011 file is a “Tag 2010” column in the “Seedling2011.accdb” file. We made the assumption in 2011 that a new stem would not grow more than 10 cm in height in less than a year. This implies that any stems tagged in 2011 were either tagged in 2010 but lost their tag over the winter or were never tagged in the 2010 survey. In fall 2011 we went through all of the maps of newly tagged seedlings to see if we could figure out whether they were tagged in 2010 based on their location. When we could determine it was a newly-tagged stem, we wrote “new tag-individual” in the Notes column. When we could determine it was a previously tagged stem, we changed the tag number in the 2010 database, and added the old tag number in the “Tag 2010” column in the 2011 database.