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# GNA Activities Documentation - East Bradford Riparian Buffer Project

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## GNA Activities Documentation

**Date:** 08/26/2015

**Project Name:** East Bradford Riparian Buffer Project

**Project Objectives:** Survival and height growth on riparian planting along the Brandywine River

**Project Contacts:** East Bradford Township – Mandie Cantlin, Assistant Township Manager  
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### Data collected and/or activity undertaken:

Restoration project started in 2011. Twenty different species were planted by volunteers from East Bradford and West Chester University Tree Campus USA (see data summary 2012 for list of species). A total of 1103 trees were planted. Our initial goal was to evaluate untrained volunteers to see how well the trees survived. The volunteers were given a 10 minute introduction on tree planting. In May of 2012 a survey was completed and we noted alive and dead trees. We noticed a large amount of trees were dead within the first year. Heights were not taken until the September 2012 survey. During September 2012 survey, survival and height measured were noted. Short comments were written to identify if trees were fed on by wildlife and if vegetation was competing with the trees, such as poison ivy, *Toxicodendron radicans*, or Japanese hops *Humulus japonica*.

Hurricane Sandy flooded the study site in October of 2012. Other large storms flooded the study site in August of 2013 and May 2014. The flood in May 2014 was the 3<sup>rd</sup> largest historical flood according to Advanced Hydrologic Prediction Service. A survey was completed to assess the damage after each storm. Our findings were brought to the Green Committee of East Bradford Township in a summary report listing each species dead or alive. A summary document was created and we suggest alternative management techniques. A map was made using google maps to illustrate the five plots.

In the summer of 2014, a noticeable amount of non-native purple loosestrife *Lythrum salicaria* were noted along with native Tall coneflower *Rudbeckia laciniata*.

Summer of 2015, meeting took place to determine the future of this project. All parties want to continue working on project. We were asked to determine species survival per a plot to determine which species are surviving in each plot, so when we go to replant in these plot we will know which species to plant.

We are concern that the maintenance crew are cutting to close to the base and wounding the residual unprotected tree. We recommend visiting the study site every 6 months for basic maintenance needs, which include the following:

1. Pruning dead branches
2. Remarking blue ID numbers
3. Hammer in stakes

4. Remove covers on trees that are taller than cover (only if East Bradford approves)
5. Zip-ties for replacing covers or redirection of trees without covers

**Field tools:** Pruning shears, hammer, zip-ties, blue marker or something to re-identify numbers on tree. Ideas for future tools: Measure height with pole marked at one foot intervals; use clinometer after tree reaches fifteen feet tall. Use caliper to measure diameter until trees reaches two inches in diameter, then change to a DBH tape.

**Frequency of data collection:** Each fall and after large storms a survival survey is completed. All assessments and future suggestion the project are brought to the Green Committee of East Bradford Township.

**Amount of time (approximate # days/year) spent on project:** Project started in 2011. Last update of project was 2014. Mortality rate survey and basic maintenance needs takes about 16-20 hours with a team of two people.

**Any WCU class use associated with project?** This project is not associated to a class, however, WCU Tree Campus USA holds volunteer days to help with the restoration project, undergraduate and/or graduate students can continue with project as an independent research.

**Name of electronic folder containing data archive, project info, etc.:** East Bradford Riparian Buffer Project

**Any hard copies of data, project files, etc? If yes, where are they located?** Black binder with hard copies is in Dr. Hertel's Old Office. Electric copies can be found on GNA flash drive or WCU Digital Commons. You can also find current data under WCU ArcGIS Network file (app1gis) under Gordon Natural Area.

### **Reference**

Advanced Hydrologic Prediction Service web site:

<http://water.weather.gov/ahps2/hydrograph.php?wfo=phi&gage=CDFP1>