

## Green Ash Seed Collection Procedure

### For Seeds Collected in Texas and Sent to Lady Bird Johnson Wildflower Center

**Date:** 11/14/2013

**Description:**

Due to extensive tree mortality across the United States by the Emerald Ash Borer (EAB), ash seeds are being collected for long term storage to preserve genetic resources of the ash species. This has been a combined effort of the Forest Service and other agencies including Lady Bird Johnson Wildflower Center. The overall goal is to obtain 50 trees per ecoregion (regions of like environmental conditions). Collections are to be evenly spaced across an ecoregion. Amounts collected per tree generally range from 2 to 10 quarts (2,000 to 10,000 CC) or 2,500 to 12,500 seeds.

In Texas, the Texas Master Naturalist Chapters are working with the Lady Bird Johnson Center to collect green ash seeds across all ecoregions of the state.

**Pre-Collection Reading:**

To ensure that each collector has an overall understanding of how to identify green ash trees and the steps of seed collection, it is highly recommended that each collector review the pdf file titled that was sent to you via email.

**Ash Seed Collection and Emerald Ash Borer**

If needed, the Power Point version of this file may be obtained from the link:

[http://www.nsl.fs.fed.us/GeneticConservation\\_Ash.html](http://www.nsl.fs.fed.us/GeneticConservation_Ash.html)

**Note – additional specific instructions on labeling and other details for the Texas collections will be found in the Procedure below.**

**Procedure:**

1. Identify your ecoregion.
  - a. See map in Ash Seed Collection pdf or look up in the following link:  
[http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd\\_mp\\_e0100\\_1070z\\_08.pdf](http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_mp_e0100_1070z_08.pdf)  
Example: Brazoria County is located in Ecoregion 34, Western Gulf Coastal Plain
2. Find location(s) of green ash trees in your ecoregion and verify that the species is correct.
  - a. Note - it is very important that seeds are collected from naturally-occurring trees. Seeds from trees that were purchased from a nursery or transplanted from a non-native forest should not be included.
  - b. Refer to **Green Ash Seed Collection** pdf for help in identifying green ash species. For additional help, see links in Reference section or consult field guides or local botanists.
3. Obtain landowner permission to collect seeds from the green ash trees.
  - a. For permission from private landowners, use form in Appendix I: Landowner Permission Form. Fill this form out even if you are the landowner.

- b. For permission to collect on public sites such as city, county or state parks, contact the director or manager of each site to determine if a different form must be completed prior to seed collection.
  - c. For permission to collect on federal land, Federal Form <http://www.fws.gov/forms/3-1383-G.pdf> is required.  
For assistance in completing the form for Texas Mid-Coast Complex in Brazoria County, contact Jennifer Sanchez at [jennifer\\_sanchez@fws.gov](mailto:jennifer_sanchez@fws.gov)
4. Determine if seeds are mature and substantially free of insects.
- a. Follow process and refer to photos in **Green Ash Seed Collection** pdf as needed to determine if seeds are mature and free of damage.
  - b. Do a test cut on seeds any time you collect samaras. A samara is a winged fruit. The seed end of the samara is cylindrical. Make the cut through the cylindrical end, not the flat end.
  - c. Cut one or more fruit (samara) open to make sure
    - i. Seed inside is full sized and firm, not soft or milky before collecting.
    - ii. Seed inside is mature. The seed coat should be a tan color (light- medium brown or dark yellowish in color (not green)). If possible, wait until the cylindrical end of the samara is light brown.
    - iii. There is no insect or weevil damage to the seeds
5. Assemble collection materials.
- a. Large, brown-paper grocery bag - (use for bagging and shipping seeds)
  - b. Tote bin (optional – use for interim seed collection prior to bagging)
  - c. Large white cloth or tarp (optional – use to place seeds on by the tree prior to bagging)
  - d. Garden pruning shears or lopper or pole – (use to snip seed panicles from high branches or to knock seed clusters from tree)
  - e. **Ash Seed Collection Data Form** (see next step)
  - f. Black Marker – (use to label bag)
  - g. Stapler –(use to staple paper bag shut)
  - h. Camera – (use for required photos)
6. Fill out **Ash Seed Collection Data Sheet**.
- a. See Appendix II – **Ash Seed Collection Data Sheet**. Fill out data sheet BEFORE starting to collect seeds. Note – use a different collection data sheet for each tree from which you collect seeds.
  - b. Data Sheet Questions – print neatly using pen
    - i. Date of collection – enter date as mm/dd/yyyy
    - ii. Collector’s name – enter name of person collecting seeds
    - iii. Species – **X** Green
    - iv. Seed lot identification
      - 1. Collector’s ID number – use your initials, e.g. Mary Smith = **MS**

2. Seed lot number – enter **1** for seeds from 1<sup>st</sup> tree you collect, **2** from 2<sup>nd</sup> tree, etc.
- v. State – enter **Texas**
- vi. County – enter the county where the tree is located and the eco-region where this county is found, e.g. **Brazoria/Region 34**
- vii. GPS Coordinates - Use GPS from car, smart phone, camera, or GPS device to determine GPS location. Record latitude, longitude and elevation in meters. Alternatively, if you know the exact address of the site where the ash tree is located, use a web site such as <http://www.mapcoordinates.net/en> or [maps.google.com](http://maps.google.com) to pinpoint the exact coordinates. If you cannot provide the coordinates, complete section of form “Directions to the site if not using GPS.” Example: A Lake Jackson, TX may have coordinates such as  
latitude **N29.040982**  
longitude **W95.427248** (i.e. -95.427248).
- viii. Number of ash trees within 20 – 40 feet of this tree: put **X** to the left of correct response
- ix. Number of other trees within 100 feet of this tree: put **X** to the left of correct response
- x. Distance between this tree and nearest other ash tree from which seeds were collected: put **X** to the left of correct response [only relevant if you are collecting from more than one tree. If you are not collecting from other trees in the immediate area, put an **X** to the left of ‘more than 200 feet.’
- xi. Soil: put an **X** to the left of the soil type  
Example: Brazoria County will general be **X** Clay.
- xii. Site type: put an **X** to the left of the site type. If site is upland, also complete Topography type  
Example: Brazoria County will generally be upland or wetland. If upland is checked for Brazoria County, topography will be **Flat**.
- xiii. Twig: put an **X** to denote that twig has been placed in bag and an **X** to denote that photos have been taken

7. Label the bag.

- a. Create label and attach to bag or write directly on the bag with a permanent marker using the following coding scheme. Note – since collector codes are not assigned to each master naturalist collector, the following coding scheme must be used:  
Example: For Green Ash collected by Mary Smith on Nov. 15<sup>th</sup>, 2013  
[USDA Code for green ash *Fraxinus pensylvanica*] = **FRPE**  
[Collector’s Initials], e.g. **MS** for Mary Smith  
[Date] as yyyyymmdd with no spaces, e.g. **20131115** for Nov. 15, 2013

Code on Bag: **FRPE.MS.20131115**

- b. If you collect from more than one tree on the same date, add a number after your initials.

Example: Mary Smith collected from two trees on Nov. 15, 2013

**Tree #1 code is FRPE.MS1.20131115**

**Tree #2 code is FRPE.MS2.20131115**

8. Collect ash seeds (samaras).
  - a. Follow process and refer to photos in **Green Ash Seed Collection** pdf as needed to determine ways to collect the samaras.
  - b. Wait to collect samaras from the tree until some are already on the ground. If the ground is relatively level, spread a sheet or cover cloth or tarp under the tree and use a long pole to shake the limbs. Most of the samaras that dislodge easily will be just right for long-term storage. Samaras that had fallen to the ground earlier are more likely to be infested with mold or insects. Alternatively, samaras may be collected into a bucket or bin as an intermediate step.
  - c. Sample randomly from the tree. Try not to collect any more than 20% of the total seed clusters on the tree. Collect an estimated 2,500 or more seeds from each tree.
  - d. Inspect the samaras that you have collected for empty or broken fruit, insects, or debris, twigs, leaves, etc. The goal is to ship only healthy samaras. Do not break open the samaras that will be shipped.
  - e. Place healthy fruit in paper bag.
9. Collect twig from tree.
  - a. After picking all the seeds that can be reached, collect a twig sample for identification purposes. To do this, grasp a twig with both hands and break off the end of the twig (about a 6 to 9 inch long piece).
  - b. Pull all the leaves off of the twig and discard. Drop twig in the bag with the seeds you have just collected.
  - c. Mark the data collection sheet that you have put a twig in the bag.
10. Close and staple bag.
  - a. Fold top of bag over once and staple shut in at least three places.
  - b. Bag may be folded over if needed for shipping.
11. Take digital photos.
  - a. Take three digital photos as follows
    - i. Landscape with entire tree in photo - **L**
    - ii. Individual tree close-up with trunk - **P**
    - iii. Material collected (seed) - **S**
  - b. Name photos using same coding scheme as the bag label, but add an additional character to denote each of the three photos. Save as .jpg files
  - c. Using the same example as above, the photo file names will be

**FRPE.MS.20131115L.jpg**  
**FRPE.MS.20131115P.jpg**  
**FRPE.MS.20131115S.jpg**

- d. Mark the data collection sheet that you have taken the photos.
- e. Send images by email attachment to Minnette Marr at Ladybird Johnson Wildflower Center. Her email address is

[mmarr@wildflower.org](mailto:mmarr@wildflower.org)

12. Pack and ship seeds and forms

- a. Pack paper bags of seeds in a cardboard box lined with newspaper or with a small gel pack. MAKE SURE THERE IS NO PLASTIC IN THE BOX!
- b. Put all Landowner Permission Form (or other permission form from federal, state, or county agency) and Ash Seed Data Collection Sheet in box with bag of seeds. If seeds from more than one tree are shipped in same box, make sure that all forms are included in the box.
- c. Write you contact information on a separate sheet of paper (Name, phone number, and email address) and place in box.
- d. Ship to

**Lady Bird Johnson Wildflower Center**  
**c/o Minnette Marr**  
**4801 La Crosse Avenue**  
**Austin, TX 78739**

- e. Ship seeds within one day of collection by USPS parcel post or priority mail. Note – the Master Naturalist Chapter cannot reimburse for shipping the seeds.

**References:**

[http://www.nsl.fs.fed.us/GeneticConservation\\_Ash.html](http://www.nsl.fs.fed.us/GeneticConservation_Ash.html)  
[http://treedoctor.anr.msu.edu/ash/ashtree\\_id.html](http://treedoctor.anr.msu.edu/ash/ashtree_id.html)  
<http://www.nps.gov/plants/sos/>

<b>Date</b>	<b>Revision</b>	<b>Revised by Name/Chapter</b>	<b>Changes</b>
11/14/2013	1	Peggy Romfh/TMN-COT	Original procedure – input from Minnette Marr and Forestry Service protocol

**Appendix I: Landowner Permission Form**

**LANDOWNER PERMISSION FOR NATIVE PLANT SEED COLLECTION**

**1. Permission for volunteer seed collector:**

I hereby grant approval for \_\_\_\_\_  
to enter property I own or manage to collect seeds of wild populations of native species.  
In most cases, a seed collection will involve three or four trips to the property. The first trip  
involves scouting for the target species and documenting the location and associated species.  
Subsequent trips involve monitoring development of and collecting fruit.

\_\_\_\_\_  
(Landowner or manager)

\_\_\_\_\_  
(Date)

**2. Notification:** I request \_\_\_\_\_ days notice before a scouting/monitoring/collecting visit.

\_\_\_\_\_  
(Landowner or manager)

\_\_\_\_\_  
(Date)

**3. Name and Address**

\_\_\_\_\_  
(Name of Landowner or Manager)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City, State, Zip)

\_\_\_\_\_  
(Phone)

\_\_\_\_\_  
(Email Address)

**4. Tract**

\_\_\_\_\_  
(Name of Natural Area)

\_\_\_\_\_  
(County)

\_\_\_\_\_  
(Acreage)

Appendix II – Ash Seed Collection Data Sheet

### Ash Seed Collection Data Sheet

Date of collection: \_\_\_\_\_

Collector's name: \_\_\_\_\_

Species (check one):  Black  Blue  
 Green  Pumpkin  White

Seed Lot Identification

Collector's ID number \_\_\_\_\_

Seed lot number \_\_\_\_\_

State \_\_\_\_\_ County \_\_\_\_\_

GPS Coordinates: lat \_\_\_\_\_ long \_\_\_\_\_ elevation \_\_\_\_\_ meters

Decimal Degree Format

Accuracy  $\pm$  \_\_\_\_\_ ft

Number of ash trees within 20 to 40 feet of this tree:  0,  1,  2 to 4,  5 or more

Number of other trees that are not ash within 100 feet this tree:  0,  1,  2,  4 or more

Distance between this tree and nearest other ash tree from which seeds were collected.  
 100 feet (minimum),  200 feet,  more than 200 feet

Soil:  Rocky  Gravel  Sand  Loam  Clay

Site type:  upland  wetland  aquatic.

Complete only for upland sites

Topography:  Flat  Slope (Aspect:  N  S  E  W)

Directions to the site if not using GPS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Twig sample has been put in bag  Trunk and whole tree photos have been taken \_\_\_\_\_