

THE U.S. FOREST SERVICE NATIONAL SEED LABORATORY AND *FRAXINUS* EX SITU GENETIC CONSERVATION

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The U.S. Forest Service's National Seed Laboratory (NSL) has as part of its mission the conservation of genetic resources for the Forest Service and Forest Service cooperators through long-term seed storage. The Forest Service recognizes ash as one of four priority species for genetic conservation. The NSL is in charge of the Forest Service ash preservation plan. NSL cooperates with the Natural Resources Conservation Service (NRCS) Rose Lake Plant Materials Center and the Agricultural Research Service North Central Plant Introduction Station. The main activities of the NSL are described as follows:

Planning – Collections were principally made in areas where emerald ash borer (EAB) was active or areas near active EAB infestations. Some collections have also been made to provide a wider geographic spread of the genetic material for research. As a general rule of thumb, seeds are collected from 50 individual mother trees evenly spread over an Omernik level III ecoregion. Every ash species existing in an ecoregion is collected. In 2010 Geographic Information Systems (GIS) mapping will start.

Cooperative Collections – The NSL staff was able to make some collections directly, but many more seeds were gathered by cooperators. Many persons are in the right place to collect seeds, and the program tries to encourage collection by providing training and supplies. It was

found that without training, volunteers had difficulty in making any collections at all. Cooperators are contacted through a variety of avenues. Seeds collected through the NRCS Rose Lake Plant Materials Center are tested, stored, and distributed by the NSL.

Documenting collections – To the fullest extent possible, the following information is taken as a minimum on every seed tree: Name of seed collector, date of collection, GIS coordinates (or other locator information), a 6- to 9-inch twig sample with a healthy terminal bud, a leaf, and a photo of both the bark and the whole tree or stand in which it was growing.

Handling seed collections – All seed lots are given a cold treatment for at least 2 weeks to force the exit of seed weevils. This procedure makes removal of weevil-damaged seeds easier in the seed-cleaning equipment. Then the seed lots are dried thoroughly with air at 30-percent relative humidity, and empty seeds and trash are removed. X-ray and excised embryo tests are done to ensure that only seed lots of acceptable viability are placed in freezer storage. A security backup sample of each lot is placed at the National Center for Genetic Resource Preservation in Fort Collins, CO. All seed lots are listed in the Genetic Resource Information Network and made available for research and breeding projects when researchers contact the NSL directly.