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**Wild Virginia Position Paper:**
**REMEDIATION of NON-NATIVE INVASIVE PLANTS**
January 8, 2013

## Background Information

Non-Native Invasive Plants (NNIP) are a severe threat to natural areas resulting in loss of biodiversity, increasing exposure of native species to disease, and degradation of the ecosystem. Early recognition and removal of NNIP is extremely important to maintenance of intact ecosystems. The George Washington National Forest (GWNF) has not been spared from the threat of NNIP. As public use of the GWNF increases, the area covered by NNIP increases also. It is never too late to begin reducing the NNIP which threaten any natural area.

In the summer of 2009, Wild Virginia employed two student interns to survey the major trail systems of Ramsey's Draft Wilderness Area in the GWNF. Based on the results from that survey, the decision was made to begin control efforts with garlic mustard (*Alliaria petiolata*) removal every March for five years, beginning in 2011. Garlic mustard was the species chosen for two reasons:

First, it was found in abundance only in one site just before entering the Wilderness on Ramsey's Draft. With the number of hikers using the trail, it is only a matter of time before garlic mustard seeds are tracked into the Wilderness area. Second, it is easily removed by hand and makes for a very good public outreach project once a year.

After two successful years of removing garlic mustard as part of a five year plan, Wild Virginia wanted to add another work day in Ramsey's Draft, in the fall of the year, targeting other NNIP identified in the 2009 study. A plan was developed to remove some woody species manually, both inside and outside of the wilderness area, using only shovels to dig them up. The plan was not implemented because the U.S. Forest Service needed to perform an archeological study of the proposed work areas before any ground disturbance could take place. This has prompted Wild Virginia to clearly define what kind of work we are willing to do concerning NNIP removal in the GWNF.

## Position

First, a strategy for removal needs to be determined based upon the biology of the plant to be removed. The best removal practice will determine the season, the method of removal, and how many times the area needs to be remediated. Mechanical means are the most desirable methods but are not always the

best method of removal. For example, cutting *Ailanthus altissima* (Tree of Heaven) causes suckers to grow profusely, increasing the number of individuals and making the problem worse.

If mechanical means alone will not accomplish removal, then an herbicide, possibly in conjunction with mechanical methods is indicated. When herbicide application is the best removal practice, specific targeted herbicide application is the method of choice over broadcast spraying of herbicide. Tree of Heaven that is mechanically cut, with the stump treated immediately with herbicide, is an effective method of control.

The least toxic product should be the herbicide of choice. Surfactants present in some herbicide formulations can be very detrimental to aquatic and soil life so great care must be exercised. At all times, the concept that the GWNF is a watershed and therefore must be maintained in the most pristine condition must be the guiding principle.

Second, if mechanical methods are used, the site should be returned as closely as possible to initial, undisturbed conditions. Disturbance is what usually allows NNIP to become established in the first place. Moving leaf litter and disrupting soil exposes seeds present in the soil to conditions which might favor germination. Exposed soil also makes a good substrate for new NNIP to be introduced. If the NNIP targeted for removal has already set viable seeds, the plants should be bagged and removed from the forest.

Third, follow up visits to the area should be done to determine effectiveness of the remediation method. Depending on the species targeted to be removed, multiple site visits may need to be scheduled until the seed bed is depleted or there is no regrowth.

**Summary**

NNIP pose a severe threat to biodiversity in the GWNF. When control methods for NNIP are practical and can be effective long term, Wild Virginia may choose to implement them. When working to control NNIP:

- Thorough species-specific strategies must be developed
- Mechanical treatments only are preferred when possible
- When herbicide use is necessary
    - Very targeted applications will be used (i.e., broadcast spraying will not be used)
    - The least toxic products possible will be used
- After treatment, sites will be returned as close as possible to the original, undisturbed conditions in order to minimize the probability of NNIP returning
- Follow up visits for multiple years should be conducted to evaluate the effectiveness of the treatments

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