

**A Success Story:  
Early Detection and Quick Elimination of a New Invader in Southeast Alaska**

**Mandy Tu & Barry Meyers-Rice, November 2001  
The Nature Conservancy's Wildland Invasive Species Program**

**The Setting**

Southeast Alaska is home to the cities of Juneau, Sitka, and Ketchikan, over 1,000 islands of the Alexander Archipelago, and to the Tongass National Forest, which at 17 million acres (7 million hectares) is the largest national forest in the U.S. The Tongass is rich in native biodiversity and encompasses forests, estuaries, peatlands, scrublands, large networks of islands, valley bottoms, rugged mountain slopes and ice fields. It also contains the largest contiguous expanse of temperate rain forest in the world and is home to more than 300 native wildlife species, including grizzly bears, moose, bald eagles, and wild salmon.

**The Invader – Garlic mustard (*Alliaria petiolata* (M. Bieb.) Cavara & Grande)**

Garlic mustard is a highly competitive and aggressive non-native herbaceous plant that forms dense populations in the understory of deciduous forests, forest edges, hedgerows, shaded roadsides, and riparian and urban areas in the northeastern and north-central U.S and adjacent Canada. It can occur in areas with shade or full sun, and in a variety of soil conditions. Once established, garlic mustard can completely dominate and displace native plants in the rich herbaceous understory layer, which is vital habitat for many indigenous plant, animal, and insect species.

Garlic mustard is native to northern Europe, and was first collected in the U.S. in New York in 1868 (Nuzzo 2000). It is now present in 34 states in the U.S. and 4 provinces in Canada. Northeastern and the midwestern states report the worst infestations (USDA-NRCS 2001) but garlic mustard is also present in Oregon, Washington State, and in British Columbia. Until now, however, there was no documented report of garlic mustard in Alaska (A. Denton, pers. comm.; E. Haber, pers. comm.; S. Reichard, pers. comm.).

**A Success Story**

Phil Johnson is a microcomputer specialist and naturalist in Juneau, Alaska. One day in the spring of 2001, as he walked from his car to his office building, he noticed a plant he had never seen before growing in the landscaping borders of his parking lot. Phil knew the natural history of Alaska well enough to recognize that this plant was not native. It sparked his curiosity immediately. He called a local botanist-author--Carol Biggs--who recognized the plant as garlic mustard. Phil then did some web searching and found The Nature Conservancy's Weeds-on-the-Web web site, which documented this plant's invasive qualities. Phil contacted The Nature Conservancy's Associate Scientist, Dr. Barry Meyers-Rice. At Barry's encouragement, Phil carefully removed the entire plant from the site and sent in the pressed and dried specimen to the University of California Davis Herbarium, where Dr. Ellen Dean, the herbarium curator, positively identified it as garlic mustard (*Alliaria petiolata*). A second expert, Dr. Robert Preston,

was asked to independently identify the plant. His diagnosis was the same: garlic mustard!

Due to Phil Johnson's early detection of the newly established garlic mustard, followed by his quick actions to eliminate it, this aggressive invader may no longer be an immediate threat to the biodiversity of southeast Alaska. Phil is now vigilantly monitoring this site periodically for any surviving garlic mustard plants. Once garlic mustard becomes established and begins to spread it is very difficult to control. It spreads rapidly by seed and displaces native herbaceous species in the forest understory. The recovery of heavily infested communities following garlic mustard removal, requires intensive replanting and restoration efforts (Nuzzo 2000).

Phil is not resting as a result of his success with garlic mustard---other invasive plants are still making headway into Alaska. Phil is going to take on Japanese knotweed (*Polygonum cuspidatum*) next. This non-native plant aggressively invades and can dominate coastal and riparian habitats in the Pacific Northwest from northern California to southern Alaska. He is also worried about a non-native forget-me-not, because it has become established in the wild and may be displacing Alaska's state flower, the native forget-me-not, *Myosotis alpestris*.

### More Information

For more information, contact Barry Meyers-Rice, Associate Scientist of TNC's Wildland Invasive Species Program at 530-754-8891 or at bamrice@ucdavis.edu. A review by Vicki Nuzzo with more detailed information about garlic mustard, including a description of its diagnostic characteristics, range, ecology, and methods for its control, is available on the TNC's Wildland Invasive Species Program Weeds-on-the-Web site (<http://tncweeds.ucdavis.edu/esadocs/documnts/allipet.html>).

### References

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