

Developing a potential restoration strategy for *Geum peckii*, Eastern Mountain Avens

Sarah Fancy, Robin Browne, Juan Carlos Lopez, Diane LaRue

Geum peckii is a small herbaceous plant found in only two places globally, Brier Island, Digby County NS and mountainous regions of New Hampshire. In Canada it is listed as an endangered species with the Species At Risk Act (SARA) and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The 2010 COSEWIC report cites a population decline at 64% since 1986 with fewer than 9000 mature individuals in Nova Scotia. *G. peckii* is one of the species that is protected in the seed bank at the K.C. Irving Centre. To ensure that seeds are viable in long term storage they must be regularly tested. This trial is to validate the Seed Bank and to test a “disaster plan” in the event the species continues to decline.

Project Components:

- Establish a viable Tissue Culture population from Seed Bank material collected on Brier island
- Understand the Arbuscular Mycorrhizal Fungal (AMF) associations and how they might influence plant growth
- Outplant and test the Tissue Culture population in the field and greenhouse to see if mycorrhizal inocula helps the plants to better establish



G. peckii and its natural habitat on Brier Island, NS.



Tissue Culture

A method of plant propagation done under sterile laboratory conditions. Plants grow in closed environments on a prepared growth medium. This method works well to quickly multiply a population.

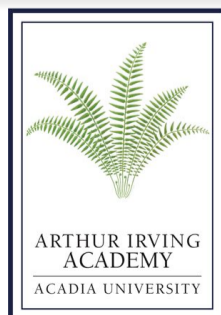
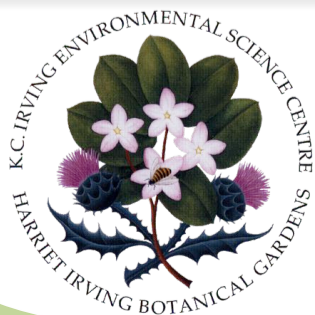
AMF

Endomycorrhizae, such as AMF, is found in 80% of land plants. The fungus forms a mutualistic relationship with plant roots.

The fungus helps the plant to find nutrients while the plant provides carbohydrates to the fungus.



Outplanting trials: 30 plants have been selected to grow in the phytotron. They were outplanted from tissue culture into soil and received a treatment from either a commercial mycorrhizal inoculum, a prepared inoculum from Brier Island soil, or were left sterile. Differences in growth and vigor will be measured over the following weeks. The same experiment is also taking place in the field on Long Island, Digby County with the support of the Nova Scotia Department of Natural Resources.



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