

Final Report for NPS Cooperative Agreement, H120004001

Task Agreement J1434070082

Project: Bulking of Mycorrhizal Fungi Associated with Understory Vegetation Alpine Ecosystems

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Mycorrhizal fungi form a symbiosis with most plants, and can affect host plant establishment and growth, plant community composition, and ecosystem structure and function. Restoration of heavily impacted soils can be enhanced in the presence of mycorrhizal fungi, by enhancing plant growth, soil properties and soil food webs.

The bulking of mycorrhizal fungi from the Lunch Creek soils occurred by growing Sudan grass (*Sorghum sudanese*) in the greenhouse in pots filled with a mixture of soils from Lunch Creek and sterilized greenhouse mixture. After 4 months of growth, pots were allowed to dry so that plants would senesce and mycorrhizal fungi would sporulate.

The bulked soil can be used in mycorrhizal inoculum beds built outside of the GNP Native Plant Nursery, or can be added directly to conetainers used for growing seedlings to transplant at the site.

Protocols for developing mycorrhizal inoculum beds were developed so that GNP can generate customized mycorrhizal inoculum for restoration projects throughout the park.

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