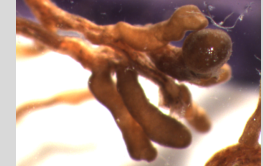
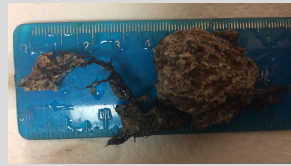
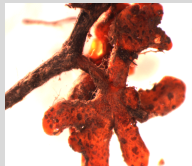


USING MYCORRHIZAL FUNGI IN RESTORATION PROJECTS OF THE SOUTHWESTERN US



2020 RIPARIAN RESTORATION CONFERENCE
GRAND JUNCTION • COLORADO • USA • FEBRUARY 6, 2020



Photos: Lisa Markovchick & Jamie Yazzie

General Background

1. Symbiotic mycorrhizal fungi can assist vegetation with nutrition, drought resilience, pests, disease, and more - but our knowledge here is still in its infancy.
2. Co-adaptations between soil, fungi, and plants can occur locally.
3. Anthropogenic actions, invasive plant species, and even well-intentioned management actions can impact the mycorrhizal community at a site.
4. Restoring that mycorrhizal community alongside the vegetation community may be critical to restoration success.
5. Commercially-available mycorrhizal inoculum may target mycorrhizal fungi that are not site or vegetation-appropriate and/or contain mostly fertilizer.

Obtaining and Using Mycorrhizal Inoculum

1. The easiest and cheapest method of inoculating is using bulk-soil. Bulk soil can be obtained from a nearby, more pristine site that lacks some of the invasive plant, or other potentially disruptive, legacies. Soil can be bulked-up in the greenhouse with appropriate plants, to increase soil fungi (do not cover or drown the bins!). Soil can be applied prior to, during, or after planting in the field.
2. If specific mycorrhizal fungi taxa are known to be critical to success, it is also possible to specifically culture those fungi in a lab setting. Once cultured, these fungi can be applied prior to, during, or after planting in the field.

Things to Consider Prior to Implementation

1. What nearby sites have similar vegetation, similar soil, but less invasive vegetation and other intrusions that might have reduced the soil community?
2. Do I have a good match between the soil at the site, the plant source, and the mycorrhizal source?
3. Do I have permission to dig?
4. When might be the best time to apply the inoculum?
5. What management actions will be taken at the restoration site that might affect the mycorrhizal community (e.g. herbicide application, fuel reduction, etc.)? Is it possible to apply or re-apply mycorrhizal inoculum after these actions are taken?

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Thinking about including mycorrhizas in your restoration project?

Let us know! Tell us how we can help!

- Catherine A. Gehring, Ph.D.: Catherine.Gehring@nau.edu
- Julia Hull: julia.b.hull@gmail.com
- Lisa Markovchick, M.S.: Lisa_Markovchick@nau.edu

