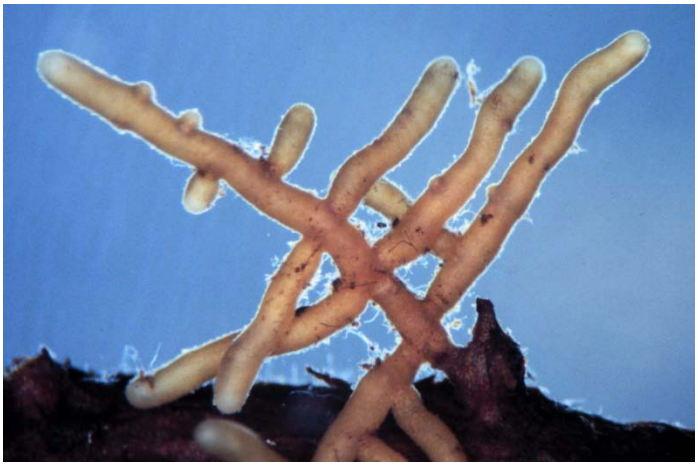
RESEARCH SEMINAR SERIES

Specificity of ectomycorrhizal fungal communities with local populations of Douglas-fir and implications for assisted migration

Marty Kranabetter, Research Soil Scientist, Coast Region



Abstract

Recent studies in community genetics have proposed that trees, as a foundation species, greatly influence other forest biota through heritable traits (such as leaf tannin concentrations), creating a genetic basis for many ecosystem services. For ectomycorrhizal fungi (EMF), the genetics of tree populations can be especially important because these fungal symbionts have coevolved to some degree with their hosts via selection pressures reflecting local site conditions. Moving tree populations to match anticipated future climates, as has been widely proposed as a climate change adaptation strategy, may therefore disrupt the geographically-based, heritable association suggested to exist between host trees and EMF communities. In this presentation I explore the issue of specificity between local populations of trees and their EMF communities through a 40 year-old Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*) reciprocal transplant field trial using four provenances from contrasting coastal climates in southwestern British Columbia. I will describe the nature of site-adapted EMF communities in existing forests, and whether maladapted communities might consequently arise through assisted migration of trees. In addition to the host-mycorrhizal implications of assisted migration, I will explore the possible vulnerability of EMF fungi to rapid climate change through migration pressures on species to match future forest conditions.

Bio

Marty Kranabetter is a professional Agrologist with a M. Sc. in Soil Science and a PhD in Forest Science. He has spent almost 20 years in soils research, recently transferring to the Coast Forest Region from the Skeena-Stikine satellite office of the Northern Forest Region. Marty has studied many aspects of ectomycorrhizal ecology related to forest harvesting disturbances and fungal succession, as well as soil productivity and conservation issues, foliar nutrition and soil nitrogen dynamics, site carbon storage, hypermaritime soils of the northcoast, soils of dry coastal forest ecosystems, and patterns in natural abundances of ^{15}N.

When: August 16th, 2011 1:30 pm to 2:30 pm
Location: Victoria: Room 502, 727 Fisgard Street
Conference call: 1-877-353-9184 Conference ID: 7190434
Common meeting rooms have been reserved in the following FLNRO locations:
Kamloops: Juniper room, 441 Columbia Street, Thompson Okanagan Regional Office
Williams Lake: Williams Lake Room, 640 Borland Street, Cariboo Regional Office
Smithers: Driftwood Room, 3333 Tatlow Road, Skeena-Stikine District Office
Nanaimo: Birch Room at 2100 Labieux Rd. Coast Regional Office
A PowerPoint presentation will be available at http://www.for.gov.bc.ca/hre/research_seminars on the day of the presentation.
For further information, contact Ken Soneff at: Ken.Soneff@gov.bc.ca or 250 828-4164.