



Les Colloques du **SCF-CFL**

Service canadien des forêts - Centre de foresterie des Laurentides



En anglais seulement

Le jeudi 28 octobre 2010

10 h : café et échanges informels

de 10 h 30 à 12 h : conférence

Salle Lionel-Davault

MYCORRHIZAS: EVIDENCE FOR THEIR KEY ROLE IN SUSTAINABLE FOREST MANAGEMENT

par :

Suzanne Simard

Professeur,

University of British Columbia

All tree species in Canada form obligate symbiotic associations with mycorrhizal fungi, where the fungi provide trees with nutrients and water acquired from soil in return for photosynthate carbon. Without their fungal symbionts, the trees cannot survive or grow; without the trees, the fungi either die or switch to a saprotrophic energy strategy. Thus, mycorrhizal fungi are foundational to forest regeneration and productivity; they also play a crucial role in linking the aboveground with the belowground components of the terrestrial carbon cycle. Our recent research in the temperate region of western Canada provides intriguing evidence for the crucial role of mycorrhizal fungi in these processes, including self-regeneration, organization and stability of old-growth forest ecosystems. We have found that seedlings have dramatically reduced regeneration rates when isolated from the mycorrhizal networks of old trees, particularly in drought-stressed climates. Moreover, we have found management practices that remove key features of ecosystems (including hub trees, deciduous trees, or forest floor) can lead to a collapse of the native mycorrhizal community and failure of forest regeneration. These discoveries are important in the design of sustainable forest management practices. They will also be instrumental in conservation of our forests under increasingly stressful climatic conditions, and in assisting migration of tree species into new habitats with global climate change.

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