# UNDERSTORY VEGETATIVE RESPONSE FOLLOWING HIGH-INTENSITY CROWN FIRES IN JACK PINE–BLACK SPRUCE STANDS

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## ABSTRACT

The understory vegetation response is one of the post-fire effects studies being carried out as part of the International Crown Fire Modelling Experiment (ICFME), Northwest Territories. In each of the main 150 × 150-m ICFME plots, fifteen 1 × 1-m quadrats, further subdivided into quarters (i.e., $n$ = 60) are being used to characterize the species composition, frequency, cover, and prominence of the trees, shrubs, herbs, grasses, sedges, mosses, and lichens present within the experimental plots before and subsequently after burning in order to judge the ecosystem response to high-intensity crown fires.

Pre- and post-burn sampling has been undertaken in late August–early September. For example, the data collected on ICFME Plot 6, burnt on 6 July 1997, indicated that the dominant understory vegetation prior to fire consisted of red pixie-cup (*Cladonia borealis*), feathermoss (*Pleurozium schreberi*), bunchberry (*Cornus canadensis*), marsh reed grass (*Calamagrostis canadensis*), reindeer lichen (*Cladina mitis*), and kinnikinnick (*Arctostaphylos uva-ursi*). Two years after the fire (1998), the principal understory vegetation consisted of marsh reed grass, jack pine (*Pinus banksiana*) seedlings, Bicknell's geranium (*Geranium bicknellii*), broom moss (*Dicranum scoparium*), kinnikinnick, American dragonhead (*Dracocephalum parviflorum*), and willows (*Salix* spp.). Four years after the fire (2000), the number of species increased and there was a slight change in the understory composition for the following species: purple horn-tailed moss (*Ceratodon purpureus*), sedges (*Carex* spp.), marsh reed grass, kinnikinnick, common chickweed (*Stellaria media*), willows, jack pine seedlings, fireweed (*Epilobium angustifolium*), black spruce (*Picea mariana*) seedlings, prickly rose (*Rosa acicularis*), cinquefoil (*Potentilla* spp.), and northern bedstraw (*Galium boreale*).

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