Tree Sensitivity to Climate Change

Presented by the Canadian Forest Service (CFS)

Sensitivity Indices

Researchers have created indices of tree species sensitivity for three key climate change stressors:

DROUGHT

MIGRATION

FIRE

Increased frequency of drought events

Shifts in climatically suitable habitat

Increased fire intensity and frequency



Each index ranks the relative ability of the most common tree species in Eastern Canada to cope with these climate stressors.

The sensitivity indices were developed based on the various "strategies" a species can use in response to climate change. An index value was attributed to each species based on its relative ability to use a given strategy when faced with drought, rapid shifts in suitable climatic conditions, and fire.

Strategies used by tree species:

DROUGHT



Drought avoidance



Resistance to drought-induced damage



Population recovery after mortality

MIGRATION



Reproductive capacity



Dispersal ability



Colonization potential

FIRE



Protection from burn injury



Population recovery by vegetative propagation



Population recovery by seed



Adaptation to shorter fire intervals

The indices have been packaged into an interactive data visualization tool, where you can filter searches by tree type (conifers or hardwoods), species, and sensitivity values.

