

Charles Van Wagner

“The Face of Fire Research”



Charles Van Wagner started working at the Petawawa when it was still known as the Petawawa Forest Experiment Station (1918-1979) and later Petawawa National Forestry Institute (1979-1995). Charles looks back on his time in Petawawa as ‘marvellous’. “It was a great place to work, with a great reputation, and I am proud of everything that we achieved.”

His research led to, among other things, a system that is used all over Canada and around the world: the Canadian Forest Fire Danger Rating System. The system comprises two sub-systems: 1) The Forest Fire Danger Rating System, which yields six moisture codes and indexes based on weather readings only, taken daily at noon; and 2) the Forest Fire Behaviour Predictor (FFBP) System, which yields quantitative estimations of fire spread rate and frontal intensity for many specific kinds of forest, and is based on components of the Fire Weather Index System.

Charles and his team ran over 100 experimental fires in different, but controlled and well monitored circumstances, ranging from gentle surface fires to full-fledged crown fires. “Out of all this came two things: one, the basis for the use of gentle prescribed fire in the management of red and white pine forest to promote natural regeneration; and two, contribution to the forest fire behaviour prediction database and theory,” explains Charles Van Wagner.

“We are in favour of using controlled, small fires as part of management plans to improve natural regeneration,” says Charles. In fact, Parks Canada reintroduced fire in parks where many decades of fire suppression has resulted in an over-mature forest.

One of Charles’s best known experiments was on Christmas trees. “If you keep the butt of a Christmas tree in water, you need as much as a blowtorch to set the thing on fire. If you don’t provide water, you better step back when a match comes too close to the tree,” says Charles. Ever since this study was published, newspapers will add to this day, reminders that you should keep your tree in water.

“It was with good reason that in 1978 The Globe and Mail called the Petawawa National Forest Institute the Flagship of the Canadian Forest Service” says Charles Van Wagner. And the legacy of these forests continues with a new generation of scientists conducting their research in these living laboratories.



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