

The Decline of Cottonwood Poplars in the Prairies – Cathy Linowski



Cottonwood poplar, Police Point Park, Medicine Hat, AB

With deeply gouged bark echoing the coulees and draws of the river bluffs around them, cottonwood poplars rise like giants from the banks of rivers, streams and floodplains. Growing upwards of 100 feet (30.5 m) tall with canopy diameters of 75 feet (23 m) and trunks often in excess of 7 feet (2.5 m) these fast growing trees have the remarkable ability to increase 6 feet (2 m) in height per year when moisture conditions are optimum. Massive trees mean massive roots and cottonwoods are firmly anchored down by roots that often extend out from the trunk one and a half times the height of the tree. To put this into perspective a 60 foot (18 m) tall tree would have roots 90 feet (27 m) from the trunk. For this

reason cottonwood poplars are NOT recommended to plant near foundations, sewer lines or septic fields. Likewise the large and heavy limbs weighing upwards of 300 pounds (136 kg) can create significant damage if they break off during wind storms. Trees may live to be up to 300 years in age but more frequently start to die back when they approach 100 years.

The name cottonwood comes from the fluffy seed covering produced by female trees and is designed to help the seeds to fly through the air but also to float if they land in water. Cottonwood poplars have evolved a very unique ability to time the release of their seed to flooding events. As flood waters recede the floating seeds quickly germinate in the newly exposed mud and produce young seedling trees. This important relationship between production of new seedling trees and floods is probably one of the major cause resulting in the decline of cottonwood poplars across the prairies. While practices such as urban development have impacted the cottonwood forests in Alberta it is the construction of structures such as the Oldman River dam that reduce the number and time of flooding events in flood plain areas that have been most significant.



Cottonwood forest, Lions Park, Medicine Hat, AB

Regulated river flows limits the production of new seedlings to replace old trees as they reach their maximum life span. Construction of berms to protect communities from future floods such as what has recently been done in Medicine Hat, cuts off the cottonwood forest from the conditions required to rejuvenate and replace the trees. Ultimately this means that these isolated cottonwood forests will die off.

What is the value of these giant trees in the prairie landscape? Cottonwood poplar forests have one of the highest biodiversity levels of ecosystems found in the prairies. The giant roots of the trees anchor the ground when flooding events occur and the canopy of leaves provides cooling and reduction in wind erosion along with contributing organic nutrients as they decompose. From my perspective there is

something very magical when you follow a path through a cottonwood forest in the fall and your feet rustle through a thick carpet of golden leaves dappled with sunlight that filters to the ground.

Are you interested in visiting some outstanding examples of cottonwoods in the SEAWA watershed? Do you know of some special trees of note? Within Medicine Hat there are several designated heritage trees including the Hargrave Plains cottonwood tree at 110 3rd St NE in Riverside planted in 1888 and a number of 200-300 year old trees in Police Point Park. For more information about these heritage trees visit: <https://www.medicinehat.ca/home/showdocument?id=11714>

Submitted by Cathy Linowski, SEAWA member