Birch Basics

## Environmental Education Activity

Resource Sheet

Paper Birch (Betula papyrifera spp.) is arguably the most important tree in the boreal forest. It is a prolific, resilient tree whose range extends from the Pacific to Atlantic to the near Arctic tree line. Whereas Sugar Maples (acer saccarum) grow only in eastern regions, Canadians from coast, to coast to almost co-habitat with Paper Birch trees.

Humans have countless uses for birch, from fuel wood to furniture to food. Indeed, birch sap harvesting is a traditional Aboriginal technology practiced by many First Nations, including those in the Northwest Territories. As a seasonal activity, birch sap harvesting represents one of *Dene Kede’s* key cultural experiences inasmuch as it grounds concepts, skills and attitudes of a classroom in a practical, traditionally-relevant, outdoor activity.

Some critical facts about birch trees and sap production may prove useful:

* Sap flow is in the spring of the year, when day time temperatures are consistently above freezing, and the ground begins to thaw. While there is still much debate about the mechanisms of sap transport, it is sure bet that sugars photosynthesized during the previous summer and fall are stored in the trees roots, in watery sap up the trunk and towards the crown when conditions become warm. The sugars help to fuel the growth of the new season’s leaves.
* There are a variety of birth species in Canada. In Western Canada, indigenous birch trees (as opposed to indigenous shrubs- Dwarf Birch, Bog Birch) are known as Paper Birch, White Birch, Canoe Birch, or Alaska Birch. There is some debate whether Alaska Birch is a sub-species of Paper Birch or a species in its own right. For our purposes all tree can be harvested for sap.
* Birch sap contains on average 1% sugar. The sugars are principally fructose and glucose, as opposed to maples’ high concentration sucrose. Fructose tends to burn at lower temperatures than sucrose, meaning that care must be taken not to scorch birch sap during evaporation. Moreover, fructose has a lower tendency to crystallize, resulting in a thinner syrup than maple.
* Birch is reportedly more acidic than Maple sap. For this reason, it recommended to avoid metal equipment, wherever possible in the harvesting and production of birch syrup, to avoid imparting metallic flavours.
* Invariably, questions arise about whether sap harvesting harms the tree. Seemingly, exposure to infection poses a greater risk to health than sap taking. For this reason, care must be taken when taping and plugging holes. Only sterilized drill bits, spigots and plugs should be used.
* Humans aren’t the only species to tap birth trees in the spring. Yellow-billed sap suckers can often be seen boring holes in birch trunks and eating the insects that are attracted to the sweet dripping liquid. Look for sap-sucker perforations on birch trunks in the southerly regions of the NWT and keep your eyes peeled for the boreal bird during the spring run.

# Additional Resources

## Web Resources

* <https://scholarworks.alaska.edu/bitstream/handle/11122/2696/MP_04_02.pdf?sequence=1> **Birch: White Gold in the Boreal Forest**- this PDF is an invaluable resource for first-time birch harvesters. While the information relates specifically to Alaska, the document contains recipes, best practice guidelines and suggestions for further reading.
* <http://birchboy.com/> A comprehensive site providing information on birch syrup production, history, commercial standards and recipes. Also, a retail source for birch syrup products

## Books

* **K’i tu/Birch Water**, Brent Kaulback & students of chief sunrise Education Centre. South Slave District Education Authority.
* **Backyard Sugarin’**, Rink Mann. Woodstock Vermont: Countryman Press. 1976