



Urban Forest Renewal in Waskesiu

Prince Albert National Park Backgrounder

September, 2011



Introduction

The Waskesiu Community Council (the Council) and Prince Albert National Park are working together to ensure the townsite maintains a canopy of mature white spruce trees, while transitioning to a more diverse and resilient forest made up of a variety of tree species and ages. Managing white spruce trees is the primary objective of the strategy, and is of prime importance to residents and visitors alike.

Protecting Waskesiu's White Spruce Forest

Prince Albert National Park and the Council recognize that Waskesiu is a destination in itself and that the health of its white spruce forest is key to the enjoyment of visitors to the town. The spruce forest and old mature trees are an iconic look for the community of Waskesiu.

Prince Albert National Park and the Council are committed to implementing the Waskesiu Urban Reforestation Plan and continuing the Spruce Health Monitoring program.

Implementing the Plan: Actions in 2011

Planting young trees

- Planting of a minimum of 30 trees that are 3 m (10 feet) high,
- Arbour Day planting and fencing of a mix of deciduous and conifer trees 1-2 m (3-5 ft) high,

- Planting of spruce seedlings in nursery at old compound site.

Hazardous tree assessment and removal

- Prince Albert National Park monitors white spruce trees and removes any found on Park lands that are hazardous to visitor safety.
- Residents are responsible for removing hazardous trees on their leaseholds.
- Prince Albert National Park carries out a hazardous tree assessment on leaseholds upon request.

Insect Control

- Pesticides, which include biological control agents such as Btk (described below), can be used by residents to control insects on leasehold properties providing they are licensed for residential or household use in Saskatchewan and are used in accordance with manufacturers' instructions.
- All lessees are encouraged to use all products according to package directions, and to consider the needs of their neighbours and park lands when deciding when and how to apply the products.
- Btk (*Bacillus thuringiensis* subspecies *kurstaki*) is a bacterium found naturally in soils. For approximately 30 years it has been used successfully world-wide as a biological pest control agent to combat a variety of forestry and agricultural insect pests. Btk is a naturally-occurring, widely-distributed organism in the



environment. Most people will be exposed to this biological agent during their lifetime, even if they never come in contact with a formulated product.

- Btk only becomes toxic in the alkaline gut of specific butterfly and moth larvae (caterpillar stage). It is not specific to spruce budworm, and targets any feeding caterpillars. It does not affect adult moths and butterflies, other insects, honeybees, fish, birds or mammals. There are no groundwater contamination concerns as Btk does not percolate through the soil beyond 25 cm.
- Prince Albert National Park works with commercial lessees wishing to control insects. Lessees may be required to submit an integrated pest management plan.

Monitoring and reporting

- Prince Albert National Park and the Council revisit the Waskesiu Urban Reforestation Plan on a yearly basis and invite feedback from residents.
- Prince Albert National Park continues annual spruce health monitoring and reporting.

Background: Waskesiu's Urban Forest

The changing forest

Forest composition and structure change slowly with age. The last forest fires to pass through Waskesiu and area burned in 1890 and 1919. Consequently, by 1927 Waskesiu town site was dominated by immature aspen and birch forest. As time passed, white spruce trees matured and displaced many of the deciduous

trees. Currently, many of the mature white spruce trees in town are approaching the end of their natural lives. As development has interfered with seedling establishment, the forest in the core area is maintained by planting.

Similar to other communities, residents of Waskesiu tend to think of the townsite forest as a static entity. The long life span of trees relative to that of humans leads us to believe that the forest has always been and will always be the same as we see it now. However, these forests, like all forests, are ever-changing. No matter what we do these forests will change. Unless we plant trees, Waskesiu's forest will gradually be lost.

Many of the large white spruce trees in the town site are old, have heart rot and are suffering the effects of root exposure and insect damage which make them hazardous and susceptible to being knocked down in strong winds. Human activity has also stressed these trees and has negatively affected their health.

The Waskesiu Vegetation Management Plan

Building on the Waskesiu Community Plan, the Waskesiu Vegetation Management Plan was developed in 2003 to ensure a slow transition of the town site forest from a mature spruce-dominated forest to a mixed age, mixed species forest that is less prone to disease and insect infestations. Maintenance of a mature white spruce tree canopy is a key goal.

The Waskesiu Vegetation Management Plan uses a co-operative, consultative approach to working with the community. It includes planting trees, removing hazardous trees and managing spruce budworm defoliation. As well, re-vegetation of degraded areas, native garden development and invasive plant species removal are occurring.



Historical spruce health management

In 2002 and 2003, white spruce health became a politically charged and divisive issue in Waskesiu. The Council, as the elected body representing residents and businesses in Waskesiu, recommended spraying Foray 48B, a compound containing Btk. Prince Albert National Park initially rejected the recommendation; and upon review agreed to conduct aerial spraying using Foray 48B.

Spraying was carried out in 2003, 2004 and 2005. The cost of aerial spraying was shared between the community and Prince Albert National Park. Spraying reduced high spruce budworm populations resulting in less defoliation. Reforestation and culling of dangerous trees accompanied spraying efforts and continue to this day.

Managing spruce health today

The health of spruce trees in the Waskesiu townsite is monitored on an annual basis. Each autumn the results of the spruce health monitoring program are presented to Prince Albert National Park and the Council.

In autumn 2010, four management options were presented to the Council to address the continued health of the spruce forest.

- Option 1 focused on tree planting.
- Option 2 focused on ground application of Foray 48B to targeted trees within the core area.
- Option 3 focused on aerial application of 100 ha within the core area.
- Option 4 focused on aerial spray of the previously treated 310-ha area.

Options 2 through 4 would likely slow down the infestation of mature white spruce trees and

temporarily improve tree health. However, the life span of these trees is already limited due to a combination of factors reducing their health. In addition to health effects from defoliation by spruce budworm, the trees are subject to disease and damage including heart rot and subsequent windthrow, and other natural and human-imposed processes.

On November 26, 2010, Prince Albert National Park and the Council reviewed the results of the health monitoring program. Prince Albert National Park recommended Option 1 and the Council, following a vote, agreed.

Due to spruce defoliation concerns, the Waskesiu Seasonal Residents Association (WSRA) commissioned an overwintering budworm larval survey through BioForest Technologies. It forecasted severe white spruce defoliation in 2011. Prince Albert National Park reviewed these results and those of the 2010 Spruce Health Monitoring report. In light of those studies and considering current tree health, Prince Albert National Park and the Council believe the majority of trees in Waskesiu are healthy enough to accommodate this defoliation.

On February 3, 2011, WSRA requested that Prince Albert National Park consider spraying Foray 48B in spring 2011 to reduce defoliation. On Feb. 15, 2011, Prince Albert National Park responded to this letter reiterating their position, copied the Council and asked if they wished to reconsider their support for Option 1.

During a special meeting held on March 2, 2011, the Council reaffirmed their support for Option 1.



To achieve this goal, Prince Albert National Park and the Council developed a three-pronged strategy:

- plant a variety of small and large trees that will be less vulnerable to disease;
- be diligent in cutting down trees that pose a potential hazard to the community;
- and monitor defoliation.

Tree planting is a significant component of the vegetation management strategy and has proven successful. Many trees in the town-site day-use area were planted by Prince Albert National Park over the years.

CONCLUSION

All interested parties want Waskesiu to maintain its aesthetic appeal without sacrificing a healthy balance of vegetation. The Council and Prince Albert National Park agree that sustaining a healthy urban forest requires a long-term approach of planting new trees of varying age and species, recognizing that the white spruce trees of Waskesiu are a significant part of its heritage, and that development has created a forest that leaves the trees vulnerable to budworm defoliation, other insect damage and wind fall.

