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HISTORICAL AND FUTURE GROWTH OF CARAGANA SHELTERBELTS IN SASKATCHEWAN

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We wanted to better understand how shelterbelt trees will grow in the future based on how they have already grown on the landscapes in the past. To do so, we sampled 125 shelterbelt locations across Saskatchewan covering the six dominant shelterbelt tree species, and covering a spatial network across all of southern Saskatchewan.

ALL TREE SPECIES

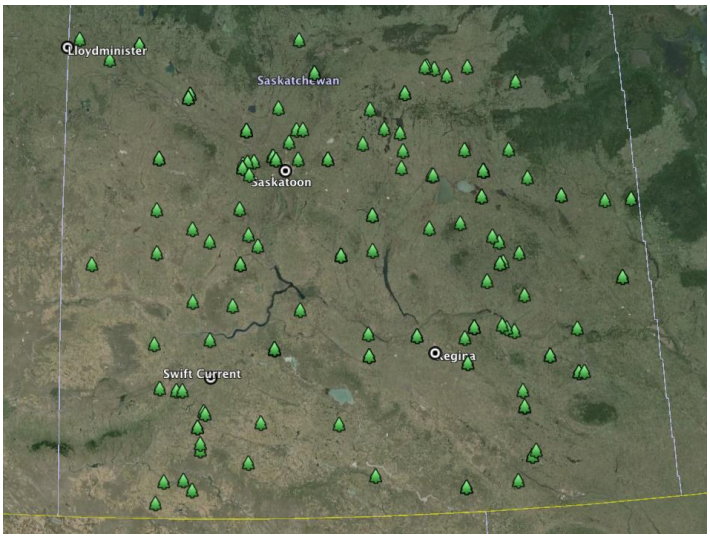

Figure 1: Locations where all six different tree species were sampled in southern Saskatchewan.

THE CARAGANA SPECIES

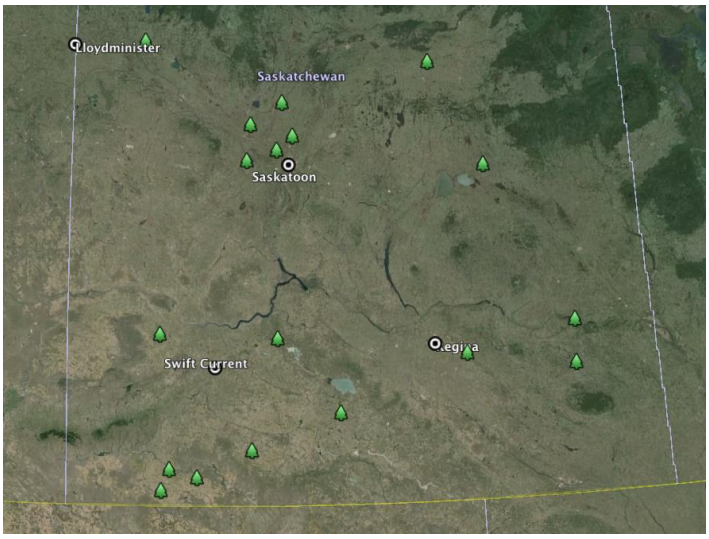

Figure 2: Locations where all of the white spruce species were sampled in southern Saskatchewan.

CLIMATOLOGICAL LIMITING FACTORS

The most common climatological limiting factors that drive the radial growth of caragana trees in order of importance across the southern part of the province are:

Current year June Precipitation;
Current Year July precipitation and;
Current year march and April temperature.

From these data we get a better understand that caragana is dominated by moisture signals in summer. When it gets good moisture at these key times in its growth cycle, it can do well. Most important is for it to get good moisture inputs when its rings are actively being formed in June and July. Lastly, if is gets a warm temperatures in the spring months, it will have a good overall growth year. Conversely, if does not receive good moisture inputs during the summer or a cool spring, it will produce a small or very small growth ring in that given year.

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Caragana Modelled Future Growth

Of the 18 Caragana sample sites tested across the province, no sites were found where the trees were old enough to model with any statistical reliability. In all investigations, there were no climatological limiting factors that could be found that severely limited the growth of caragana. In all areas tested, caragana seems to be growing well and the amounts of precipitation and temperature changes that might occur in the future climate change scenarios do not seem to hamper the growth of caragana.

Individual Modelling Locations

For more specific information on future forecasted growth for each species in specific locations in Saskatchewan, please visit our radial growth model at:
http://madlabsk.ca/model2/externaldata_3.html

Other Factsheets in the Series

Specific analysis on most of the locations in the study can be found on our web site at http://www.madlabsk.ca/ and http://www.madlabsk.ca/reports.html

Contact for more information: SASKAGROFORESTRY.CA/

Acknowledgements & Copyright

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