Aging the Doug Jackson Cores – Set II

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Abstract

In the summer of 2013, 45 tree cores were sampled at various locations across Saskatchewan by Doug Jackson and Shannon Poppy's crews (University of Saskatchewan). As part of the four-year Agricultural Greenhouse Gases Program (AGGP) these cores were sent to the Mount Allison Dendrochronology Lab for analysis. The purpose of this study was to identify the age of each sample.

Introduction

The Agricultural Greenhouse Gases Program (AGGP) is tasked with determining the potential impact that shelterbelts in Saskatchewan have as a greenhouse gas mitigation strategy. The analysis of a variety of tree species present in diverse microclimatic regions across Saskatchewan will ultimately allow for the development of modeled scenarios that will help to maximize carbon sequestration and biomass production through the implementation of different agroforestry practices. In order to allow for the cross-referencing of biomass production data with annual growth increments, tree core samples taken by Team Van Rees/Jackson/Poppy were sent to the MAD Lab for analysis.

Methods

Forty-five tree core samples were taken at various locations in Saskatchewan by Doug Jackson and Shannon Poppy's crews. Eighteen of these cores were Manitoba maple (*Acer negundo*), fourteen were hybrid poplar (*Populus spp.*), four were green ash (*Fraxinus pennsylvanica*), five were spruce (*Picea*), two were white spruce (*Picea glauca*). Remaining two cores were not labeled with an identifiable species code. Please note that core *RichHPC* is not hybrid poplar as its label would suggest, but rather green ash. All samples were sent to the MAD Lab for analysis.

Samples were glued into slotted mounting boards, and subsequently sanded with increasingly finer sanding paper (60, 80, 120, 220, 320, and 400 grit) in order to reveal the annual-growth rings of the wood. Rings were analyzed and counted using a mounted Velmex staging system with an accuracy of 0.001 mm. The age of each core was determined.

Results

Measuring of tree samples provided a ring count for each core. Some samples did not extend to the pith of the tree while others were broken in several pieces, explaining the discrepancies in age count for such trees.

Table 1. Age and time span of trees sampled Summer 2013, Saskatchewan, Canada.

ID	Time Span		Age	ID	Time Span		Age
BurtonA	2000	2012	13	RichHPA	1991	2012	22
BurtonB	2000	2012	13	RichHPB	1993	2012	20
HerringA	1996	2012	17	RichHPC	1997	2012	16
HerringB	1995	2012	18	SaunderA	1970	2012	43
BlakeA	1998	2012	15	SaunderB	1971	2012	42
BlakeB	1998	2012	15	Across	1930	2012	83
YelleA	1990	2012	23	EppMMA	1971	2012	42
YelleB	1990	2012	23	EppMMB	1946	2012	67

Table 1 con't.

ID	Time Span		Age	ID	Time Span		Age
ZablotA	1988	2012	25	SiedelA	2003	2012	10
ZablotB	1990	2012	23	SiedelB	2001	2012	12
PartonA	2002	2012	11	FriesenA	1998	2012	15
PartonB	2007	2012	6	FriesenB	1975	2012	38
ColdMM	N/A	2012	N/A	DowieA	1976	2012	37
RichGA	1993	2012	20	DowieB	1975	2012	38
AitHPA	1987	2012	26	EppWSA	1998	2012	15
AitHPB	1990	2012	23	EppWSB	1997	2012	16
AitSPA	1993	2012	20	KruegA	1999	2012	14
AitSPB	1995	2012	18	KruegB	2000	2012	13
MahaMMA	1996	2012	17	BigEpp	1916	2012	97
MahaMMB	1997	2012	16	SulzA	1978	2012	35
WilsonA	1957	2012	56	SulzB	1980	2012	33
WilsonB	1957	2012	56				
EppGAA	1971	2012	42				
EppGAB	1952	2012	61				

** See excel file "Doug's Cores Report 2.xls" for more detail **