



**Effects of Blowdown and Salvage Logging on
Vegetation in a Mature Spruce-Pine Forest**

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3 June 1999



June 1904

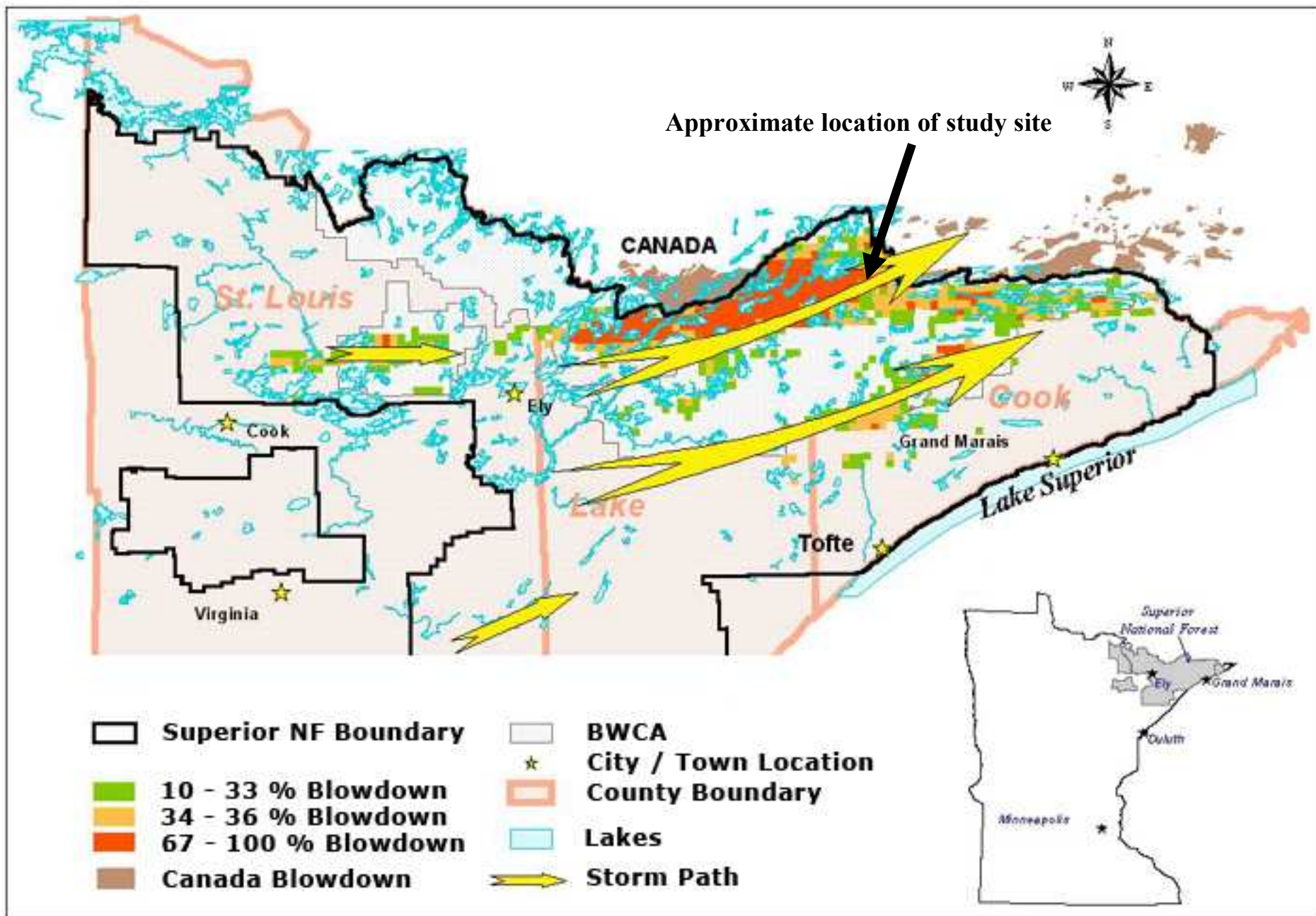




June 1999



June 2000



July 4th, 1999 Storm Impact - USDA Forest Service



6 June 2000

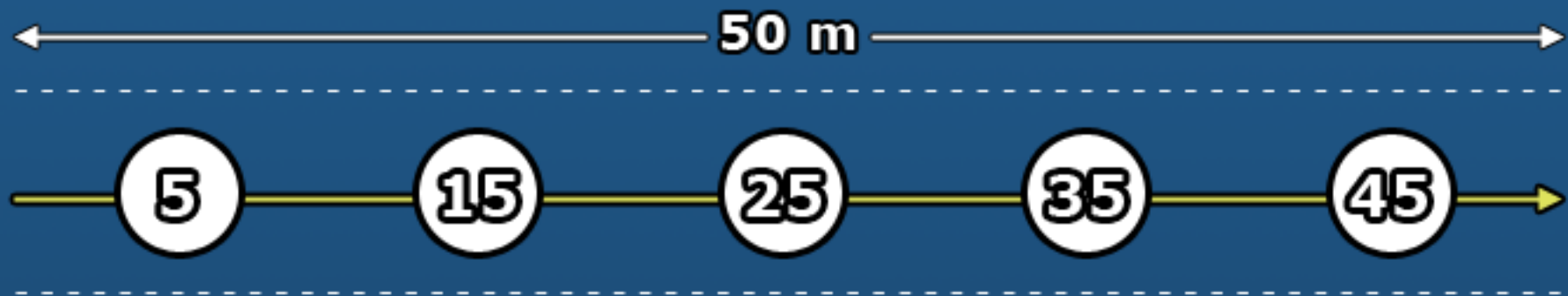


June 2003





Methods - Vegetation



PERCENT COVER

- Herb, Mineral, Litter, Bryophyte: 1 m² ground-layer quadrat
- Shrub: line intercept of stems < 5 cm dbh and > 1 m in height
- Tree: line intercept of stems > 5 cm dbh

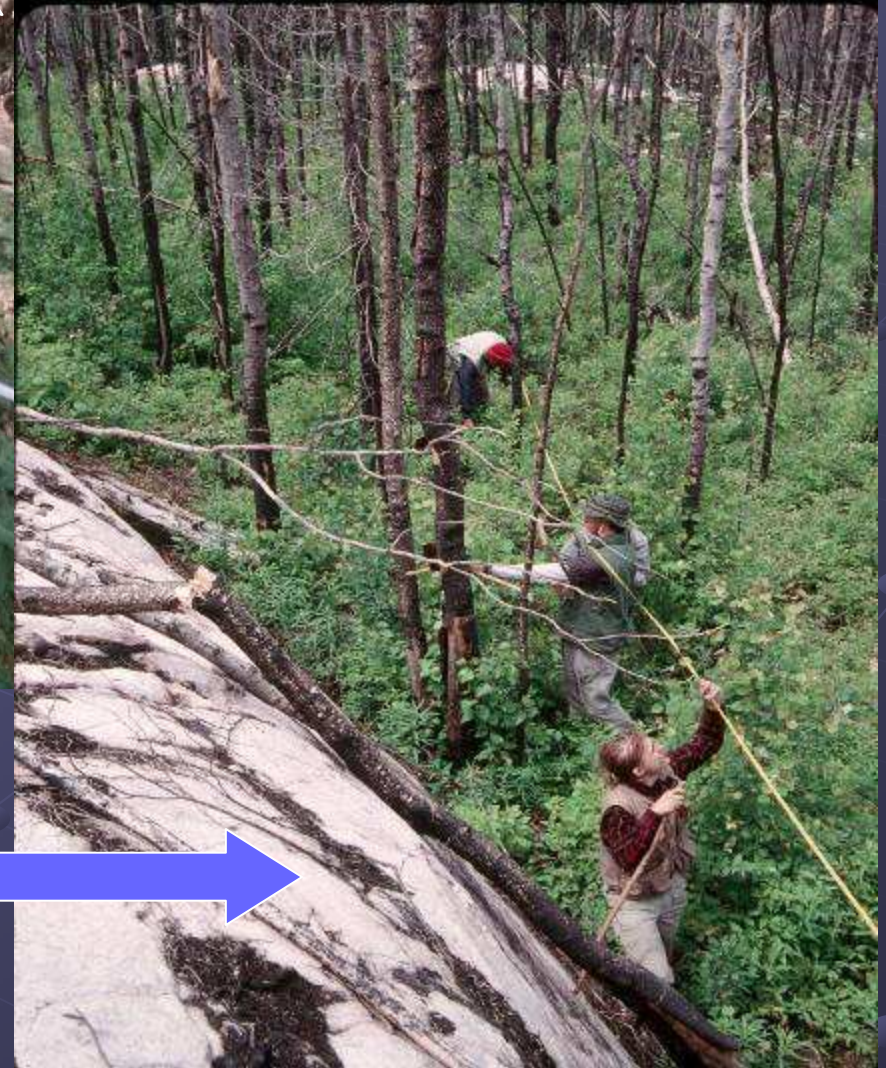
DENSITY

- Shrub: no. live and dead within 1 m of right side of transect
- Tree: no. and diam. live and dead within 1 m either side of transect



1 m² circular frame used to estimate the percent cover in the ground layer (vegetation < 1 m. tall).

50m tape used to locate herb plots, and estimate cover of woody vegetation. Trees (> 5 cm dbh) and shrubs (< 5 cm dbh) were also tallied in 1 x 50 m and 2 x 50 m quadrats , respectively, along the tape.



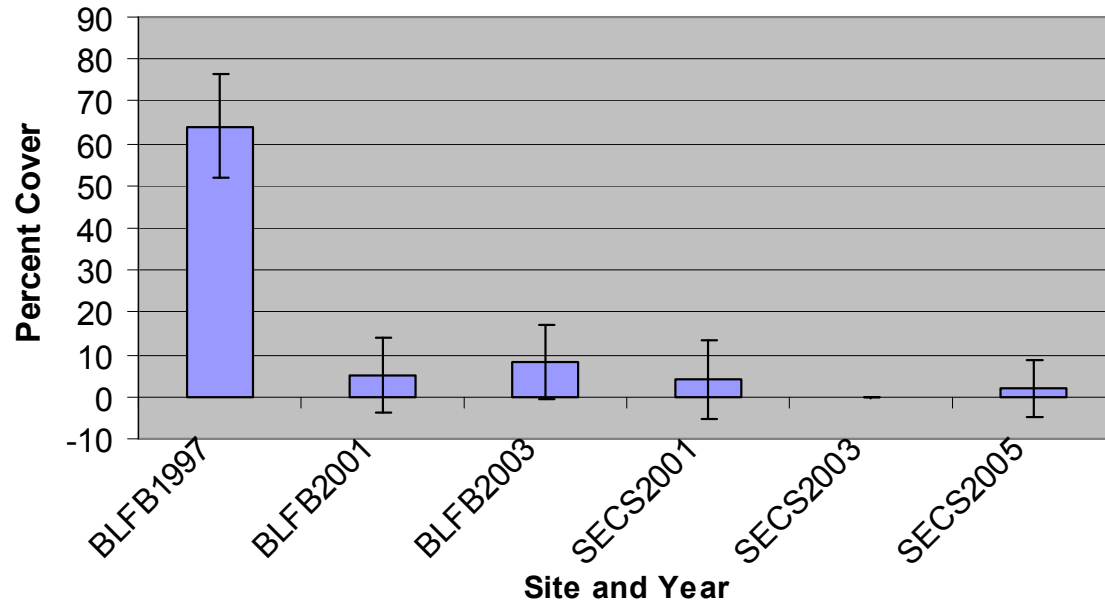


**Running line intercept
through recent blowdown**

Trees tipped to $< 45^\circ$ of the ground were defined as “shrub layer.”

Volume of CWD was estimated from diameter of each stem > 5 cm that the intercept line crossed, and summing for all stems intercepted along each 50 m transect.

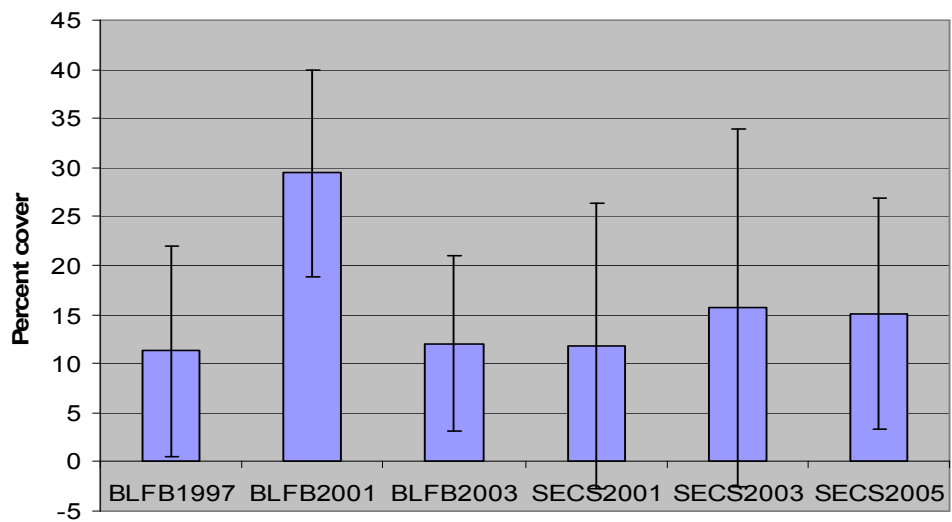
Percent Tree Cover



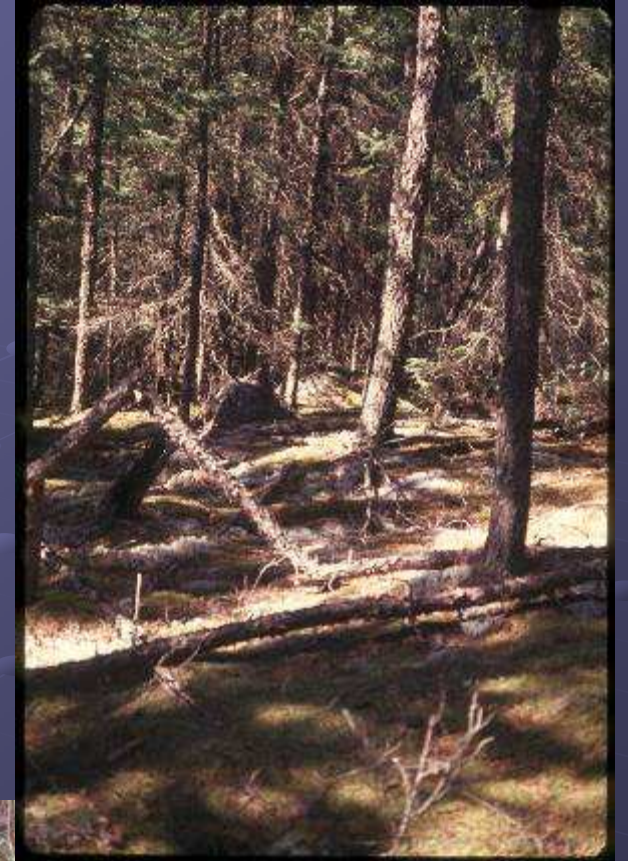
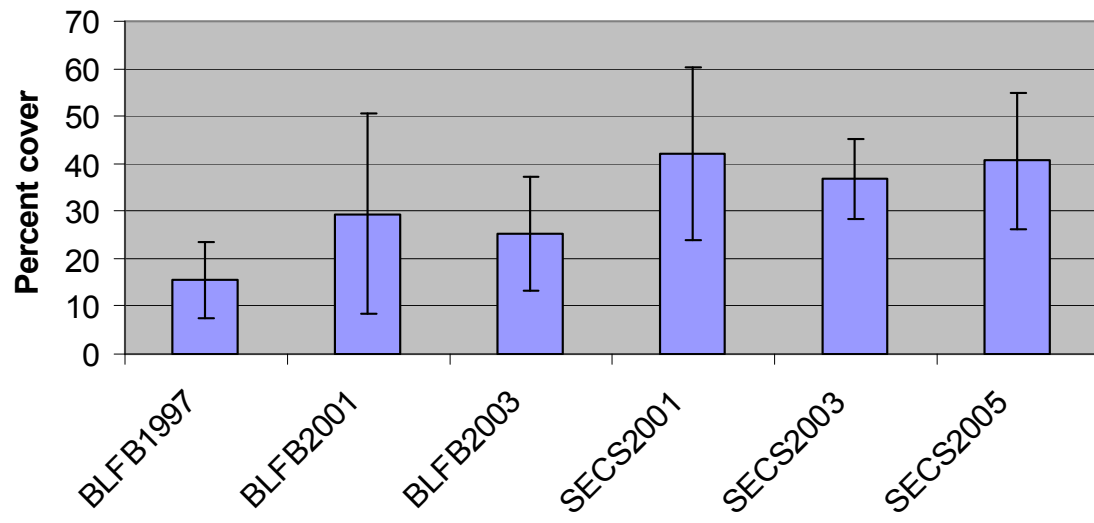
% of total cover

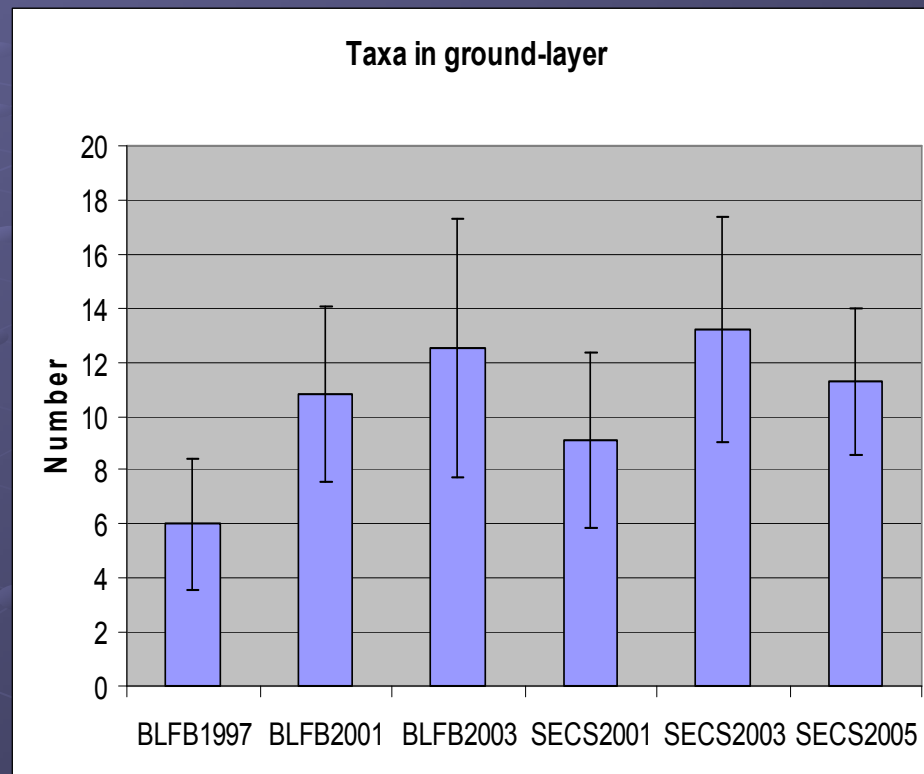
	<u>1997</u>	<u>2001</u>
Balsam fir	8.7	21.2
Paper birch	14.8	32.0
Black spruce	52.2	20.8
Jack pine	20.6	14.4
Quaking aspen	14.8	30.8

Percent Live Shrub Cover

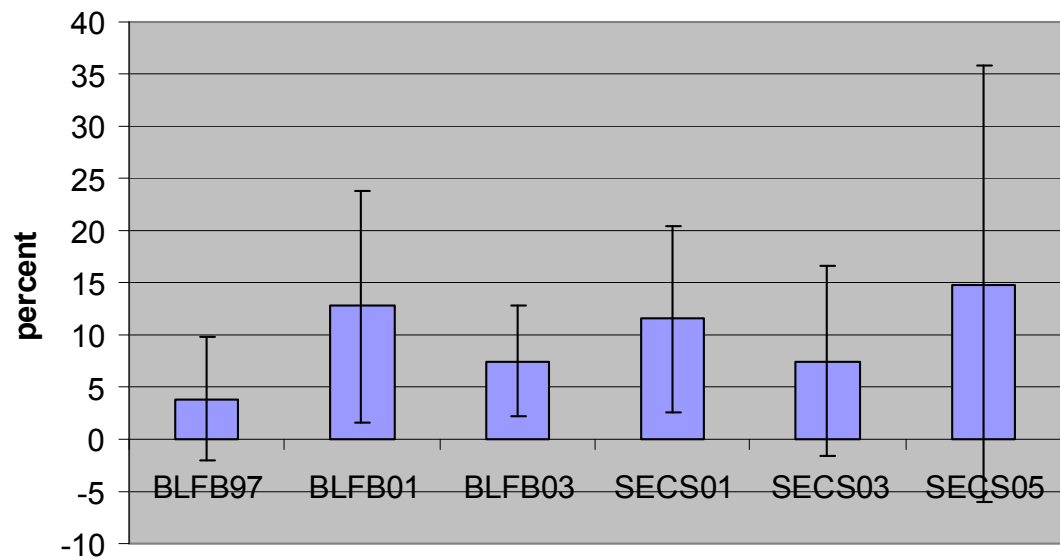


Sum of Cover for Ground-layer Species



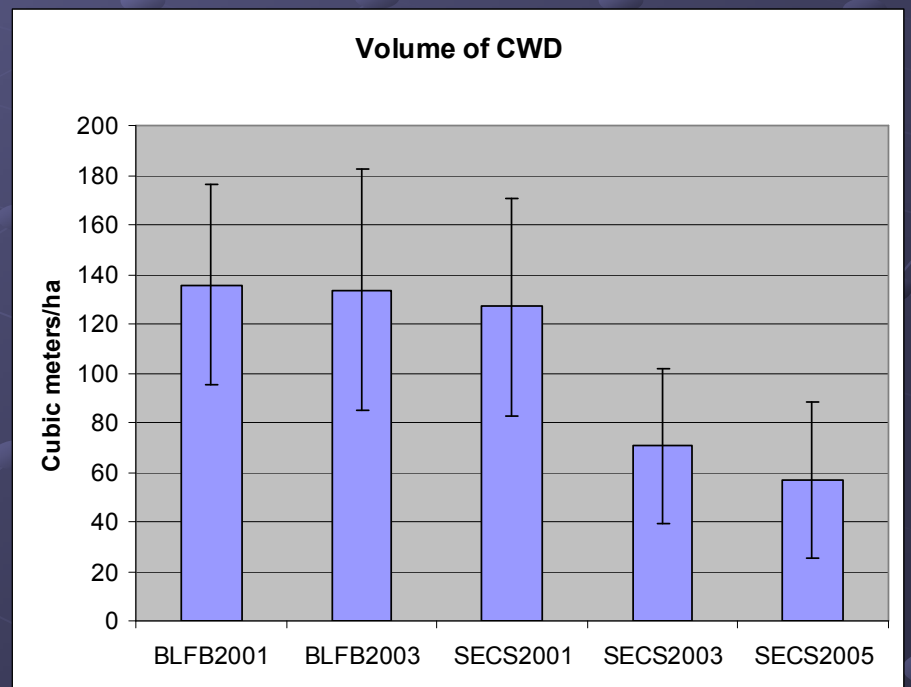


Exposed mineral surface

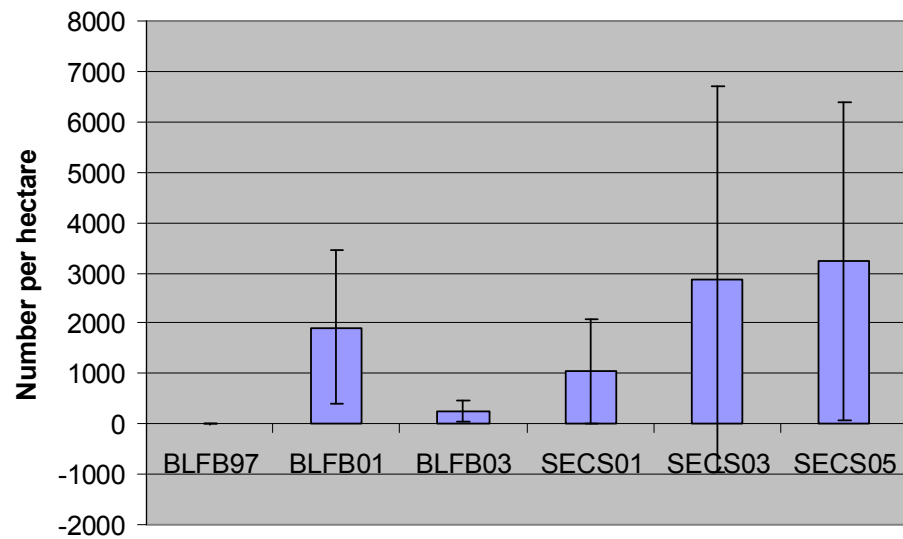


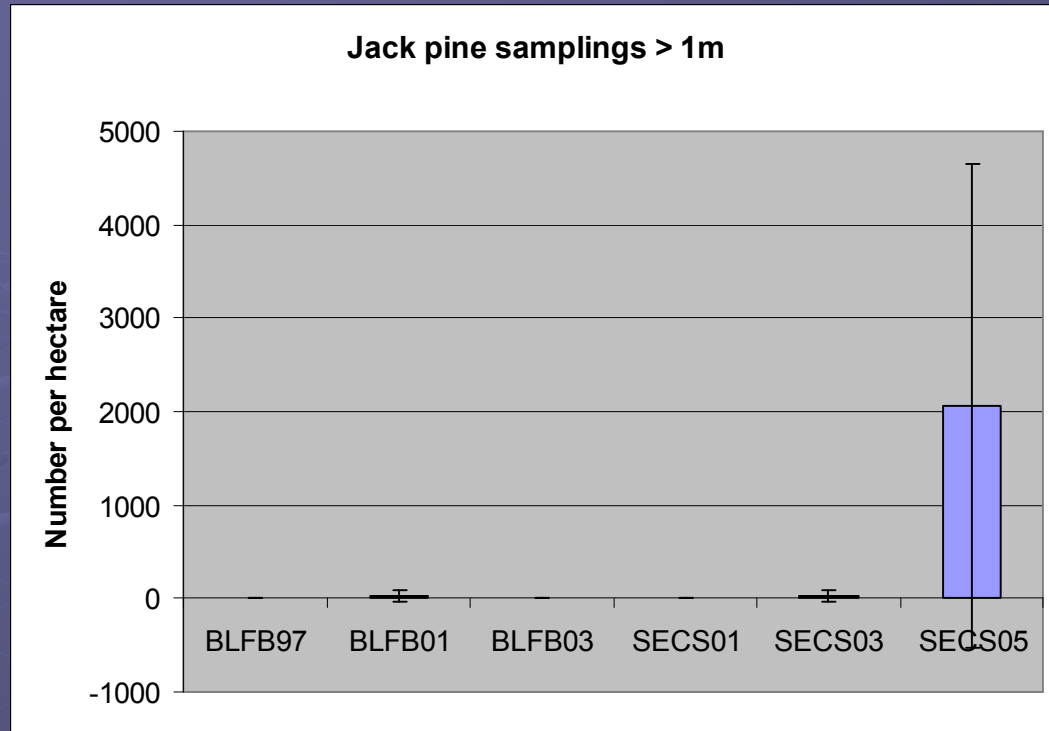






Aspen stems > 1 m tall

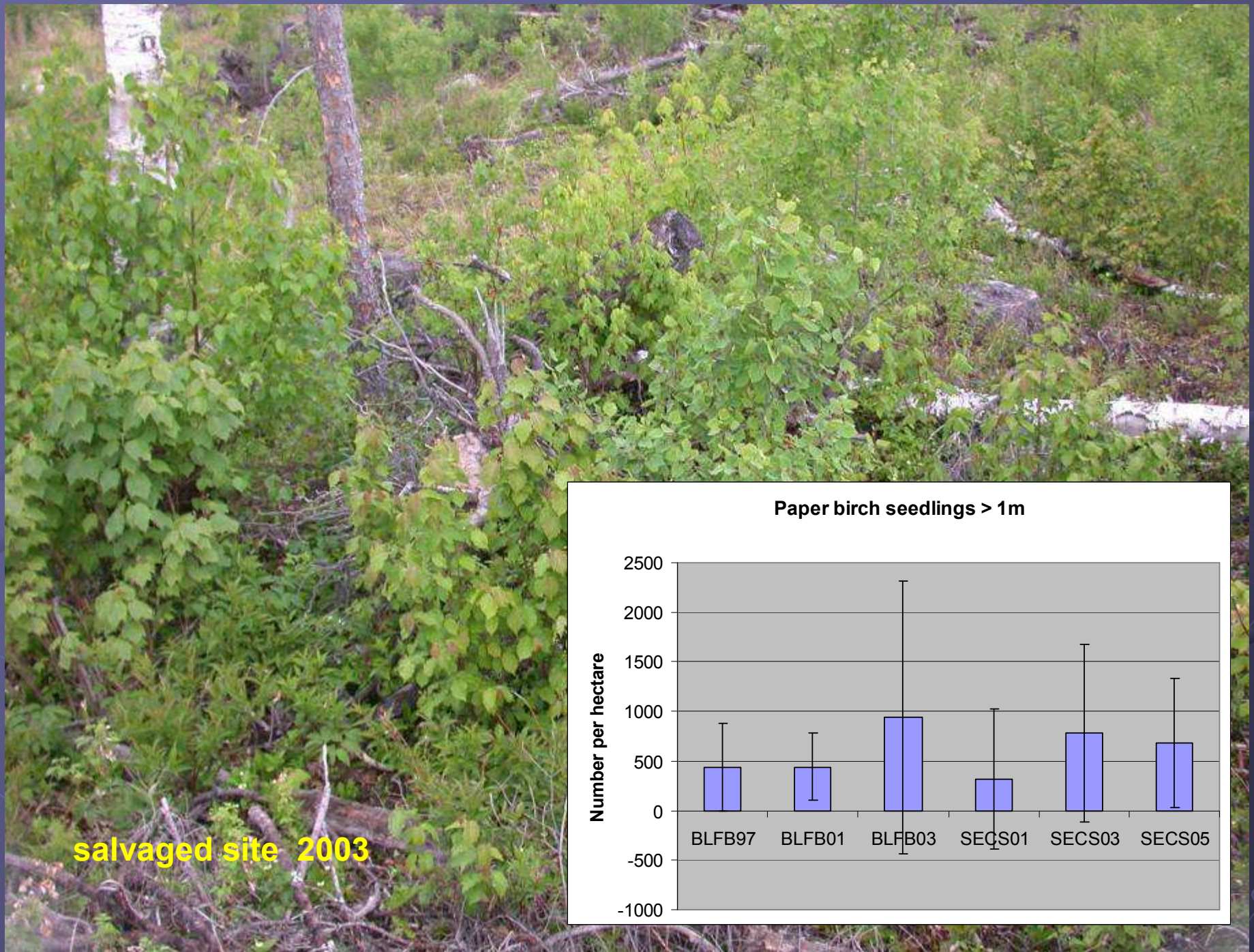




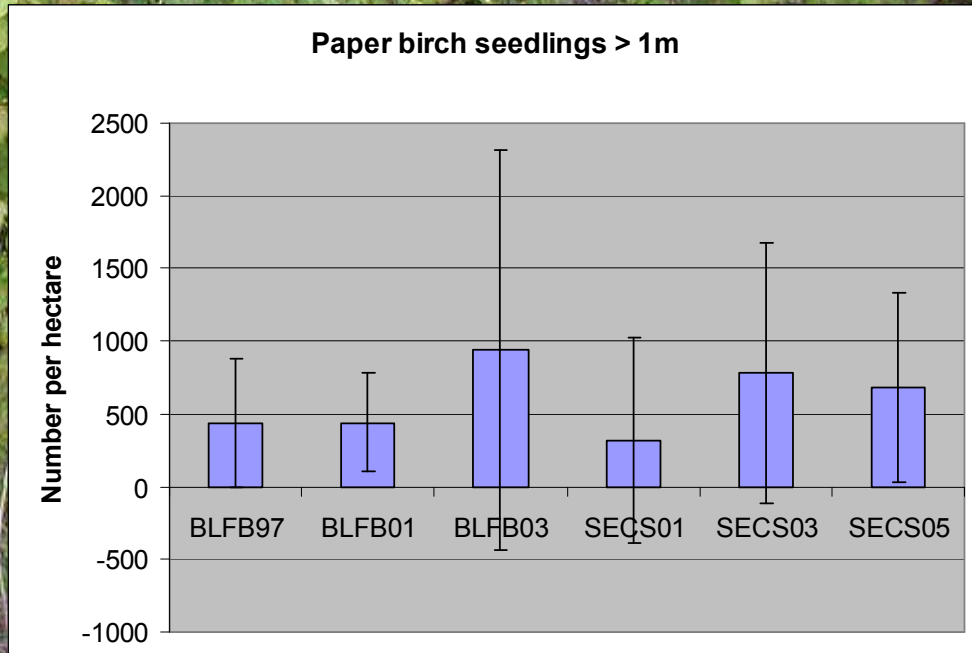
Percent of jack pine cover in ground-layer

Unsalvaged Salvaged

1997	0	
2001	0	0.1
2003	0	1.0
2005		2.0



salvaged site 2003





Conclusions:

1. The salvaged site will regenerate to a mixture of aspen and jack pine with scattered spruce and fir.
2. The unsalvaged site will come back to spruce and fir, mostly from advanced regeneration.
3. Both sites will maintain a good population of paper birch.

Lain, Emily J., Alan Haney, John M. Burris, and Julia Burton. 2008. Response of vegetation and birds to severe wind disturbance and salvage logging in a southern boreal forest. *Forest Ecology and Management* 256: 863-871