

A close-up photograph of a white pine branch. The branch is dark brown and has several clusters of long, thin, green needles. The needles are arranged in a fan-like pattern. The background is a soft, out-of-focus white, suggesting a snowy or very bright environment.

Is white pine a good choice for
plantations in the southern
Interior Cedar hemlock zone?

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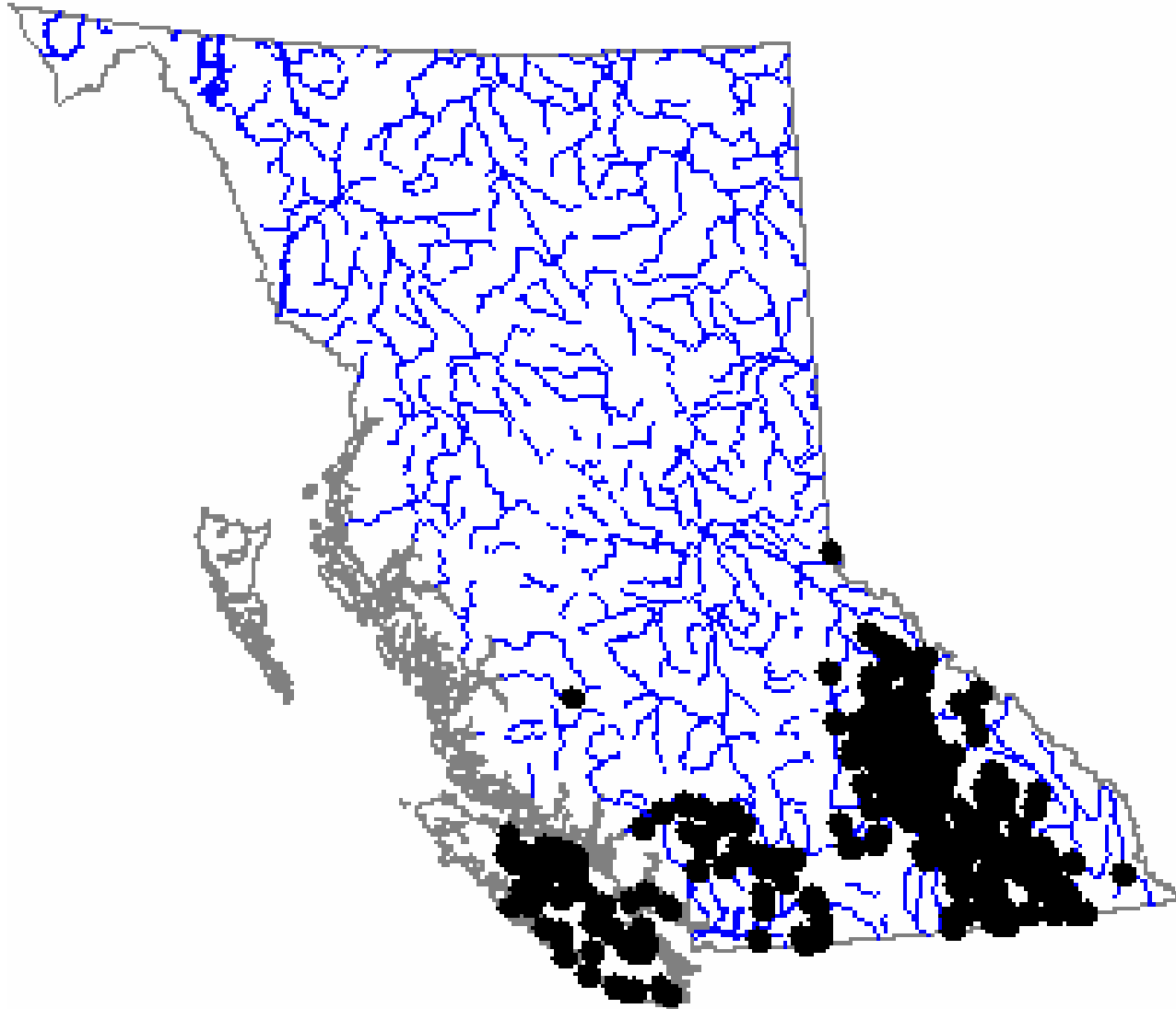
High species diversity in the ICH

- The ICH has the distinction of having the highest tree species diversity of any zone in the province. What to choose?
- In the past lodgepole pine has been a firm favourite: hemlock and cedar were regarded with disdain; broadleaves were actively discriminated against. Douglas-fir seemed to be particularly susceptible to Armillaria. White pine was not regarded as acceptable because of blister rust.

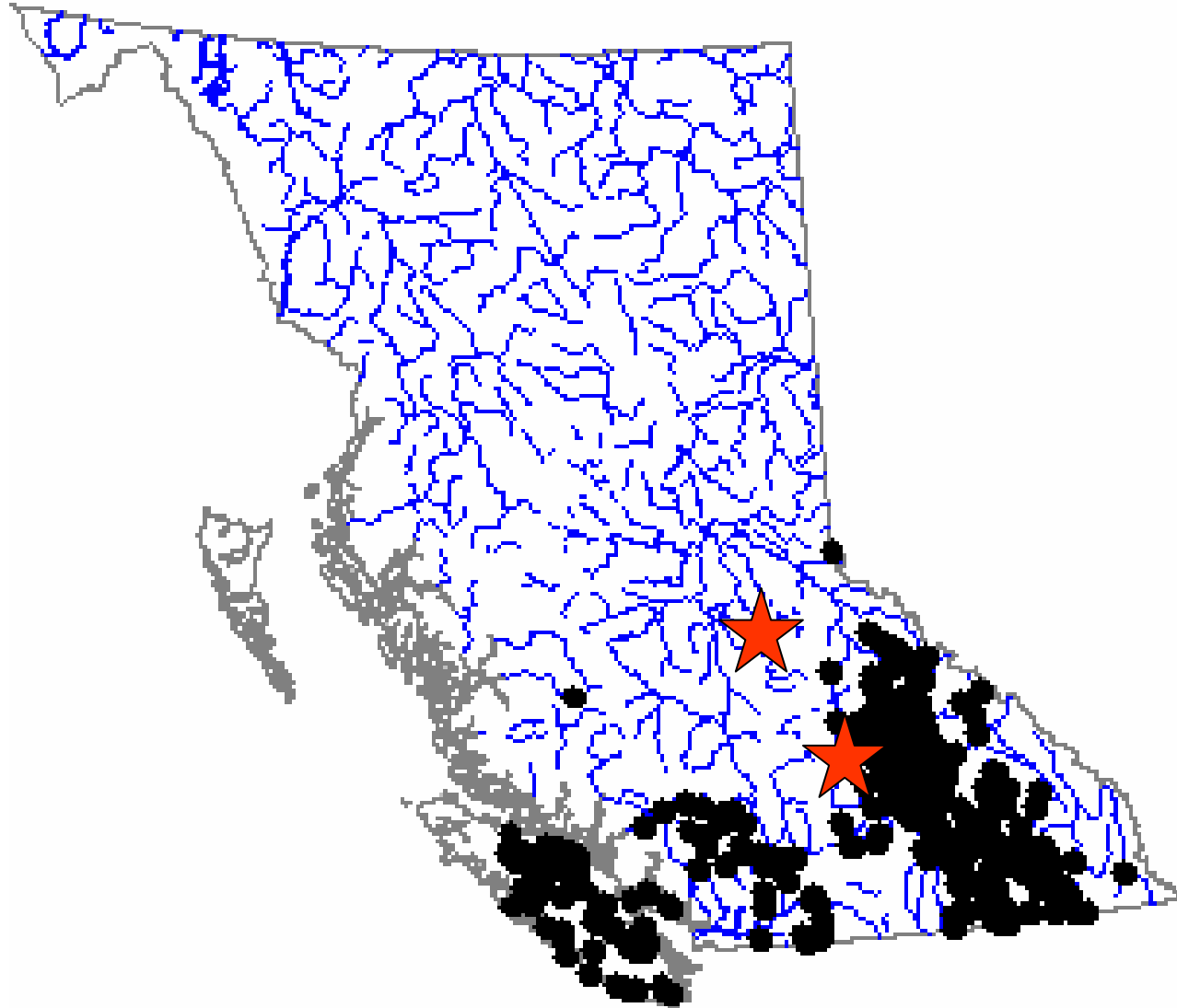
Pw Species trials in the ICH

- EP 904 planted in 1982
- EP 1158 planted in 1988
- Both trials were re-measured this year
- Hidden Lake is ICH moist warm subzone
- Quesnel Lake sites are in ICH wet cool subzone
- Elevations are 800-1100m
- QL is outside the current species distribution;
- HL is on the western edge.

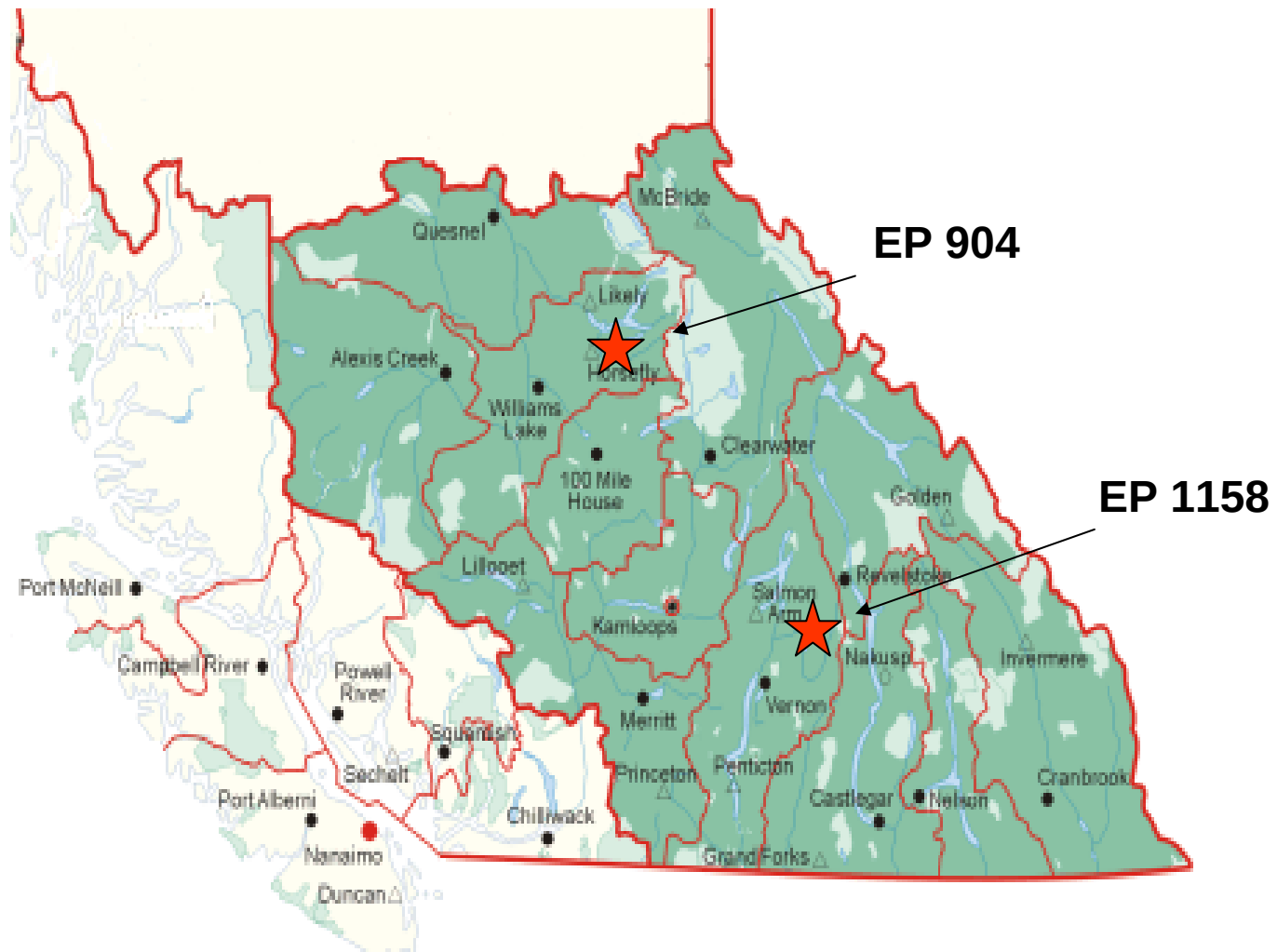
Distribution of white pine in B.C.



Location of species trials



Species trial locations



EP 1158

- The Hidden Lake ICH species trial compares the growth of seven conifer species and two broadleaved species in the ICH moist warm subzone. The trial uses a large plot, randomized block design with six replications.
- The site was clearcut in 1987. Slash was piled and burned. The species trial was planted in 1988. One seedlot of each species was planted, all from local sources except Lw and hybrid poplar. The trial areas were brushed for the first four years.

EP 1158 Hidden Lake

Species	Seedlot	Source	Elevation	Stocktype
• Fdi	8147	Larch Hills	800	PSB615
• Cw	2534	Lee Creek	1100	PSB313
• Si	8032	Birch Island	400	PSB615
• Pli	2540	Joe Rich Ck.	1100	PSB615
• Py	3001	OK Falls	600	PSB313
• Pw	8006	Harbour Lakes	900	PSB313
• Lw	5235	Creston	1050	PSB313
• Ep	2756	Larch Hills	800	PSB313
• ActX		Hybrid from UW		Cuttings

Hidden Lake Pw

plot	5 yr survival %	20 yr survival %	mortality	tallest tree m	dbh cm
1	93	21	DRA DSB	13.9	16.3
2	99	47	DSB	14.2	16.5
3	93	46	DSB	14.7	19.9
4	97	19	DSB Early rust	11.2	15.1
5	92	74	DSB	14.1	19.5
6	99	53	DSB DRA	11.6	14.6



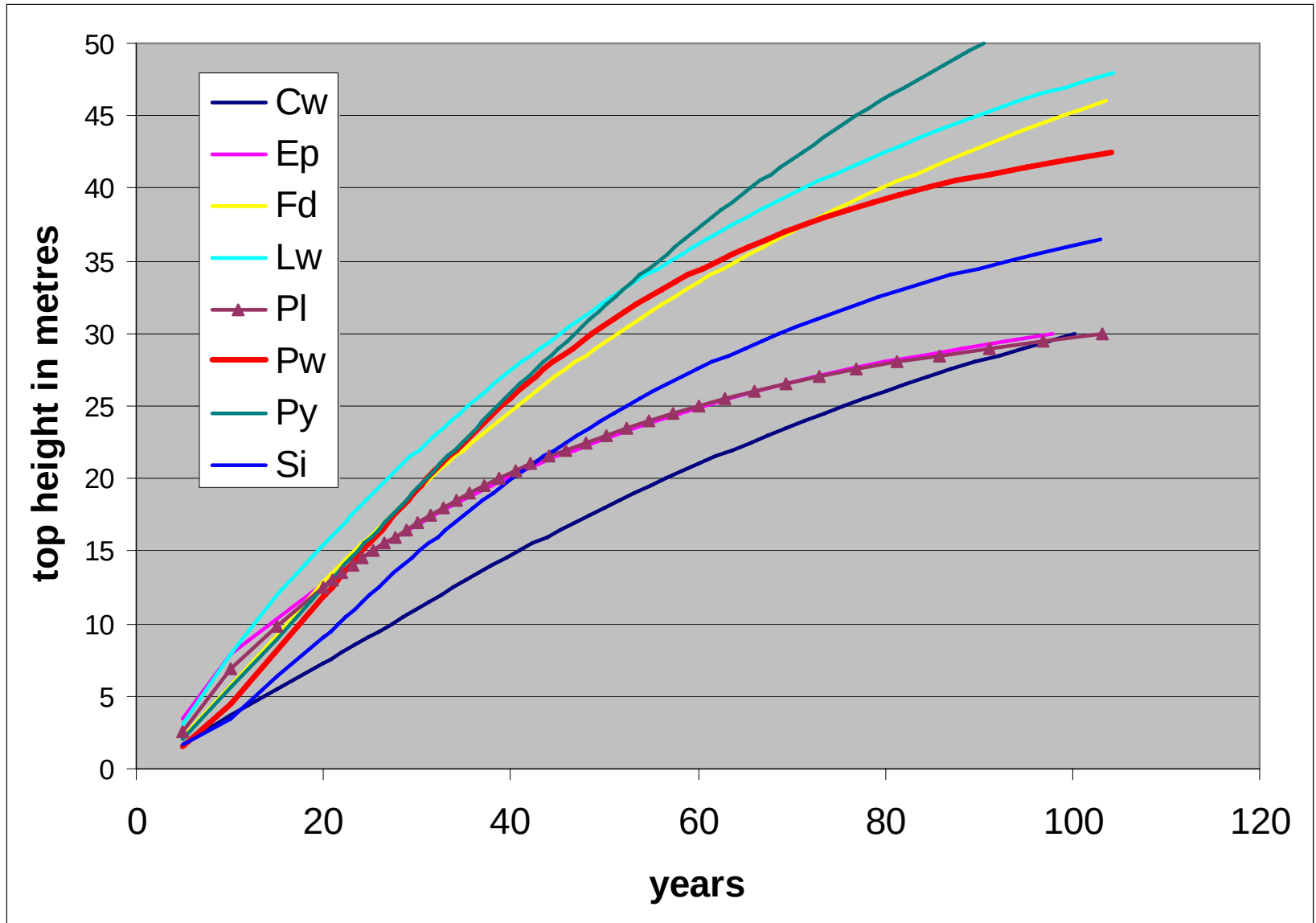
Hidden Lake Pw



EP 1158

Species	Top Ht at 20 yrs	Top Ht at 75 years	Site index 50 yrs BH age
Pw	11.84	38.3	32.1
Pli	12.50	27.2	<u>22.7</u>
Py	12.44	44.2!	33.2
Fd	12.84	38.6	30.8
Lw	15.45	41.2	32.9
Si	9.07	31.6	25.4
Cw	7.22	25.0	18.4
Ep	12.72	27.3	22.0
Hybrid Act	dead		

EP 1158 Top height curves



EP 904 Quesnel Lake

- The trial was established to test the performance of white pine in the northern portion of the ICH, outside of the current range but within the potential range.
- There were 6 sites but only four remain; the species are replicated 3 times on each site.
- The sites were all broadcast burned in 1980-81 and planted in 2002.

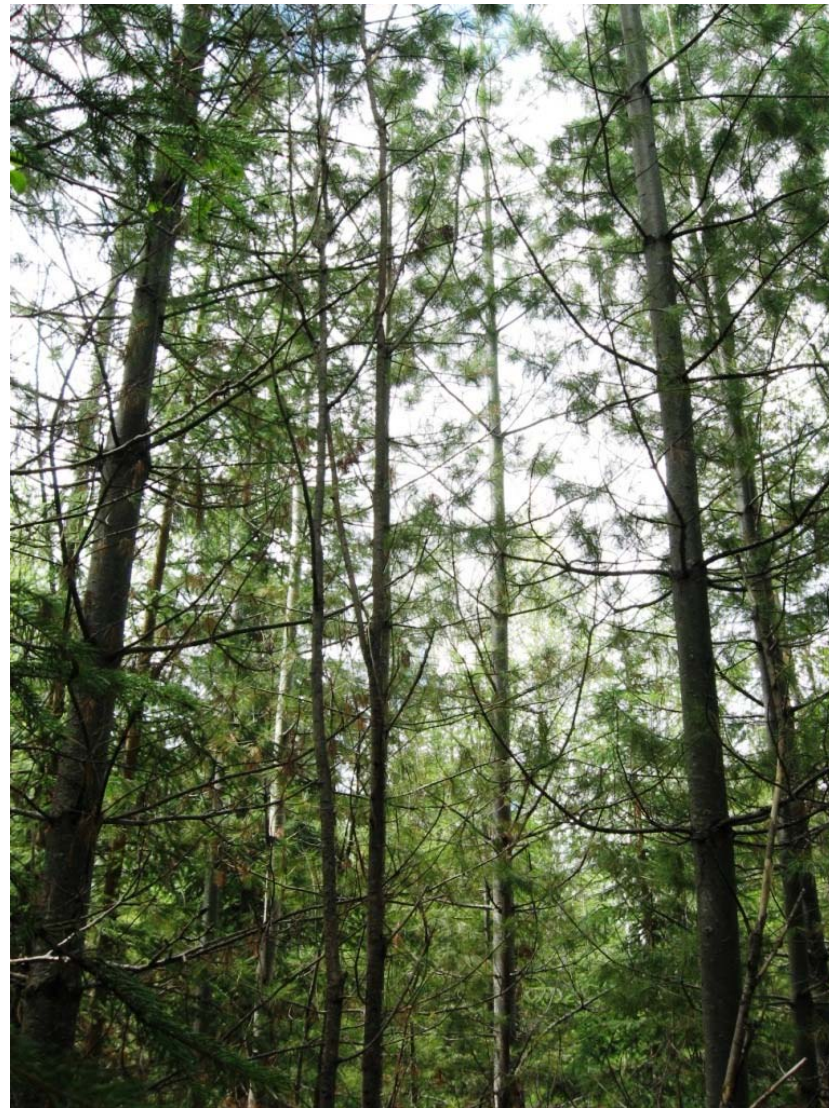
EP 904 Quesnel Lake

Species	Seedlot	Source	Elevation	Stocktype
• Fdi	2894	Likely	915	PSB415
• Si	2643	Cariboo R.	946	PSB415
• Pli	3795	5 Mile Lake	1050	PSB415
• Pw	3876	Adams Lake	800	PSB415/313
• Pw	4351	Moscow ID		PSB415/313

EP 904 McKusky Creek



Pw BC seedlot



Pw Idaho seedlot



Quesnel Lakes Pw BC

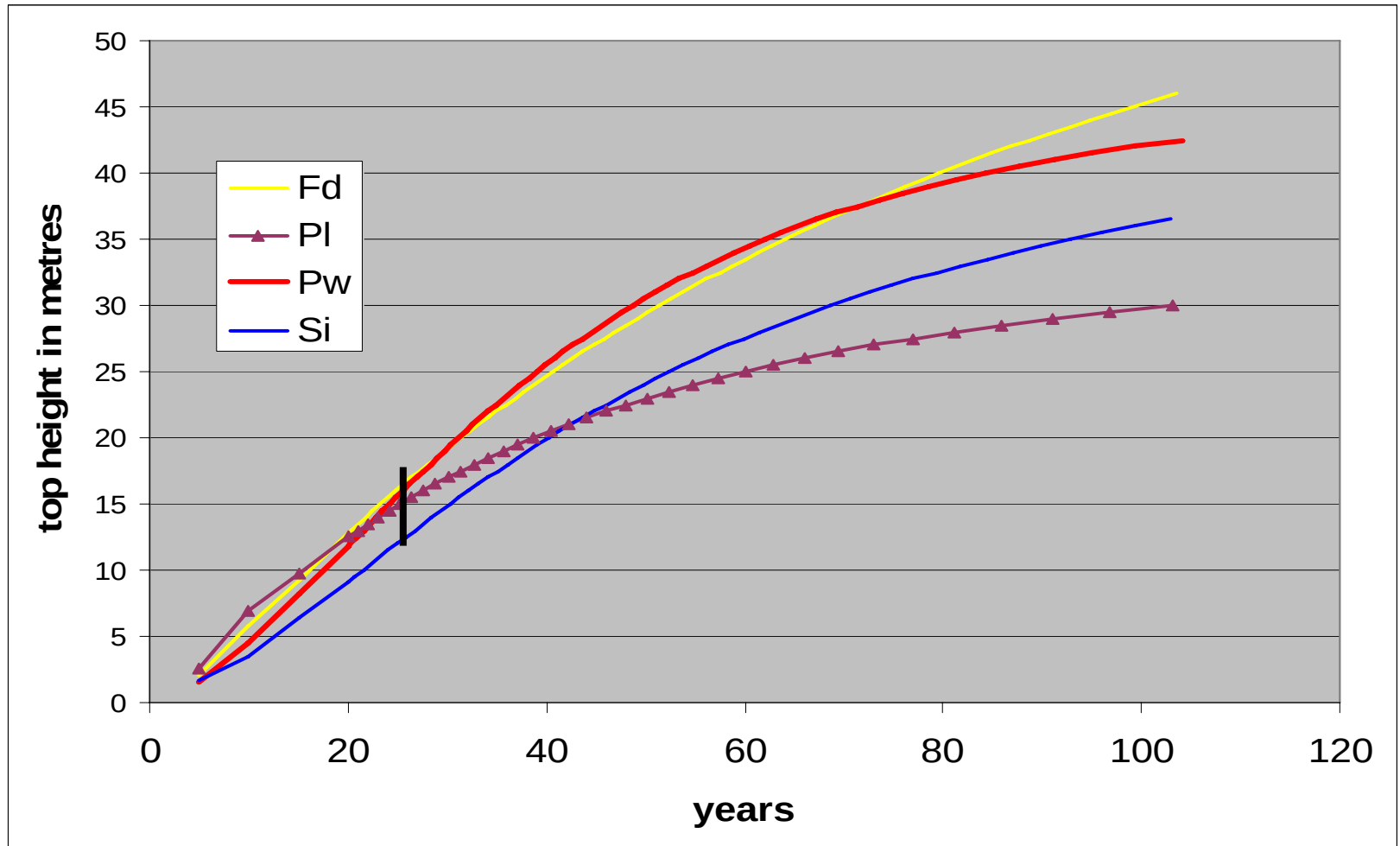
Site	10 yr survival %	26 yr survival %	tallest tree m	dbh cm
Benny	71	2	12.4	18.6
Clearbrook dry	68	42	17.8	22.1
Clearbrook wet	56	33	14.8	23.4
McKusky	85	23	15.6	21.1

Quesnel Lakes Pw Idaho

Site	10 yr survival %	26 yr survival %	tallest tree m	dbh cm
Benny	90*	76	17.7	25.8
Clearbrook dry	59	53	16.7	25.1
Clearbrook wet	49	38	15.8	18.8
McKusky	69	55	18.7	23.0

EP 904:

Estimates of top height growth using Hidden Lake curves



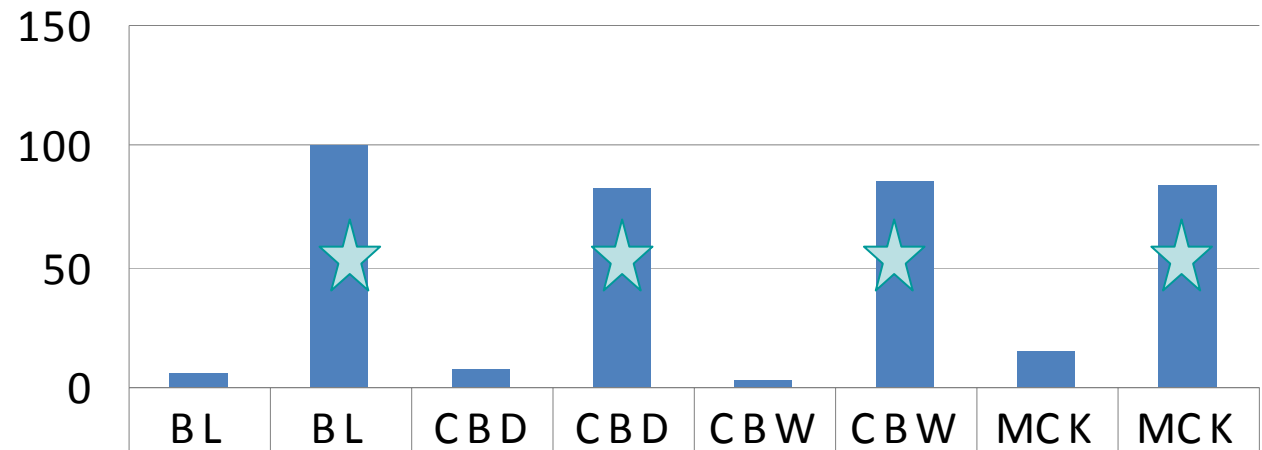
EP 904

Cronartium ribicola on Pw
BC at Benny Lake



DS B Branch Infections (% Live Stems)

Percent Live Stems



Branch Cankers

BL

BL

CBD

CBD

CBW

CBW

MCK

MCK

6.58

100

6.91

82.67

3.57

85

14.7

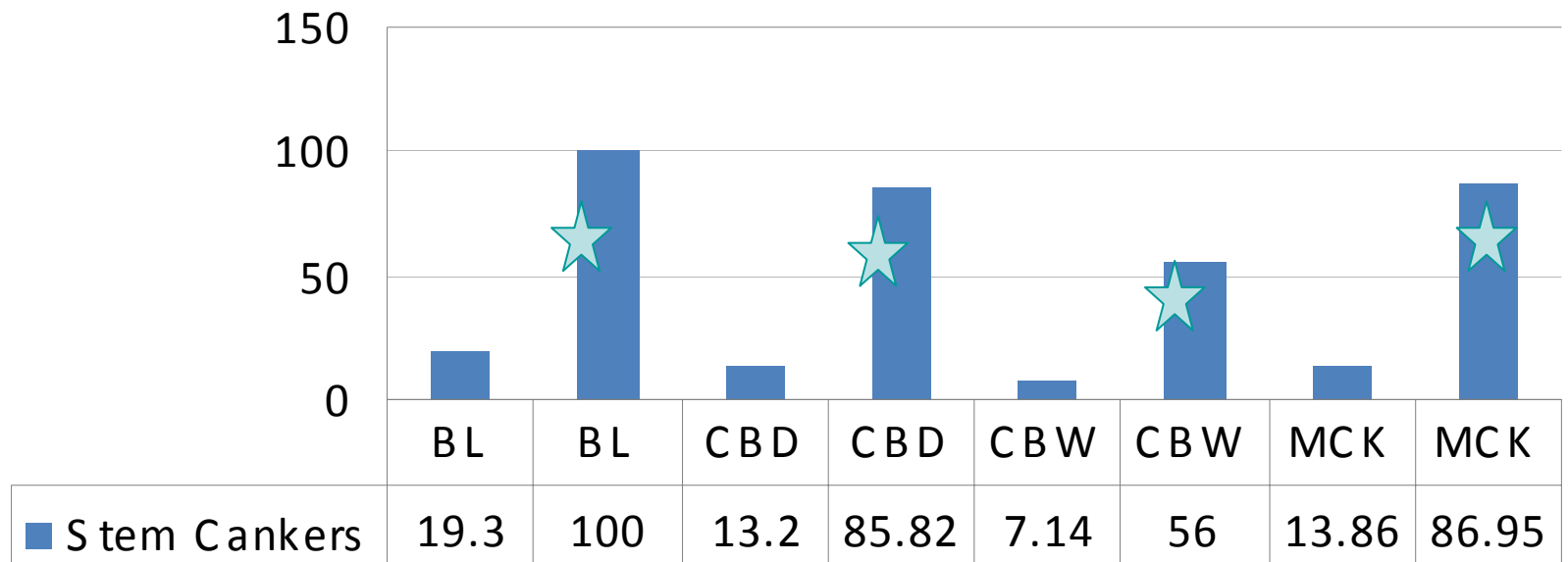
84.05



BC white pine

DS B S tem Infections (% Live S tems)

Percent Live S tems



BC white pine



Mountain pine
beetle:

How does it affect
white pine?



Mountain pine
beetle:

Numerous attacks
on Pli at Hidden
Lake and 3 of 4
Quesnel Lake
sites; QL sites
surrounded by
dead Pli

For Pw at QL, only
6 trees attacked
and only 2
successful attacks
on Pw; none at HL
so far



EP 904

The tallest Pw at
McKusky Creek

19m at 26 years

Conclusions

- White pine grew well at both locations
 - Much better than Pli and Si and better than Fdi
 - All were preferred species in past
- The disease resistant white pine lived up to its promise
- Should look at white pine performance in other trials
- More extensive trials are warranted

Acknowledgements

- The establishment crews
- Teresa Newsome for protecting EP 904
- Forrest Joy for diagnosing damage and death
- Ian Cameron for the growth and yield advice and calculations



Thanks to the
measuring
crews



