



MPB Decision Support Tool (DST) Prototype Development

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DST Objective

DST Objective is to:

“ project stand conditions under a range of mortality, secondary structure and regeneration scenarios ”

DST Development Steps

1. Describe Existing Stands

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2. Define Levels of MPB Attack

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4. Define Regeneration Assumptions

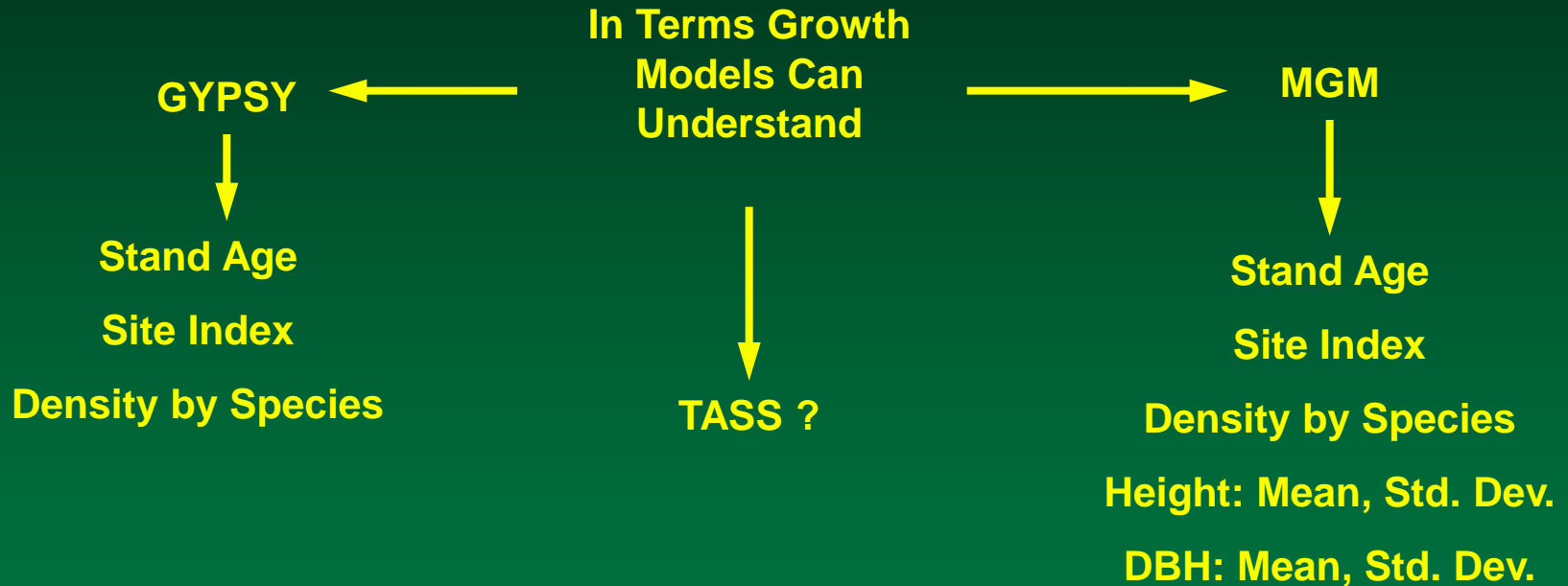
DST Development Steps

1. Describe Existing Stands
2. Define Levels of MPB Attack
3. Define Salvage Treatments
4. Define Regeneration Assumptions
5. Post-Attack Stand Projections

DST Development Steps

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6. DST Application Development

1. Describe Existing Stand Conditions



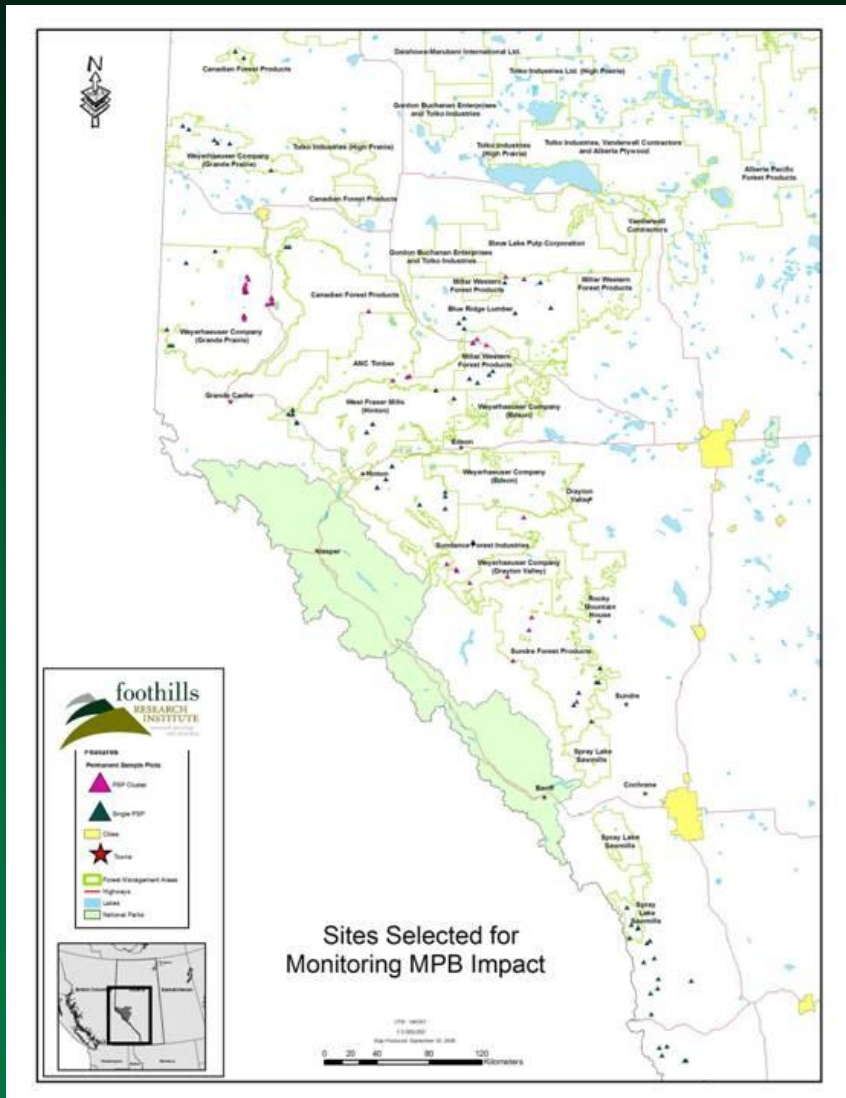
1. Describe Existing Stand Conditions

	Stratum Number	Ecosite	Natural Region	
Drier	1	b, c	Any	Poorer
	2	d (c)	UF	
	3	d (c)	LF	
	4	e (d)	SA/UF	
	5	e (d)	LF	
	6	f (e)	UF	
	7	f (e)	LF	
	8	h (f)	Any	
Wetter				Poorer

Mesic Moisture Regime

Rich Nutrient Regime

1. Describe Existing Stand Conditions



**149 MPB Monitoring
PSP's in:**

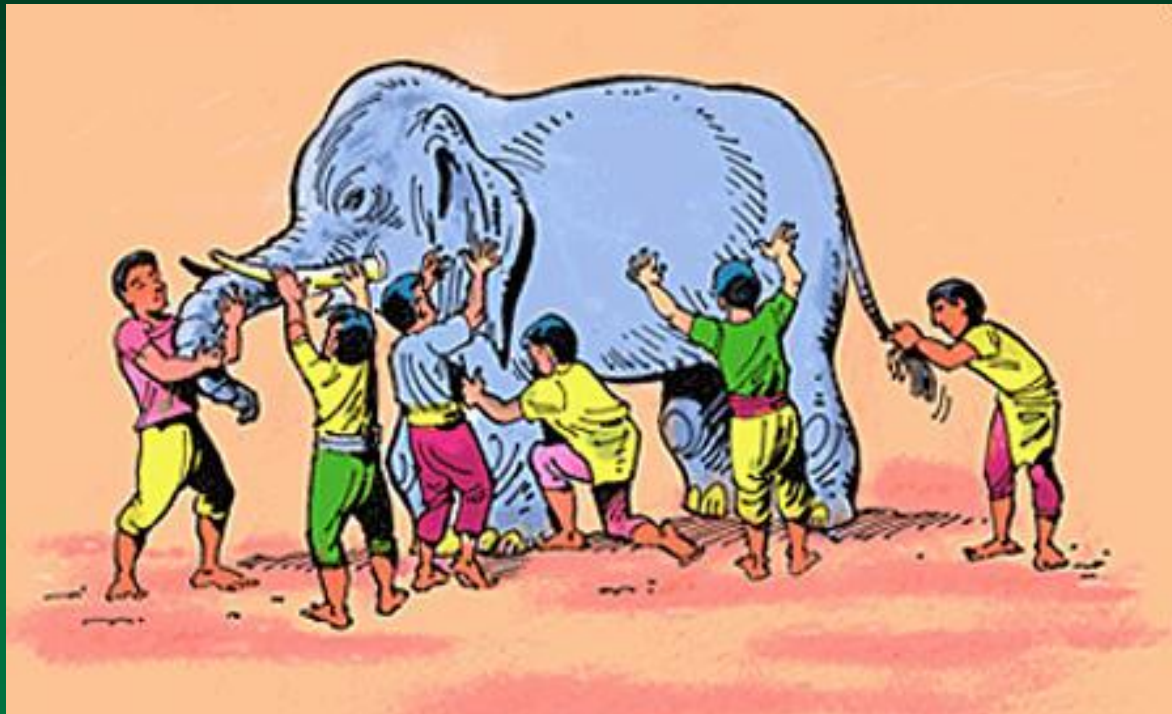
8 Strata

**Spatially widespread - SRD + 7
FMA's**

All Ages

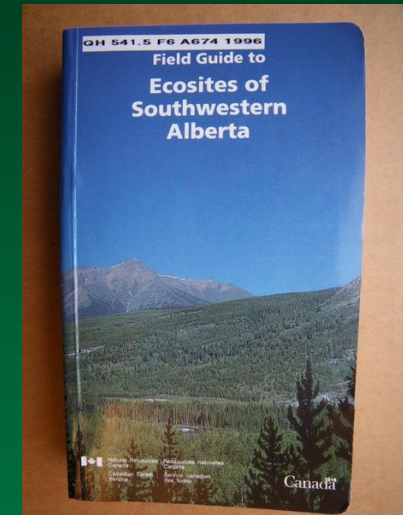
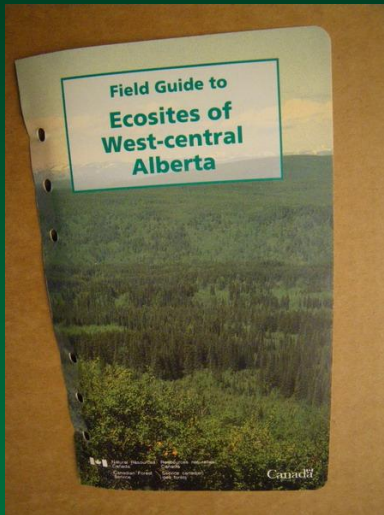
1. Describe Existing Stand Conditions

What does the elephant REALLY look like ?



1. Describe Existing Stand Conditions

AHA !!



Let someone else do the sampling !

1. Describe Existing Stand Conditions

Result:

18 unique '*Stand Types*' across the 8 Strata

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Represent the most common '*typical*' stand types found in the 8 project strata

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Attributes

1 layer vs 2 layer

Species composition by layer

Plot data and Ecosite Guides used for densities, heights, Site Index

2. Define Levels of MPB Attack



0 %

25 %

50 %

100 %



3. Define Salvage Treatments

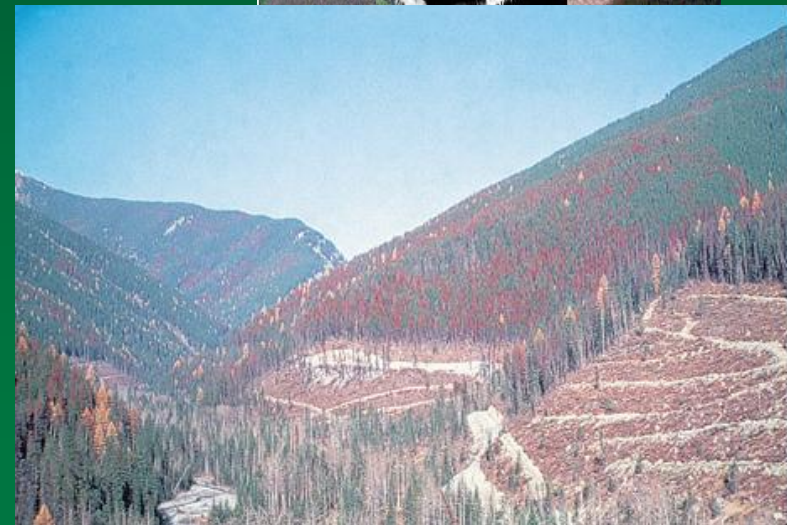
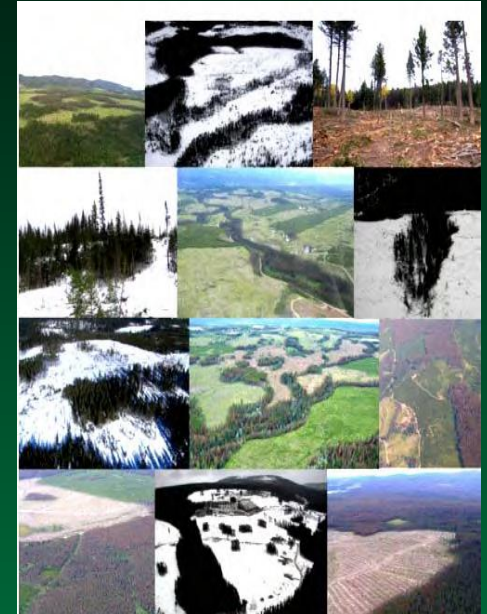
No:

No removal of trees, no matter the degree of attack



Yes:

Removal of all attacked trees, no matter the degree of attack



4. Define Regeneration Assumptions



**Where
undisturbed
by salvage,
understory
continues to
grow**

4. Define Regeneration Assumptions



Areas disturbed by salvage recruit natural *Pine* regeneration at rates observed in FGYA RLP study

4. Define Regeneration Assumptions



Option:

**Supplemental planting
of 2000 *Pine* trees/ha
in salvage - disturbed
areas**

4. Define Regeneration Assumptions



Option:

Scarification / site preparation to promote natural regeneration

Only after salvage in 100% MPB attack

5. Post Attack Stand Projections

Existing Condition

Stratum,
Stand
Type,
Age

Beetle Kill

0 %,
25 %,
50 %,
100 %

Evil Wizard of
Growth and Yield



?? Black Magic ??

Natural,
Planting,
Site Prep

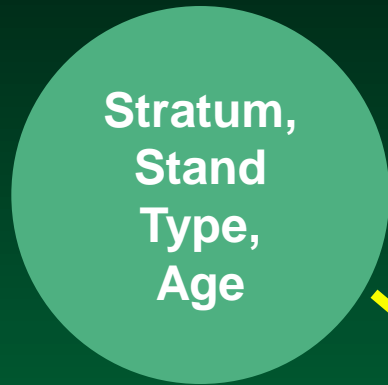
No, Yes

Regeneration Assumptions

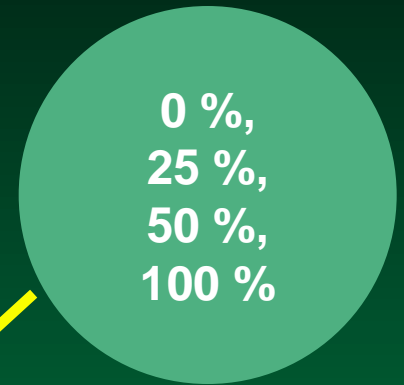
Salvage Treatments

5. Post Attack Stand Projections

Existing Condition



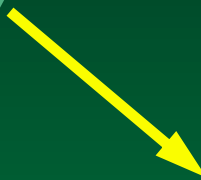
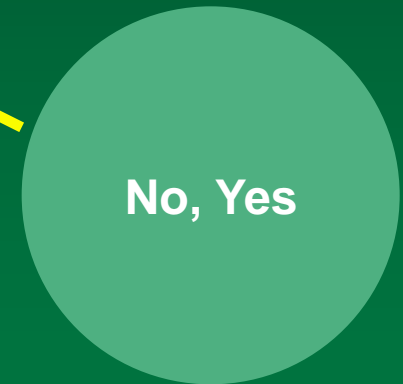
Beetle Kill



Growth
Projections



Alberta's Growth
Models:
GYPSY
MGM



Regeneration Assumptions

Salvage Treatments

6. DST Application Development

Home **GY Scenarios** Documents Feedback Administration Logout

My Scenarios **New** Help

Run Label Date:

Scenario Name

Scenario Label

Model: Stratum: Structure: Start Age: Intervention: Mortality Level:

Data Version ->

Age	BA	Conif Vol	Decid Vol	Avg Ht	Density	?	?

6. DST Application Development

Home **GY Scenarios** Documents Feedback Administration Logout

My Scenarios New Help

Open	Select	Run Label	Scenario Name	Scenario Label	Version	Model	Stratum	Structure	Intervention	Mortality
View	<input checked="" type="checkbox"/>									
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Delete Export to xls Compare Copy to New New

6. DST Application Development

Run Label	Run Label						
Scenario Name	Scenario Name						
Scenario Label	Scenario Label						
Run Parameters:	Model:	Model	Start Age	Start Age			
	Stratum	Stratum	Intervention	Intervention			
	Structure	Structure	Mortality Level	Mortality level			
	Data Version	Version					

Age	BA	Conif Vol	Decid Vol	Avg Ht	Density	?	?

Graph of Basal Area

Y-Axis

Age

Graph of Top Height

Y-Axis

Age

Graph of DBH

Y-Axis

Age