



Effects of mountain pine beetle on lodgepole pine cover and stand recovery

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- Some background on MPB ecology
- What is different this time?
- What we can expect in the future?

Mountain pine beetle

(Dendroctonus ponderosae)

- Native eruptive (not cyclic) insect
- Develops outbreaks **in response** to a combination of climatic conditions **AND** forest conditions
- The recent outbreak is far outside the historic norm
 - >10X larger than any past recorded outbreak
 - ~35 million hectares affected

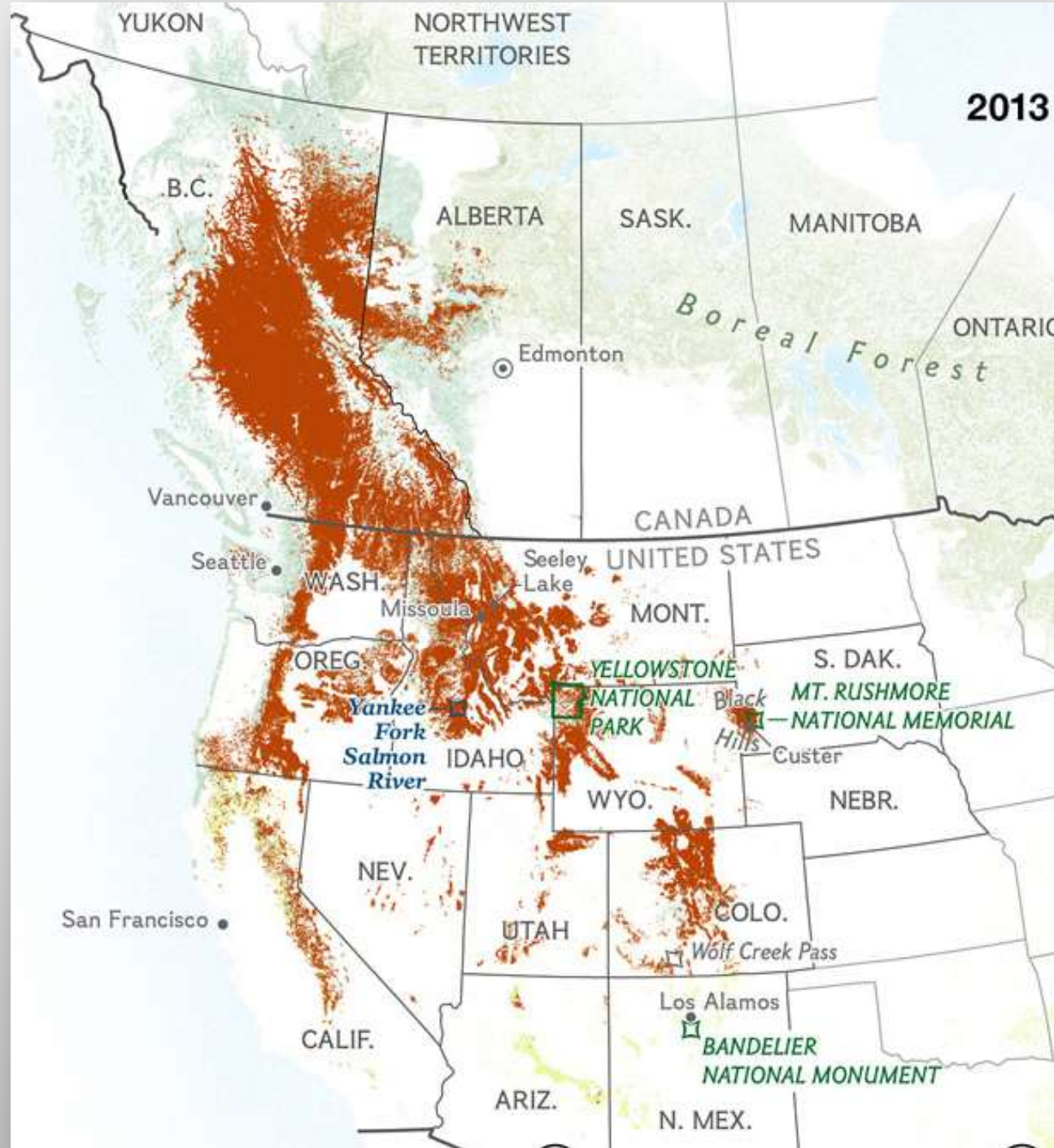


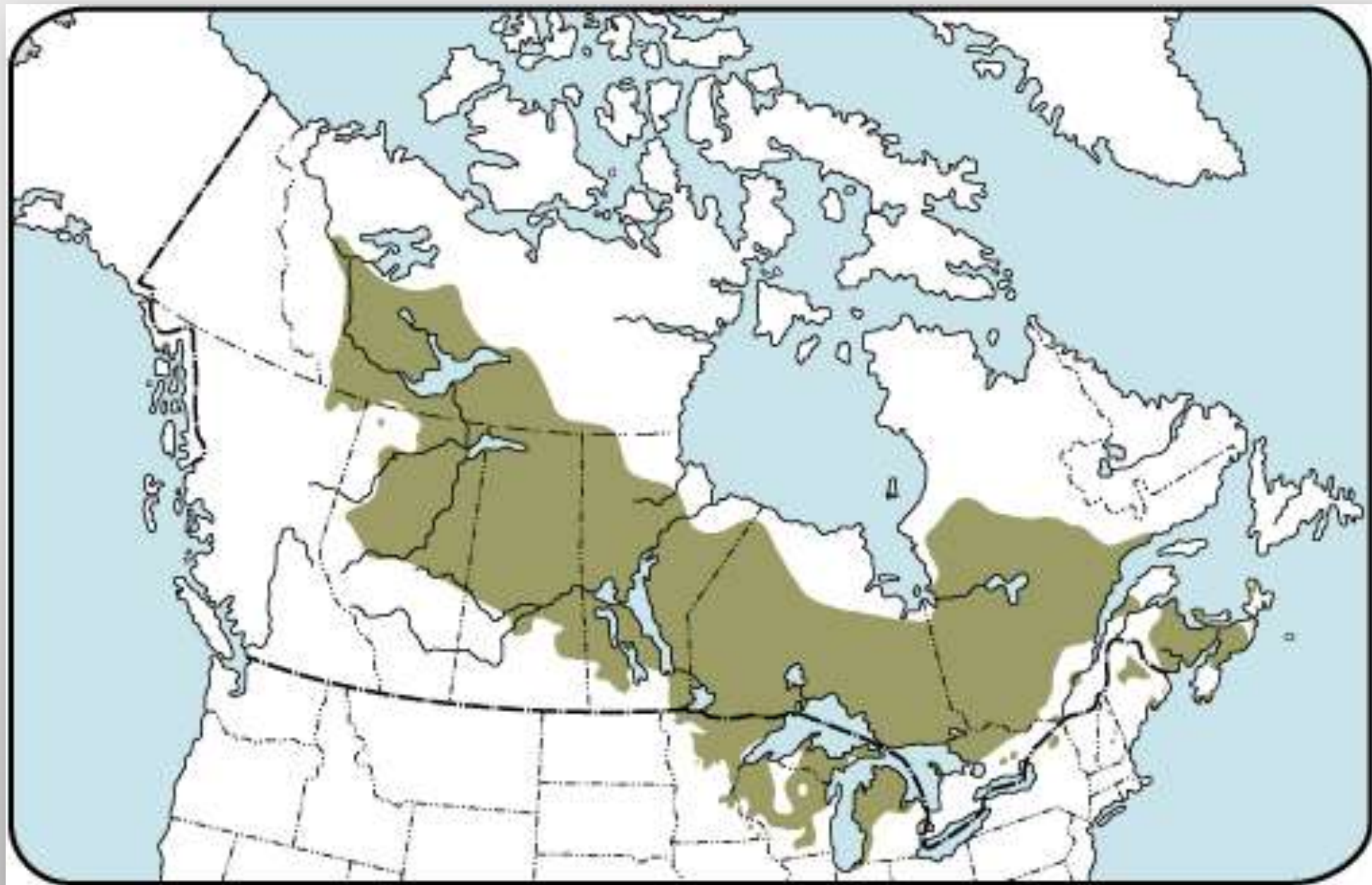
Mountain pine beetle

(Dendroctonus ponderosae)

- Native eruptive (not cyclic) insect
- Develops outbreaks **in response** to a combination of climatic conditions **AND** forest conditions
- The recent outbreak is far outside the historic norm
 - >10X larger than any past recorded outbreak
 - 40 million hectares affected









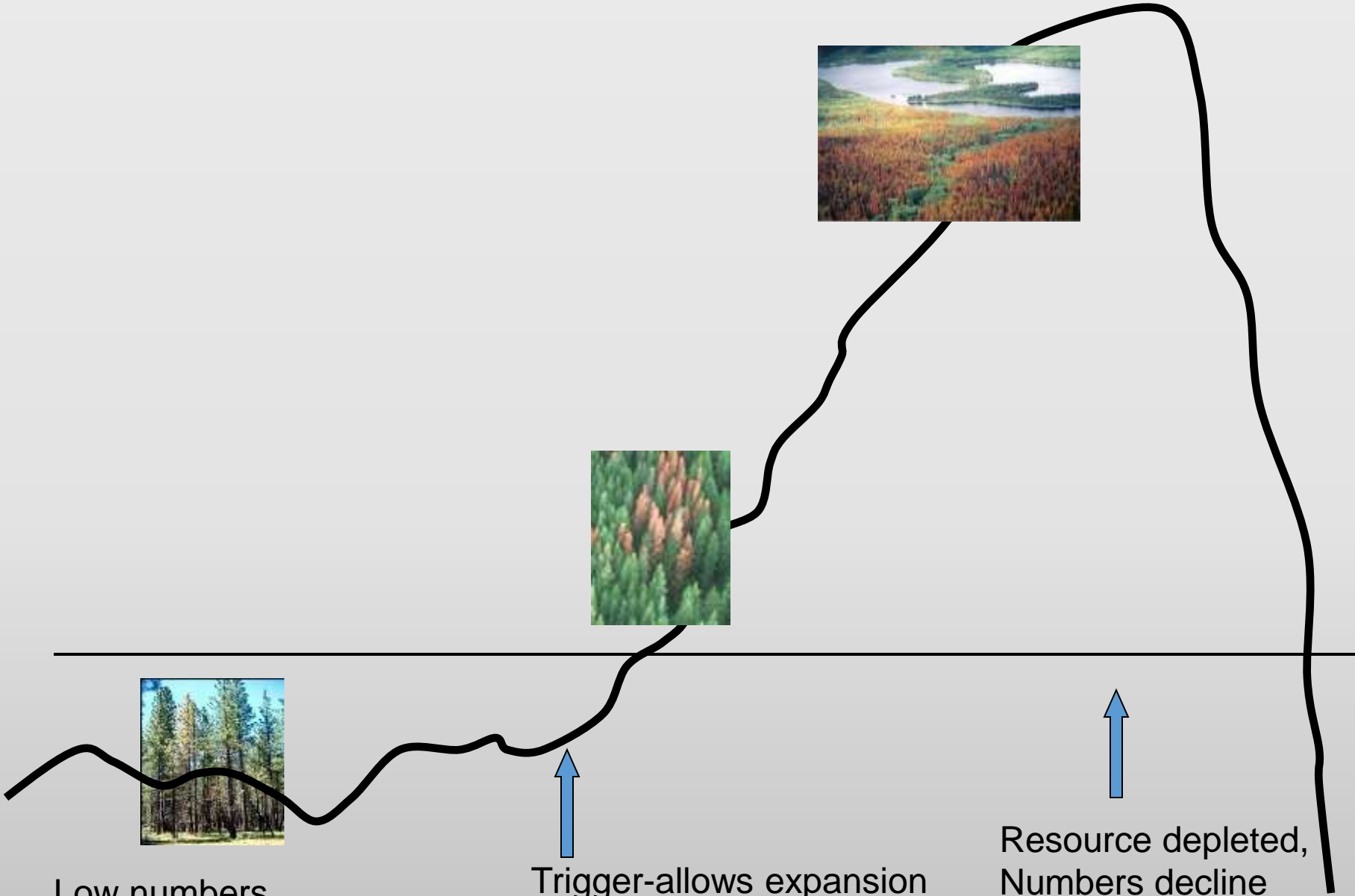
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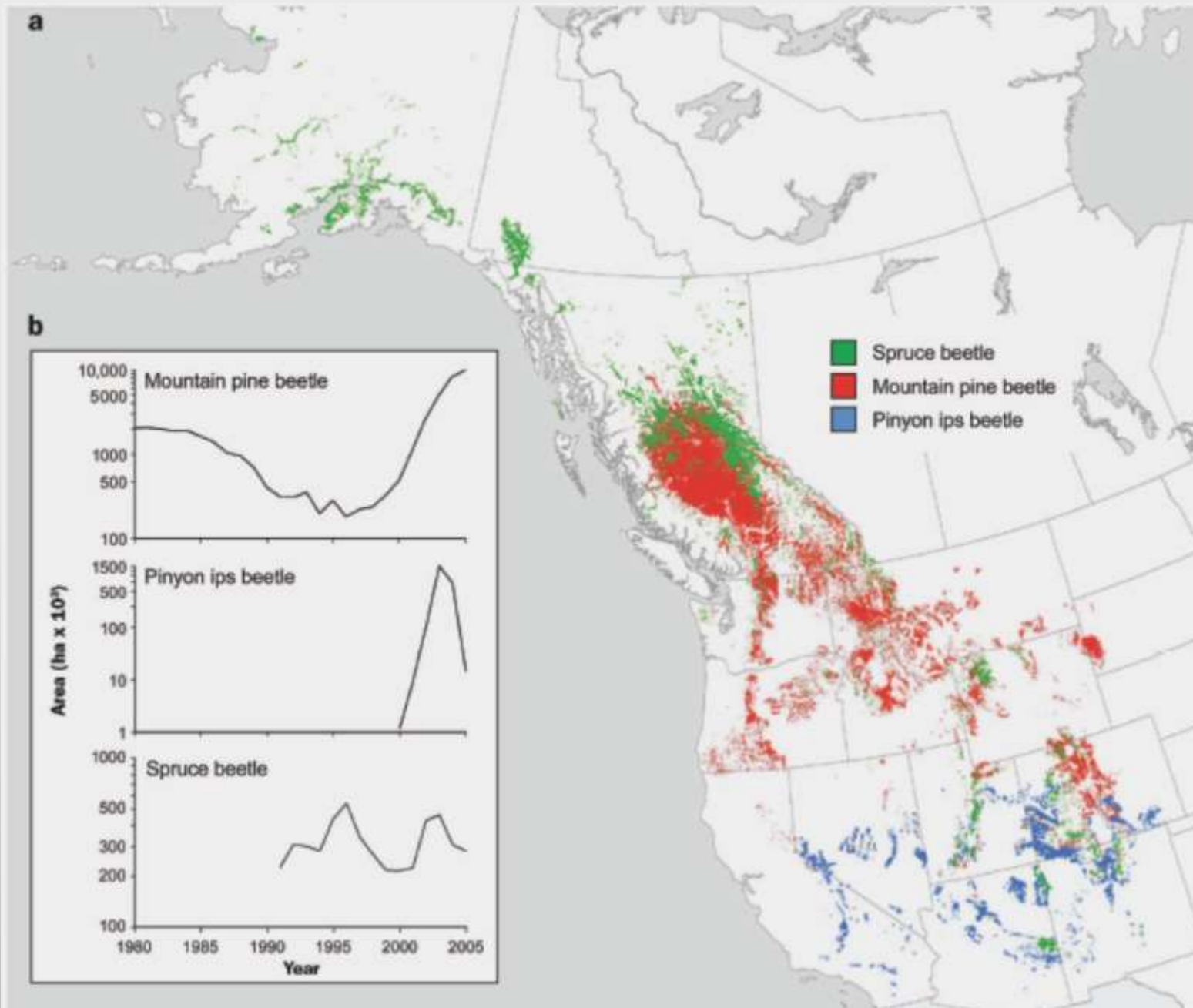


Low numbers,
Limited to rare weak trees

Trigger-allows expansion

Resource depleted,
Numbers decline

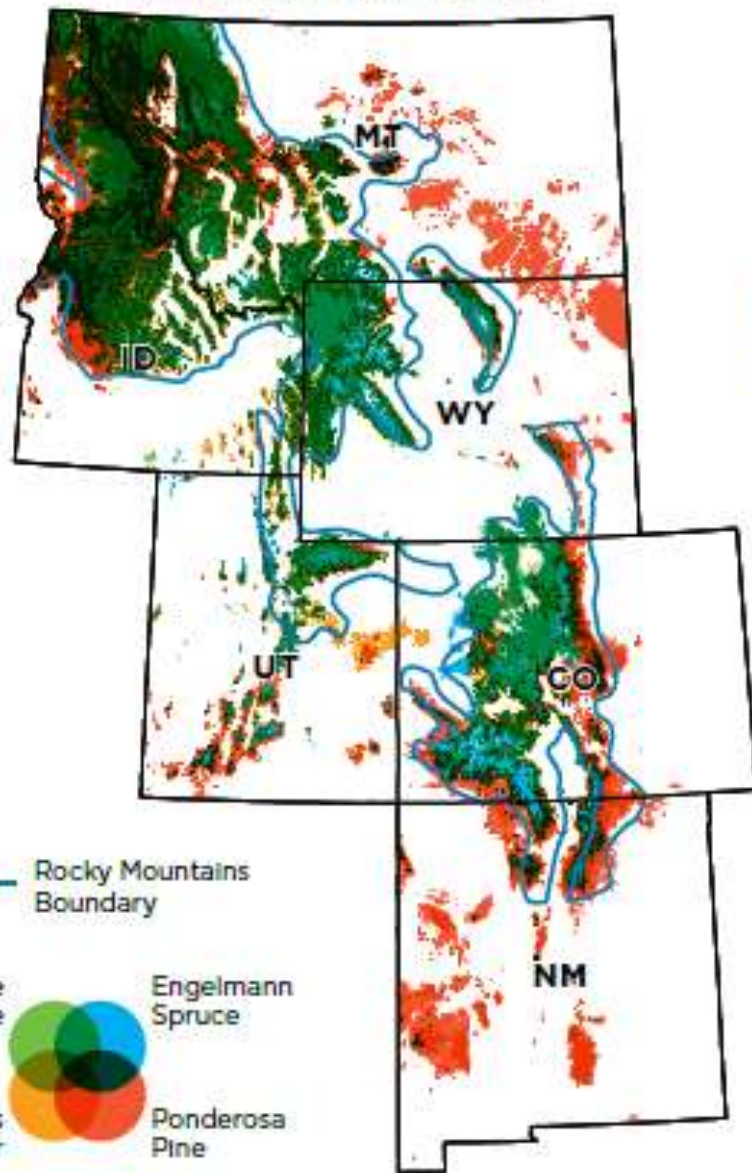




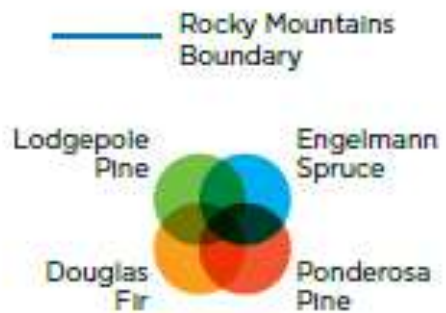
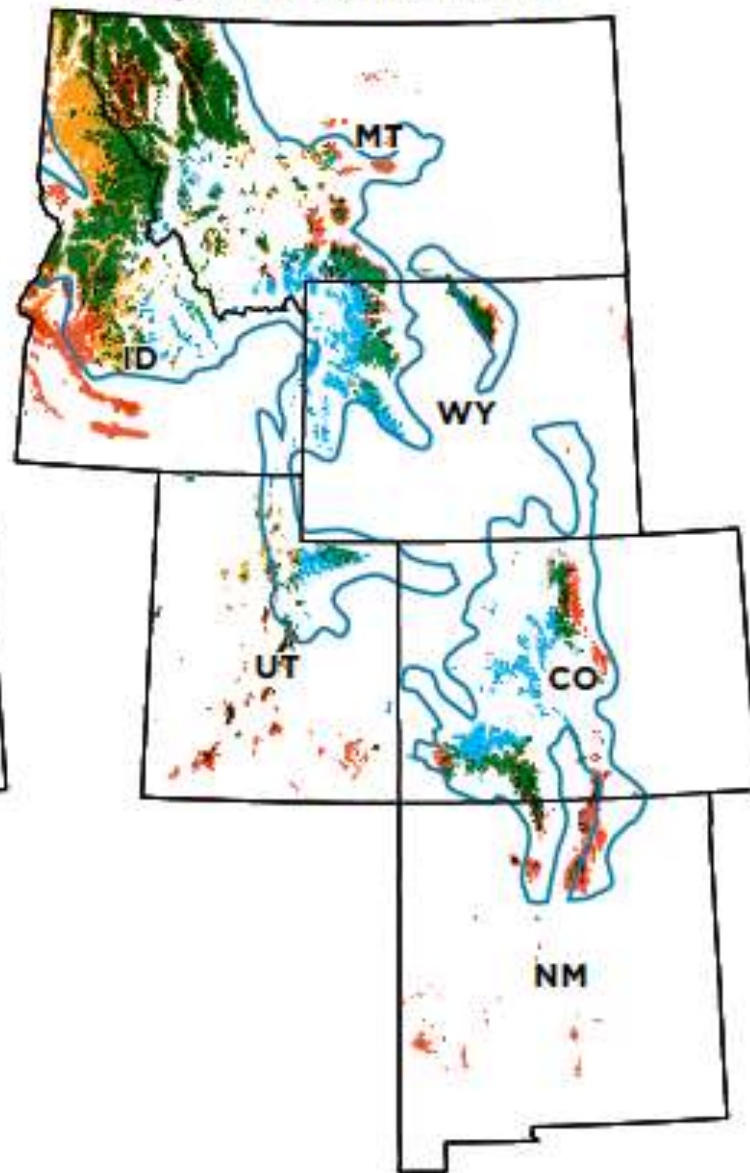
'Recovery' in the short and 'longer' term

Species	Current	2060		
	Recent Historical Suitability (acres)	Projected Suitability (acres)	Net Change in Suitability (acres)	Percent Net Change
Lodgepole Pine	60,474,000	6,065,000	-54,409,000	-90%
Ponderosa Pine	39,842,000	7,771,000	-32,071,000	-80%
Engelmann Spruce	64,651,000	21,999,000	-42,652,000	-66%
Douglas Fir	53,620,000	22,606,000	-31,014,000	-58%

Recent Historical Suitability



Projected Suitability in 2060



The future?