



Bark Beetles in the Rocky Mountain Region

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Forest Health Protection**



Mountain Pine Beetle



Spruce beetle



Douglas-fir Beetle



Western Balsam
Bark Beetle



Fir Engraver Beetle



Pine and other Engraver
Beetles



Western Pine Beetle

Rogues' Gallery Beetles behaving badly in the Region



Pinyon Ips

Mountain Pine Beetle





“Like fire and wind, the spruce beetle is a natural though destructive means for liquidating overmature forests and making way for the new”

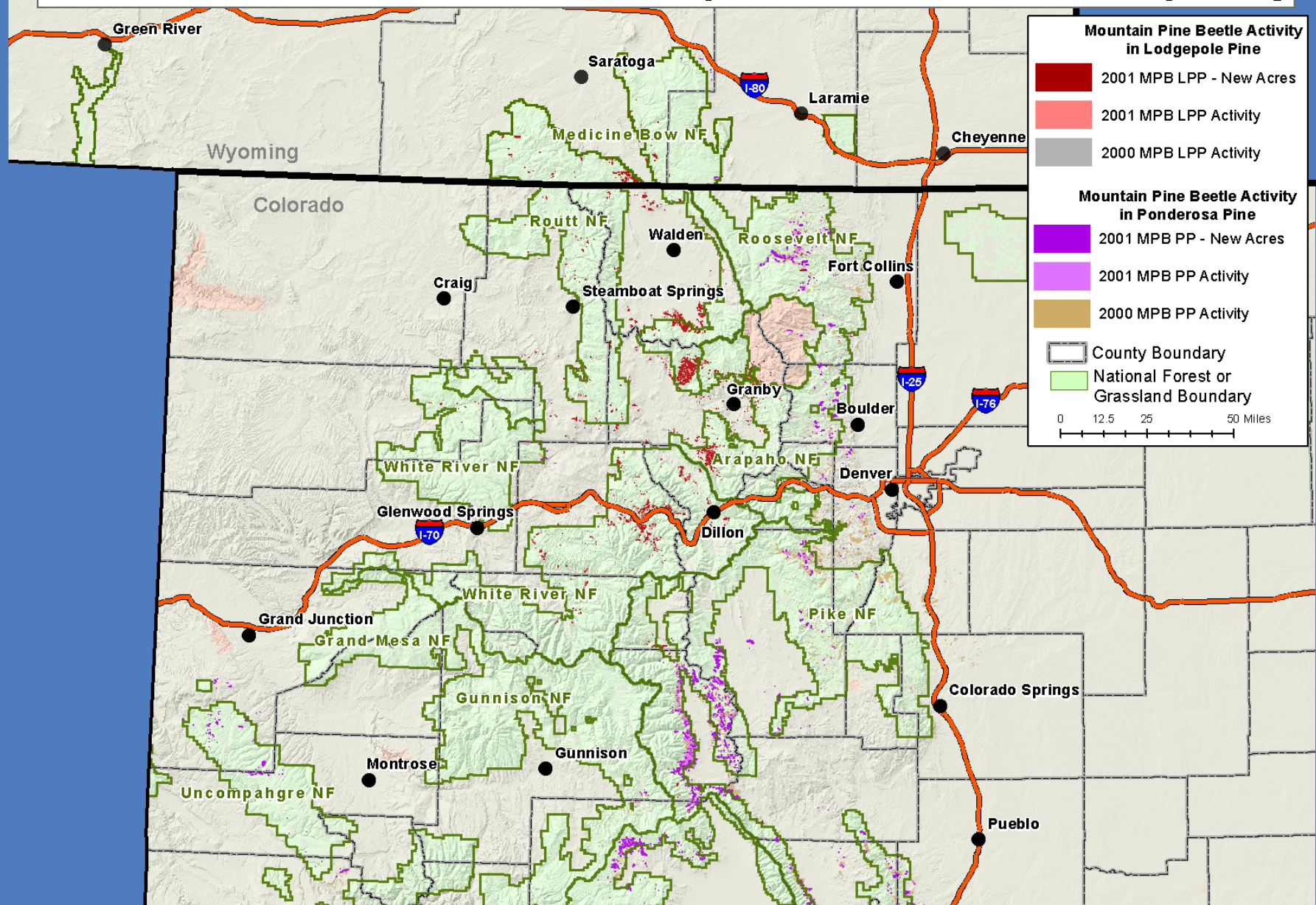
Furniss and Carolin, 1977. Western Forest Insects

Spruce Beetle



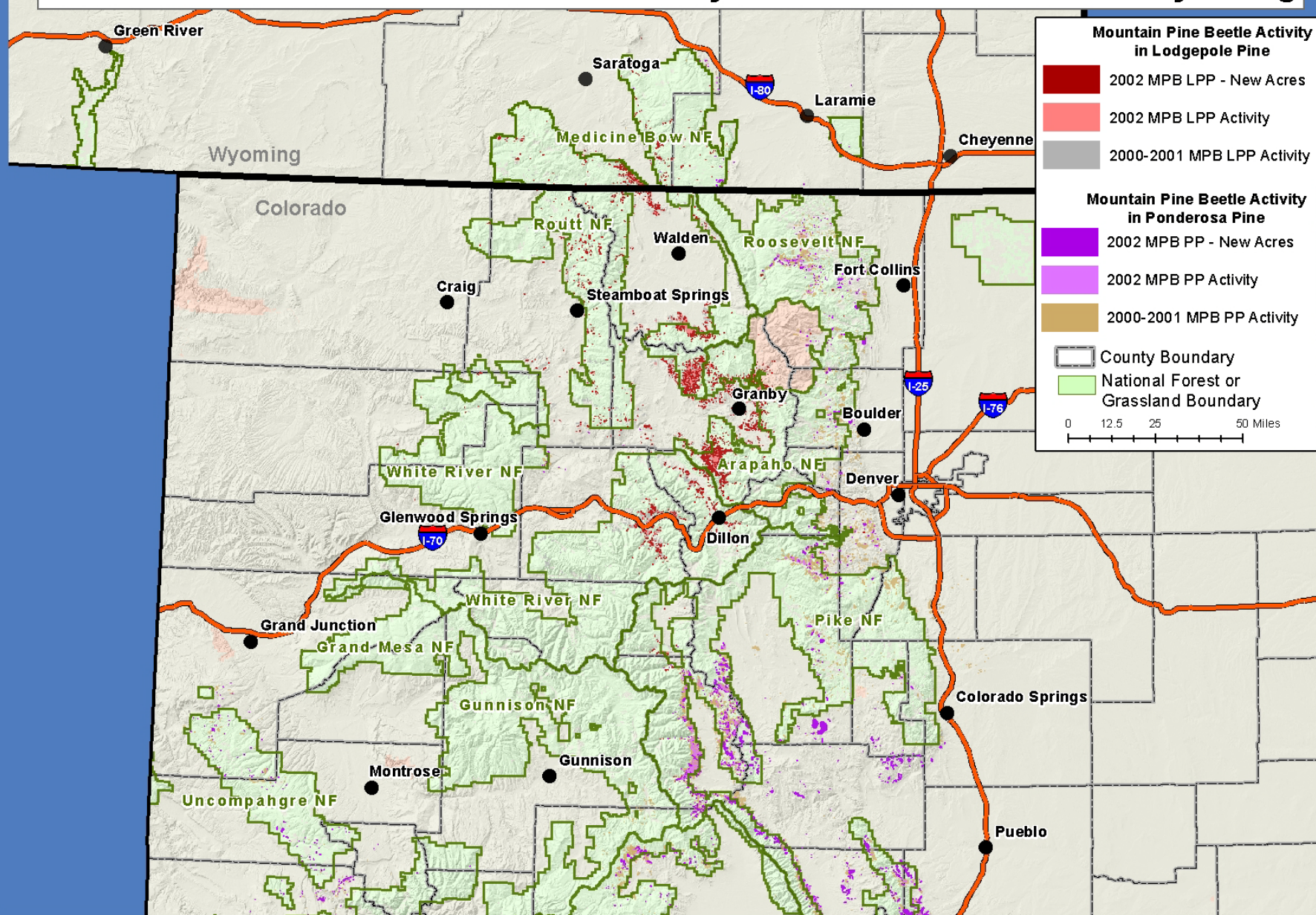


2000 - 2001 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



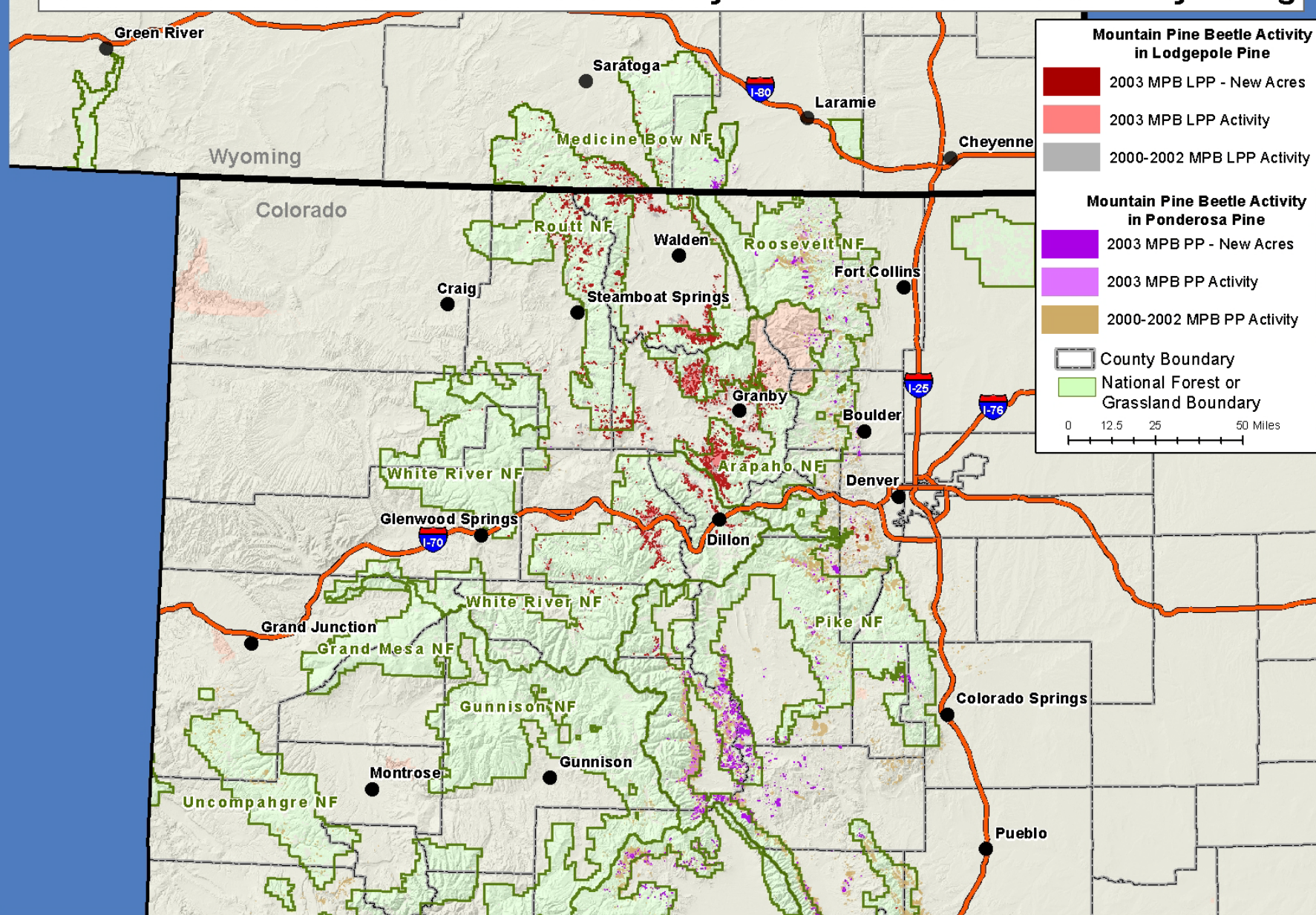
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2000 - 2002 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



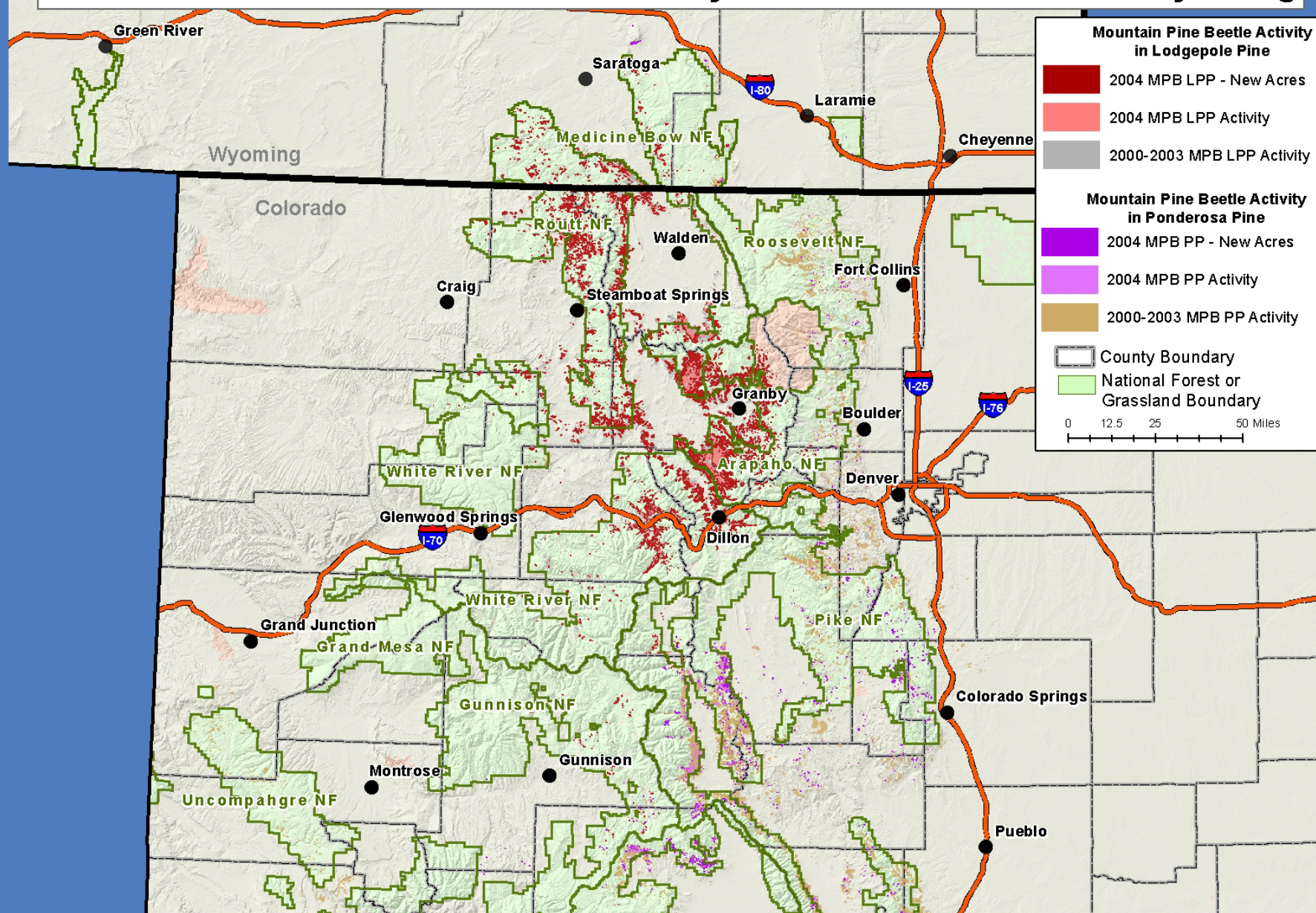
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2000 - 2003 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



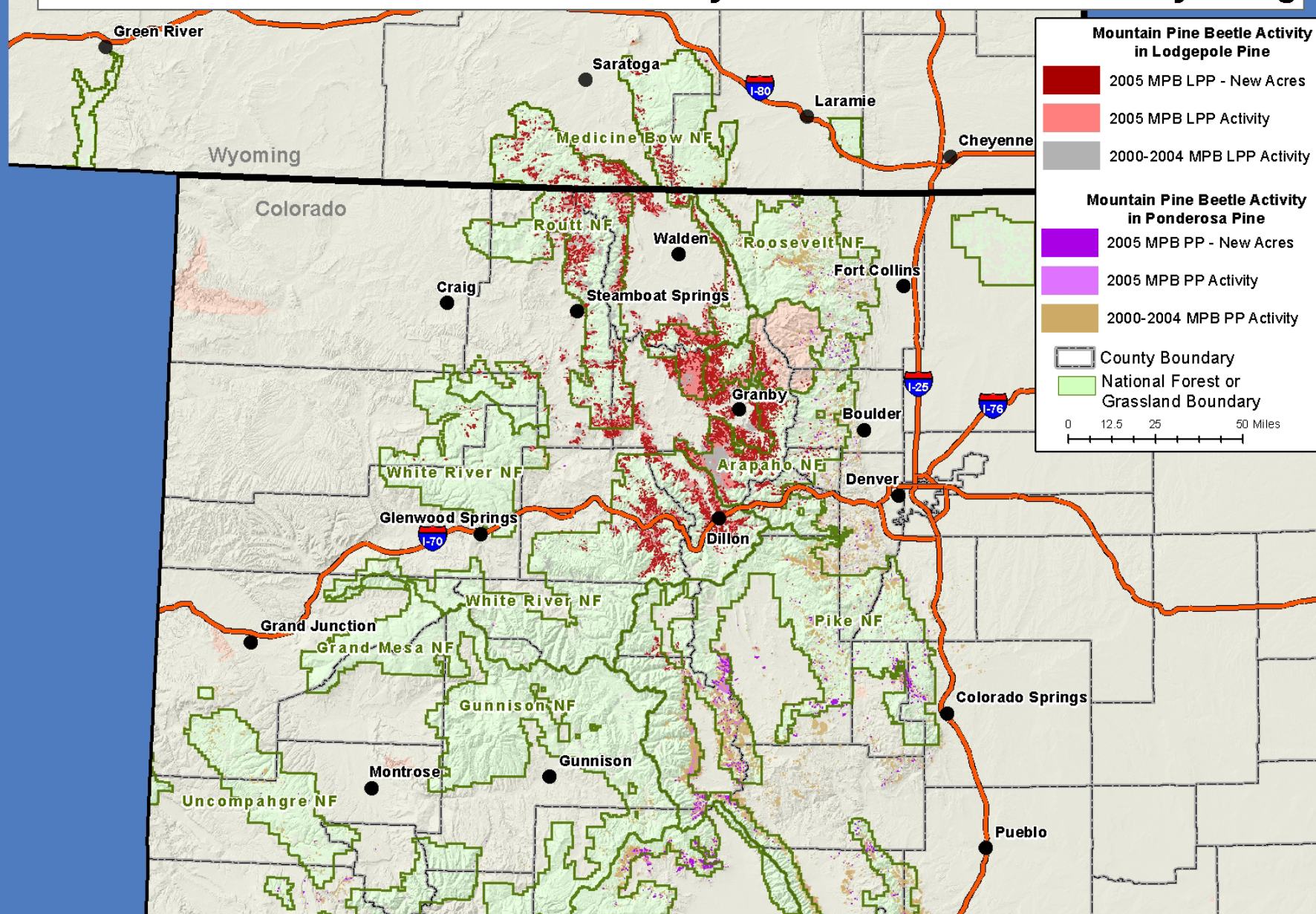
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2000 - 2004 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



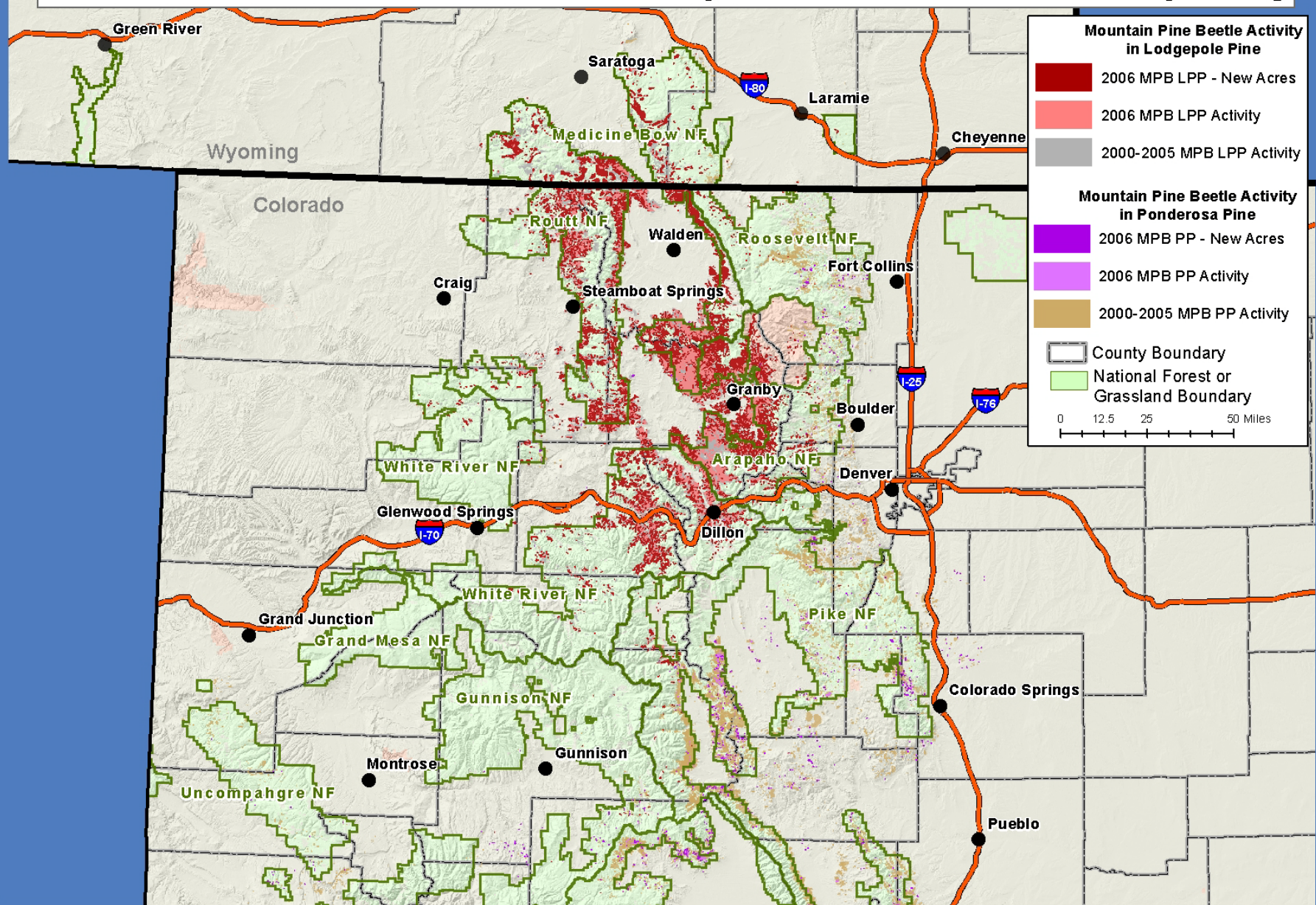
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2000 - 2005 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



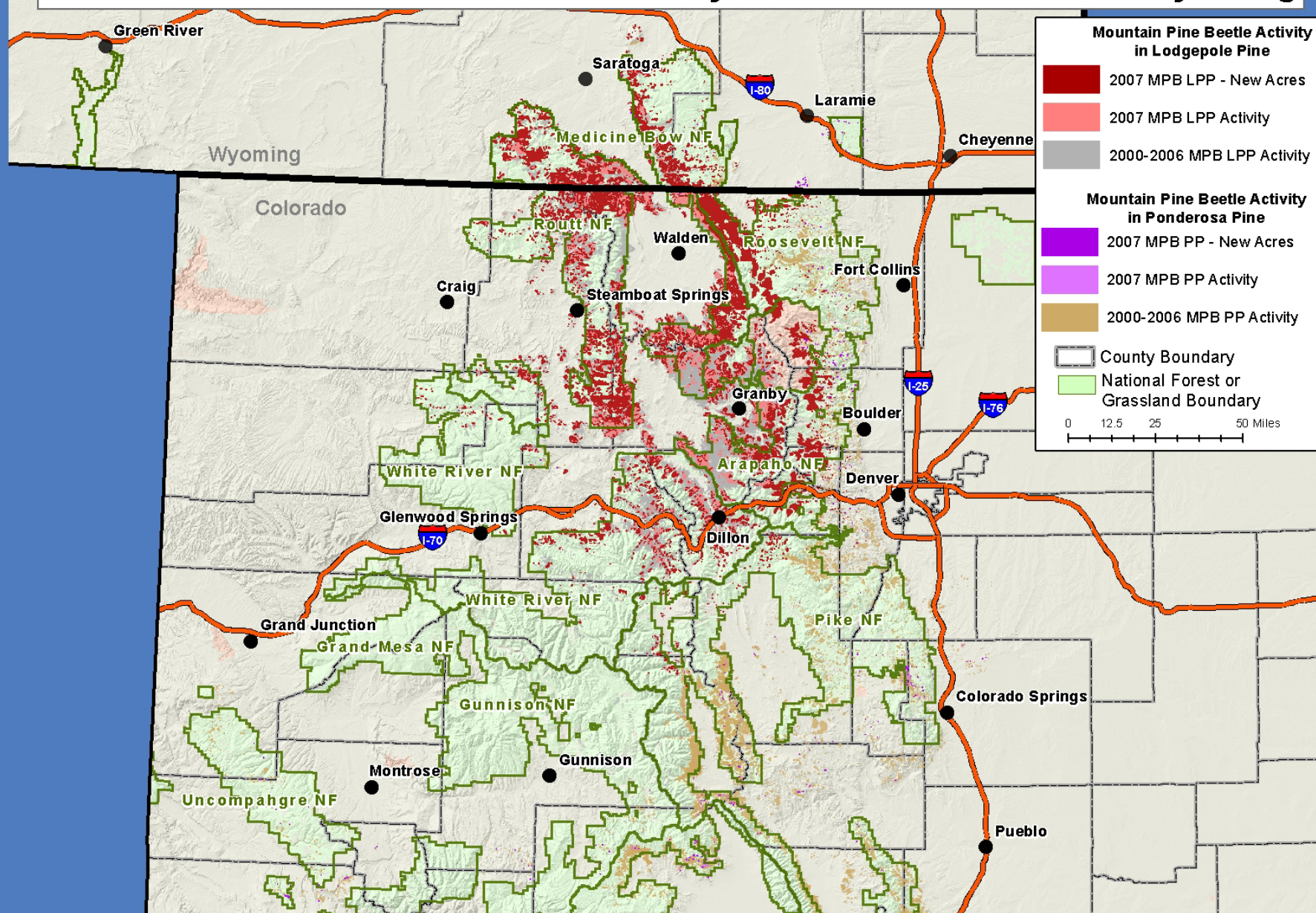
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2000 - 2006 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



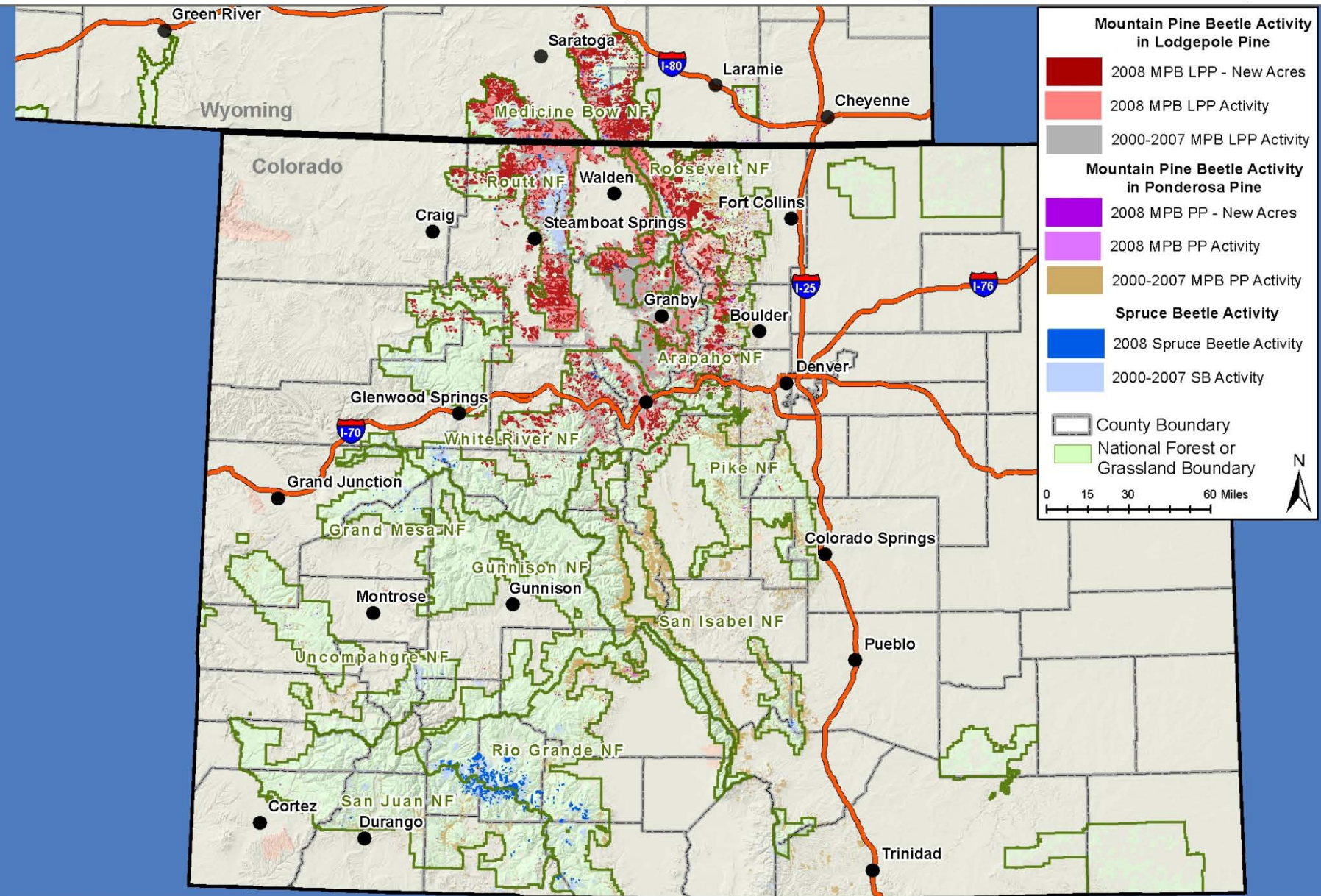
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2000 - 2007 Mountain Pine Beetle Activity in Colorado & Southern Wyoming



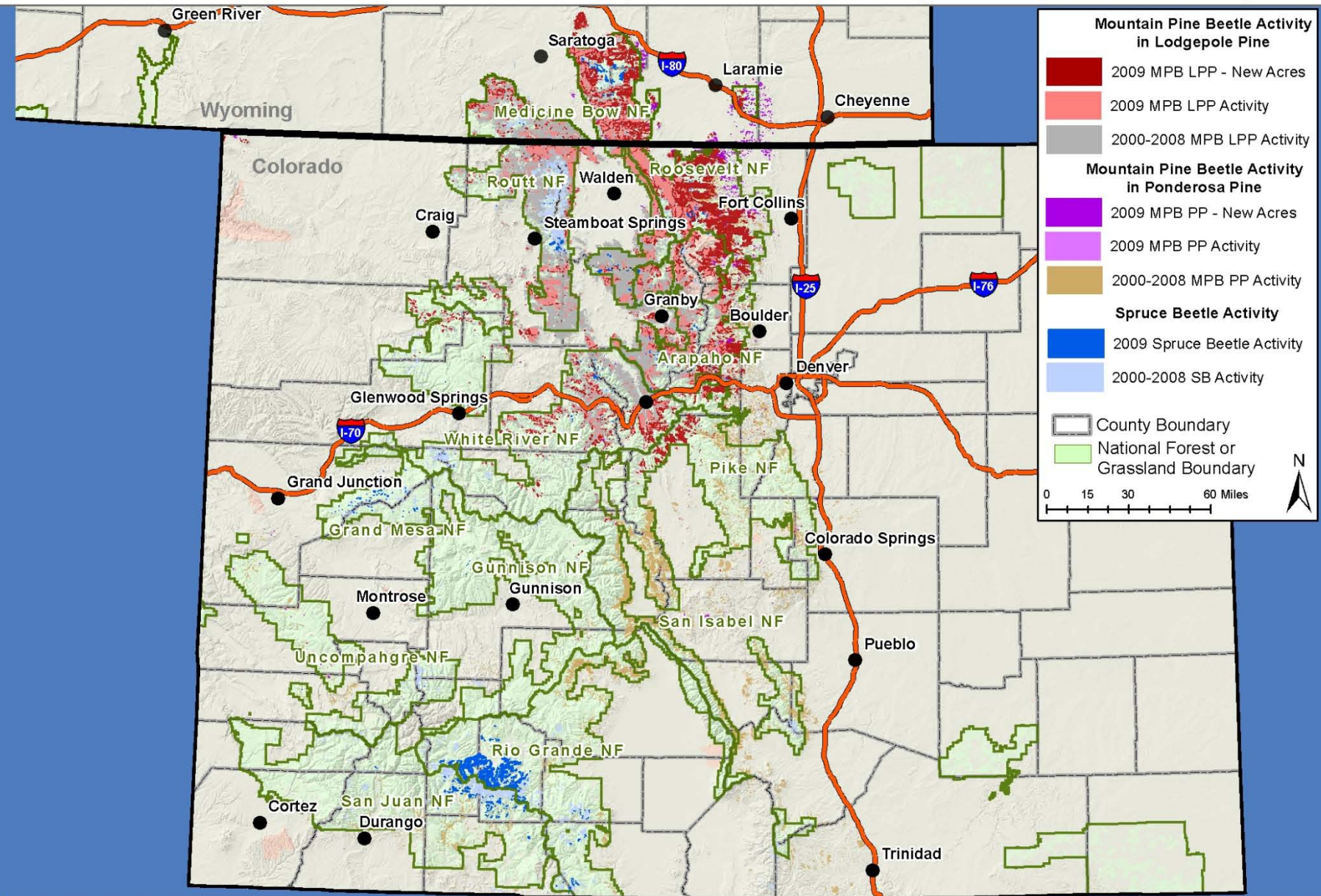
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2000 - 2008 Mountain Pine Beetle and Spruce Beetle Activity in Colorado & S. Wyoming



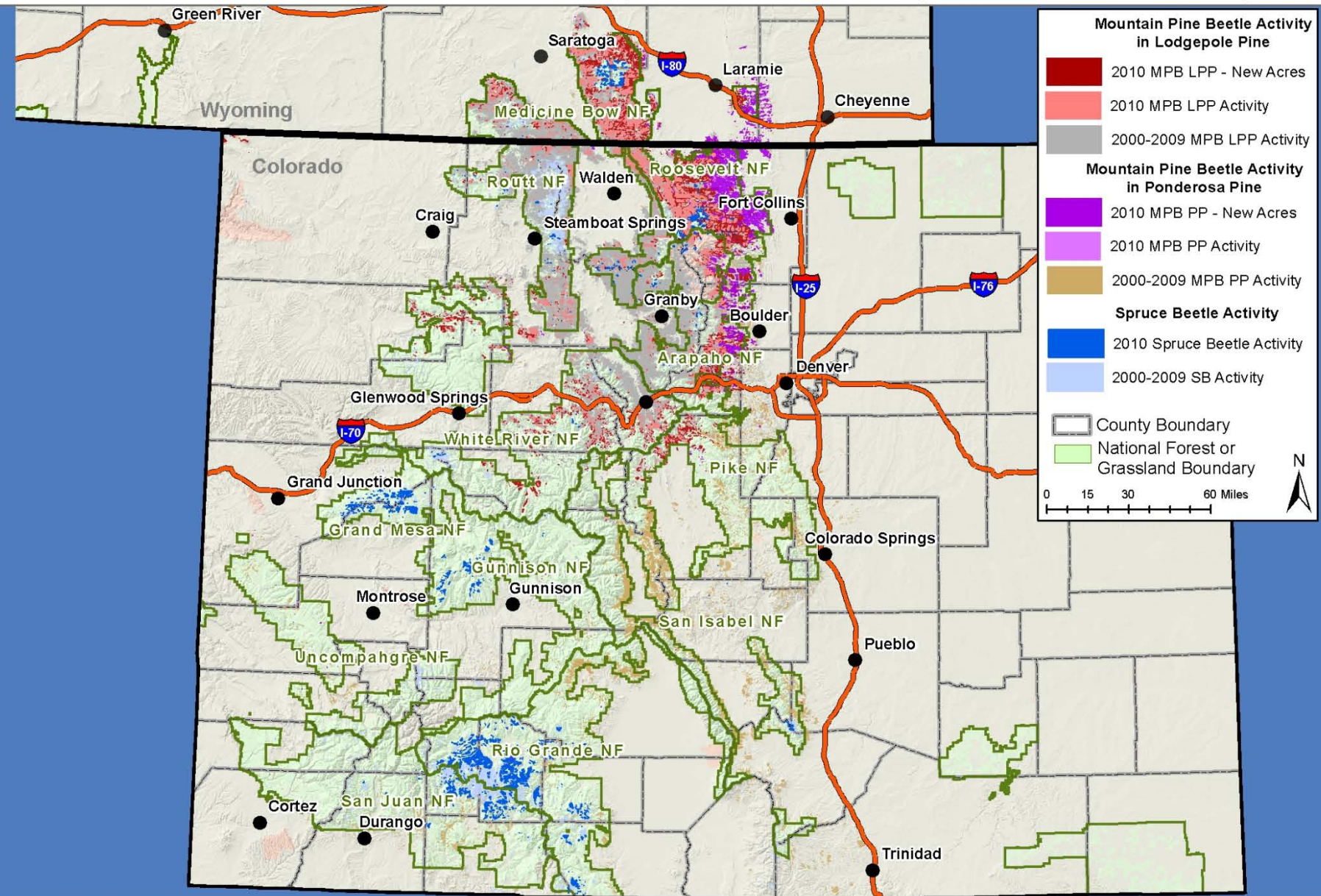
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2000 - 2009 Mountain Pine Beetle and Spruce Beetle Activity in Colorado & S. Wyoming



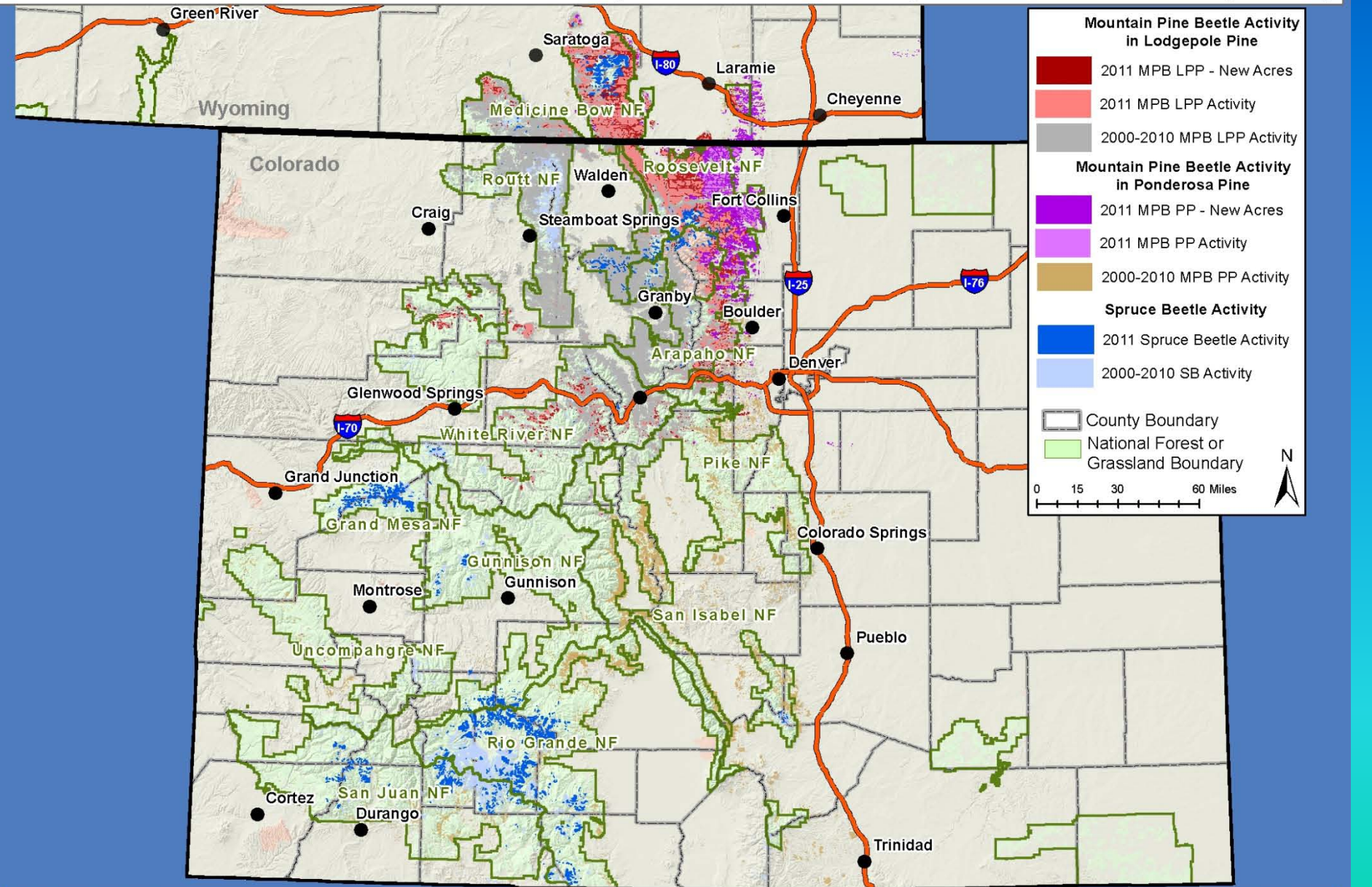
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2000 - 2010 Mountain Pine Beetle and Spruce Beetle Activity in Colorado & S. Wyoming



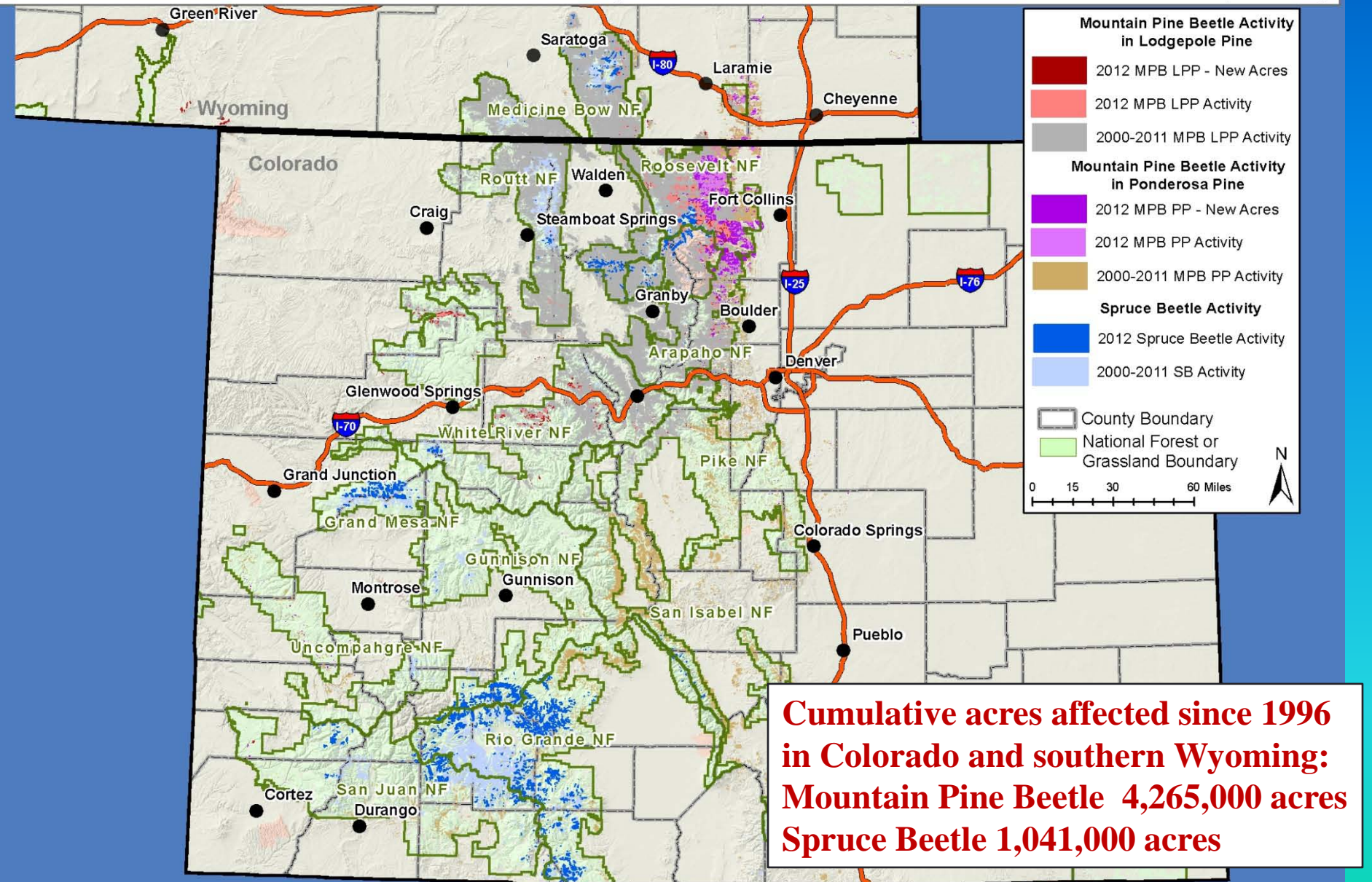
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2000 - 2011 Mountain Pine Beetle and Spruce Beetle Activity in Colorado & S. Wyoming



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2000 - 2012 Mountain Pine Beetle and Spruce Beetle Activity in Colorado & S. Wyoming



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Big Populations leading to reports of Odd Observations.....

Mountain pine beetle documented for the first time in Nebraska in 2010.

In 2010 Ralph Zentz, City of Fort Collins Forester, found beetles in a tree that were able to complete an entire life cycle between August and Halloween, very short and late.

Scott Ferrenberg, University of Colorado – Boulder, suggests the possible occurrence of two generations of mountain pine beetles in a single year in high elevation limber pines based on observations in 2010.

Computer models suggesting spruce beetle completing its life cycle in a single year



In spite of reported observations of early emergence, mass attacks are still being observed during the expected July – early September period, with only one generation per year. Spruce beetle has been reported with both a one year or a two year life cycle in Colorado but recent studies in southern Colorado still indicate primarily a two year life cycle



Cold Snap!

Was it cold enough to kill the
bark beetles?

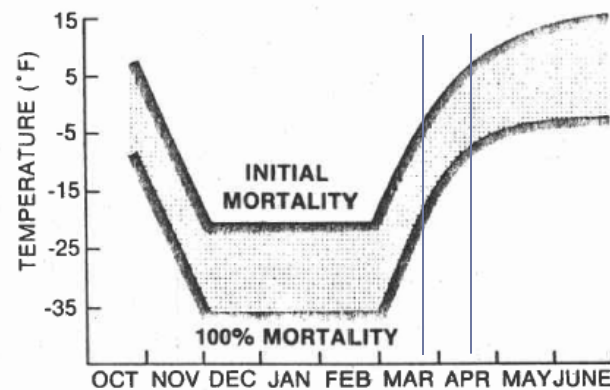


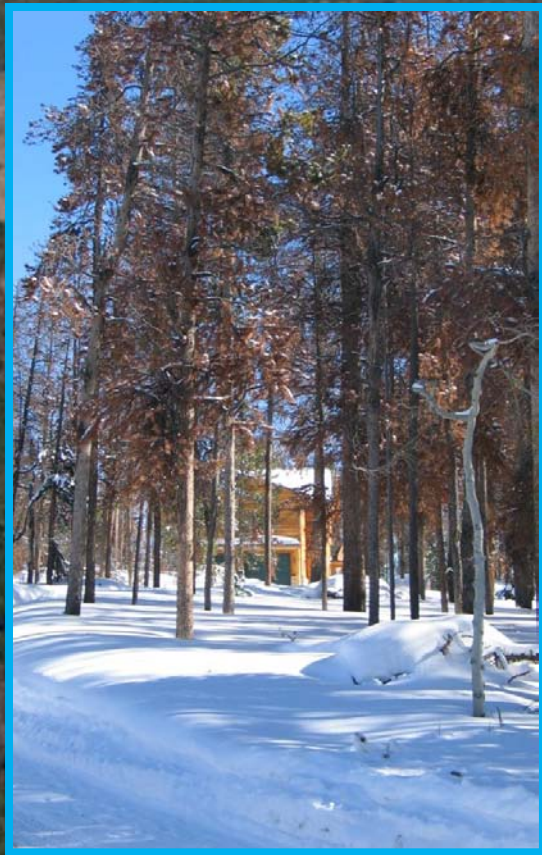
Figure 1.--Relationship of larval mortality and cold temperatures.

Satellite Photo of Mountain Pine Beetle



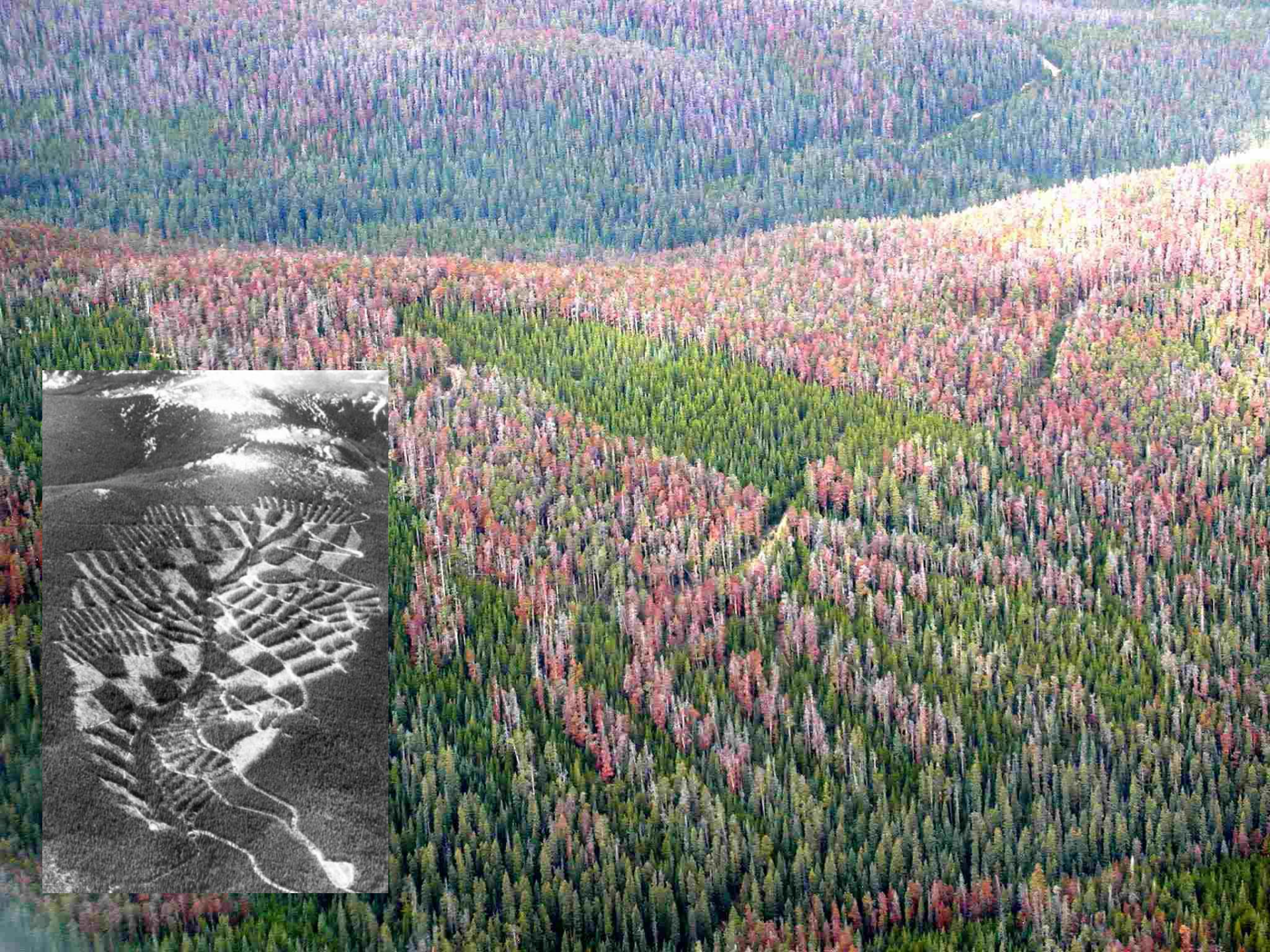
Lake Granby, Shadow Mountain Lake, and Grand Lake, Grand County, CO

















Vegetation response under dead lodgepole overstory
has helped reduce run off concerns on many sites



Increasing age class diversity across landscapes and species diversity where possible in future lodgepole pine stands



*Cariboo Area, standing dead, September 2006
Photo: Lorraine Maclauchlan*

Black Hills Thinning

Un-thinned Areas
with Beetle Kill

**Thinned Areas
2003/4**

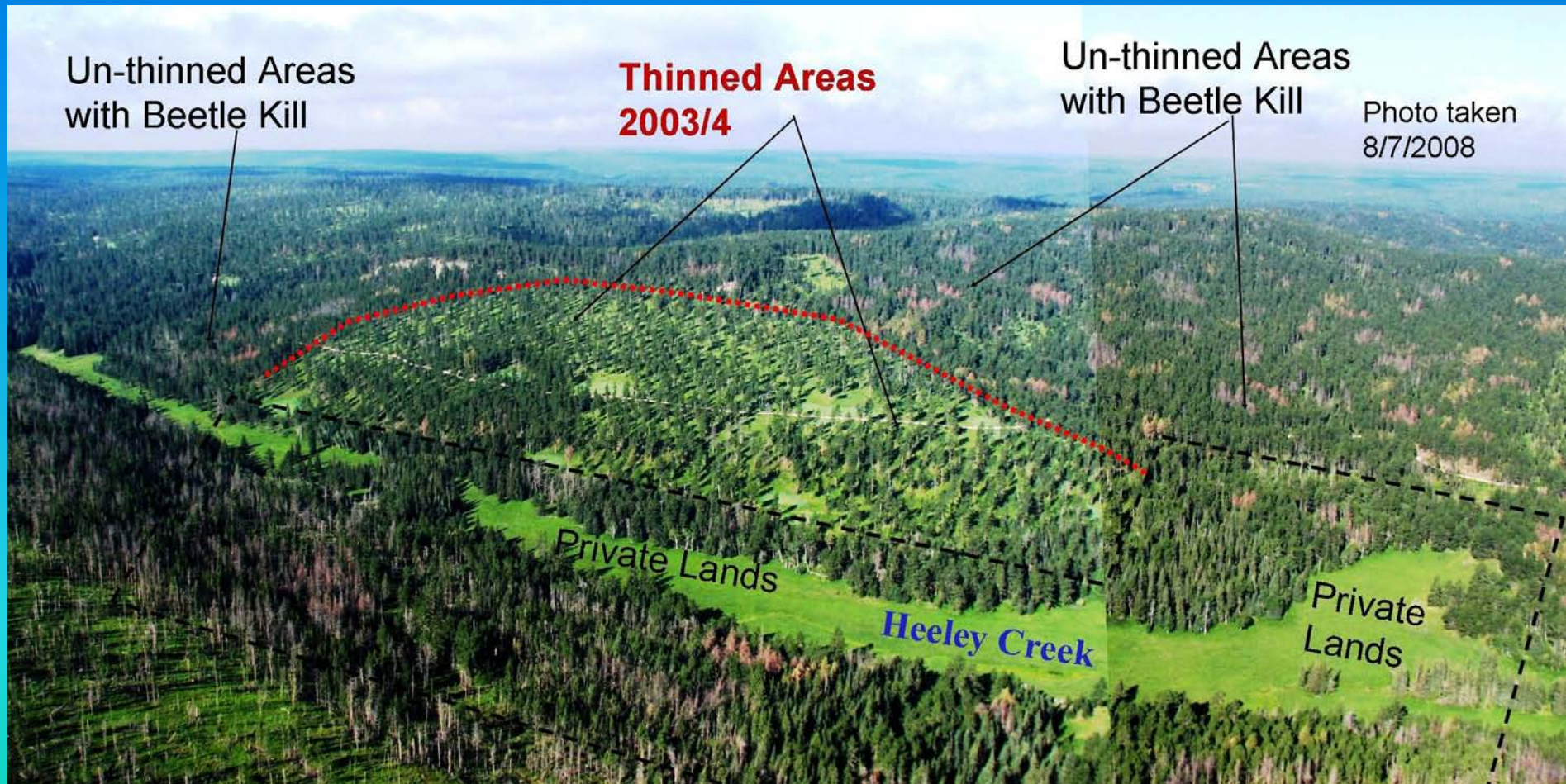
Un-thinned Areas
with Beetle Kill

Photo taken
8/7/2008

Private Lands

Heeley Creek

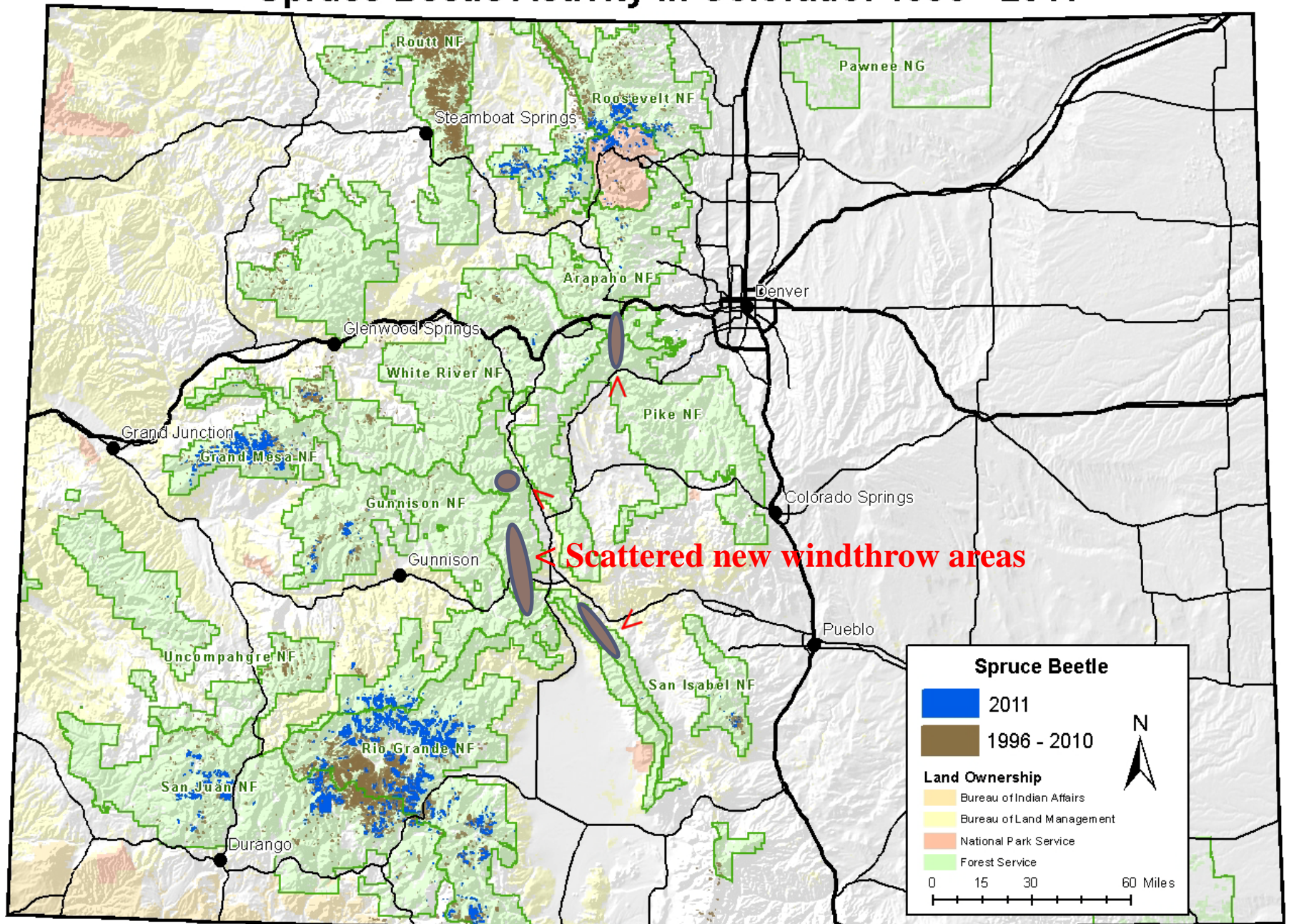
Private Lands



Spruce Beetle, Rio Grande National Forest



Spruce Beetle Activity in Colorado: 1996 - 2011

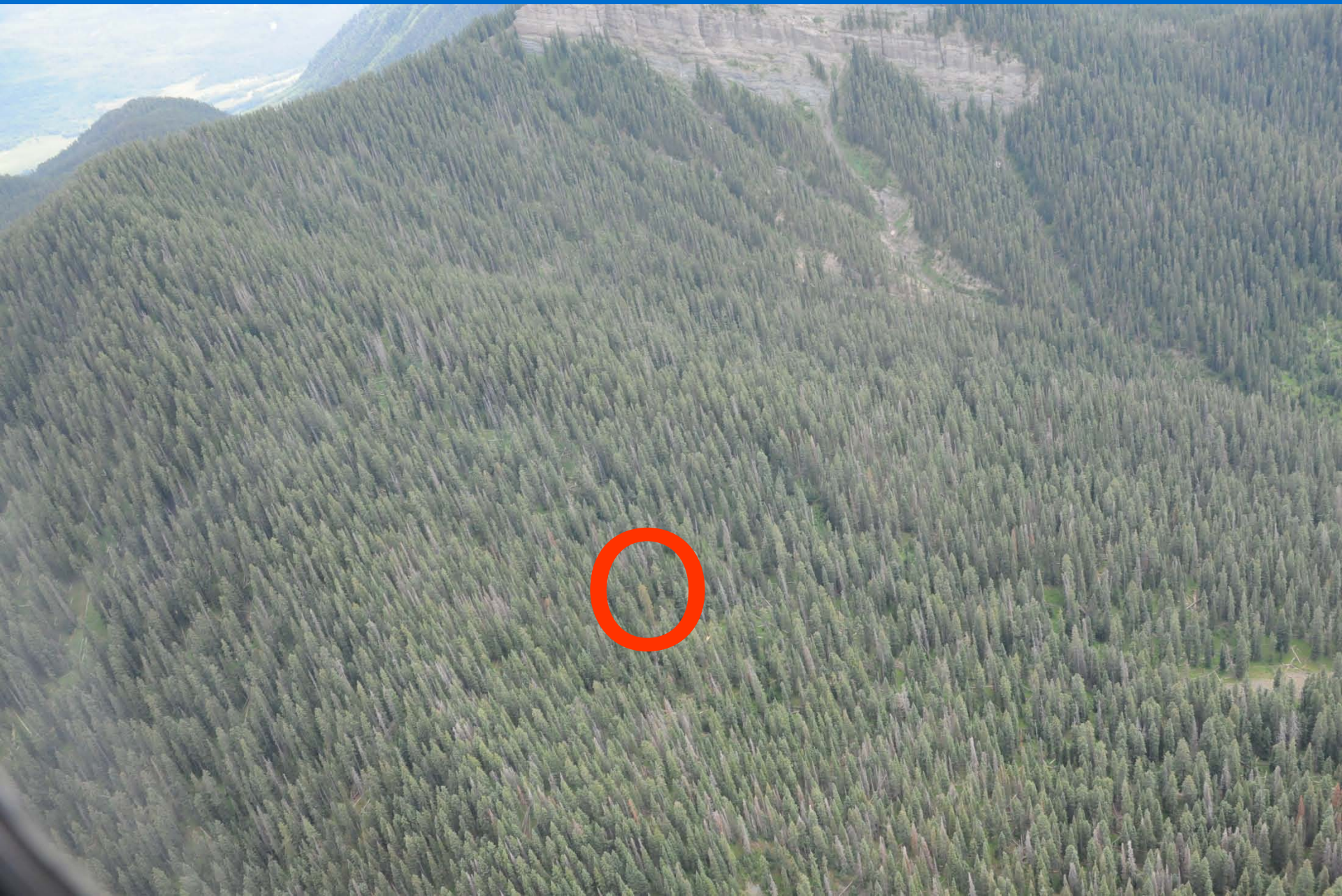




2012 Blowdown Monarch Pass



Spruce Beetle – Rio Grande NF







Spruce Beetle



SB Lime Creek, Rio Grande N.F., 2010

Justin Backsen

Spruce Beetle Rio Grande NF 2012





SB Seven Parks Peak, Rio Grande N.F.



SB, Rio Grande N.E.





Big Meadows Campground
Rio Grande National Forest