

## Short-term changes in plant communities in arid Wyoming big sagebrush ecosystems from fuel treatments

David A. Pyke, Paul S. Doescher, Eugene W. Schupp, Michael D. Reisner, Scott Shaff, Jeff Burnham, and Andrew Lindgren

### ◆ What plant community elements change with fuel treatments?

	Decreases		Increases
◆ Fire		◆ Fire	
– Shrubs		– Basal gap size	
– Perennial grasses		– Bare ground	
– Mosses		◆ Mowing	
◆ Mowing		– Cheatgrass	
– Shrubs		– Perennial grasses	
◆ Plateau		◆ Plateau & Fire	
– Cheatgrass		– Bare ground	
– Perennial grasses		– Basal gap size	
– Annual forbs			

### ◆ Spatial structure of perennial plants (gaps) is related positively to cheatgrass cover.

- High livestock grazing intensity plus heat and water stress indirectly create these gaps
- Fire & Plateau also increases gaps

### ◆ Perennial grasses associate with sagebrush with high stress (heat, water or livestock grazing intensity)

### ◆ Fire kills shrub and grasses and increases basal gaps

### ◆ Monitoring gaps between perennial plants may provide a fast early warning indicator of invasion potential.