

# Mule Deer Monitoring in the Pinedale Anticline Project Area



**Prepared for:**

**Pinedale Anticline Project Office (PAPO)**

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# Background

- Sublette Mule Deer Study (Phase I): 1998 - 2001
- Sublette Mule Deer Study (Phase II): 2001 - 2007
- Transition period: 2008
- Pinedale Anticline Project Office (PAPO) monitoring: 2009 - present



# Wildlife Monitoring and Mitigation Matrix (WMMM)

Table 1. Wildlife monitoring and mitigation matrix (WMMM) developed by the BLM (2008).

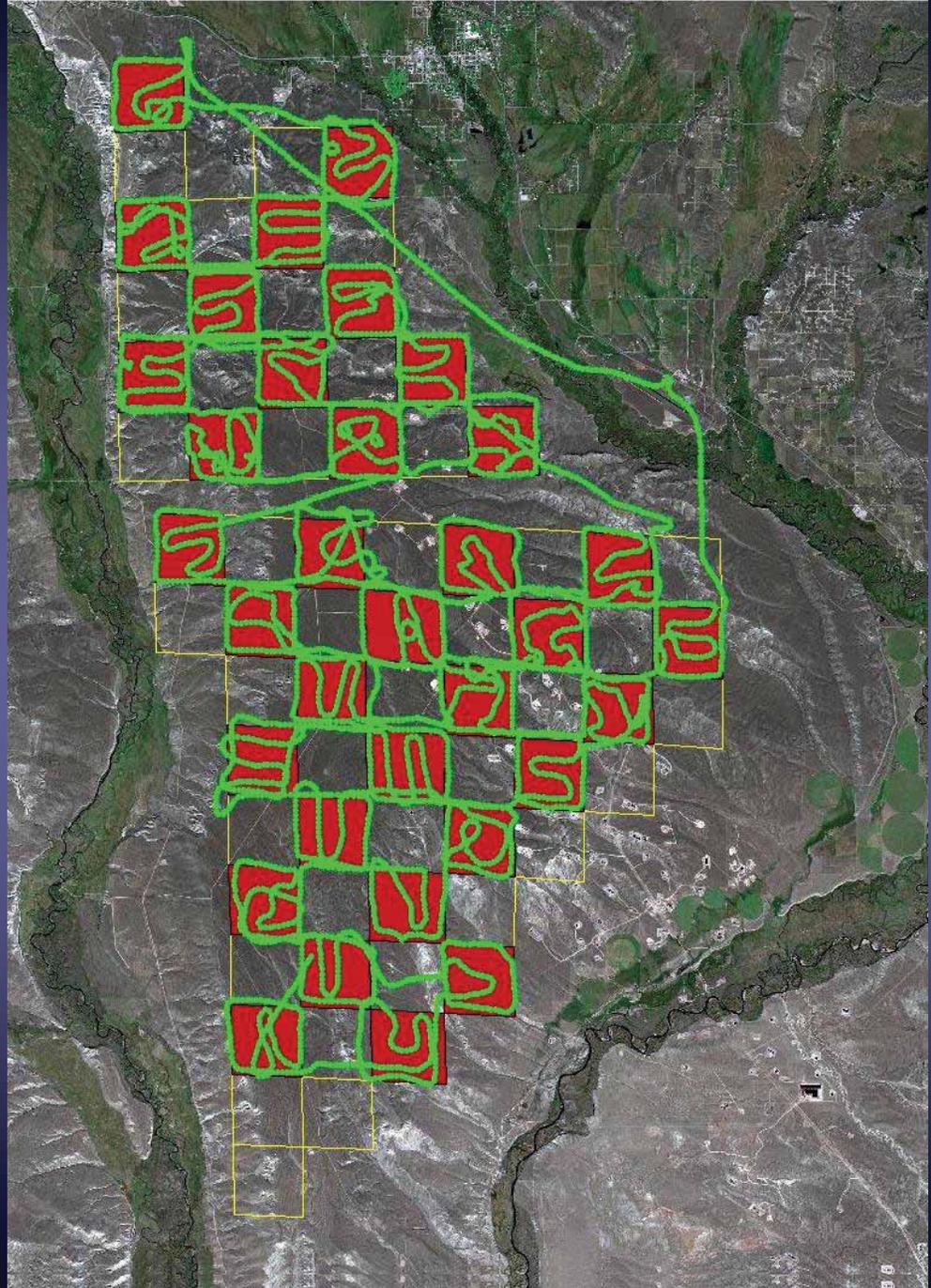
## Wildlife Monitoring and Mitigation Matrix

SPECIES	CRITERIA	METHOD	CHANGES THAT WILL BE MONITORED	SPECIFIC CHANGE REQUIRING MITIGATION	MITIGATION RESPONSES
Mule Deer	Change in Mesa deer numbers	Current mule deer study, and use of WGFD data	Change in deer numbers in any year, or a cumulative change over all years, initially compared to average of 05/06 numbers (2856 deer)	15% change in any year, or cumulatively over all years, compared to reference area (Sublette mule deer herd unit [average 05/06 herd unit population is 27,254], or other mutually agreeable area).	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.
	Average distance from well pads		Average of any 2-year period of avoidance distance from well pads, and a concurrent change in deer numbers compared to average of 05/06 numbers (2856 deer)	Average of 0.5 km change per year over 2 years, and a concurrent 15% change in deer numbers in any year, compared to reference area (sublette mule deer herd unit [average 05/06 herd unit population is 27,254], or other mutually agreeable area).	Select mitigation response sequentially as listed below, implement most useful and feasible and monitor results over sufficiently adequate time for the level of impact described by current monitoring.

# Approach: Mule Deer Abundance

Survey Area: 68 blocks (1 x 1 mi)

Sample Area: 34 blocks (1 x 1 mi)

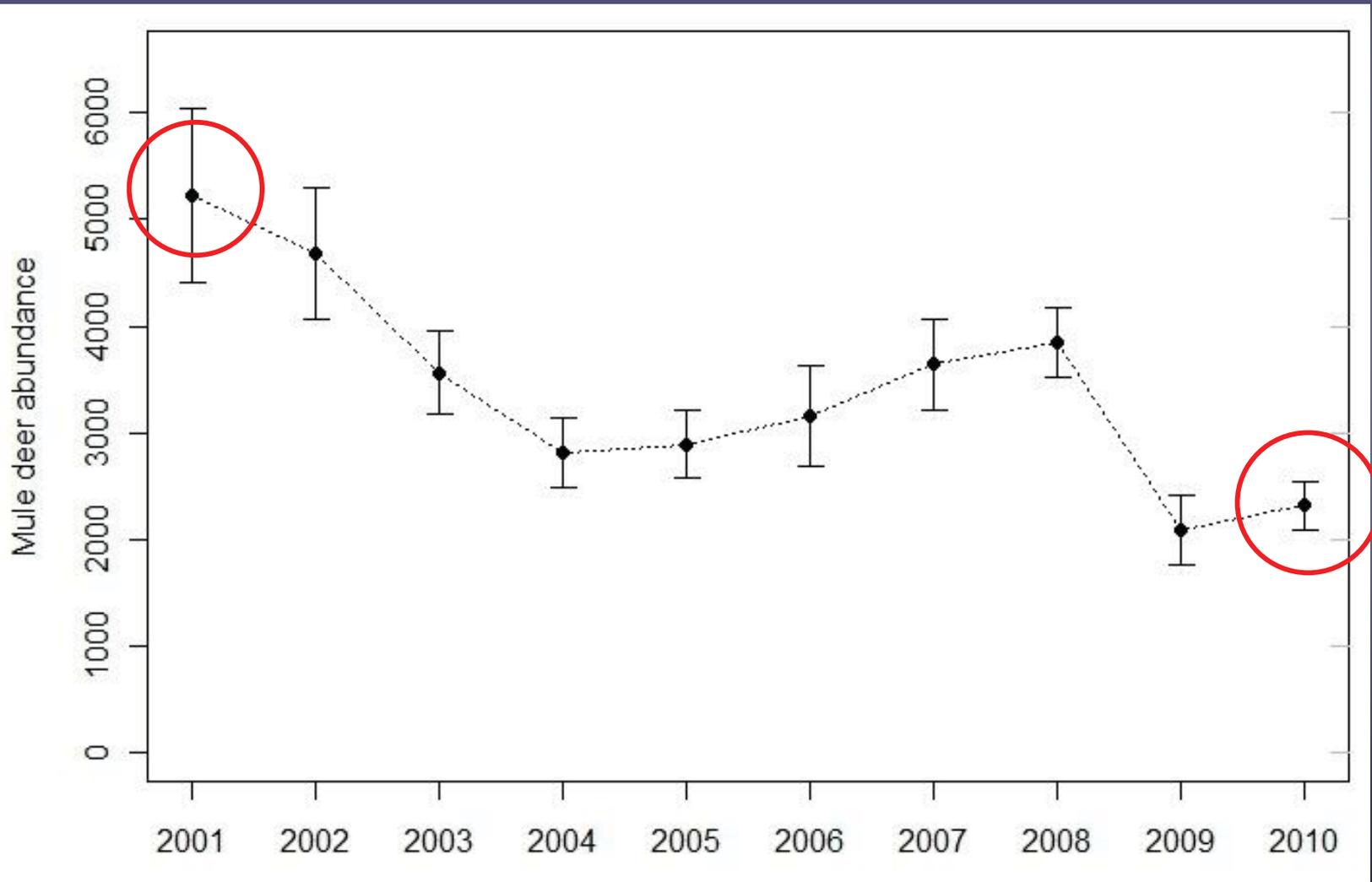


# Results: Mule Deer Abundance – long-term trends

2001 winter: 5,228 deer

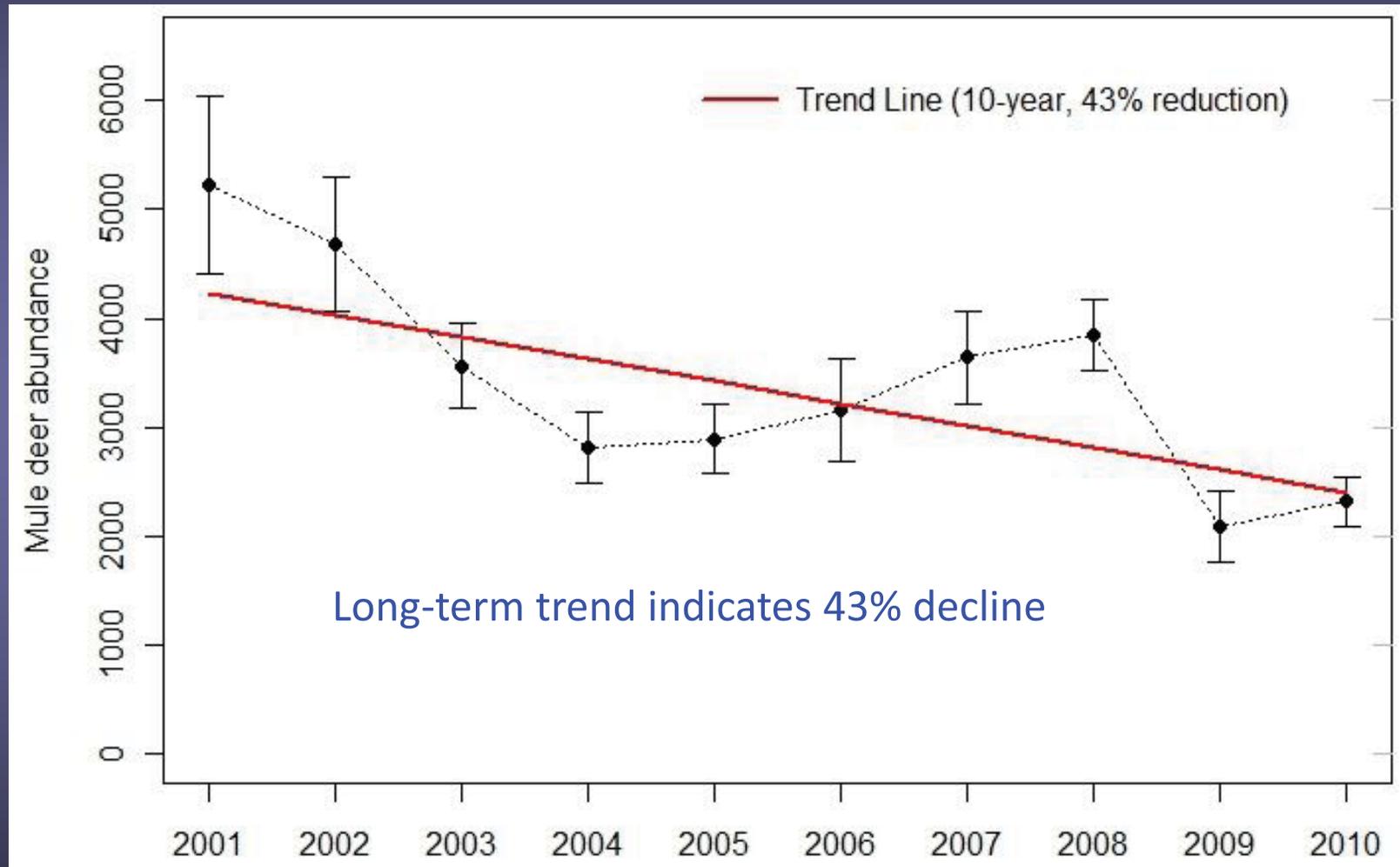
→ 56% decline

2010 winter: 2,318 deer



# Results: Mule Deer Abundance – long-term trends

What's the best approach for assessing change in abundance?



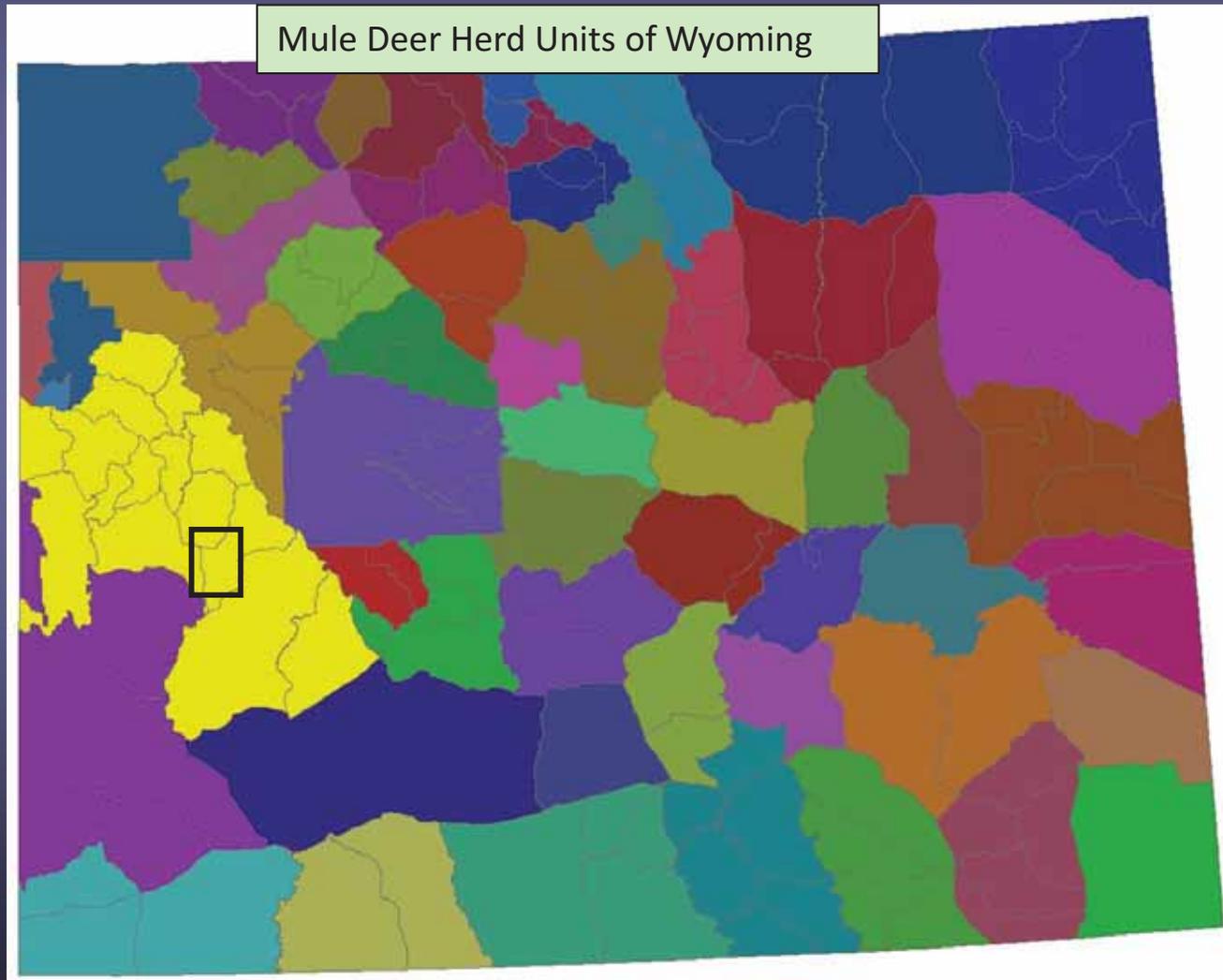
# Results: Mule Deer Abundance – long-term trends

Did mule deer decline at a similar rate in other areas?

Sublette Herd Unit

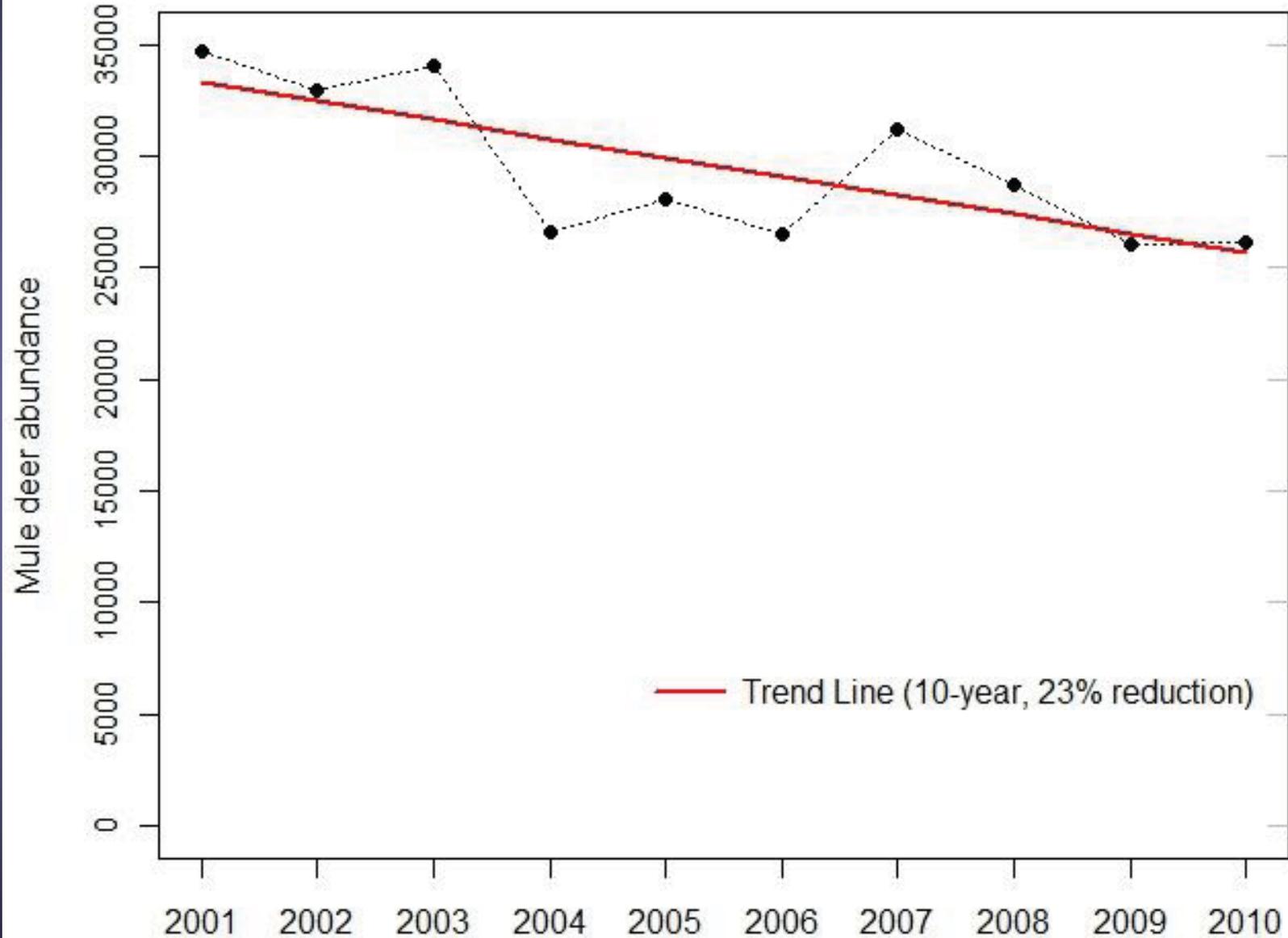


WGFD estimates based on POPII models



# Did mule deer decline at a similar rate in other areas?

## Sublette Herd Unit

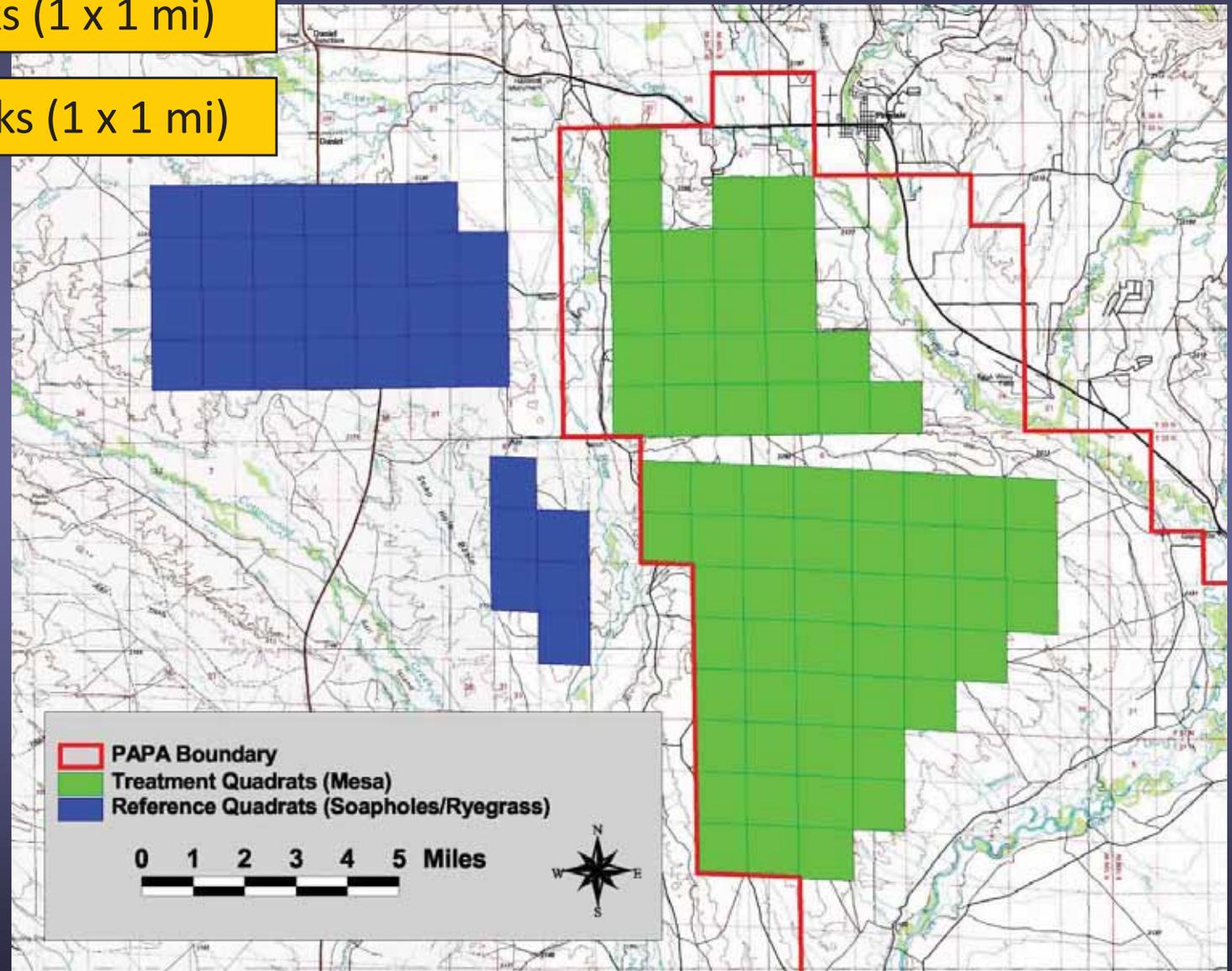


# Did mule deer decline at a similar rate in other areas?

## Ryegrass/Soapholes

Survey Area: 33 blocks (1 x 1 mi)

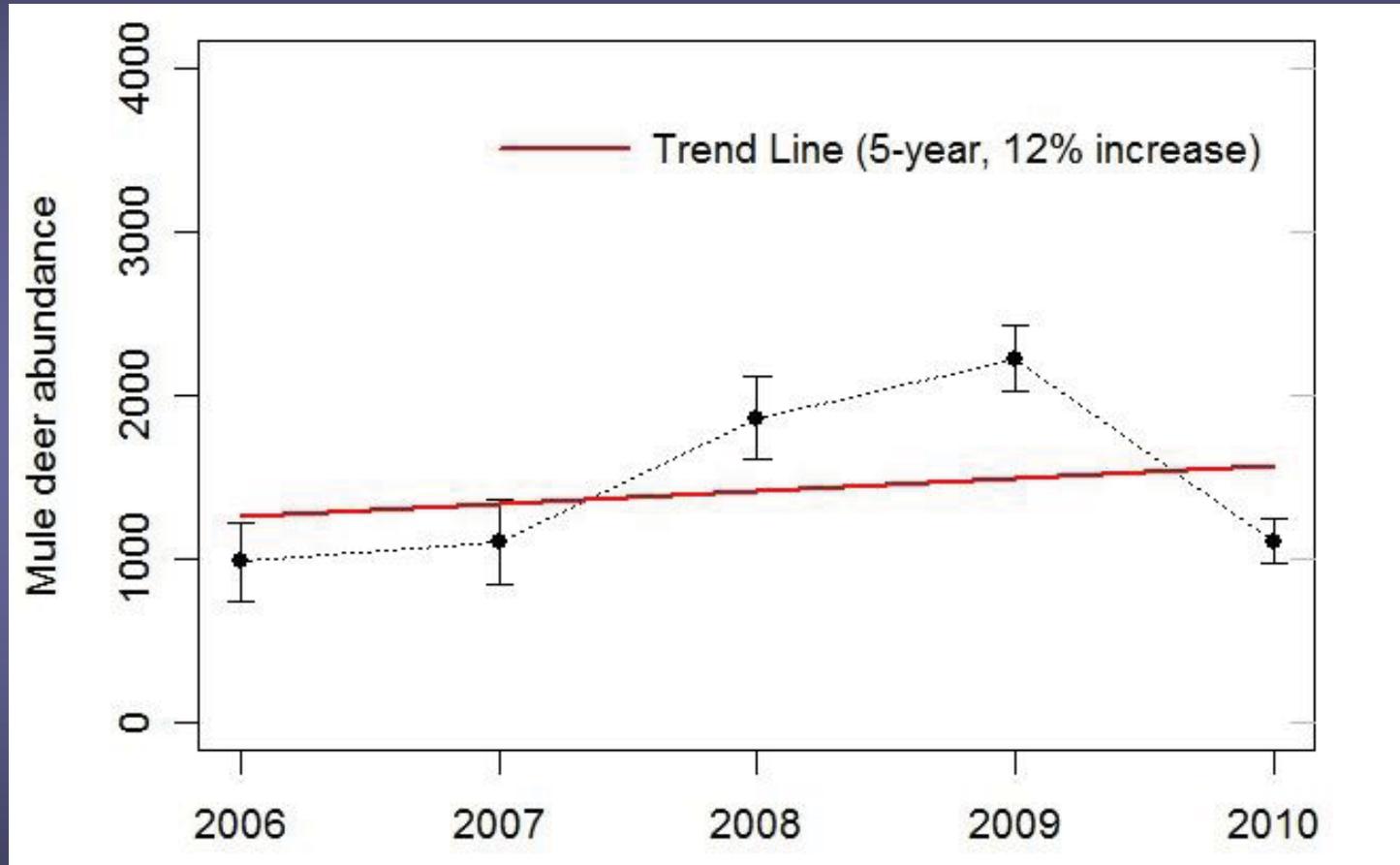
Sample Area: 23 blocks (1 x 1 mi)



# Results: Mule Deer Abundance – long-term trends

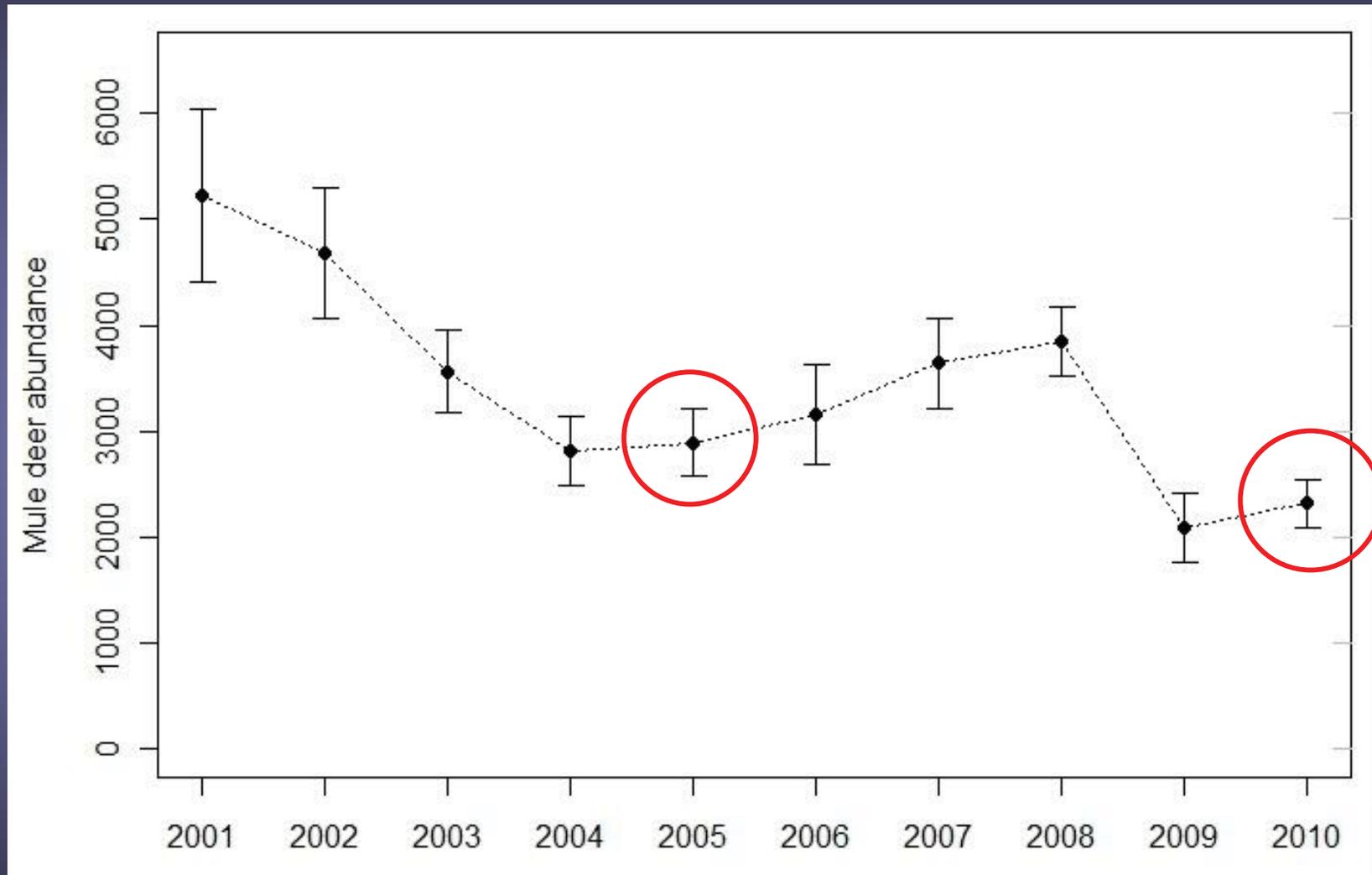
Did mule deer decline at a similar rate in other areas?

Ryegrass/Soapholes



# Results: Mule Deer Abundance – calculation for WMMM

- WMMM looks only at annual differences between 2005 & present

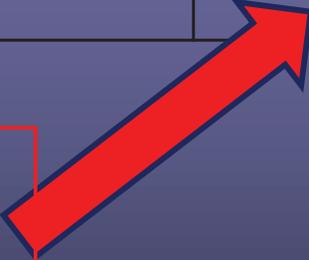


# Results: Mule Deer Abundance – calculation for WMMM

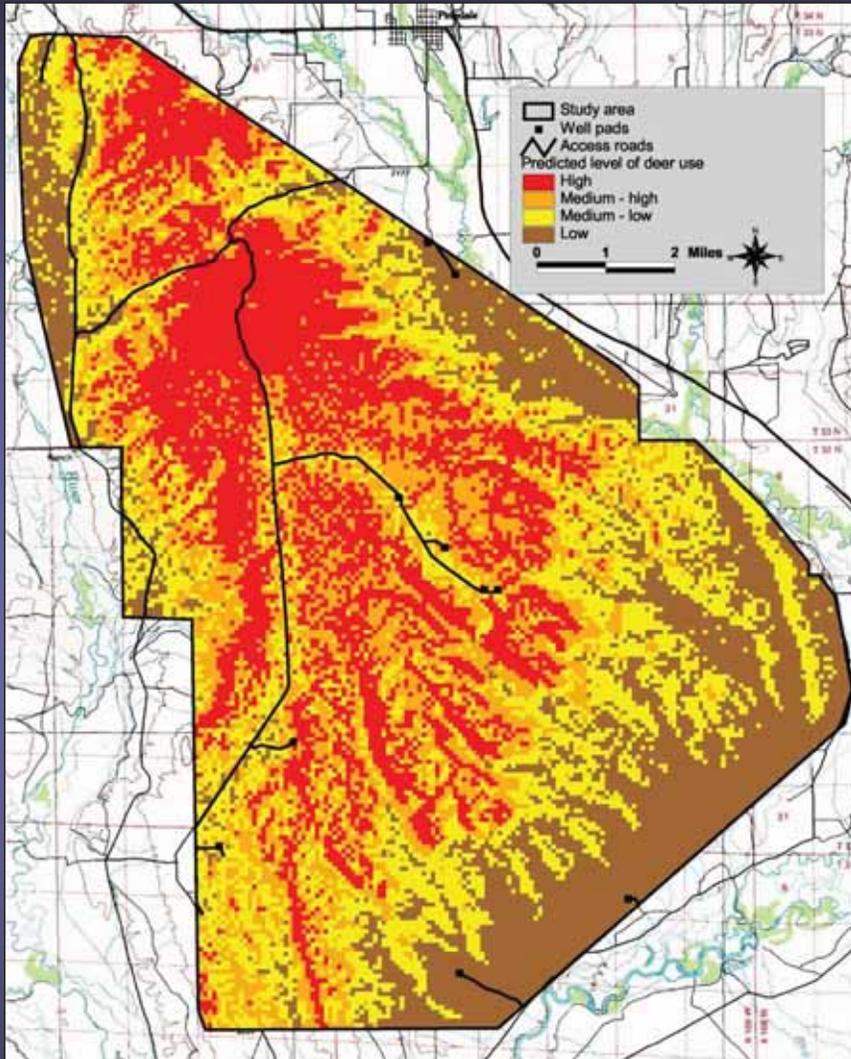
- WMMM looks only at annual differences between 2005 & present

Area	2005 estimate	2010 estimate	% Decline
Mesa	2,894	2,318	-20%
Sublette herd unit	27,254	26,162	-5%
<b>Difference between Mesa and Sublette herd unit</b>			<b>15%</b>

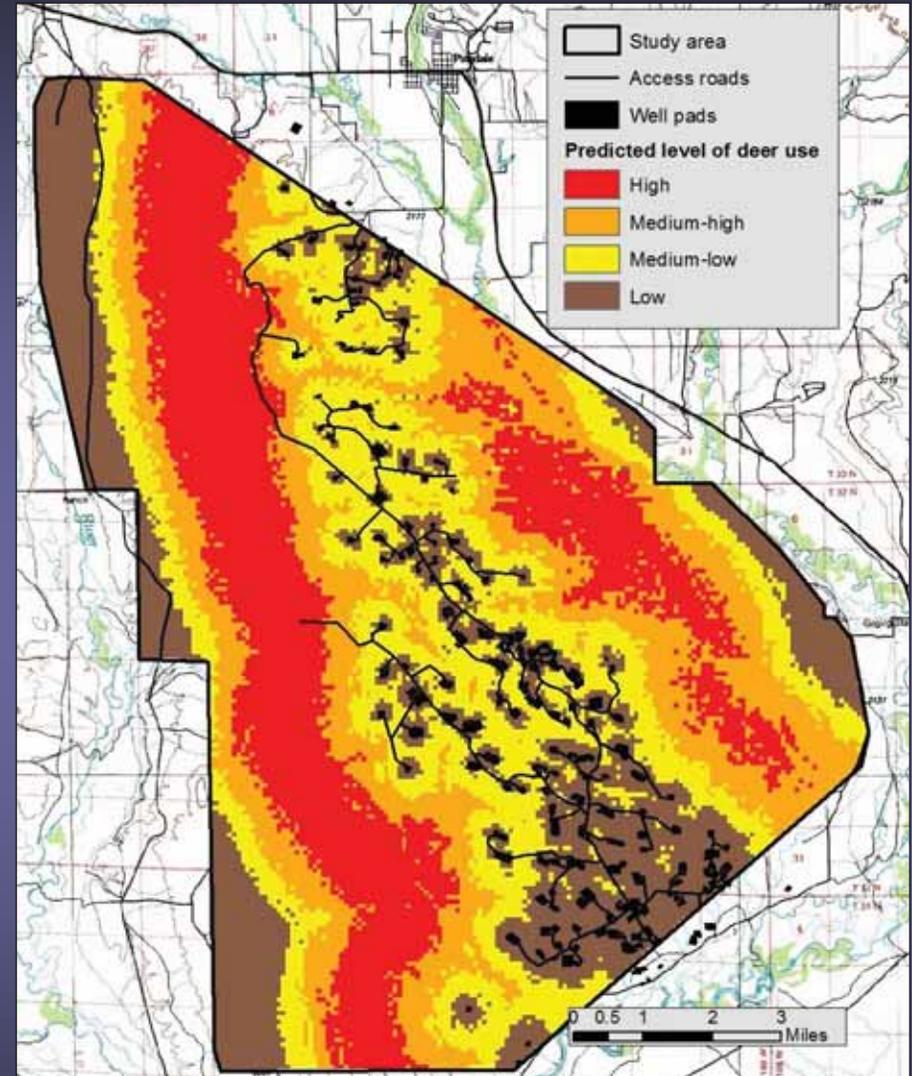
This number is used to determine if WMMM threshold has been exceeded



# Results: Winter Resource Selection

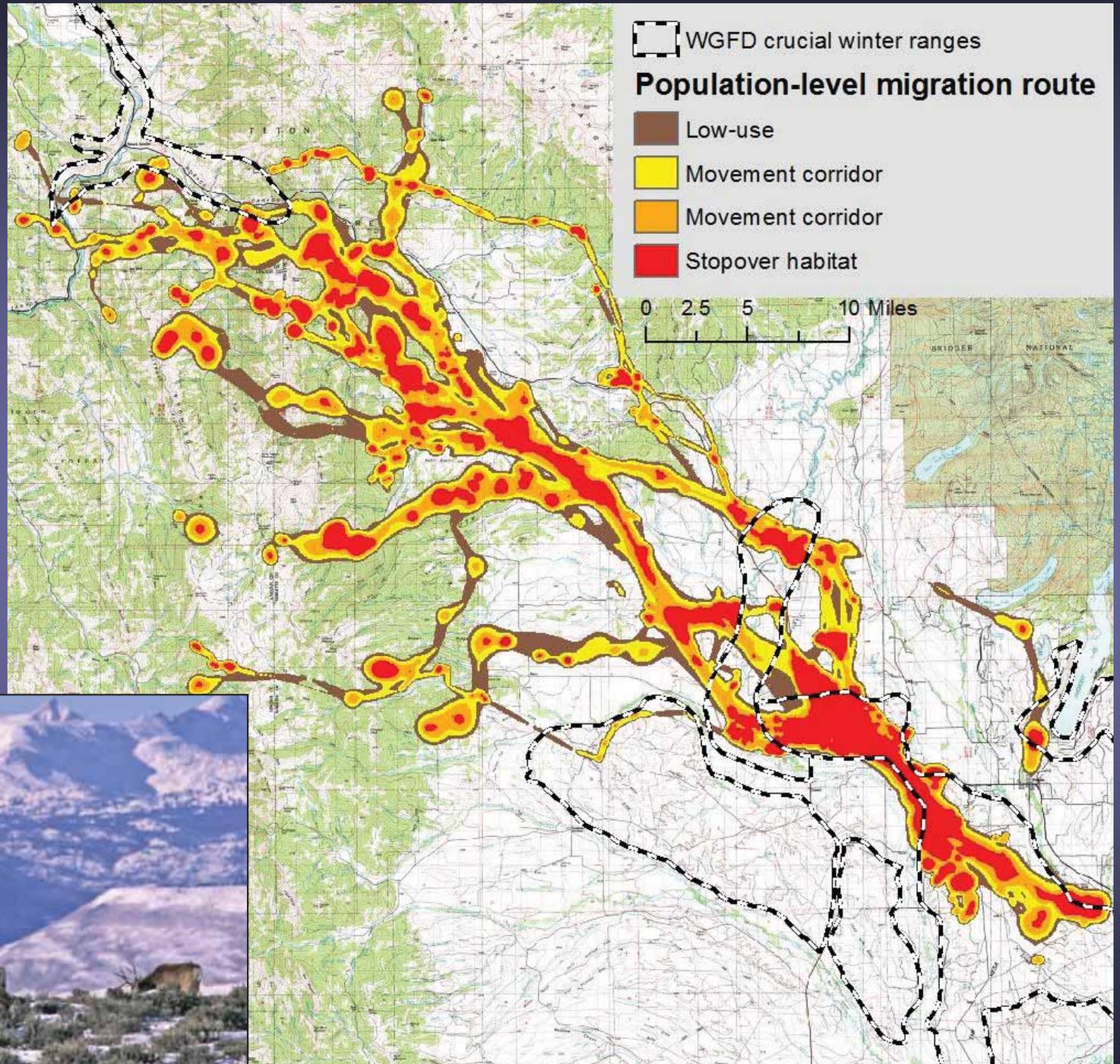


Pre-development (1999-2000)

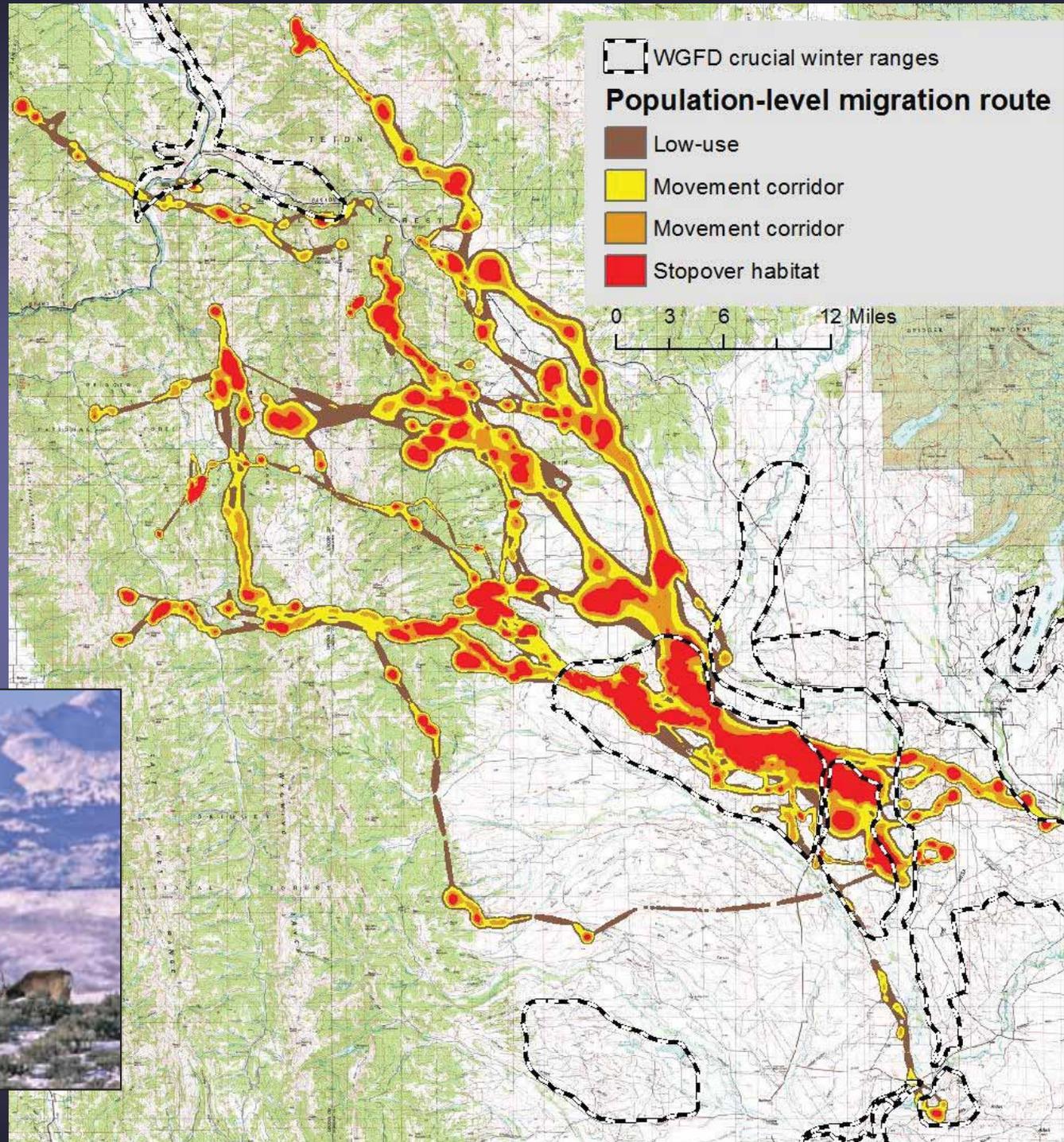


2010

# Results: Migration Patterns



# Results: Migration Patterns



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