

# Agenda Item 23

## Cougar Hunting Seasons and Regulations



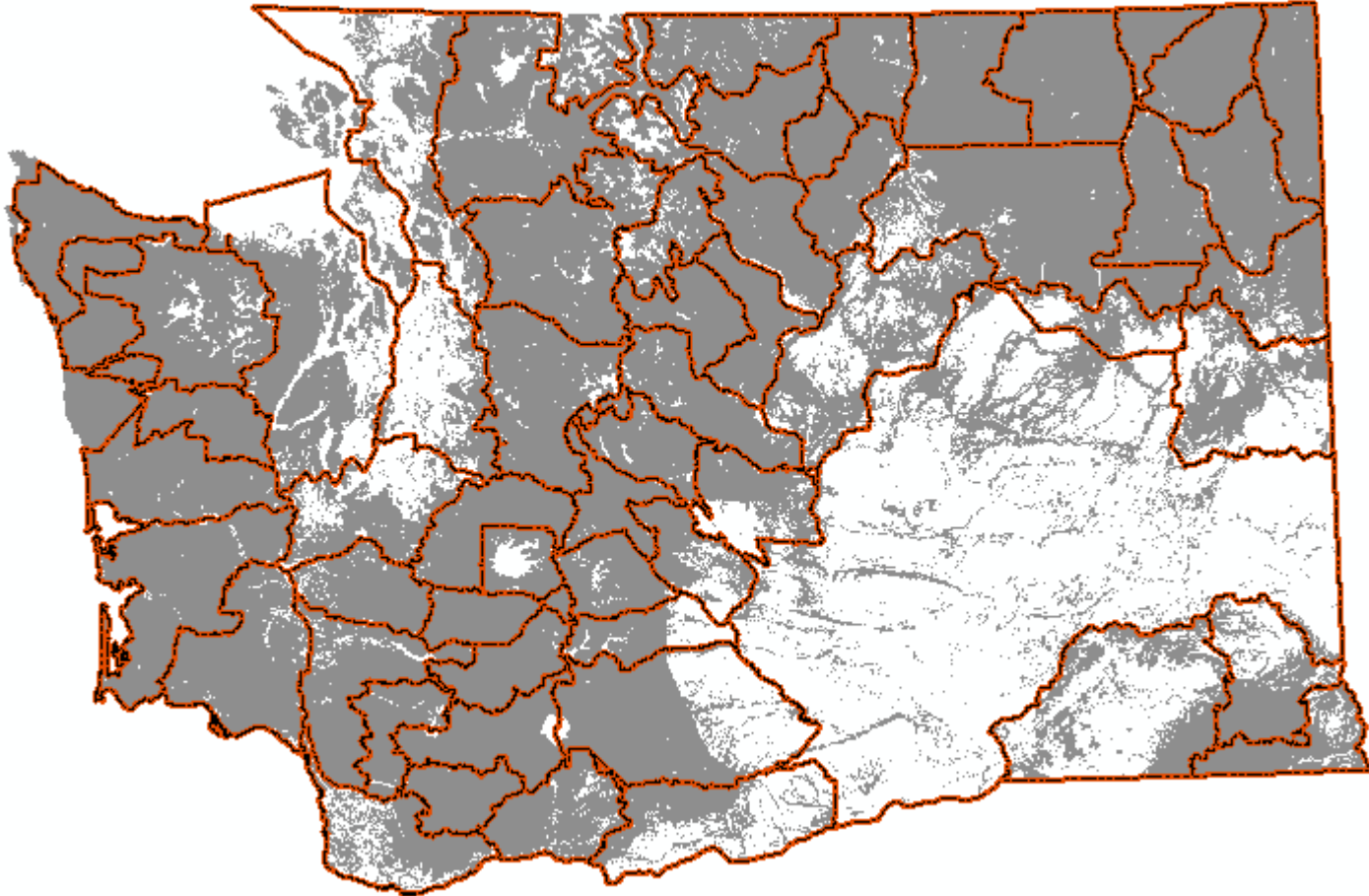
Donny Martorello, Ph.D.  
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Game Division, Wildlife Program

# Current Season Structure

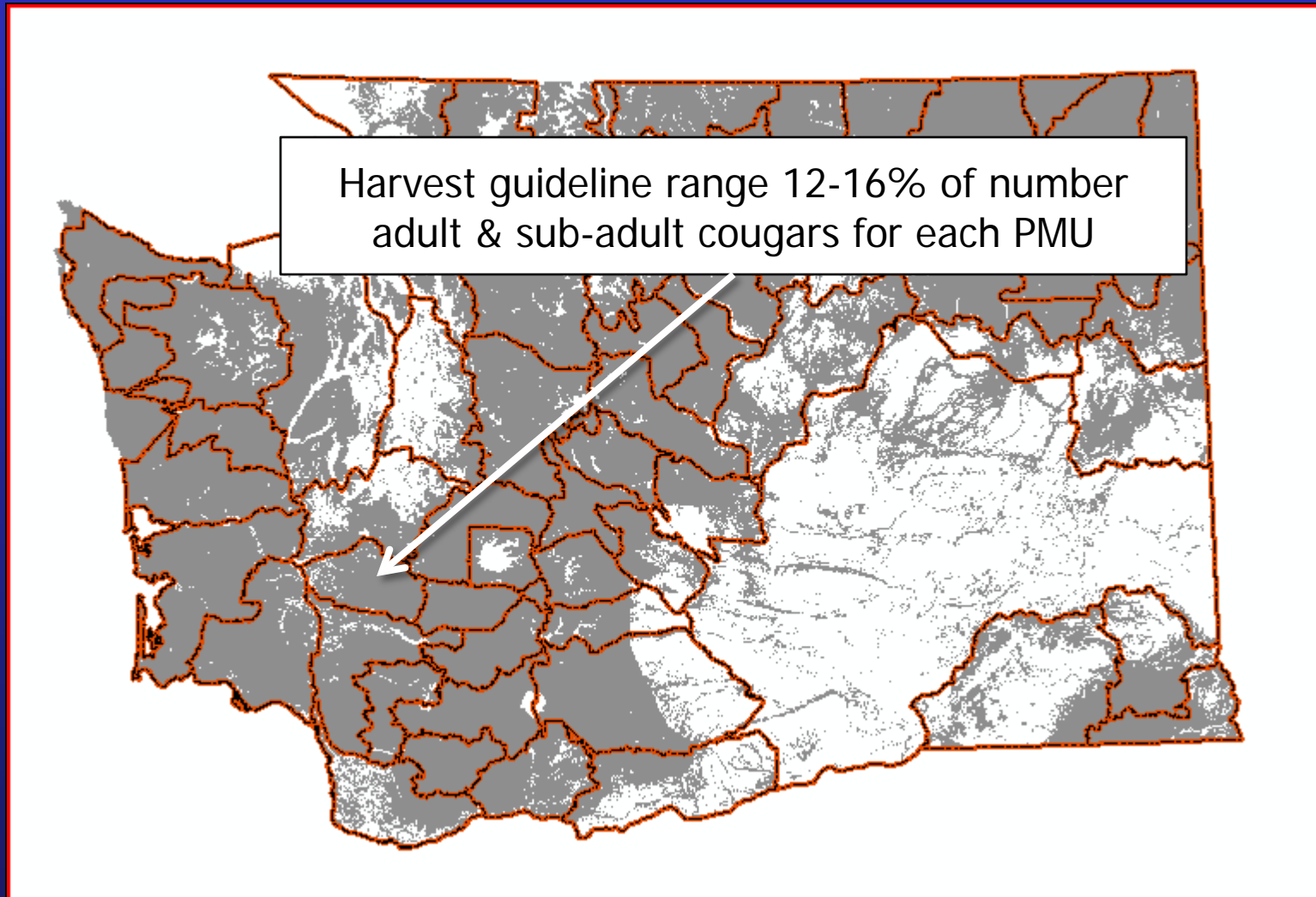
- Early season Sept 1 – Dec 31
- Late season Jan 1 – Mar 31
  
- Any legal weapon in both seasons
  
- Each hunt area (PMU) has a harvest guideline corresponding to 12-16% of cougar population (excluding kittens)
  
- Starting Jan 1, the Director may close hunt areas that meet or exceed the harvest guideline

# Cougar Season Structure

## 49 Hunt Areas



# Harvest Guideline for Each Hunt Area



# Cougar Research Projects

Cougar Demographics

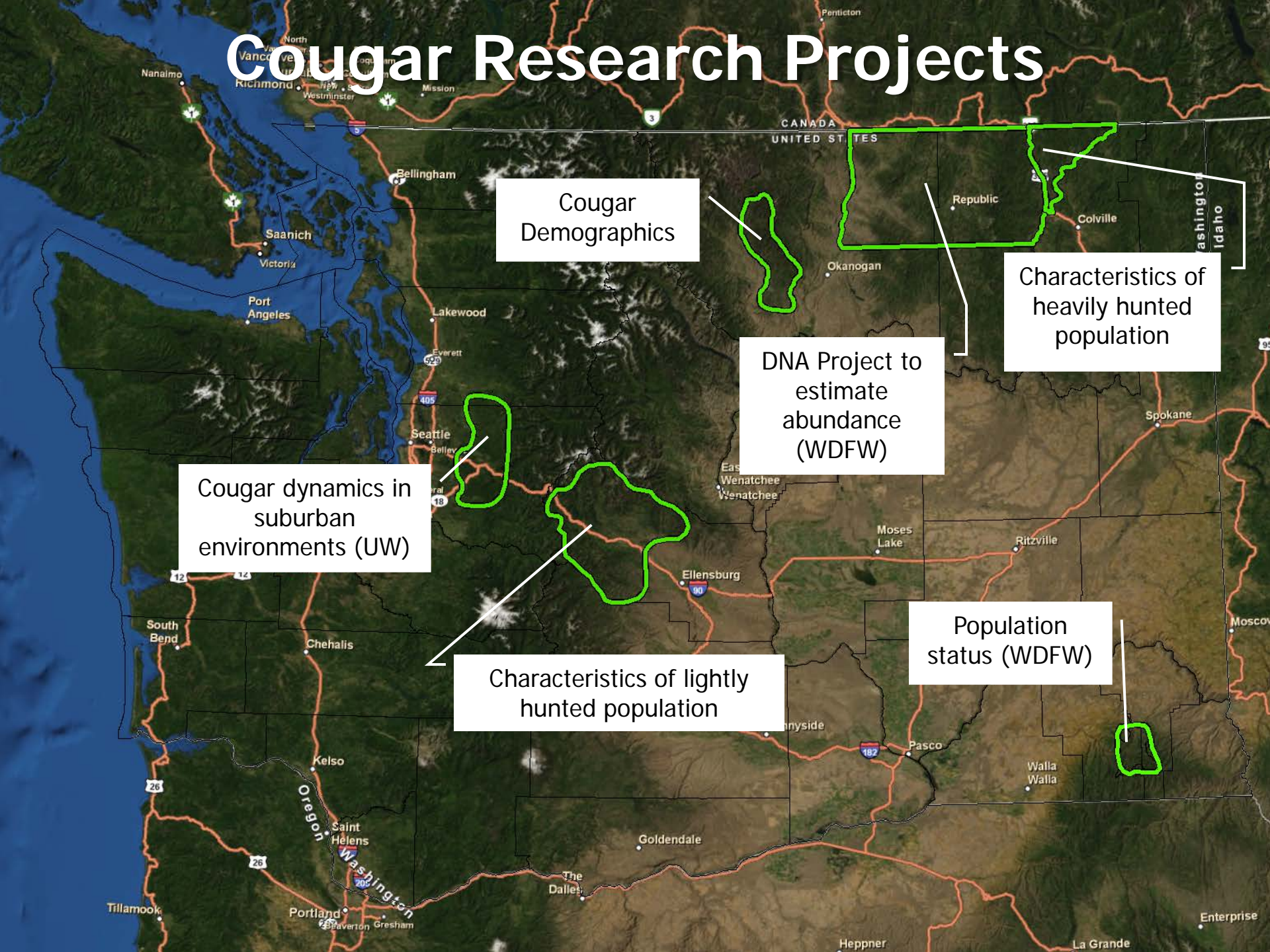
Characteristics of heavily hunted population

DNA Project to estimate abundance (WDFW)

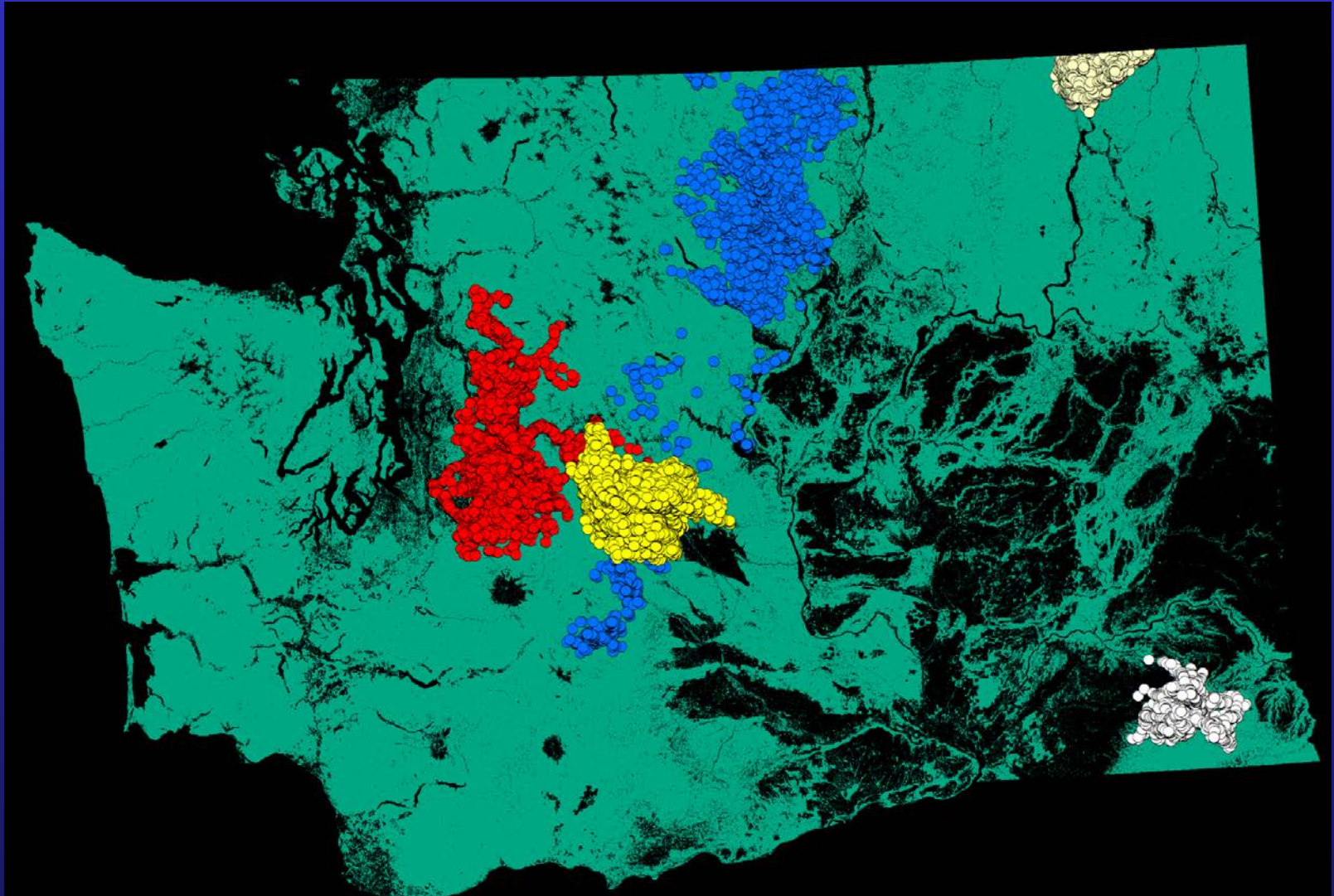
Cougar dynamics in suburban environments (UW)

Characteristics of lightly hunted population

Population status (WDFW)



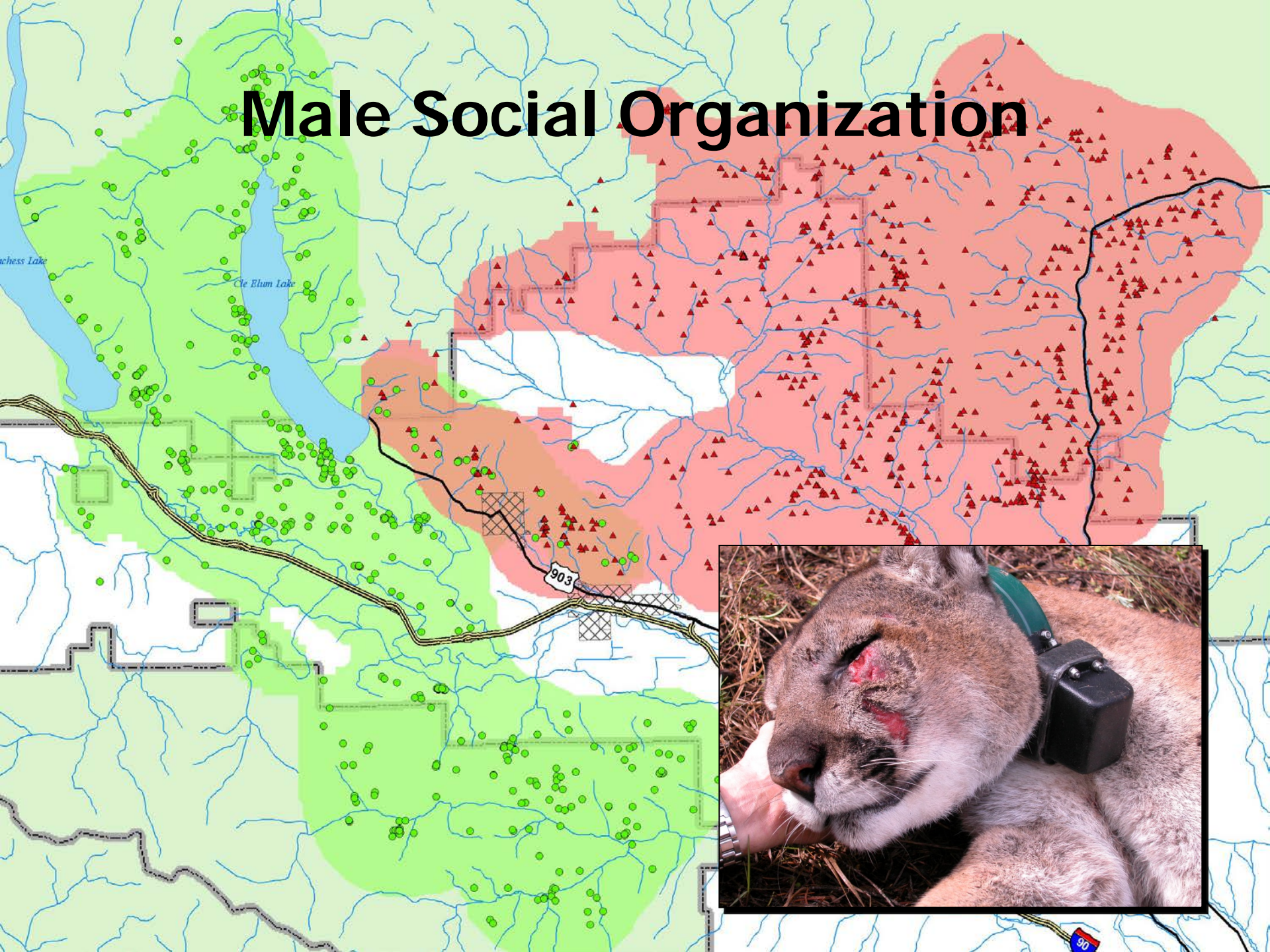
# Cougar Distribution and Telemetry Locations



# Research Findings

Area	<u>Survival</u>		<u>Density</u> (per 100 km <sup>2</sup> )	
	Male	Female	Adult	Total
Moderate hunting (Cle Elum)	0.65	0.87	1.9	3.6
Heavy hunting (Wedge )	0.48	0.66	1.6	3.5

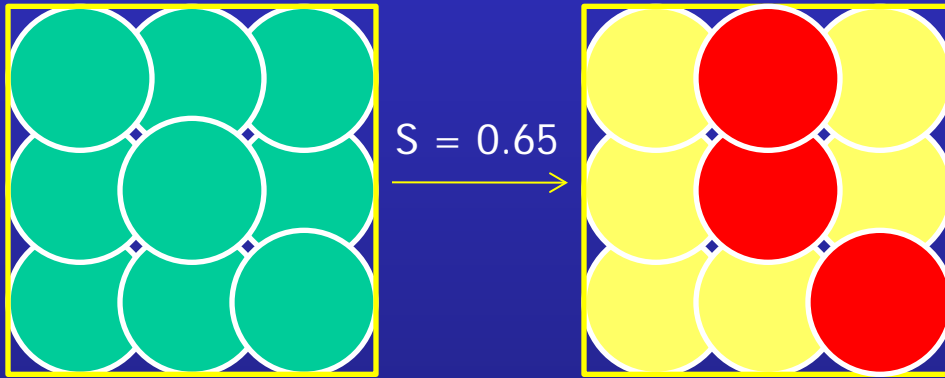
# Male Social Organization



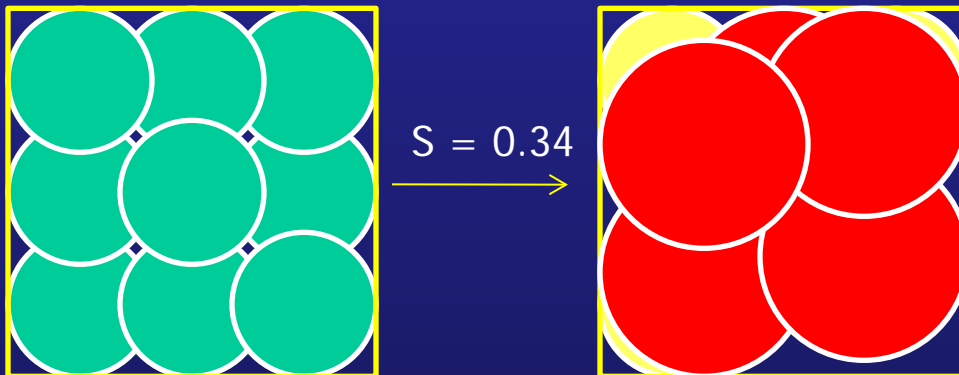


# Male Social Organization

Moderate hunting (Cle Elum)



Heavy hunting (Wedge)



# Harvest Guidelines Based on Published Science

## Ecology and Evolution

Open Access

### Effects of hunting on cougar spatial organization

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#### Keywords

Cougar, home range, hunting, *Puma concolor*, spatial organization, territoriality.

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#### Abstract

The effects of increased hunting on cougar spatial organization are not well understood. We used a spatially explicit model to evaluate the effects of hunting on cougar home range size and spatial organization. The instability hypothesis predicts that hunting will increase home range size and spatial organization in heavily hunted populations. We used data from 2002 to 2010 to evaluate the effects of hunting on cougar home range size and spatial organization. We found that hunting increased home range size and spatial organization in heavily hunted populations. Our results suggest that hunting may be a factor in the observed increase in cougar home range size and spatial organization in heavily hunted populations.



Contents lists available at SciVerse ScienceDirect

### Biological Conservation

journal homepage: [www.elsevier.com/locate/biocon](http://www.elsevier.com/locate/biocon)



### Effects of male trophy hunting on female carnivore population growth and persistence

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 Depensatory mortality

#### ABSTRACT

Carnivore population models that ignore the effects of hunting on population dynamics (e.g., survival, and immigration) suggest that hunting will decrease population growth and persistence. We used a spatially explicit model to evaluate the effects of hunting on cougar population growth and persistence. We found that hunting increased population growth and persistence in heavily hunted populations. Our results suggest that hunting may be a factor in the observed increase in cougar population growth and persistence in heavily hunted populations.

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#### In My Opinion

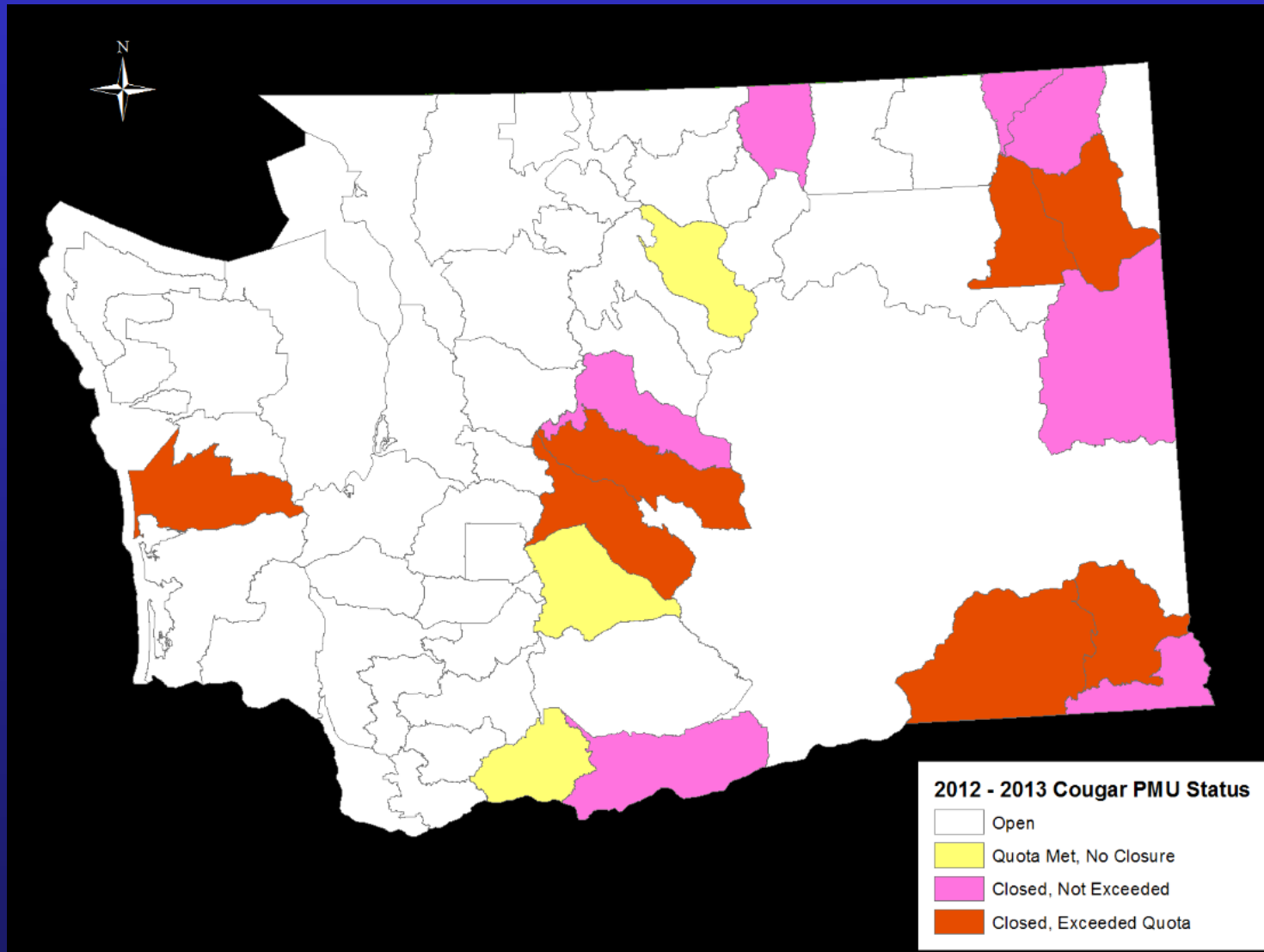
### Research to Regulation: Cougar Social Behavior as a Guide for Management

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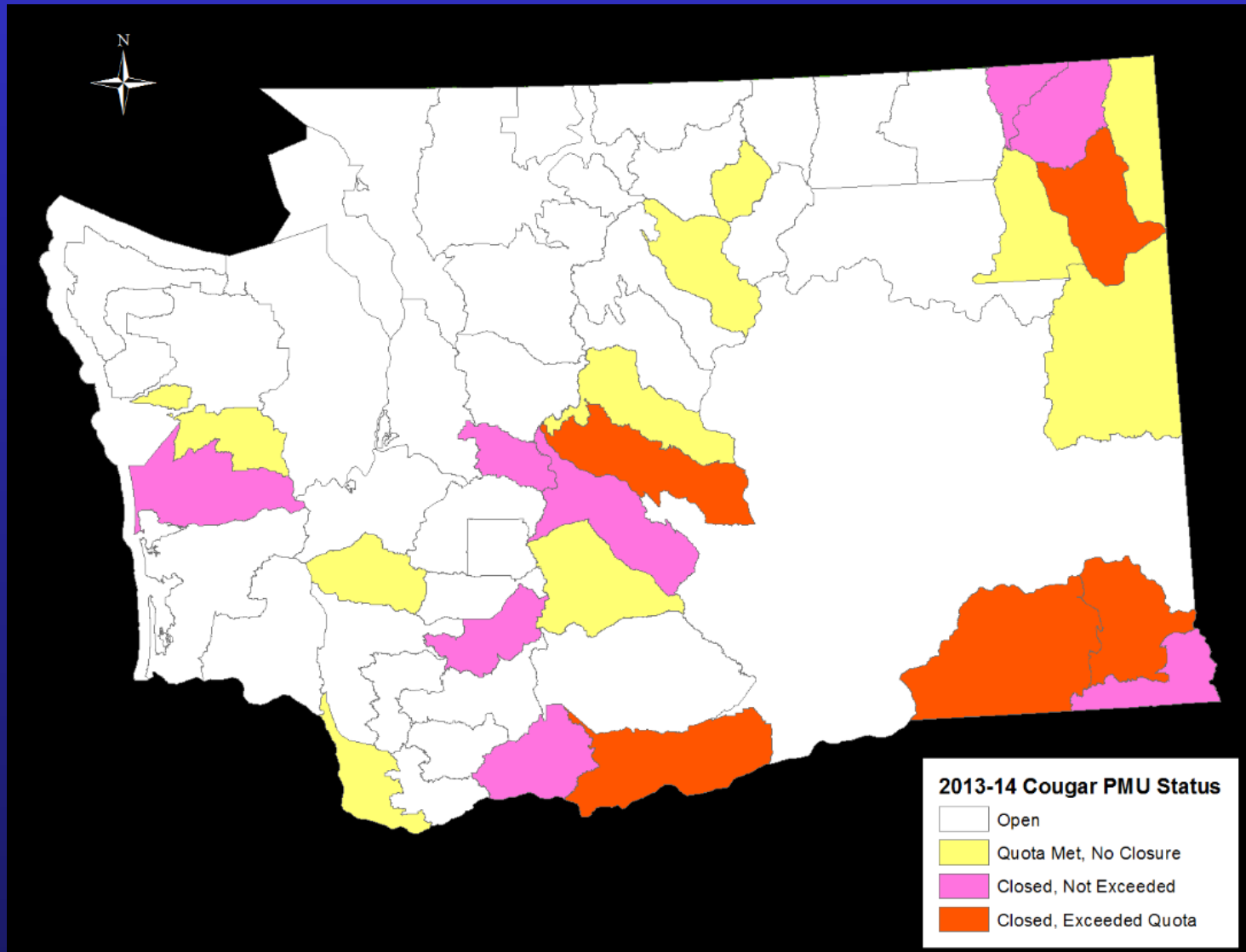
**ABSTRACT** Cougar (*Puma concolor*) populations are a challenge to estimate because of low densities and the difficulty marking and monitoring individuals. As a result, their management is often based on imperfect data. Current strategies rely on a source-sink concept, which tends to result in spatially clumped harvest within management zones that are typically approximately 10,000 km<sup>2</sup>. Agencies often implement quotas within these zones and designate management objectives to reduce or maintain cougar populations. We propose an approach for cougar management founded on their behavior and social organization, designed to maintain an older age structure that should promote population stability. To achieve these objectives, hunter harvest would be administered within zones approximately 1,000 km<sup>2</sup> in size to distribute harvest more evenly across the landscape. We also propose replacing the term "quota" with "harvest threshold" because quotas often connote a harvest target or goal rather than a threshold not to exceed. In Washington, USA,



# 2012-13 Hunt Area Closures



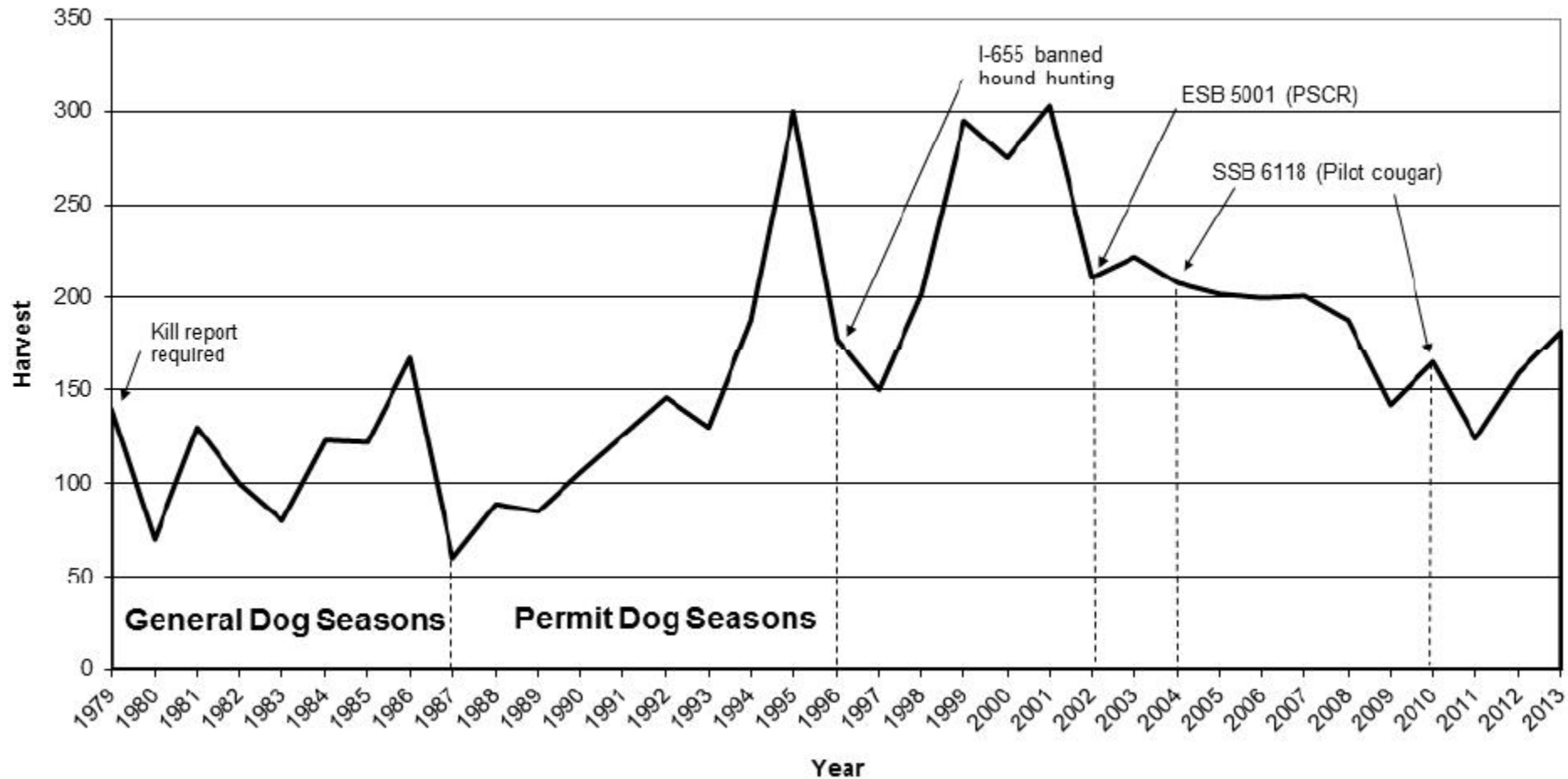
# 2013-14 Hunt Area Closures



# Hunt Statistics

<b>ITEM</b>	<b>2012-2013</b>	<b>2013-2014</b>
Total hunt areas	49	49
Hunt areas closed in initial review after Dec 31	16% (8/49)	16% (8/49)
Total hunt areas closed	20% (10/49)	31% (15/49)
Hunt areas remained open until March 31	80% (39/49)	69% (34/49)
Hunt areas that exceeded 16% harvest rate	14% (7/49)	10% (5/49)
Total harvest	159	177
Number of cougars harvested in excess of 16%	13	17
Allowable harvest	205-277	205-277

# Cougar Harvest Trend



# Recommendation

- Status Quo harvest guidelines
  - Review harvest guidelines prior to next 3-year season setting process
- Extend season to April 30 annually (add 1 month)
  - Provide more opportunity in 75% of state
- Direct agency to close hunt areas, rather than delegated to Director

# Questions?