

Agenda Item 17

Cougar Hunting Seasons and Regulations



Washington Department of
FISH and WILDLIFE

Anis Aoude
Carnivore Section Manager
Game Division, Wildlife Program

Cougar Game Mgt. Plan Objectives

- Manage for a stable cougar population in each PMU
 - Implement a harvest guideline that corresponds to a stable cougar population at the PMU level
 - Implement a harvest guideline for a maximum harvest providing an overall stable growth rate and age structure

Current Season Structure

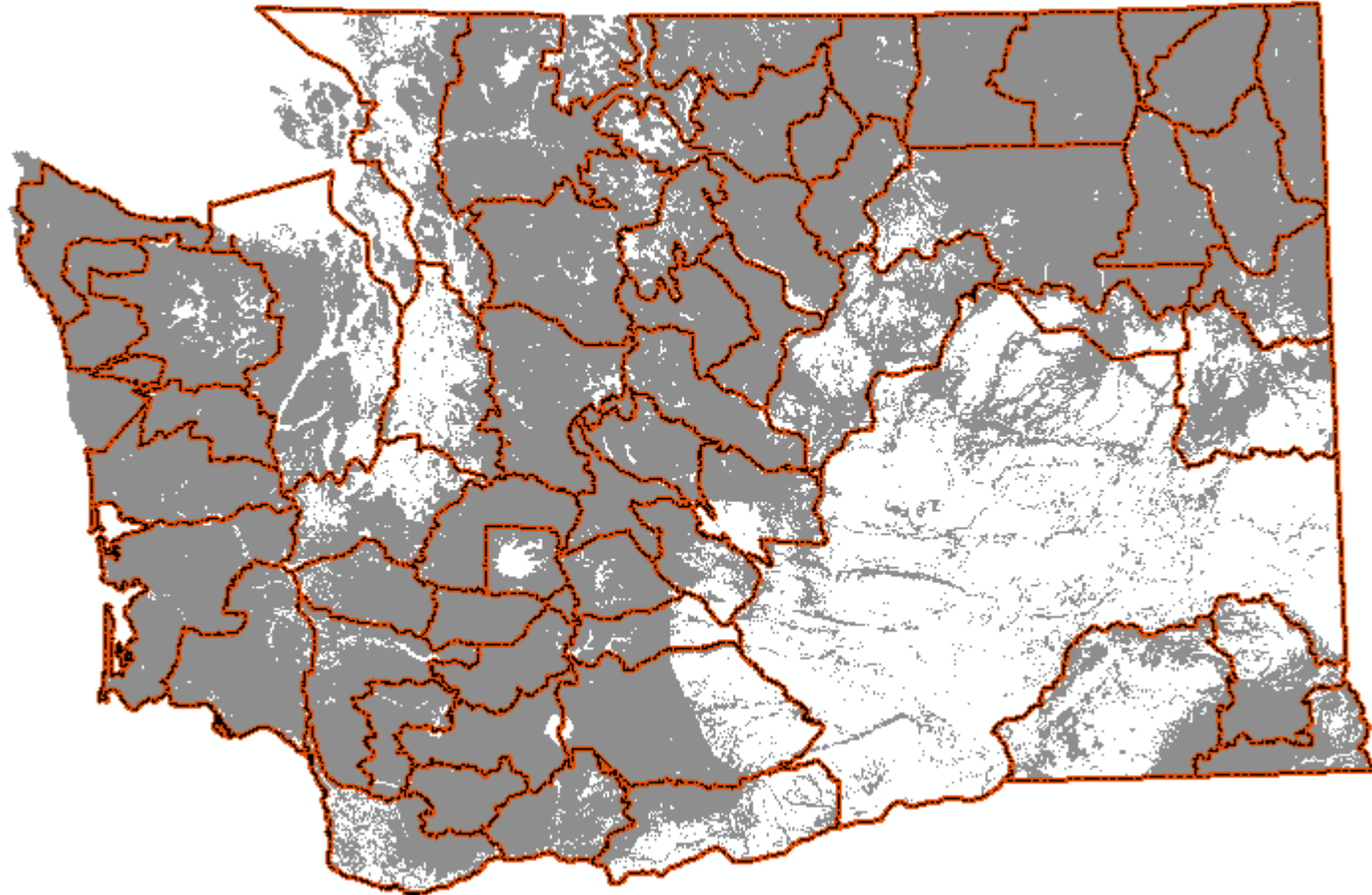
- Early season Sept 1 – Dec 31
- Late season Jan 1 – April 30
- Any legal weapon in both seasons
- Each hunt area (PMU) has a harvest guideline corresponding to 12-16% of cougar population (excluding kittens)
- Starting Jan 1, the Director may close hunt areas that meet or exceed the harvest guideline
- Only recreational harvest count towards the guidelines

Why Revisit Harvest Guidelines?

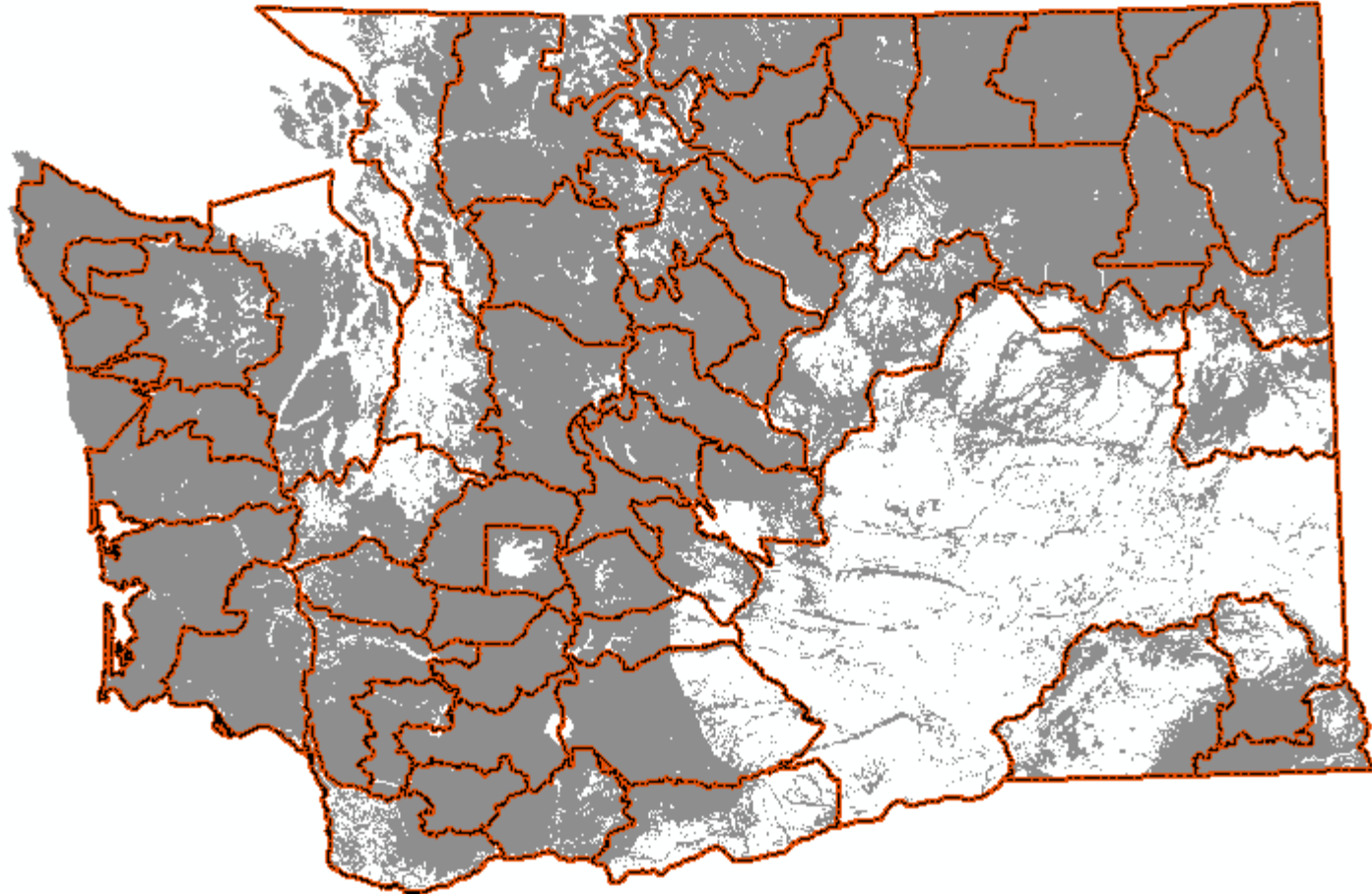
- Last year's recommendation was contested
- We recognize the need to incorporate uncertainty into our density estimate
- Provides opportunity for Commission to discuss options

Cougar Season Structure

50 Hunt Areas or PMUs

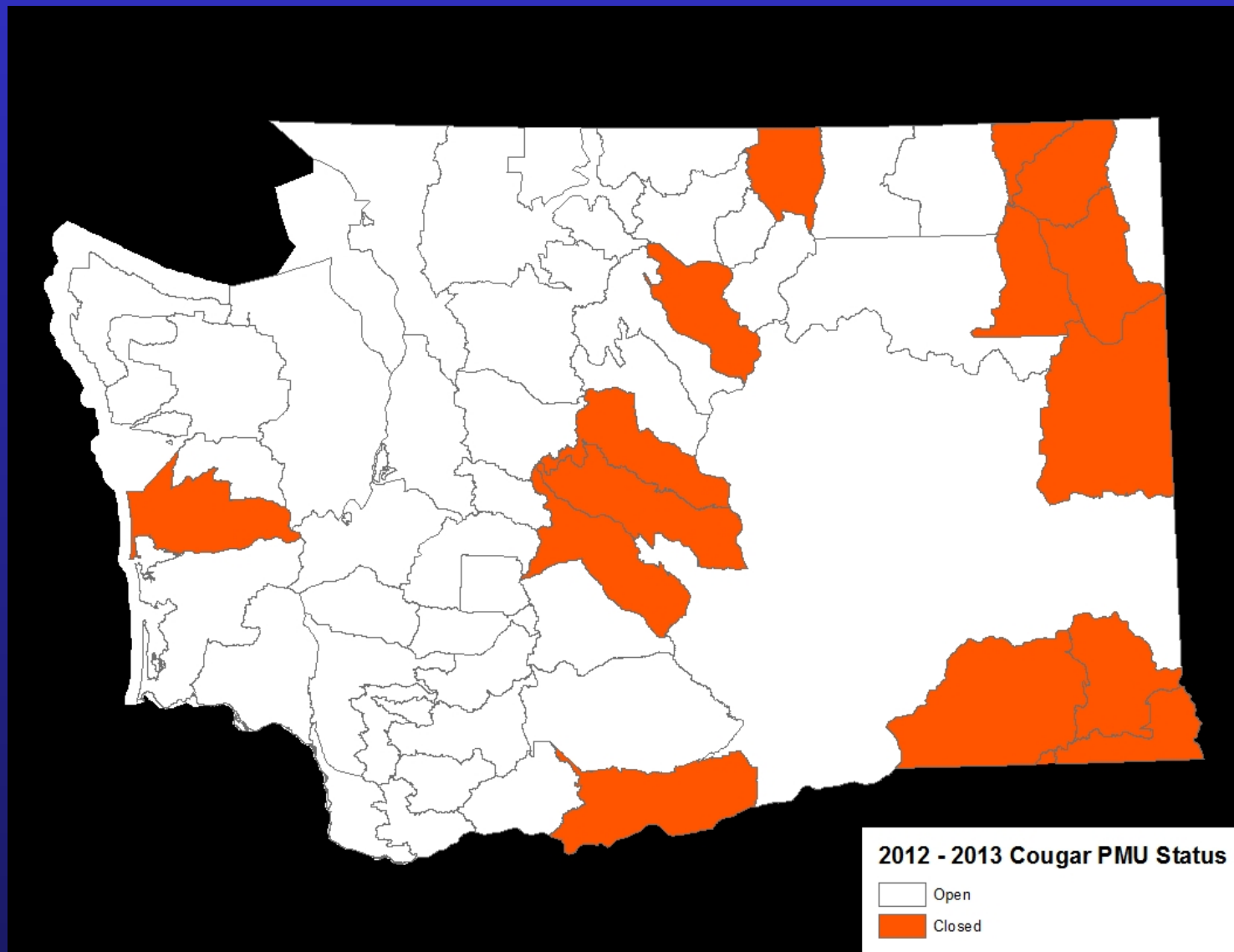


Harvest Guideline by PMU

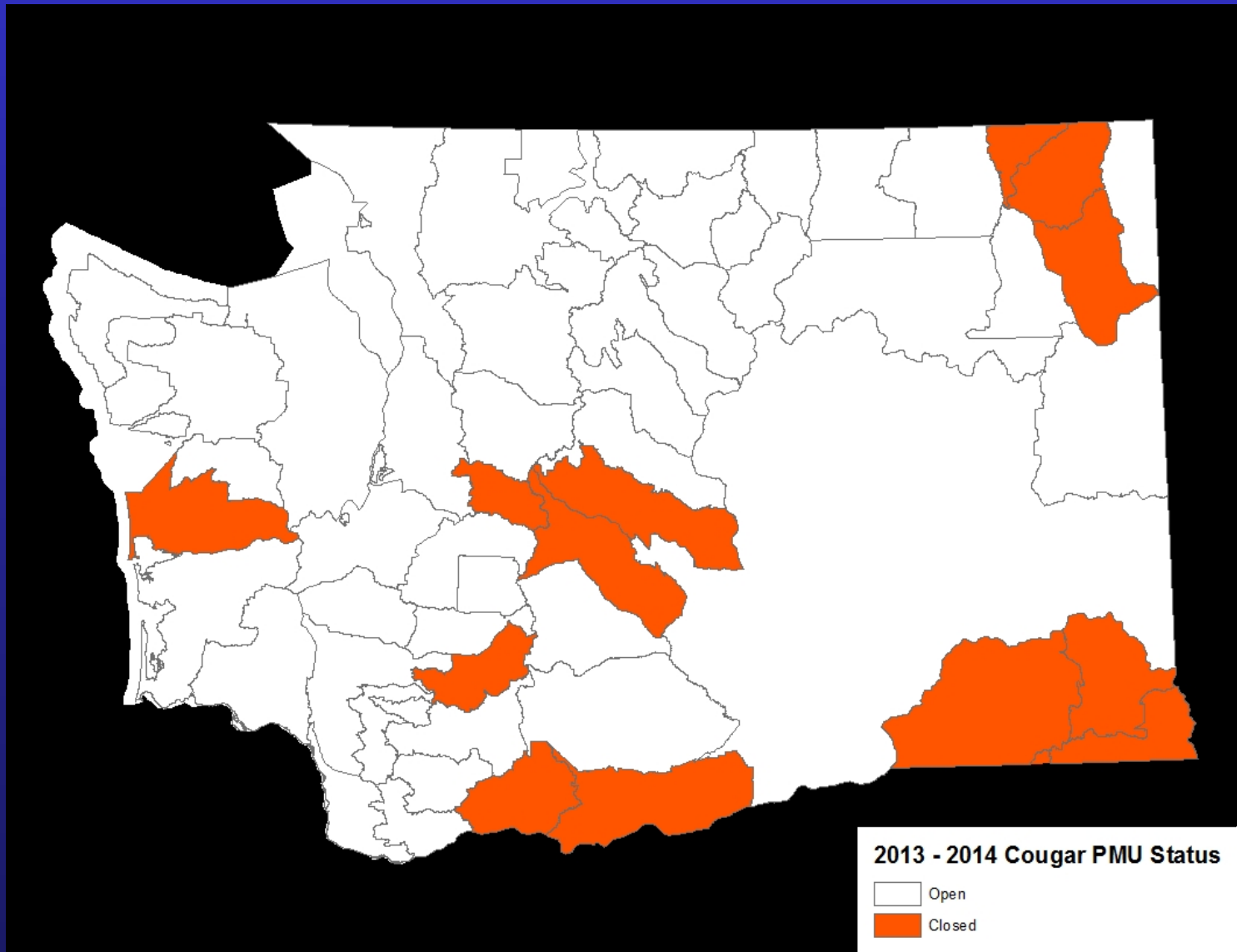


Density X Habitat = population est.
Population X 12-16% = Guidelines

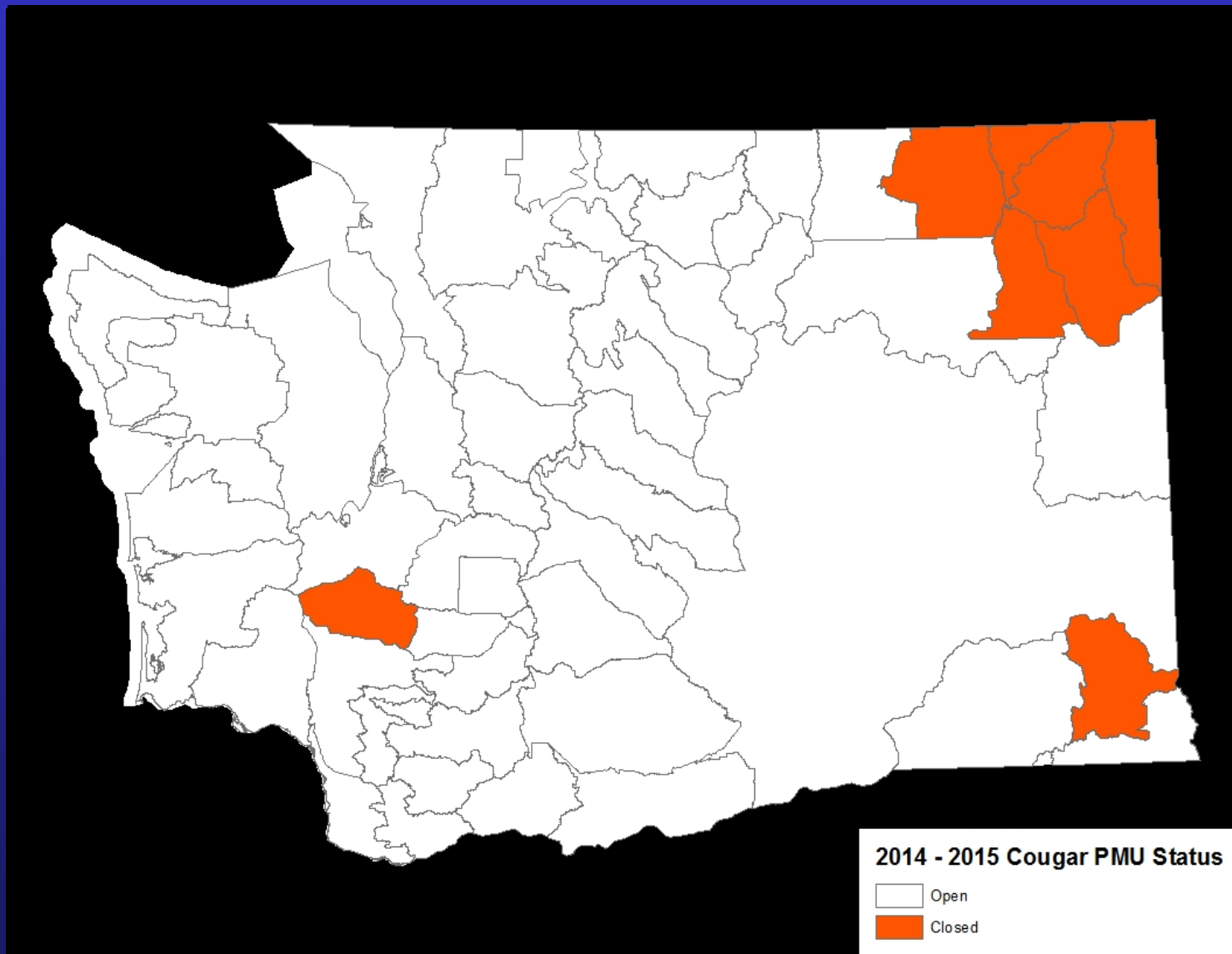
2012-13 PMU Closures 14



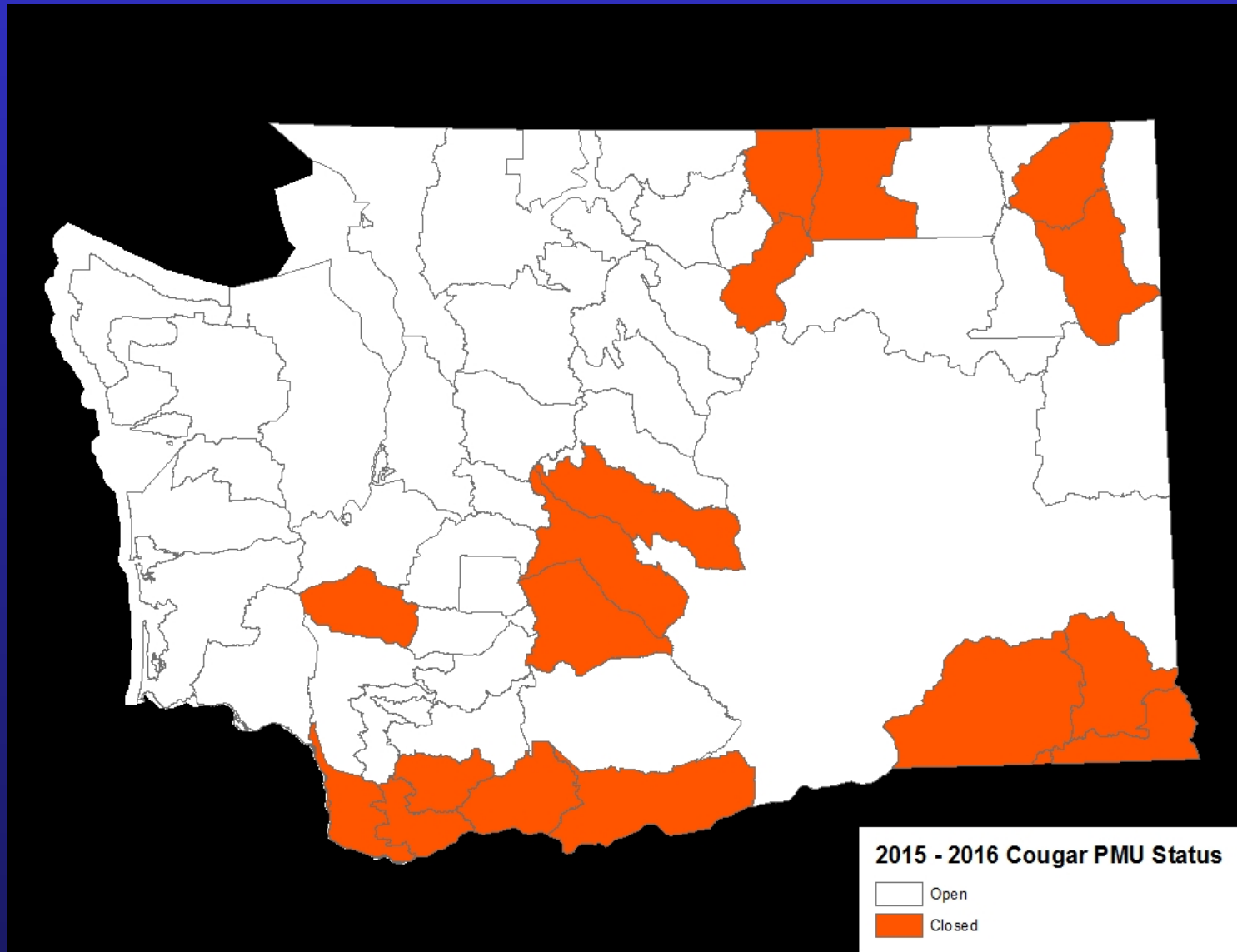
2013-14 PMU Closures 13



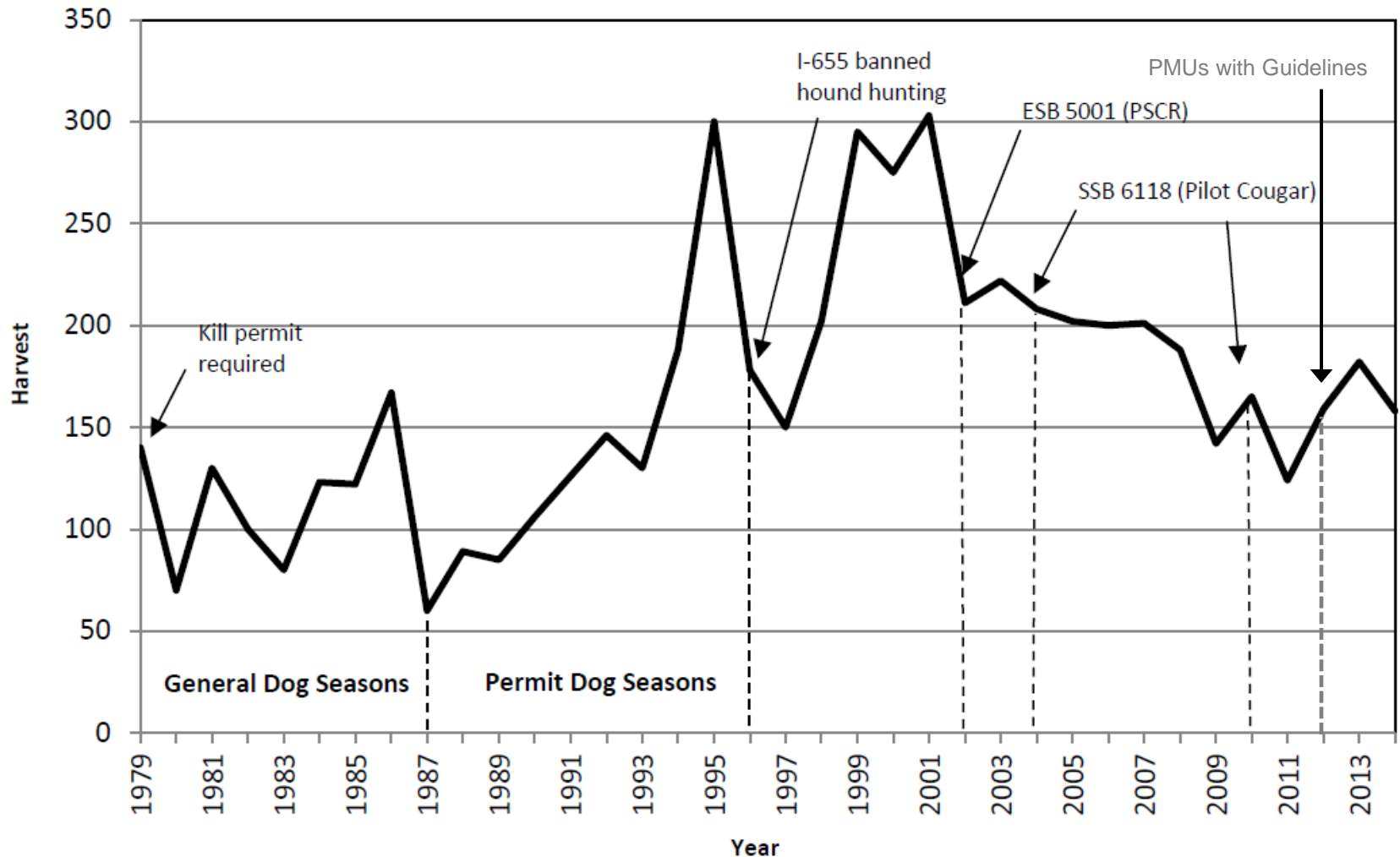
2014-15 PMU Closures 8



Current Season PMU Closures 17



Cougar Harvest Trend



Harvest Guidelines Based on Research

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 population model to evaluate the effects of hunting on cougar home range size and spatial organization. The instability hypothesis predicts that home range size and spatial organization will be greater in heavily hunted populations. We compared home range size and spatial organization of cougars with and without hunting collars from 2002 to 2010. Home range size and spatial organization were similar among areas, suggesting that hunting does not affect home range size, but that utilization distribution of male and female cougars overlapped more than those of male and female cougars with hunting collars. Home range size and overlap of



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

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ABSTRACT

Carnivore population models that incorporate hunting, immigration, and emigration are needed to understand the effects of hunting on population growth and persistence. We used a spatially explicit population model to evaluate the effects of hunting on cougar population growth and persistence. We compared population growth and persistence of cougars with and without hunting collars from 2002 to 2010. Population growth and persistence were similar among areas, suggesting that hunting does not affect population growth and persistence. However, population growth and persistence were lower in heavily hunted populations. We conclude that hunting affects population growth and persistence, but that the effects are not as severe as predicted by the instability hypothesis. We suggest that population growth and persistence should be considered in addition to home range size and spatial organization when evaluating the effects of hunting on cougar populations.

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In My Opinion

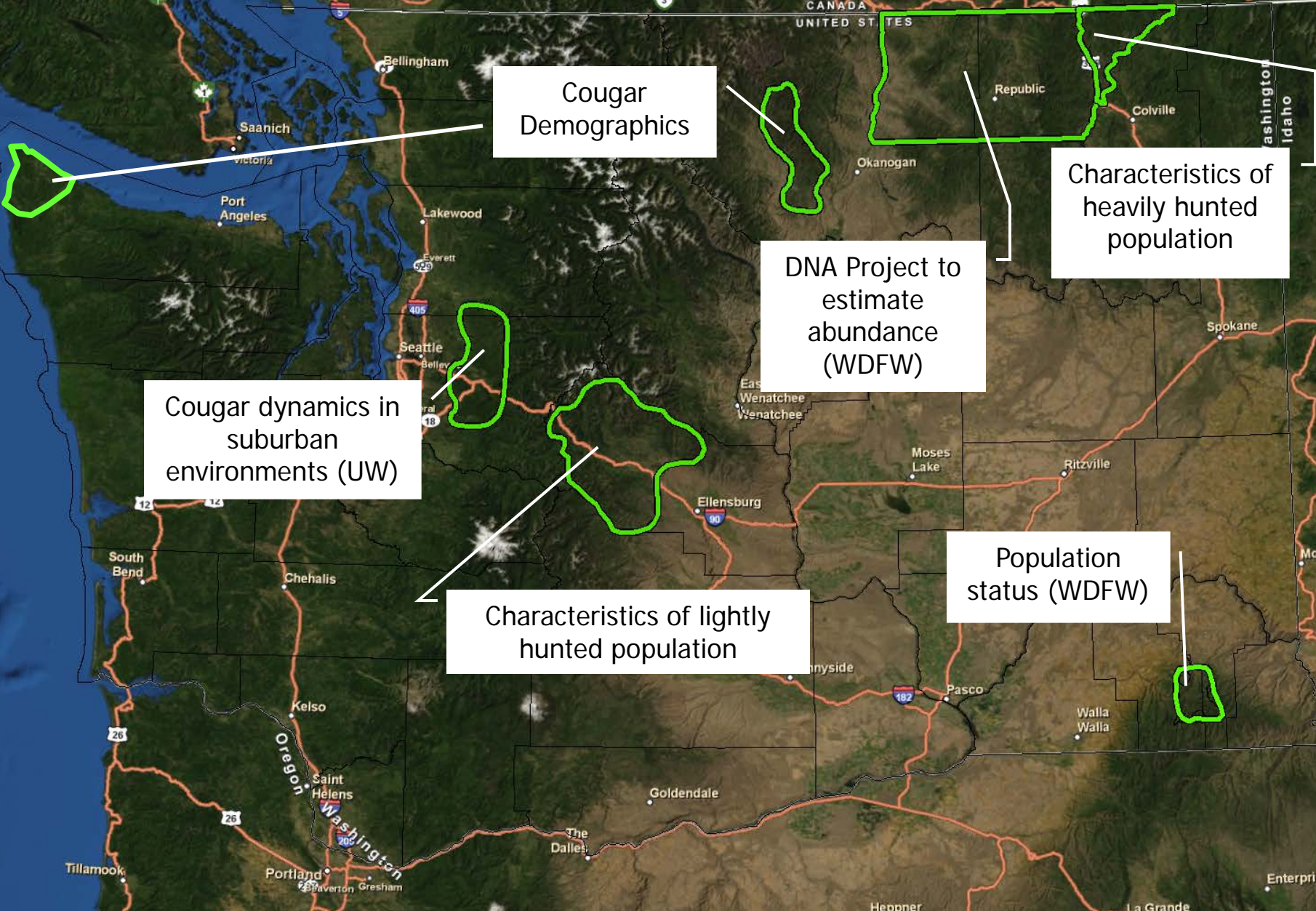
Research to Regulation: Cougar Social Behavior as a Guide for Management

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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 km². 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 km² 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,



Cougar Research Projects



Cougar Demographics

Characteristics of heavily hunted population

DNA Project to estimate abundance (WDFW)

Cougar dynamics in suburban environments (UW)

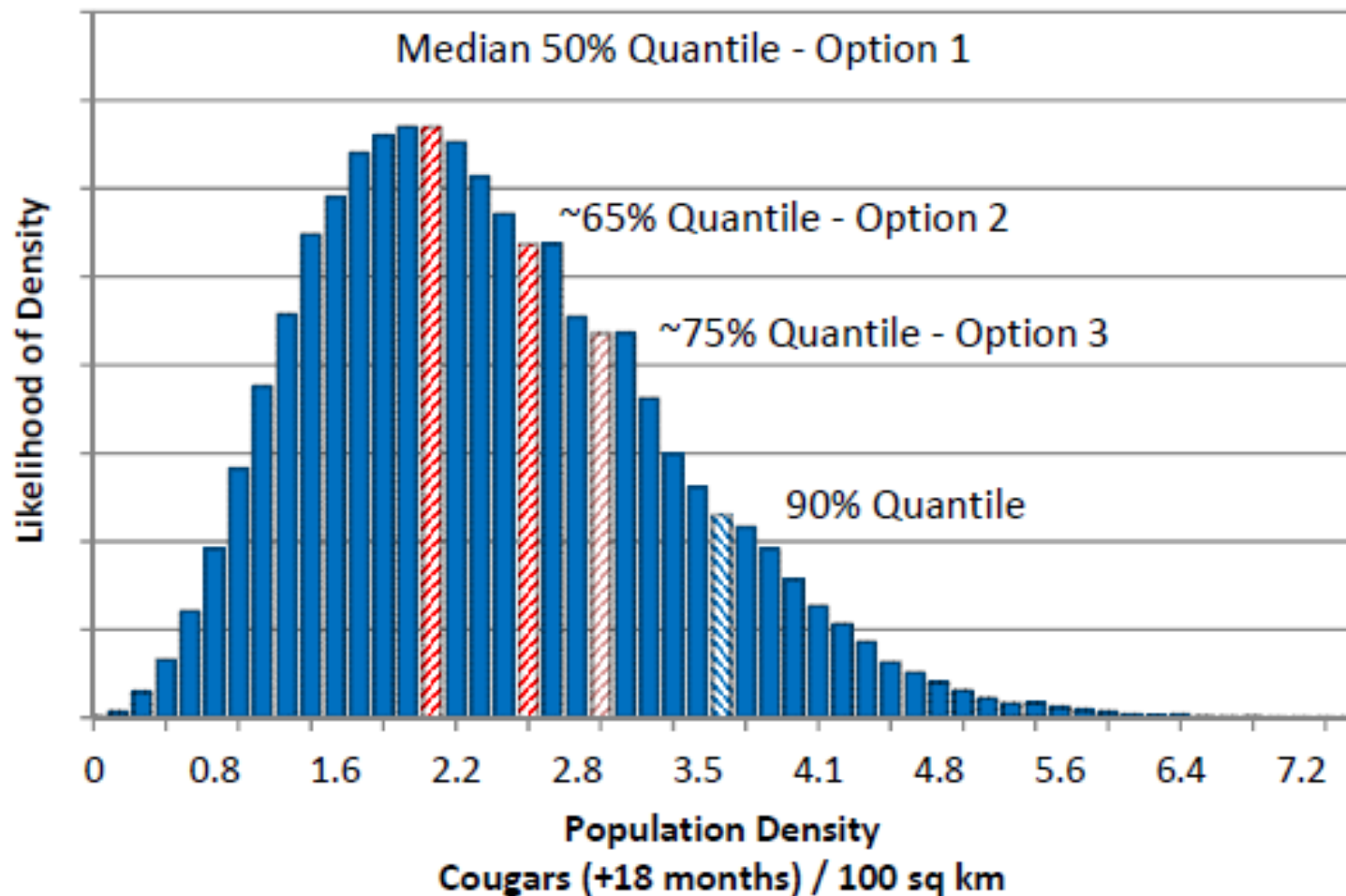
Characteristics of lightly hunted population

Population status (WDFW)

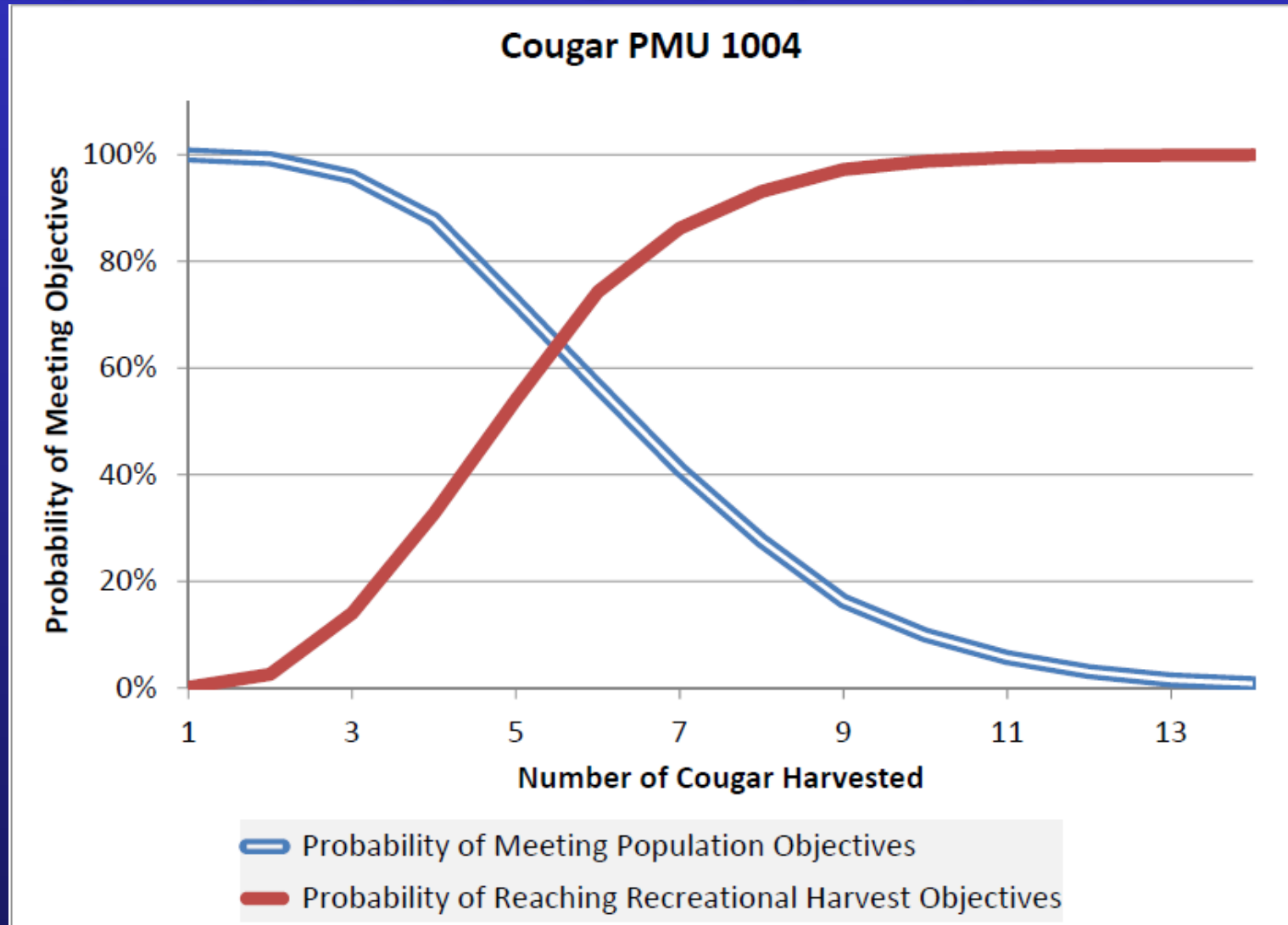
Vital Information Learned

- We can safely harvest cougar at approximately 14%
- Cougar density varies slightly across the state with a median of about 2.2 cougars/100 km² (not including Kittens)

New Approach Incorporating Uncertainty

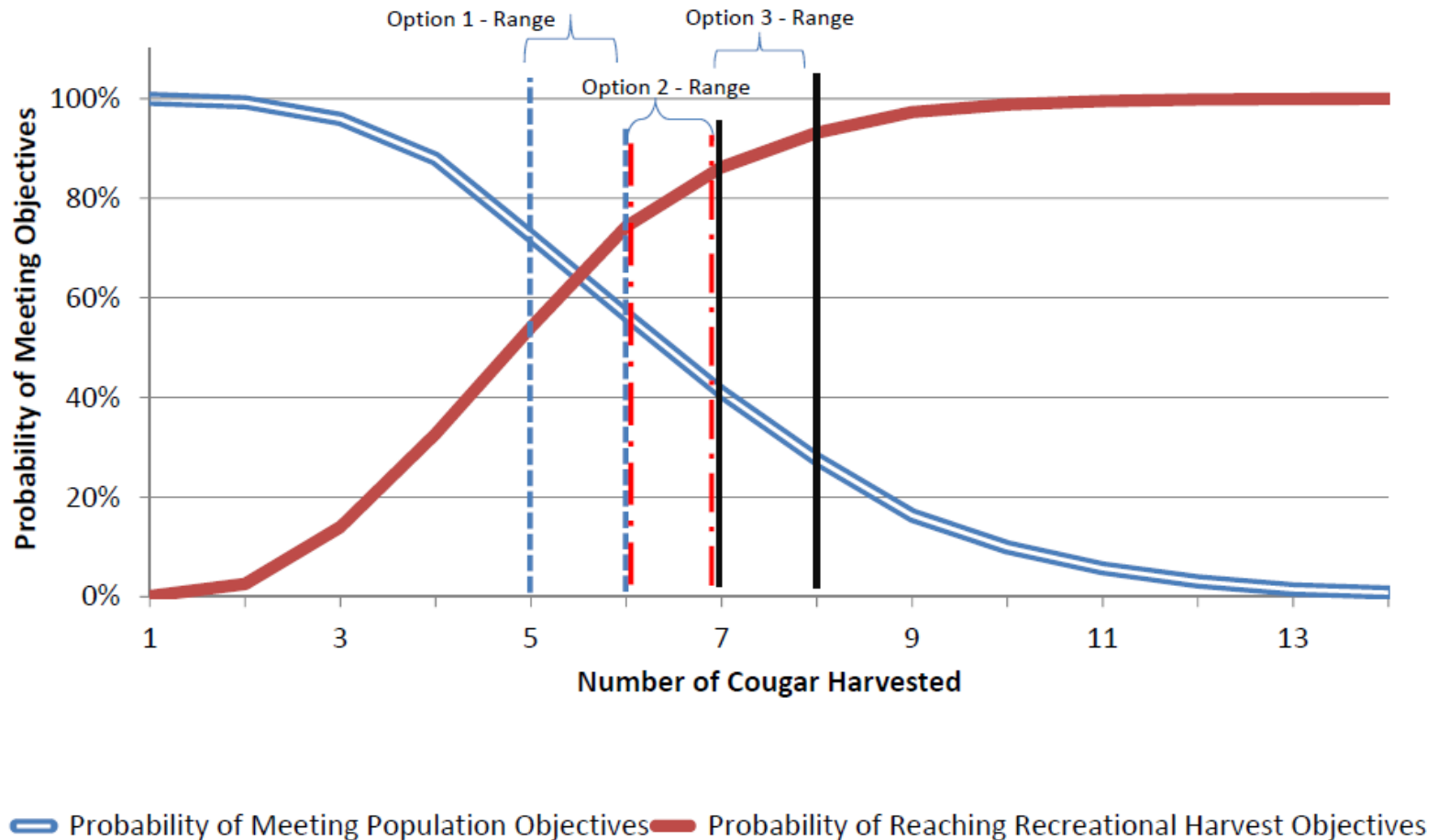


Harvest Guideline Risk Assessment for Each PMU



Harvest Guideline Risk Assessment for Each PMU

Cougar PMU 1004



Recommendation

- No change in season dates – Sept. 1 – April 30 for all options
- Option 1: Set guidelines using 12-16% harvest rate based on a statewide density estimate approach that incorporates uncertainty (*Dept. recommendation*)
- Option 2: Adding 1 cougar to Option 1 guideline per PMU
- Option 3: Adding 2 cougars to Option 1 guideline per PMU

Questions