

Agenda Item 7

WAC 232-28-297

Cougar Hunting Seasons and Regulations

&

WAC 232-12-243

Public Safety Cougar Removals

Cougar Conservation and Management



Information is subject to changes and amendments over time

March 2016 WDFW Commission meeting presentation

Review Monitoring and Research

Cougar Demographics

Characteristics of heavily hunted population

DNA Project to estimate abundance (WDFW)

Cougar dynamics in suburban environments (UW)

Characteristics of lightly hunted population

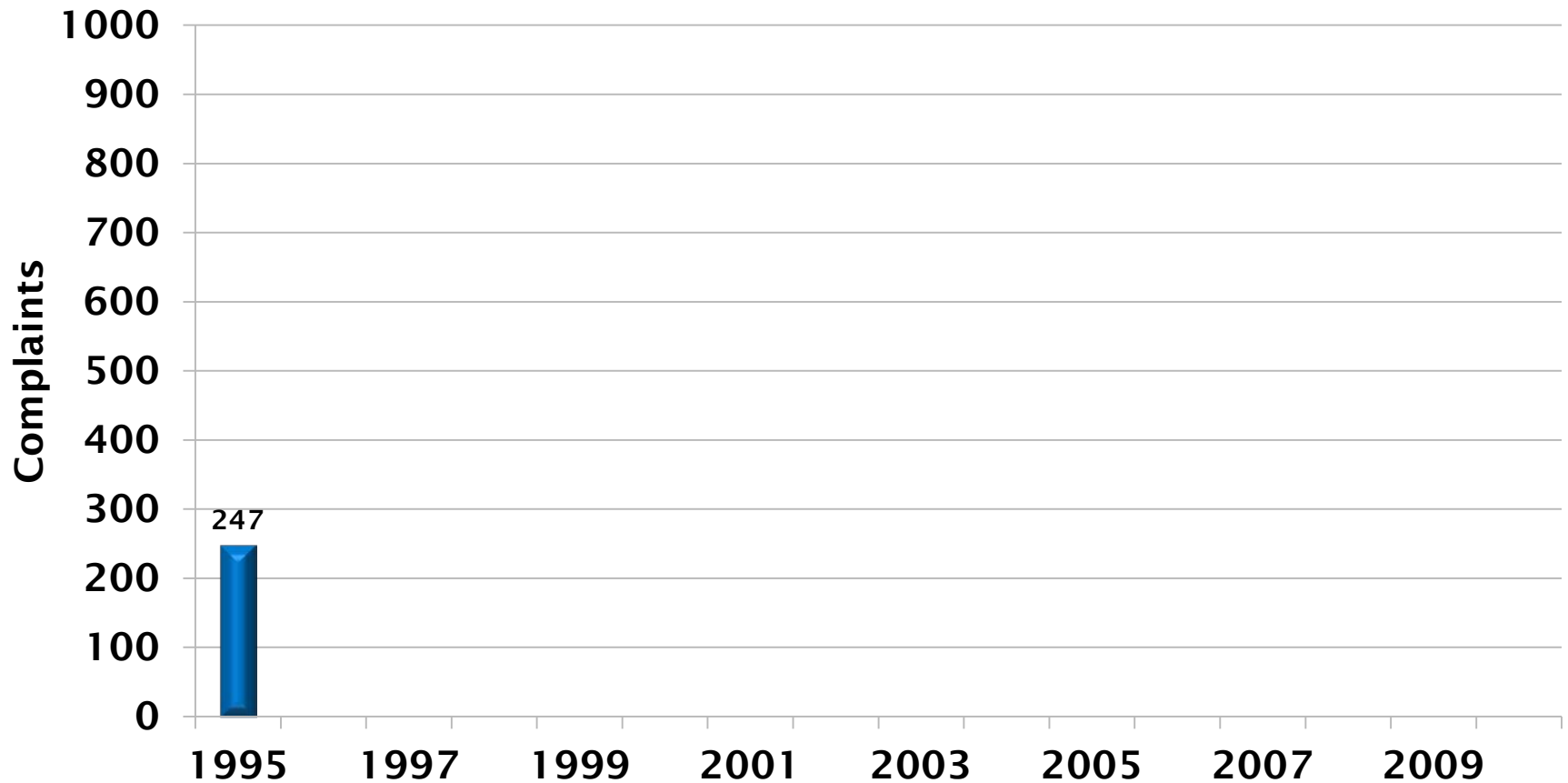
Population status (WDFW)

Cougar Policy

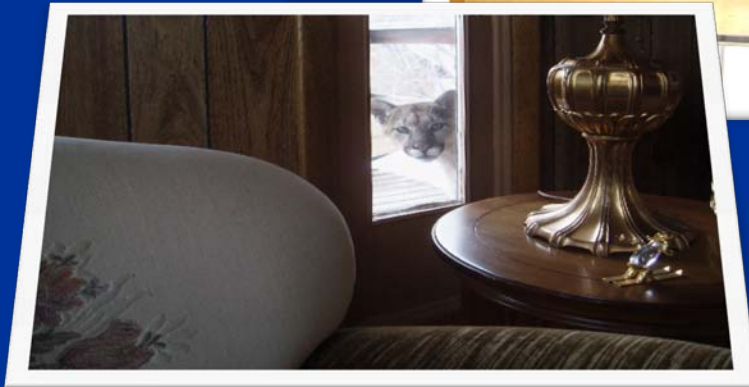
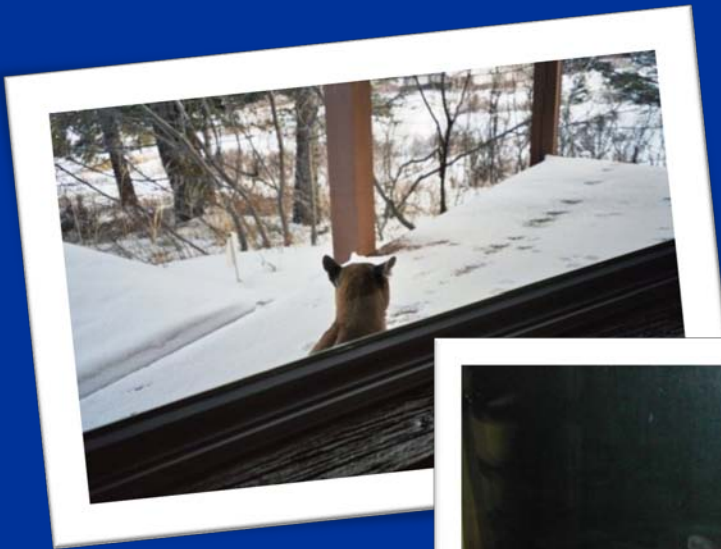
- **1996 - Voter Initiative 655**
 - ✓ Banned hound hunting
- **2000 – ESSB 5001**
 - ✓ Hotspot cougar removal using dogs
- **2004 – SSB 6118**
 - ✓ Pilot cougar hunt using dogs
 - ✓ Five counties only
- **2007 – HB 1756**
 - ✓ 1-year extension of SSB 6118
- **2008 – ESHB 2438**
 - ✓ 3-year extension of pilot program
 - ✓ County opt-in process



Confirmed Cougar Complaints



↑
Voter Initiative 655



Cougar reports on rise in county

Big cats on prowl for pets and livestock

BY BARBARA HERNANDEZ
THE BELLINGHAM HERALD

▼ How to avoid cougars

Fish and Wildlife Officer Myron Hawkins offers these hints for dealing with cougars:

- Be noisy, don't sneak around in brush, especially at night.
- Cougars are nocturnal and don't like surprises. Let them know you're coming and they'll stay out of your way. Have small children carry a whistle.
- Make yourself as big as possible.
- Keeping dog food or cat food on your porch is an open invitation to all wildlife, cougar or otherwise. Keep pets and other animals secure.
- The disappearance of fowl, small livestock, cats and dogs indicate the possibility of a cougar.

If you spot a cougar, call the State Patrol at 676-2076, and a Fish and Wildlife officer will respond.

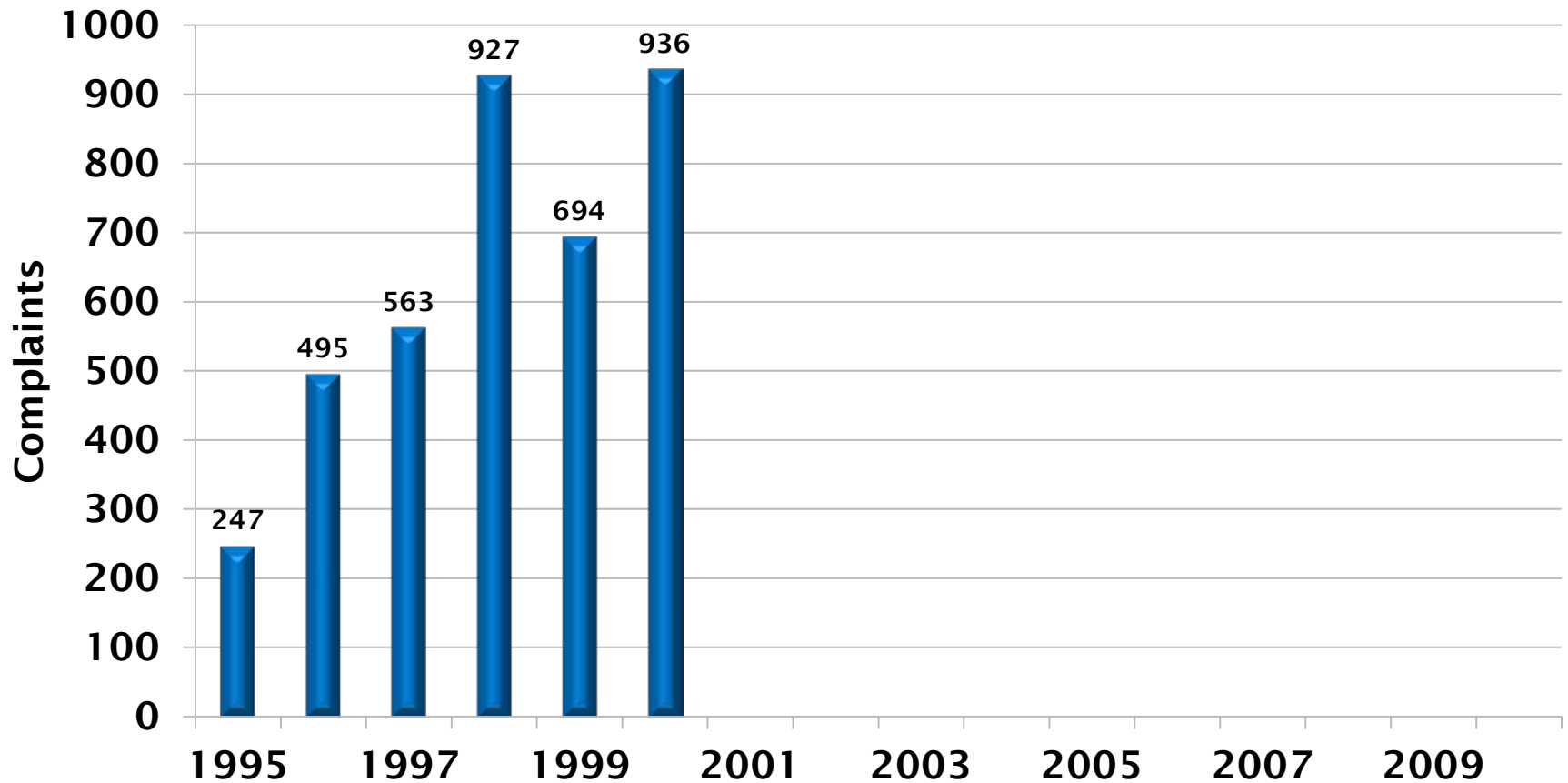
County's cougars tend to be fat and sassy, living off "casual pickings."



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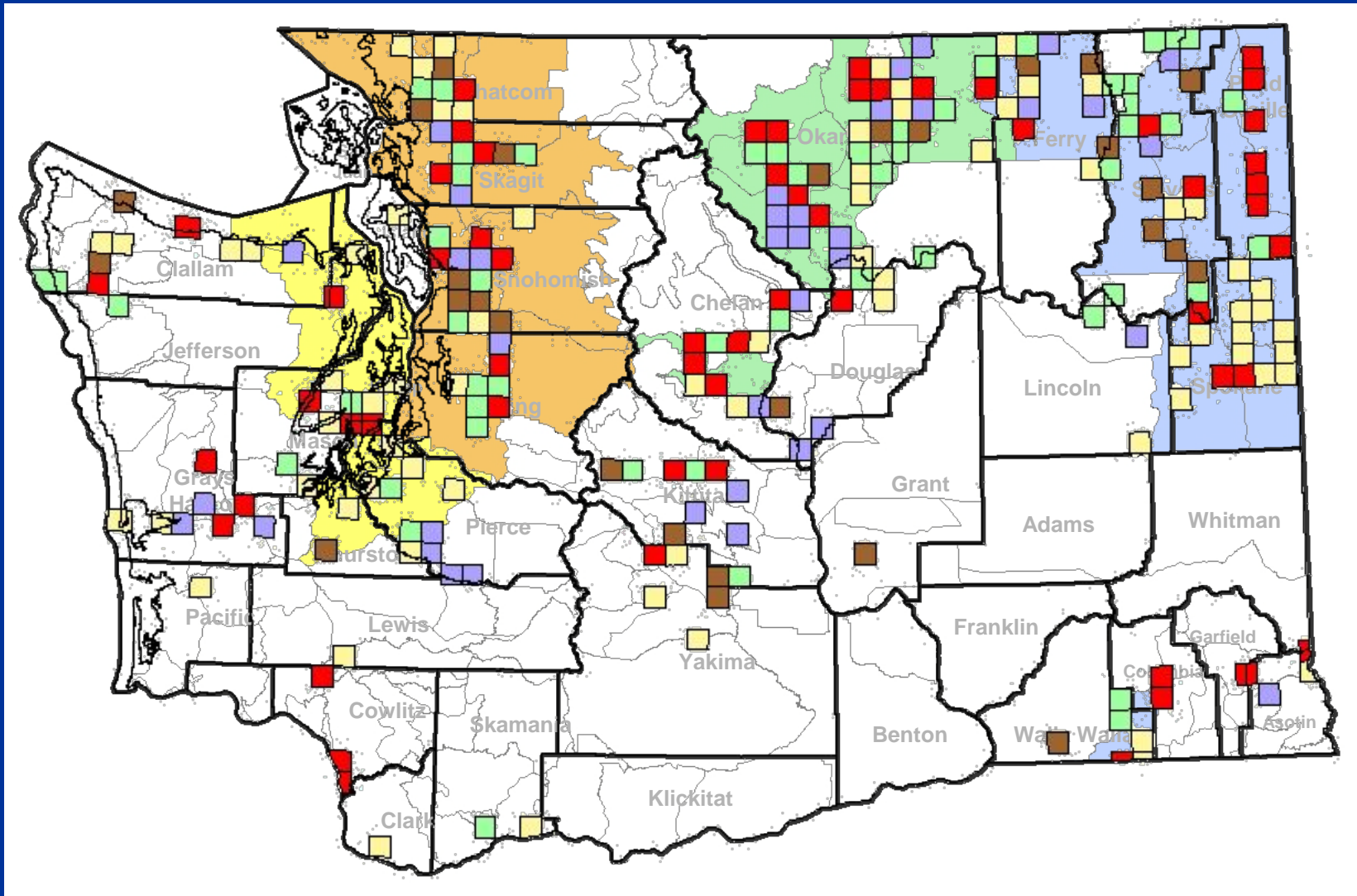
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Confirmed Cougar Complaints



↑
ESSB 5001 → PSCRs

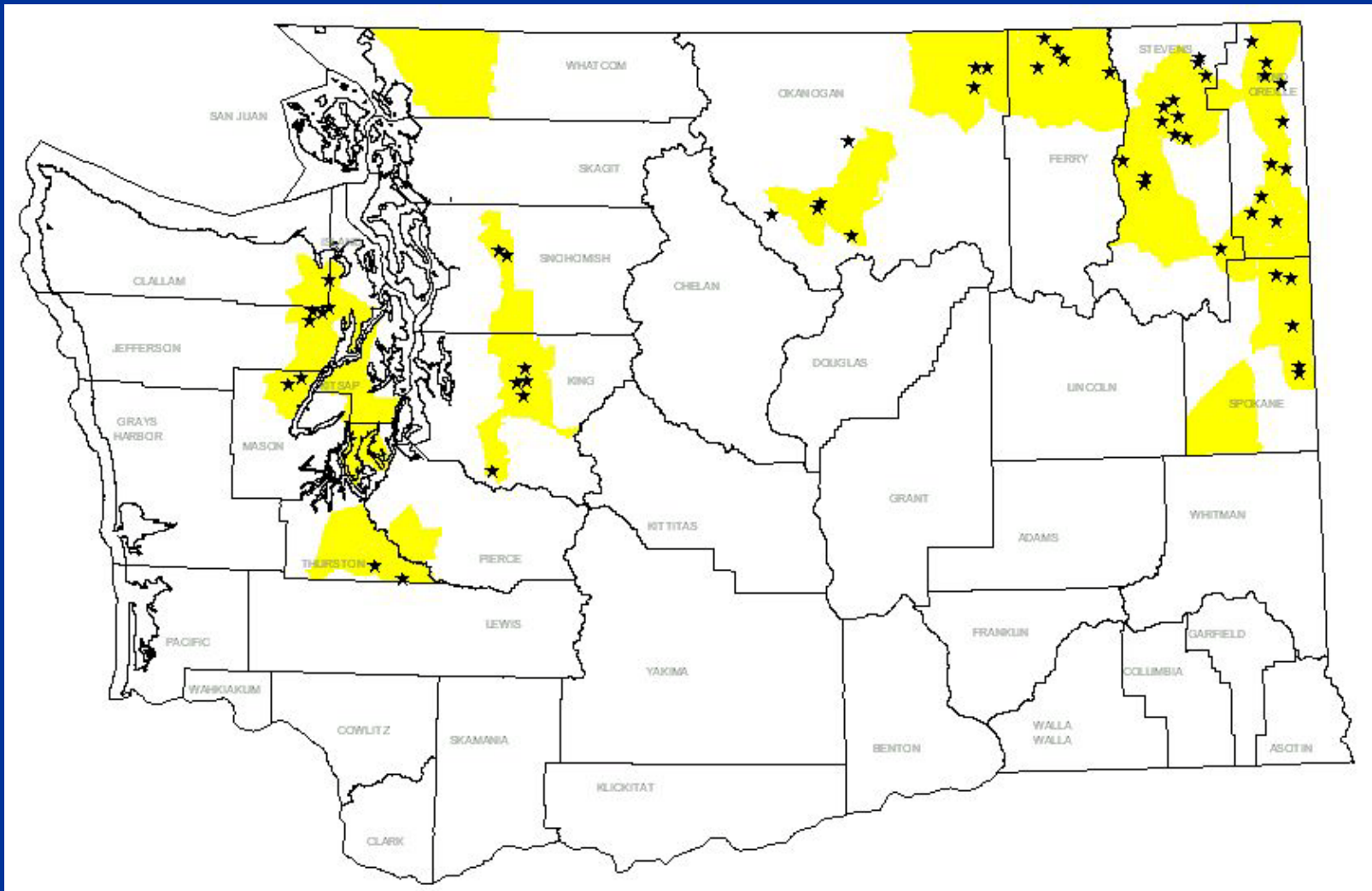
Public Safety Cougar Removals



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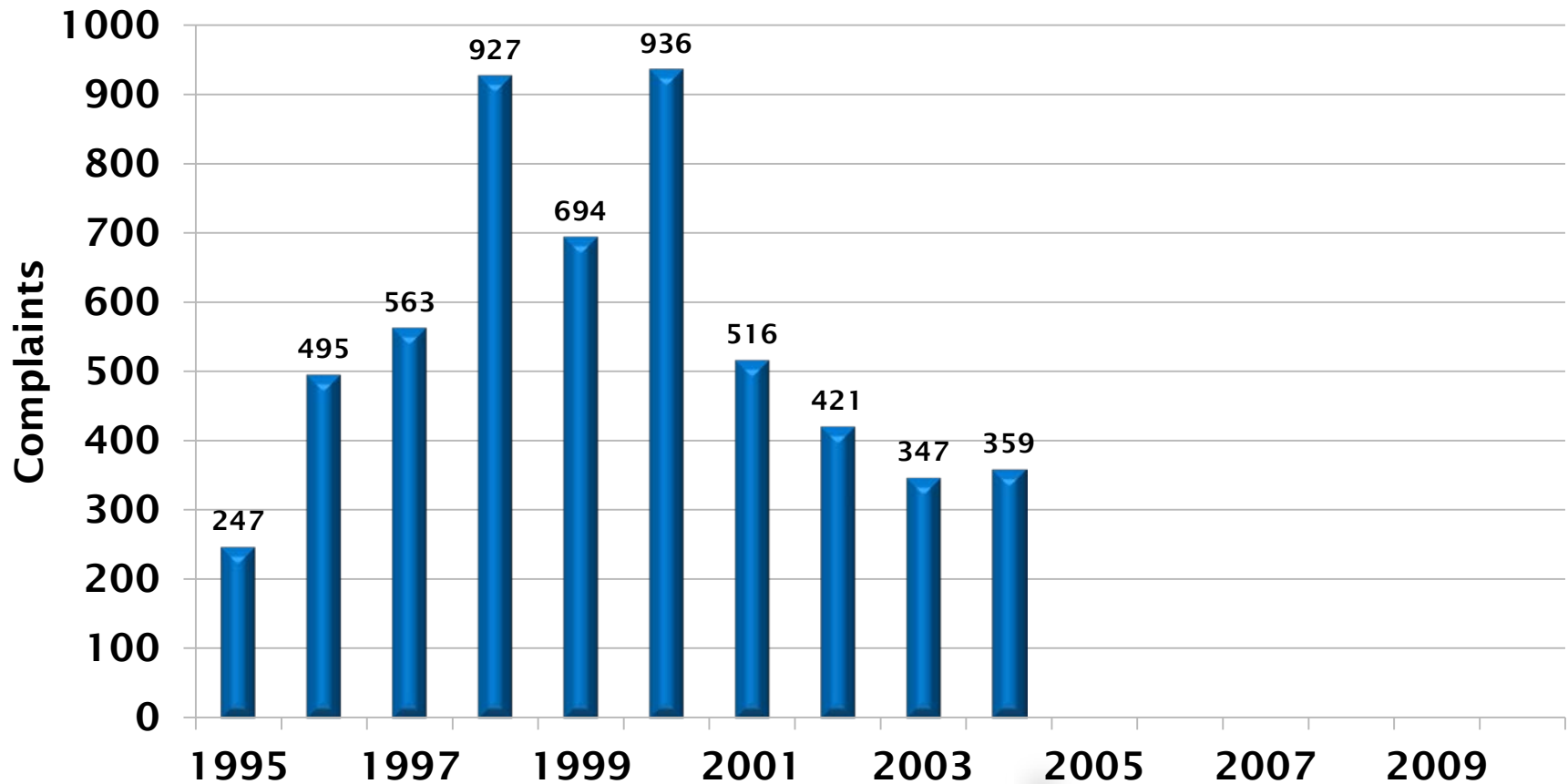
Public Safety Cougar Removals



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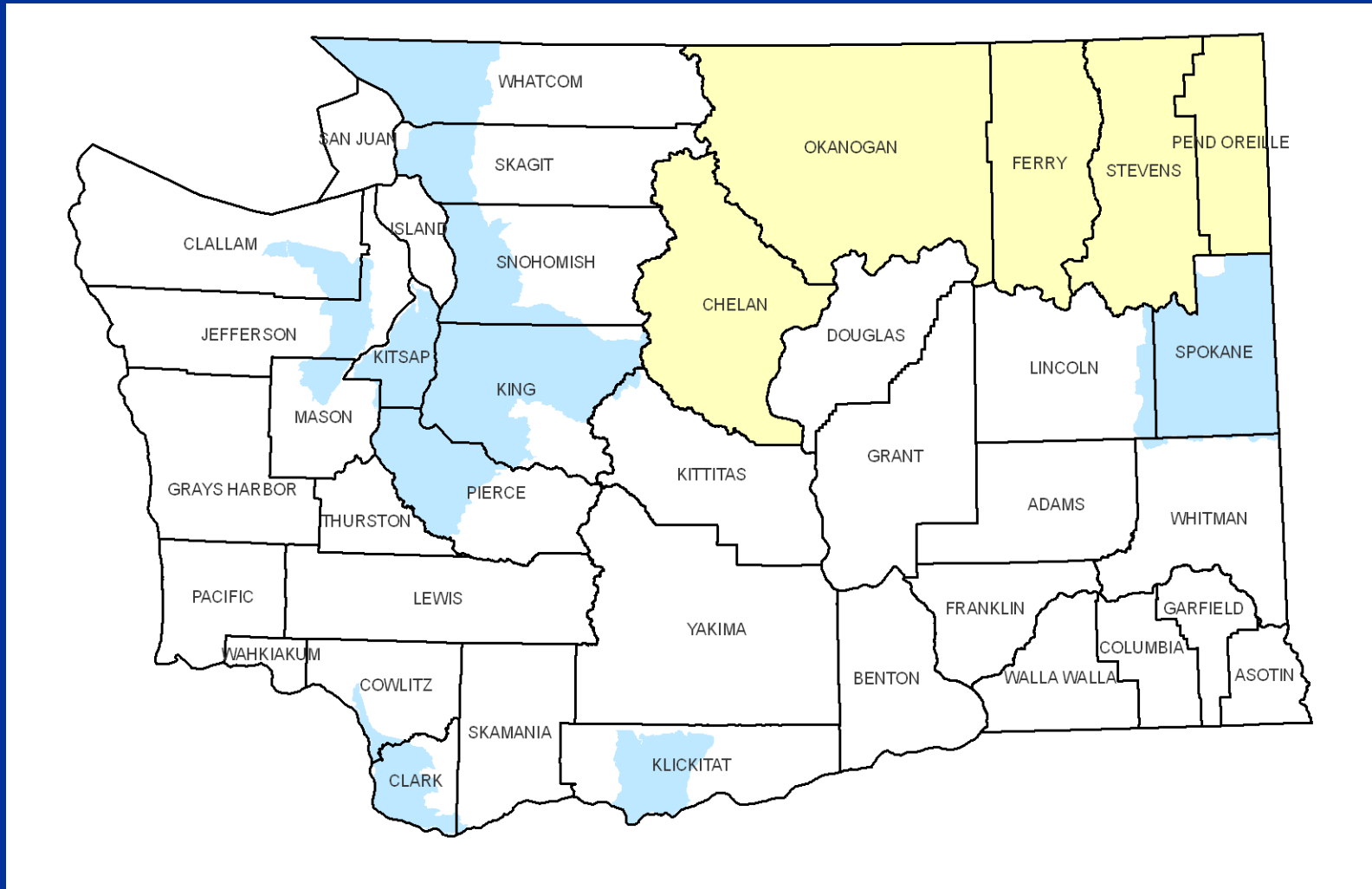
Confirmed Cougar Complaints



SSB 6118

“Pilot Cougar Hunt with Dogs”

Pilot Hunt with Dogs



Population Objective

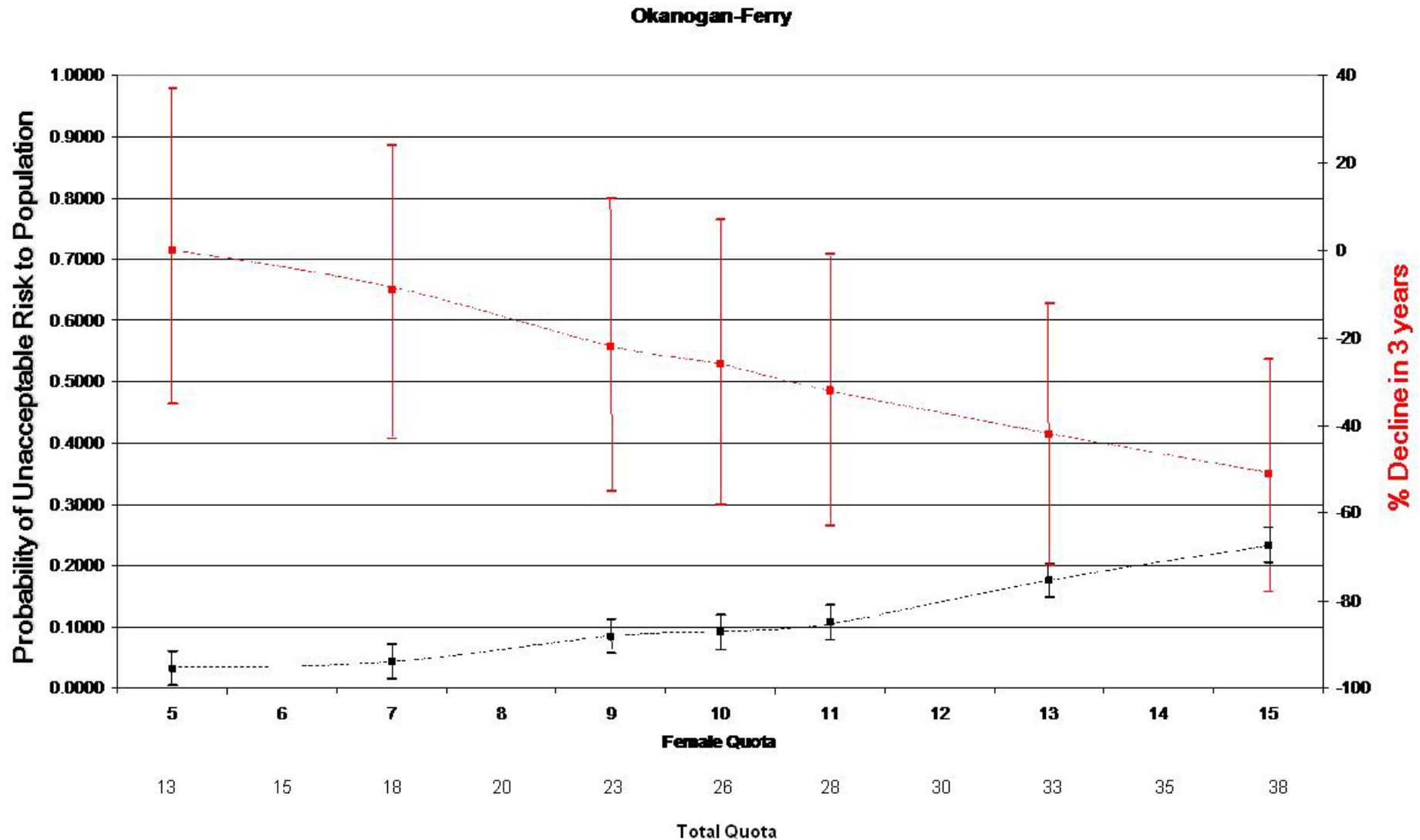
Game Management Plan

Cougar Management Units

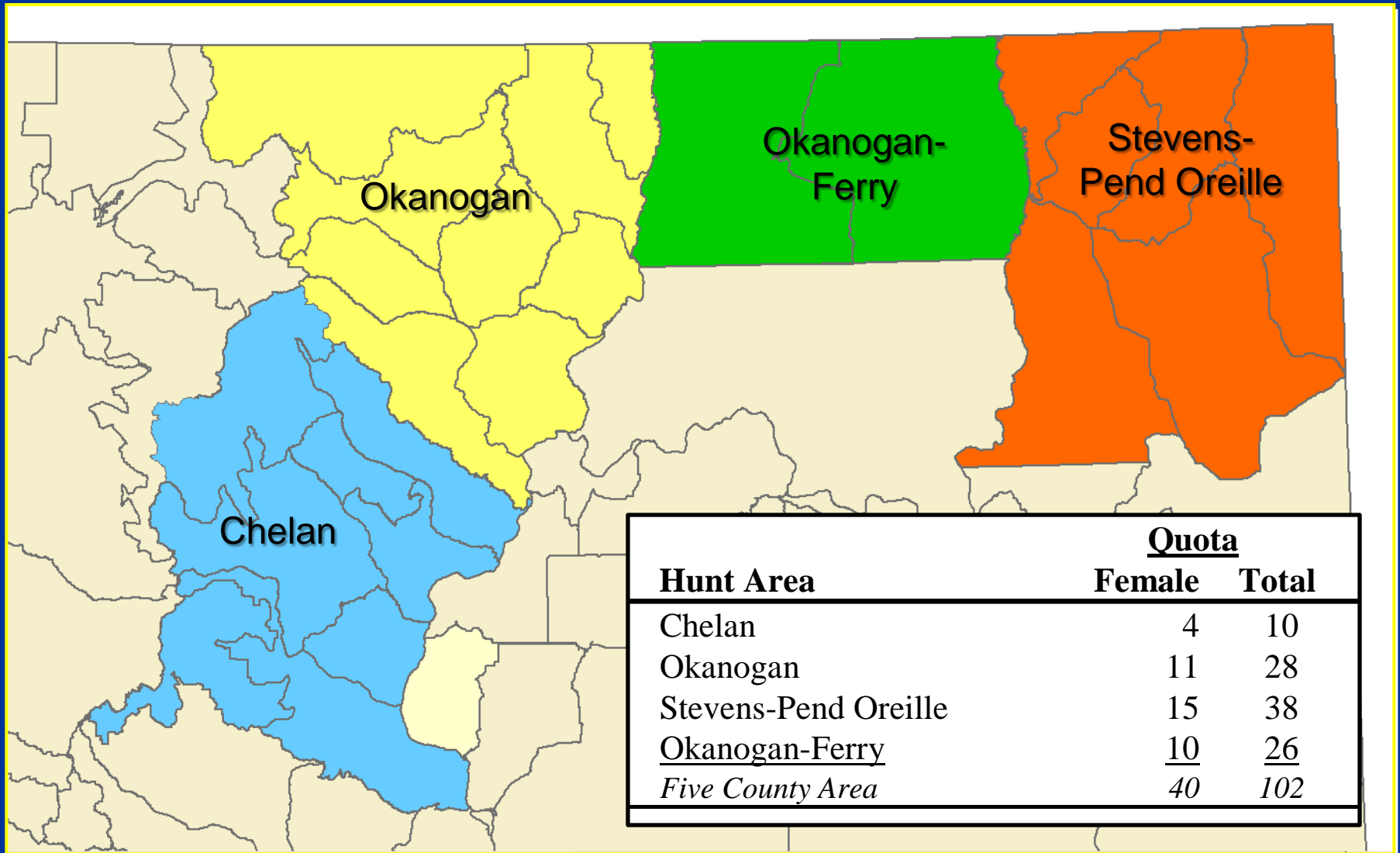


CMU	2003-2008
Coastal	Stable
Puget Sound	--
North Cascades	Stable
South Cascades	Stable
East Cascades North	Reduce
East Cascades South	Stable
Northeastern	Reduce
Blue Mountains	Stable
Columbia Basin	--

Population Impacts of Harvest



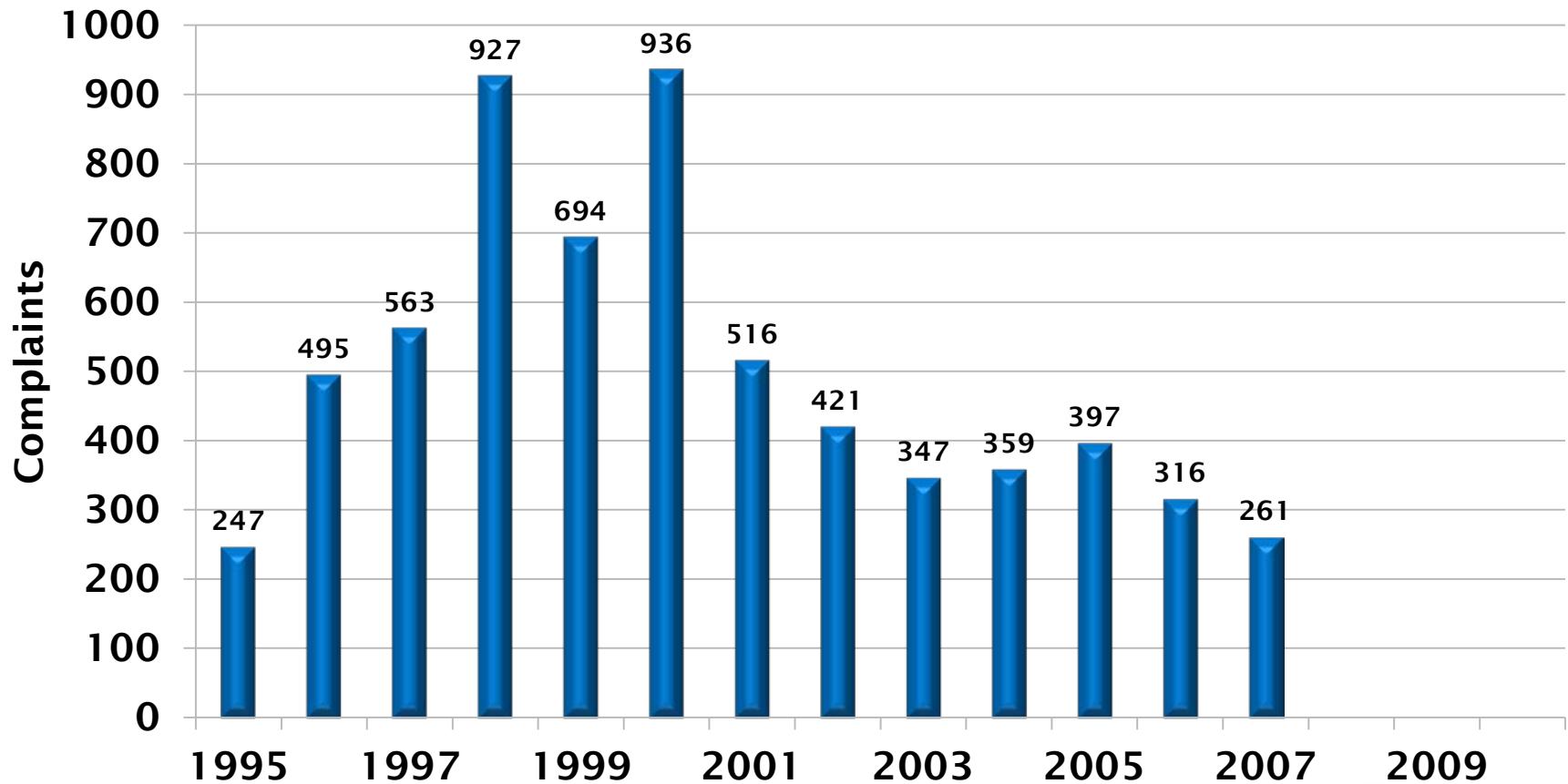
Quotas for 25% Reduction



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Confirmed Cougar Complaints



ESHB 2438

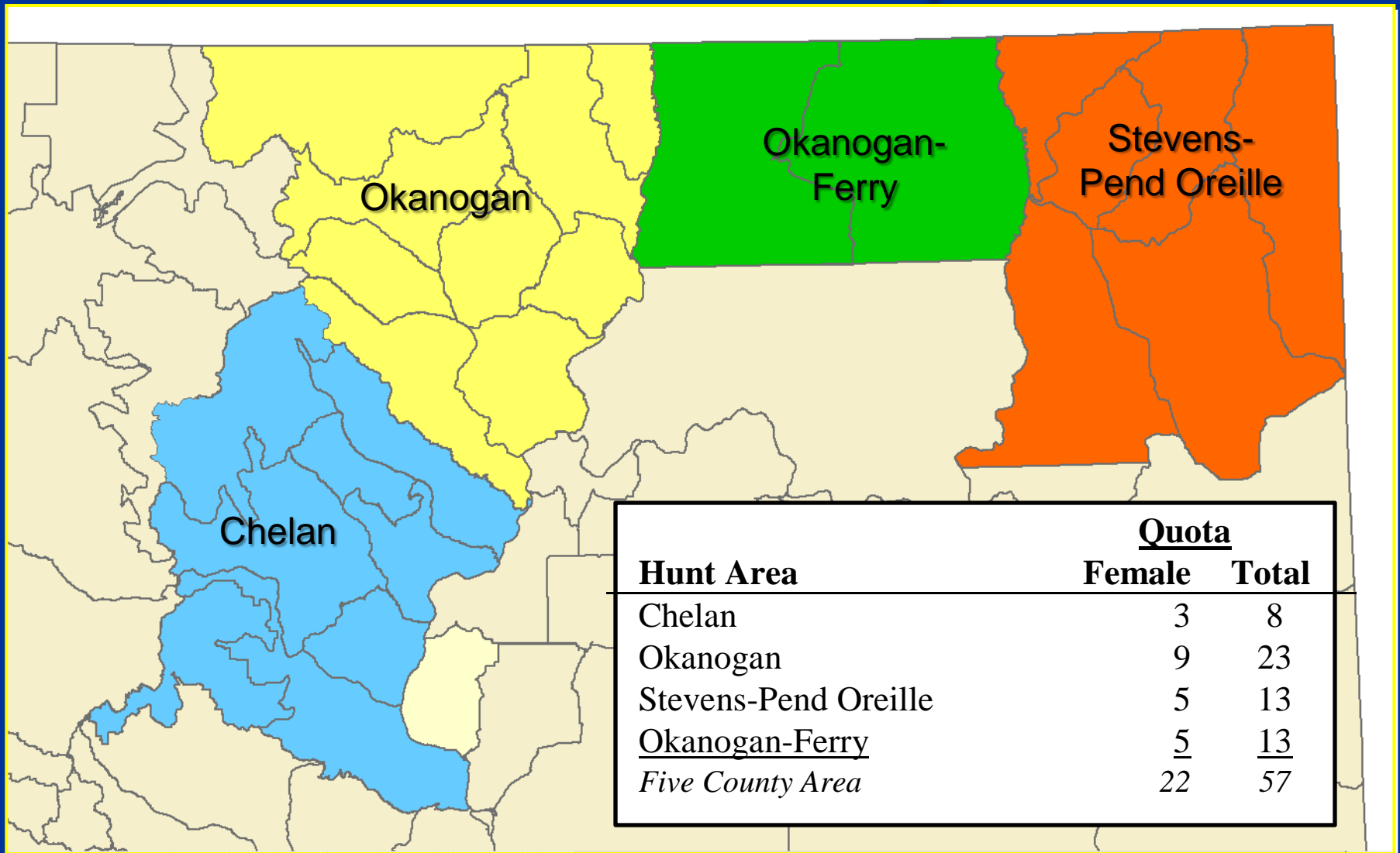
“Pilot Cougar Hunt with Dogs”

Population Objective

Game Management Plan

CMU	2003-2008	2009-2015
Coastal	Stable	Stable
Puget Sound	--	--
North Cascades	Stable	Stable
South Cascades	Stable	Stable
East Cascades North	Reduce	Stable at lower level
East Cascades South	Stable	Stable
Northeastern	Reduce	Stable at lower level
Blue Mountains	Stable	Stable
Columbia Basin	--	--

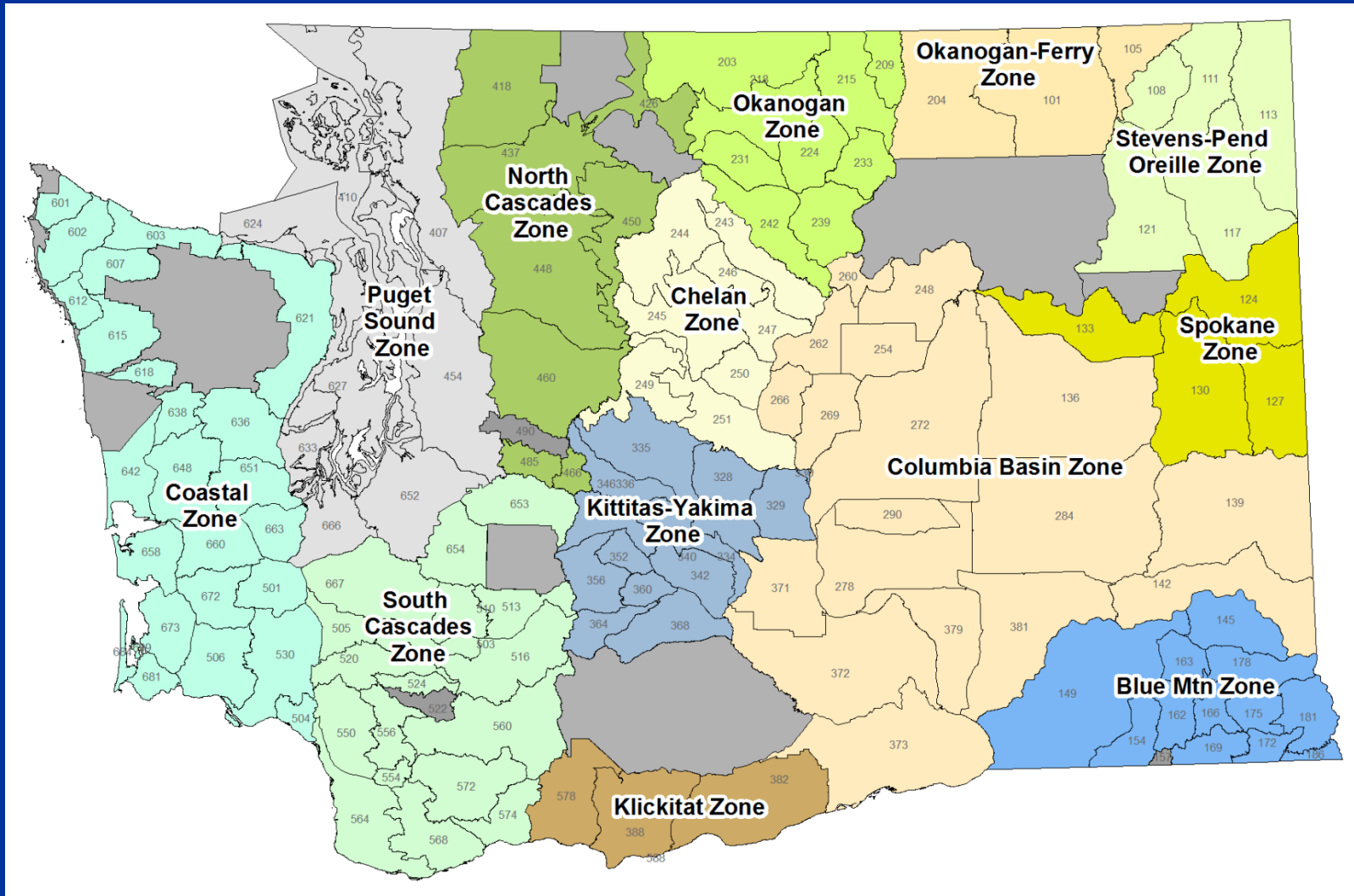
Quotas for Stable Populations



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Cougar Zones



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Female Harvest Guideline

CMU	ZONE	Harvest method	Female harvest guideline	Average harvest
Coastal	Coastal	Boot w/no quota	9	7
Puget Sound	Puget Sound	Boot w/no quota	No limit	--
North Cascades	North Cascades	Boot w/no quota	7	1
South Cascades	South Cascades	Boot w/no quota	8	10
East Cascades N	Okanogan	Dog w/ quota	7 ^b	6
	Chelan	Dog w/ quota	2 ^b	2
	Kittitas-Yakima (North)	Boot w/no quota	NA	10
East Cascades S	Kittitas-Yakima (South)	Boot w/no quota	NA	3
	Klickitat	Dog w/ quota	4 ^{b,d}	6
Northeastern	Okanogan-Ferry	Dog w/ quota	8 ^{b,d}	5
	Stevens-Pend Oreille	Dog w/ quota	7 ^{b,d}	8
	Spokane	Boot w/no quota	NA	6
Blue Mountains	Blue Mountains	Boot w/no quota	4	5
Columbia Basin	Columbia Basin	Boot w/no quota	No limit	--
Statewide			45-60	69

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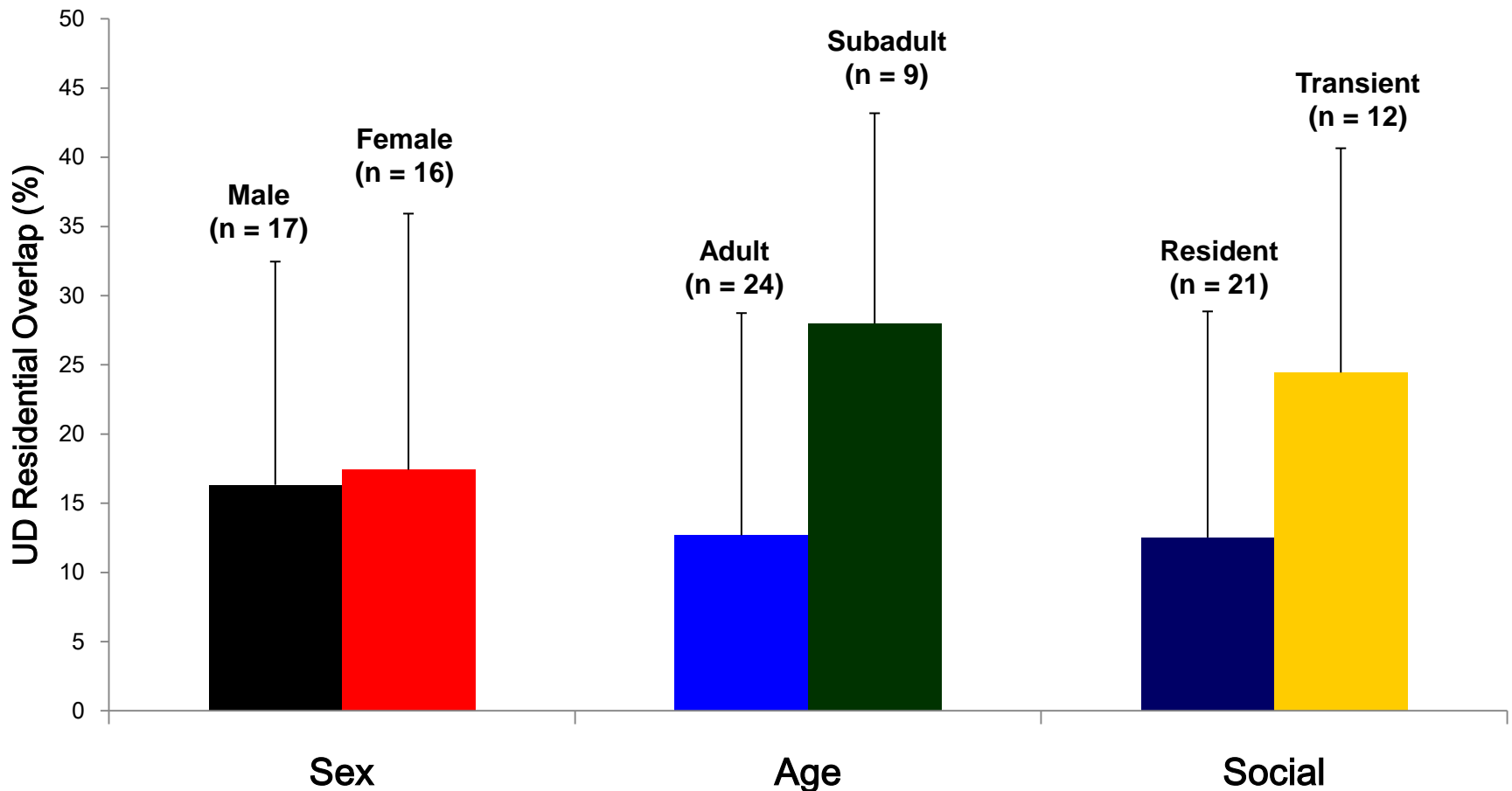
What does the science say?



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Demographic Characteristics of Cougars Living Near Suburban Areas

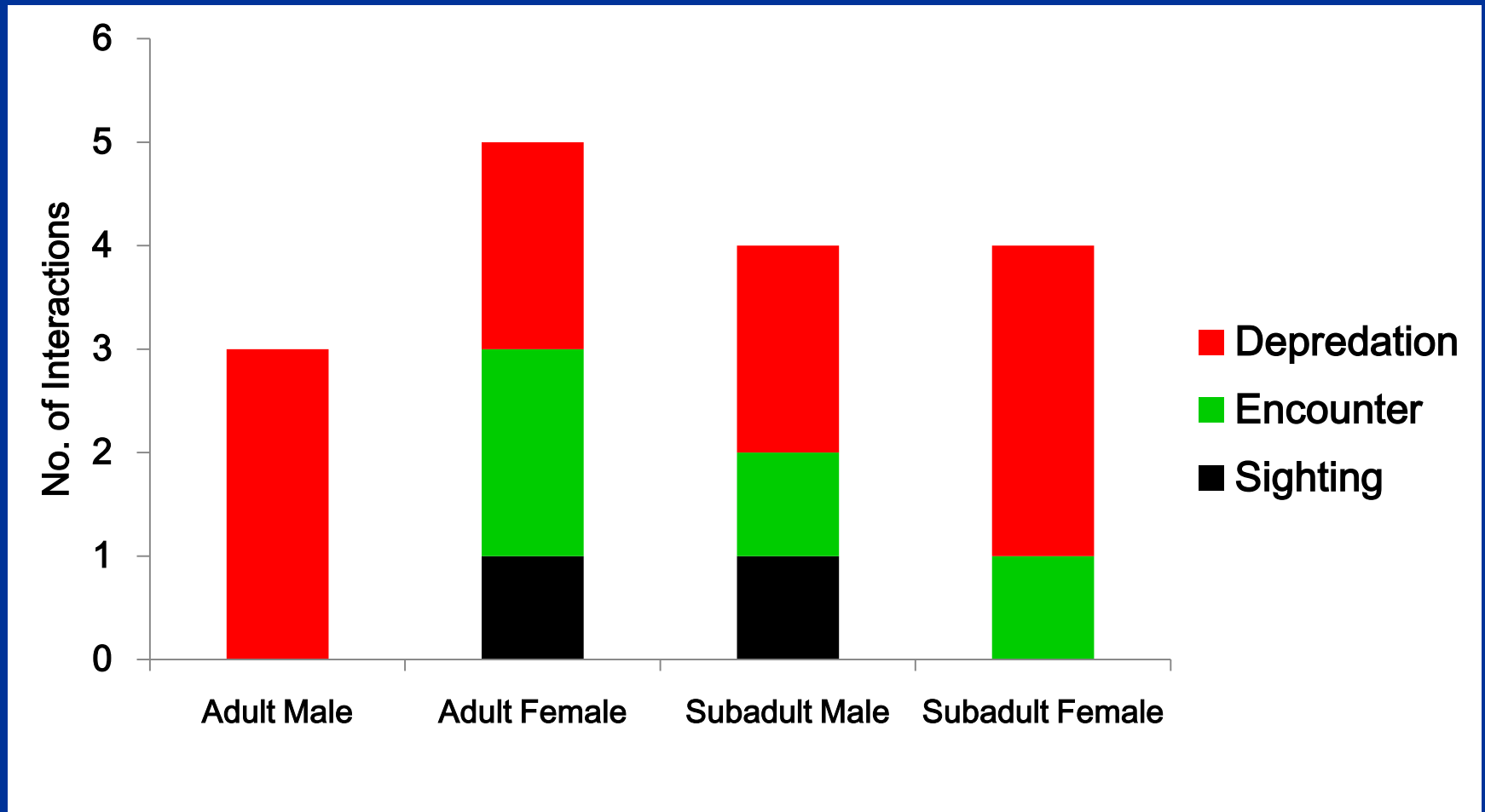


$f_{1,28} = 0.6990, P = 0.41$

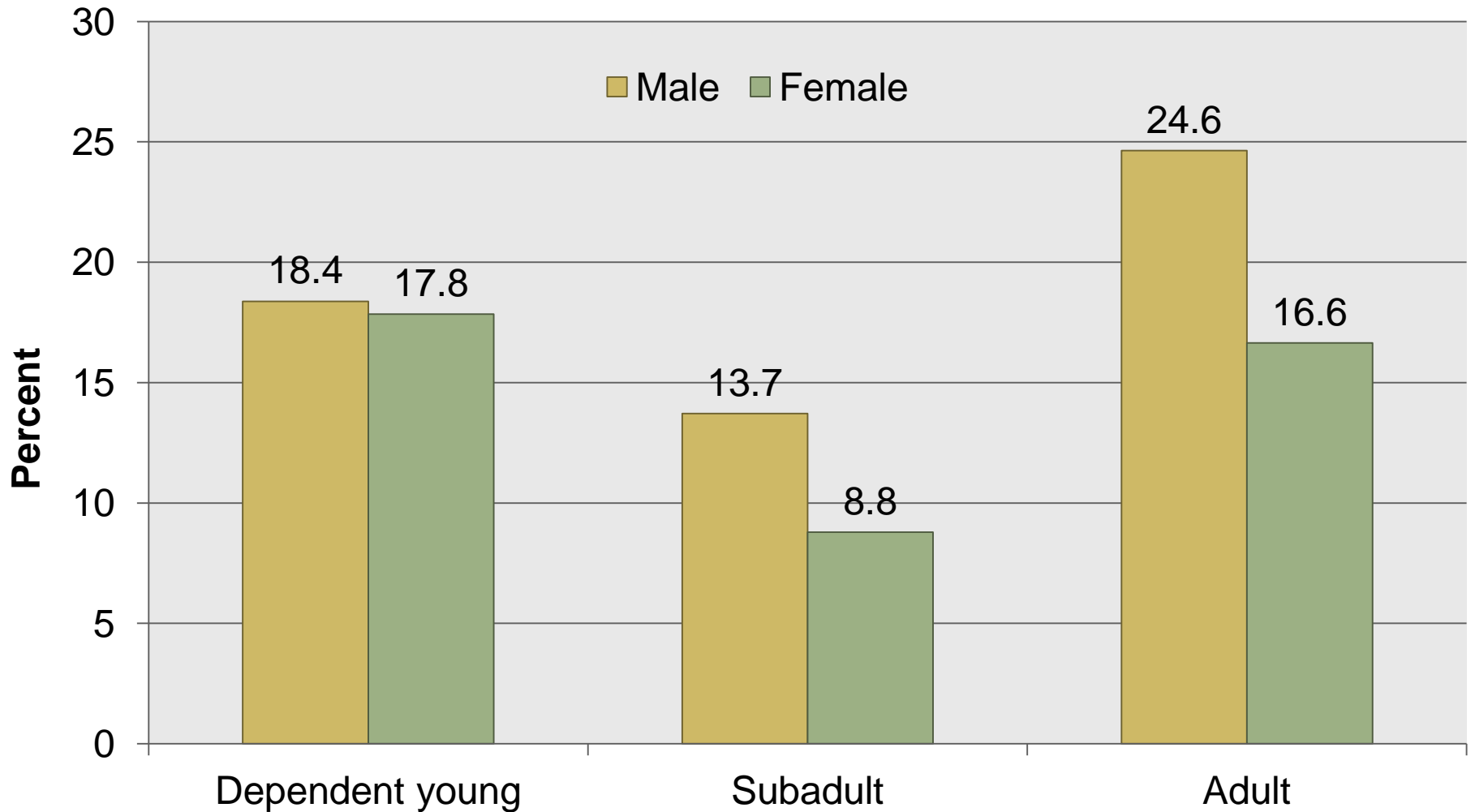
$f_{1,28} = 6.990, P = 0.01$

$f_{1,28} = 0.0004, P = 0.98$

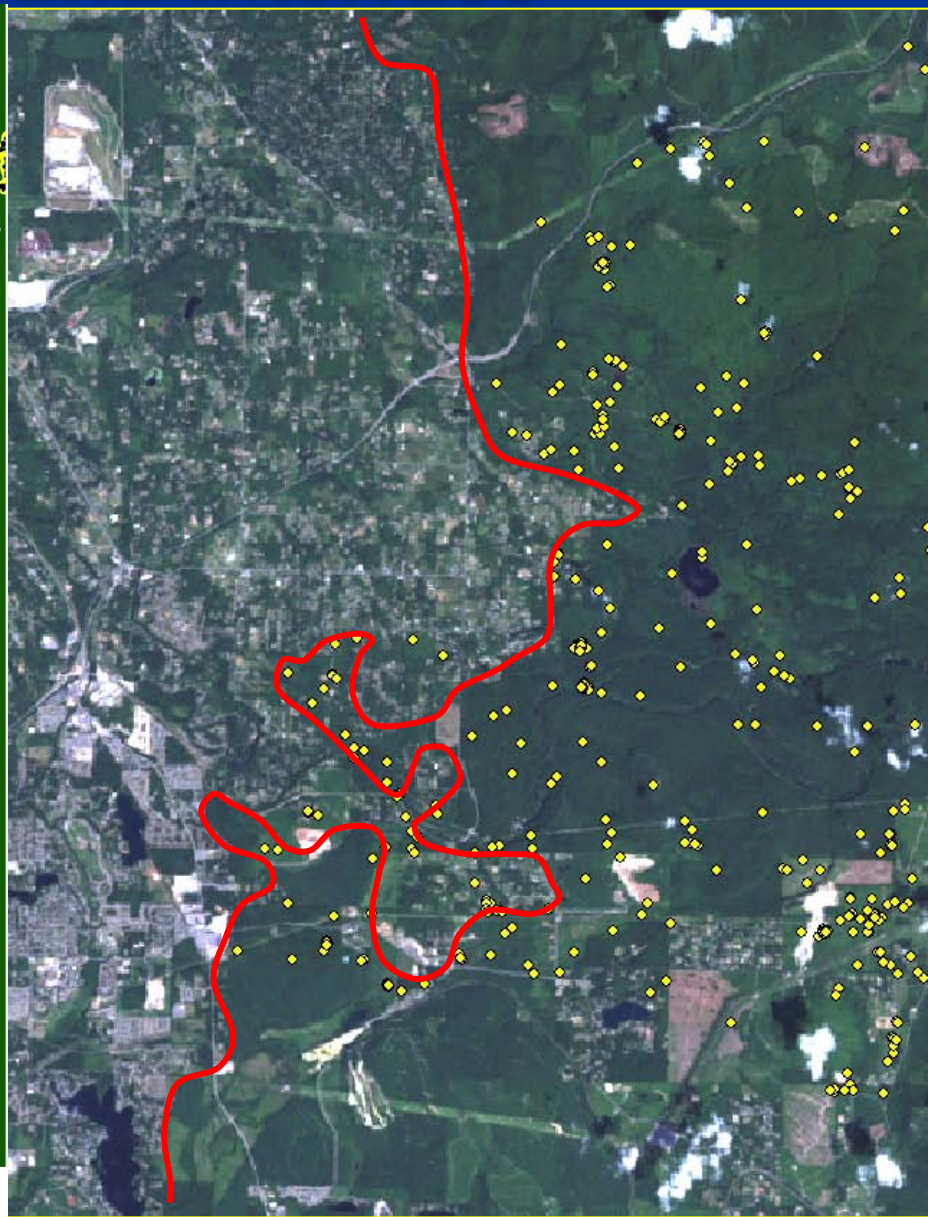
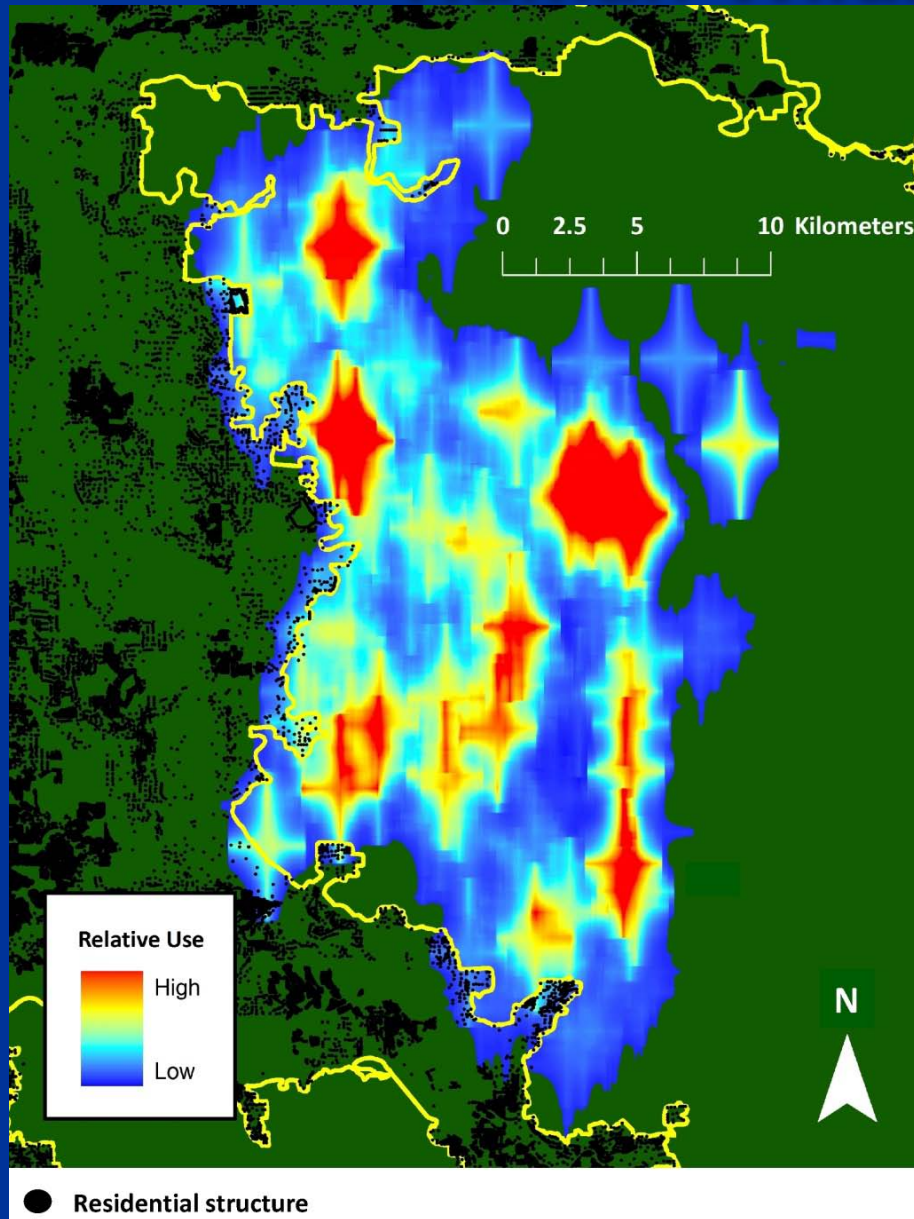
Demographics of Cougar Involved in Interactions



Cougar involved in Human-Cougar Incidents (by sex and age group)



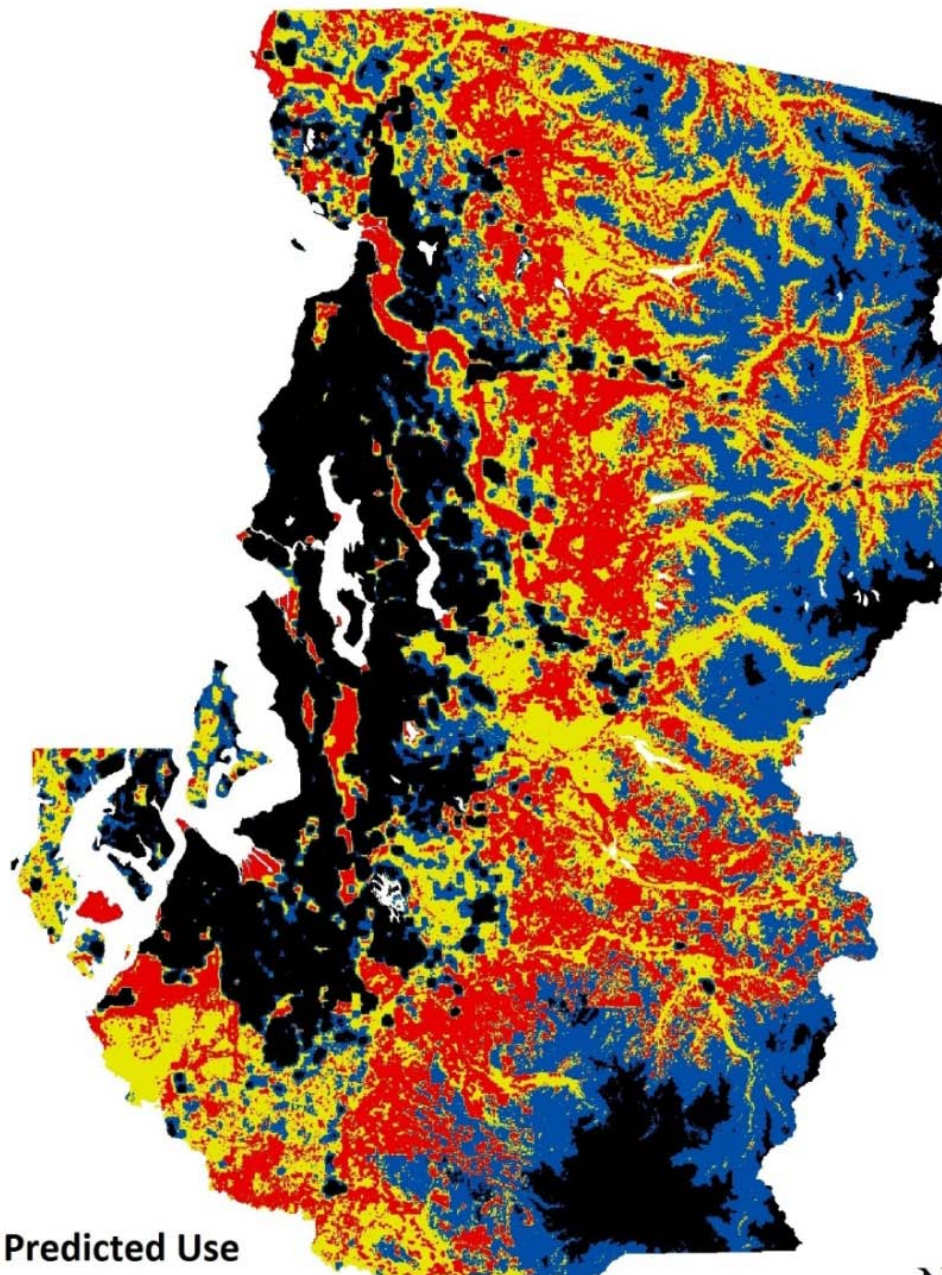
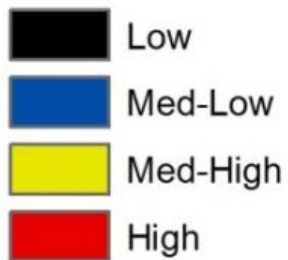
Human-Wildland Interface



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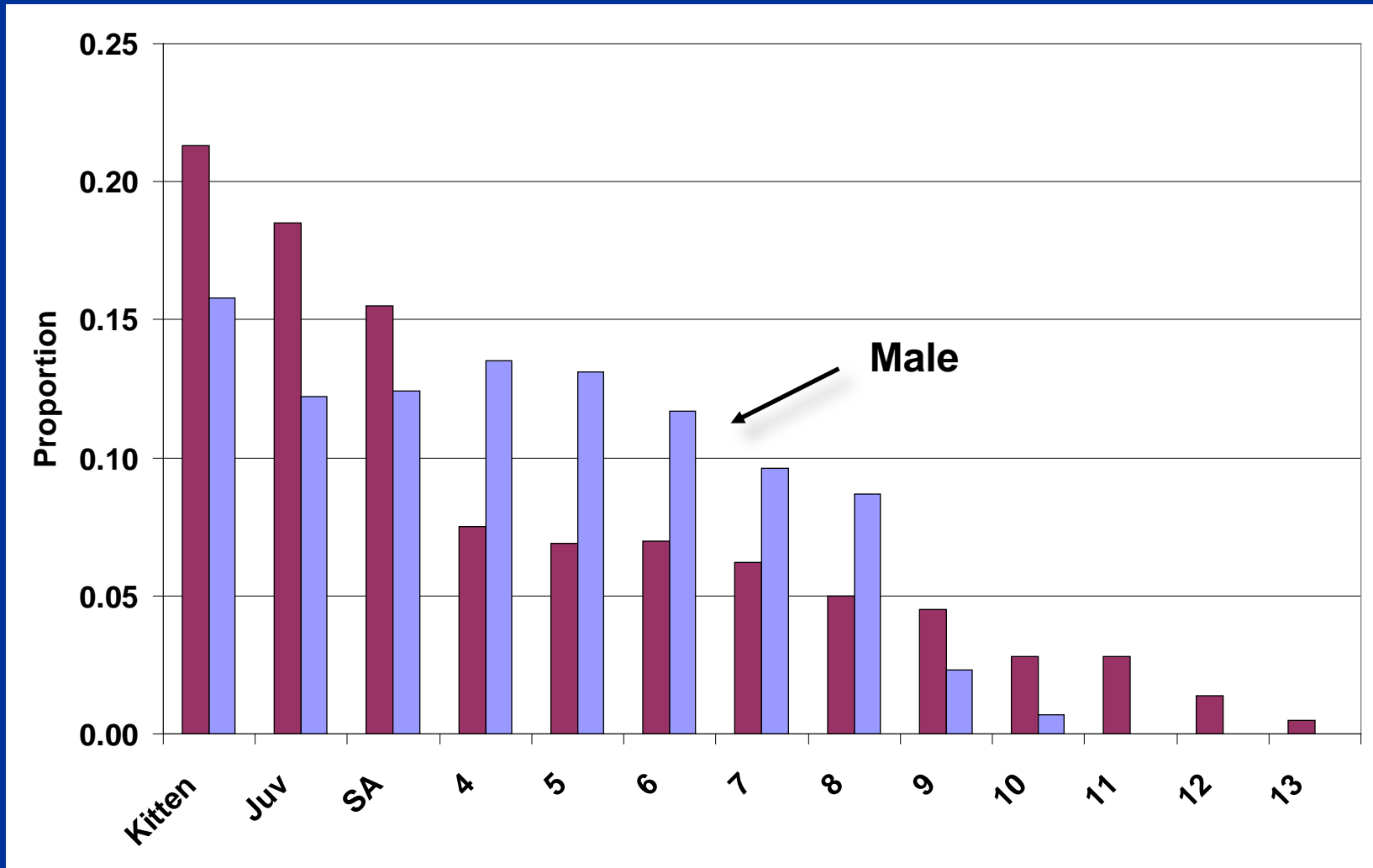
Cougar Predicted Use



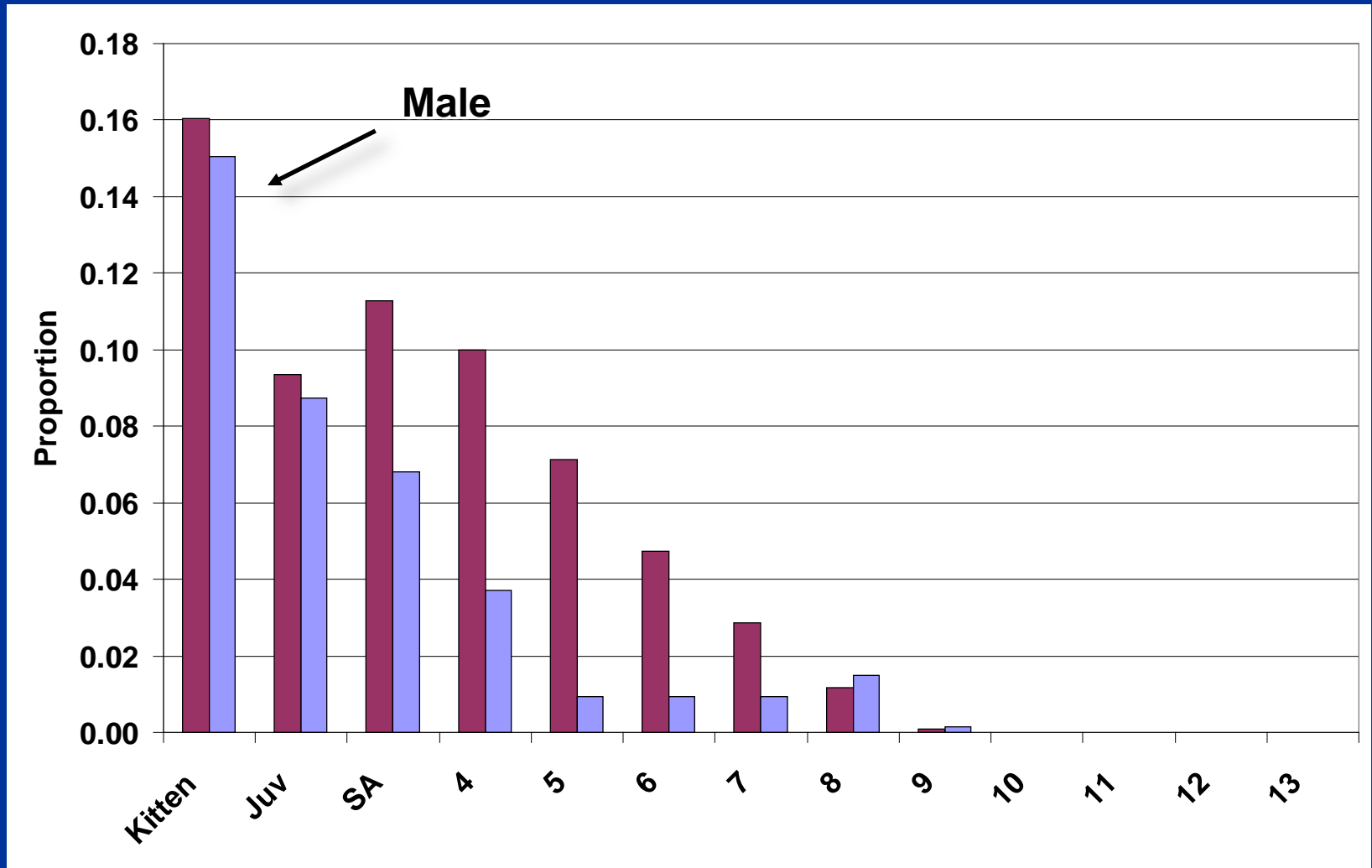
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Lightly Hunting Age Structure



Heavily Hunted Age Structure



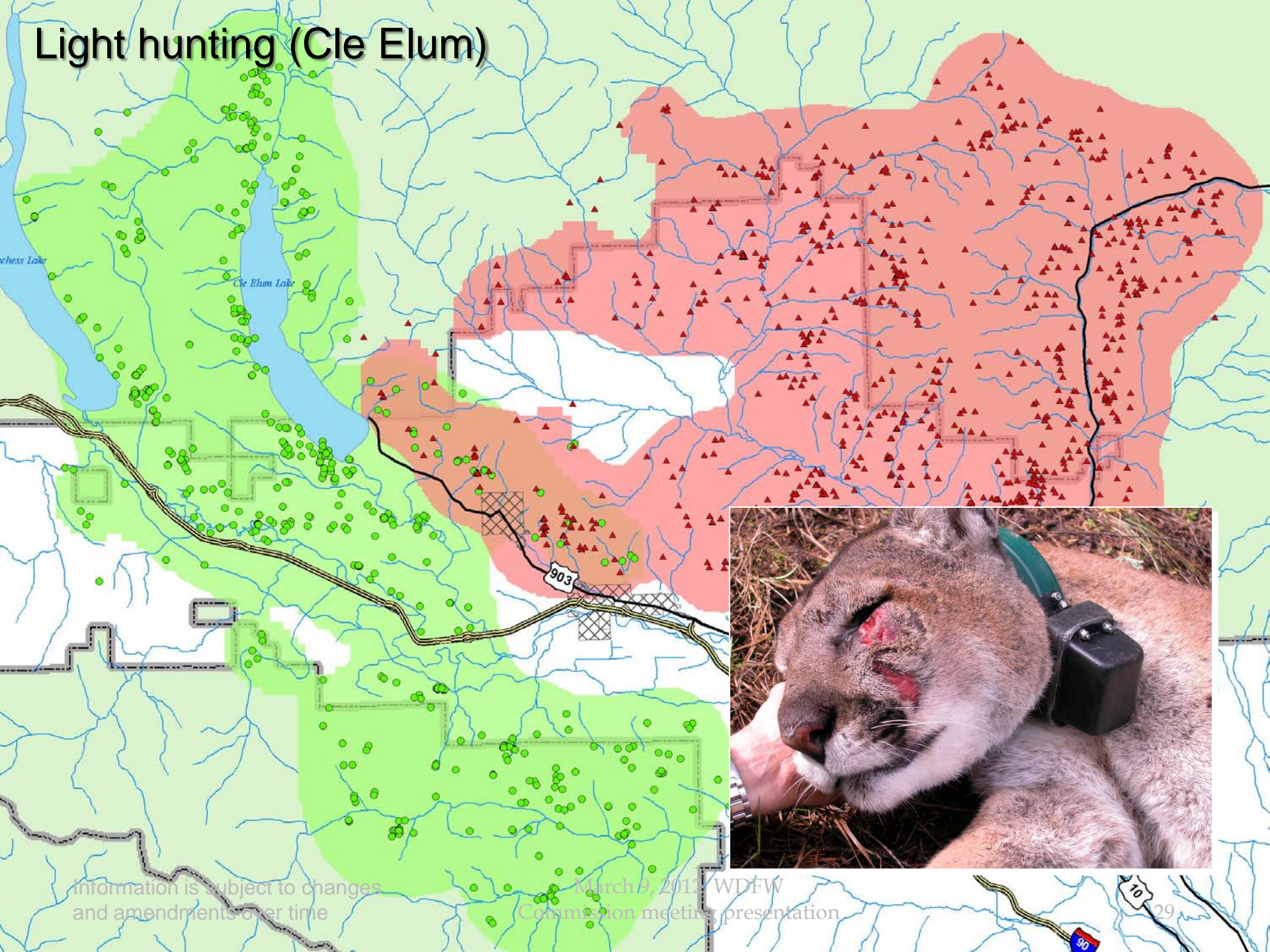
Cougar Demographics

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

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Light hunting (Cle Elum)



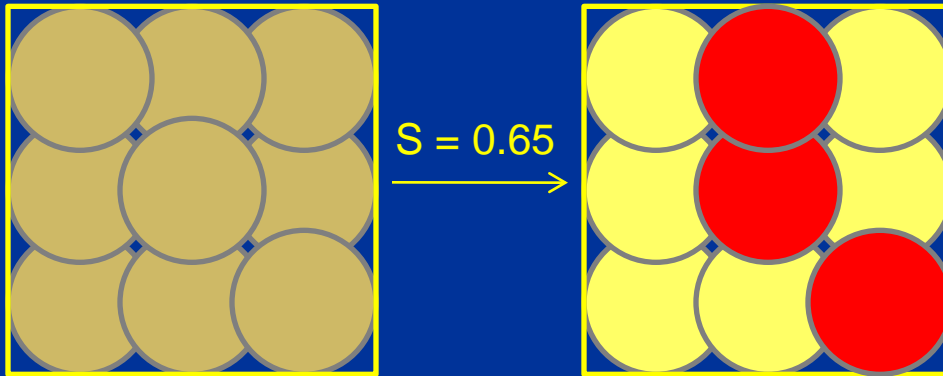
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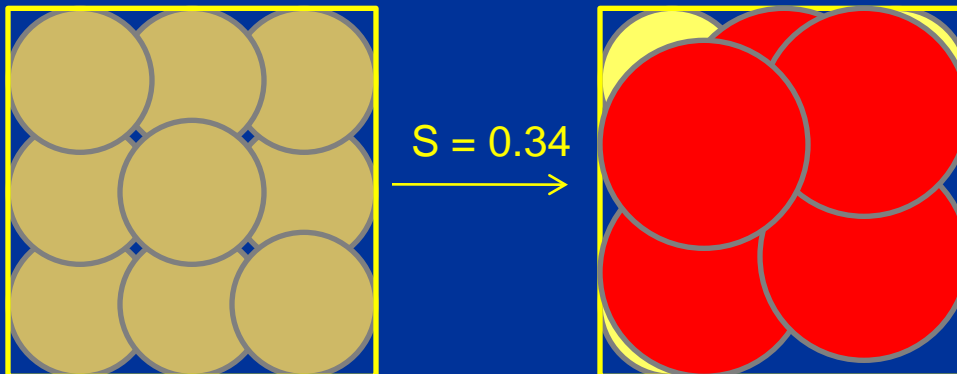


Male Social Organization

Light hunting (Cle Elum)



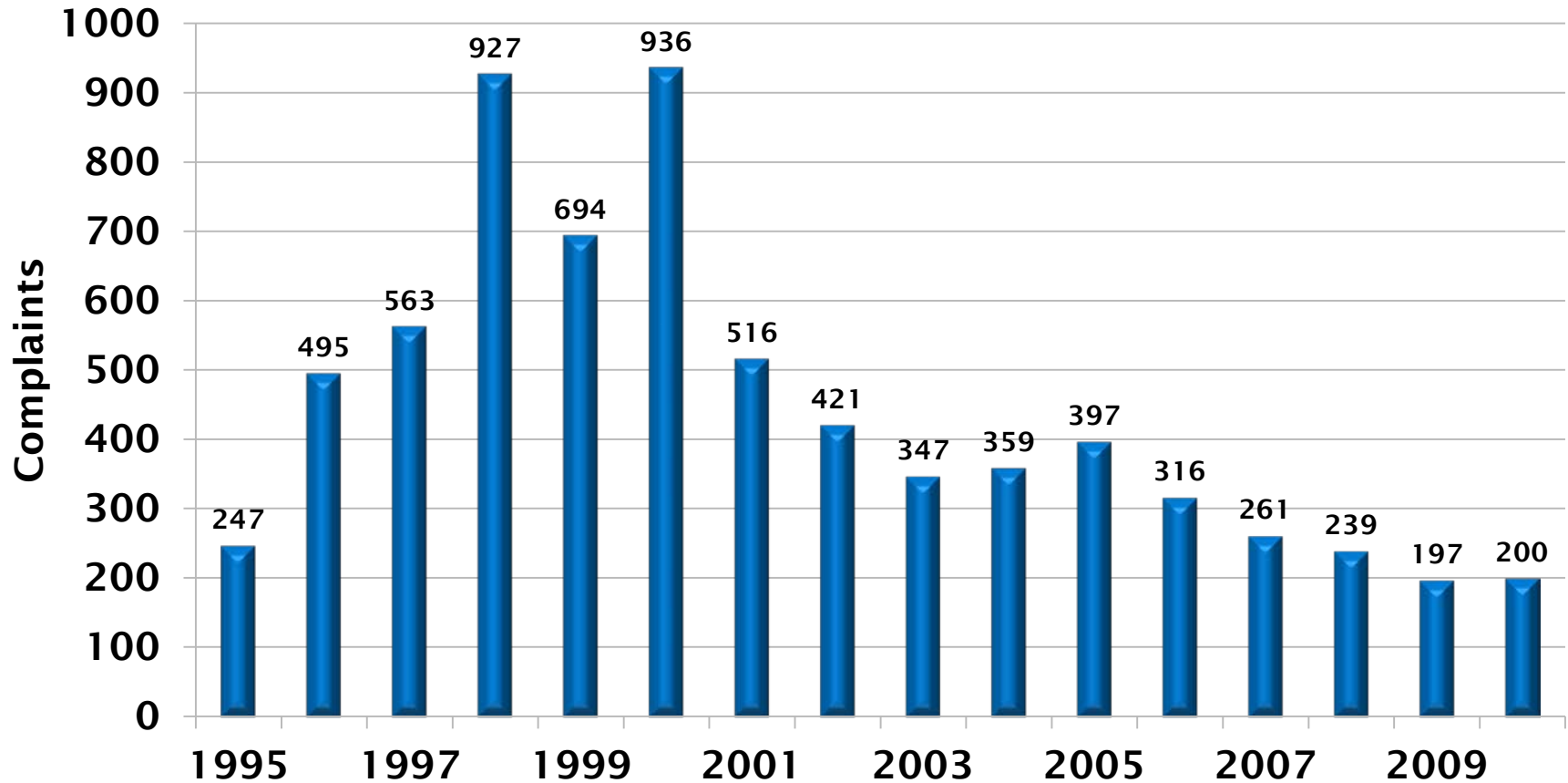
Heavy hunting (Wedge)



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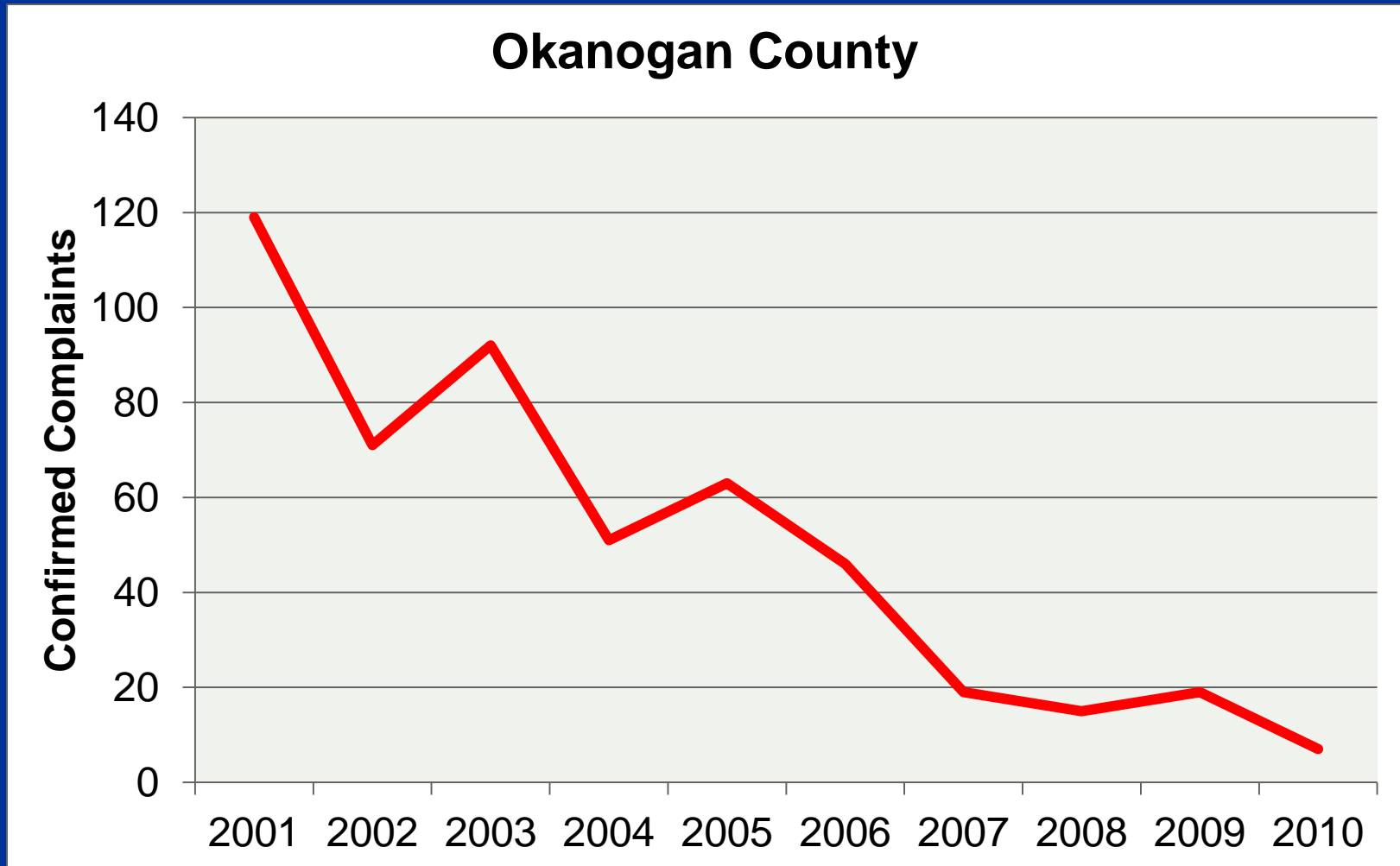
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Confirmed Cougar Complaints

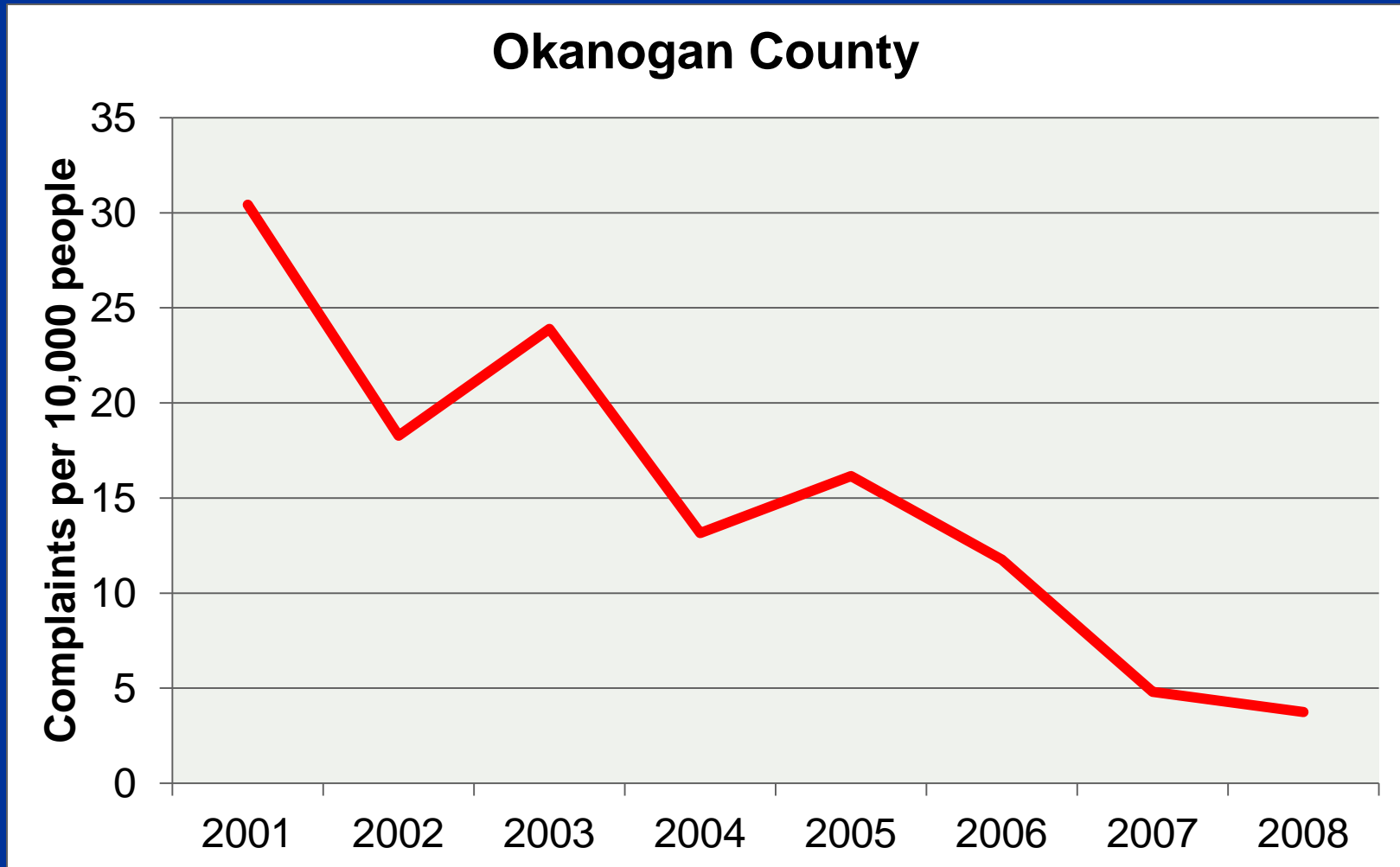


Pilot cougar hunt with dogs ended

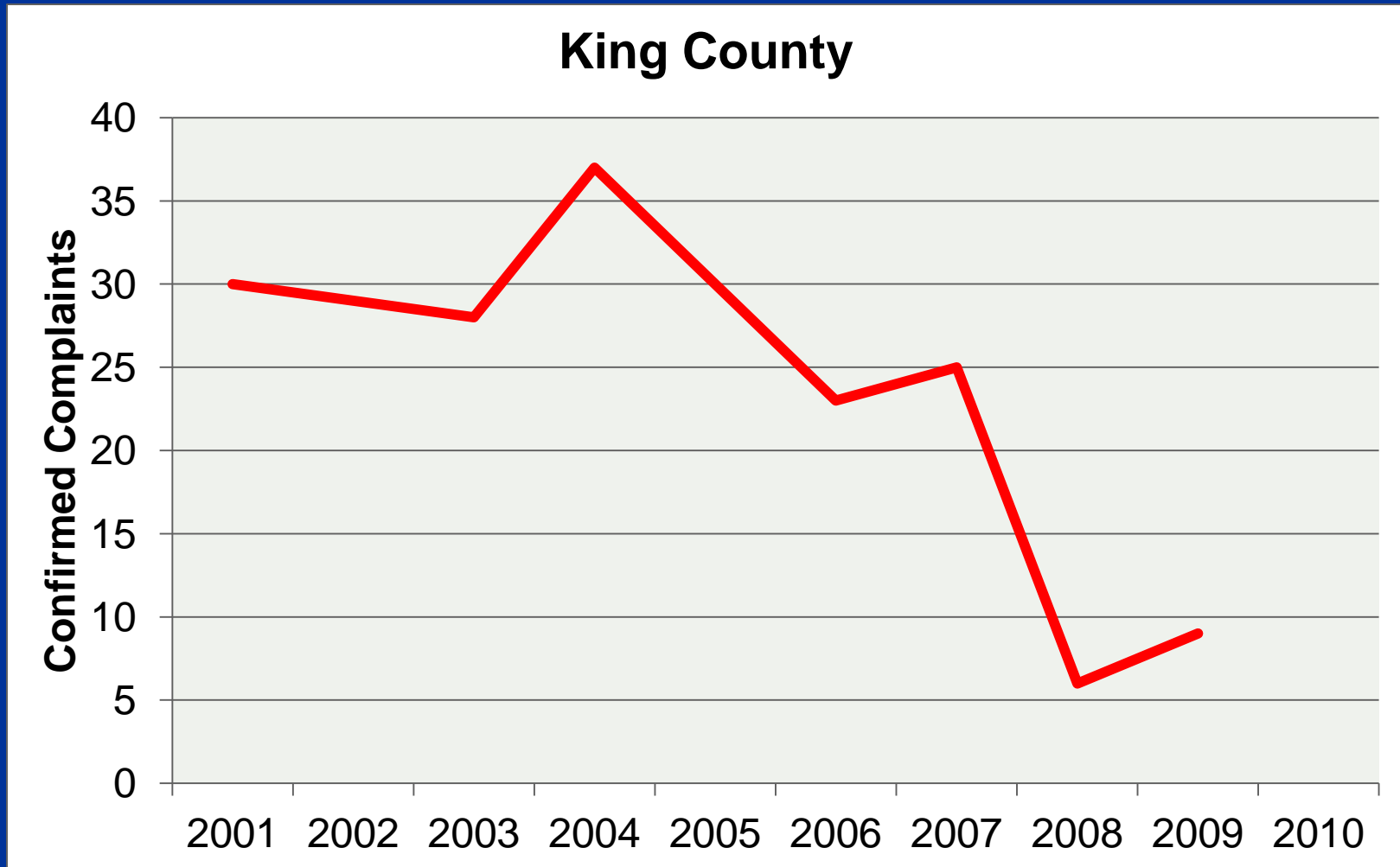
Complaint Trend



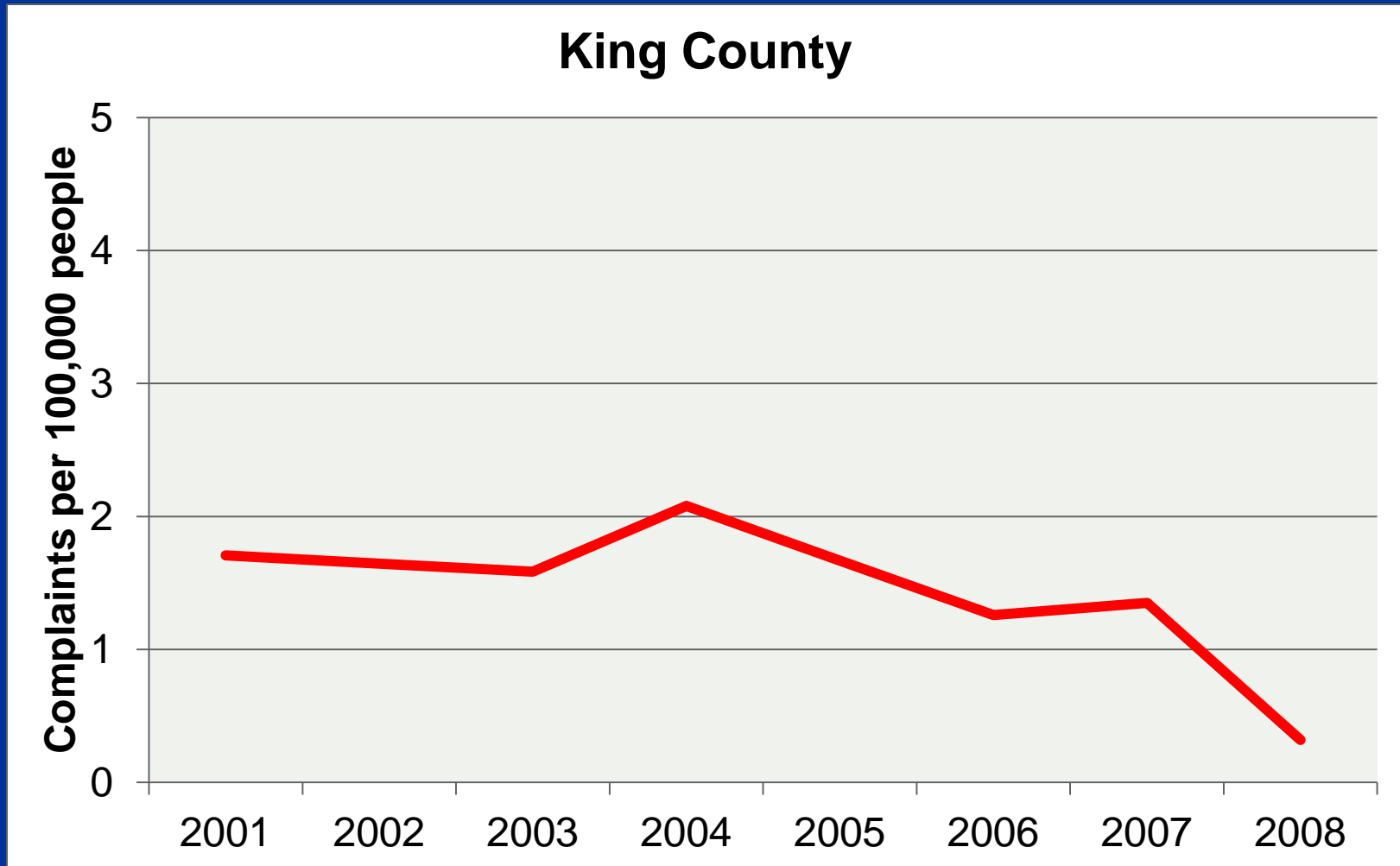
Complaints Per Capita



Complaint Trend



Complaints Per Capita



Summary

- ❖ Complaints have declined statewide
- ❖ Complaints have declined in the pilot hound hunt area
- ❖ We can't say there is or is not a cause-and-effect relationship between hunting and complaint levels
- ❖ Complaint levels likely influenced by several factors
- ❖ Meeting objective for stable or declining complaints per capita

How do we manage for public safety and depredations?

- ❖ Agency response to specific incidents
 - ✓ Dangerous wildlife policy and procedure
 - ✓ Human attack manual
- ❖ Outreach and education
 - ✓ Cougar outreach plan activities
- ❖ Hunting seasons
 - ✓ Removals in chronic “hot-spots”
 - ✓ Reduce populations
- ❖ Compensation
- ❖ Capture-relocation and hazing



Season Setting Process

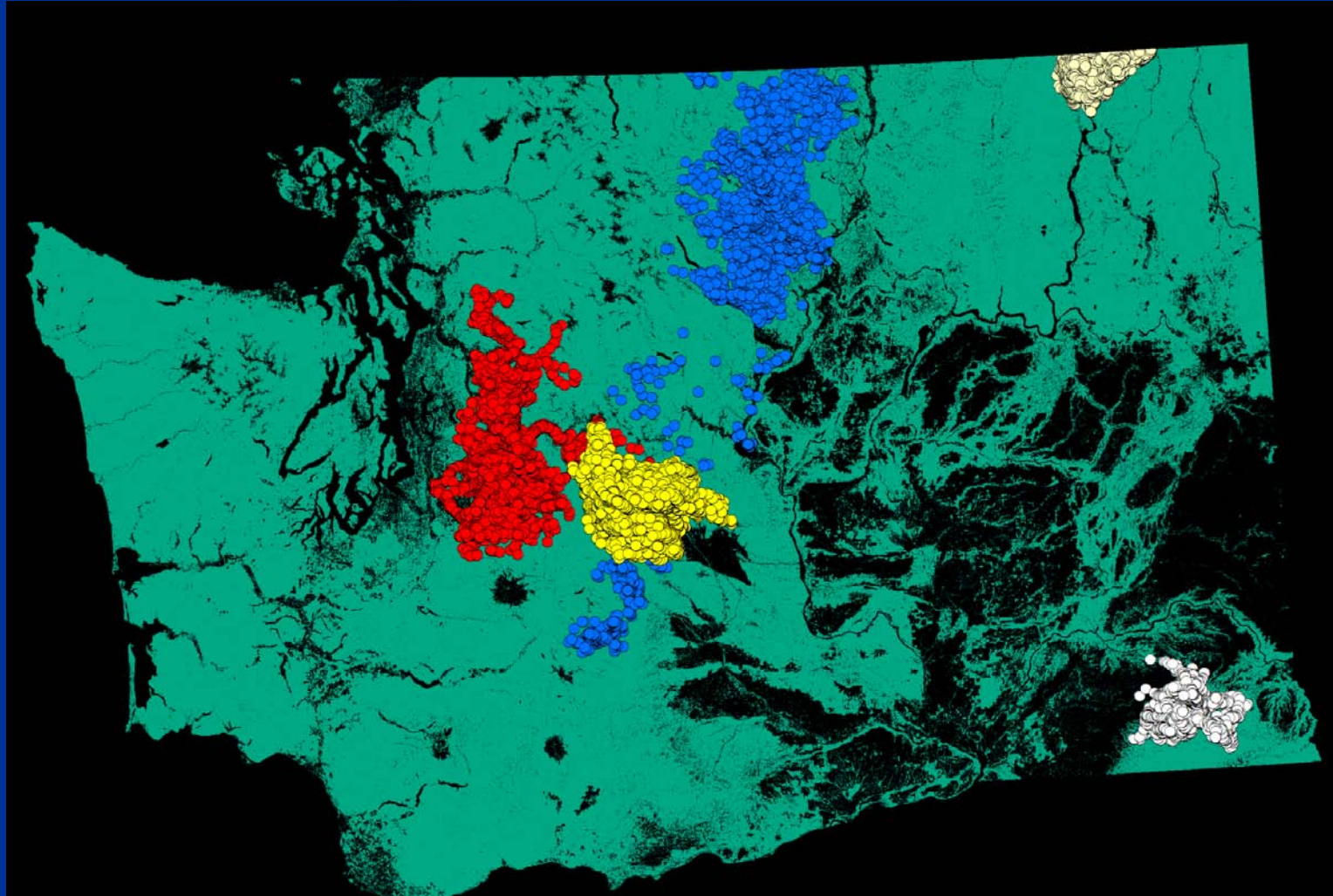


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Updates to Cougar Distribution Map

Updated Distribution

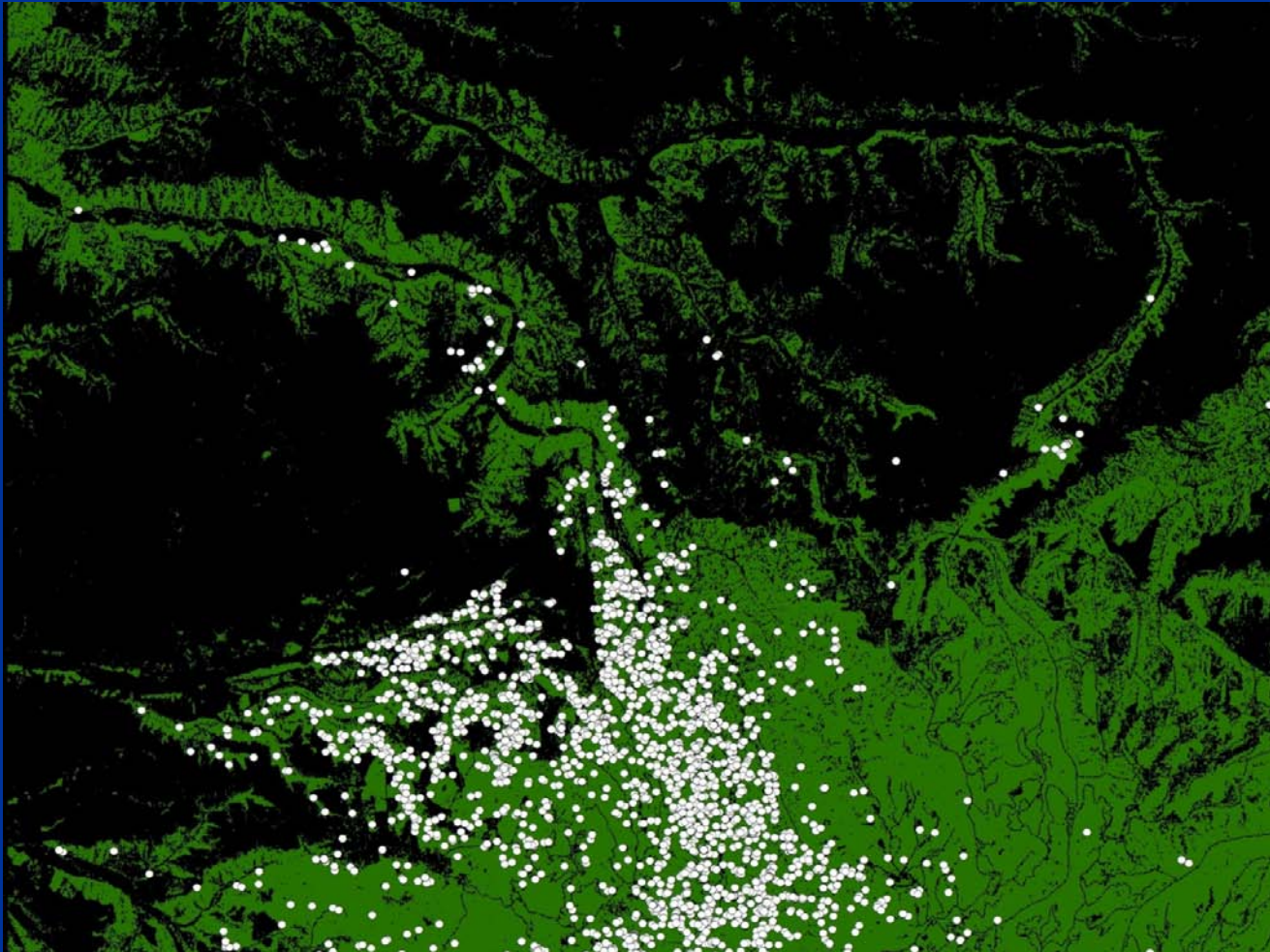


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Updates to Cougar Distribution Map

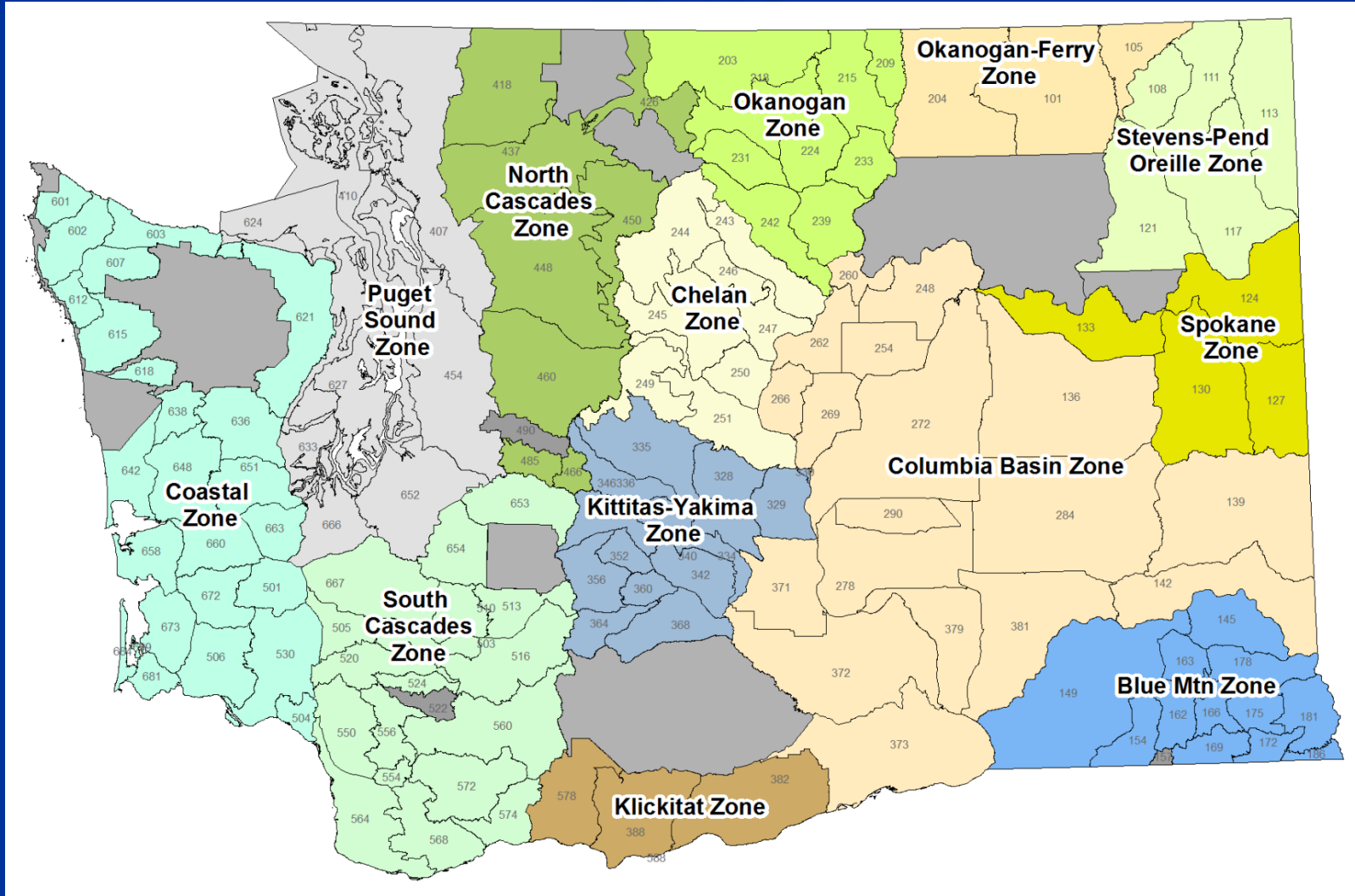
93% fit to cougar location data



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Defining Management Unit Scale Zones

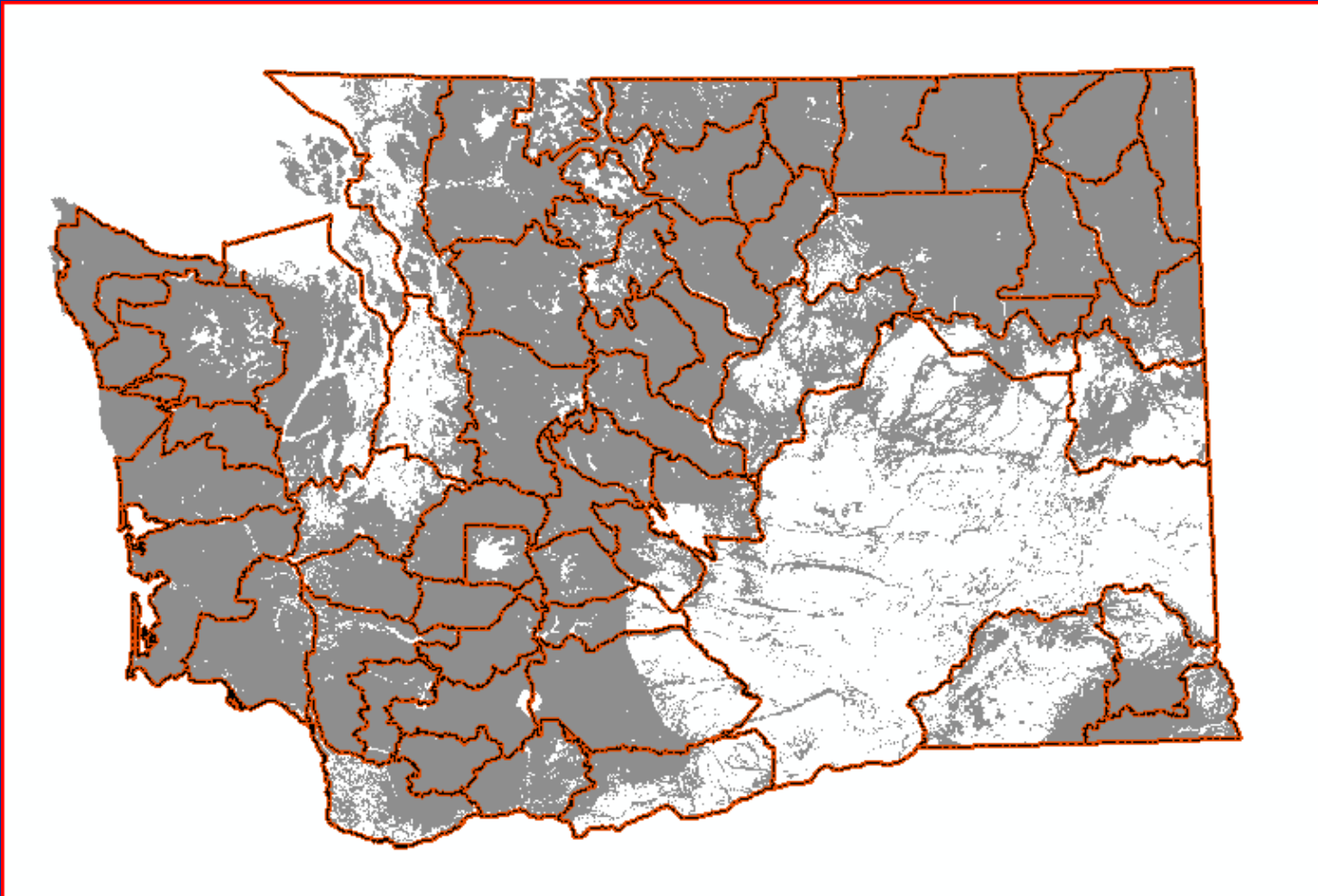


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Defining Management Unit Scale

Cougar PMUs (modified from Deer PMUs)

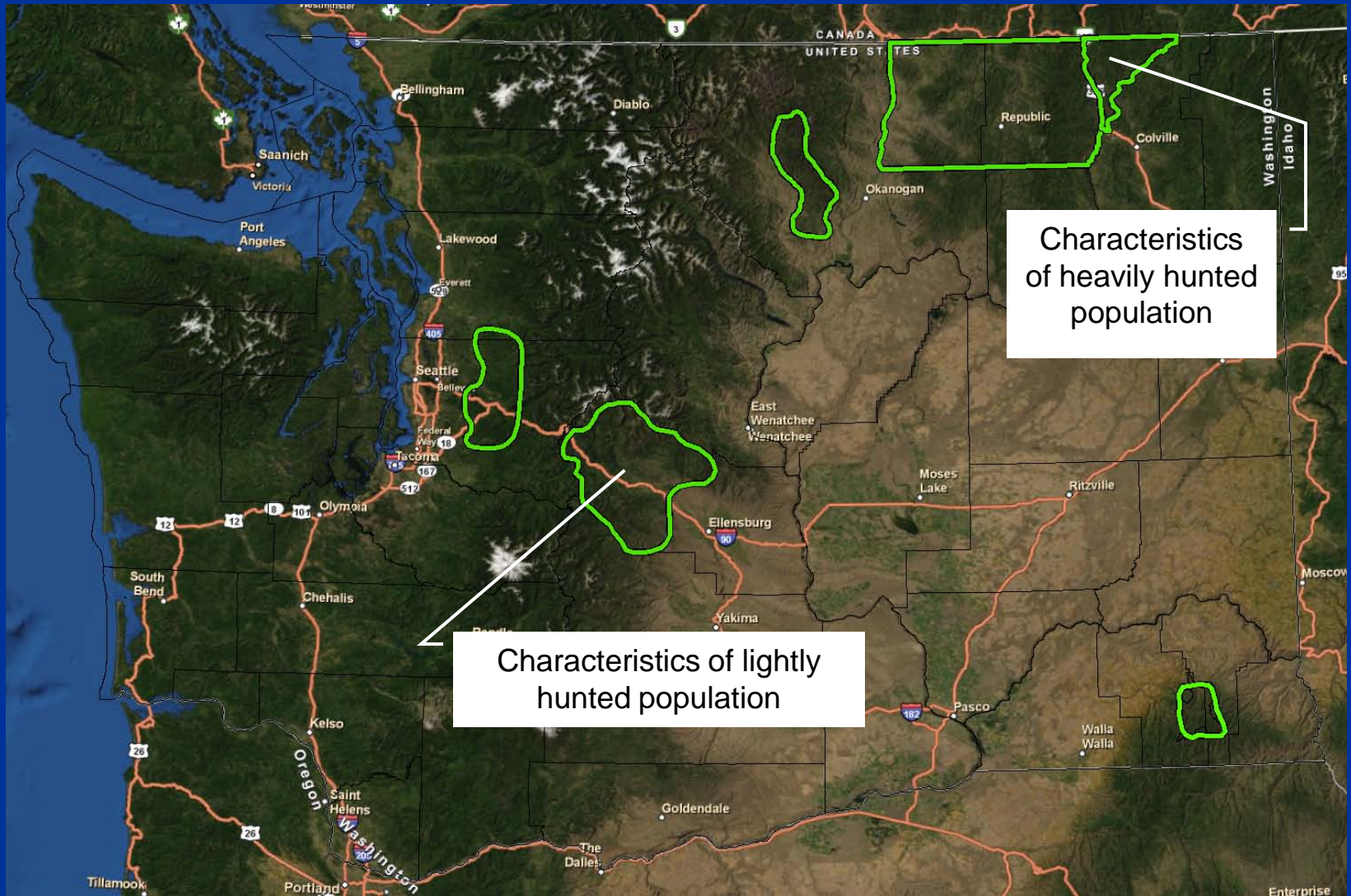


Collecting Biological Data

- ✓ Survival
- ✓ Litter size
- ✓ Kitten survival
- ✓ Age of first reproduction
- ✓ Age structure
- ✓ Population size



Harvest Rate for Stable Cougar Population



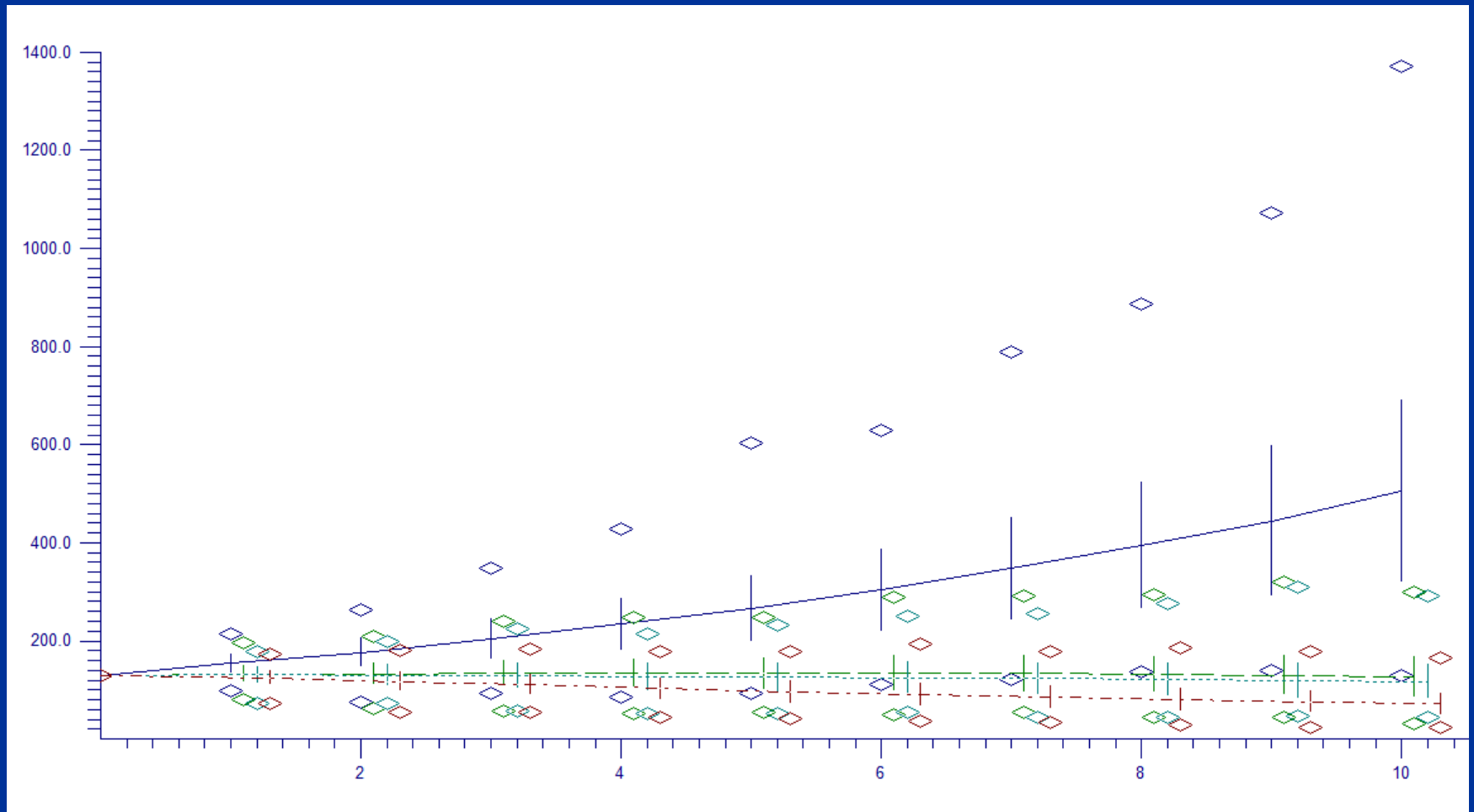
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Morrison, D. E., R. B. Wielgus, G. M. Koehler, H. C. Cooley, and B. Maletzke. 2012. Effects of trophy hunting on female cougar (*Puma concolor*) population growth and persistence.

Parameter	Lightly Hunted (Cle Elum)	Heavy Hunted (Wedge)
Female age classes	0-12 year olds	0-12 year olds
Litter size	2.47 (0.83)	2.63 (0.80)
Female fecundity	0.46 (0.27)	0.38 (0.25)
Kitten female survival	0.58 (0.06)	0.31 (0.09)
Yearling female survival	0.62 (0.06)	0.62 (0.09)
Adult female survival	0.87 (0.06)	0.66 (0.09)
Age of first reproduction	24 months	24 months
Initial female abundance	21	25

14% ($\pm 2\%$) Harvest Rate Results in Stable Cougar Population



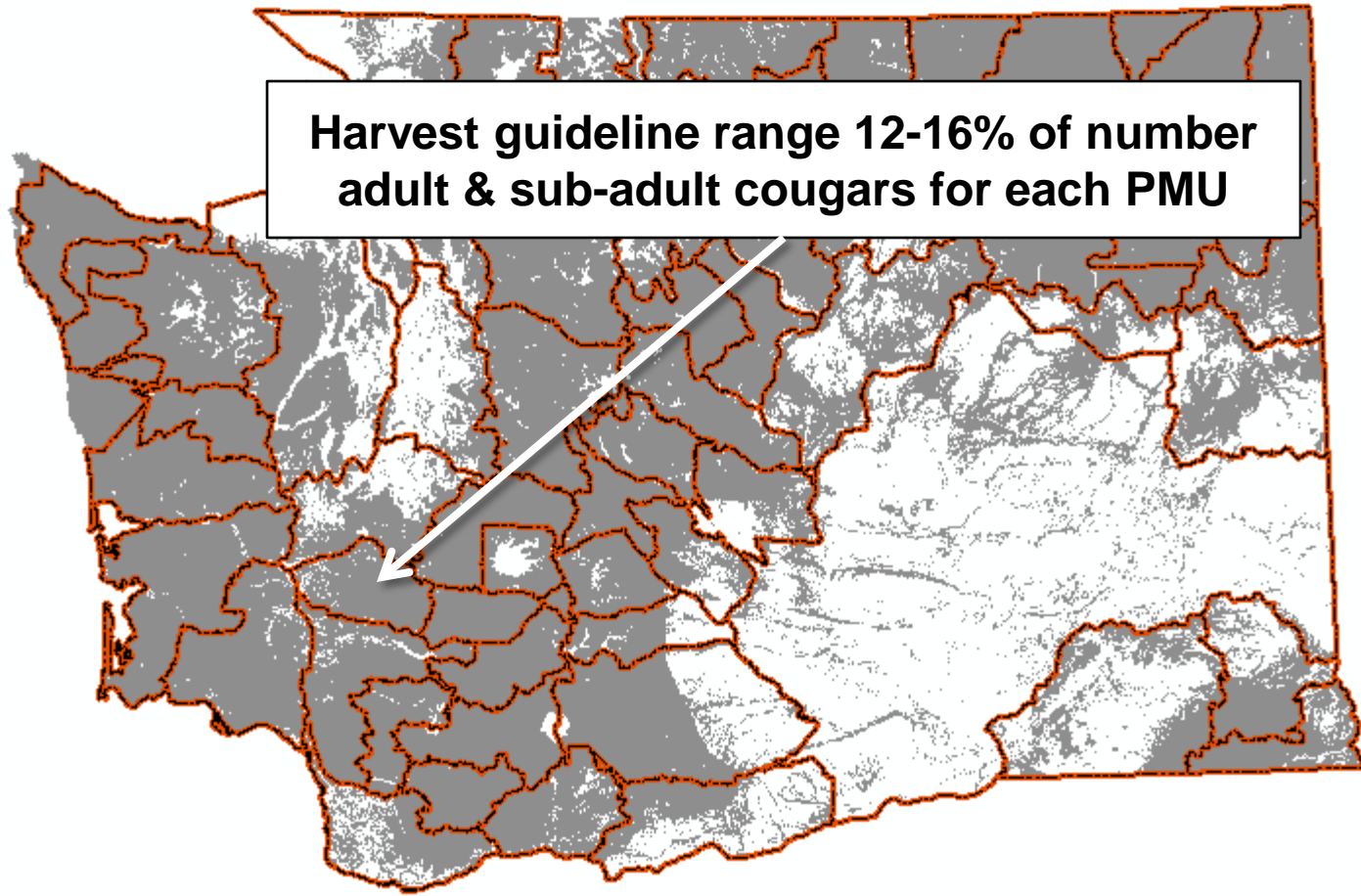
Male (≥ 24 mo) = 0.65 / 100 km²
Female (≥ 24 mo) = 1.17 / 100 km²
Sub-adults (18-23mo) = 24% of adult density

Male (≥ 24 mo) = 0.23 / 100 km²
Female (≥ 24 mo) = 1.35 / 100 km²
Sub-adults (18-23mo) = 24% of adult density

Male (≥ 24 mo) = 0.80 / 100 km²
Female (≥ 24 mo) = 1.07 / 100 km²
Sub-adults (18-23mo) = 24% of adult density

Harvest Guideline

By PMU



Statewide Recommendation

- 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 Harvest Guideline

Region 1

Hunt area	Harvest guideline	Average Harvest
GMU 101	7-9	7.0
GMU 105	2	3.7
GMUs 108, 111	5-6	4.0
GMU 113	4-6	4.7
GMU 117	6-8	4.0
GMU 121	5-6	2.0
GMUs 124, 127, 130	7-9	5.3
GMUs 149, 154, 157, 162, 163	4-6	5.7
GMUs 145, 166, 175, 178	3-4	4.0
GMUs 169, 172, 181, 186	3-4	2.0

Cougar Harvest Guideline

Region 2

Hunt area	Harvest guideline	Average Harvest
GMU 203	4-6	0.0
GMU 204	6-8	2.7
GMUs 209, 215	4-5	6.0
GMUs 218, 231	4-6	1.7
GMU 224	2-3	1.3
GMUs 233, 239	3-4	1.0
GMUs 242, 243	4-6	0.7
GMUs 244, 246, 247	5-6	0.0
GMUs 245, 250	5-6	1.0
GMUs 249, 251	5-6	1.7

Cougar Harvest Guideline

Region 3

Hunt area	Harvest guideline	Average Harvest
GMUs 328, 329, 335	6-8	10.3
GMUs 336, 340, 342, 346	5-7	5.0
GMUs 352, 356, 360, 364, 368	5-7	4.3
GMUs 382, 388	3-4	5.7

Cougar Harvest Guideline

Region 4

Hunt area	Harvest guideline	Average Harvest
GMUs 418, 426, 437	11-15	1.7
GMUs 448, 450	9-13	0.0
GMU 460	5-7	2.7
GMUs 466, 485, 490	2-3	0.0

Cougar Harvest Guideline

Region 5

Hunt area	Harvest guideline	Average Harvest
GMUs 501, 504, 506, 530	7-10	0.7
GMUs 503, 505, 520, 550	6-8	4.0
GMUs 510, 513	3-4	1.7
GMU 516	3-5	1.0
GMUs 522, 524, 554, 556	3-4	1.0
GMU 560	5-6	1.3
GMUs 564, 568	3-4	1.0
GMU 572	3-4	1.3
GMUs 574, 578	3-5	7.7

Cougar Harvest Guideline

Region 6

Hunt area	Harvest guideline	Average Harvest
GMUs 601, 602, 603, 612	5-7	1.3
GMUs 607, 615	4-5	0.3
GMUs 618, 636, 638	4-5	0.7
GMUs 642, 648, 651	6-8	5.0
GMUs 653, 654	4-6	2.0
GMUs 658, 660, 663, 672, 673, 681, 684, 699	9-12	2.3
GMU 667	3-4	4.7

Questions



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