

Cougar Framework Options

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Washington's framework

Total take = density \times habitat \times intrinsic growth rate



Population
size



Population
dynamics



Metrics for Adaptive Management

- Density
 - Median 2.34 cougars/100km²
 - Range 1.55 - 2.79 from 5 study areas
 - Conservative estimate; density varies considerably on the landscape and by sex and age class, and we don't know the upper end for the northeast
 - Risk analysis framework – Beausoleil et al. 2021 – Approach to analyze management risk and minimize uncertainty around our density estimates
- Cougar Habitat
 - 91,000 km² managed by WDFW
 - Population size = median density * total habitat
- Intrinsic Growth Rate
 - Mean 1.13 (IQR 1.10-1.16)
 - Want to allow this estimate to vary within minimized risk zone of the risk analysis framework (1.12-1.16, Beausoleil et al. 2021)





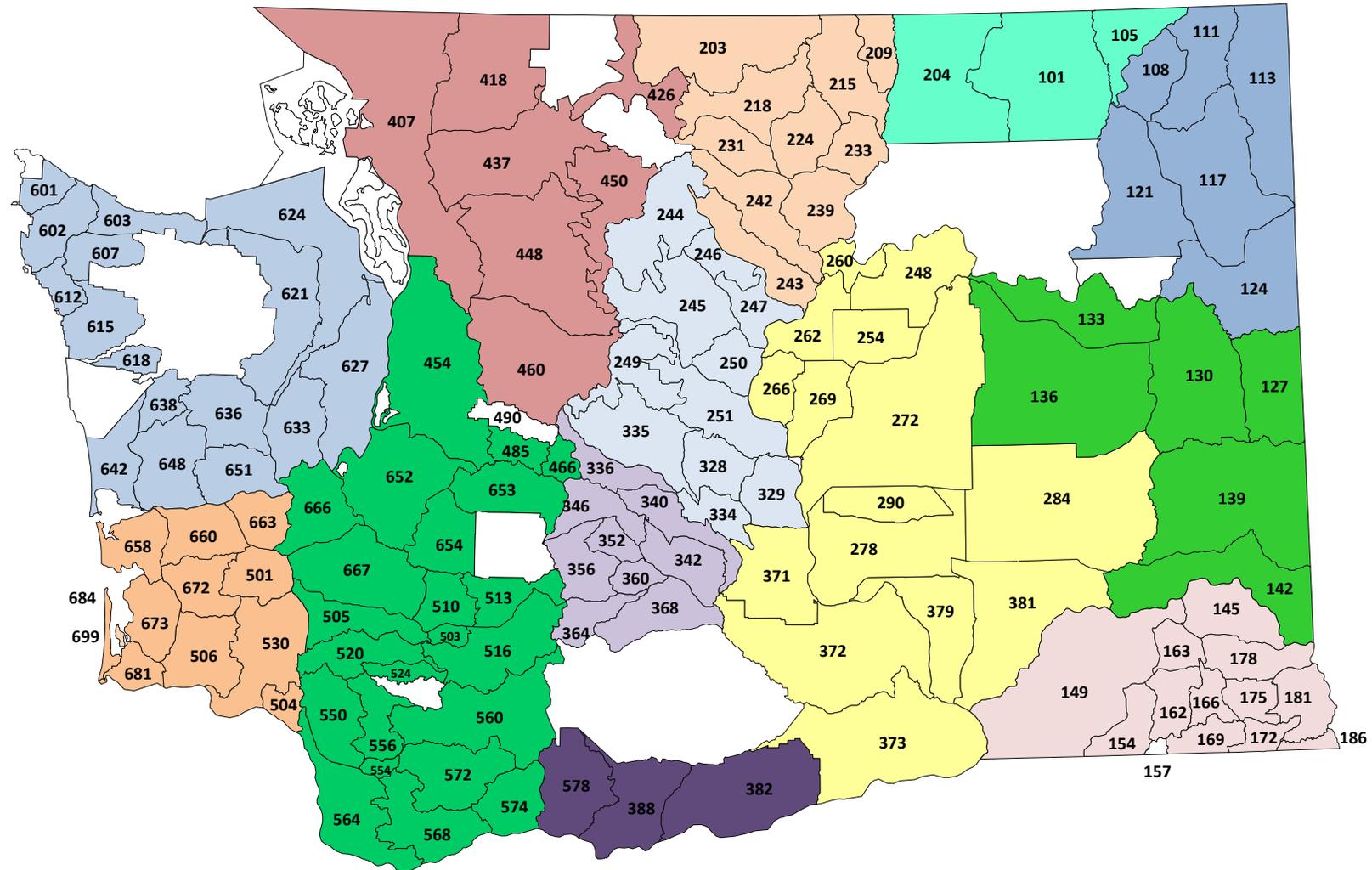
New Terminology

New Terminology

- Cougar Data Analysis Units (CDAU) are the new population-level scale units that each encompass multiple PMUs
 - Represent cougar genetically identified populations, potential barriers to movement, prey item herd units (elk and deer), etc.
 - 13 CDAUs



Cougar Data Analysis Units (CDAUs)



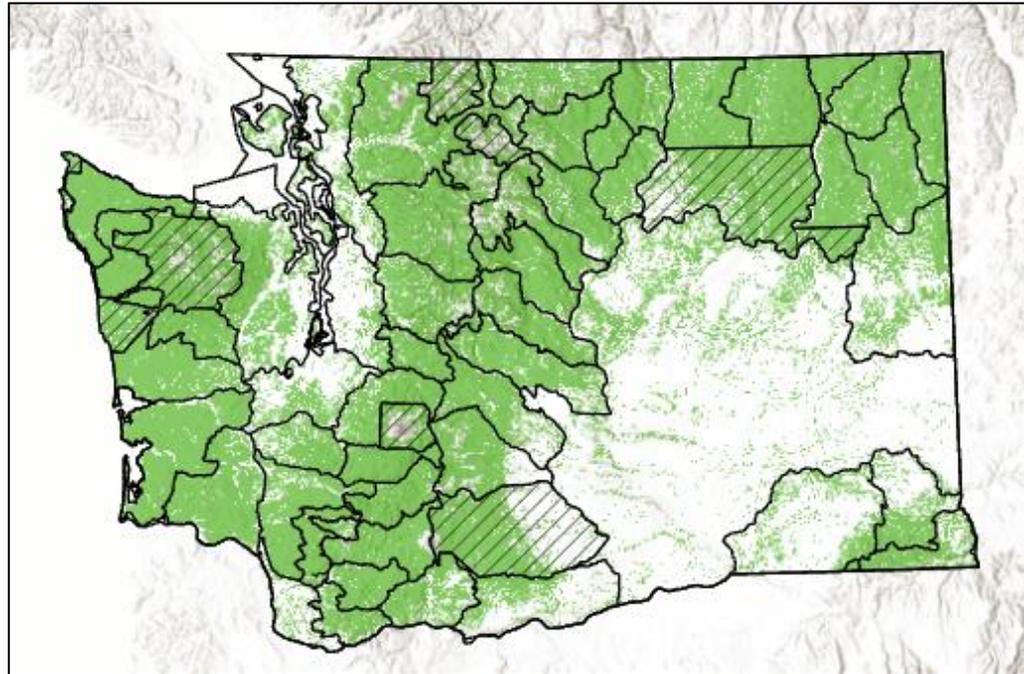
Purpose of the CDAUs

- Purpose is to distribute harvest in the PMUs within these larger population-level units and allow *immigration* and *emigration* to occur if the risk for overharvest or underharvest is reached in a PMU.
- Our proposed adaptive management option reduces potential harvest in those PMUs to allow for immigration/emigration & dispersal events to “refill” those PMUs.



New Terminology Continued

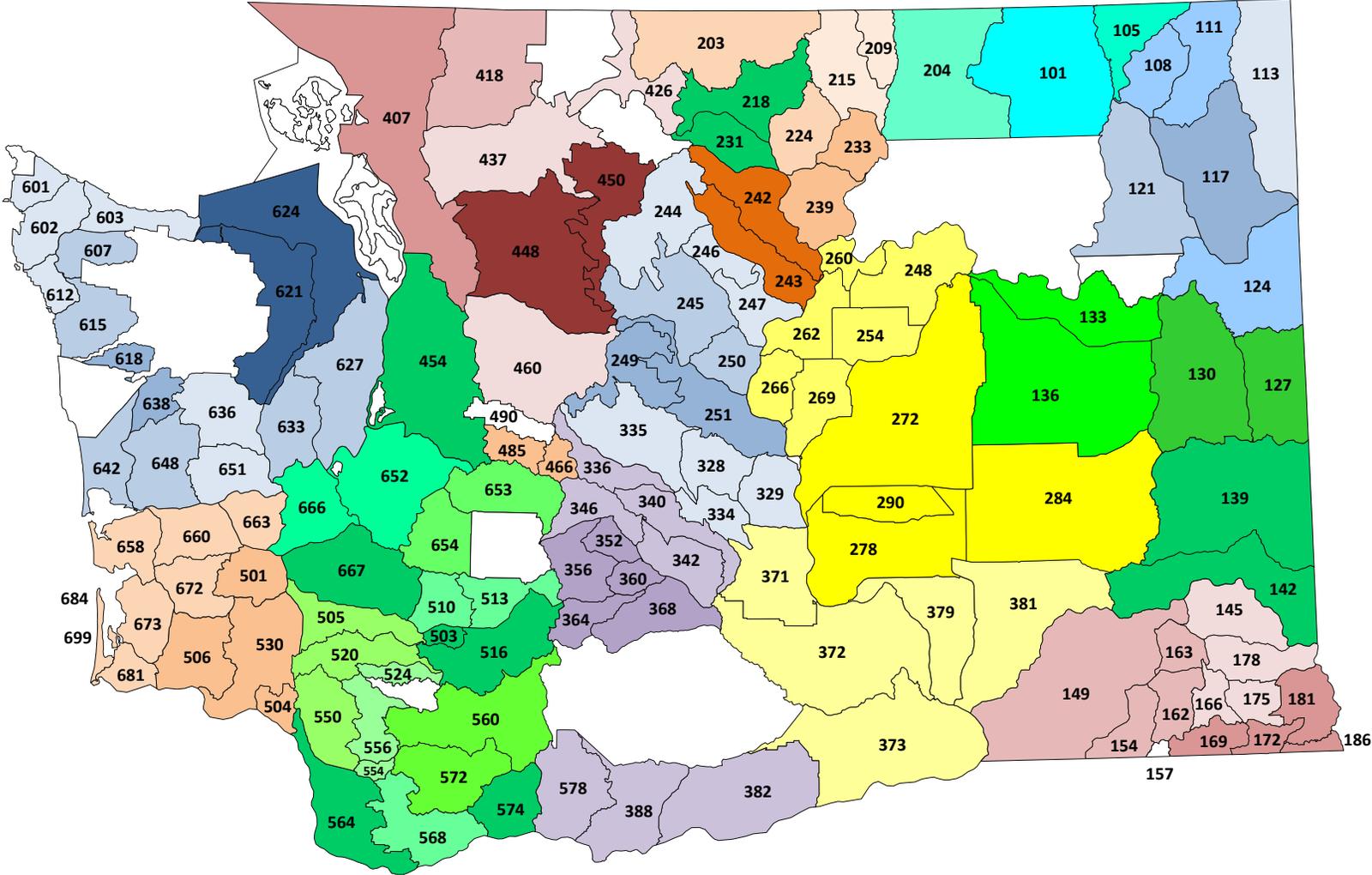
- Population Management Units (PMU) that are used to distribute hunters and harvest across the landscape are now Cougar Hunt Management Units (CHMU)
- Using staff-suggestions to designate boundaries, we went from 50 PMUs to 58 CHMUs



PMUs:



Cougar Hunt Management Units (CHMUs)





Adaptive Management Framework Options

Overlapping Aspects of each Framework

- 13% (10-16%) intrinsic growth rate recommended for management
- In-season closures and counting conflict removals
- Density * habitat per CHMU * intrinsic growth rate = cap value
- License year: April 1 – March 31
- Hunting Seasons: Sept 1 – March 31
- Count conflict removals starting April 1, and include hunter harvest during season until cap is met
- If cap is met prior to hunting season, CHMU will not open
- Counting independent-aged cats (\geq 18 months)
- All CHMUs will have caps

The differing options attempt to address concerns for places where removals consistently go above 16%, while still providing some hunting opportunity.



	Recommended Proposal	Status Quo	10-13% Option
Goals	<ul style="list-style-type: none"> • Conserve cougar populations • Manage within 10-16% intrinsic growth rate • Provide hunting opportunity 	<ul style="list-style-type: none"> • Conserve cougar populations • Manage at 13% intrinsic growth rate • Provide hunting opportunity 	<ul style="list-style-type: none"> • Conserve cougar populations • Manage at 13% (within 10-16%) intrinsic growth rate • Provide hunting opportunity
Season Dates	<ul style="list-style-type: none"> • Sept 01 – Mar 31 	<ul style="list-style-type: none"> • Sept 01 – Mar 31 	<ul style="list-style-type: none"> • Sept 01 – Mar 31
Trigger	<p>Begin with initial assessment of the previous 3 years, then set cap at:</p> <ul style="list-style-type: none"> • 10%: If >16% mortality at the CDAU scale, then CHMUs within the CDAU that are over 16% are set to a 10% cap; the rest receive a 16% cap. • 16%: If <16% mortality at the CDAU scale, then CHMUs within the CDAU are set to a 16% cap. <p>Reassess on 3-year cycle.</p>	<ul style="list-style-type: none"> • No trigger • 13% cap • If CHMU reaches 13% before Sept 1, CHMU opens until a cap of 20% is reached. When CHMU reaches 20% cap, CHMU is closed. 	<p>Begin with initial assessment of the previous 3 years, then set cap at:</p> <ul style="list-style-type: none"> • 10%: If >16% mortality at the CDAU scale, then all CHMUs within the CDAU are set to a 10% cap. • 13%: If <16% mortality at the CDAU scale, then all CHMUs within the CDAU are set to a 13% cap. <p>Reassess on 3-year cycle.</p>



Remaining Decisions

- Pelt seal requirement: 3 days excluding weekends and holidays after harvest
- Hotline reporting: remove the hunter reporting option, but keep closures and general info options
- Unit Closure: weekly on Thursdays



Questions?

