

# Cougar Hunting Framework

## Analytical Approach

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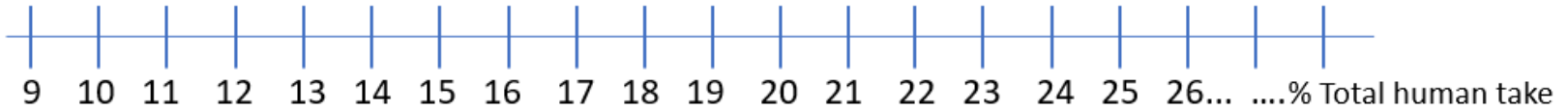
Bryan Murphie

# WA framework

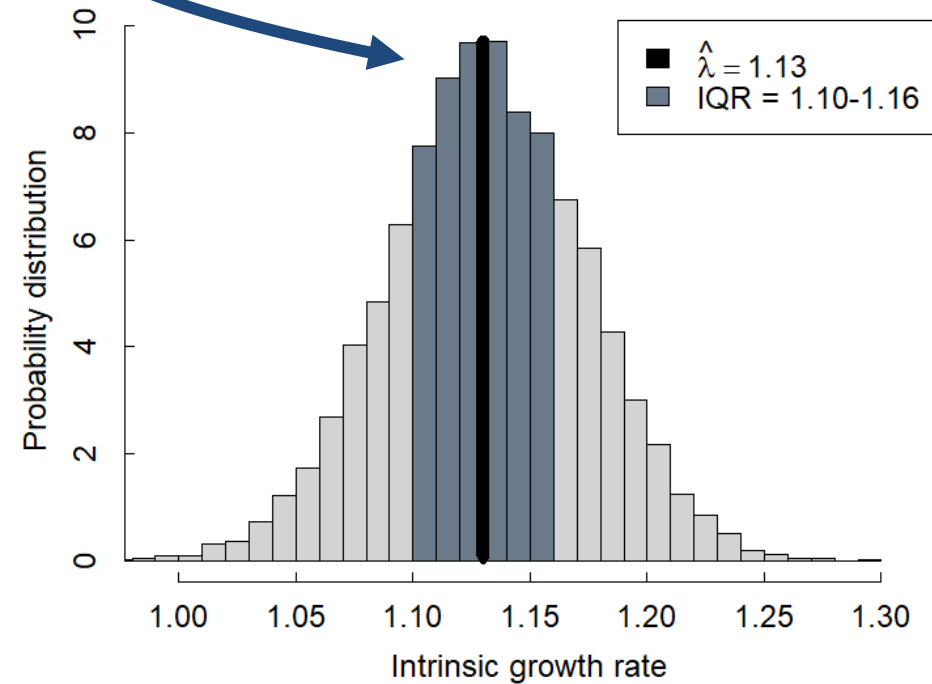
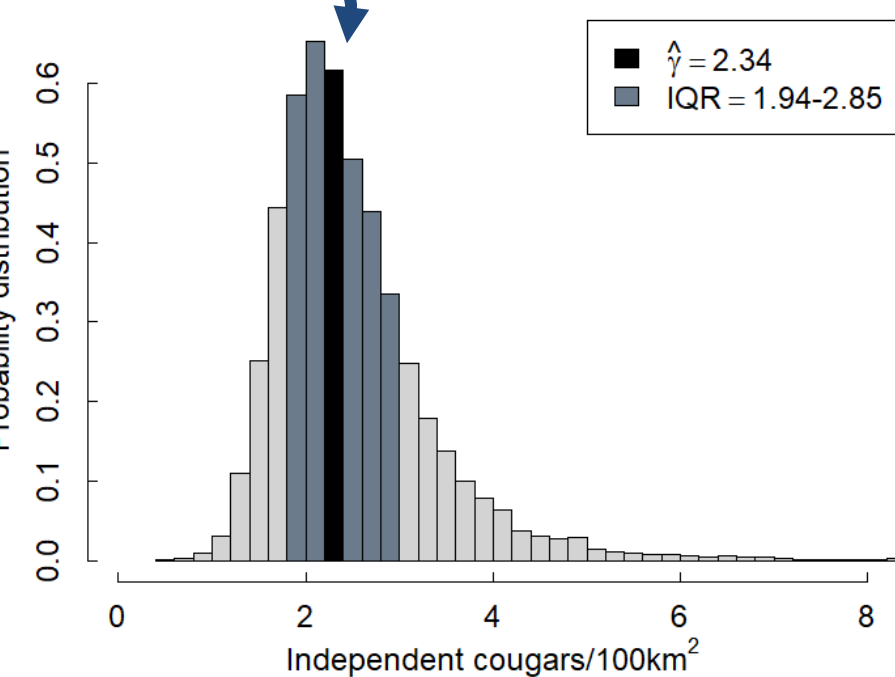
Robinson et al. 2008 documented sink and impairment of social structure (in this study at that time, we don't know where this occurs)



Minimize Risk



Stable population with social structure





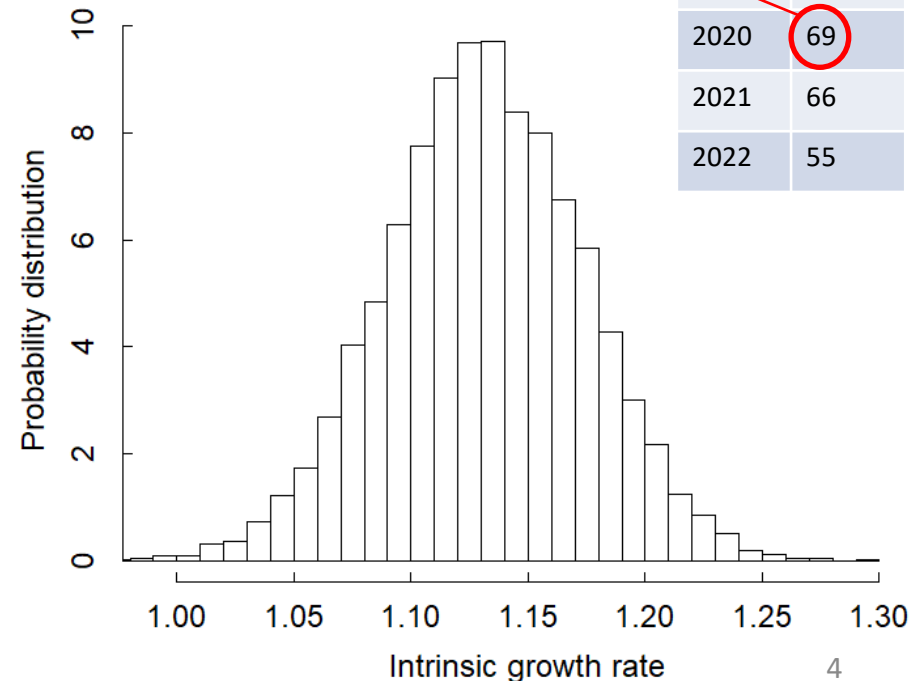
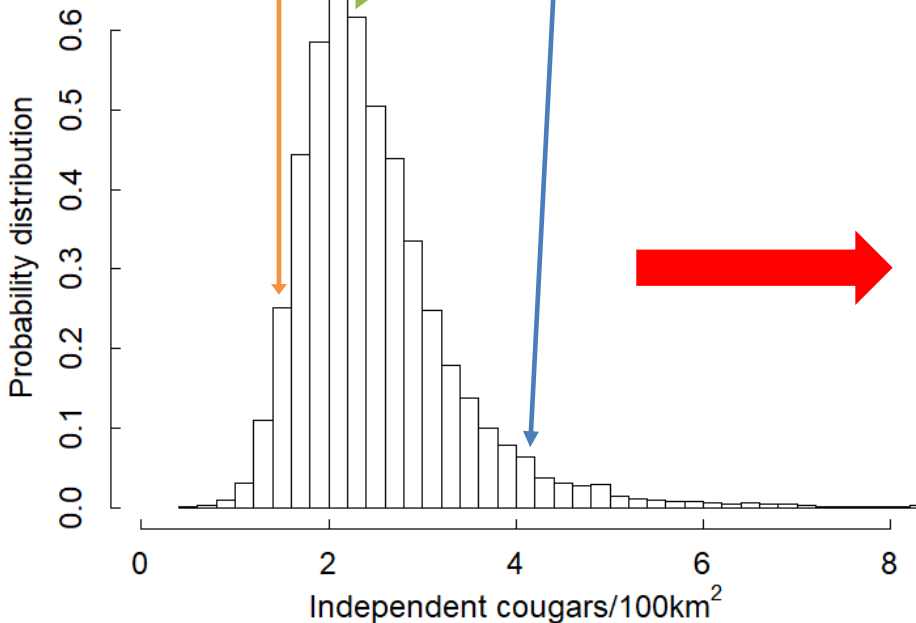
# Human take in GMUs 108-130 increased

If the population is 150,  $69/150 \Rightarrow$  significant take (46%)

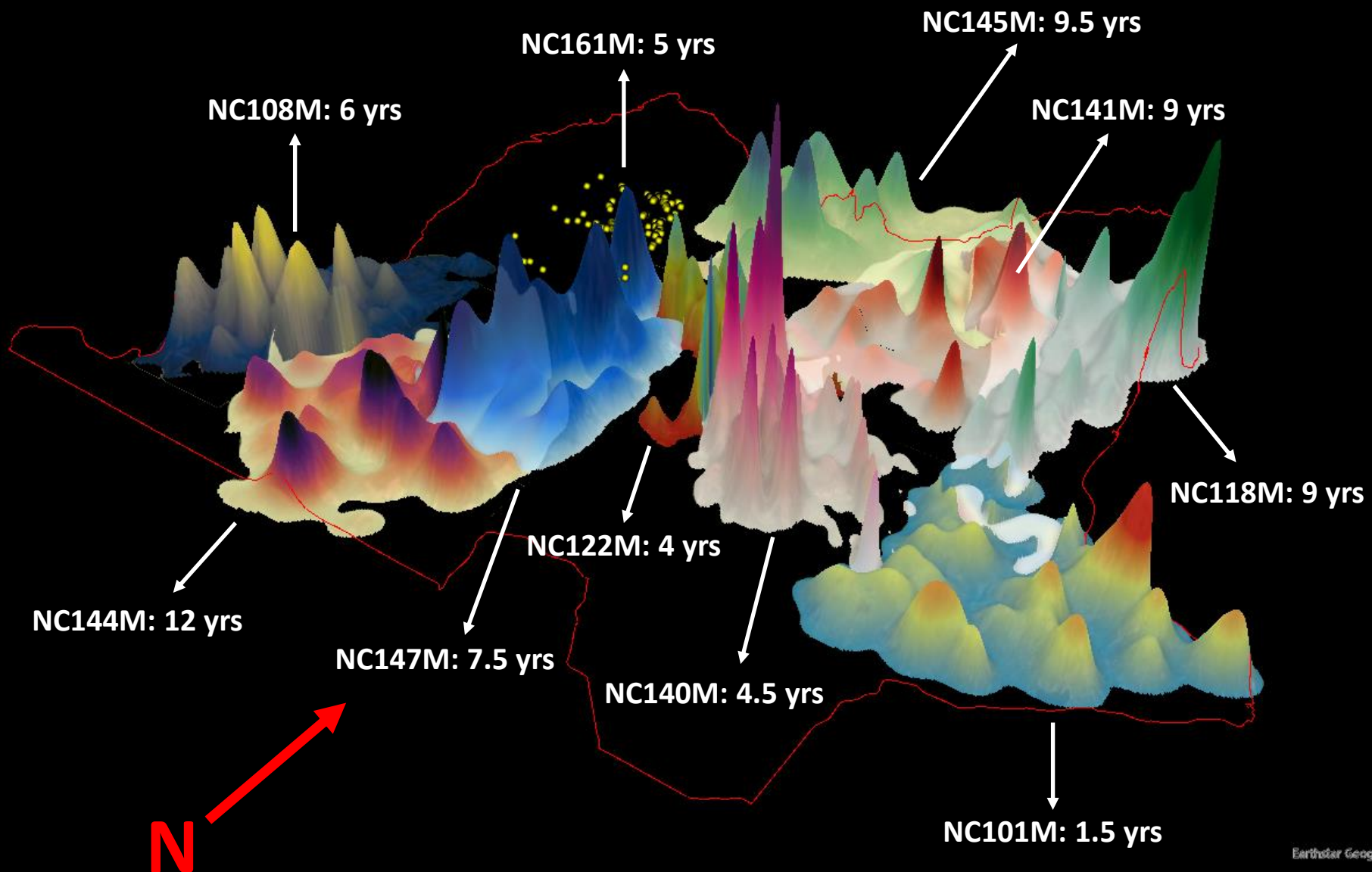
If the population is 240,  $69/240 \Rightarrow$  "risky" take (29%)

If the population is 430,  $69/430$  is still within guideline (16%)

Year	Take
2014	32
2015	33
2016	52
2017	44
2018	65
2019	62
2020	69
2021	66
2022	55



# NE SOCIAL ORGANIZATON 2019



# Summary

- Washington research data suggest that cougar densities vary around 2.3/100km<sup>2</sup> of habitat, and that in the absence of e/immigration and human take populations may grow 10-16% annually.
- Washington guidelines set levels of take for PMUs (of unknown population sizes and dynamics) to those which, in the long term, most likely result in stability across all local populations.
- As total human take increases above the guideline for any one local population, so does the risk of overharvest (if the true density is equal or lower than assumed by the guideline) to the degree (again, unknown) of that population becoming impaired.
  - The point at which cougar populations become sinks with impaired ecological function is unknown and likely not a “bright-line” threshold of % human caused mortality, but a gradation depending on the local demographics and density.
  - In northeastern Washington, there is not enough evidence to conclude that, given the level of human caused mortality between 2014-2022, the increased risk did or did not “materialize”.

# Questions