

Mortality and Conflict Trends: Introduction

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Photo: Jake Davis

Overview

Background

Bigger picture

The bear part



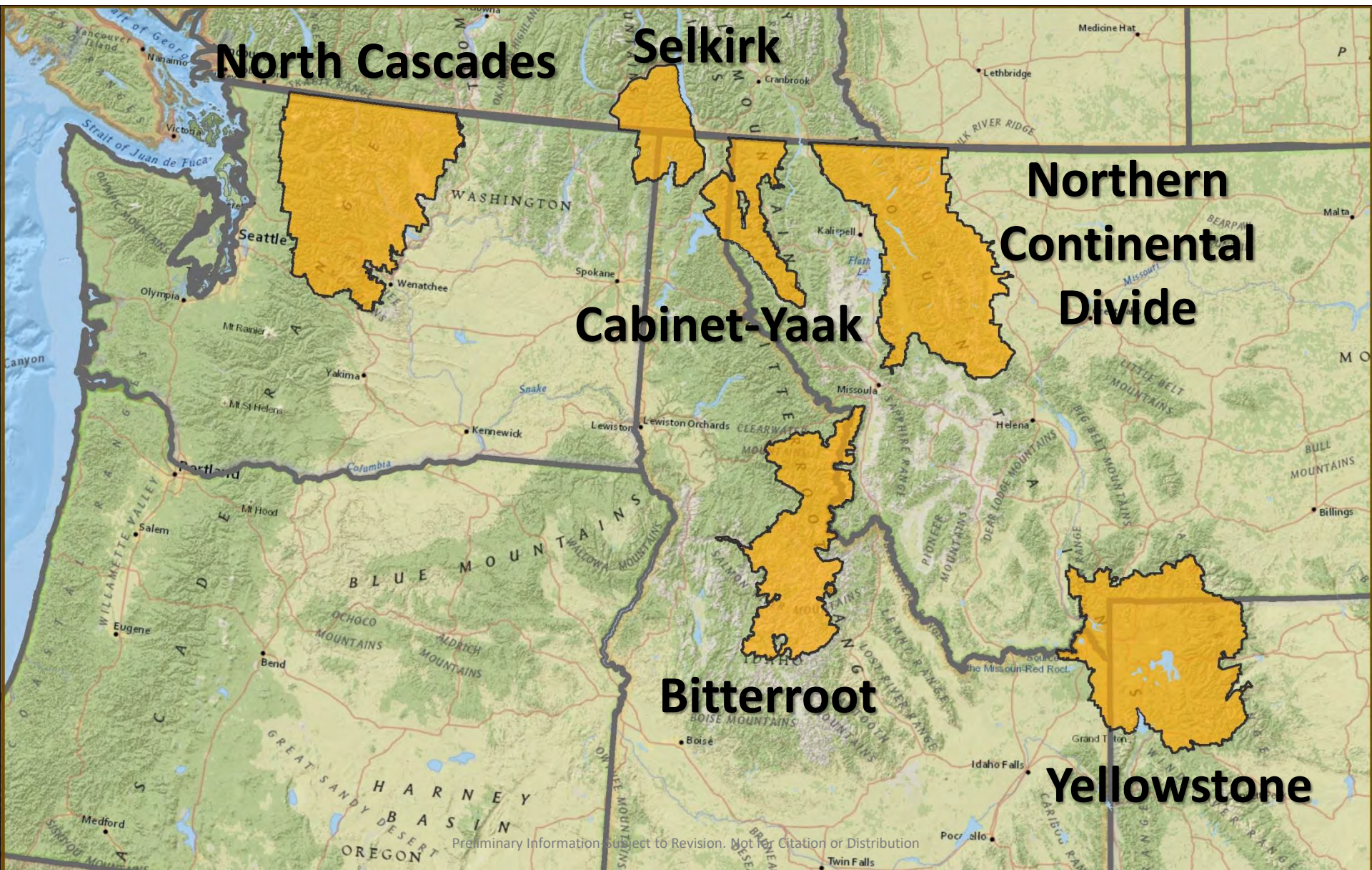
Background

- IGBC winter meeting 2018
- IGBC Advisors formed a working group
 - Reviewed 2009 Interagency Grizzly Bear Study Team report (detailed assessment of conflicts/mortalities and recommendations)
 - IGBC Chair requested subcommittees conduct similar reviews
- Identify priority issues, develop strategies and implementation plan

Time line

- Summer 2019 IGBC: preliminary list of priority issues
- Winter 2019 IGBC: recommendations to address priorities
- Summer 2020 IGBC: final implementation strategies

Working Across Ecosystems



Selkirk and Cabinet-Yaak

- 1) defense of life or property
- 2) management related
- 3) mistaken ID
- 4) poaching/malicious killing
- 5) train/auto collisions

Northern Continental Divide

- 1) shooting related
- 2) automobile strikes
- 3) train strikes
- 4) site-related conflicts

Yellowstone

- 1) hunters and backcountry users
- 2) front country and community planning
- 3) efficacy of education and outreach
- 4) livestock producer outreach
- 5) targeted community outreach

Big Picture:

Convergence of factors



The degree of
one's emotions
varies inversely
with one's
knowledge of the
facts.

--Bertrand Russell



Photo: Jake Davis

A screenshot of an RStudio interface. The main window displays a data table with columns: D2FEDGE_KM, D2STREAM_KM, DIST2OMRD_KM, D2TMRD_KM, and D2TRAIL_KM. The table has 13 rows of data. The terminal window at the bottom shows R code and output, including a citation for the 'caret' package.

	D2FEDGE_KM	D2STREAM_KM	DIST2OMRD_KM	D2TMRD_KM	D2TRAIL_KM
23	-0.182	0.541	19.563	19.567	1.080
18	-0.060	0.849	9.721	9.731	1.262
114	0.000	0.150	0.030	0.030	1.110
238	0.090	0.108	0.459	0.459	0.525
54	-0.094	1.140	0.743	0.743	0.270
207	0.037	0.331	0.443	0.443	1.922
347	0.037	0.731	10.896	10.882	0.899
204	-0.060	0.955	1.290	1.290	0.895
467	-0.217	0.234	0.335	0.335	0.335
2232	0.055	0.450	0.524	0.537	0.480
2378	0.012	1.012	11.482	11.482	0.908
2610					
2608					

```
rminal x  
ST/Data & Analyses/Self-defense kills/2018 analysis/Analysis/  
= {2019},  
{R package version 6.0-84},  
https://CRAN.R-project.org/package=caret},  
this citation information has been auto-generated from the package DESCRIPTION  
need manual editing, see 'help("citation")'.  
results)
```


Factor #1:

Recovery

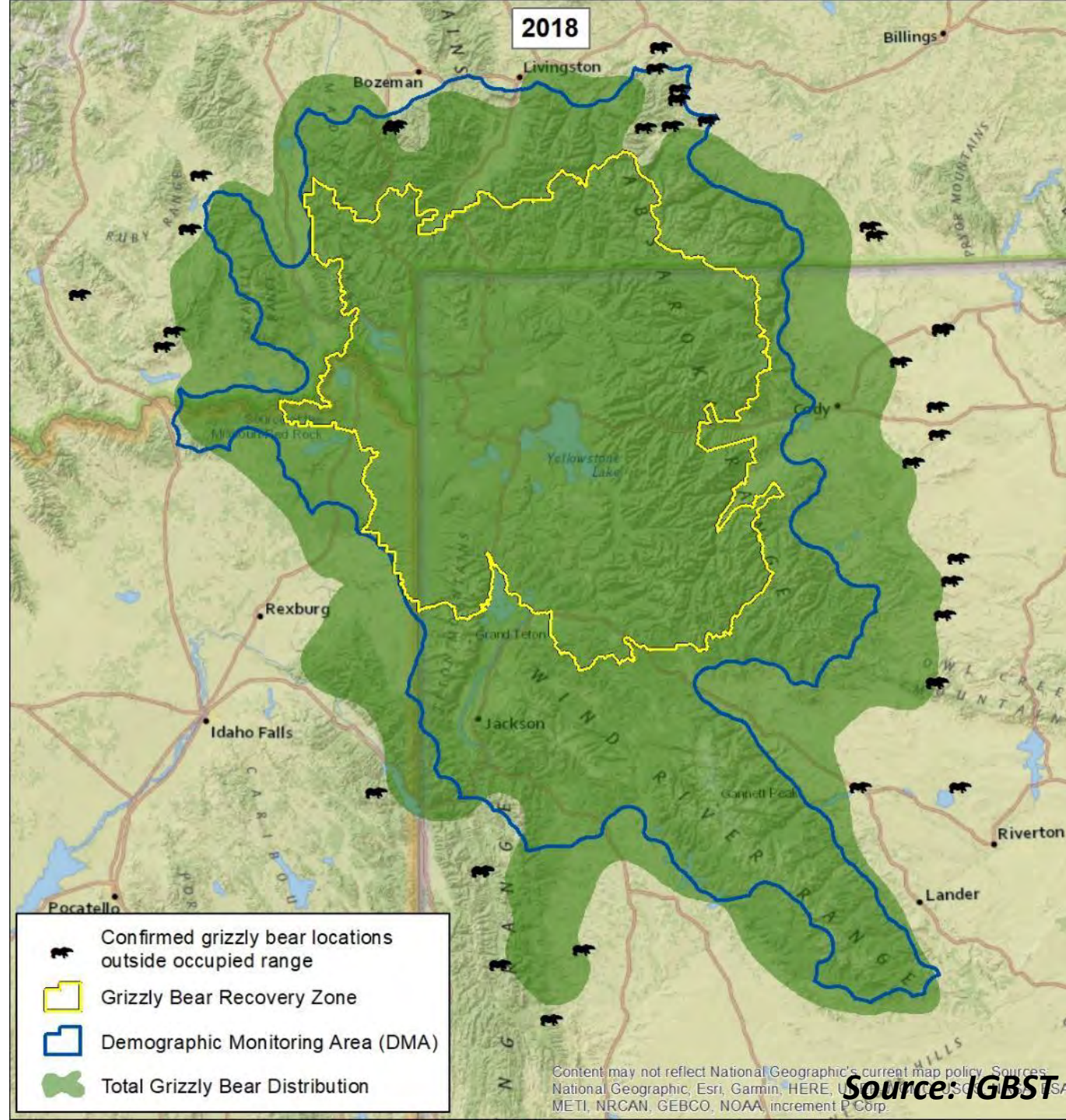
GYE: Occupied range 2004-2018

68,736 km²

98% of DMA
occupied

30% outside
DMA

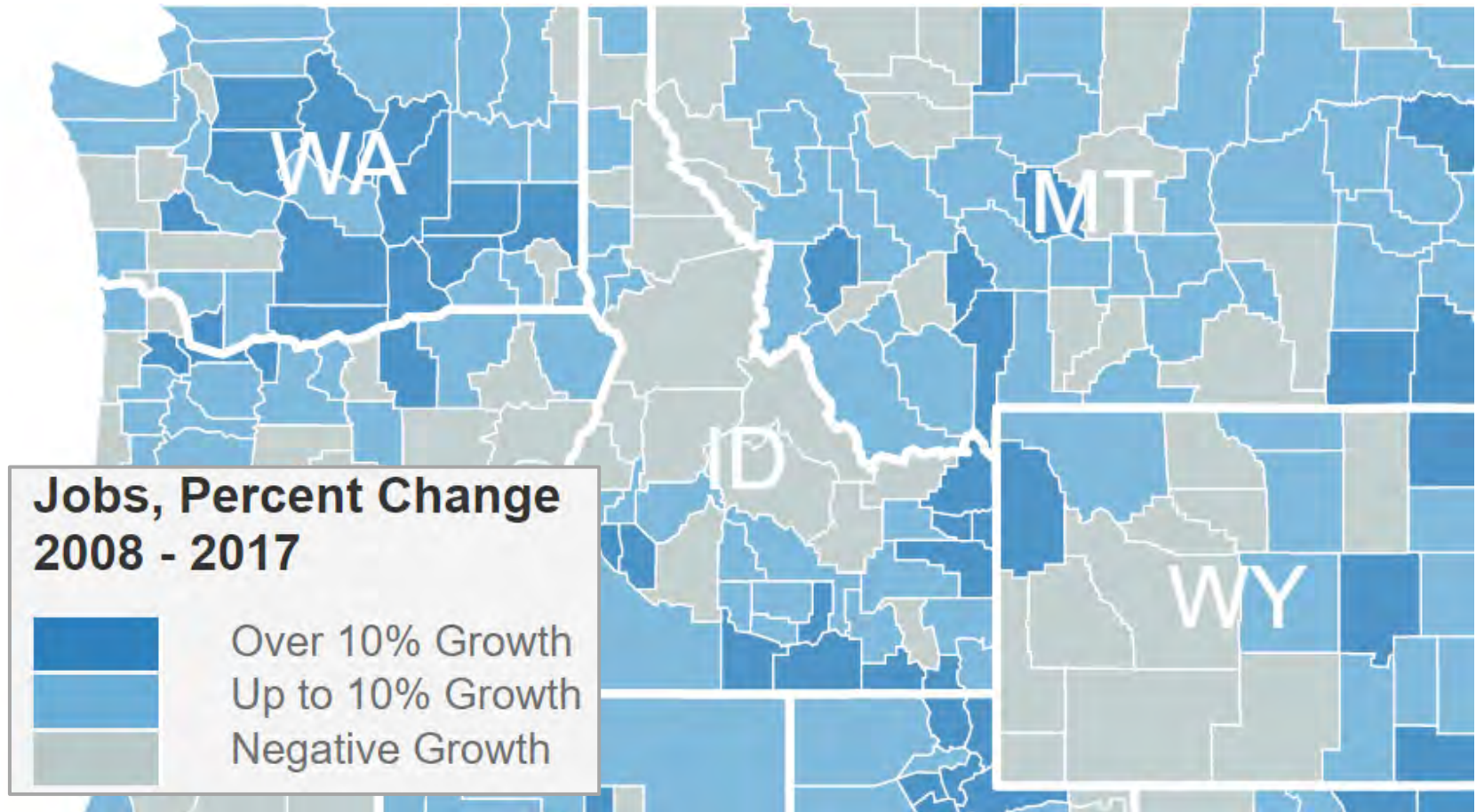
~12,000 km²
private land



Factor #2:

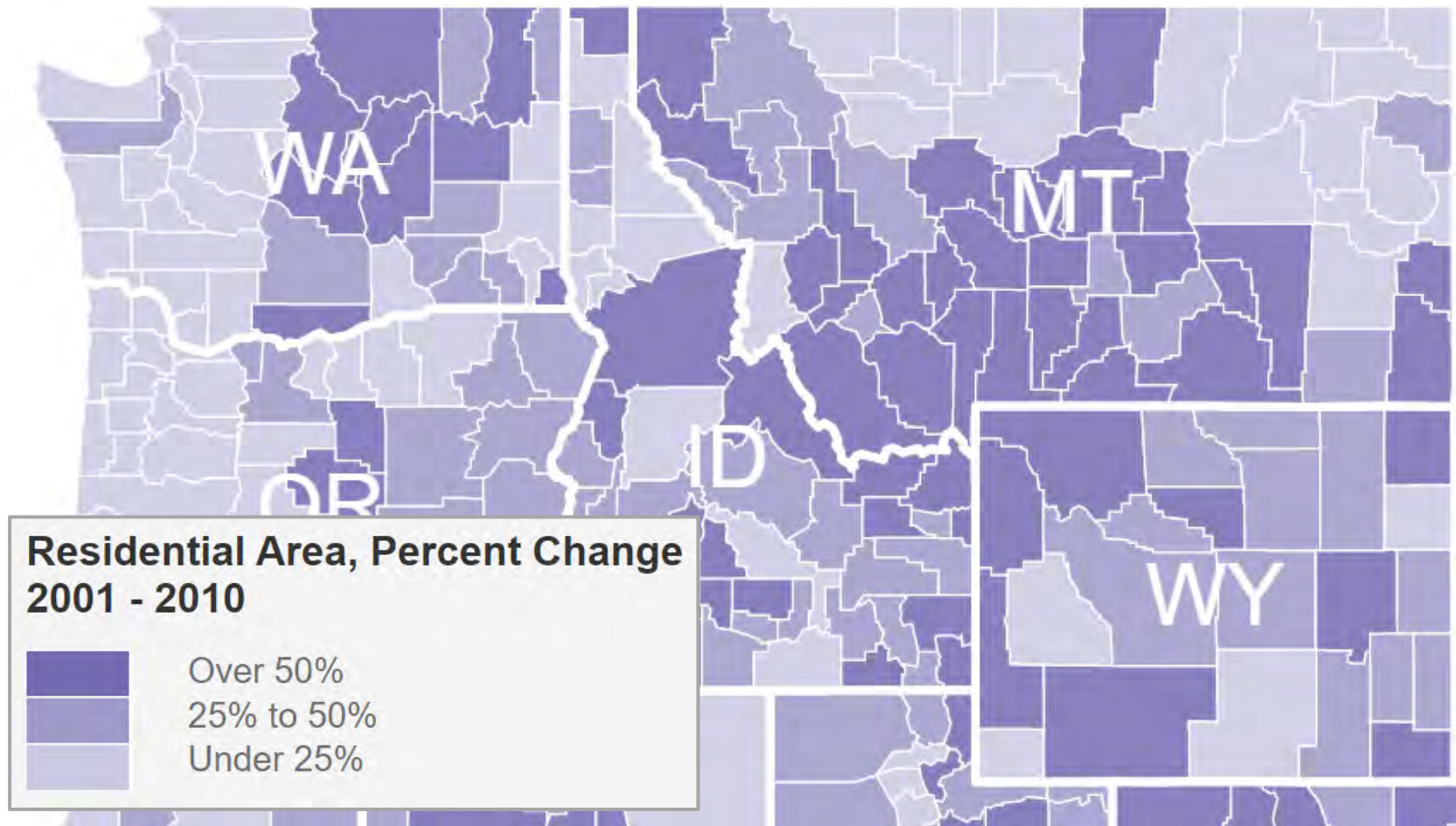
Socioeconomic Trends

Northwest: economic growth, 2001-2010



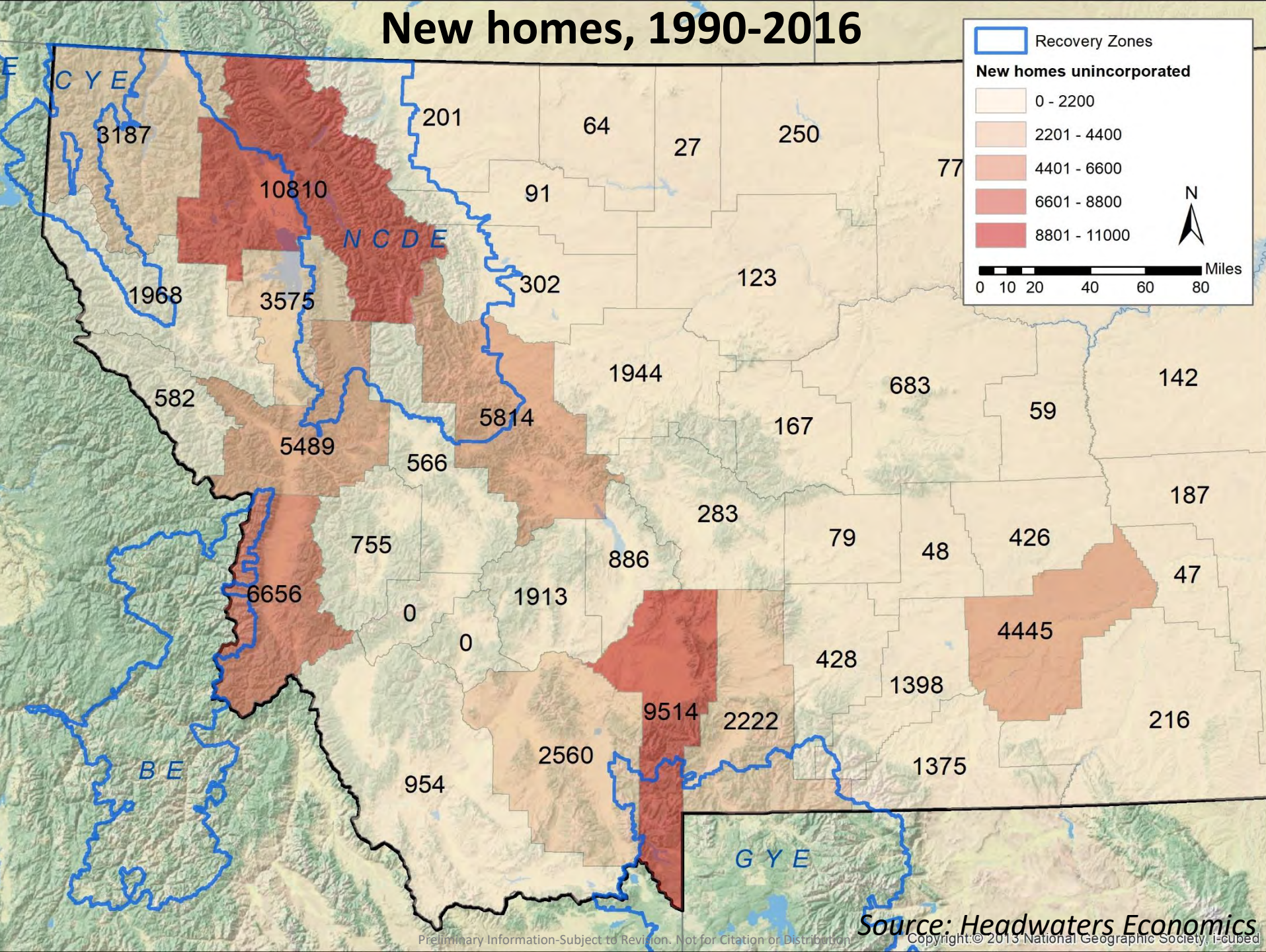
Source: Headwaters Economics

Northwest: change in residential area, 2001-2010



Source: Headwaters Economics

New homes, 1990-2016

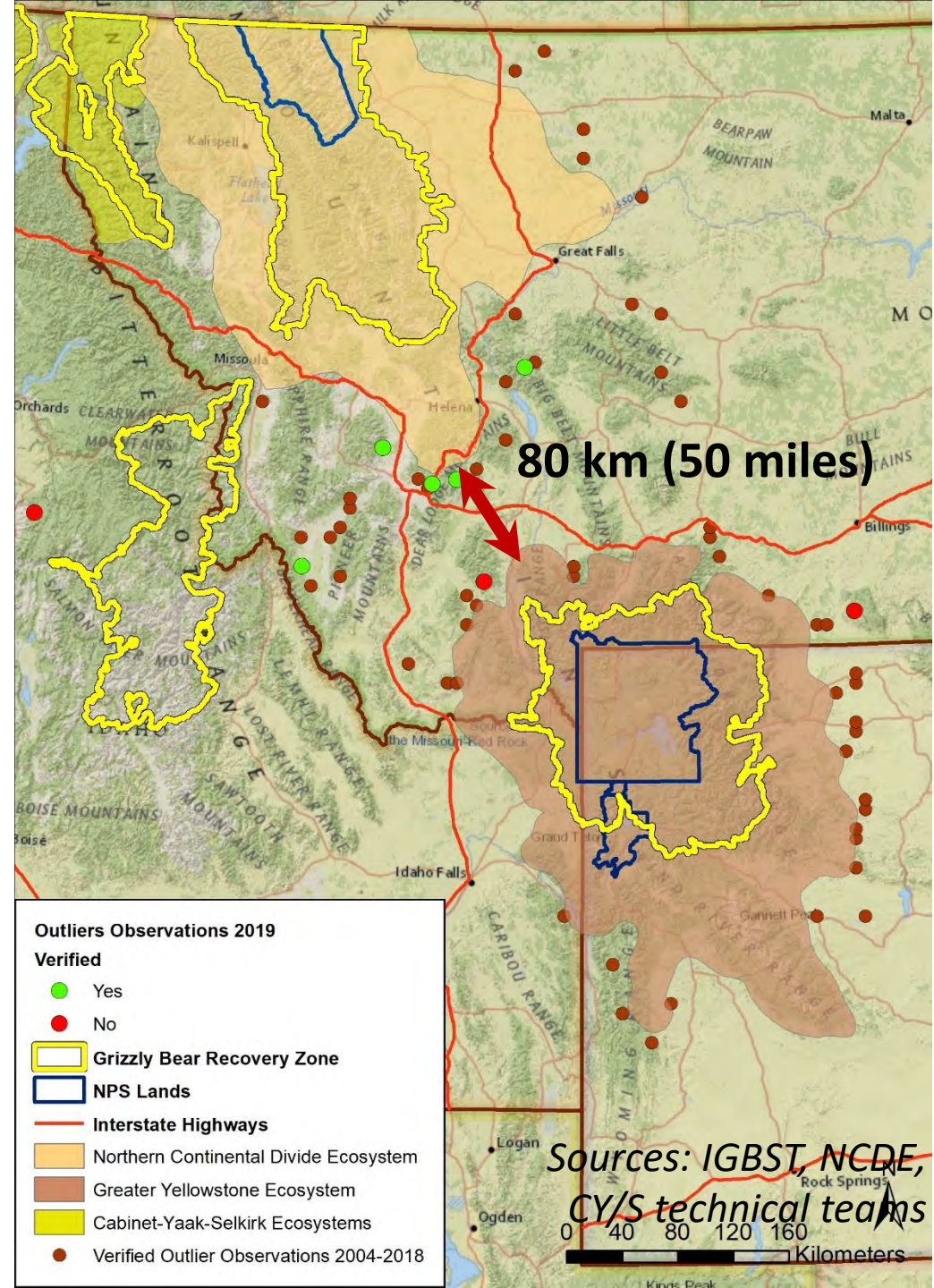


Current occupied range

&

Observations beyond

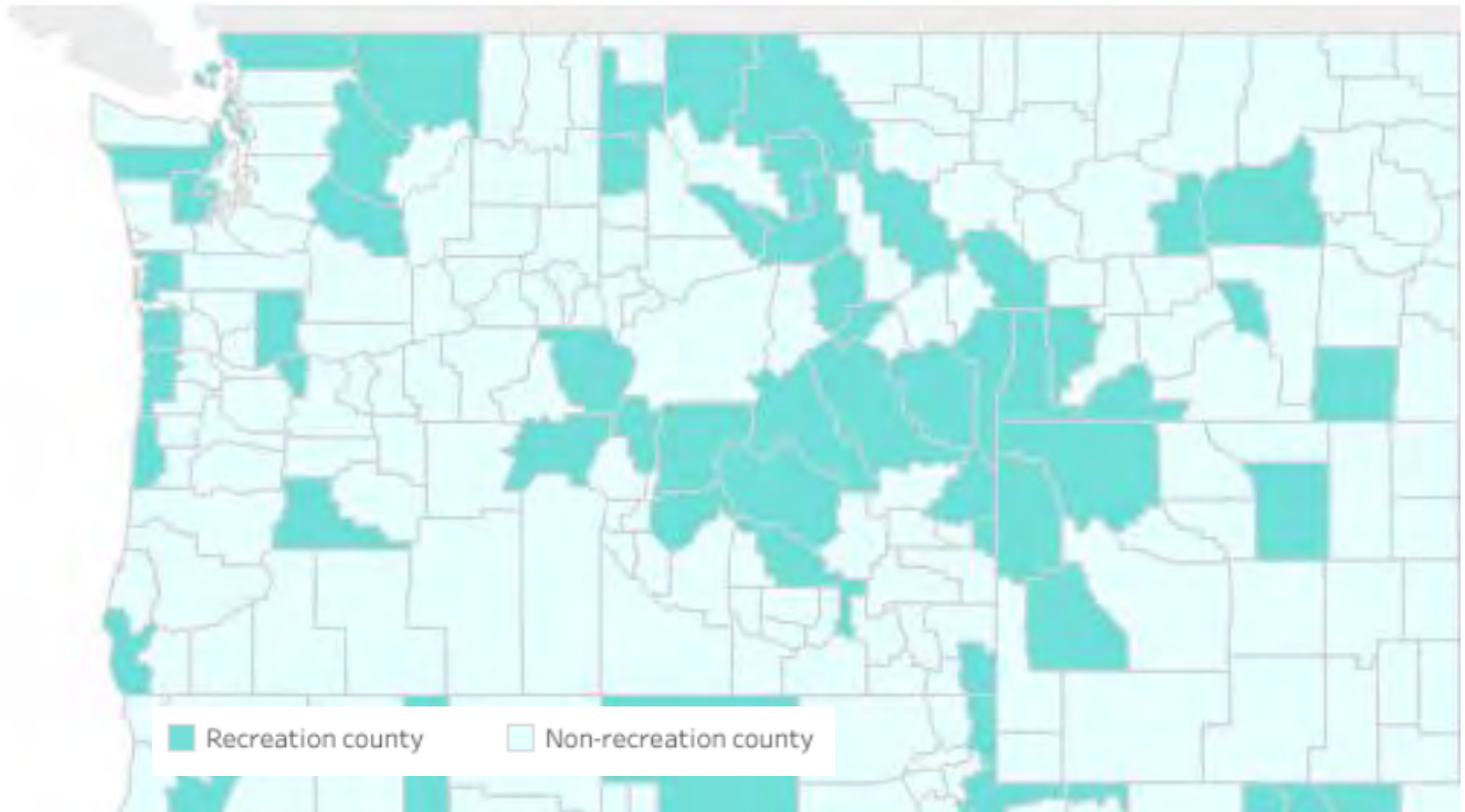
Preliminary Information-Subject to
Revision. Not for Citation or Distribution



Factor #3:

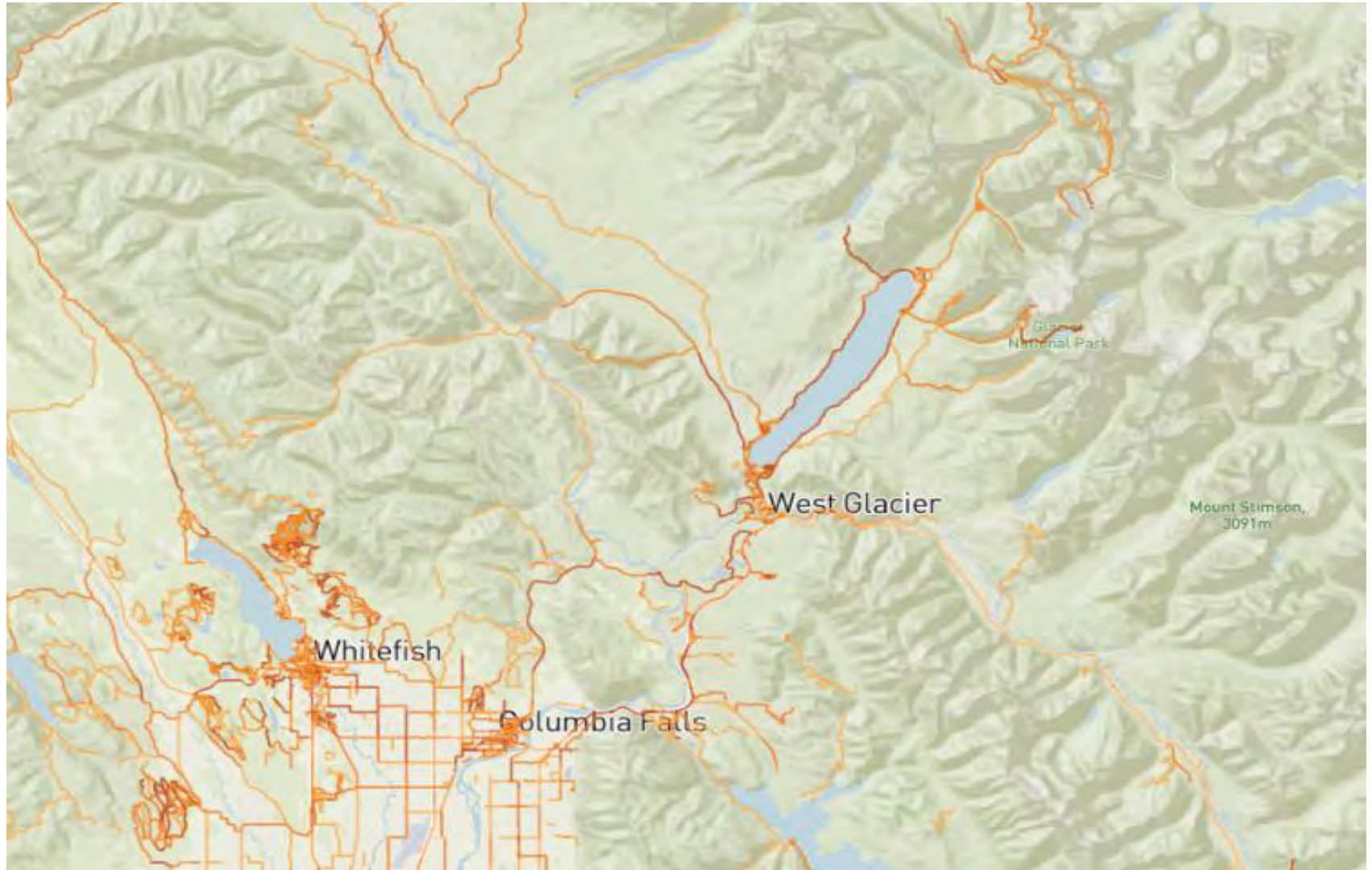
Outdoor Recreation Trends

Northwest: recreation counties, since 2010



Source: Headwaters Economics

Trail and pathway use, summer 2017, Flathead Co., MT

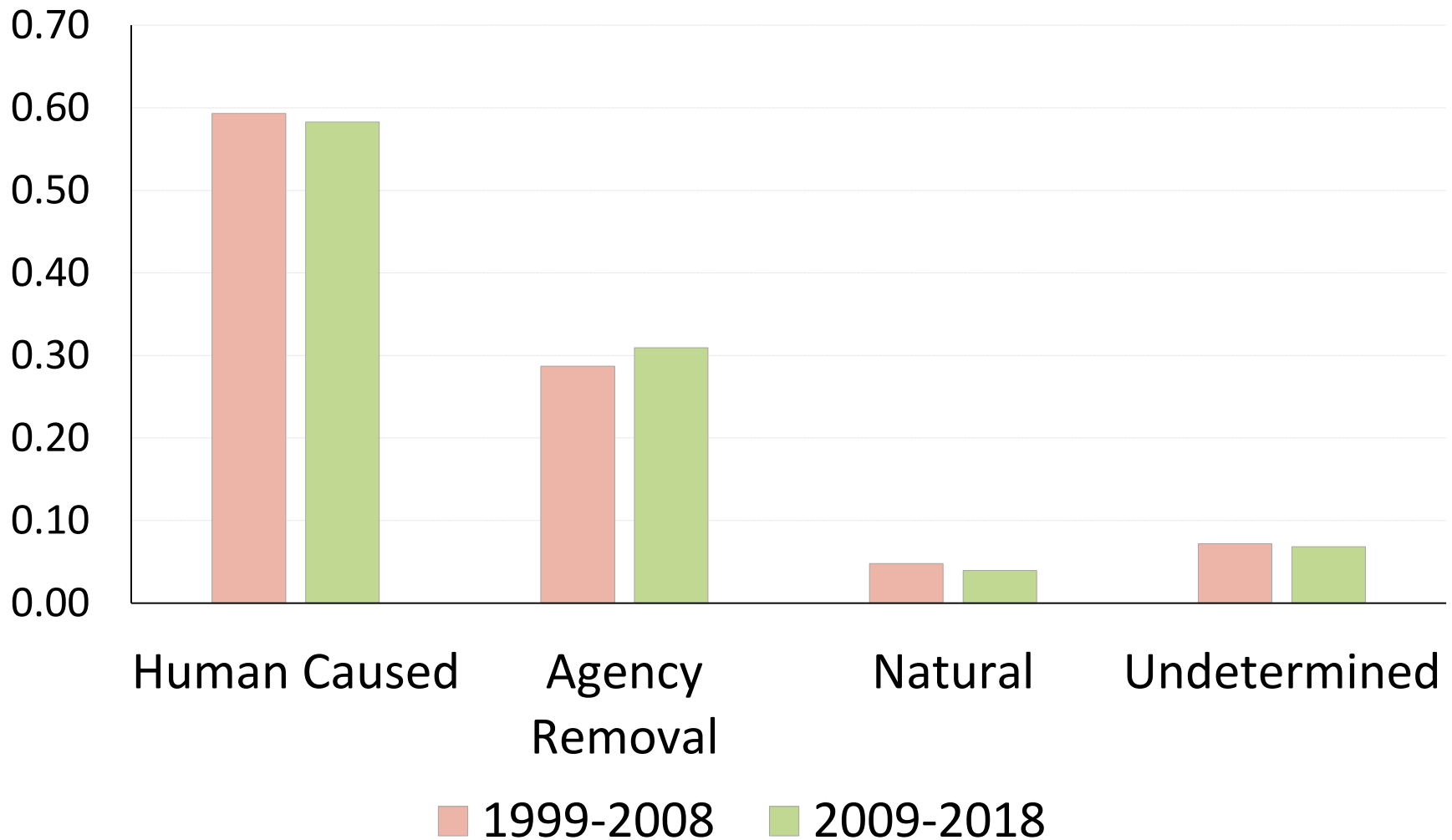


Source: Headwaters Economics

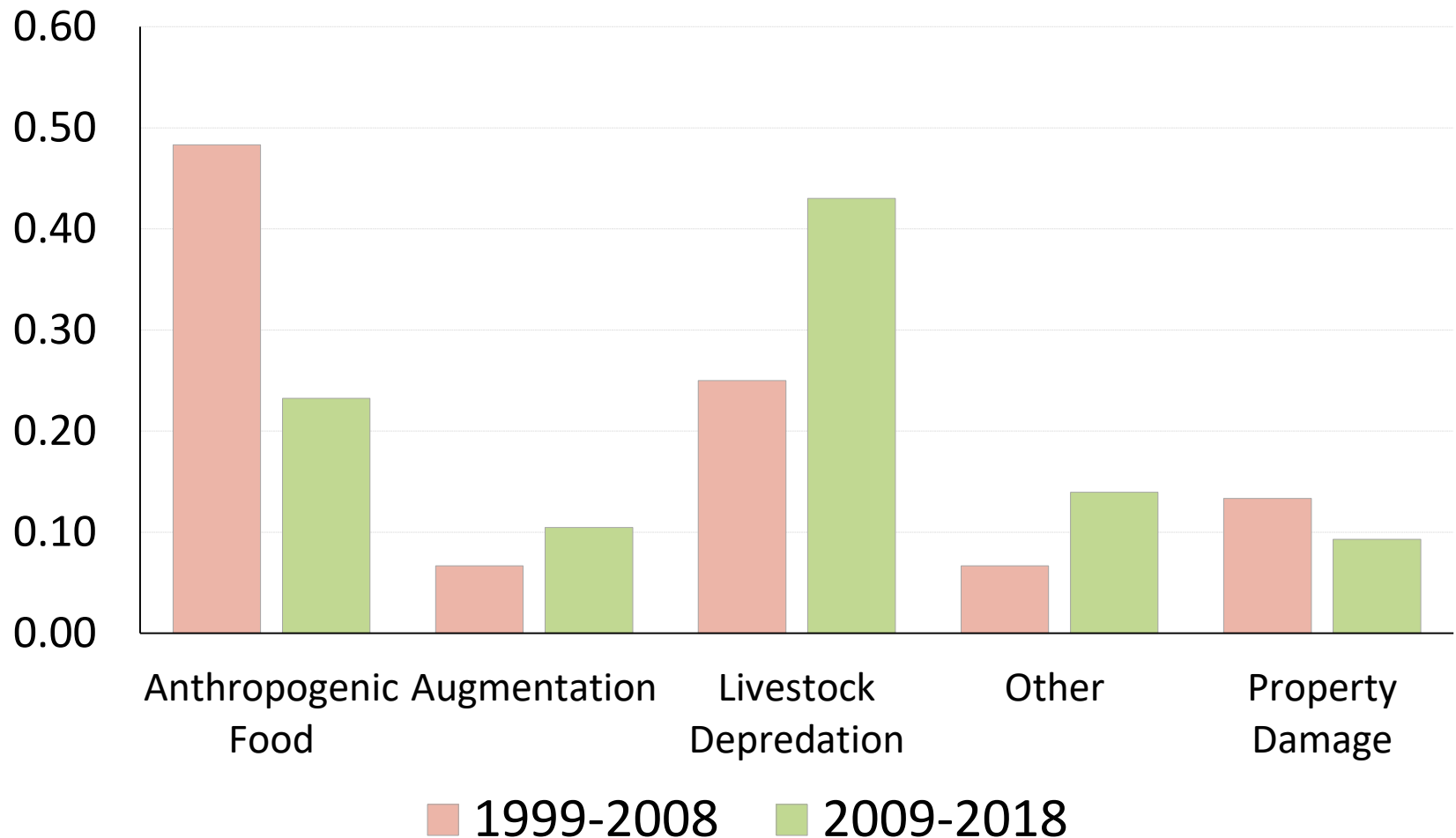
Understanding the Bear Part



NCDE: proportion of grizzly bear mortalities 1999-2008 vs. 2009-2018



NCDE: proportion of agency grizzly bear removals 1999-2008 vs. 2009-2018



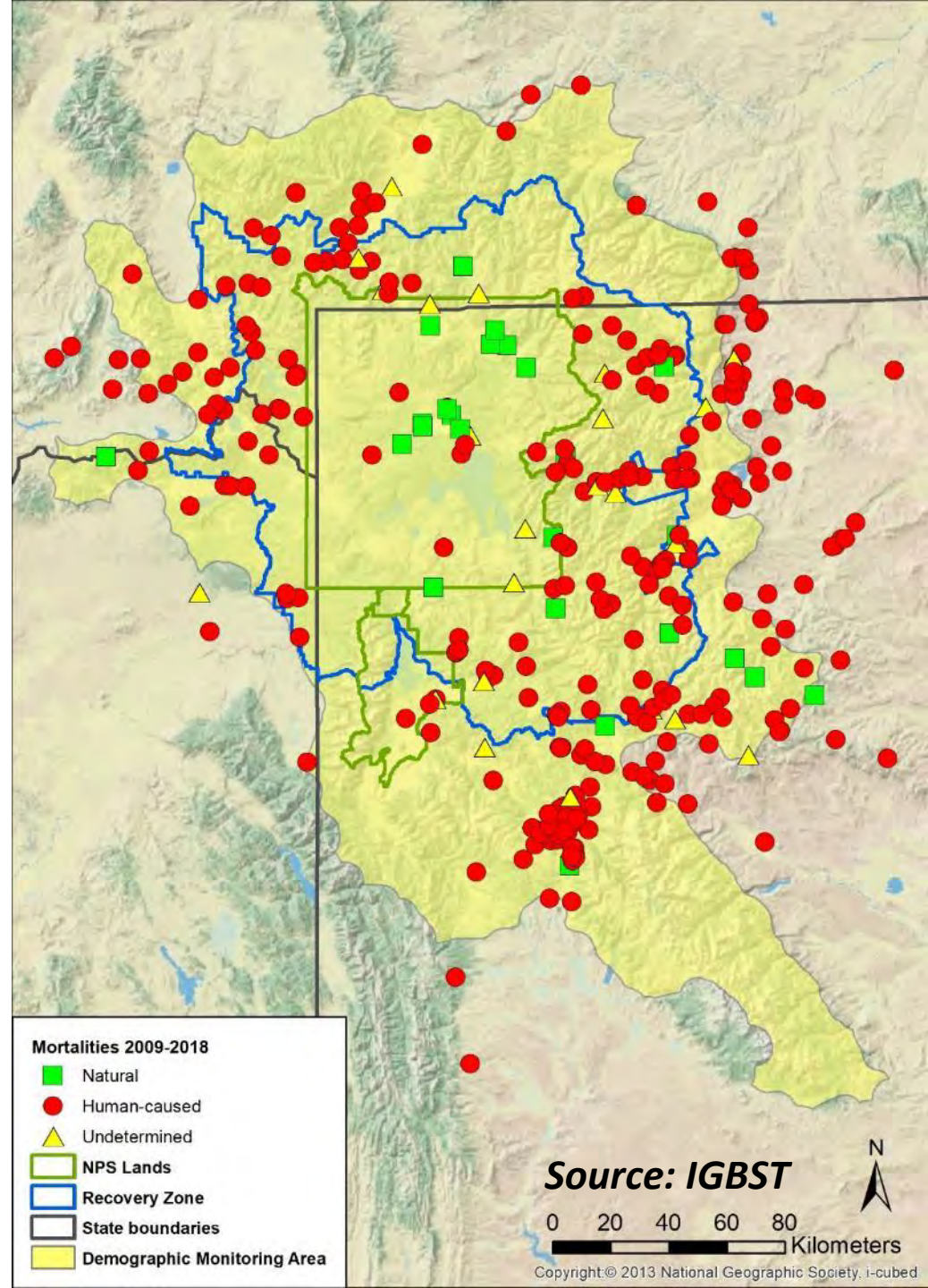
GYE: Documented mortalities 2009-2018

26 natural

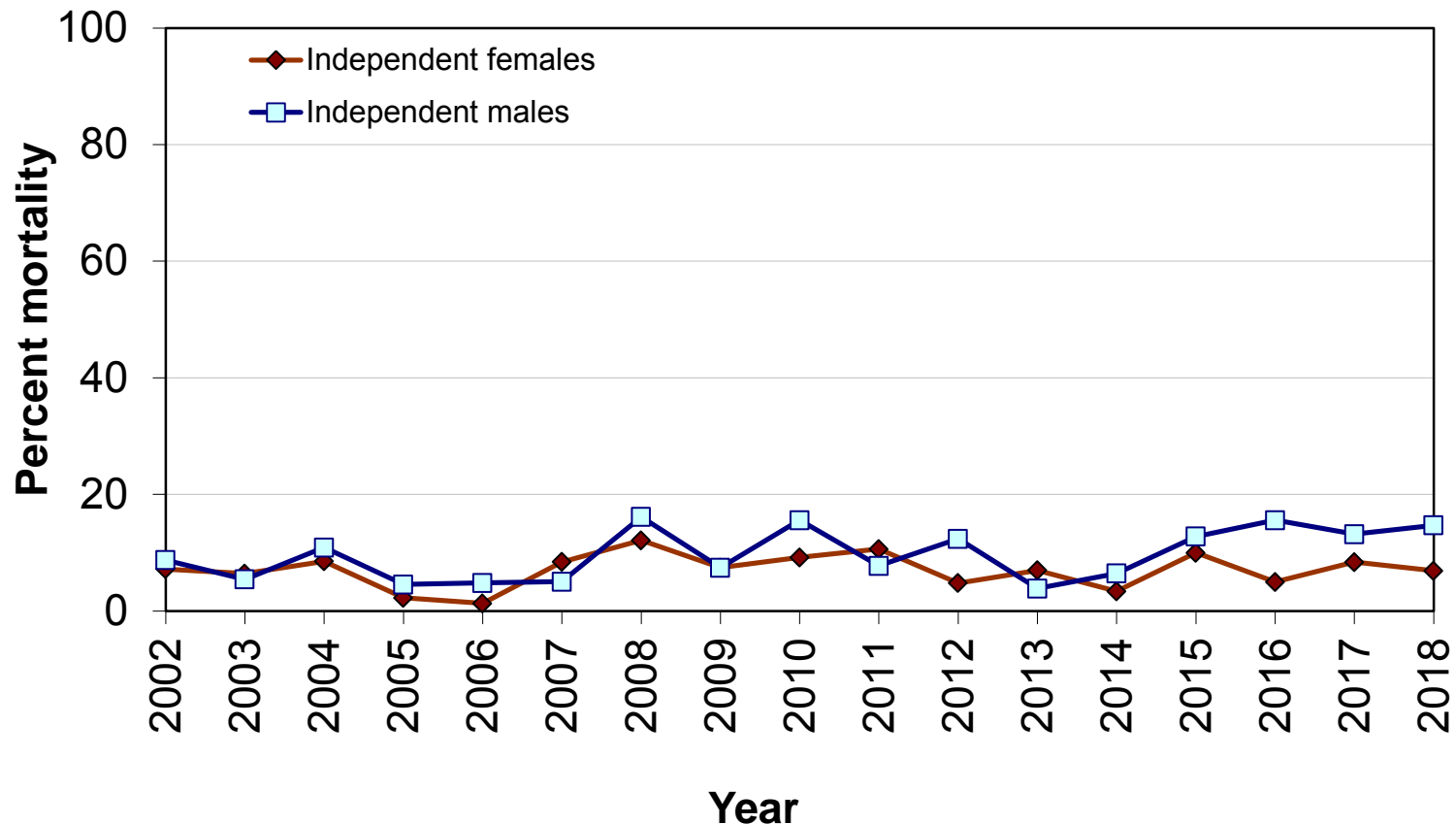
299 human-caused

24 undetermined

349 total



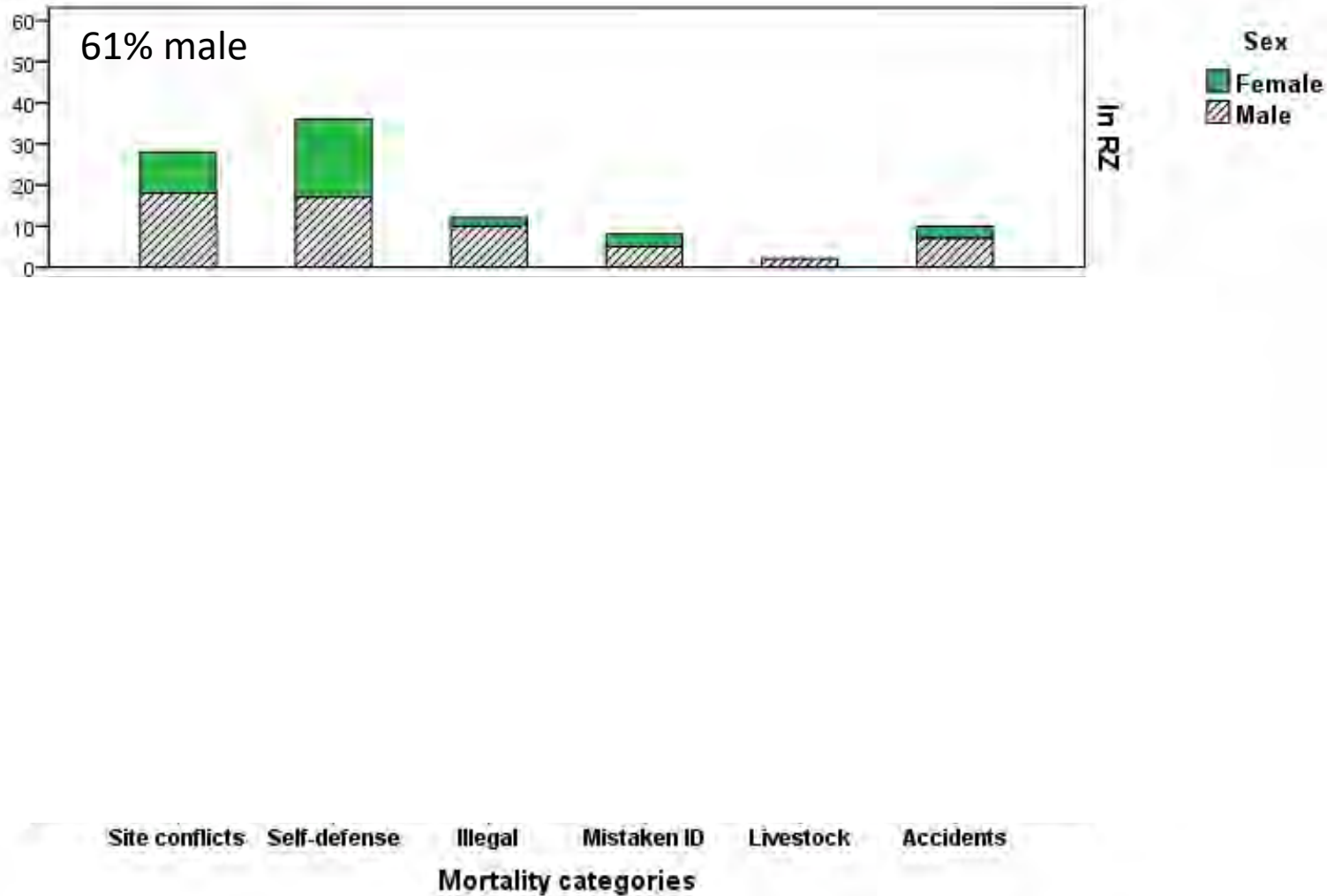
GYE: estimated % total mortality of independent (≥ 2 yrs) grizzly bears 2002–2018 (DMA only)



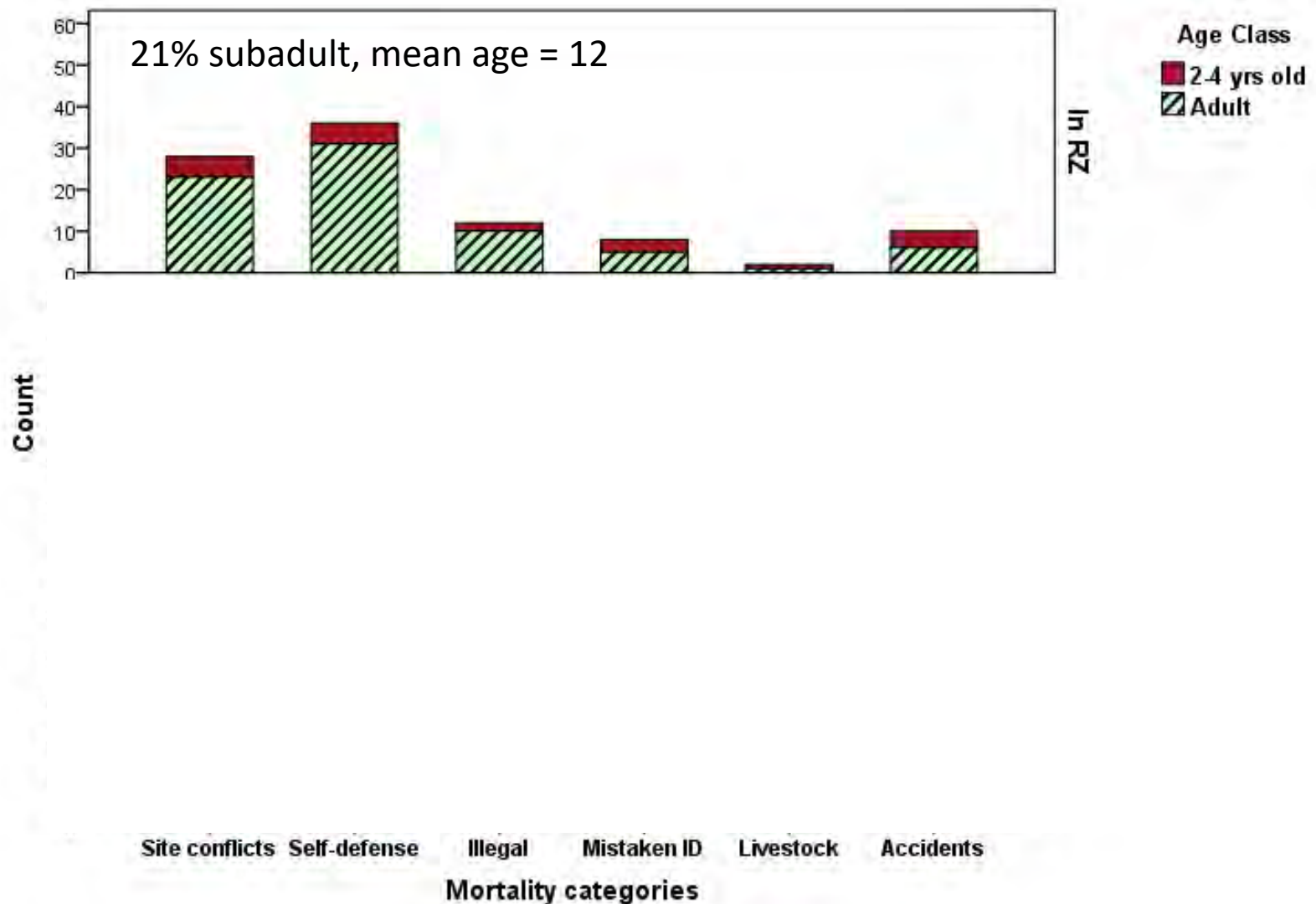
Female average = 7.0%

Male average = 9.7%

GYE: human-caused mortalities by category and sex 2009-2018



GYE: human-caused mortalities by category and age 2009-2018



The Take-Aways

- Conflict trends likely here to stay
- Grizzly bear populations not in a crisis
- Issues are real - balancing act
- Strategic, multi-ecosystem & science-based approach
- Key role of IGBC and partner agencies



Photo: Jake Davis