

Agricultural land in the West Kootenay

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Presentation Outline

- 1) Introduction
- 2) Methodology
- 3) Results
- 4) Conclusions





Research Objectives

1. To assess the area of arable lands within the West Kootenay region (Class 1 - 5),
2. To identify the soil/climate challenges and potential for small parcel agriculture, and
3. To make a preliminary assessment of the effects of climate change on this potential for small parcel agriculture.



Methodology



Agricultural Land



Soil Capability Classes (for mostly mechanized Ag.)



Parameters:

Class 1- 4: good for a range of crops

Class 5: possible for some crops including grazing

A Class 5 level stoniness or topography limitation may not be a significant limitation to growing fruit trees or grapes in areas which are climatically suitable.

& Subclasses (limitations)

stoniness, moisture holding capacity,
excess moisture etc....

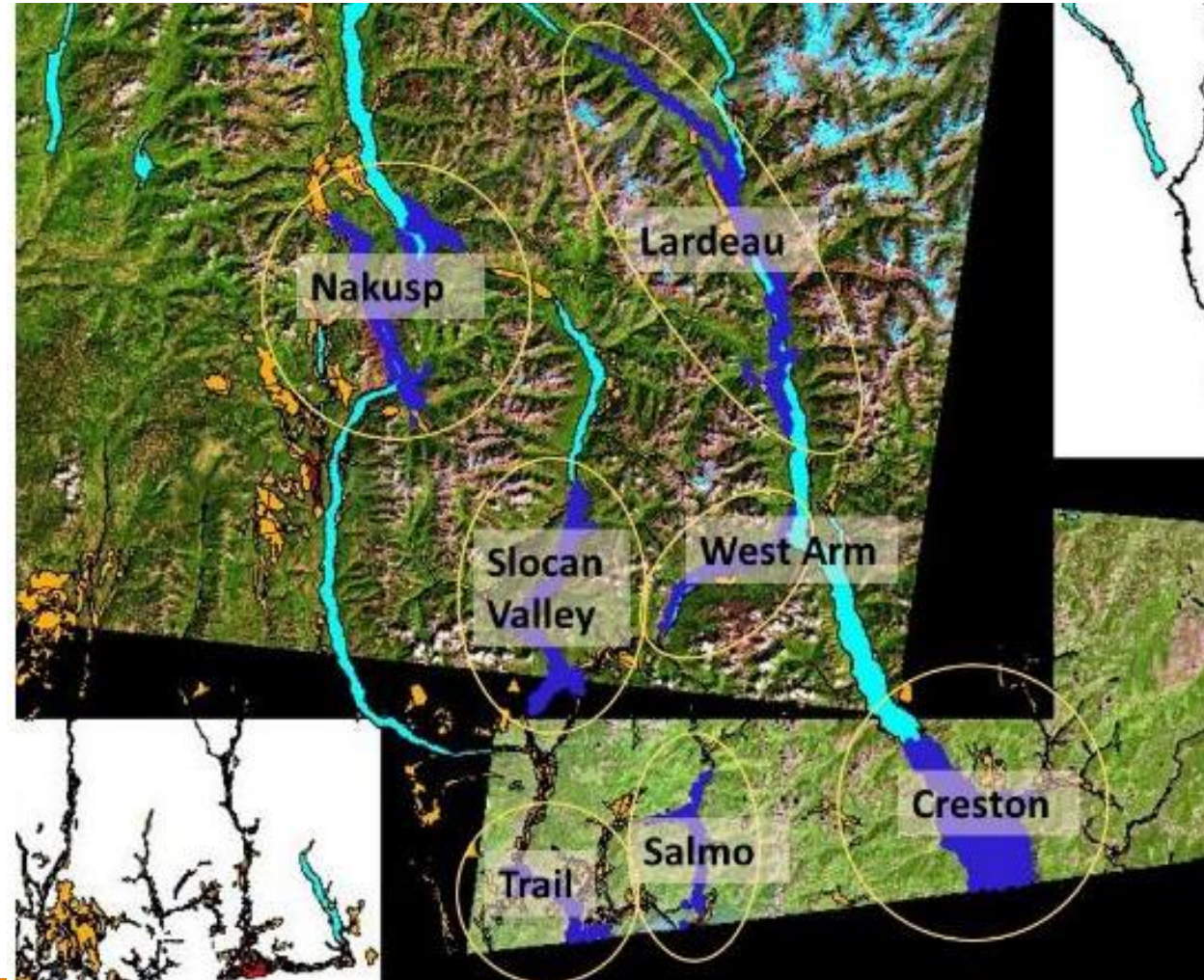
Crops

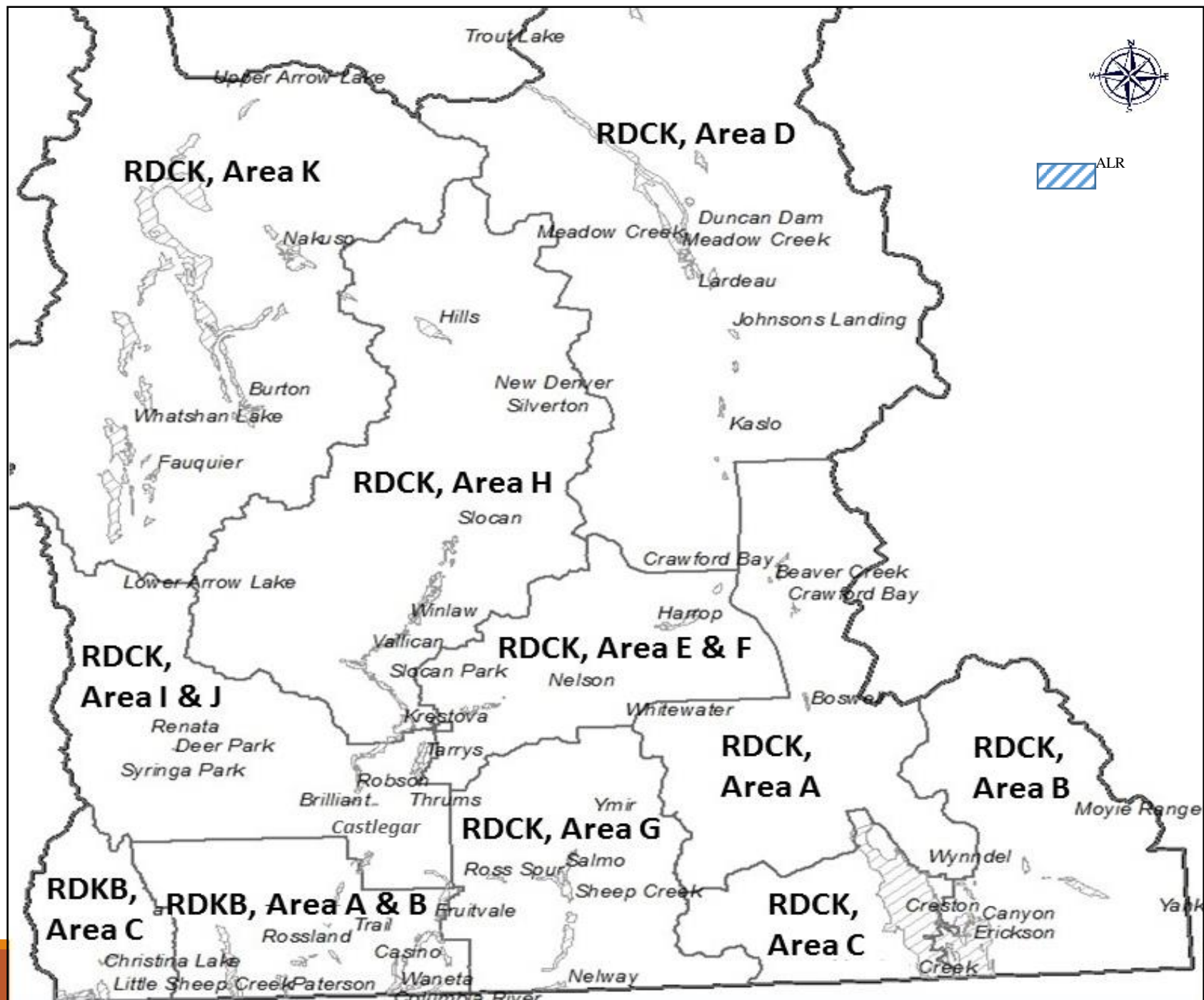
- 2011 Agricultural Census:
Farm and farm operator
data
- Total 'Land in Crops'
 - Field crops
 - Vegetables
 - Fruit, nut and berry
- Does not include small scale
backyard food production



Climate Change

- Global Climate Model Scenarios (IPCC's 5th Assessment Report)
- 2050
- 3 scenarios



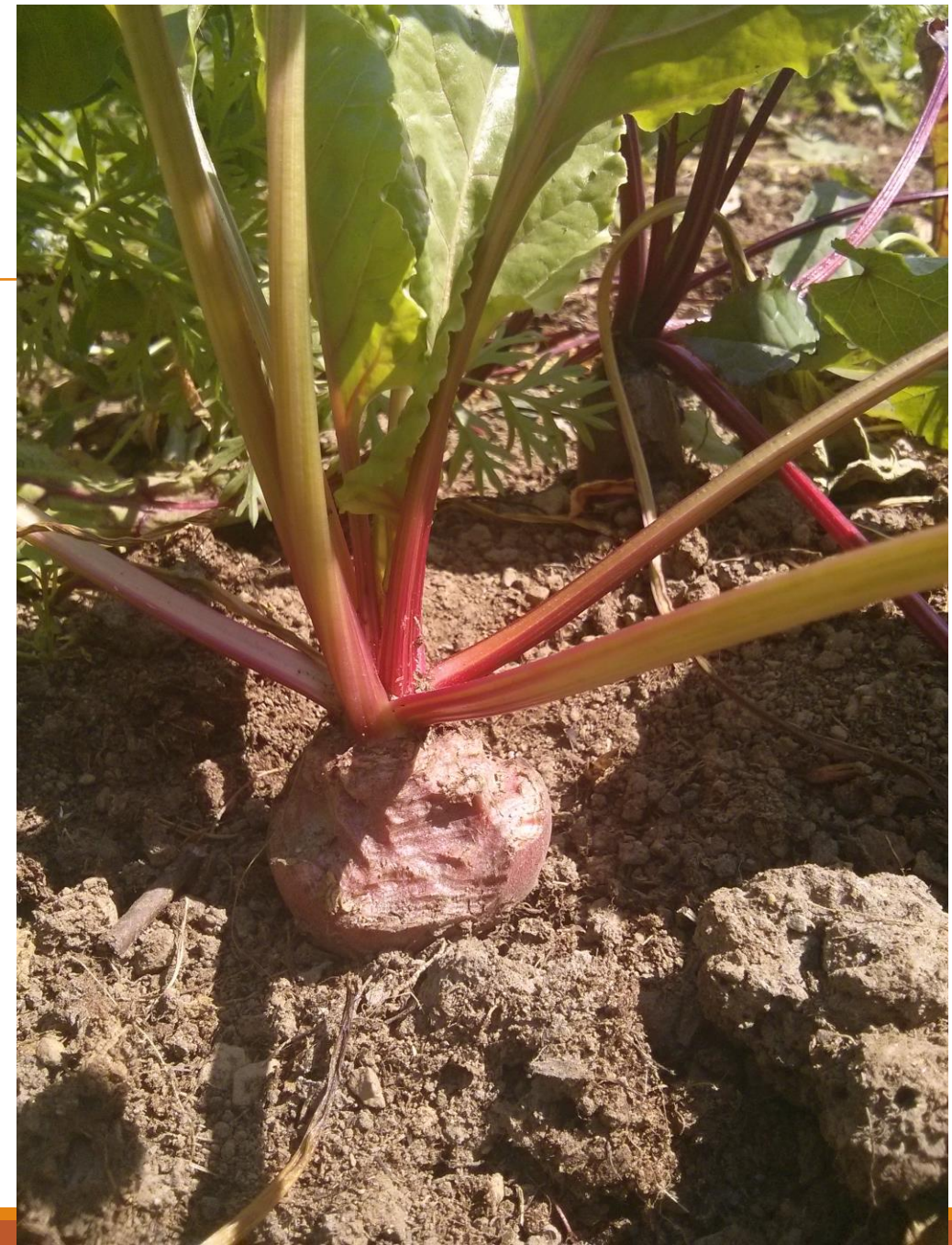


Regional District Areas

(by consolidated Census area)

Limitations

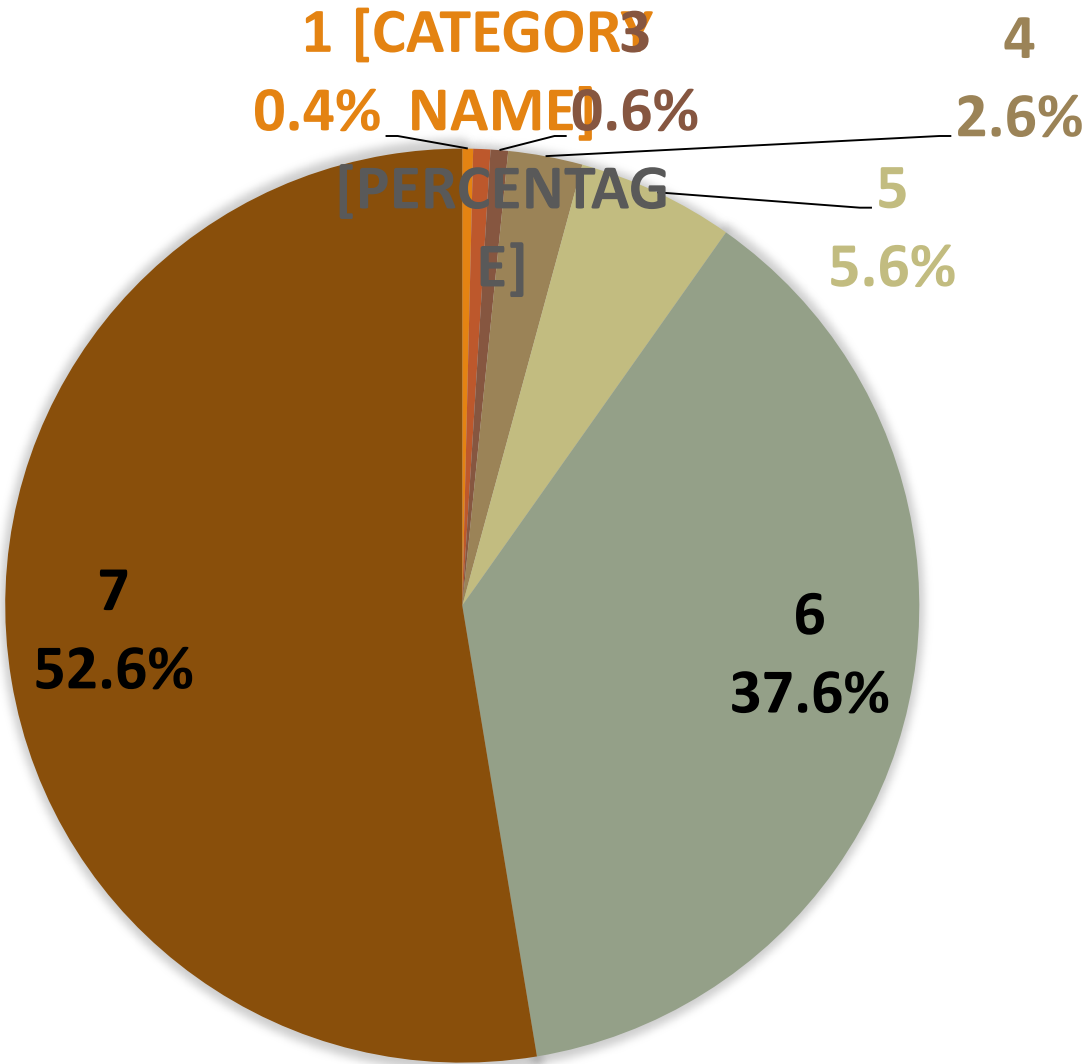
- Identifying specific available farmland
- Assumption that land under production is in the ALR
- “Land in crops” excludes small scale (backyard)



Results

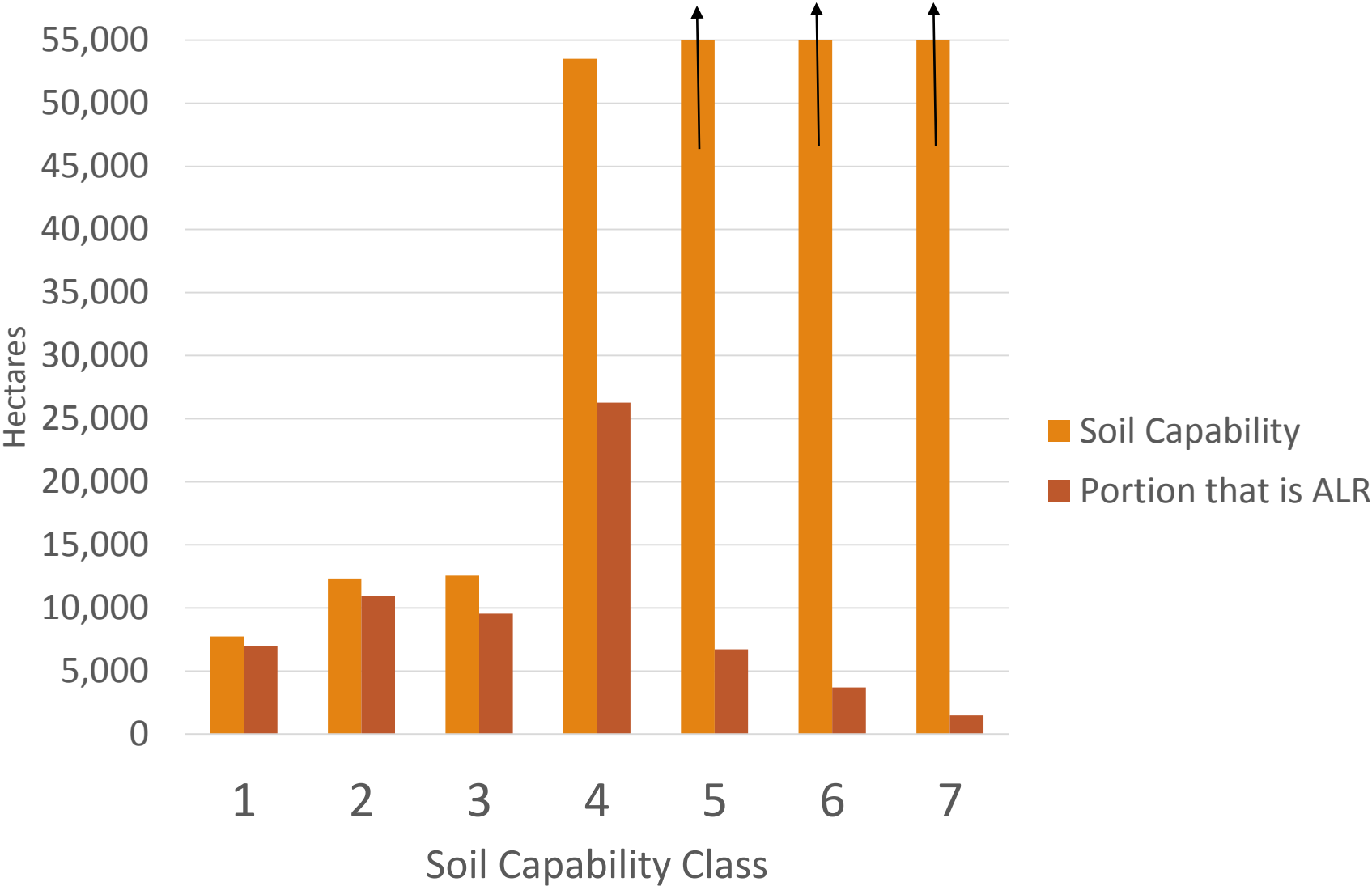
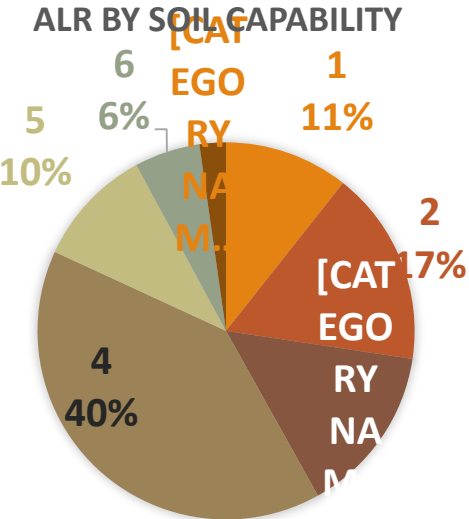


Total Land in the Study Area by Soil Capability Class (total 2,035,785 Ha)



11% of ALL land has some agricultural capability (Class 1 – 5)

Portion of land in the ALR (ALR: 65,737 Ha - 3.2% of study area)

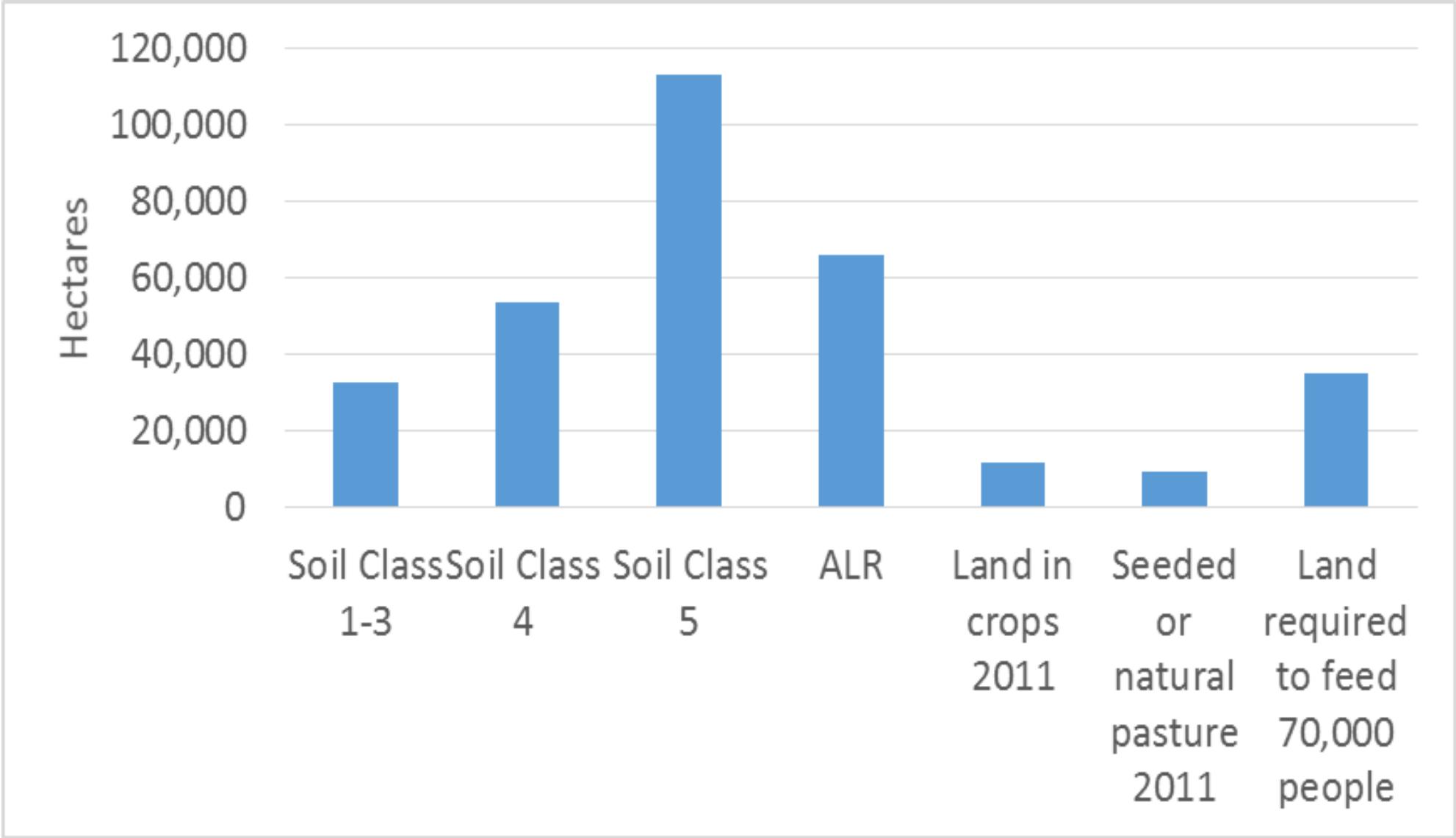


Primary Limitations for soils in the ALR

1. Moisture holding capacity: 35%
2. Topography: 22%
3. Excess water and stoniness: 11%



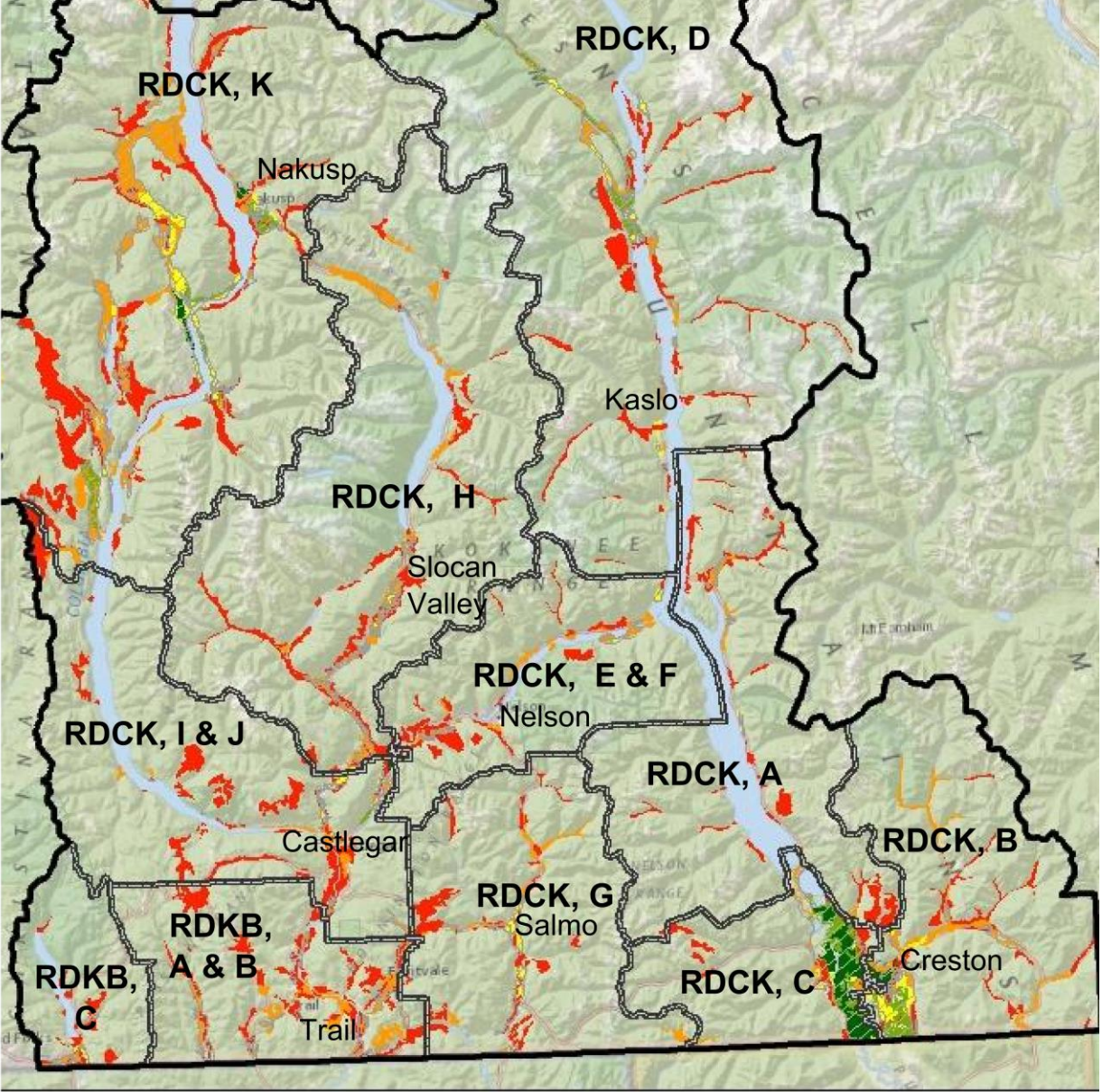
Land inventory and land use comparison



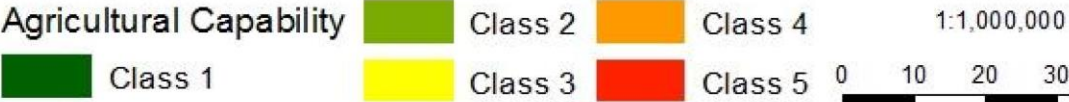
Land in crops and pasture equals only 32% of ALR.

Land to feed 70,000 people/year based on 0.5 Ha per person, (BC Ministry of Agriculture and Lands, 2006)

Distribution of Agricultural Land

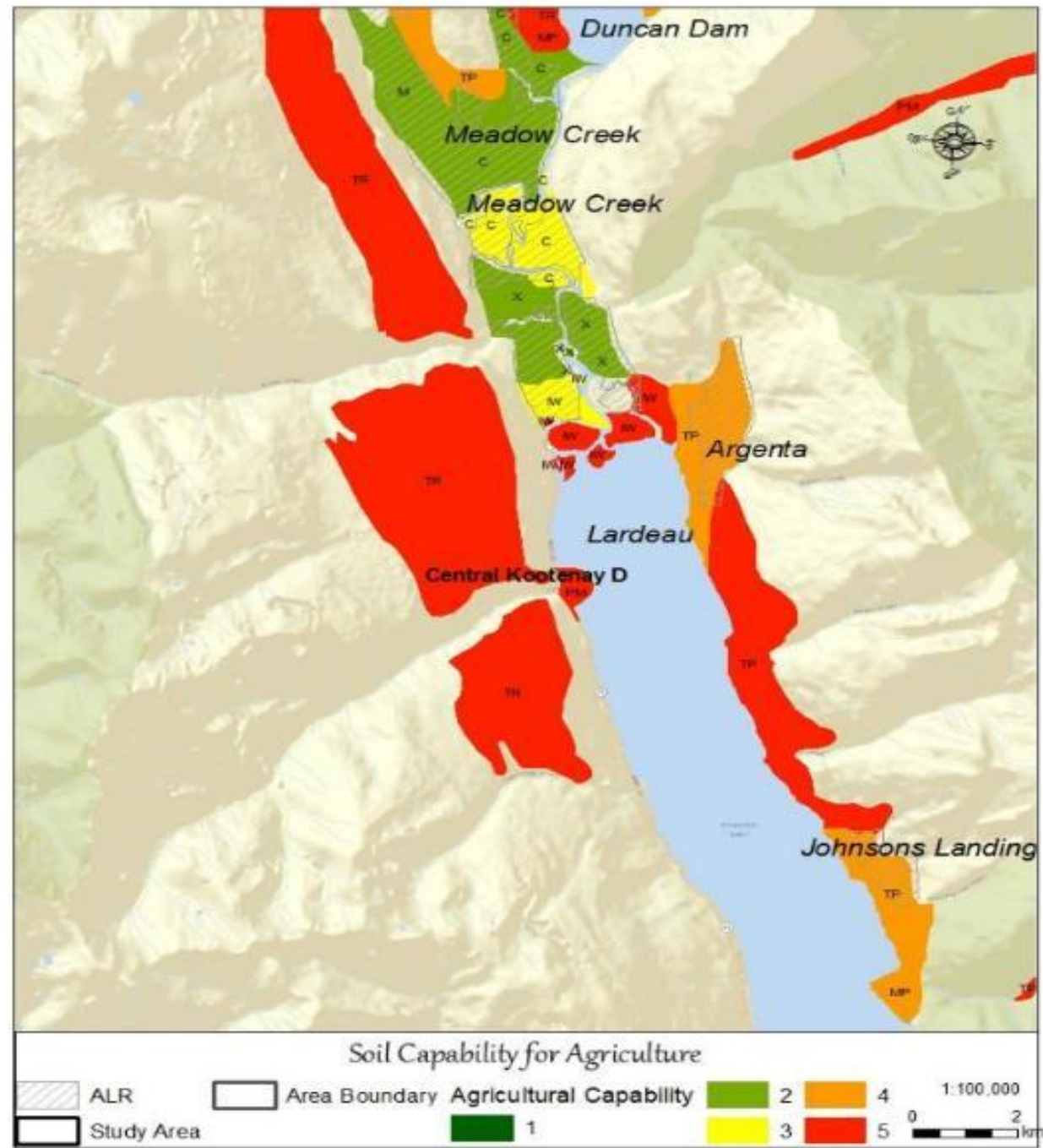


Soil Capability for Agriculture

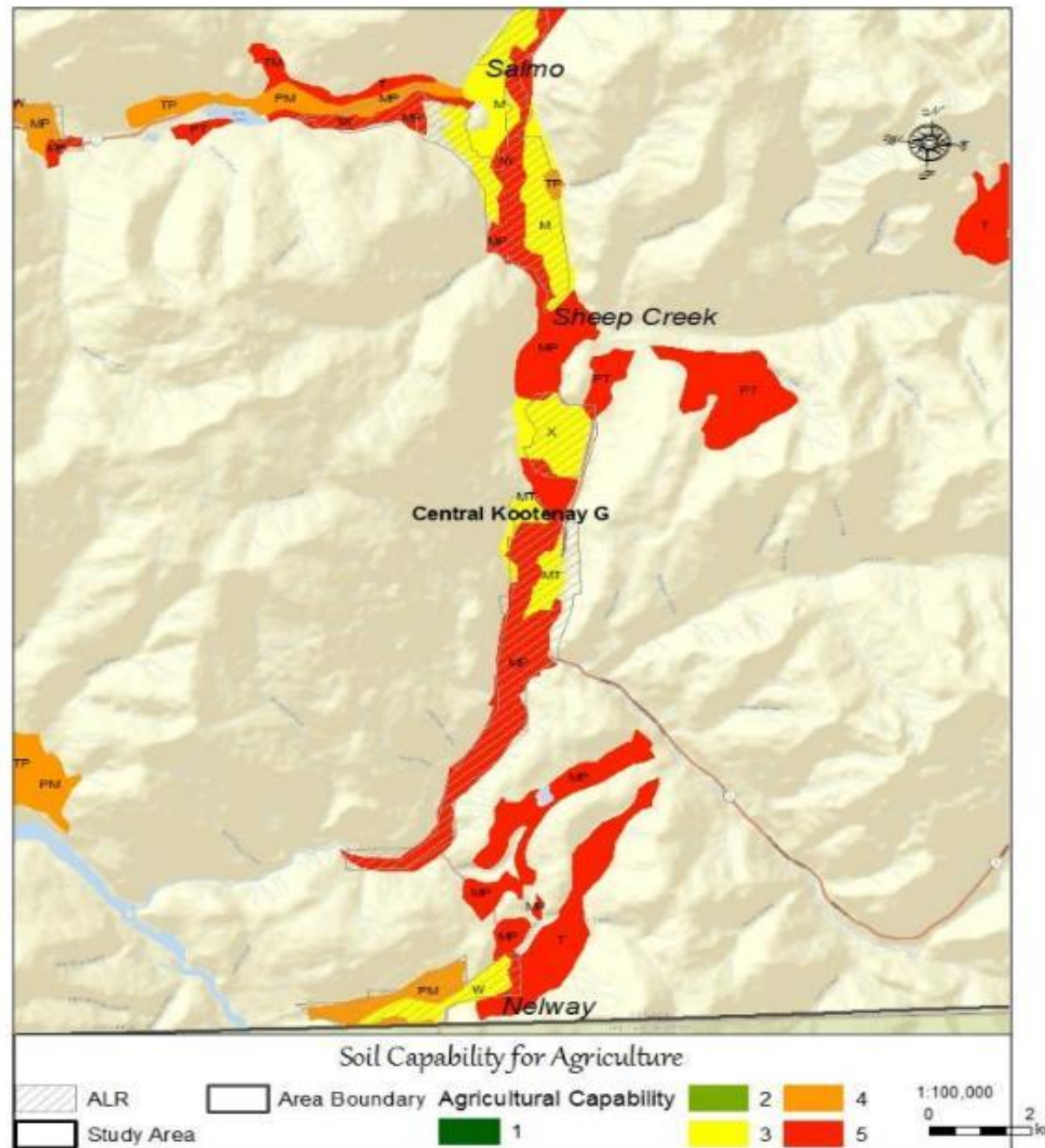


Regional District Electoral Area	Soil Class 1-3	Soil Class 4	Soil Class 5	ALR	Land in crops 2011*	Seeded or natural pasture 2011	Land used for agriculture as % of ALR
Central Kootenay A	124	1,667	7,471	492	68	150	44%
Central Kootenay B	5,763	5,826	4,879	7,375	4,560	558	69%
Central Kootenay C	9,235	2,021	3,416	12,110	4,352	3,506	65%
Central Kootenay D	5,205	3,450	12,849	7,295	177	82	4%
Central Kootenay E & F	271	2,722	5,650	1,124	299	78	34%
Central Kootenay G	1,139	2,505	7,552	2,431	189	693	36%
Central Kootenay H	329	7,751	10,936	4,427	325	932	28%
Central Kootenay J & I	750	2,411	14,044	1,852	112	464	31%
Central Kootenay K	9,559	18,348	32,318	22,804	959	1,924	13%
Kootenay Boundary B & A	0.0	6,178	11,556	4,667	277	725	21%
Kootenay Boundary C	267	636	2,492	1,156	**	**	**
Total	32,379	53,520	113,168	65,737	11,318	9,112	31%

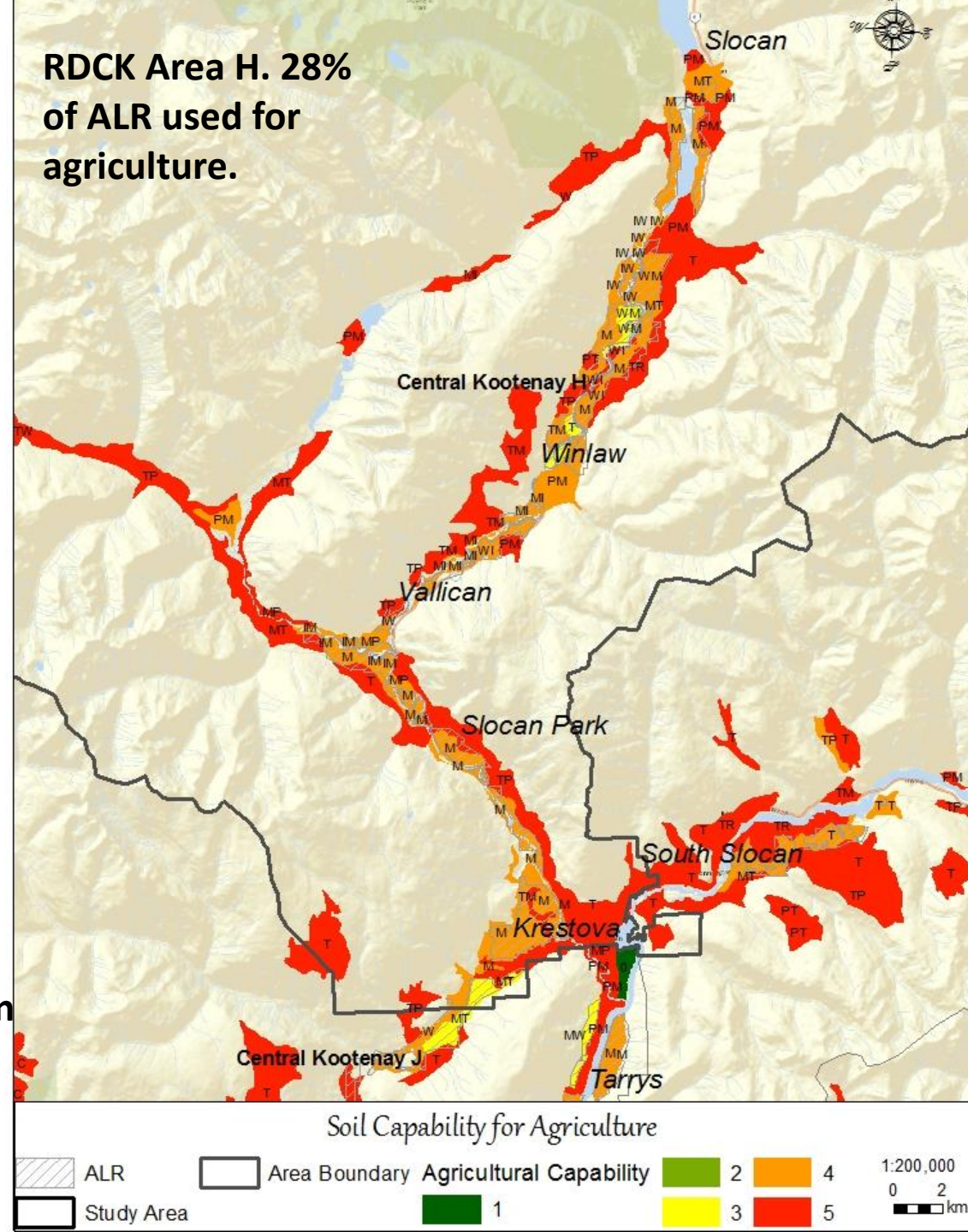
RDCK area D. 4% of ALR used for agriculture .



RDCK Area G.
36% of ALR used for
agriculture.



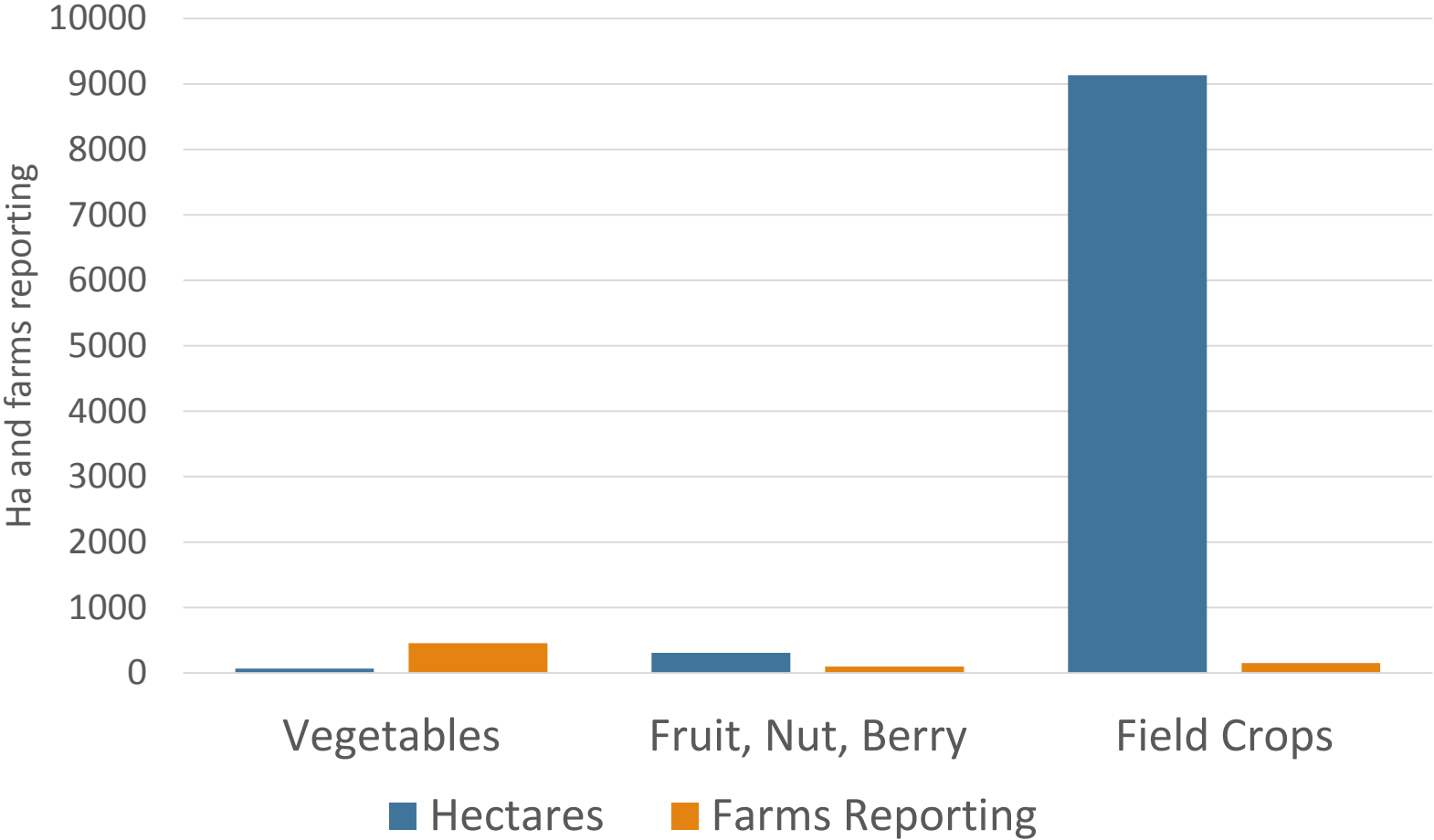
**RDCK Area H. 28%
of ALR used for
agriculture.**



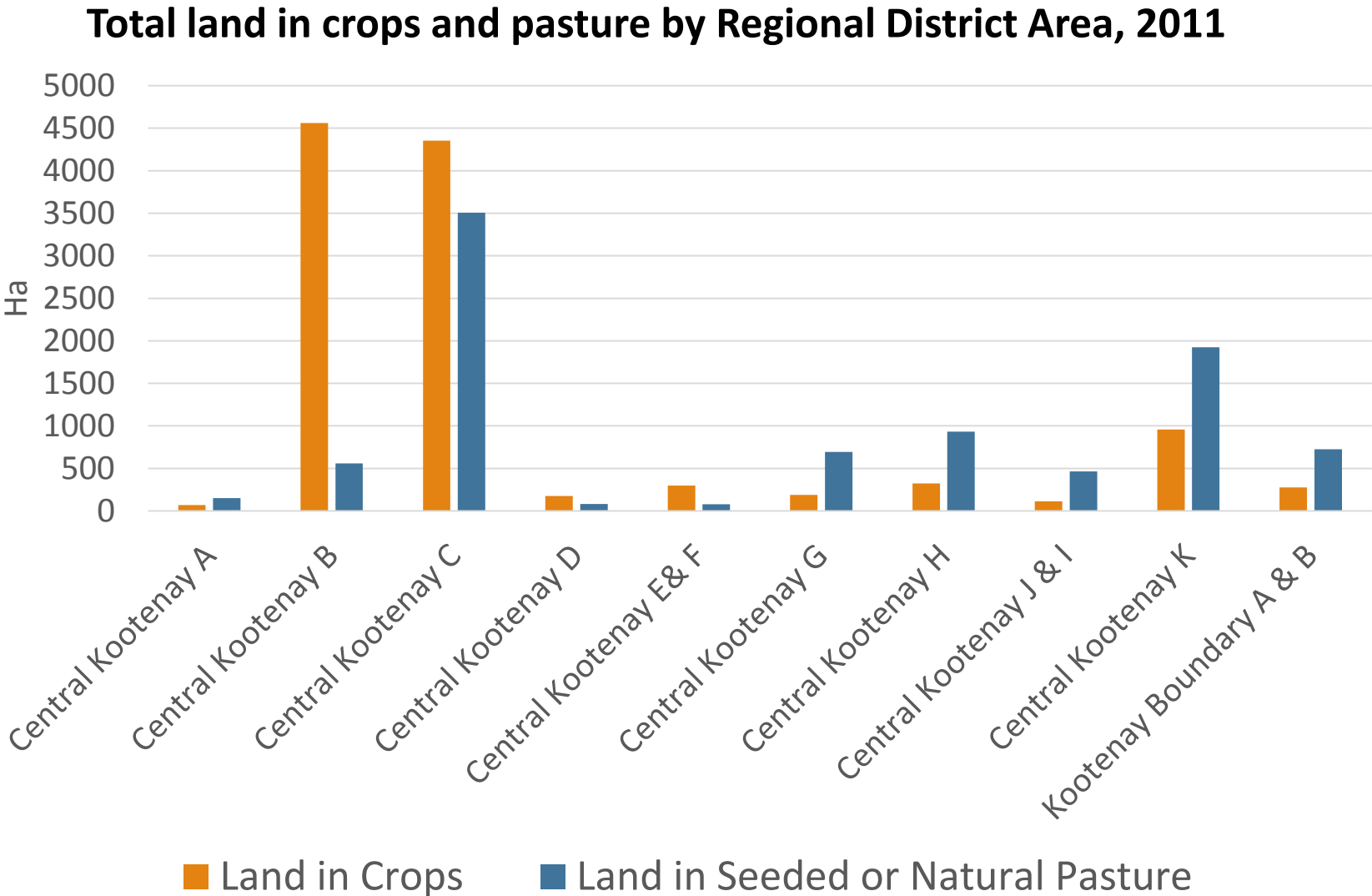
- Warm area in the region
- Class 4/5 Soils

Crops

Land in crops by category (excluding pasture), 2011



Crops by Regional District Area



Conclusions

Land/soil

- There is land (but it's limited)!
- Distribution is variable and in small pockets limiting the region to small scale agriculture
- Only 32% of ALR is under production
- ALR protects the highest quality farmland
- Water holding capacity is the main soil limitation for lands in the ALR

Climate, 2050

- Extend growing season
- Expand the range of crops that can be grown
- This could increase the potential for Class 5 lands or 'marginal lands' for crops that like warm temperatures and marginal soils (ie: fruit/grapes/hops)

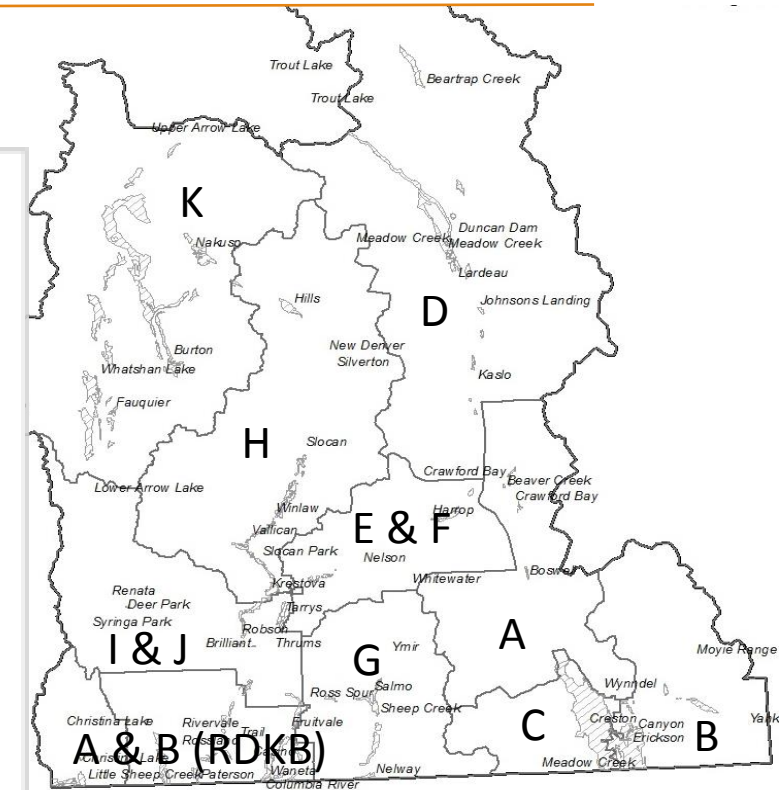
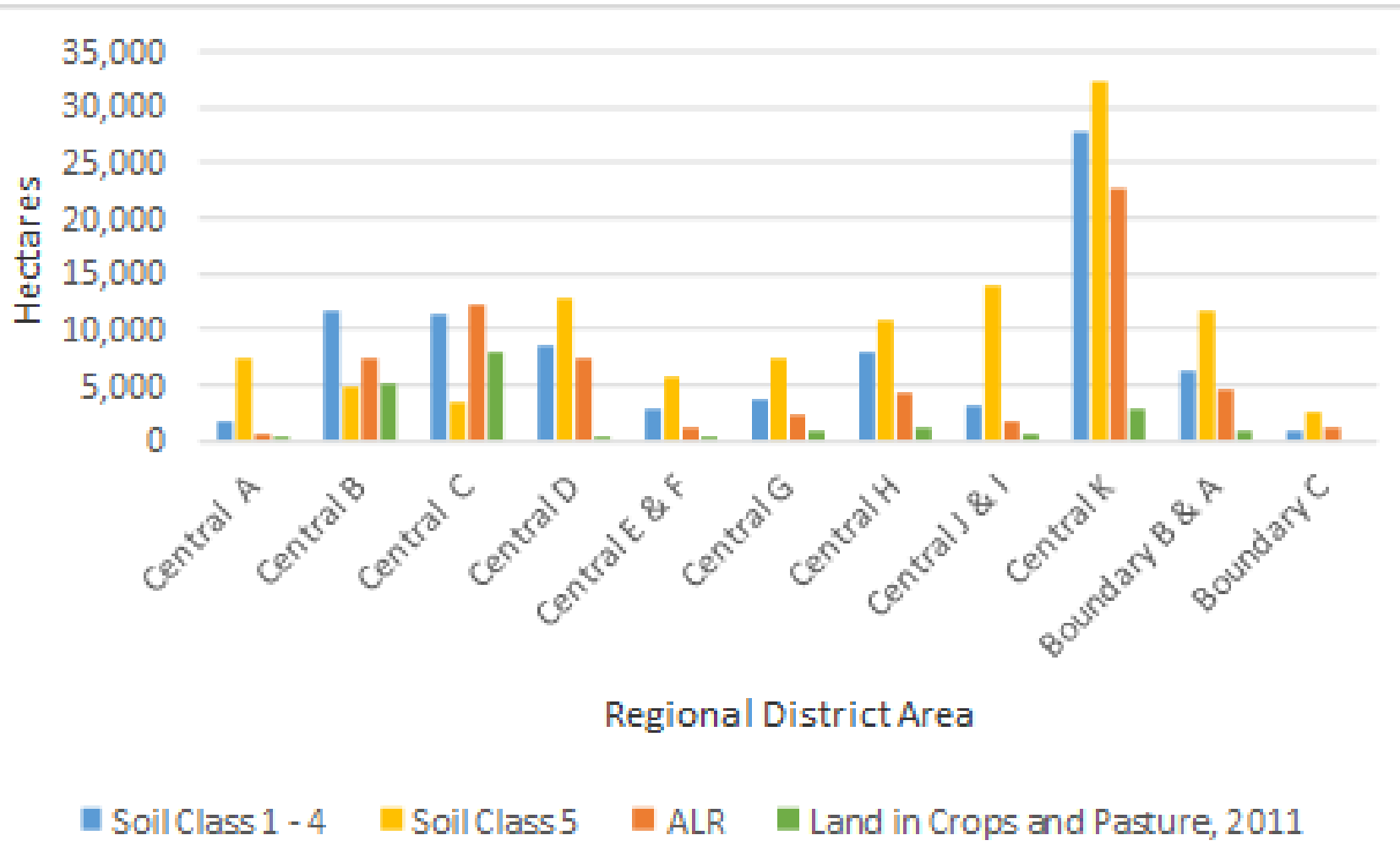


End of presentation.
Additional slides for interest follow....

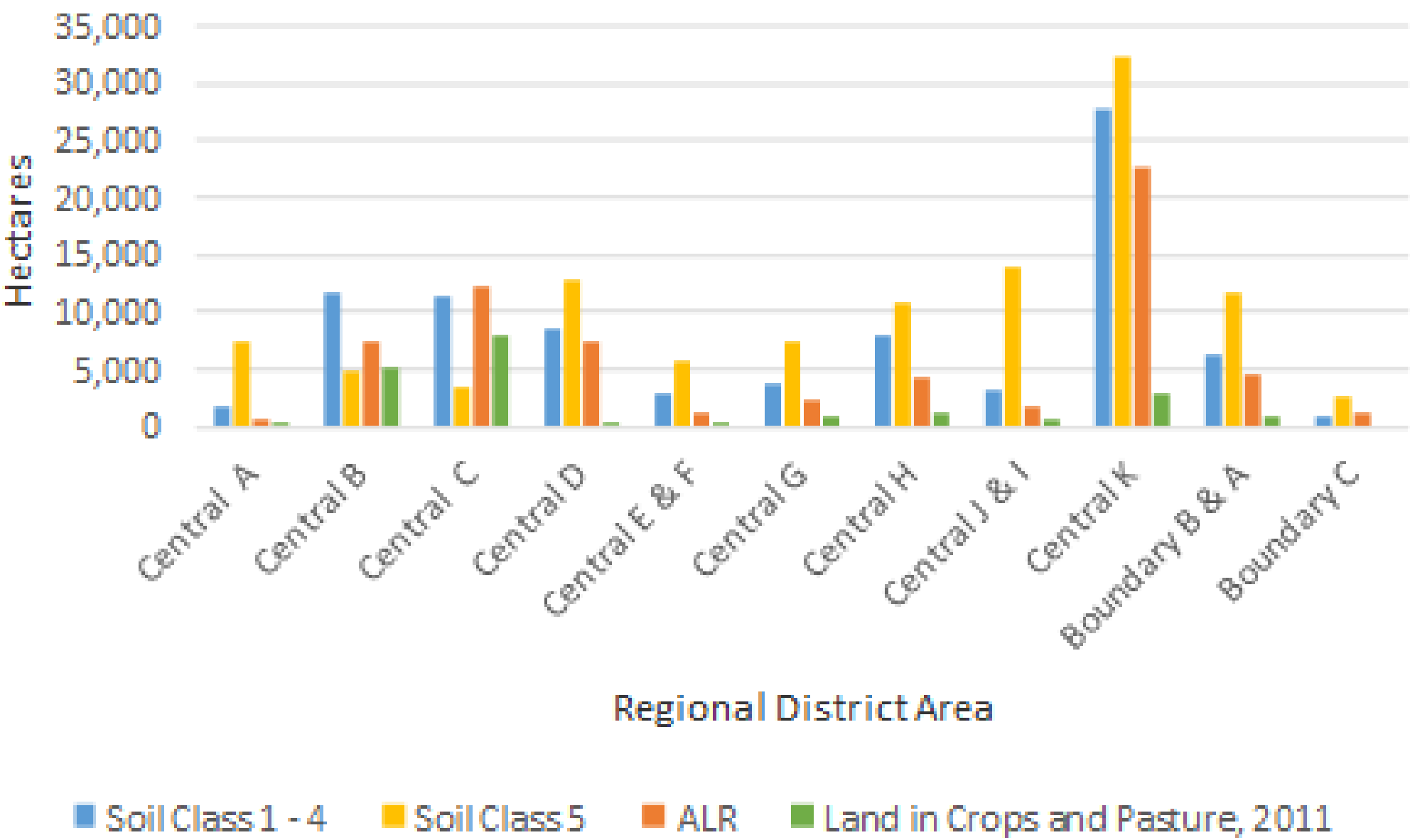


Full research paper available on RDI website: <http://www.cbrdi.ca/wp-content/uploads/Assessing-the-potential-for-pocket-agriculture-in-mountainous-regions-A-case-study-in-West-Kootenay-Roussin-2015.pdf>

Soil Capability Classes and Land in Crops by Regional District Area

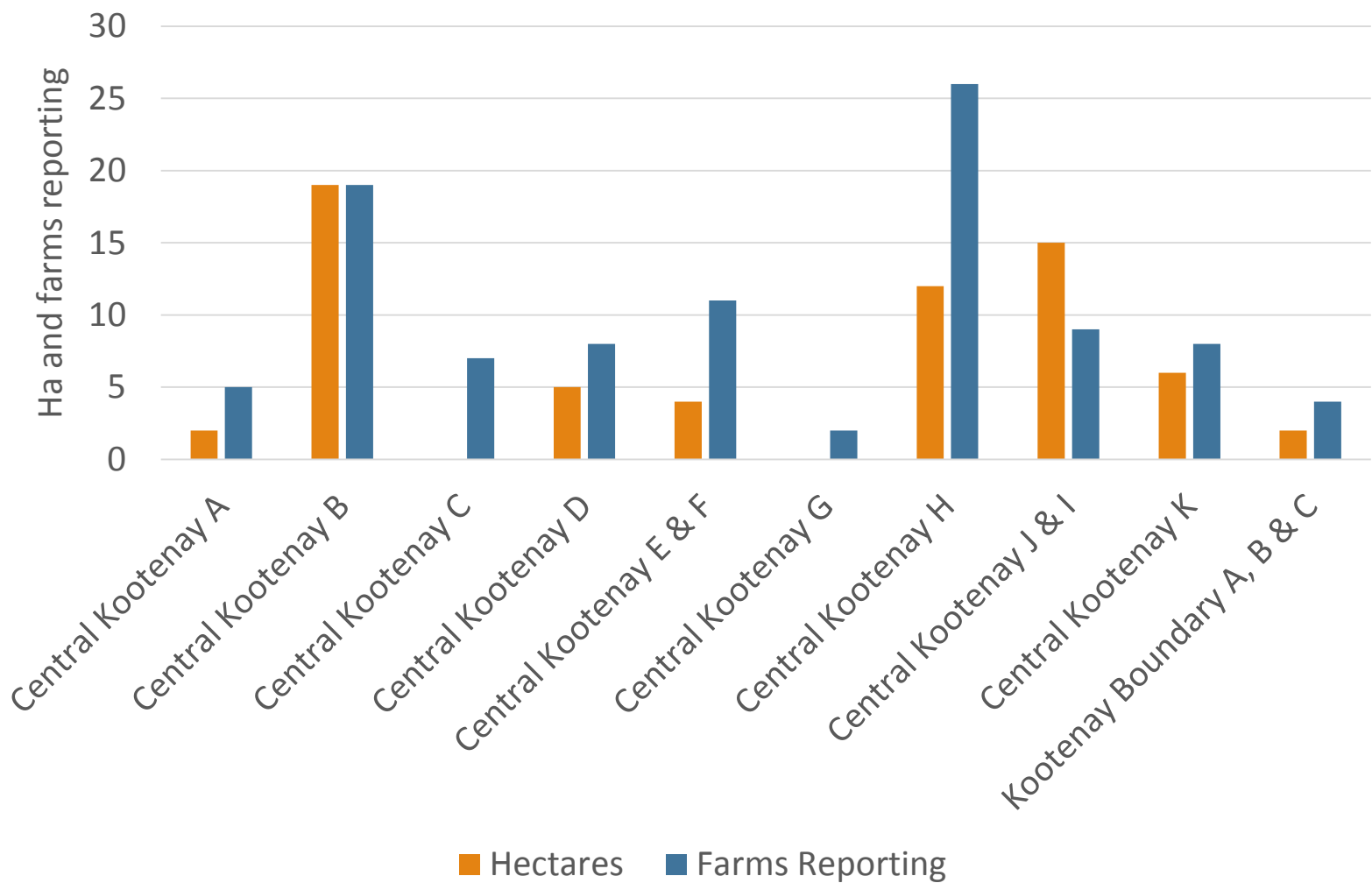


Crops by regional district area



Vegetables

Total mixed vegetable production in the study area, 2011



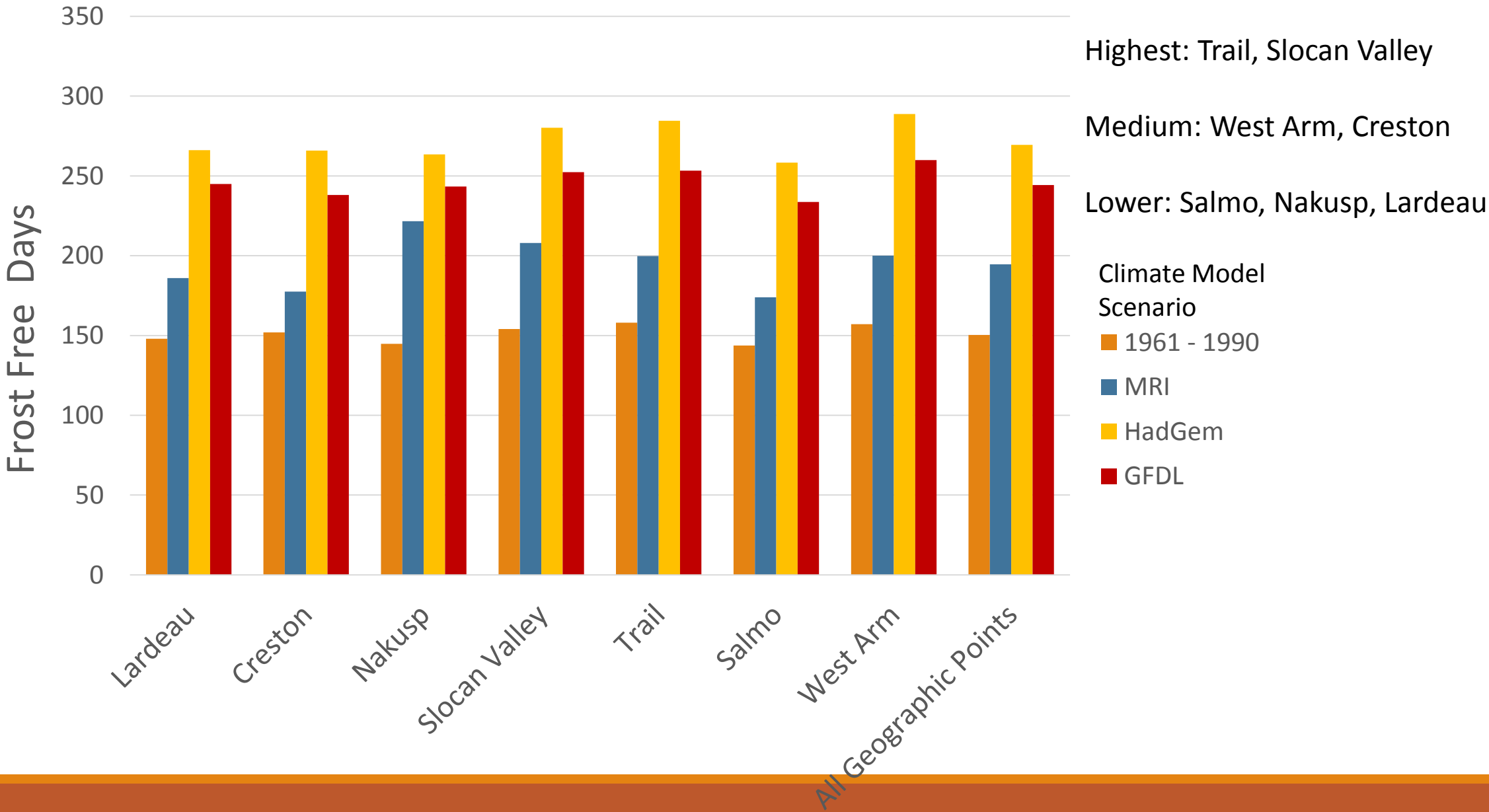
Climate Slides, 2050

Climate: Temperature Variables

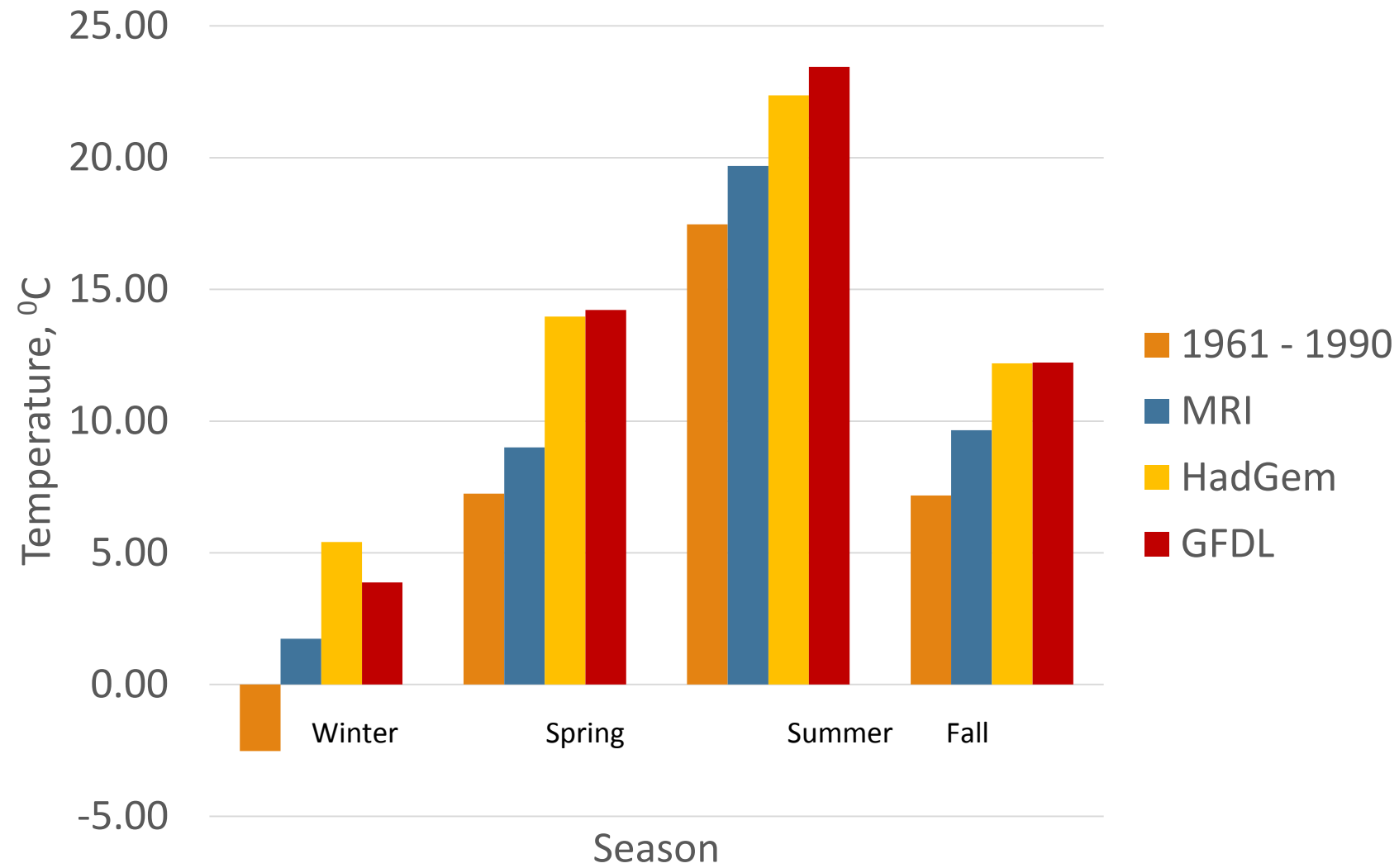
- + Frost Free Days
 - + Growing Degree Days
 - + Mean Warmest Month Temperature
 - + Climate moisture deficit
-
- Climate change will likely extend the growing season and expand the diversity of crops that can be grown.
 - This may increase the agricultural capability of some areas including Class 5 soils.



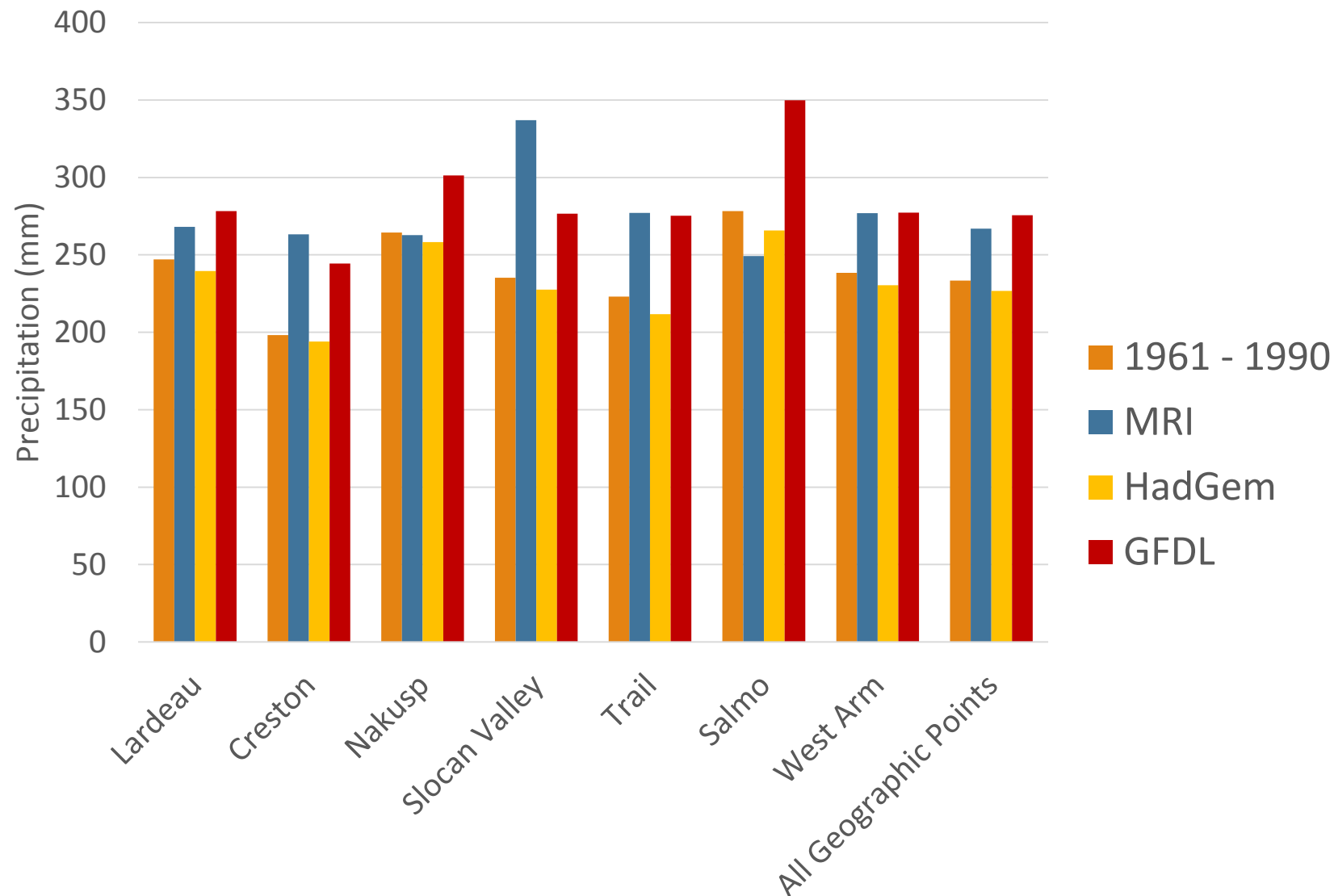
Frost Free Period, 2050



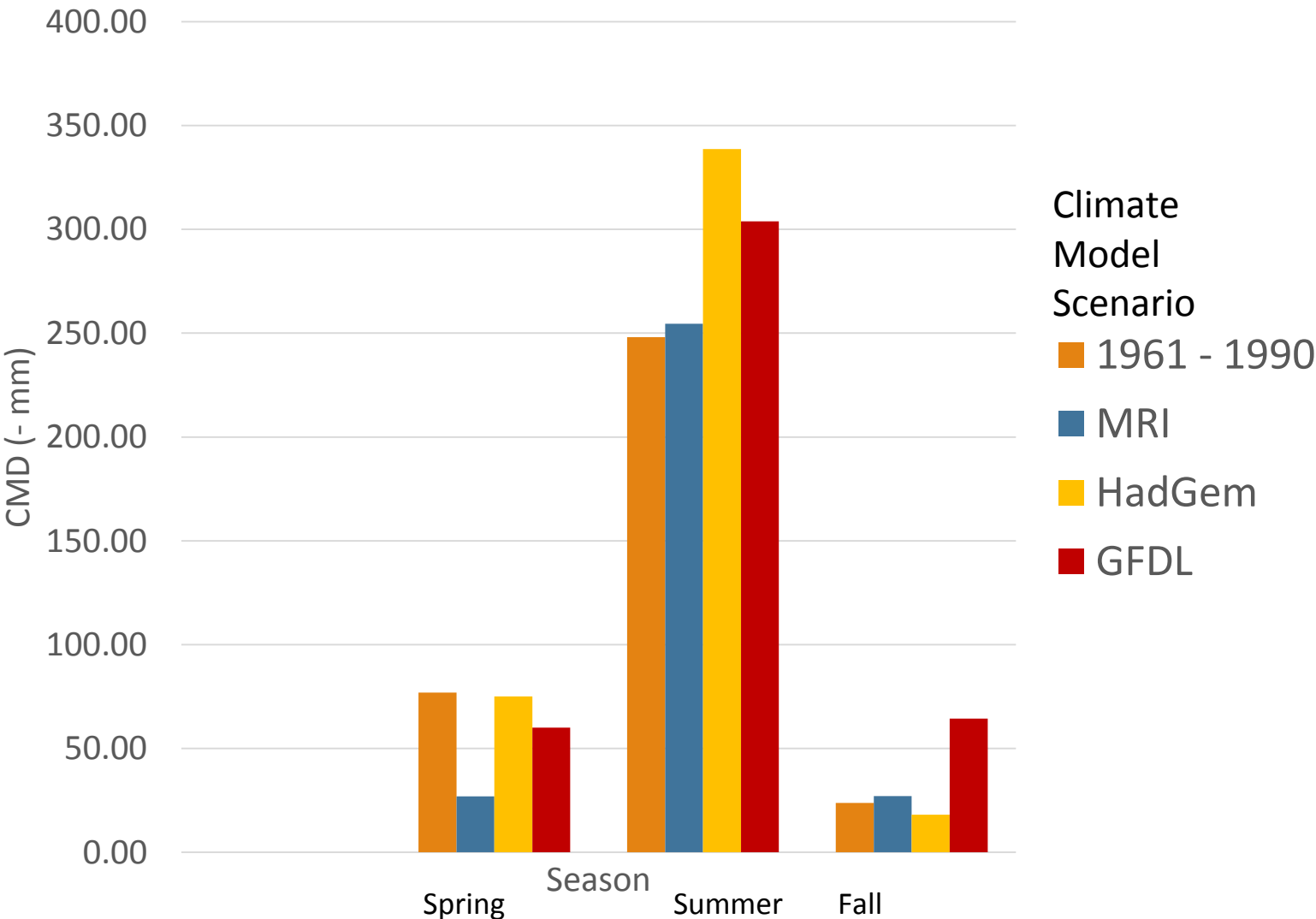
Seasonal Mean Temperature for all areas in the climate study area, 2050



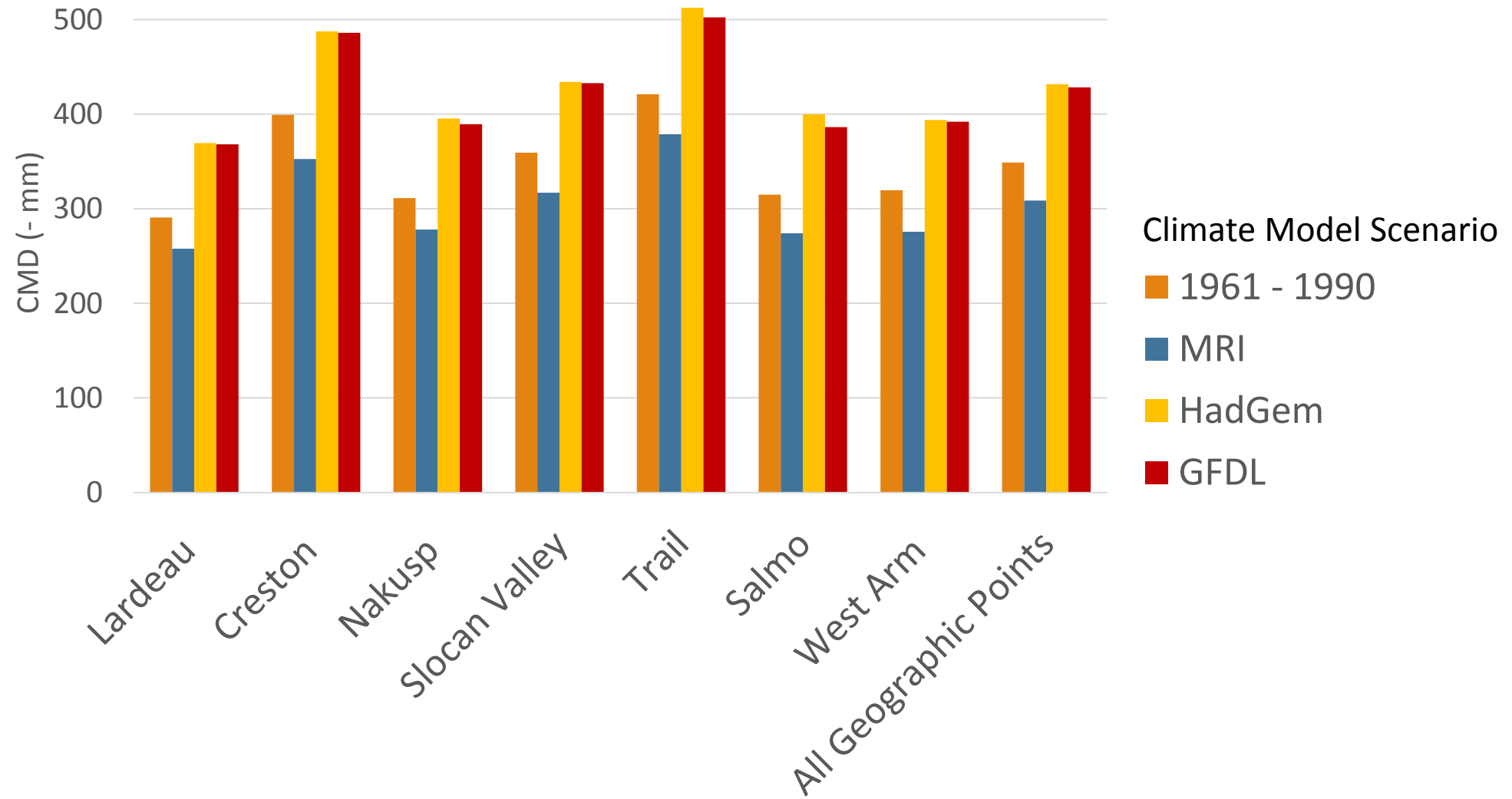
Mean Annual Summer Precipitation (May – September), 2050



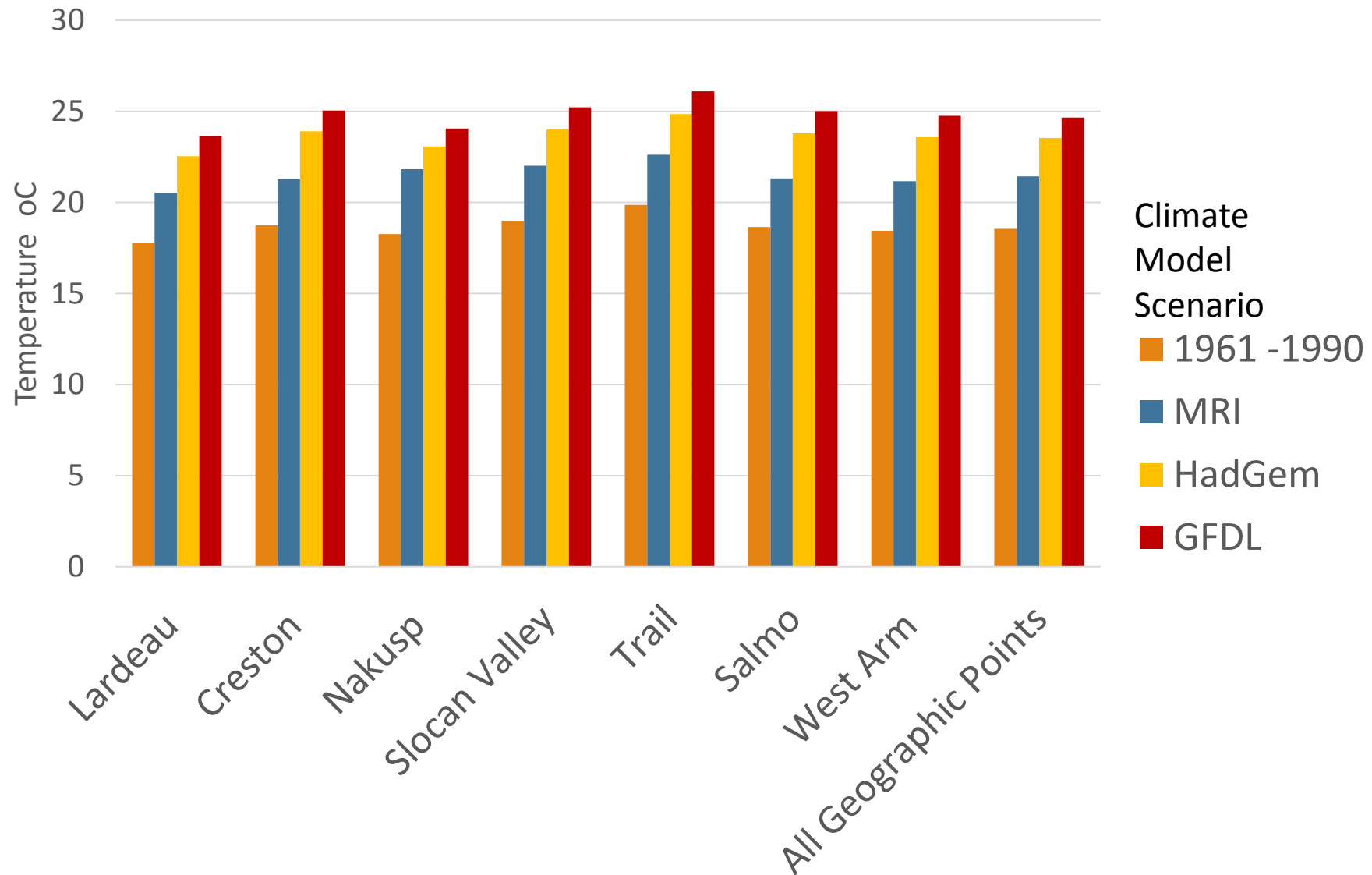
Seasonal Climate Moisture Deficit for all areas in the climate study area, 2050



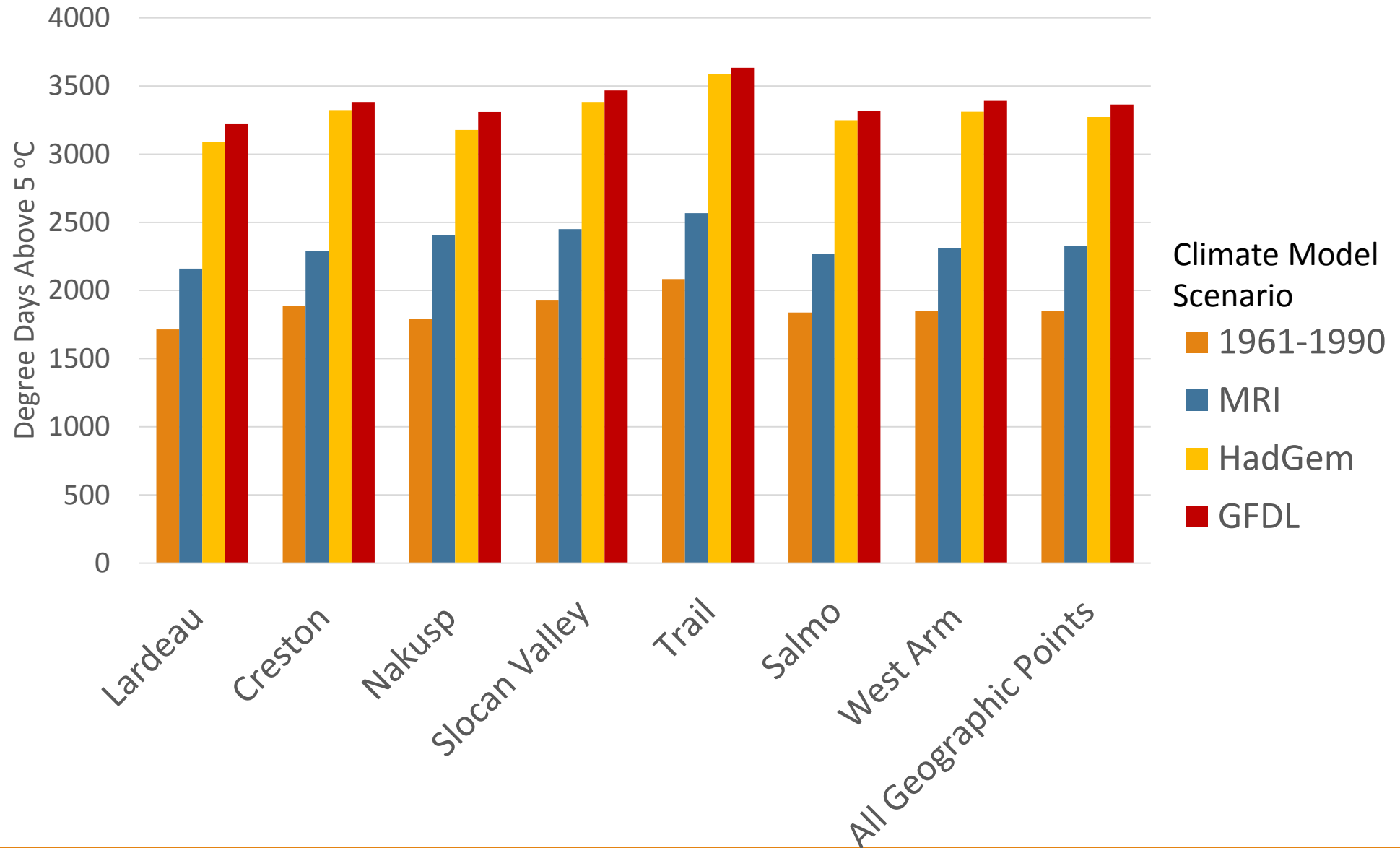
Annual Climate Moisture Deficit, 2050

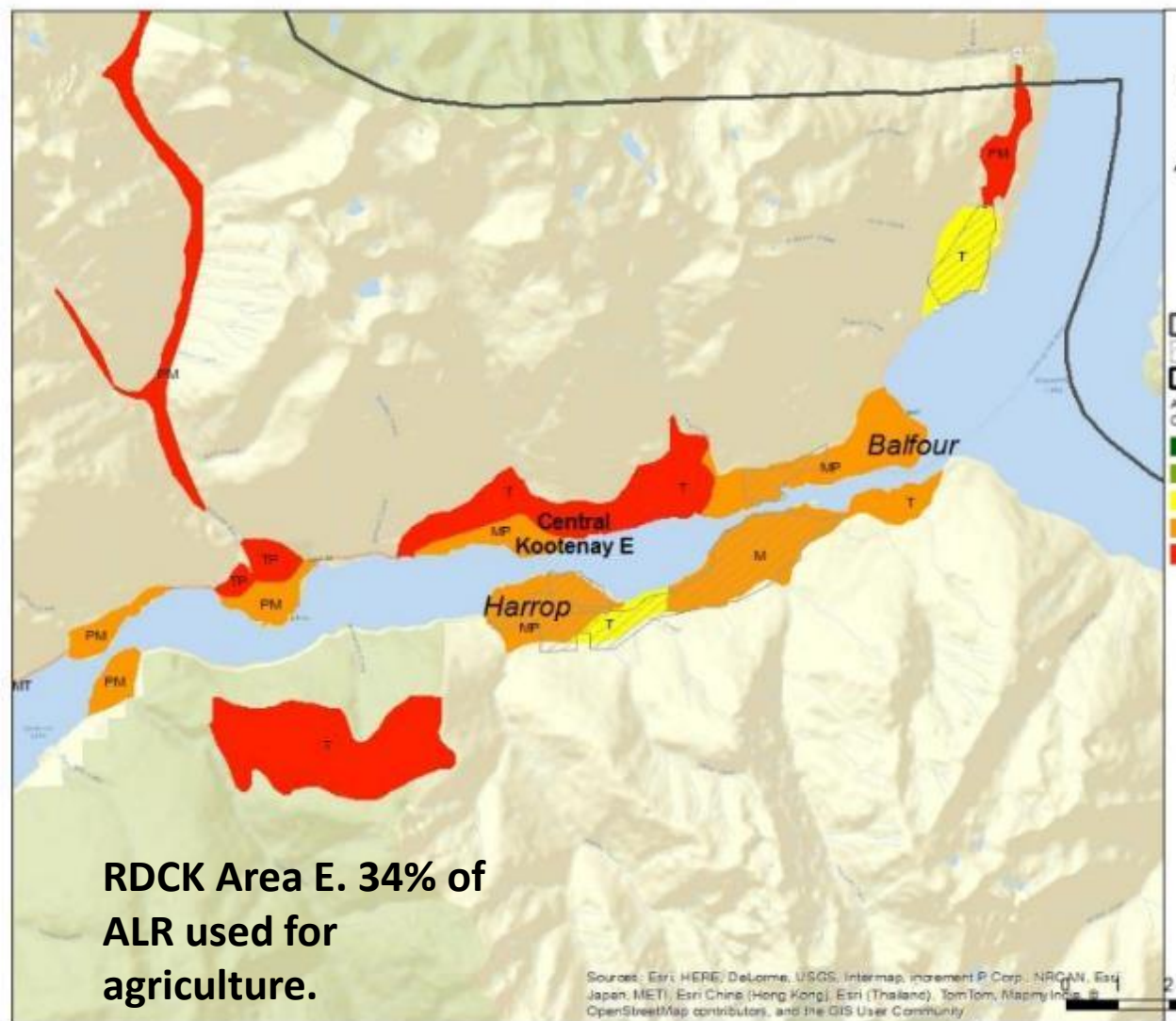


Mean Warmest Month Temperature (MWMt), 2050



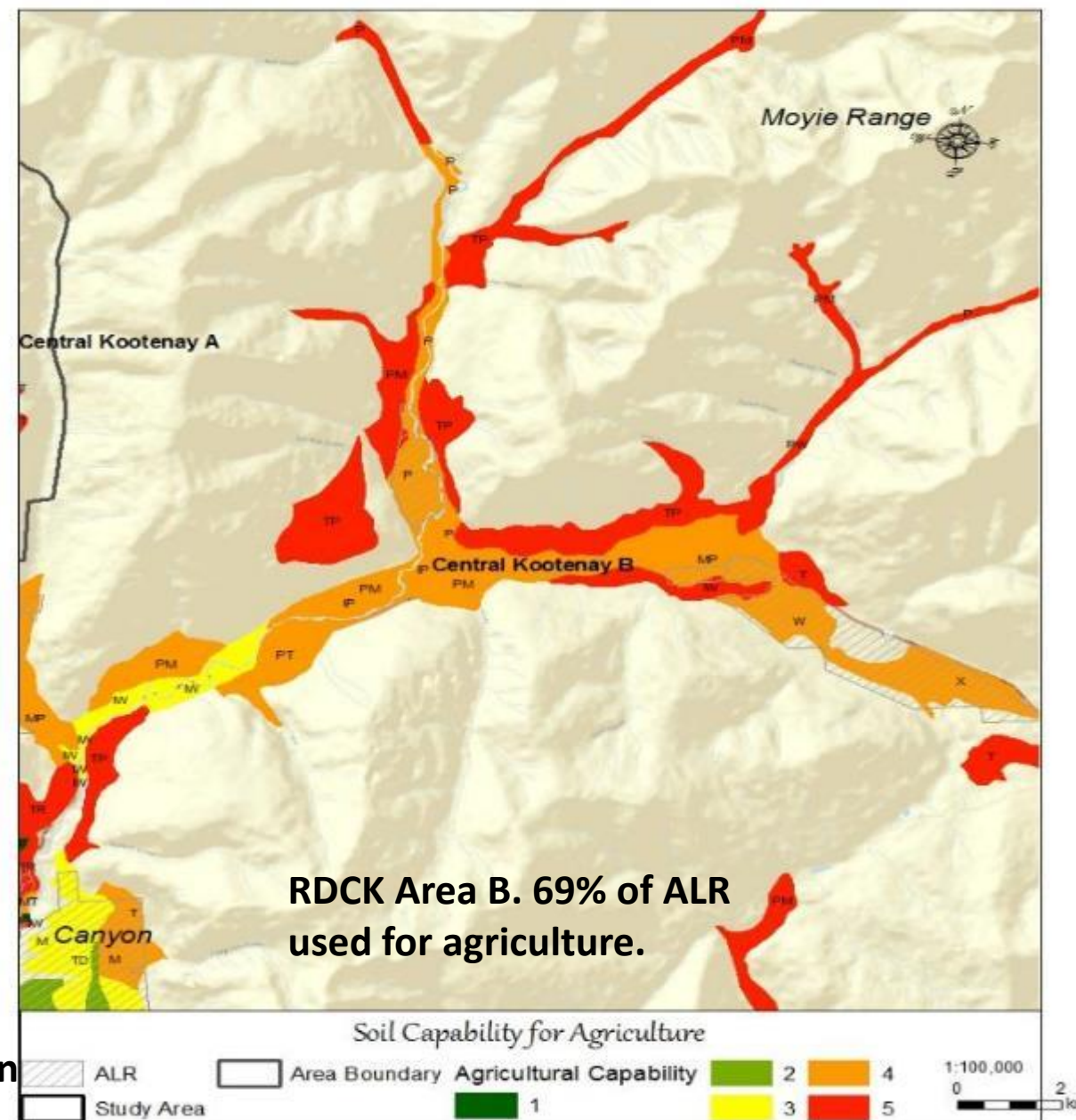
Growing Degree Days (GDD) above 5°C, 2050





**RDCK Area E. 34% of
ALR used for
agriculture.**

- Warm area in the region
- Class 4/5 Soils



**RDCK Area B. 69% of ALR
used for agriculture.**

