

Unit 26B Muskox Recovery Plan

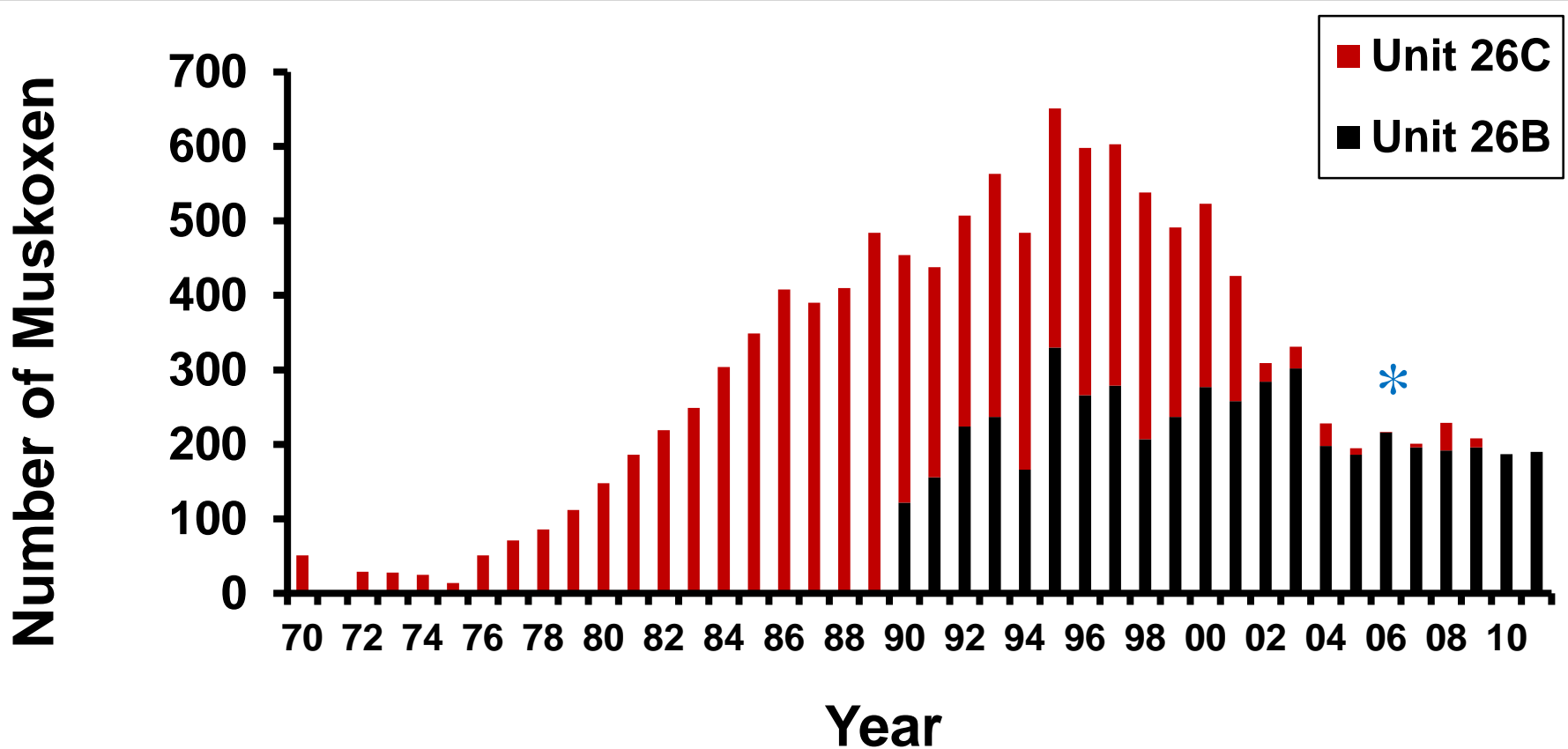
5 AAC 92.126



Photo by Steve Arthur

Alaska Dept. Fish and Game

Why was a Muskox Recovery Plan Proposed in 2012?



- Population declined to a low number and stabilized
- All hunts closed since 2006 *
- Results of research project finalized



Unit 26B Muskox Recovery Area

92.126 (b)

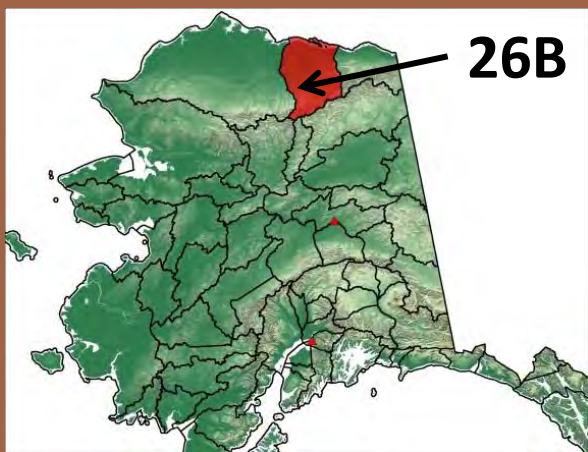
**Authorizes ADF&G to
conduct selective, lethal,
brown bear removal in Unit 26B
to
allow recovery of the
muskoxen population in
Unit 26B.**

92.126(b)

(1) Unit 26B

Muskoxen
Recovery
Area

11,500 mi²



(2) Muskox and Brown bear Objectives

Muskox Population Objective:

- increase muskox population from 190 to at least $300 \geq 1$ year old (in April surveys)
- ✓ take at least 7 years if the strategy we propose is successful



Photo by Nate Pamperin

(2) Muskox and brown bear objectives cont'd

Muskox Harvest Objective:

- re-instate a hunting season for muskox in Unit 26B after population reaches a minimum of 300 muskoxen
- ✓ Tier II hunt; 3–9 permits initially
- ✓ ANS established
20, west of Dalton Hwy
4, east of Dalton Hwy



(2) Muskox and brown bear objectives cont'd

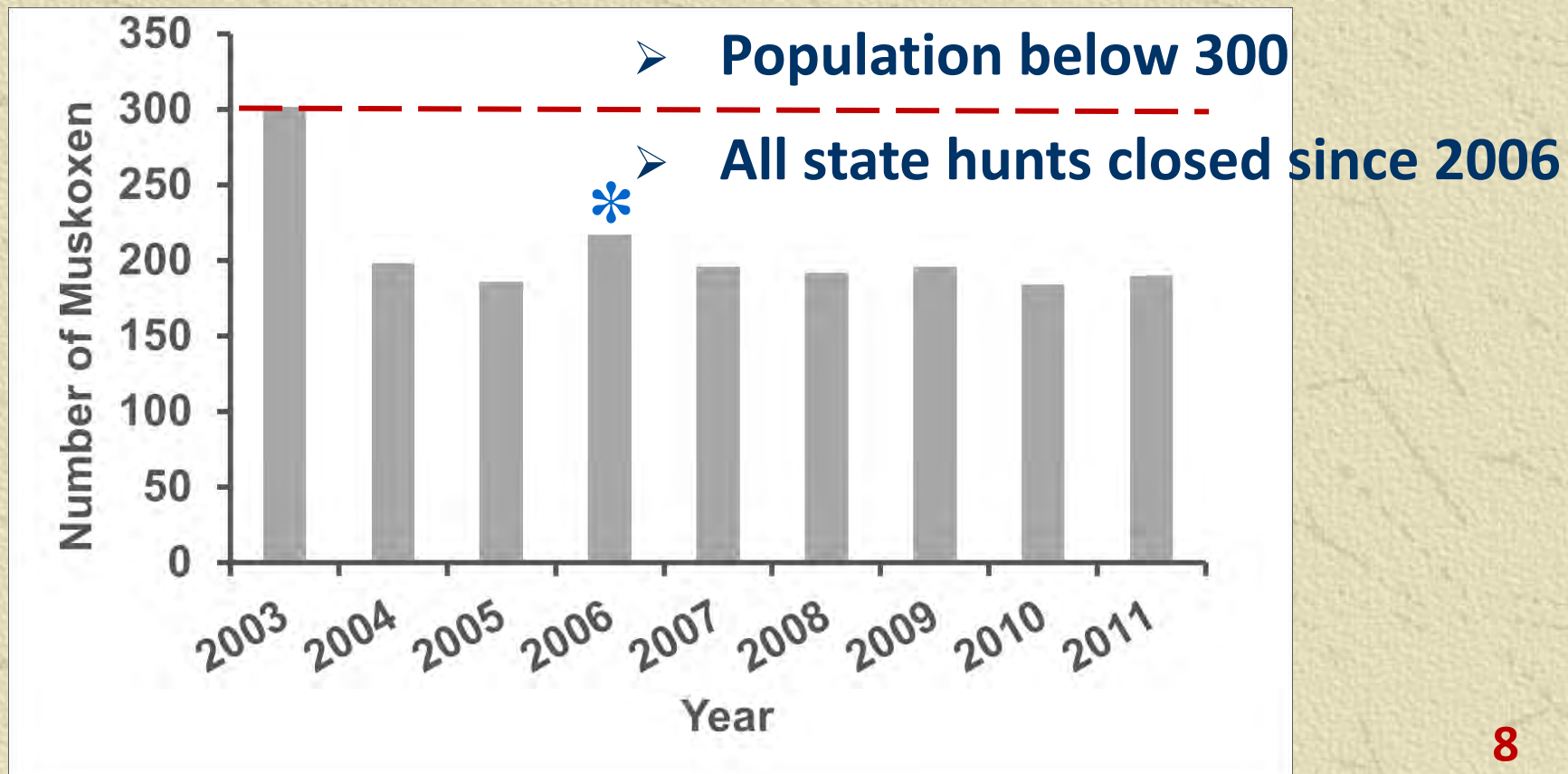
Brown Bear Population Objectives:

- **Maintain current estimated population of 200–320 bears**
- **Selectively & lethally remove up to 20 bears/year of any sex and age class killing or threatening muskox**
 - ✓ **Mostly male bears killing muskox**
 - ✓ **Bear-caused mortality is additive**
 - **Likely < 10 bears/year**
 - **Experimental approach**



(3) findings of the Board of Game concerning populations and human use

A. the Unit 26(B) muskox population and harvest objectives have not been achieved



(3) findings of the Board of Game concerning populations and human use

B. predation by brown bears was identified as a primary source of mortality on muskoxen

➤ **62% adult muskox deaths due to bears ($n=68$)**

- 9 adult muskoxen/year
- 74% were adult females

➤ **58% calf muskox deaths due to bears ($n=45$)**

- 5 calves/year
- 74 missing (15/year)



(4) Permissible methods and means:

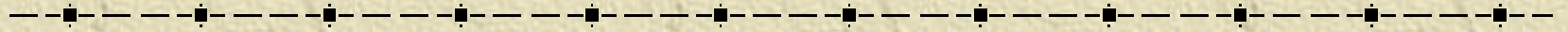
A. Hunting of brown bears by the public may occur during program

- maintain current population of bears
- harvest $\leq 8\%$ of population; $\leq 40\%$ females
- bears taken in control program count towards harvestable surplus



(4). Permissible methods and means cont'd:

B. Commissioner may allow



agents of the State

to conduct

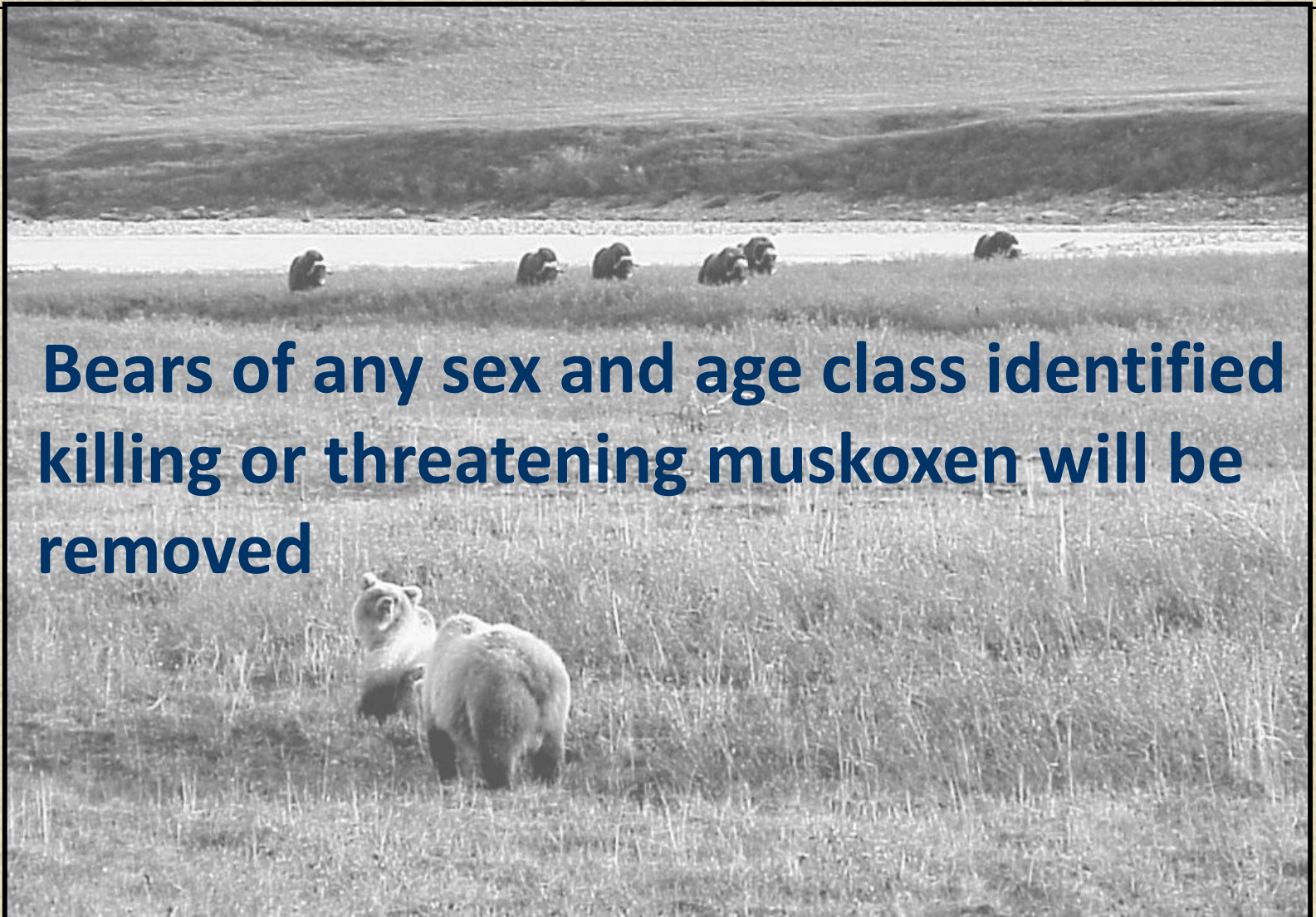
aerial, land and shoot, or ground based

lethal removal of bears.

(4) Permissible methods and means cont'd:

➤ **Criteria to remove bears:**

Bears of any sex and age class identified killing or threatening muskoxen will be removed



(5) time frame: **March 15, 2012 –June 30, 2018**

(6) the program will be reviewed and modified
or suspended **if there is no evidence of
improved survival or detectable increase in
muskox population after 3 years of lethal bear
removal**



Unit 26B Muskox Recovery Program

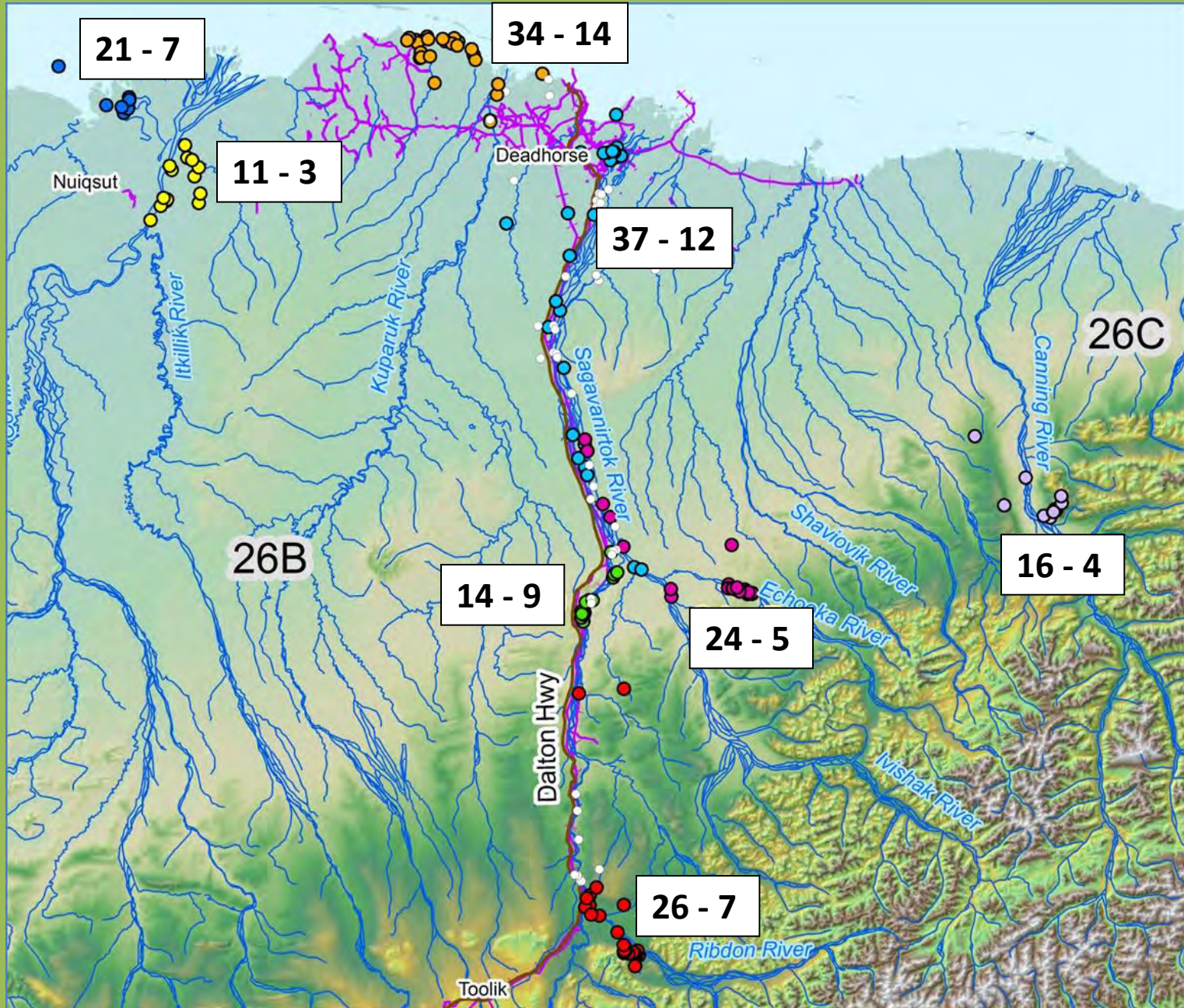
Project objectives:

1. Identify and remove grizzly bears that prey on or threaten muskox during the calving period
2. Increase spring/summer survival of muskox (includes calves and adults)

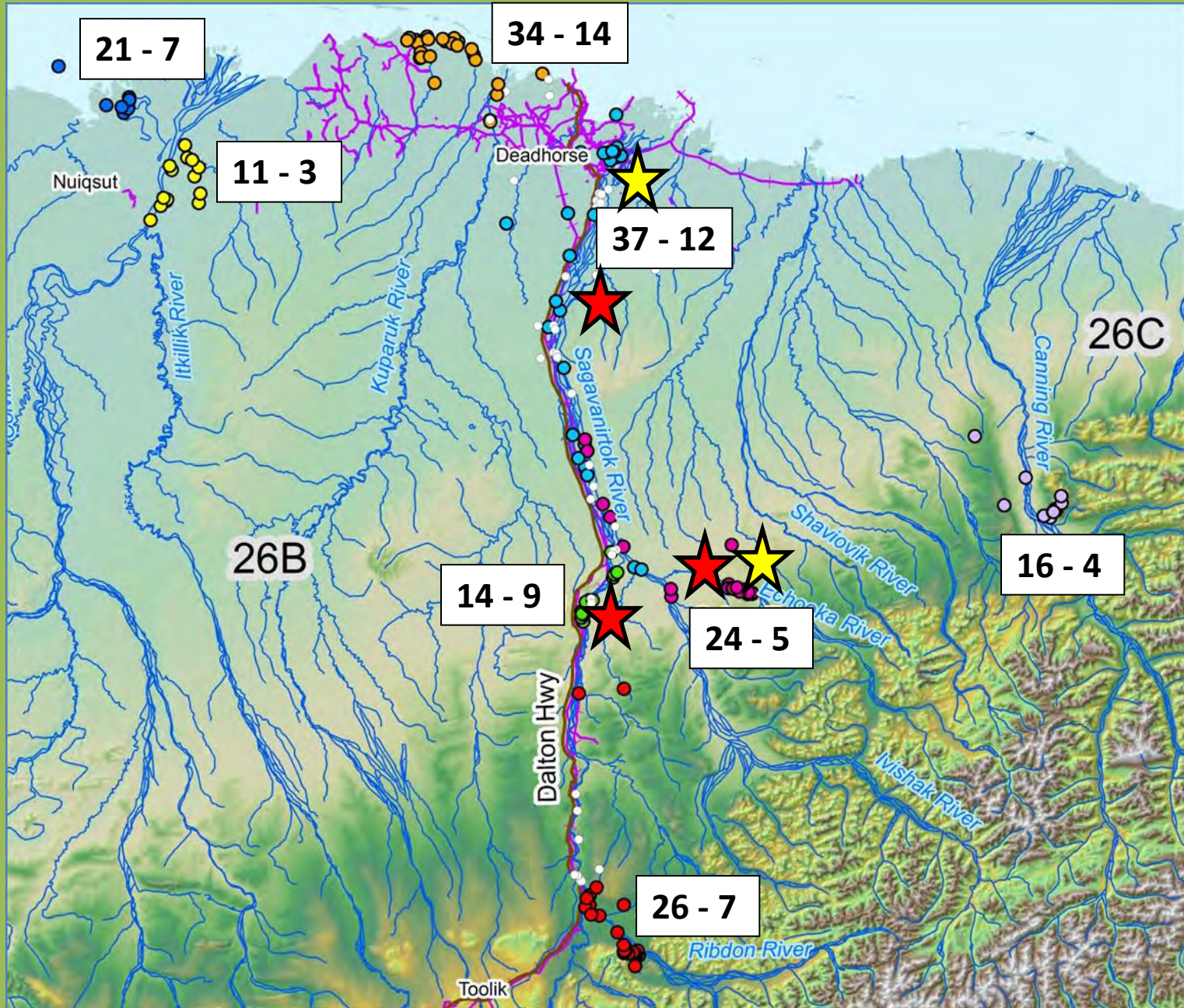
Assumptions:

1. Few grizzly bears account for most predation
2. Grizzly bear predation mostly additive mortality
3. Increase in spring/summer survival results in increased annual survival

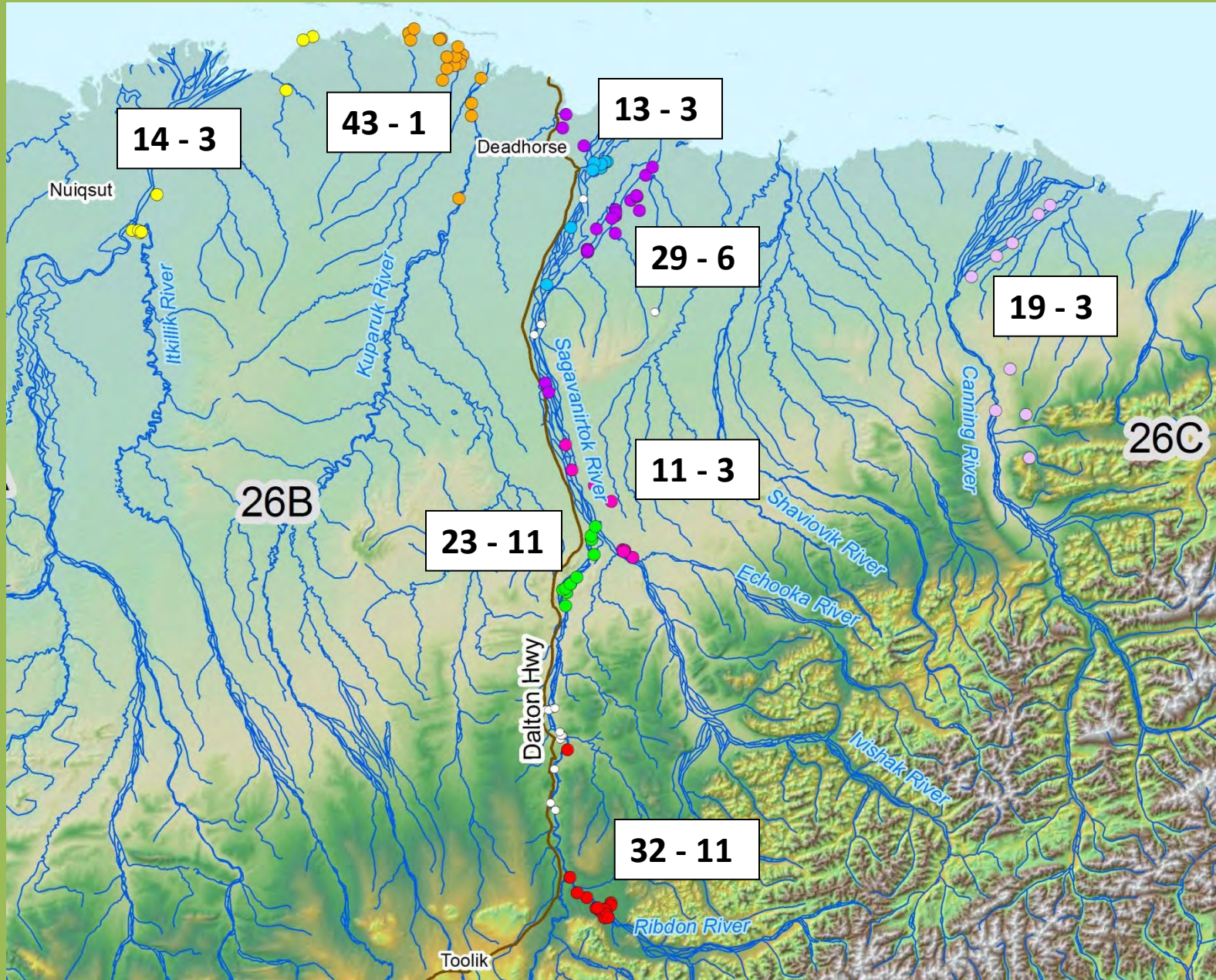
Unit 26B muskox distribution April-June 2012



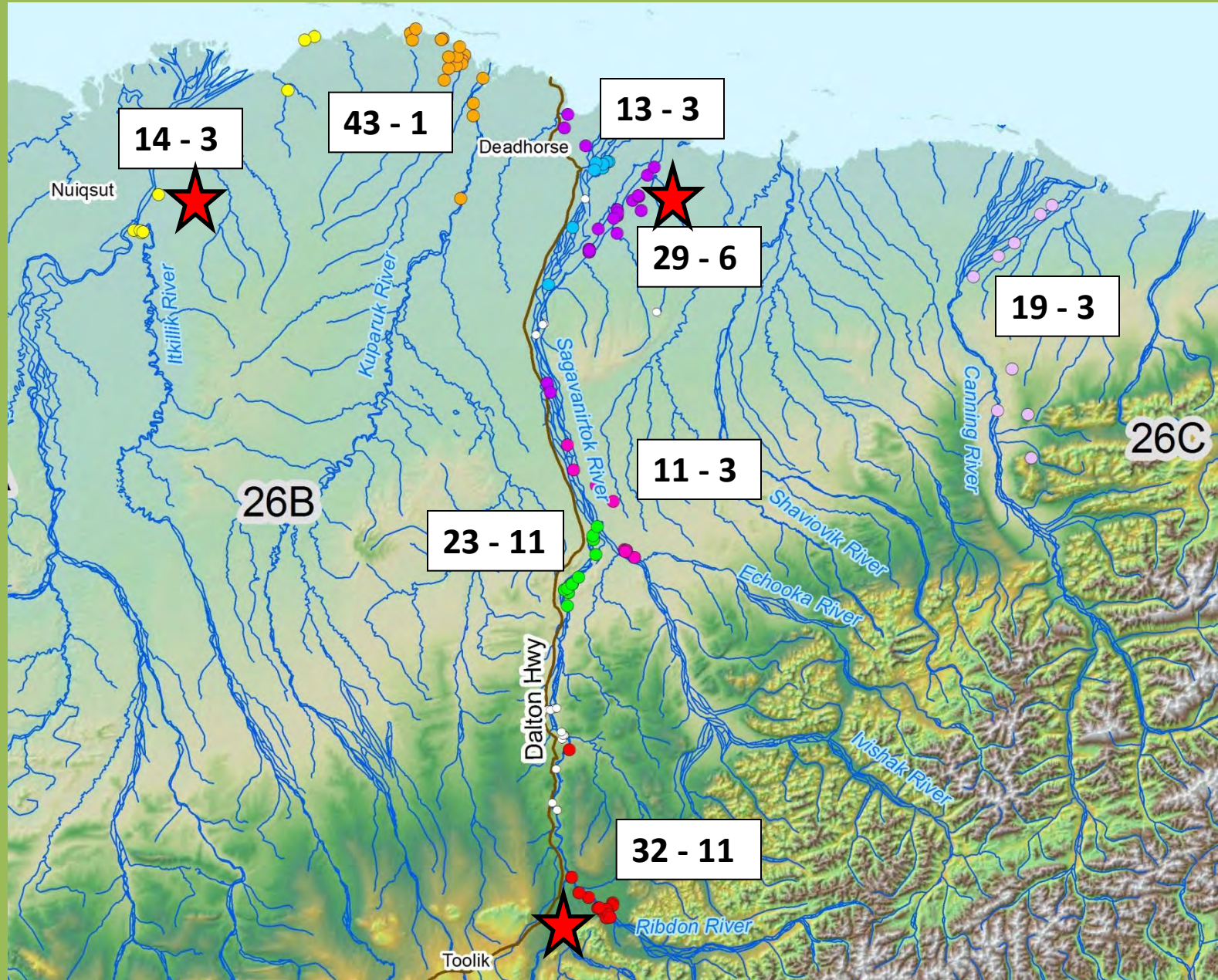
Unit 26B muskox distribution April-June 2012



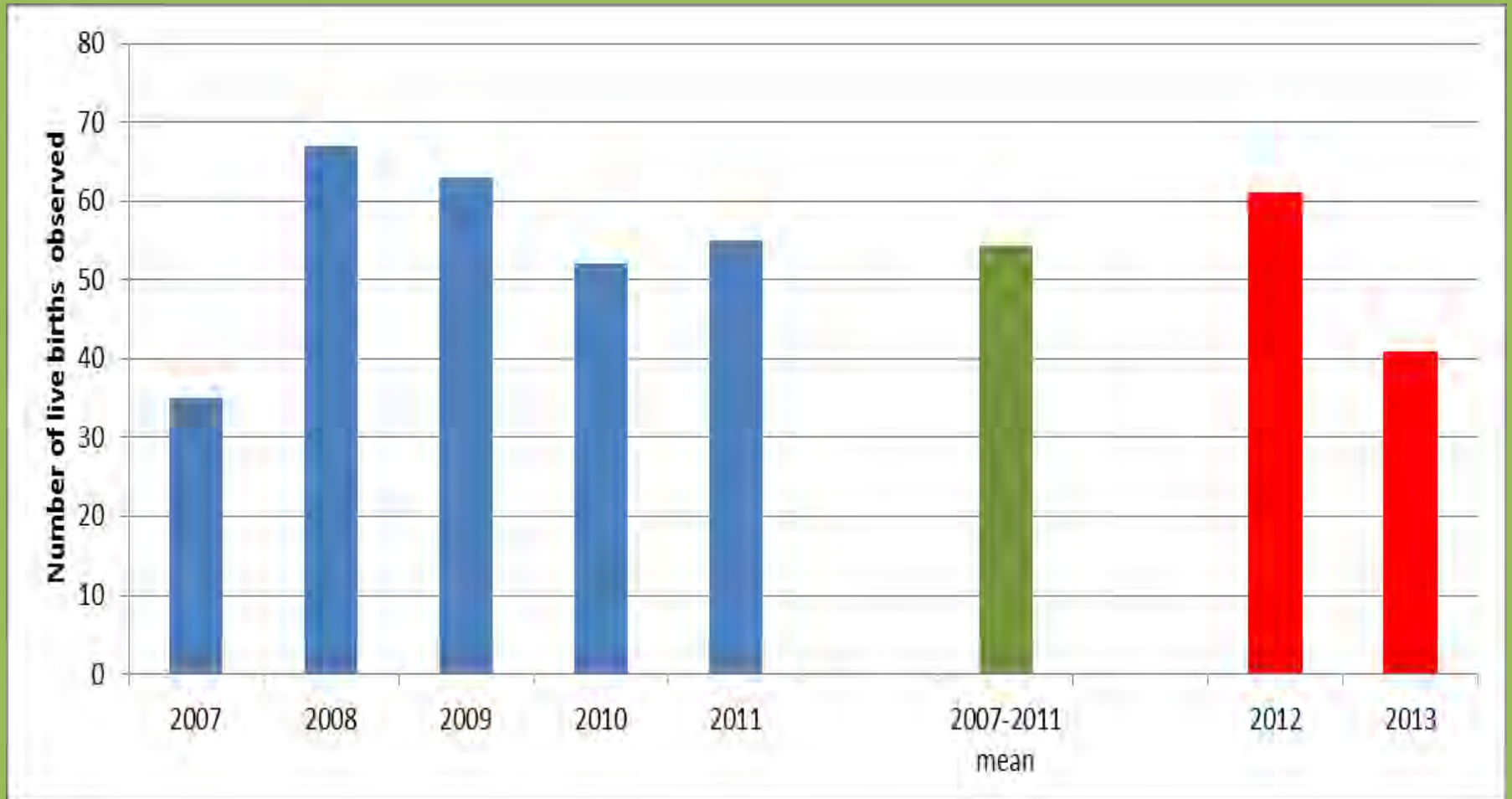
Unit 26B muskox distribution April-June 2013



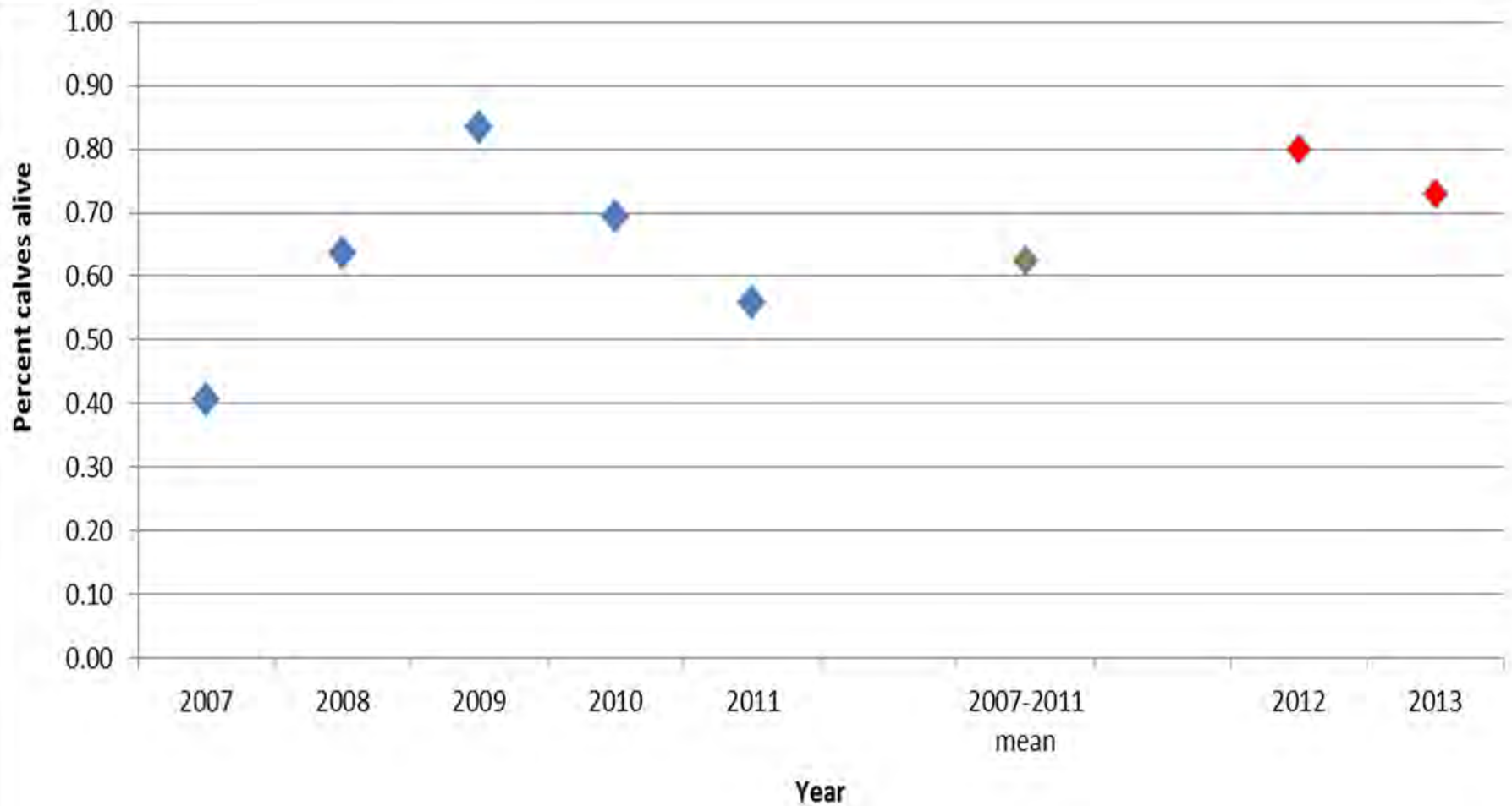
Unit 26B muskox distribution April-June 2013



Unit 26B muskox calf production, 2007-2013

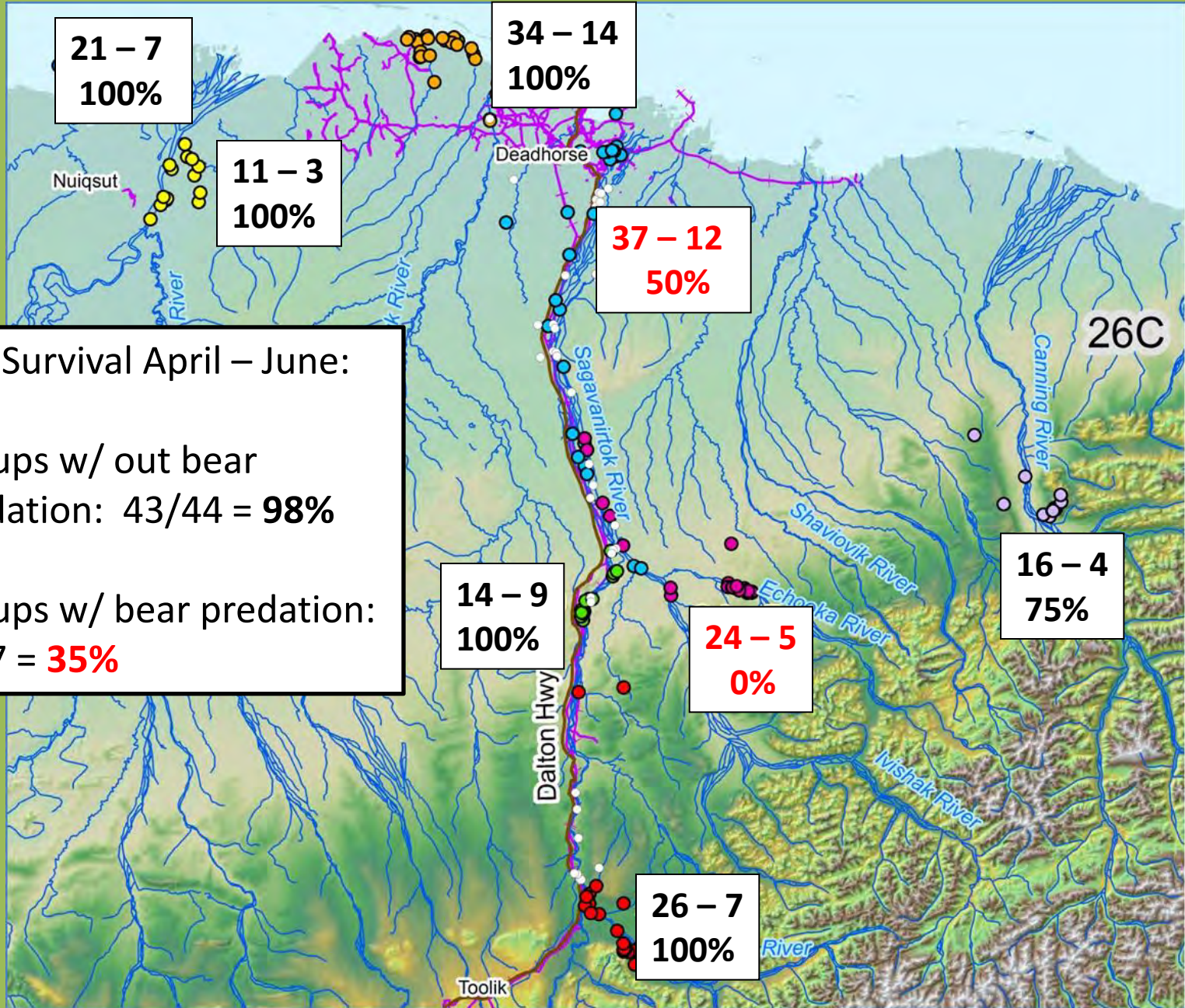


Unit 26B muskox spring/summer calf survival, 2007-2013

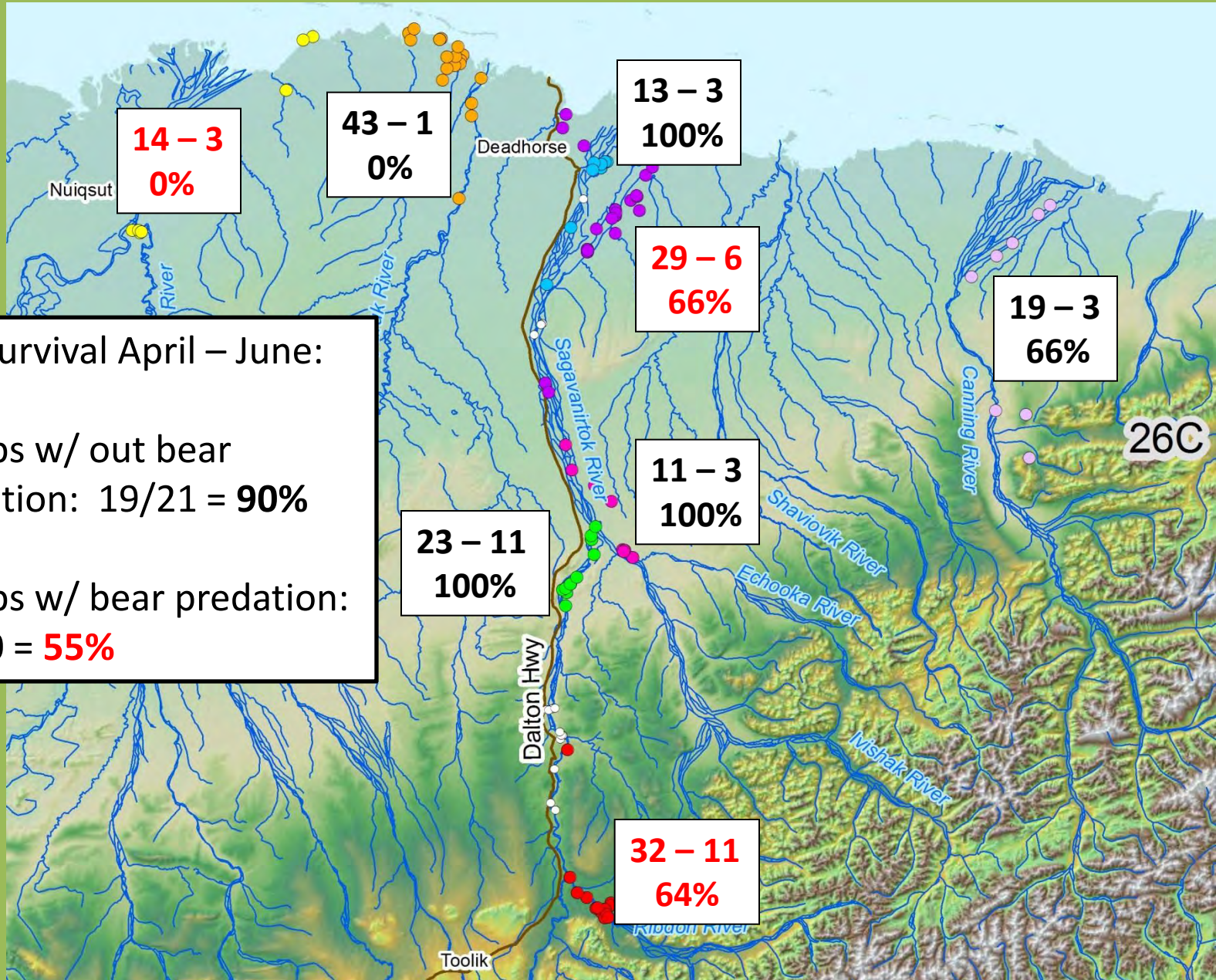


◇ calf survival through end of June

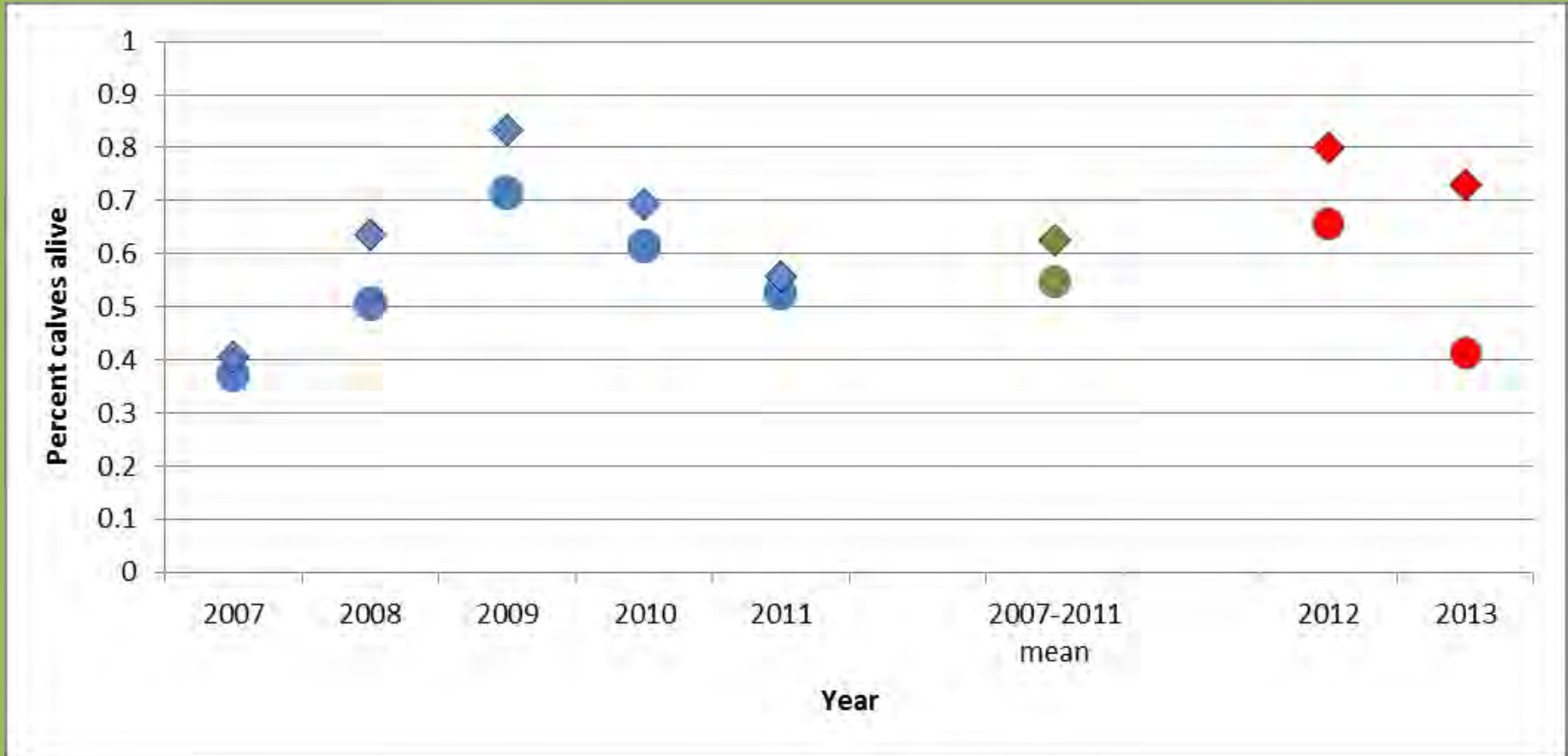
Unit 26B muskox summer calf survival by group, 2012



Unit 26B muskox summer calf survival by group, 2013



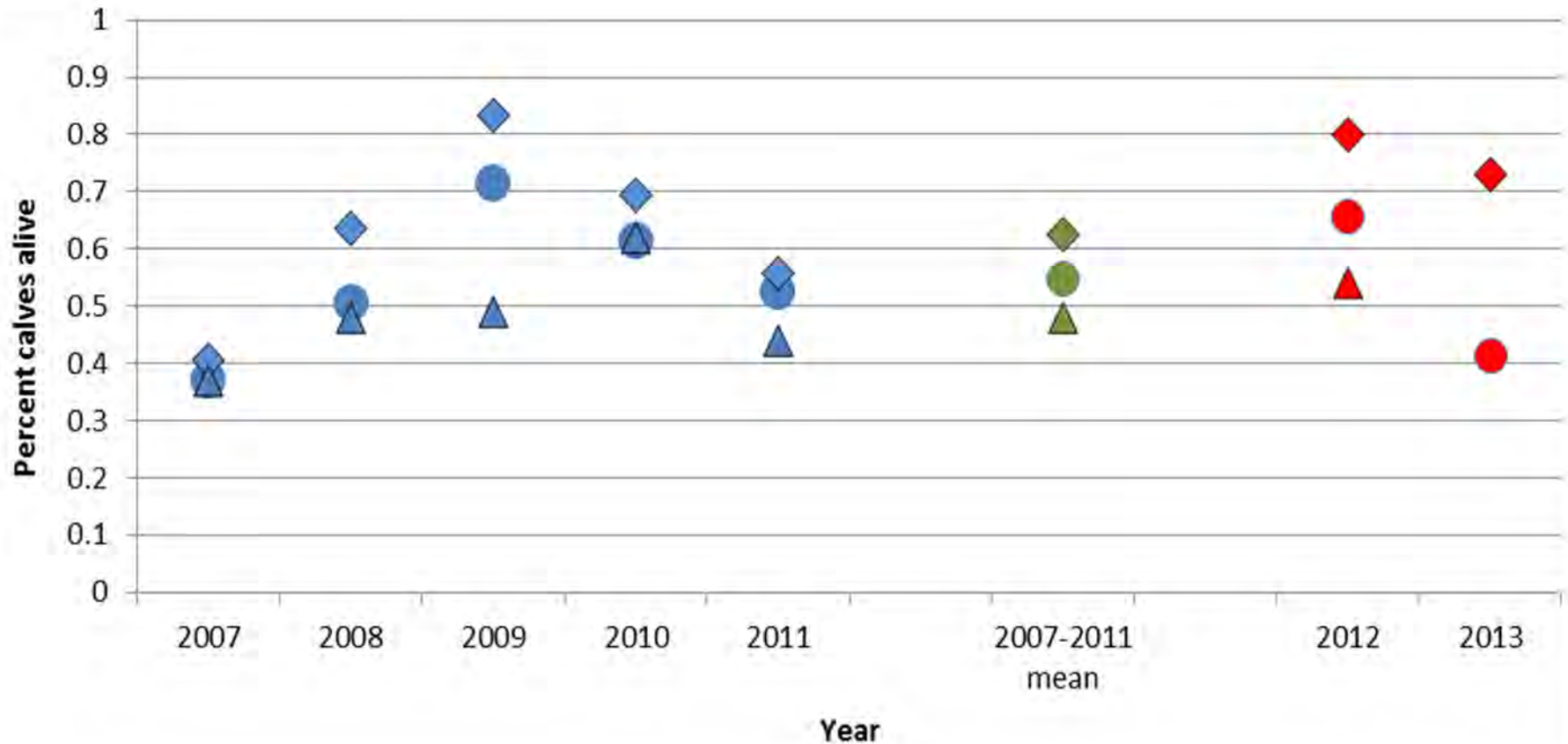
Unit 26B muskox calf survival through October, 2007-2013



◇ calf survival through end of June

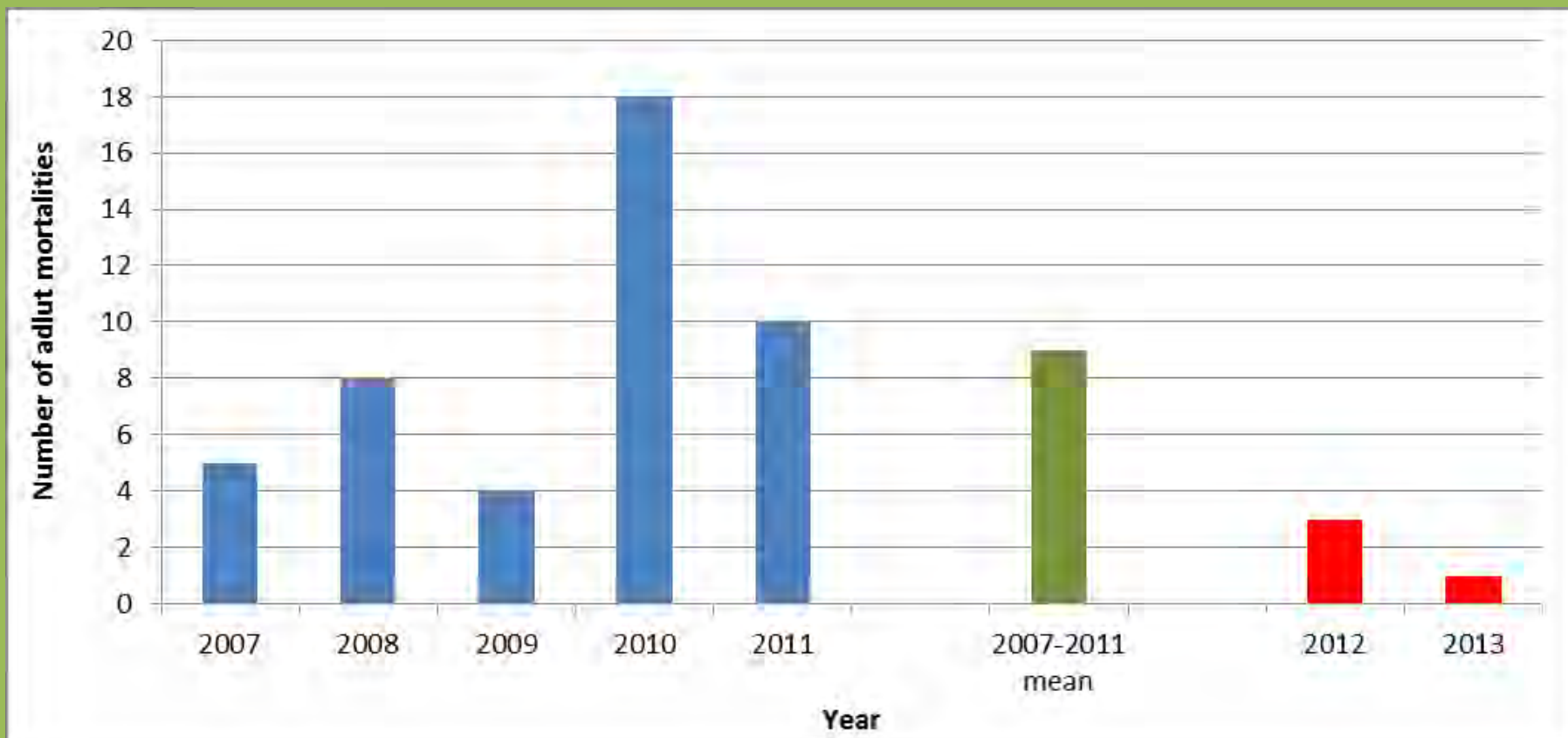
○ calf survival through October

Unit 26B muskox calf annual survival, 2007-2013

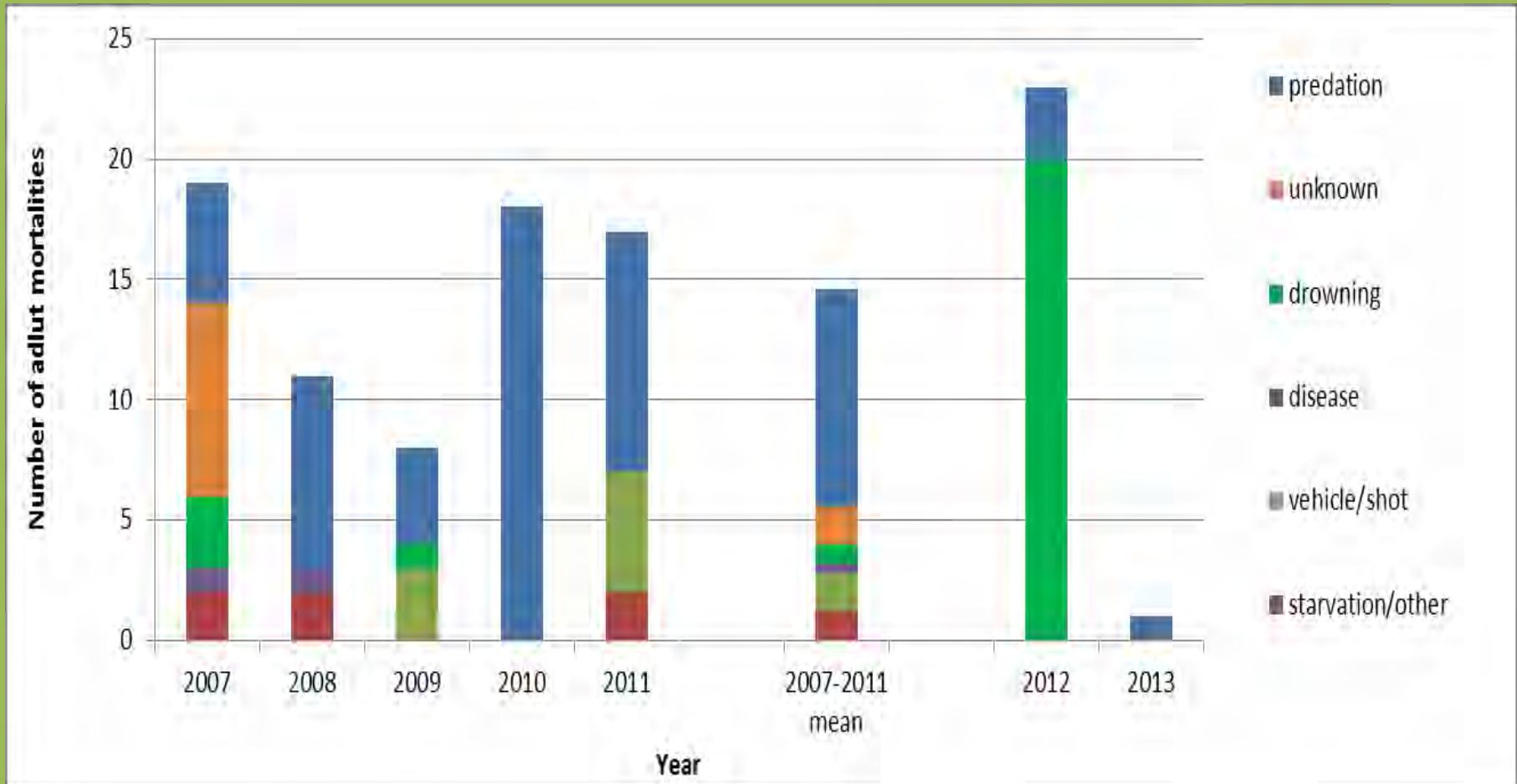


- ◇ calf survival through end of June
- calf survival through October
- △ annual calf survival

Unit 26B muskox adult mortality by predation, 2007-2013



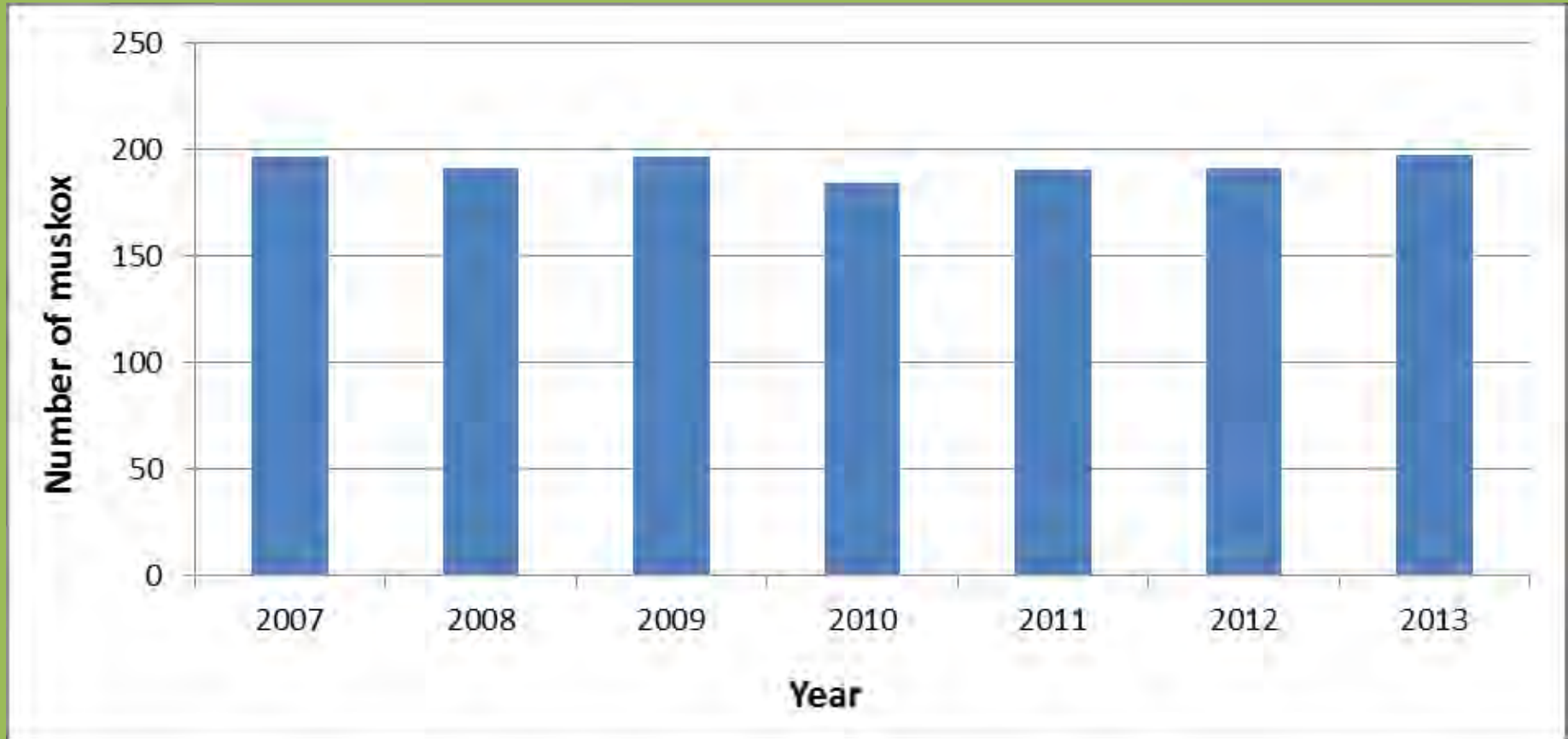
Unit 26B muskox adult mortality (all sources), 2007-2013







Unit 26B Muskox population size 2007-2013



Conclusions

- Slightly increased summer calf survival or reduced annual variability in summer survival rates
- Calf survival until October and annual recruitment did not increase
- Reduced mortality of adults as a result of predation
- Total adult mortality similar to pre-control
- No change in population size pre and post bear removal
- Effects of removing grizzly bears on future survival unknown

Plans for 2014

Muskox Recovery Program

- ❑ Budget for 2012 & 2013 was \$130k/year
- ❑ No additional monies for 2014

S&I Program \$20k

- April population survey
- April composition
- Radiotrack in June for calf index
- Maintain 25—30 radiocollars

Opportunistically
conduct bear
control in 2014