



# POLAR BEARS

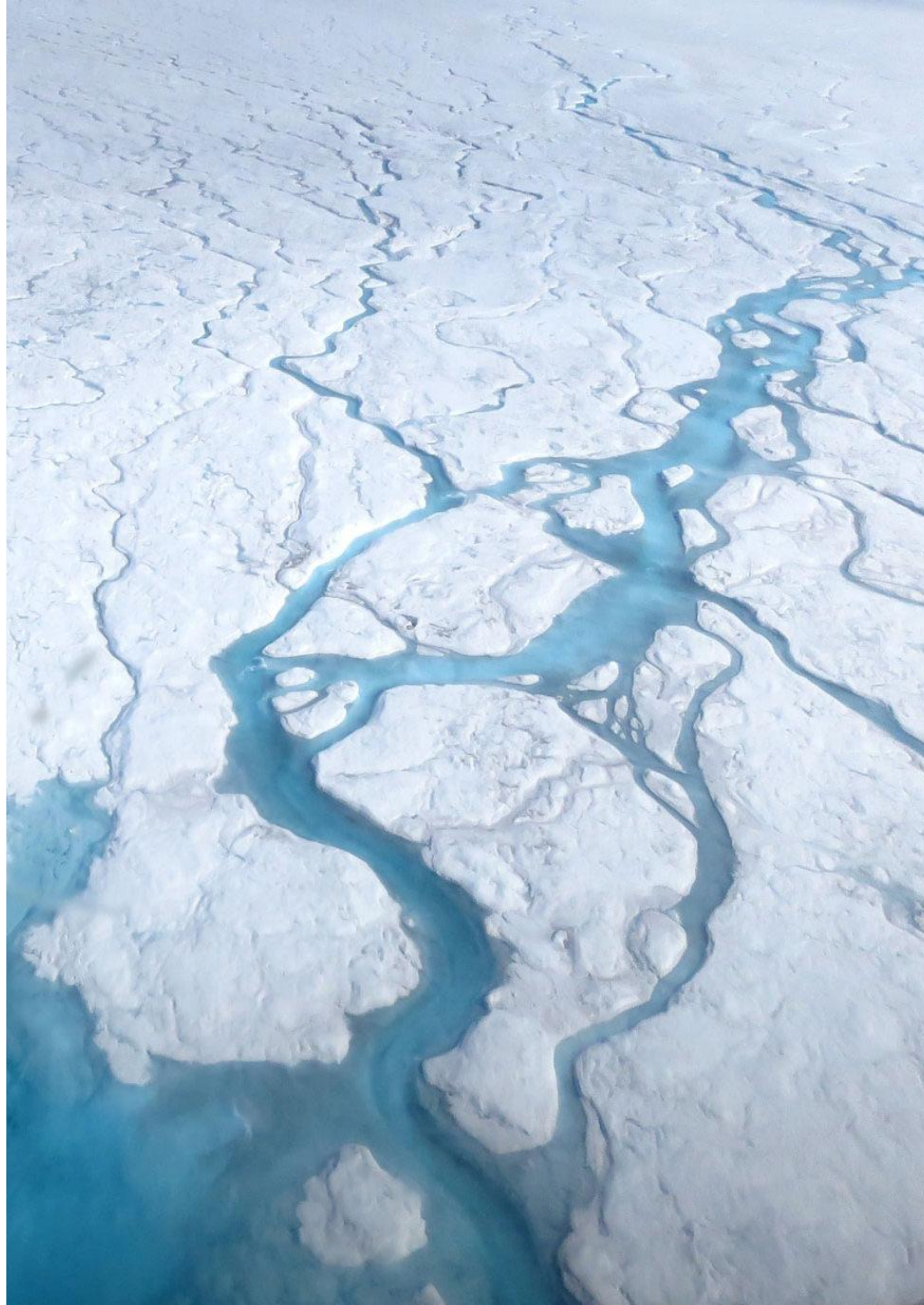
CONSERVATION INSIGHTS

Maria Koppmann



# QUESTION?

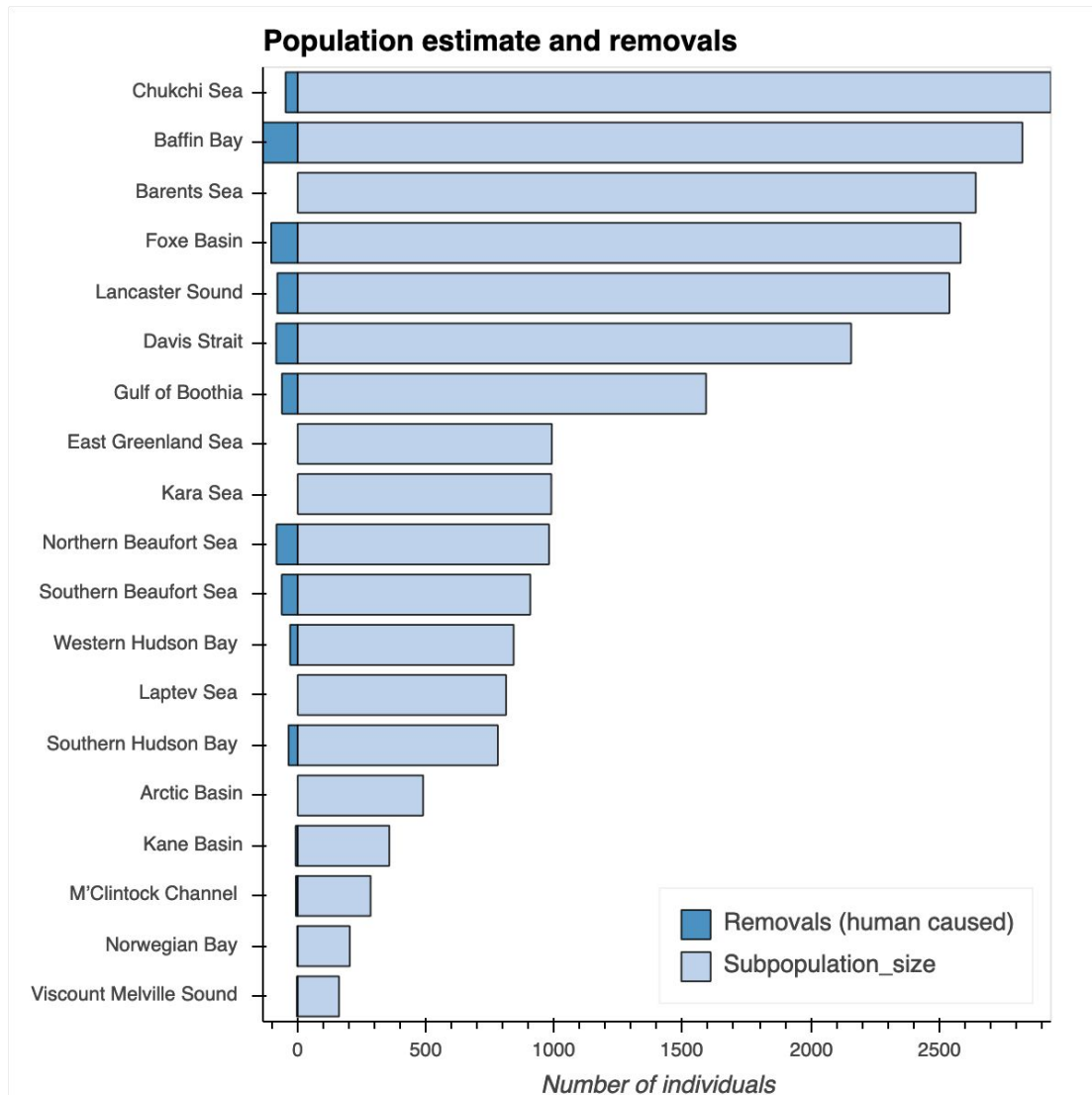
How is climate change affecting the global population of polar bears?



# DATA SOURCES

- International Union for Conservation Nature and Natural Resources ( IUCN)
- IUCN/SSC Polar Bear Specialist Group
- Assessment of global polar bear abundance and vulnerability. Animal Conservation. 10.1111/acv.12439
- National Snow and Ice Data Center (ftp service)
- Goddard Institute for Space Studies - NASA (GISS)

# 1. POPULATION AND ... QUOTAS?



25078  
Individuals



507  
Removed by humans

# How accurate are these numbers?

## Estimation Methods (Ursus Maritimus)

Density extrapolation



Distance sampling

Physical CR+extr

Genetic C-R



Physical Capture-Recapture



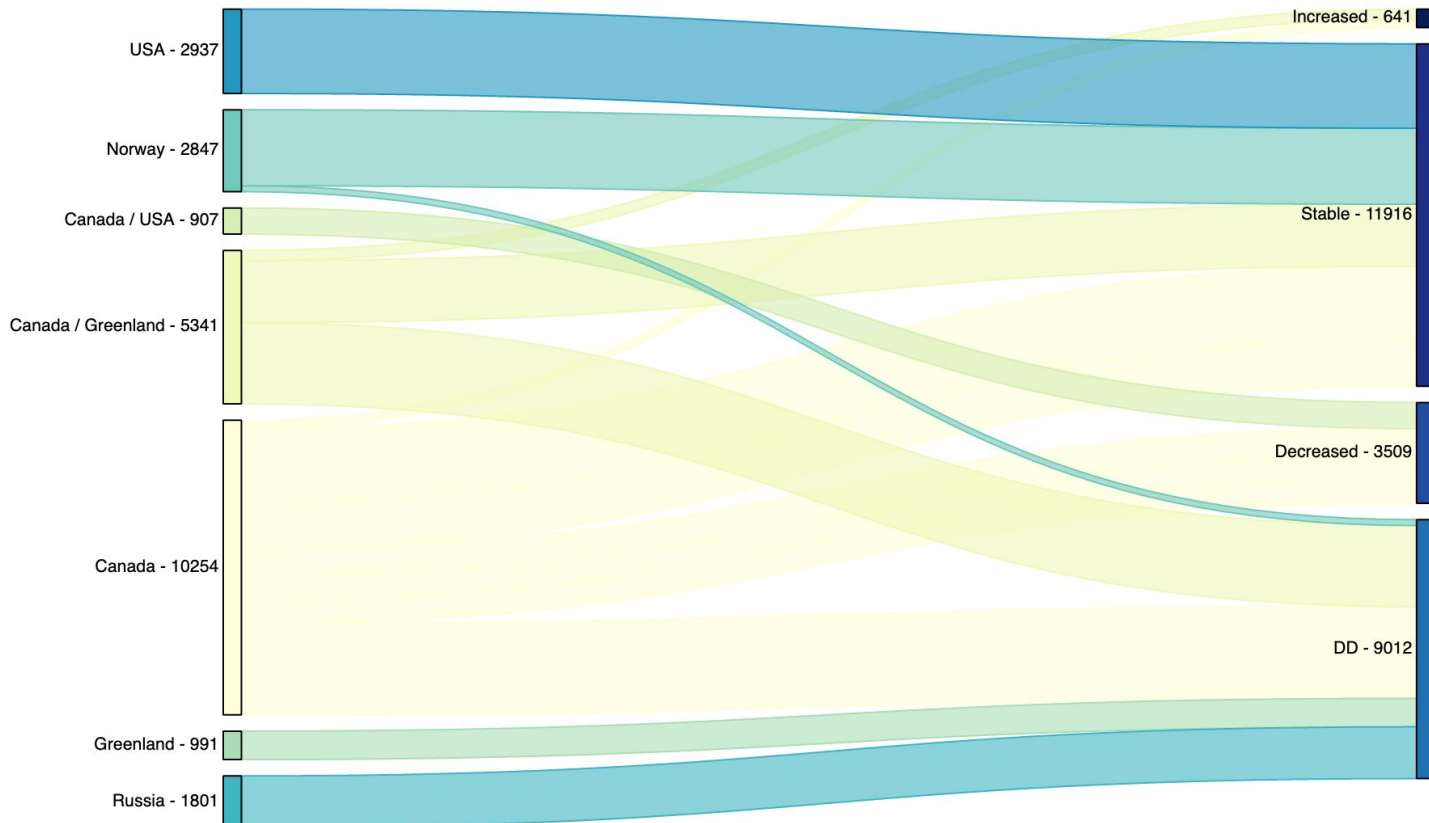
Mark-recapture distance sampling



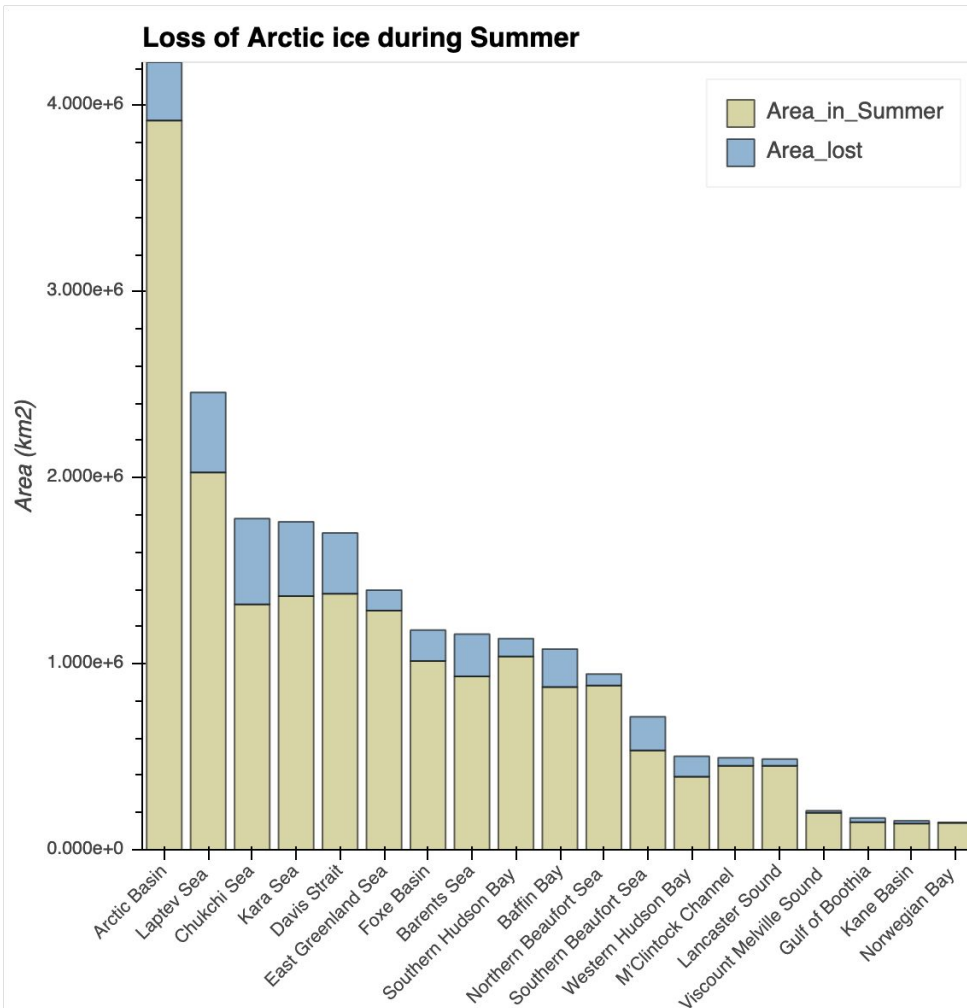
## 2. ARE THERE ANY POPULATION TRENDS?

Most of the subpopulations have remained stable, but there is not enough data to conclude the current trends for a great part of the total population.

**Polar Bear population trends**



### 3. RANGE AREA OF HABITAT



**21.72 Mkm<sup>2</sup>**

Circumpolar area of habitat

**1.88 Bears**

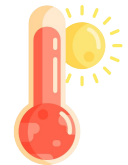
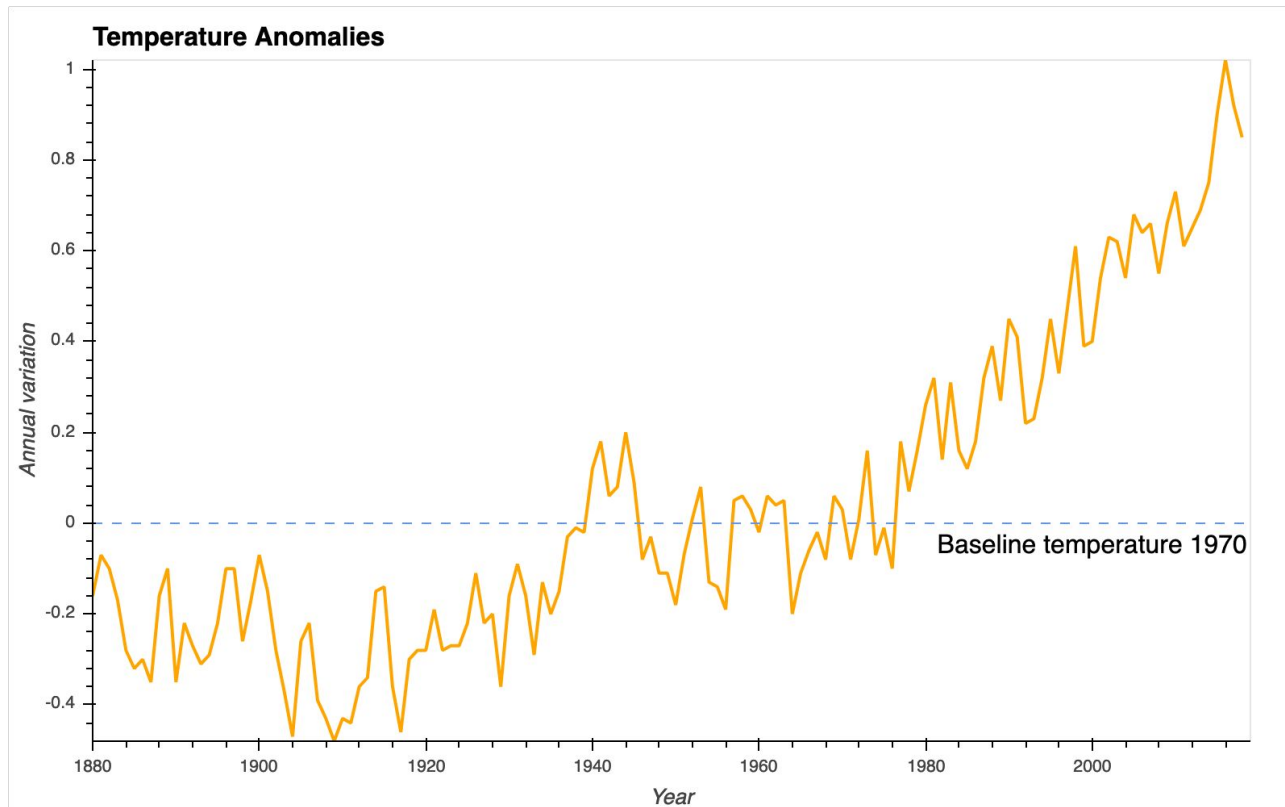
per 1000 km<sup>2</sup> in average

**15% ice loss**

in Summer months

# 3.1. RISING GLOBAL TEMPERATURES: A CRUCIAL FACTOR

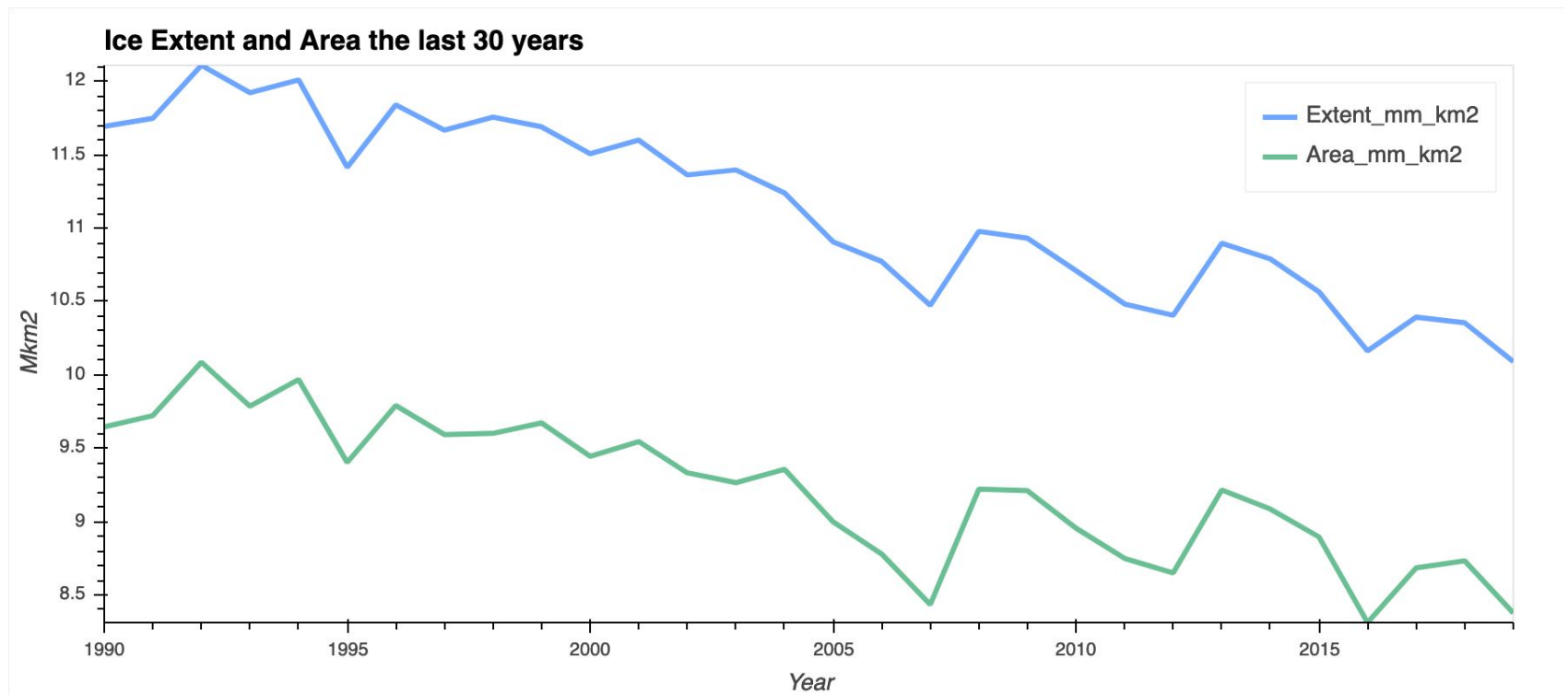
How have changed the global temperature during the last years?



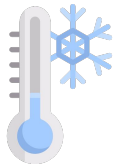
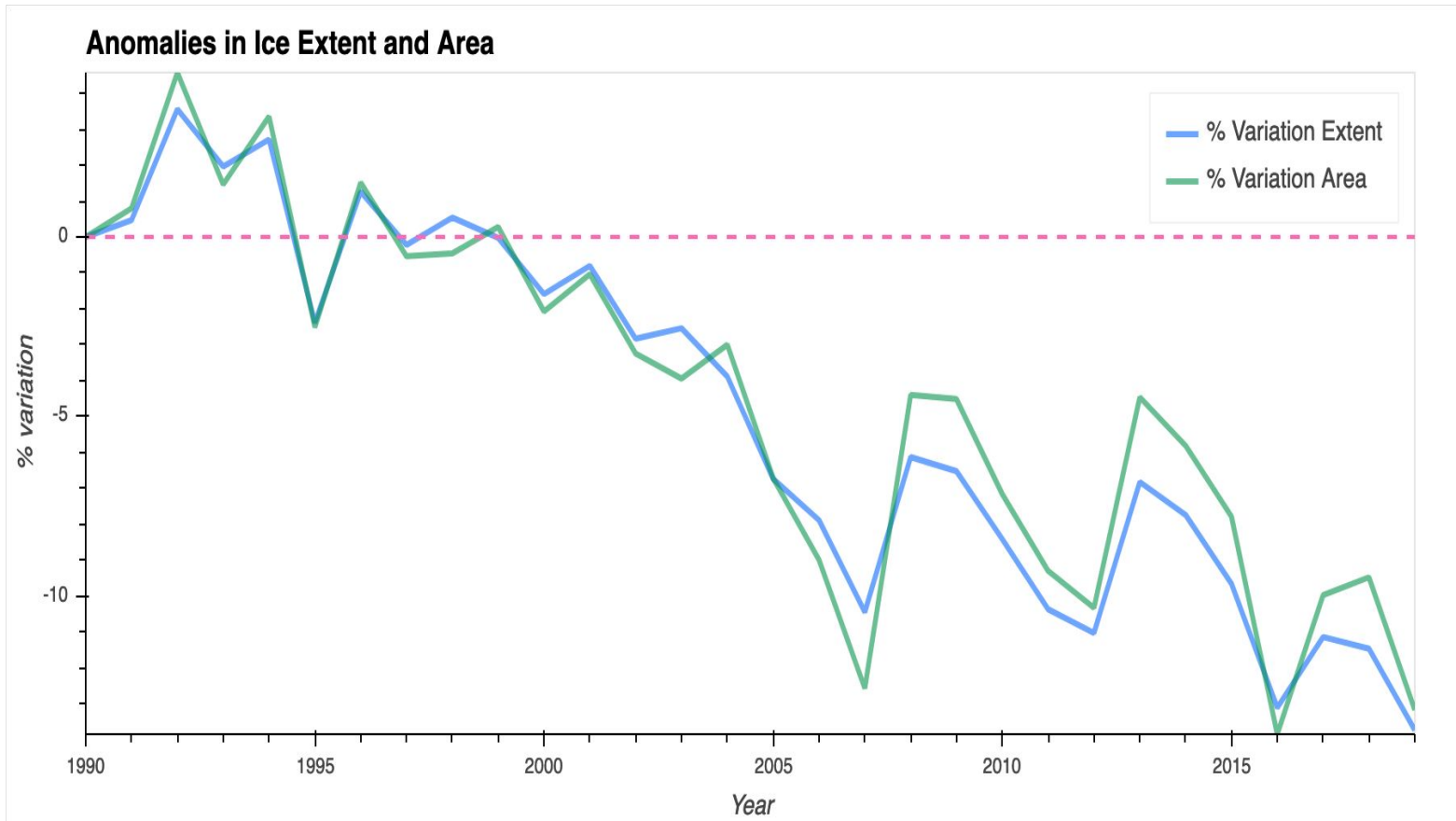


## 3.2. DECREASING OF THE ARCTIC ICE LAYER

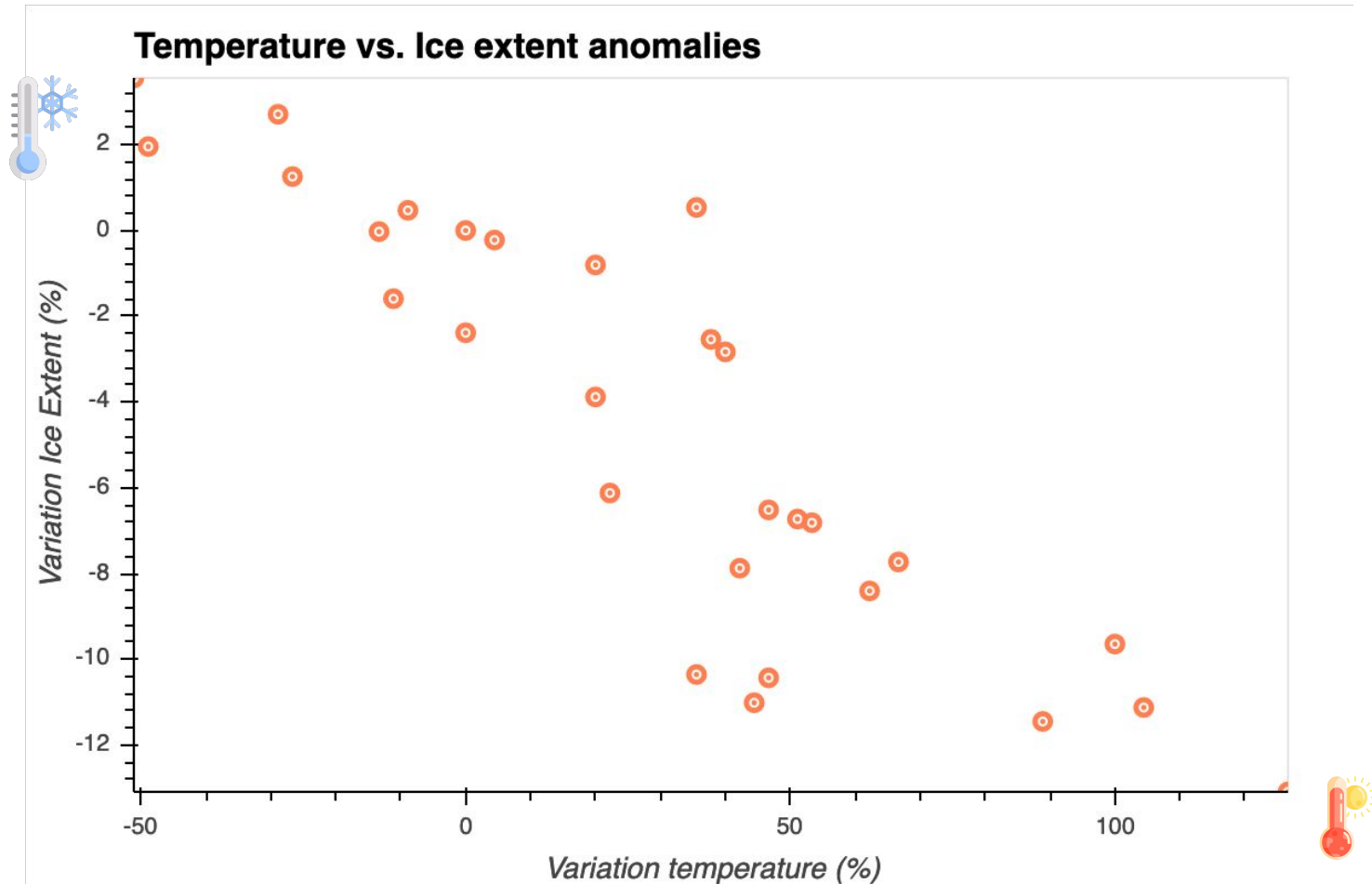
High temperatures might cause permanent loss of ice extent and therefore in loss of territory for the species:



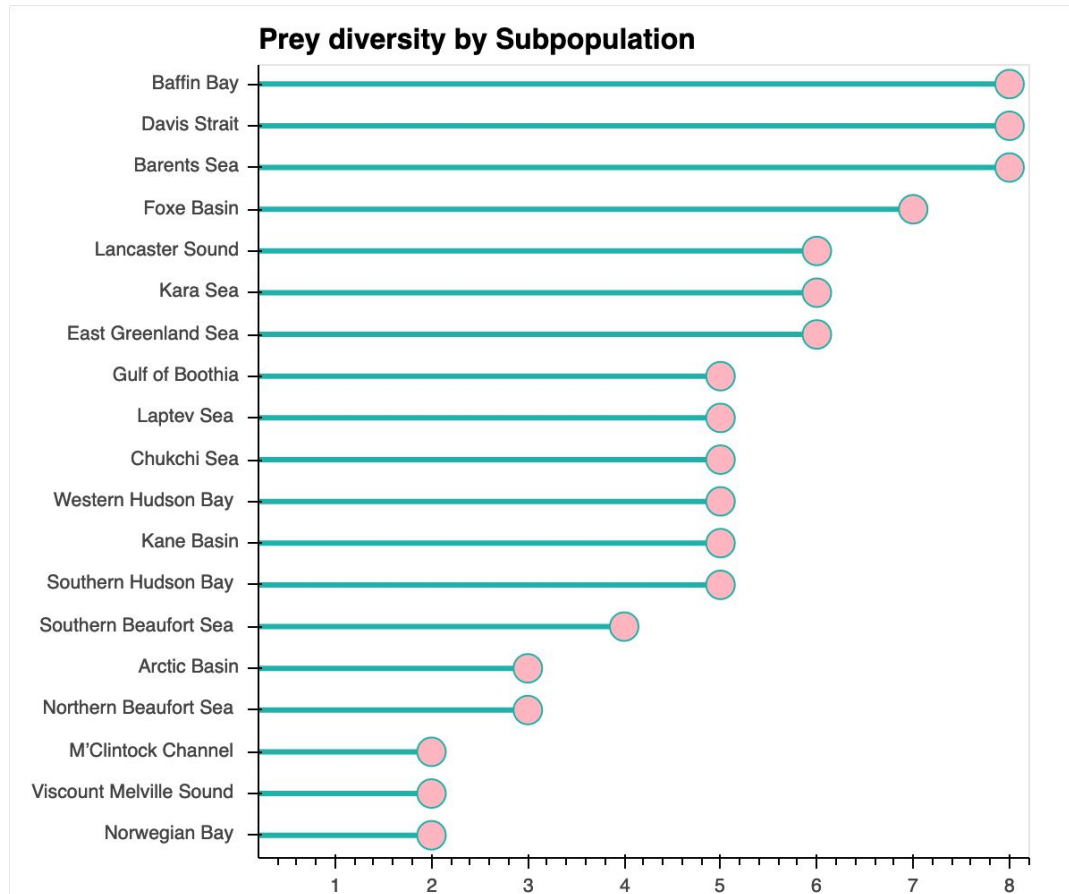
During the last 30 years, the ice extent in the Arctic has lost 15% of its area!



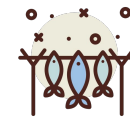
### 3.3. CONNECTING BOTH PHENOMENA



## 4. PREY DIVERSITY



**5 Prey**  
species in average

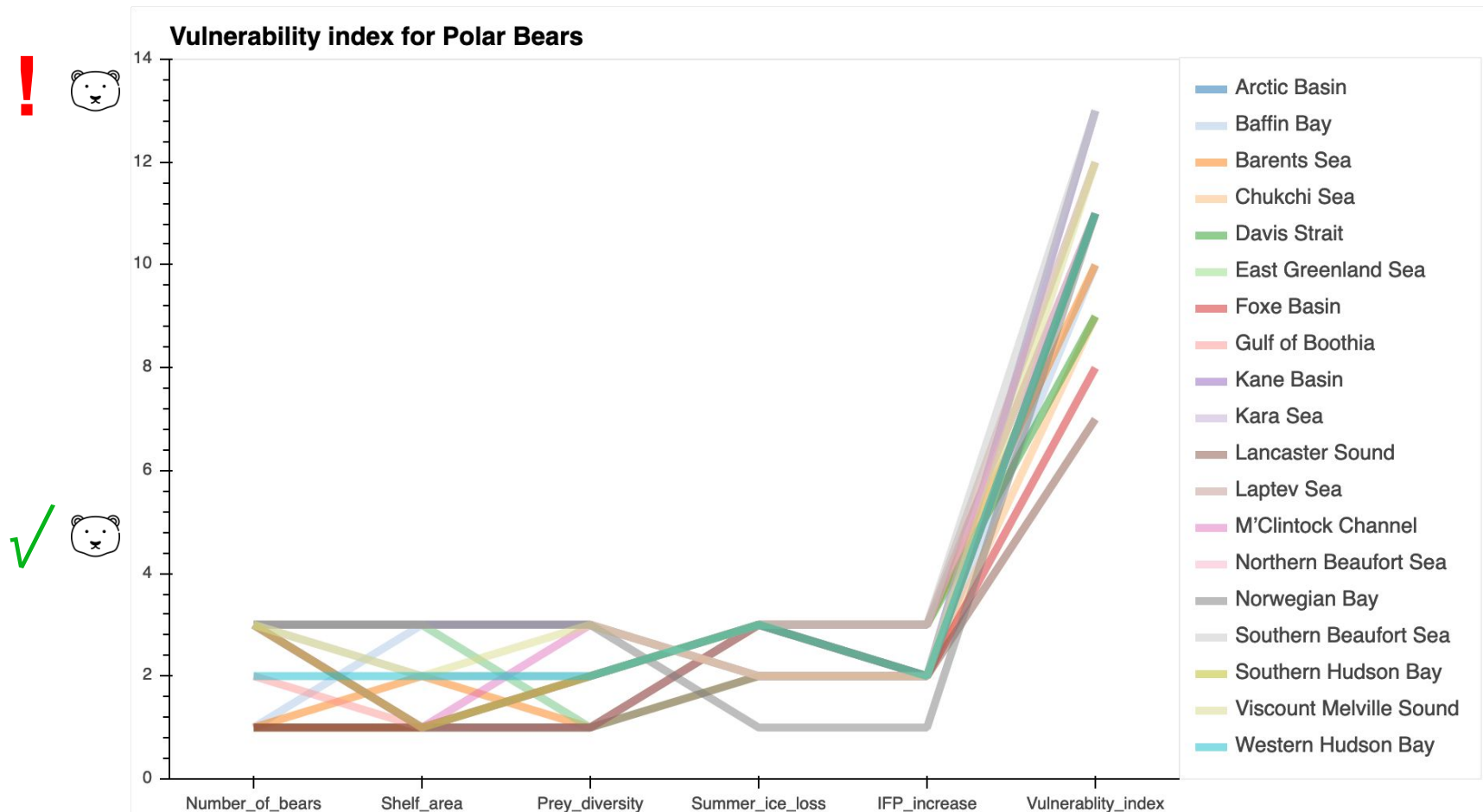


**2 Prey**  
species in 3 territories



## 5. A VULNERABILITY INDEX

What is the most vulnerable subpopulation of polar bears?

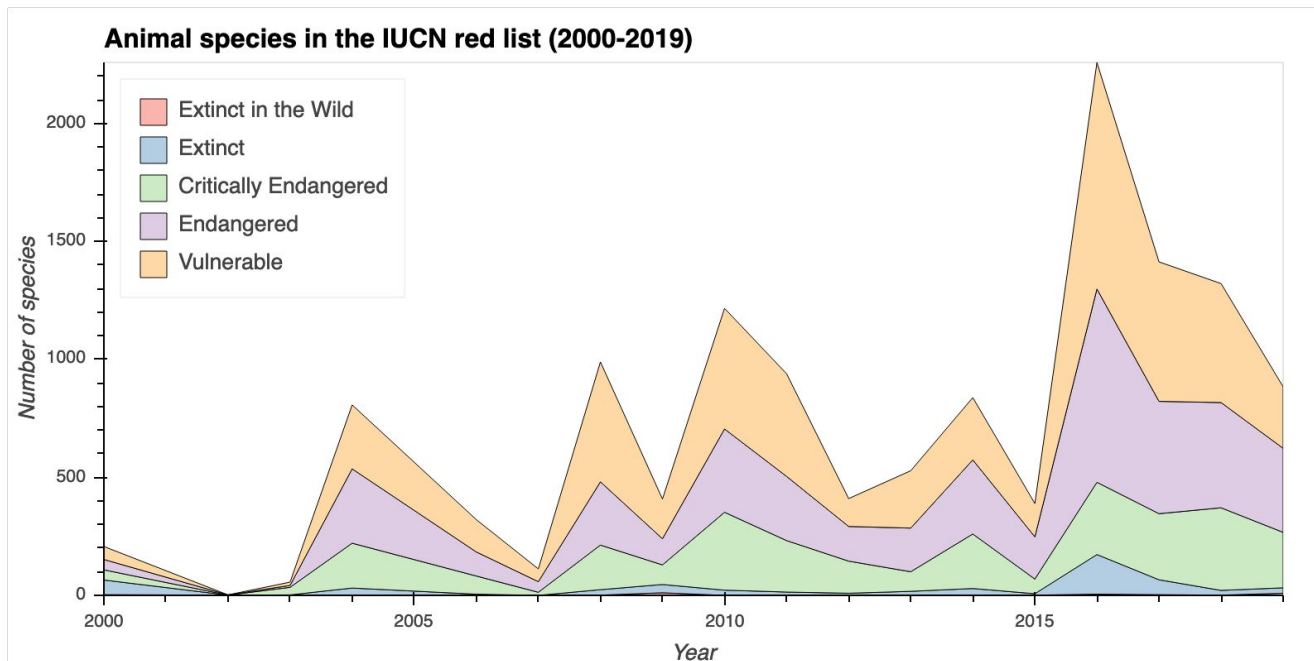


# REMAINING QUESTIONS

- How have been changing the Antarctic ice extent along the years?
- Are the Arctic species more vulnerable than the Antarctic ones?
- Does the solar radiation affect the this species?  
Has it been moving along with the global temperature?



**PLUS!** How is the global picture of endangered animal species?



> 2100

Species added in 2016

Why?

Compare with the previous charts!