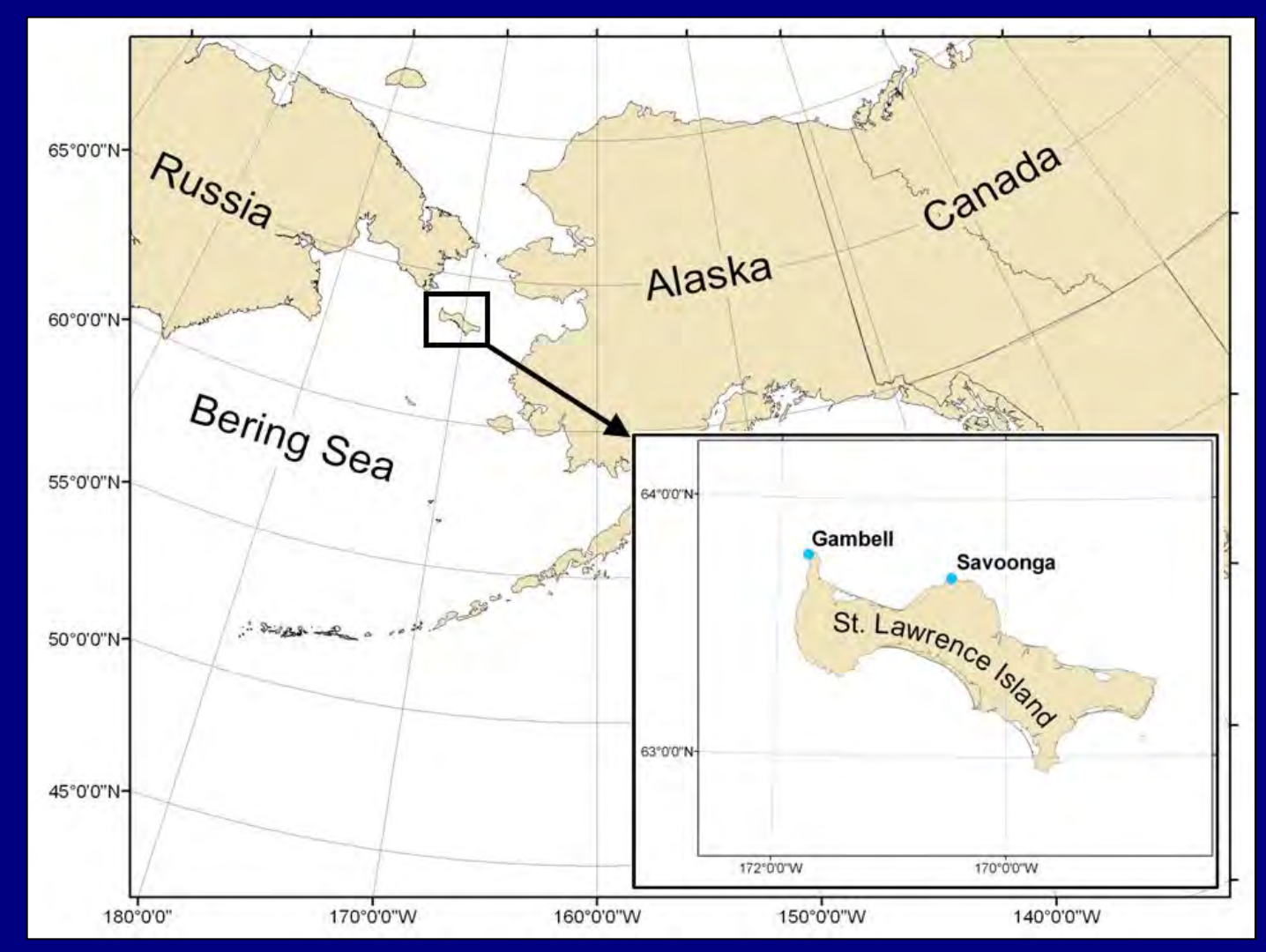


The Subsistence Harvest of Ice Seals in Alaska— Has it Changed in 40 years?

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Abstract

In Alaska, ringed (*Pusa hispida*), spotted (*Phoca largha*), ribbon (*Histiophoca fasciata*) and bearded (*Erignathus barbatus*) seals are called ice seals because they depend on sea ice for pupping and molting. Ice seals are an important source of food and materials for coastal Alaska Natives. In 1927, a \$2 bounty intended for harbor seals (*Phoca vitulina*) was placed on "hair seals" because they were viewed as detrimental to commercial fisheries. By 1962, a \$3 bounty was extended northward to include ice seals, which resulted in annual harvest estimates until the bounty ended in 1972. **We compared 1962–1972 bounty data with 1996, 2002, and 2005 household harvest survey data** to determine if the magnitude of the harvest had changed in two Bering Sea communities, Gambell and Savoonga on St. Lawrence Island, Alaska. In Gambell, during the early bounty period, the mean harvest of all four species was 792 (range 450–1,306) and during the recent survey period the mean was 1,416 (range 516–1,922) whereas for Savoonga the harvest was 864 (range 400–1,520) and 1,153 (range 498–2,196), respectively. Although the three largest annual harvests occurred during the recent survey period, **the harvest was highly variable** in both periods and the mean harvest did not differ statistically between time periods (Mann-Whitney U test: $p=0.20$ for Gambell and $p=0.60$ for Savoonga). We expected harvest might decline over time due to the increases in availability of employment providing cash and the availability of store-bought food. However, store-bought foods are expensive and although jobs leave less time for hunting they provide money for faster boats and more accurate rifles. The number of residents in both communities has grown, therefore the per capita harvest rate could have decreased while mean harvest remained the same. Ice seals continue to be an important subsistence resource for coastal Alaska Natives, but **further surveys are needed to clarify harvest trends.**

Introduction

- Ice Seals are an important component of coastal Alaska Native's subsistence way of life.
- Harvest records have not been collected on a regular basis in most villages.
- Factors that influence harvest levels.
 - Store bought food is expensive..... ↑ seal harvest
 - Jobs more available, less time to hunt..... ↓ seal harvest
 - Fewer dog teams, dogs ate mostly seals..... ↓ seal harvest
 - Snow machines are faster than dog teams.... ↑ seal harvest
 - Aluminum boats replaced seal skin boats..... ↓ seal harvest
 - Aluminum boats are faster than skin boats.... ↑ seal harvest
- However, store-bought food is expensive and although jobs leave less time for hunting they provide money for snow machines and boats.
- We compared available harvest data from the last 40 years.



Methods

- Harvest information from bounty records (1962–1972) was compared to household survey records (1996, 2002, and 2005).
- A Mann-Whitney U test was used to compare harvest levels to determine if the mean harvest has changed over time.

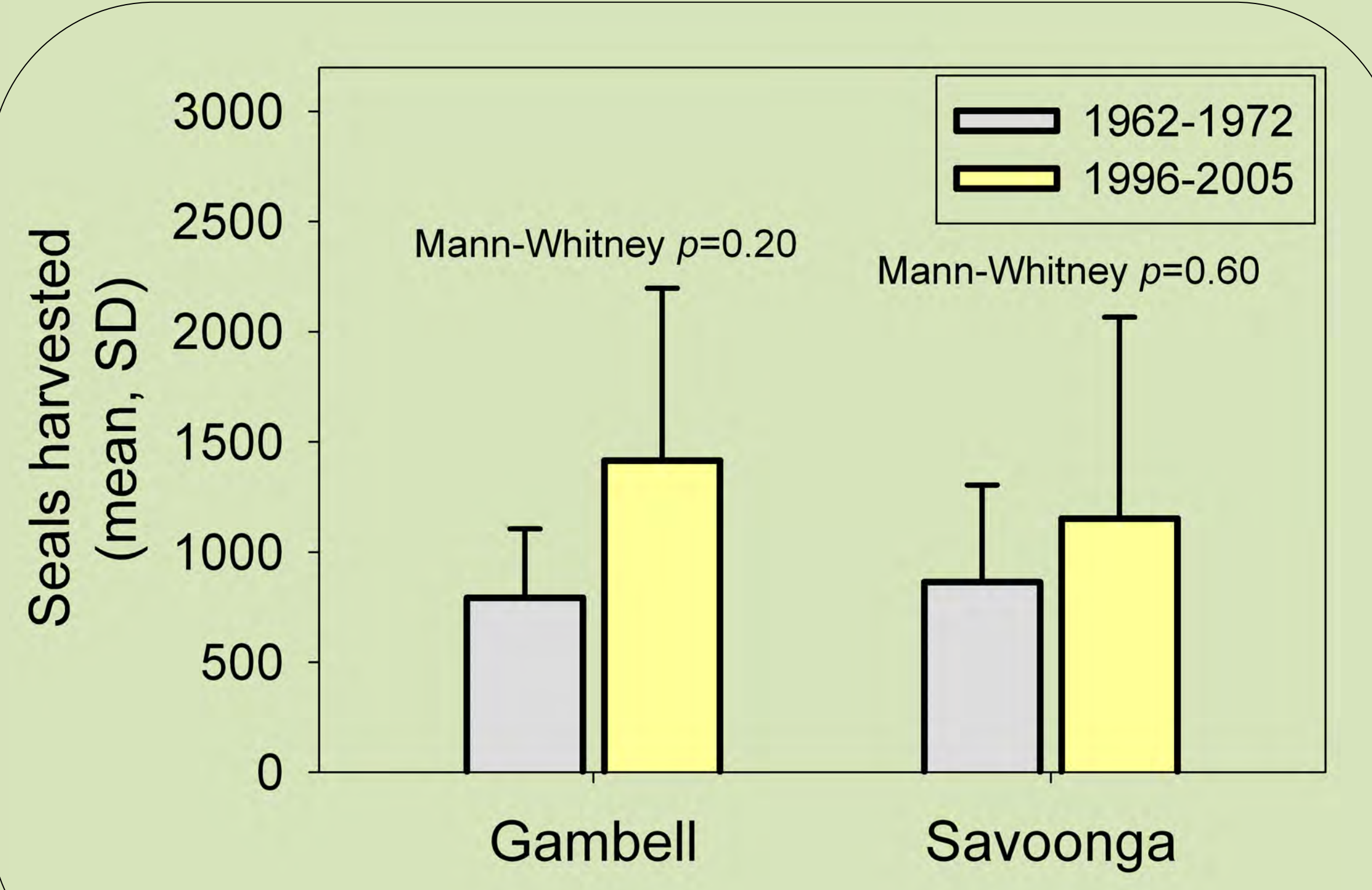


Figure 1. Mann-Whitney U test of mean seal harvest during early (1962-1972) and recent (1996-2005) time periods.

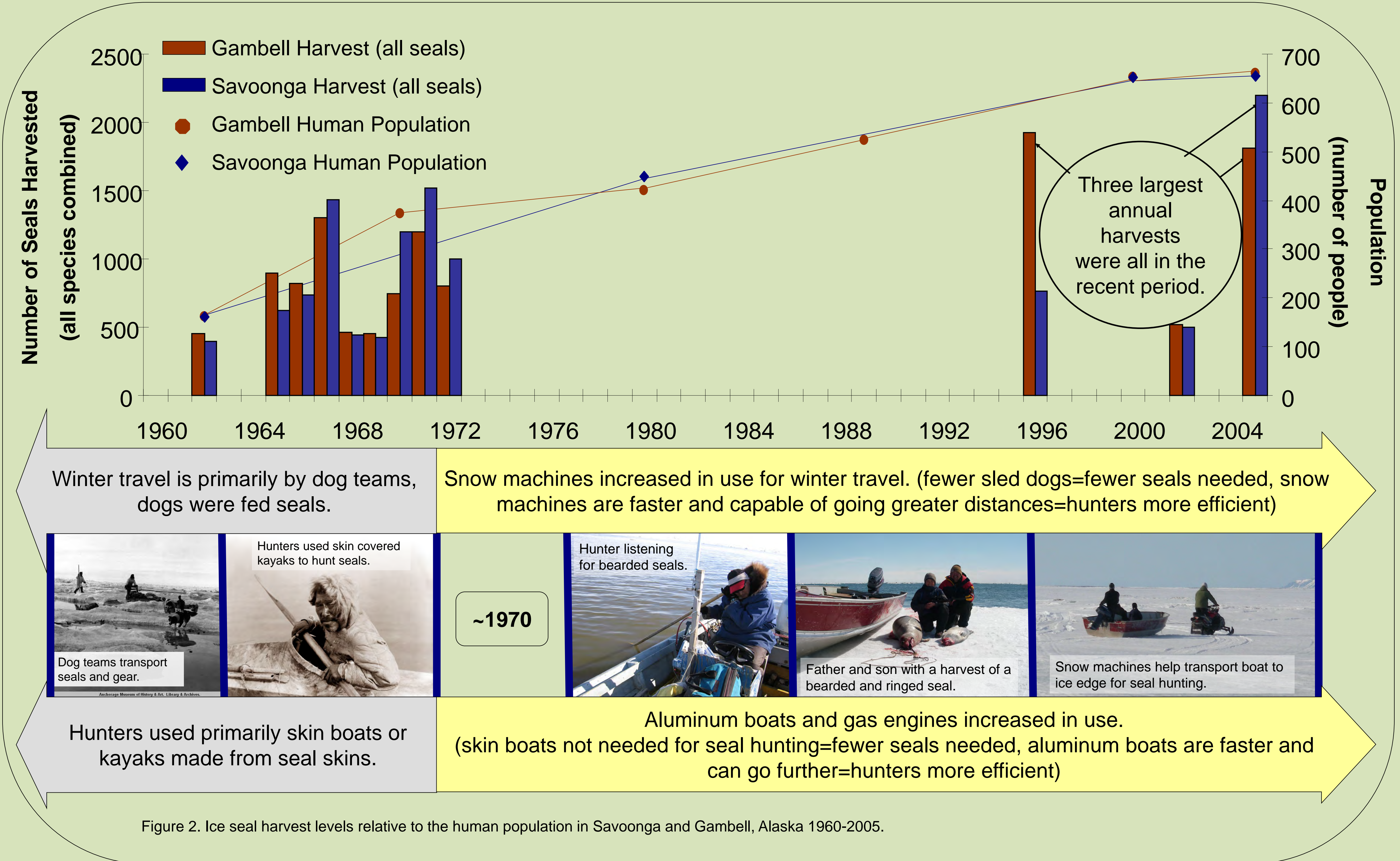


Figure 2. Ice seal harvest levels relative to the human population in Savoonga and Gambell, Alaska 1960-2005.

Results

- We did not detect a statistical difference in harvest levels between the two time periods (Fig. 1).
- Three of the six harvests documented in the recent time period were the largest harvests observed (Fig. 2).

Conclusion

- We determined that ice seals continue to be an important component to coastal Alaska Native's subsistence way of life.
- Although we found no significant difference in the average harvest between time periods, three of the six data points from the recent time period were the highest harvests recorded.
- In order to better understand the variability of the harvest and whether it is due to seal availability, social and economic factors, or both, regular harvest surveys will be necessary.
- Regular harvest surveys are increasingly important because seal distribution and abundance may be affected by changes in sea ice due to global warming.

References available upon request.

