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Alaska Region

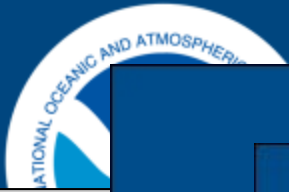
Northern fur seal management

Michael Williams

4/5/2017

Northern Fur Seal Stock

B2 Fur Seal Management
April 2017



Legal Authority

- Fur Seal Act of 1966
 - Created Title I (Fur Seal Management), Title II (Administration of the Pribilof Islands), and Title III (Enforcement)
 - “Take” or “taking” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill.
- Marine Mammal Protection Act of 1972
 - “Take” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal
 - Defined a Depleted Species as a species or population stock that is below its optimum sustainable population
 - This occurred for fur seals in 1988 and a Conservation Plan was prepared in 1992 and revised in 2007.

Depleted Listing

- 1988 NMFS listed fur seals as Depleted under the MMPA, based on the decline of the population below Optimum Sustainable Population
- Current Stock estimate is 648,534 from 2015 Stock Assessment report
- Depleted status of fur seals authorizes NMFS to consider taking additional conservation actions: regulate subsistence, create take reduction teams, list as strategic stock

Depleted Listing: Conservation Plan

- Similar to a recovery plan under the ESA, with one goal to recover the population to OSP
- 4 Objectives:
 - Identify and eliminate or mitigate the cause or causes of human related mortality...
 - Assess and avoid or mitigate adverse effects of human related activities on or near the Pribilof Islands and other habitat essential to the survival and recovery...
 - Continue and, as necessary, expand research or management programs to monitor trends and detect natural or human-related causes of change...
 - Coordinate and assess implementation of the plan...

Alaska Northern Fur Seal Population Abundance and Research Update

North Pacific Fisheries Management Council

April 5, 2017

Anchorage



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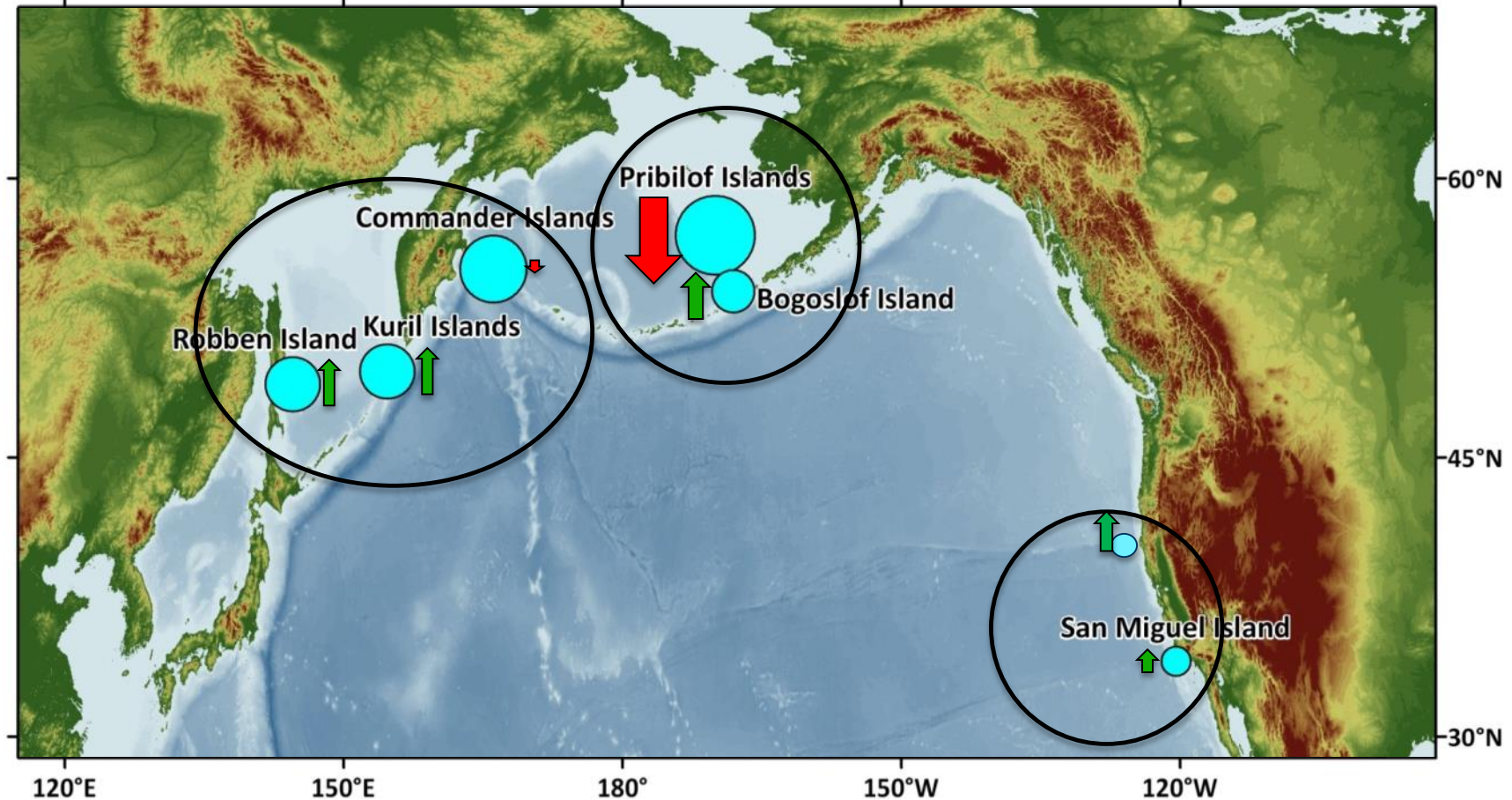


Alaska Ecosystems Program:

T. Gelatt, V. Burkanov, B. Brost, K. Chumbley, J. Cutler, B. Fadely, L. Fritz, D. Johnson, C. Kuhn, M. Lander, K. Luxa, R. Ream, B. Sinclair, J. Sterling, K. Sweeney, W. Testa, J. Thomason, R. Towell, W. Walker, T. Zeppelin.

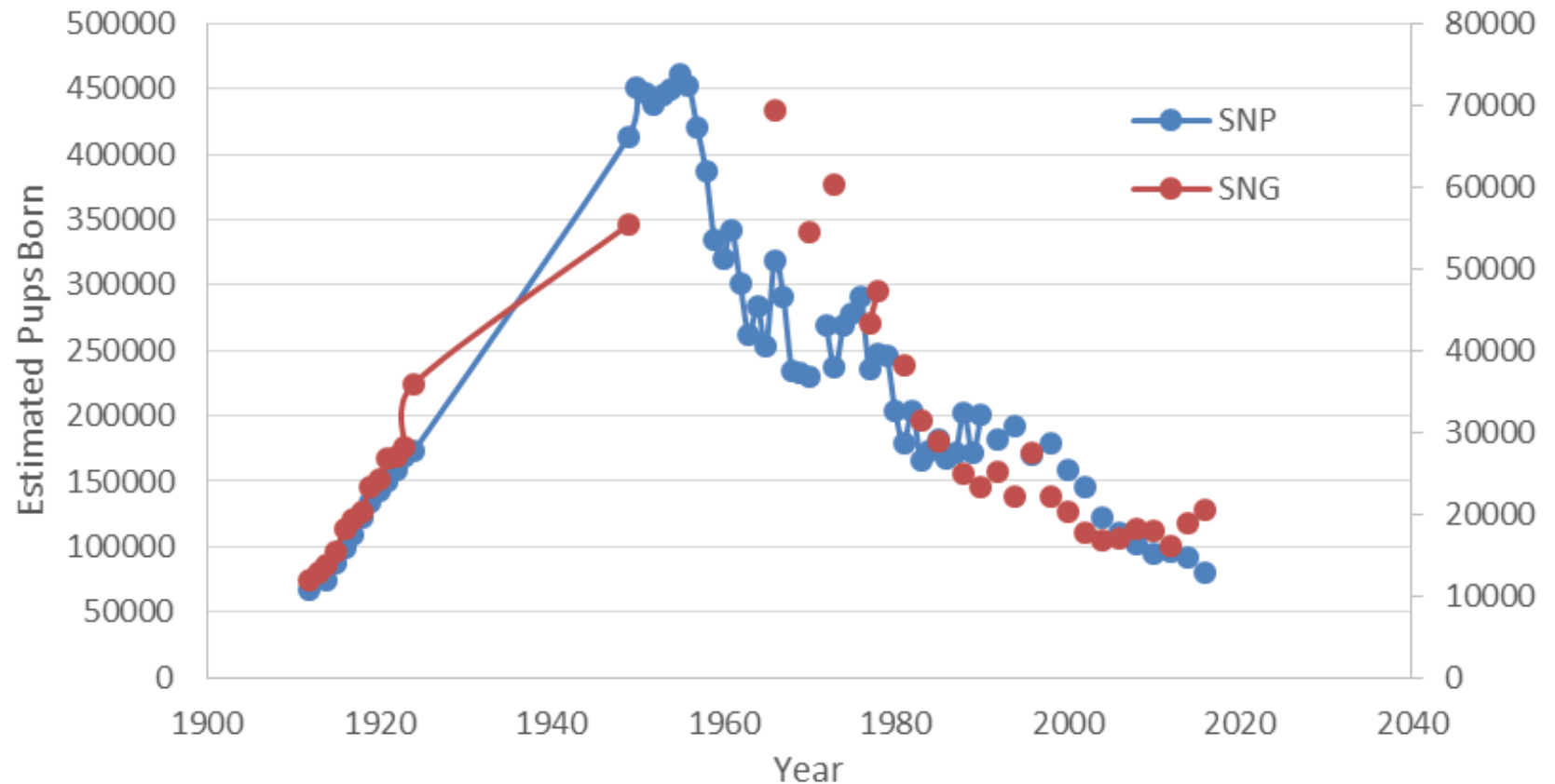
Northern fur seal abundance, stock structure, trends

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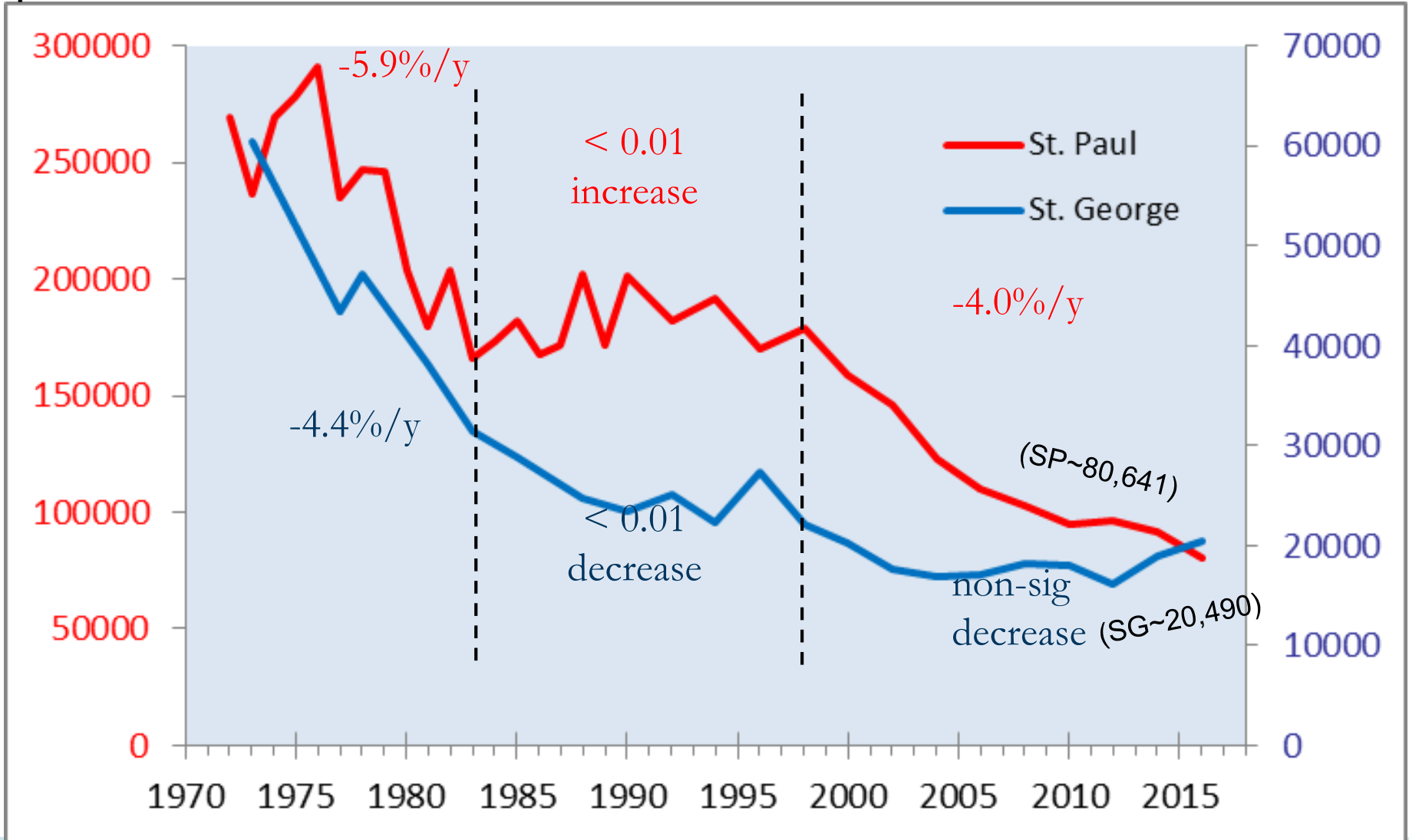
- ~1,100,000 – 1,200,000 northern fur seals in North Pacific
- Two stocks in US: Eastern Pacific, California; mixed during winter migration
- Eastern Pacific stock designated as “depleted” under the MMPA (1988)
- Regional variation in population trends

Pribilof Pup Production Estimates



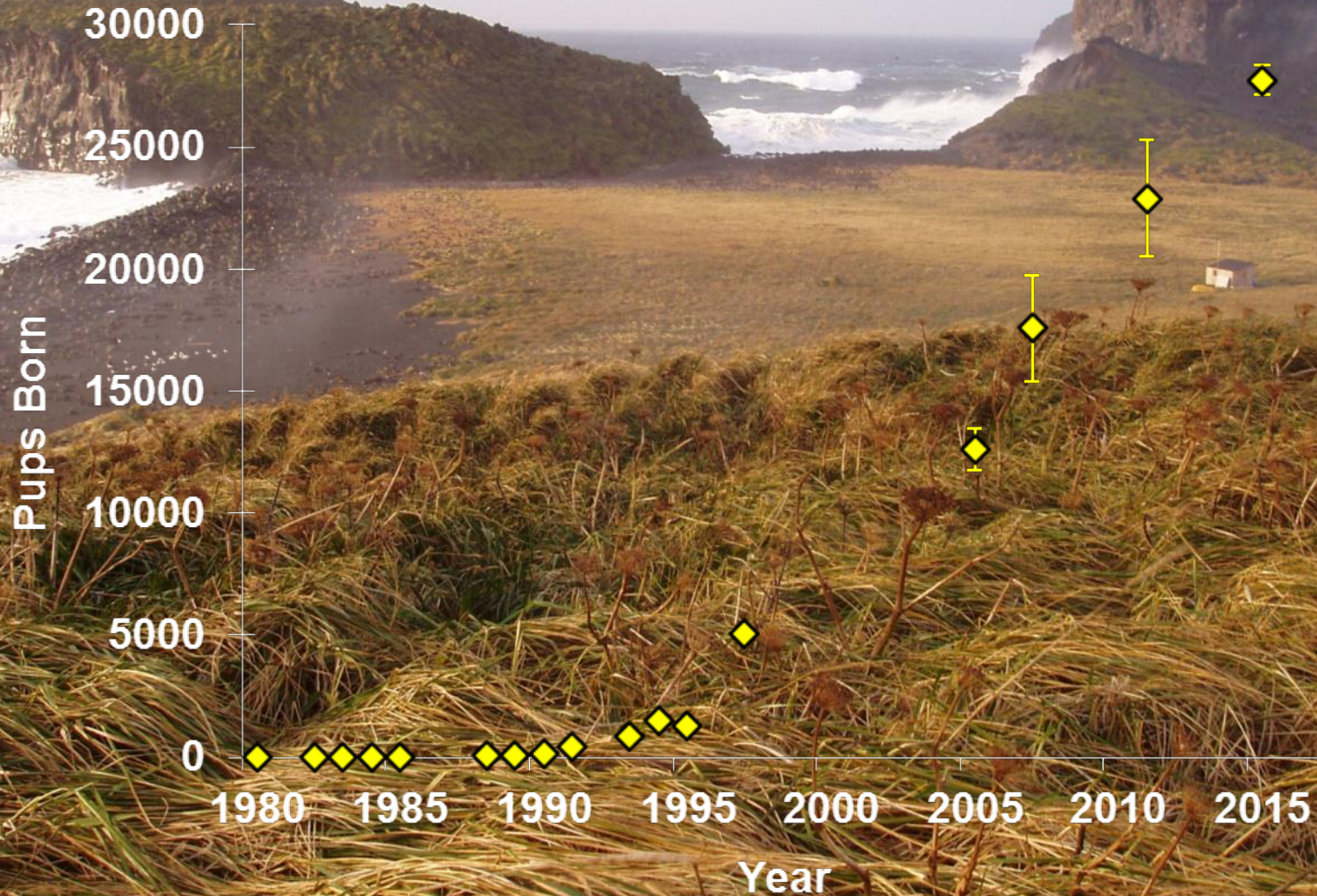
Northern fur seal pup production – Pribilof Islands

Overall pup production declined 8.6% since 2014. SP down 12% since 2014, SG up 8.6%.



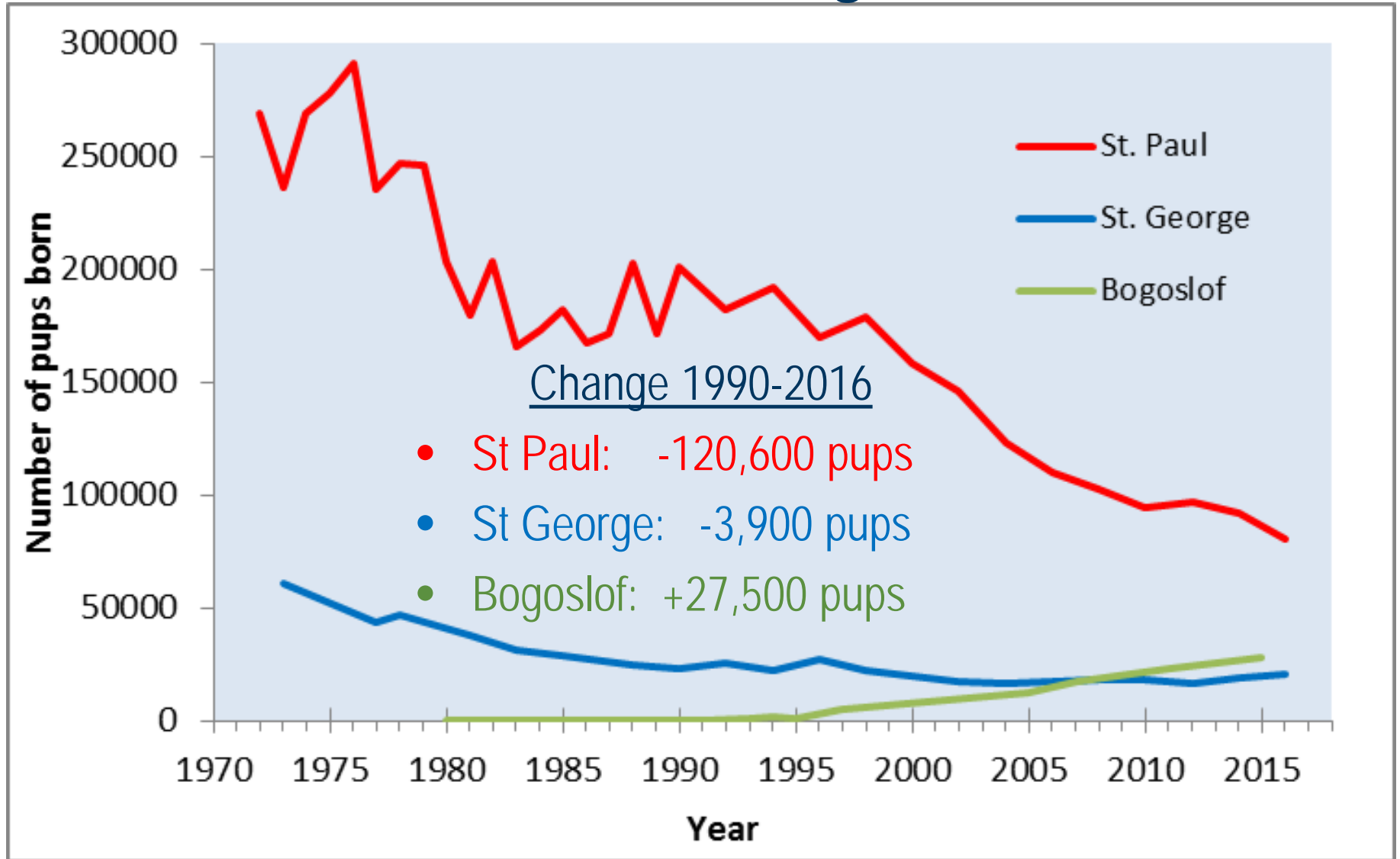
Northern Fur Seal Pup Production – Bogoslof Island

Increasing 10.1% / year (SE = 1.08%) since 1997
2015: n = 27,750 (SE = 228)



Northern Fur Seal Pup Production Changes Eastern Bering Sea

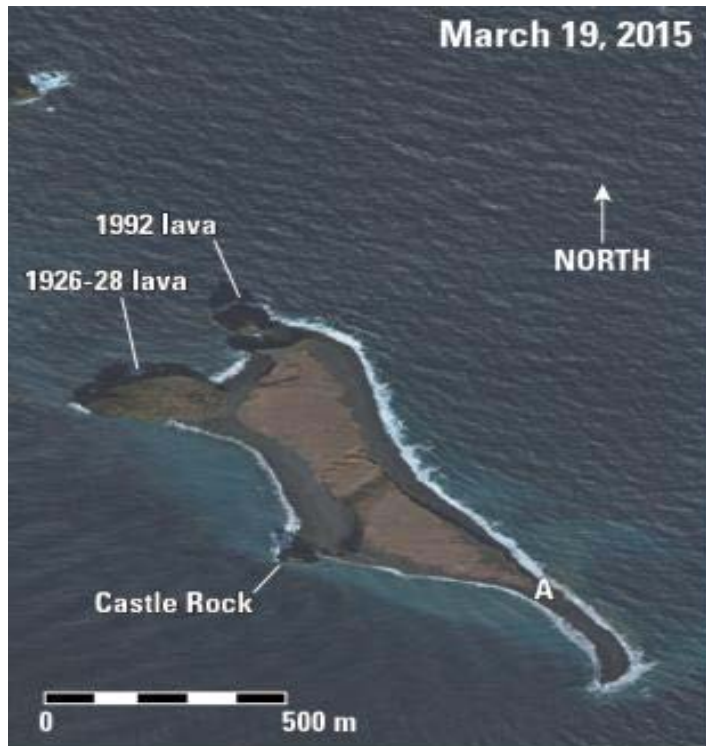
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Bogoslof – A changing location



Volcanic eruptions began in December, 2016. The last major explosive event occurred on March 8, 2017



Pre-eruption Bogoslof Island
Area = 0.29 km²



Bogoslof Island after 36 eruptive events since Dec. 12, 2016
Area = 0.98 km²

ANIMATION

Over-winter tracking for all age and sex classes.

- 847 satellite-tagged seals
- 1.5 million hours of tracking.
- 25 years consolidated into one annual cycle.

1991-3, 1995-2011, 2014-16.

Note segregation by island in summer but overlap in winter.



Annual Cycle – segregation summer, mixed winter

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April 2017

What we know:

- Population trends differ on the three Eastern Pacific stock islands (St. Paul ↓, St. George ↔, Bogoslof ↑)
- Fur seals foraging from each island eat different prey but pollock is the primary prey for both St. Paul and St. George Islands
- Adult female behavior – the time it takes to acquire sufficient resources to bring a dependent pup to weaning is correlated with pup survival. Pup and adult survivorship are strong determinants to population trends.
- Fur seals eat all age classes of pollock, we don't know how much of each age class, but we're building models to estimate age-specific mortality.
- Goal to integrate fur seal foraging behavior and demographic results into AFSC's ecosystem models (CEATTLE AND FEAST).

Thank you

