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MEMORANDUM FOR: The Record

FROM: Rod Towell, Rolf Ream, Jeremy Sterling, Michael Williams
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SUBJECT: 2015 northern fur seal pup production estimate on
Bogoslof Island, Alaska.

Numbers of northern fur seal, *Callorhinus ursinus*, pups were estimated using a mark-recapture method, shear-sampling, on Bogoslof Island (Figure 1) during August 10 to 15, 2015. For the 2015 estimate, the island was divided into 4 rookeries instead of 5 as had been done from 2005 to 2011. We no longer considered the Grotto to be a separate rookery due to the near continuous distribution of adults and little physical separation that would prevent exchange of pups with Northwest rookery. The combination of the Grotto and Northwest will be referred to as Northwest rookery. As the population grows, Southwest rookery may also be merged with Northwest as there is very little separation remaining between the rookery areas.

We estimated that 27,750 (SE = 228, Table 1) pups were born on Bogoslof Island. Dead pups were counted on all breeding areas of Bogoslof Island resulting in an observed pup mortality rate of 2.2%. The 2015 pup production estimate for Bogoslof Island is 21.1% greater than the estimate in 2011 (Figure 2). Since the first pup was observed on Bogoslof Island in 1980 pup production has increased at an annual rate of 33.7% (SE = 2.53) and at an annual rate of 10.1% (SE = 1.08) since 1997.

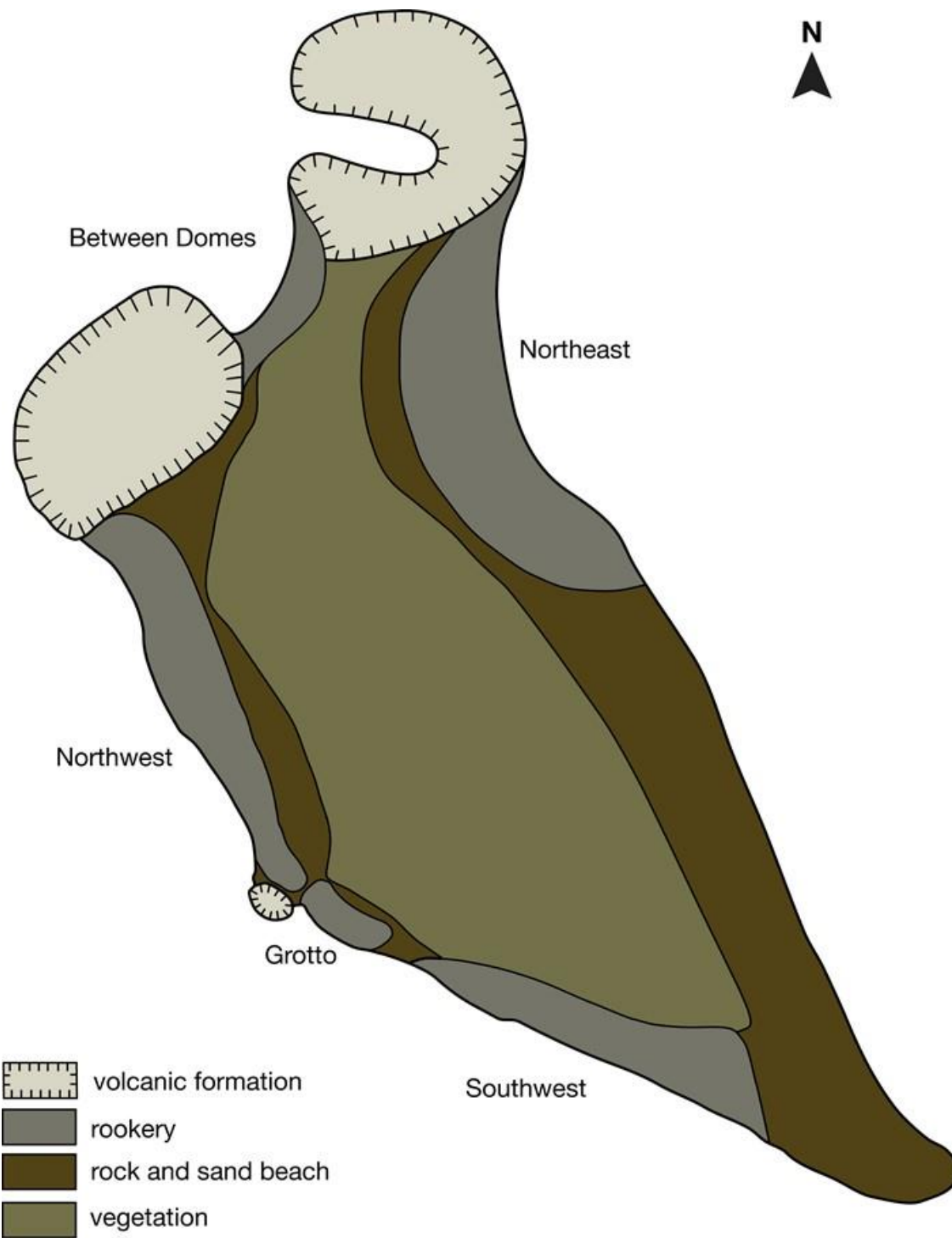


Figure 1. – Rookery areas of Bogoslof Island. Grotto rookery area was merged into Northwest in 2015.

Table 1: Numbers of northern fur seal, *Callorhinus ursinus*, pups born on Bogoslof Island, Alaska during 2015 by rookery area. Estimates are shown for the numbers alive at the time of shearing and the estimated total number of pups born.

Rookery	Live	Dead	Born	SE	Mortality
Southwest	3,994	93	4,087	116.0	2.28
Northeast	12,893	246	13,139	135.0	1.87
Between Domes	1,578	40	1,618	87.5	2.47
Northwest*	8,670	236	8,906	112.5	2.65
Total	27,135	615	27,750	228.0	2.22

* Northwest rookery includes the former Grotto rookery as they have grown together.

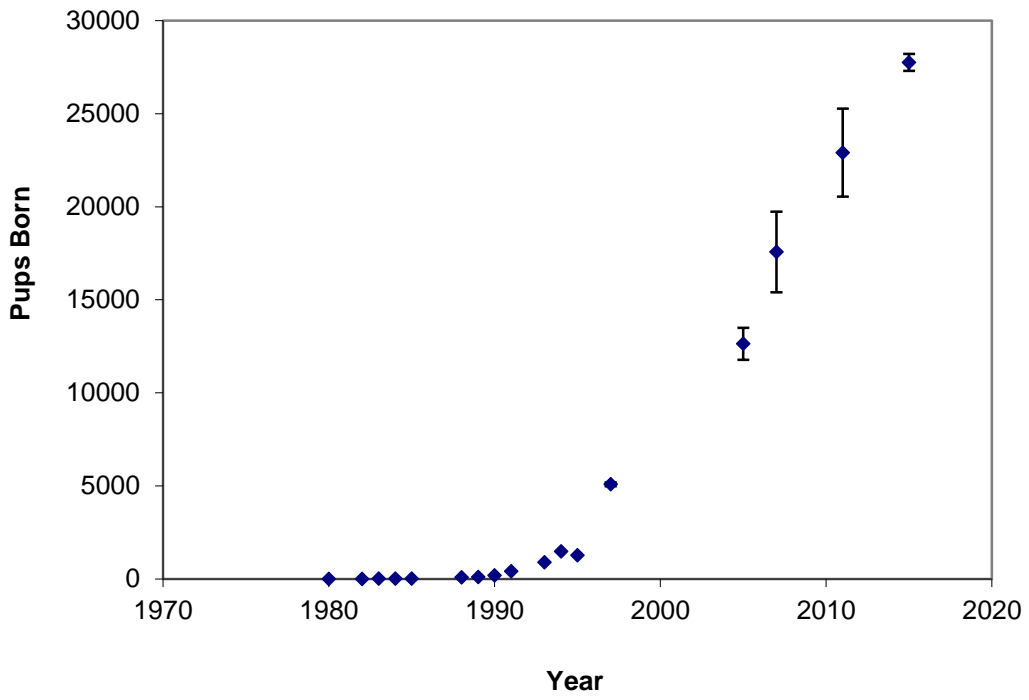


Figure 2. – Northern fur seal pups born on Bogoslof Island 1980-2015. Error bars are approximate 95% confidence intervals.