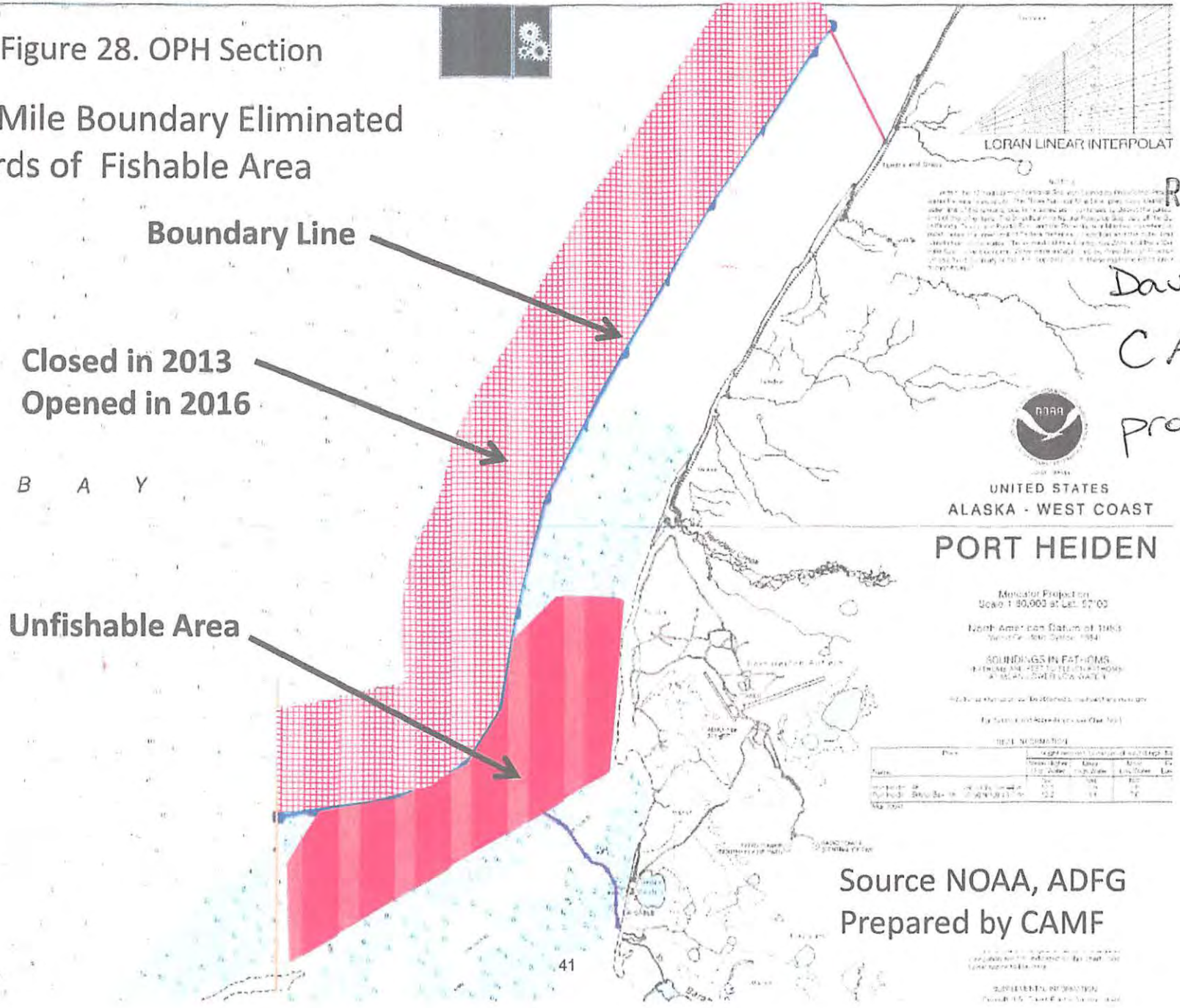
Figure 28. OPH Section

1.5 Mile Boundary Eliminated
2/3rds of Fishable Area



1st

RC 15

David Polushkin
CAMF
proposal
145

RC 15

2nd

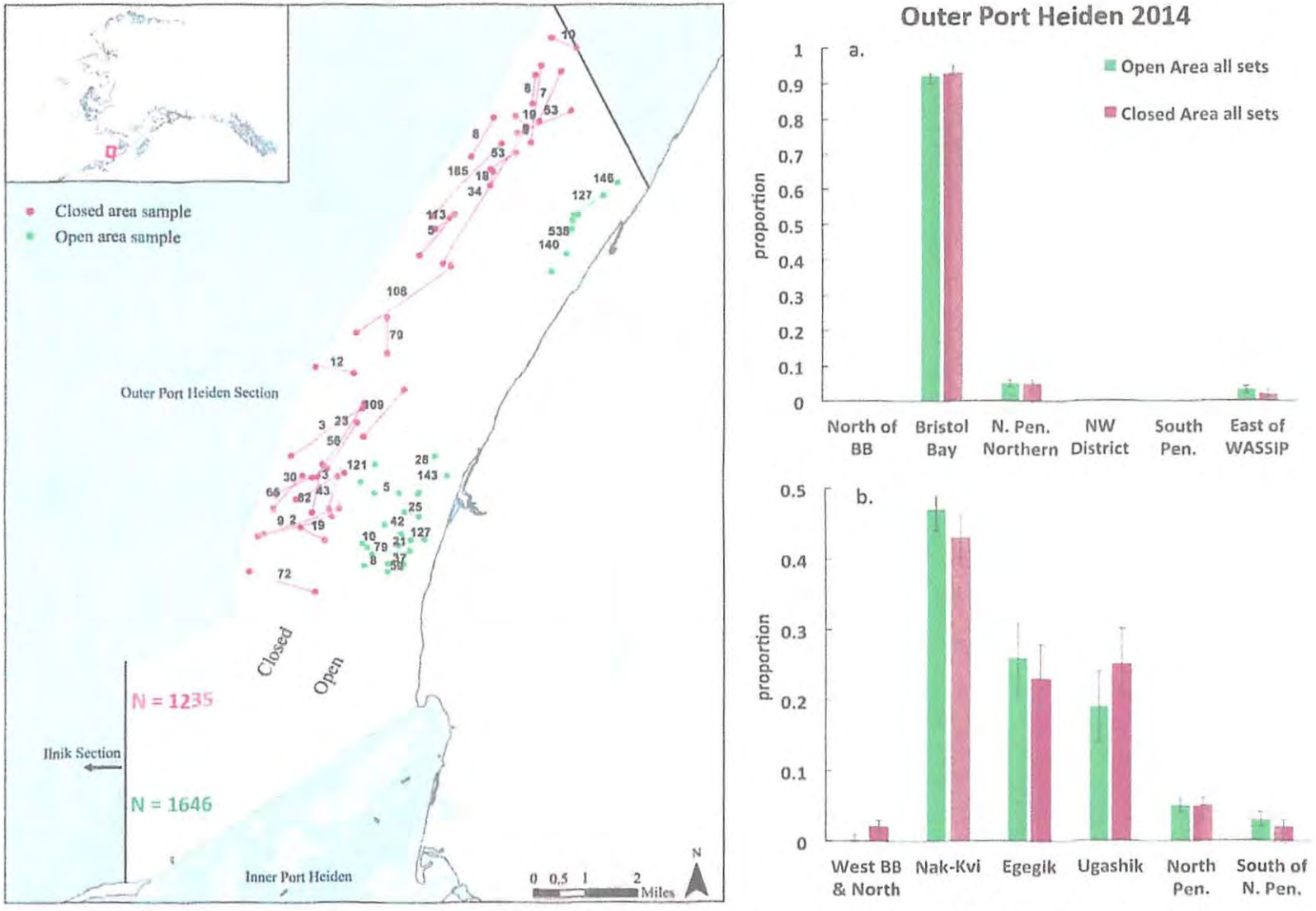


Figure 2. The distribution of sockeye samples (i.e. fishing set tracks represented with dots and connecting lines) taken between 6/28 and 7/16 in areas closed and open to commercial fishing are shown in the map (left panel), and column plots (panels a. & b.) show estimates of stock proportions represented in samples. Set tracks are labeled with no. of fish taken (map), and credibility intervals shown in black lines for each stock proportion value (column plots). Reporting groups on the horizontal axes of the column plots are made up of 24 stock groups originally defined in WASSIP (Dann et al. 2012a), see Table 4 for description of reporting groups in panels a. and b.

Executive Summary

The primary goal of this project was to use the standard genetic approach of Alaska Department of Fish and Game to determine if there are differences in stock composition between sockeye salmon captured in the open and closed sections of the Outer Port Heiden and Ilnik management sections. We analyze 2,881 samples collected in the Outer Port Heiden management section in 2014, 3,497 samples collected in the Outer Port Heiden management section in 2015, and 1,081 samples collected in the Ilnik management section in 2015. These samples were grouped into 56 strata based on sampling date, sampling area, and tidal cycle. We estimated the proportional composition of 24 reporting groups to each stratum using mixed stock analysis and the genetic baseline provided by the Alaska Department of Fish and Game. We also constructed two sets of aggregated reporting groups based on the original 24 groups to more easily visualize and interpret the results. In general, stock proportions varied by management sections, date of sampling, and year, but were similar between open and closed areas. Specifically, we observed higher proportions of North Peninsula Northern District stocks in the Ilnik management section compared to the Outer Port Heiden management section (10% on average in Outer Port Heiden vs 41% in Ilnik), North Peninsula Northern District stocks were observed in higher proportions in early strata sampled in the Outer Port Heiden management section (23% vs 7%), and higher contributions of North Peninsula Northern District stocks were observed in 2015 compared to 2014 in the Outer Port Heiden management section (15% vs 5%). On average Bristol Bay stocks contributed 93% to estimates from the Outer Port Heiden management section in 2014, 83% to estimates from the Outer Port Heiden management section in 2015, and 56% to estimates from the Ilnik management section in 2015. No consistent

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differences in stock composition were observed by tidal cycle or by fine-scale sampling area. We used a maximum likelihood approach to determine whether there was statistical evidence for stock composition differences between sampling periods and open and closed areas in the Outer Port Heiden management section. The model with the most statistical support for both 2014 and 2015 incorporated differences in stock compositions between the first time stratum and all others but did not include differences between the open and closed areas. In conclusion, we did not observe discernable differences in stock compositions between open and closed areas, and sockeye salmon from Bristol Bay made up the majority of samples captured in the Outer Port Heiden and Ilnik management sections.