Biologically Important Areas for Bowhead Whales (*Balaena mysticetus*): Optimal Site Selection with Integer Programming

Appendix S3

Results of the inter-annual variability analysis for each of the Biologically Important Areas identified in the selected scenario for feeding/milling bowhead whales or bowhead whale calves for each month. The parameters associated with each of the selected scenarios are provided at the top of each page: minimum cluster size (C, followed by the minimum number of cells in the cluster) and maximum occupied area threshold (Z). A) Number of years in which bowhead whales were observed. B) Number of years with survey effort. C) Proportion of surveyed years with observations of bowhead whales (Eqn 9). D) Intercept from the GLMM (Eqn 10). E) Standard deviation for the random effect for year in the GLMM (Eqns 10, 11).

Figure S1. July Feeding & Milling (C2, Z=0.7)

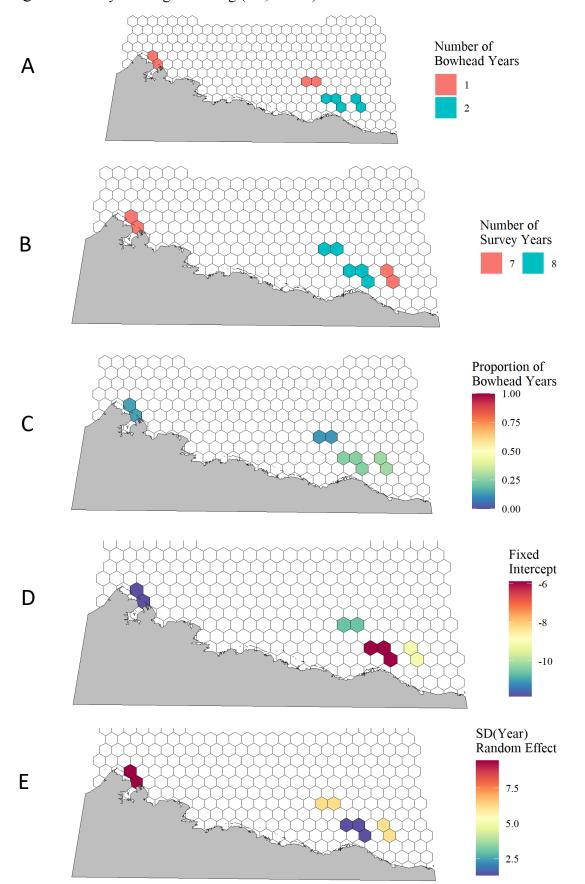


Figure S2. August Feeding & Milling (C3, Z=0.7)

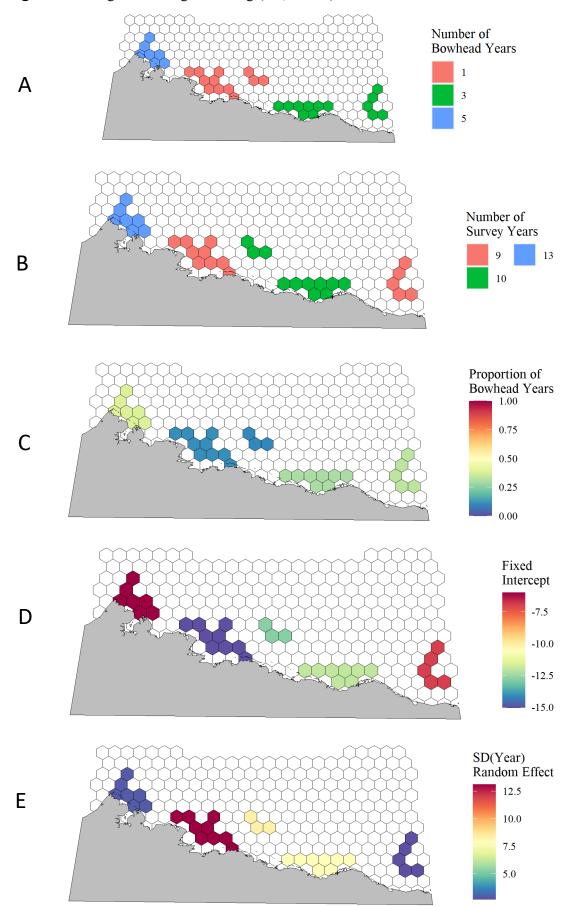


Figure S3. September Feeding & Milling (C2, Z=0.7) Number of **Bowhead Years** Α 3 10 12 Number of Survey Years В 20 19 Bowhead Years 0.75 C 0.50 0.25 0.00 Fixed Intercept **-6** D -8 -10 -12 SD(Year) Random Effect Ε 8

Figure S4. October Feeding & Milling (C3, Z=0.5)

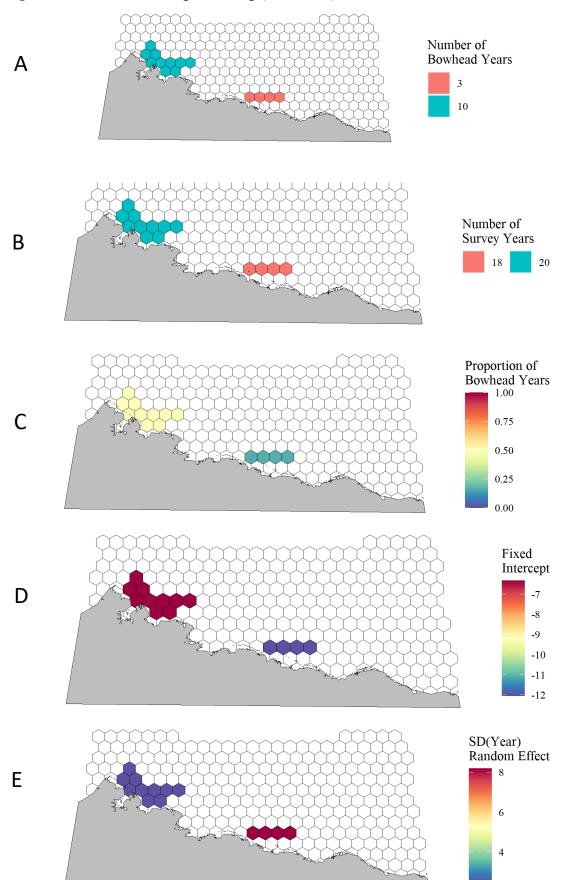


Figure S5. July Calves (C3, Z=0.7)

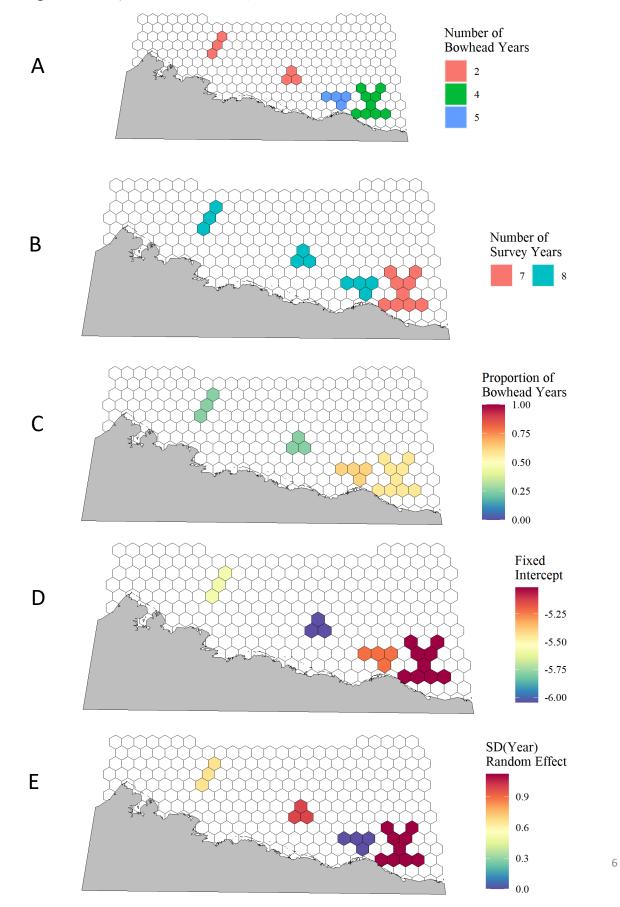


Figure S6. August Calves (C3, Z=0.7)

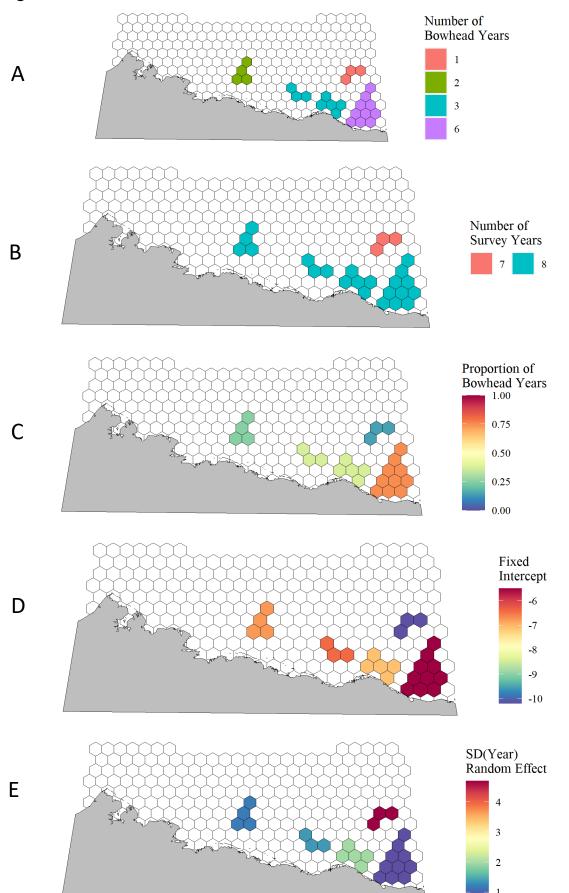


Figure S7. September Calves (C3, Z=0.7)

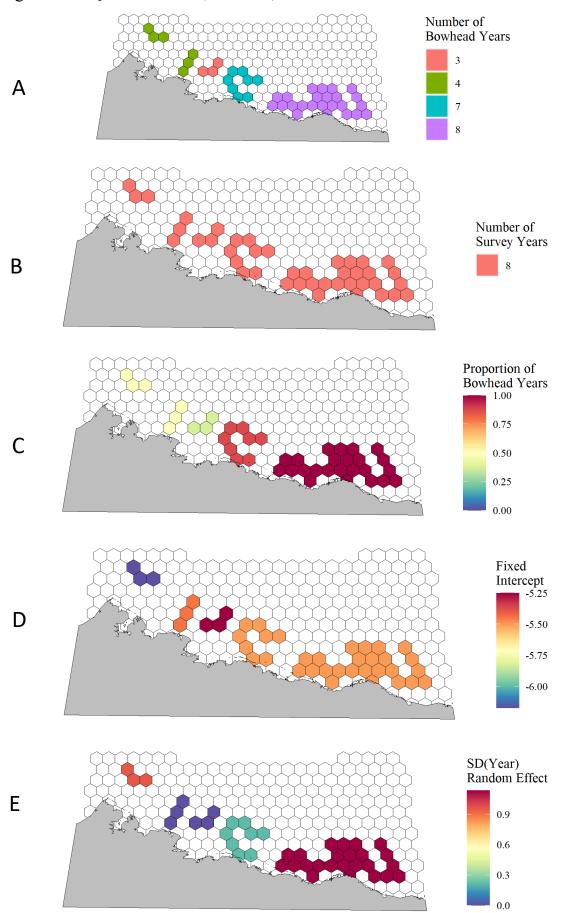


Figure S8. October Calves (C2, Z=0.7)

