

Tanner Crab SAFE Appendix C: Spatial Patterns in the NMFS EBS Shelf Survey

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Introduction

Annual spatial patterns of Tanner crab catch in the NMFS EBS shelf bottom trawl survey are presented in this appendix for surveys since 2005. Figure 1 illustrates the current sampling grid, standardized for crab stocks since 1988. Subsequent figures illustrate the annual spatial pattern for bottom temperatures at the time of the survey (Figure 2), small males (Figure 3), large males (Figure 4), industry-preferred males (Figure 5), immature females (Figure 6), and mature females (Figure 7). Females can be characterized unambiguously as immature or mature based on visual inspection of the abdomen, but no such method exists for males. Instead, males are characterized as immature or mature based on the ratio of their chela height to carapace width and a cutline based on a statistical classification analysis, but this data does not exist for all survey years. Thus, individual males are not identified by maturity in the survey database. As a simplification, survey CPUE for “small” males (< 100 CW) are plotted separately from “large” males (> 100 CW) in lieu of an immature/mature classification.



Figure 1. Map of the standardized (since 1988) NMFS EBS bottom trawl survey sampling grid for crab. Squares and circles indicate the general location of sampling stations. Each square is approximately 20 x 20 nmi², circles represent higher density sampling stations to the southwest of St. Matthew Island and surrounding the Pribilof Islands.

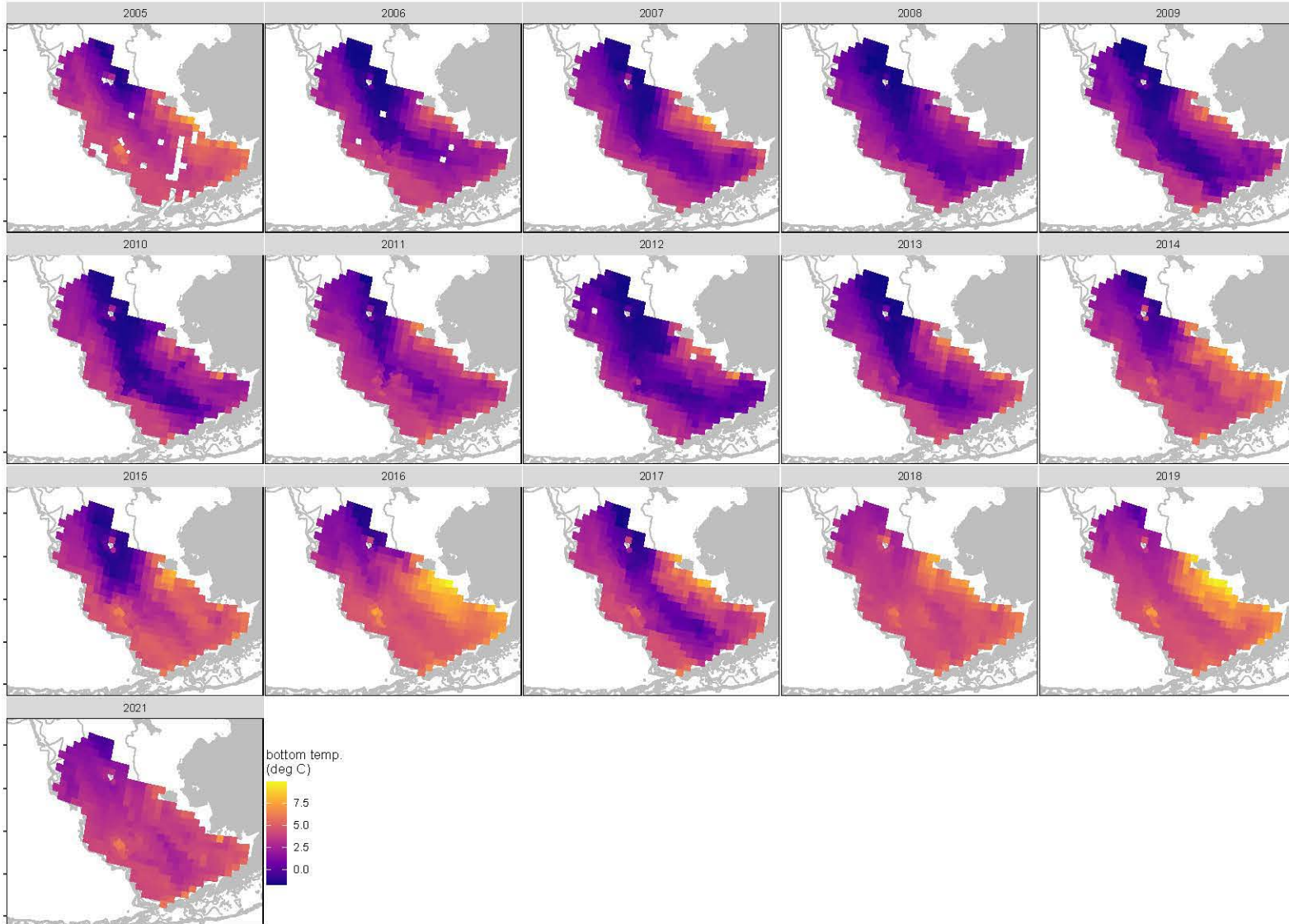


Figure 2. Annual bottom temperatures from the NMFS EBS bottom trawl survey since 2005.

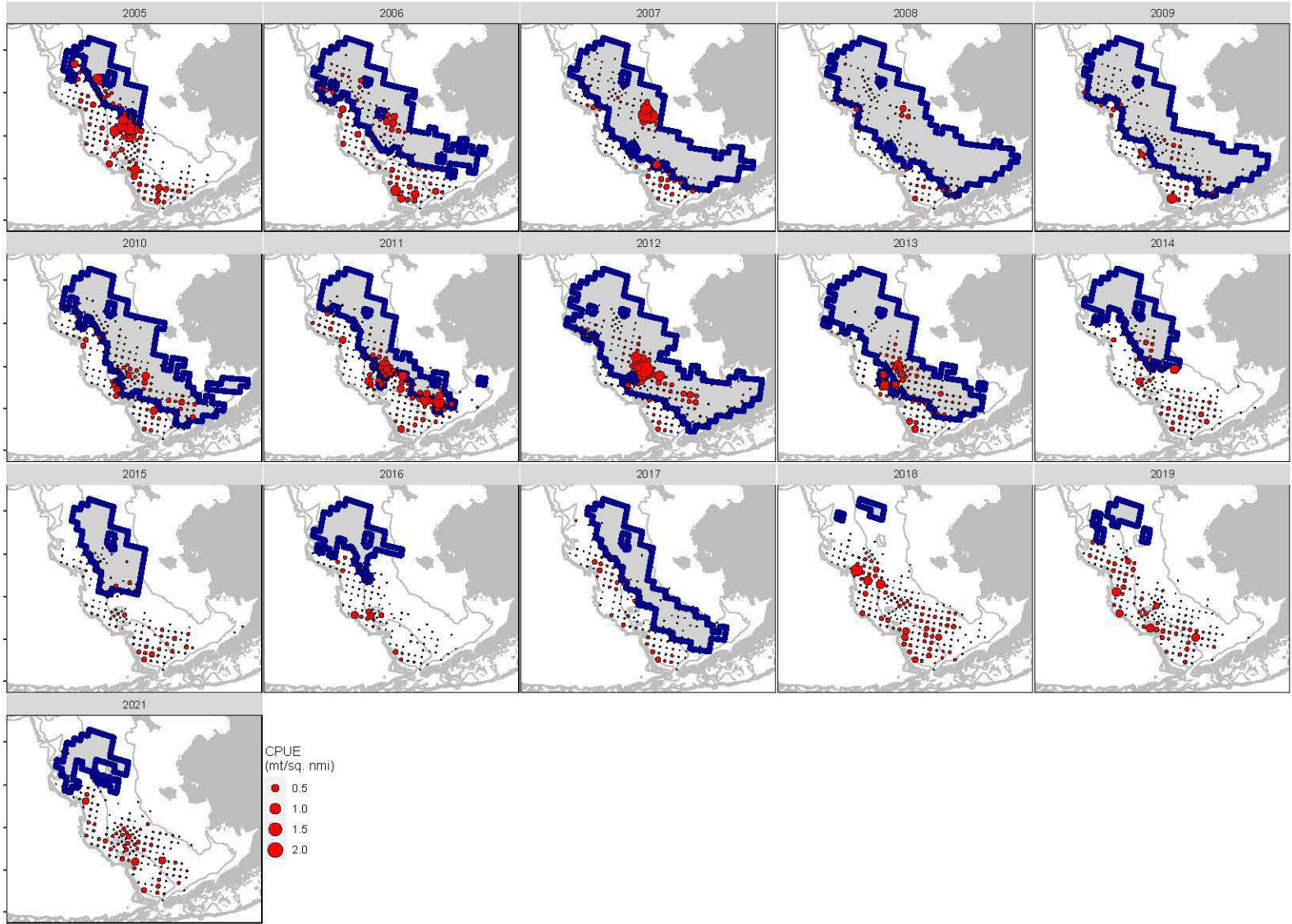


Figure 3. Catch per unit effort (CPUE, mt/sq. nmi) in the NMFS EBS shelf bottom trawl survey for small (<?? mm CW) males. The annual cold pool (<2°C) is represented by the grey polygons outlined in blue.

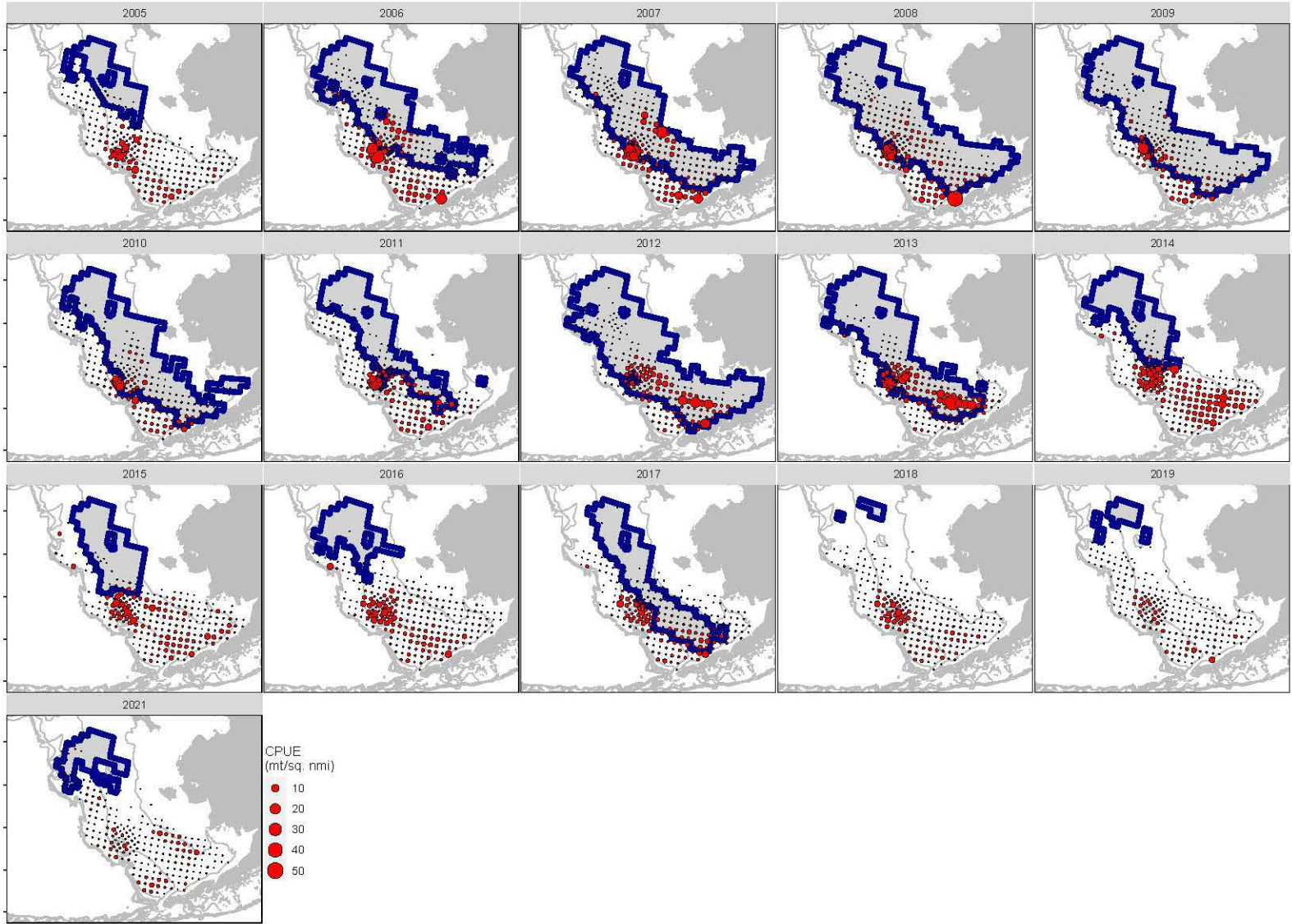


Figure 4. Catch per unit effort (CPUE, mt/sq. nmi) in the NMFS EBS shelf bottom trawl survey for large (>?? mm CW) males. The annual cold pool (<math>< 2^{\circ}\text{C}</math>) is represented by the grey polygons outlined in blue.

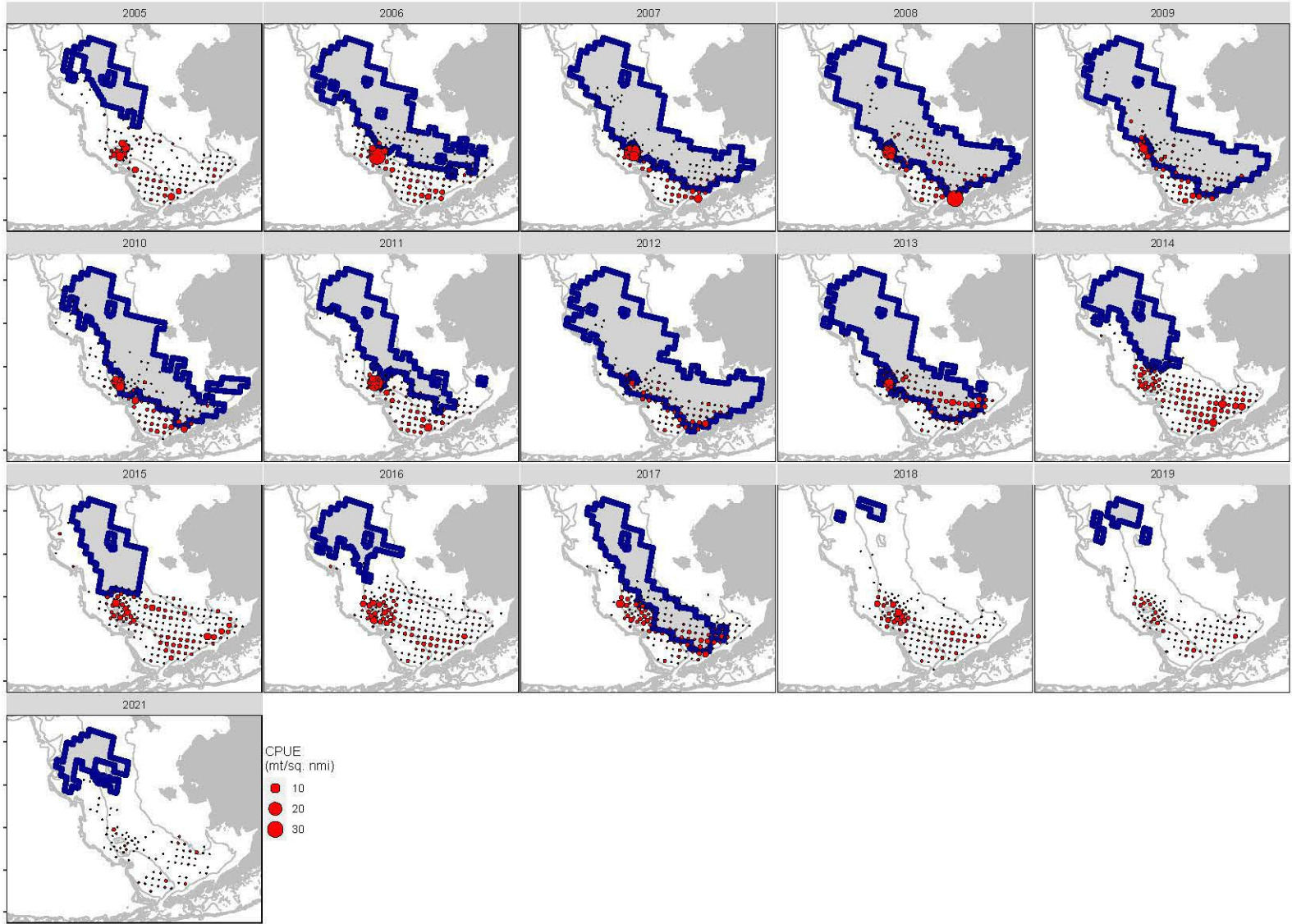


Figure 5 Catch per unit effort (CPUE, mt/sq. nmi) in the NMFS EBS shelf bottom trawl survey for industry-preferred (>125 mm CW) males. The annual cold pool (<2°C) is represented by the grey polygons outlined in blue.

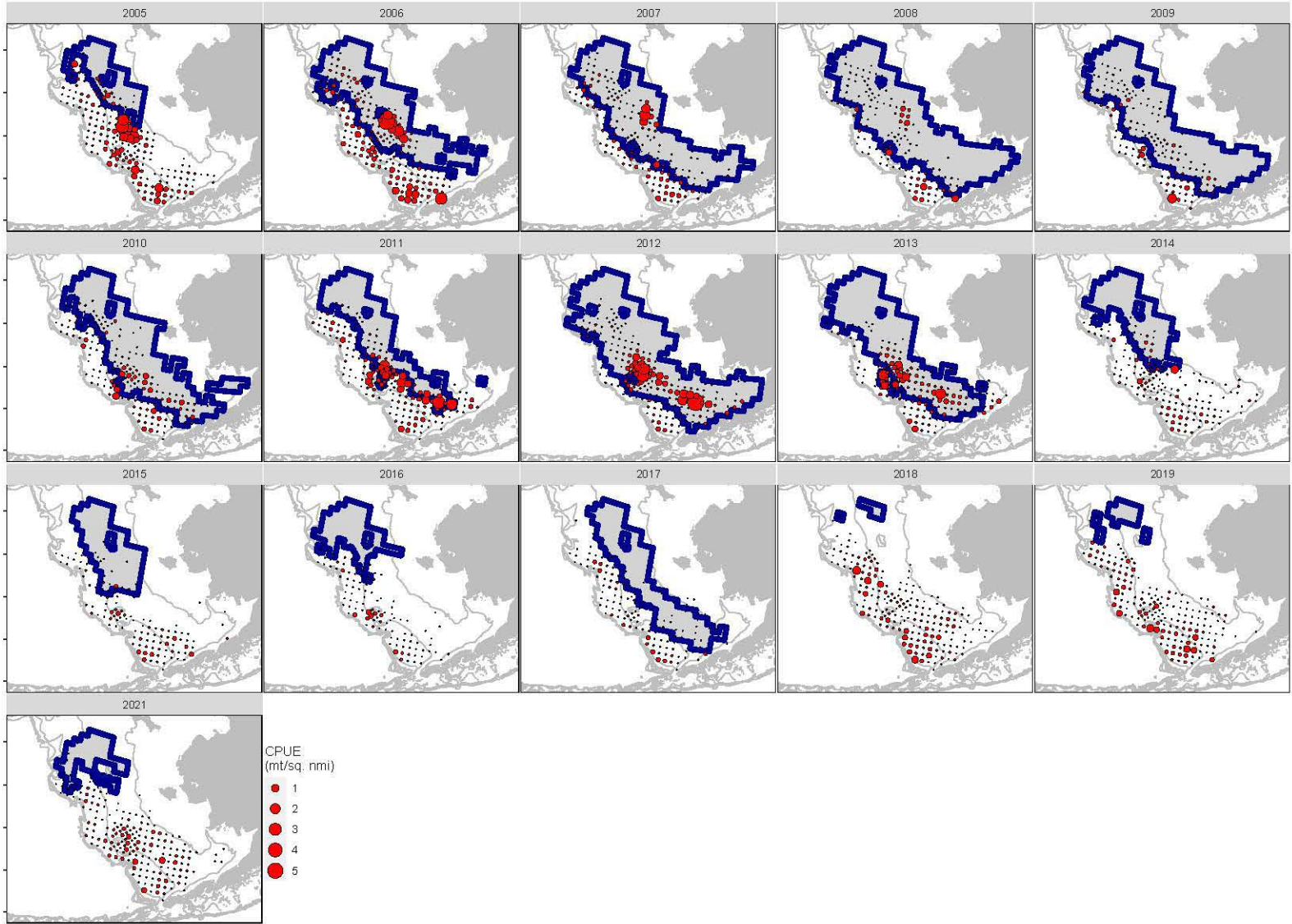


Figure 6. Catch per unit effort (CPUE, mt/sq. nmi) in the NMFS EBS shelf bottom trawl survey for immature females. The annual cold pool (<math><2^{\circ}\text{C}</math>) is represented by the grey polygons outlined in blue.

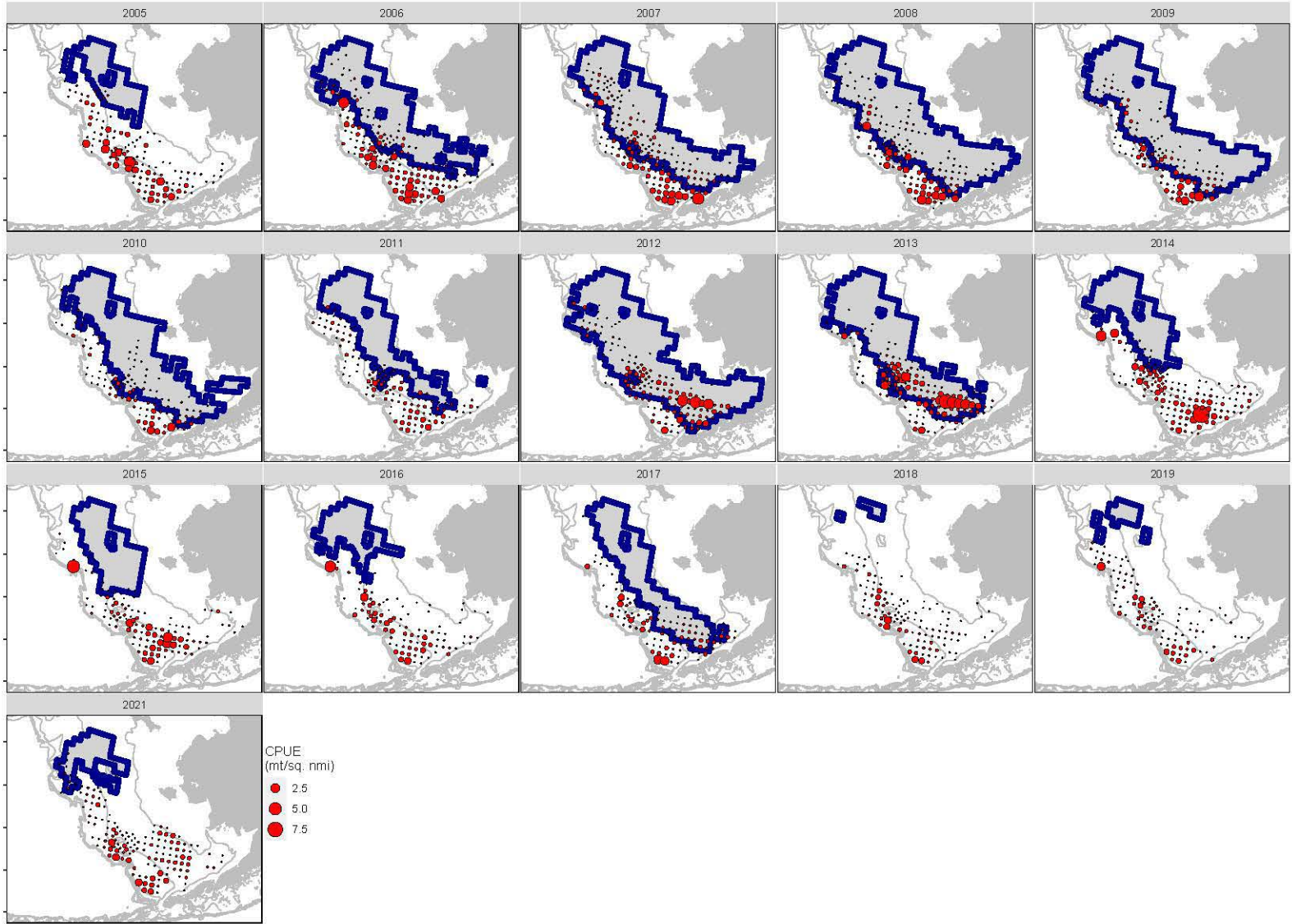


Figure 7. Catch per unit effort (CPUE, mt/sq. nmi) in the NMFS EBS shelf bottom trawl survey for mature females. The annual cold pool (<math><2^{\circ}\text{C}</math>) is represented by the grey polygons outlined in blue.

