Harvest summary

The following is a summary of the harvest locations for individual bears that were sampled as part of the ECCC biopsy report (McGeachy et al. 2023)

Three areas in Hudson Bay were defined, Area 1 Nelson River to the NU/MB border, Area 2 from the Nelson River to the WH/SH subpopulation boundary and Area 3 from the WH/SH boundary to James Bay (Figure 1). Bears were sampled in Area 1 from 2017-2022, in Area 2 from 2017-2022 and Area 3 in 2021/2022. No sampling occurred in 2020. In total 613 (32%) samples were collected in Area 1, 724 (38%) in Area 2 and 571 (30%) in Area 3.

Harvest samples (N=377, WH = 187, SH = 190) were collected from Nunavut and Quebec from 2017/2018 through 2022/2023 harvest season. Of these samples, 39 (10%) matched bears previously sampled between 2017-2022 (Figure 2). Area 1 represented 54% of the recoveries, Area 3 represented 28% and Area 2 represented 18%.

Bears sampled in Area 1 were only harvested in WH and comprised 81% of the WH harvest recoveries. Bears sampled in Area 2 were harvested in both WH and SH. Bears sampled in Area 2 comprised 11% of the recoveries from WH while bears that were sampled in both Area 1 and Area 2 comprised 8% of the harvest recoveries. Thus, in total, only 19% of the harvest recoveries in WH included bears sampled in Area 2.

In SH, 85% of the harvest recoveries were from bears previously sampled in Area 3 while bears sampled in Area 2 represented 15%.

The data suggests that bears from Area 2 in Hudson Bay are harvested less frequently. When they are harvested, they are harvested in both WH and SH. Thus, the assumption that all bears in Area 2 are available for harvest in WH appears to be invalid. A cautionary approach should be taken when considering a harvest quota for WH that includes abundance estimates from Area 2.

The report from ECCC (McGeachy et al. 2023) showed movement between adjacent subpopulations is likely a contributing factor that influenced abundance estimates derived from aerial surveys in 2021 for WH and SH. Movement between adjacent subpopulations was primarily the result of exchange between Area 2 and Area 3 in relation to sea ice dynamics. When considered in conjunction with this summary, the movement of bears between WH and SH appear to be individuals that have a lower vulnerability to harvest within WH and SH.

References

McGeachy, D., Lunn, N.J., Northrup, J.M., Trim, V., Davis, C., and Derocher, A.E. (2023). Distributional shifts of polar bears (*Ursus maritimus*) in Hudson Bay in relation to sea ice dynamics, 2017-2022 Final Report. Environment and Climate Change Canada, 32 pp.

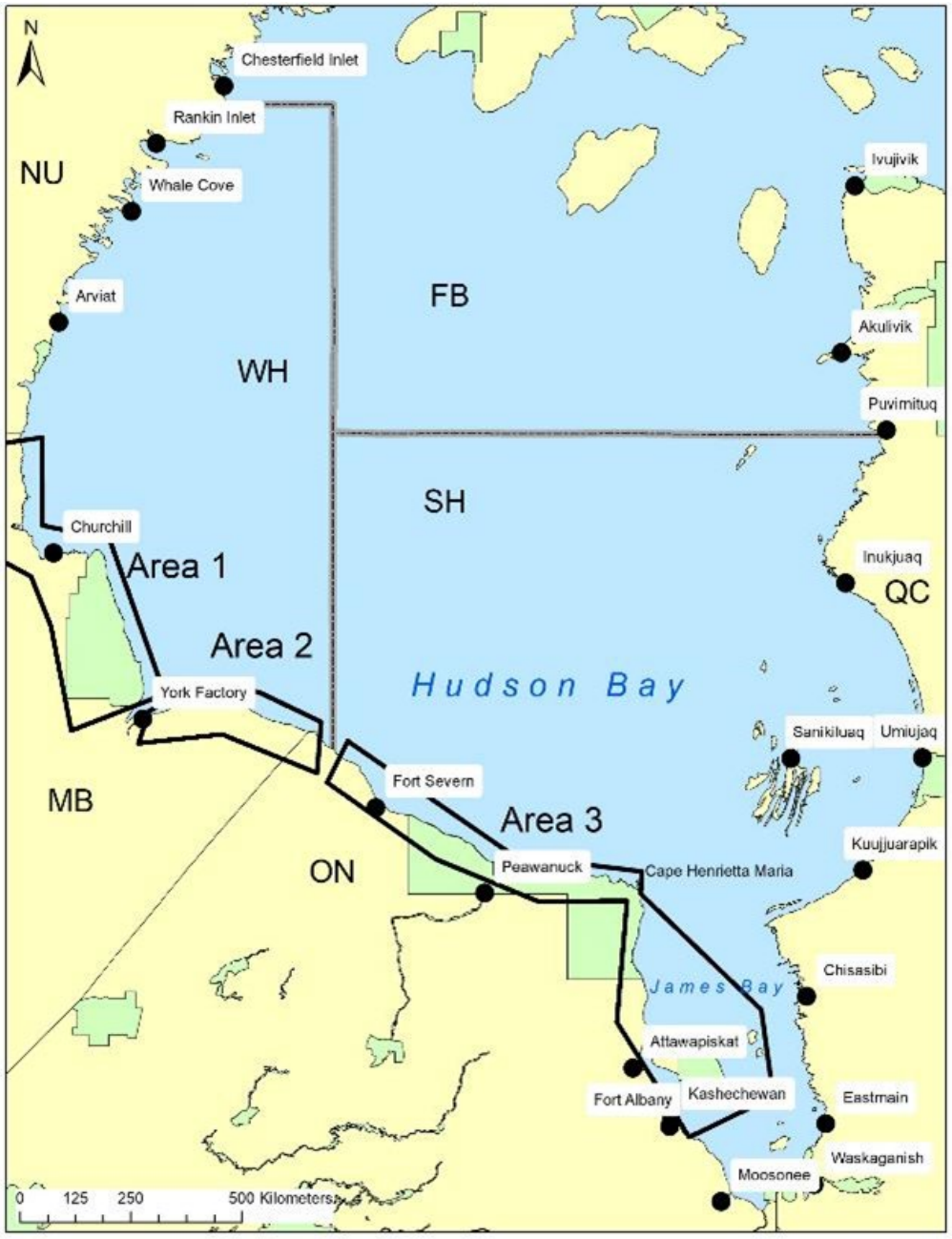

Figure 1. Study area showing 3 distinct geographic regions in Hudson Bay (Area 1, Area 2 and Area 3). Area 1 and Area 2 were sampled from 2017-2021 and Area 3 was sampled 2021-2023. No sampling occurred in 2020.

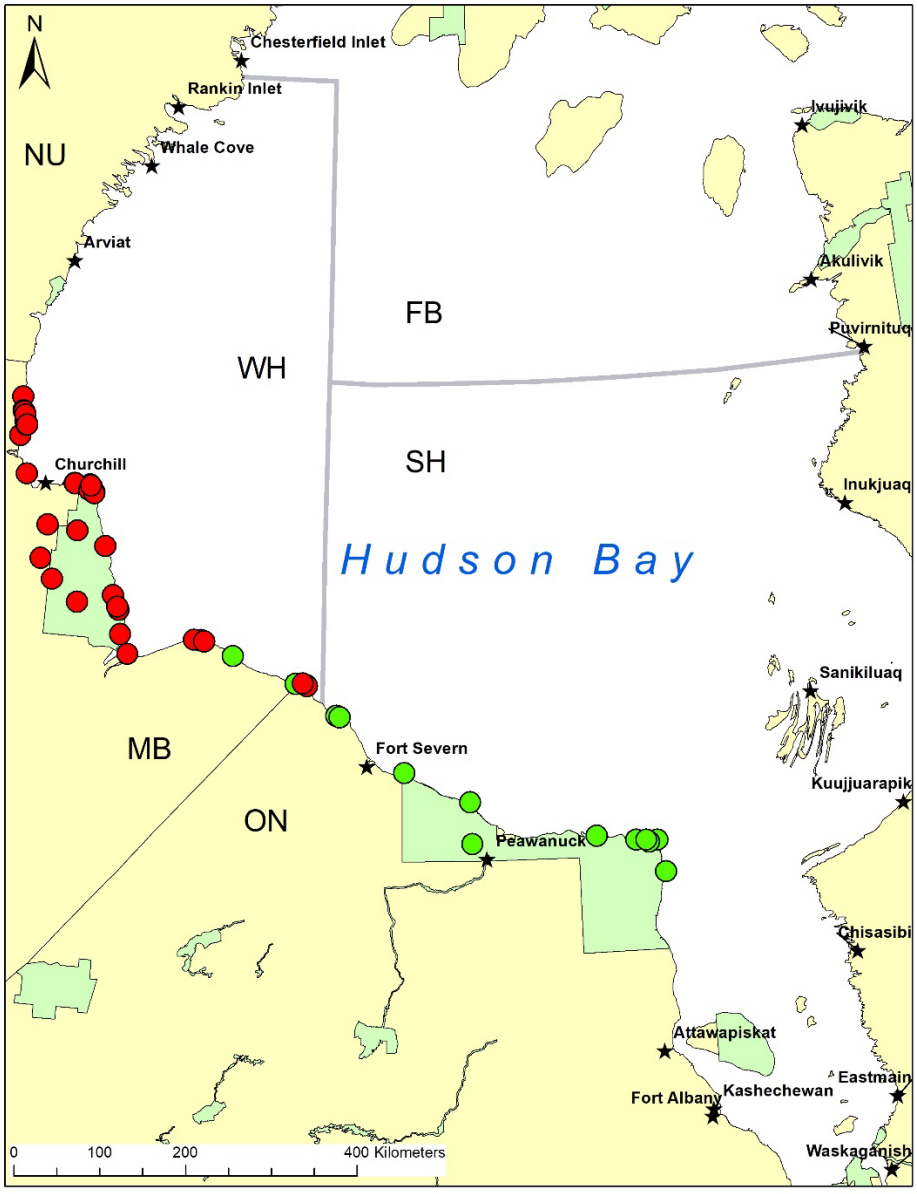

Figure 2. Locations where bears were sampled from 2017-2022 that were later harvested in WH (red circles) or SH (green circles) between 2017/18 and 20122/23 harvest seasons.