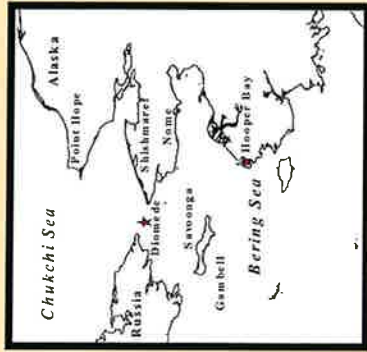




# Organochlorine contaminants in ice seal blubber from the Bering Sea subsistence harvest in Alaska

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**Introduction:** Organochlorine contaminants (OCs) can be transported to and accumulate in the Arctic. Contaminants do not have to be manufactured or used in the Arctic to be present. These pollutants can bioaccumulate in fat rich tissue due to their low water and high lipid solubility, leading to concerns about concentrations in arctic marine mammals and people who consume them. In this preliminary analysis, we examined total hexachlorocyclohexane (HCH, four compounds), total chlordane (CHLOR, seven compounds), total dichlorodiphenyltrichloro-ethane (DDT, six compounds), and total polychlorinated biphenyls (PCB, 82 congeners and congener groups) from the blubber of ice seals.

**Methods:** Blubber samples were collected from nine bearded (*Erignathus barbatus*), 11 ringed (*Phoca hispida*), eight spotted (*Phoca largha*), and seven ribbon (*Phoca fasciata*) seals from the subsistence harvest near the villages of Diomede and Hooper Bay, Alaska. Samples were collected in 2003 and 2004 through the Alaska Department of Fish and Game's (ADFG) Ice Seal Biomonitoring Program. Blubber samples were placed in Ziploc plastic bags and frozen. Frozen blubber was subsampled in the laboratory at ADFG under clean conditions using titanium knives on a Teflon covered surface (Becker et al. 1991). Clean samples were placed in IChem glass jars and stored at  $-55^{\circ}\text{C}$ . Samples were then transported to TDI—Brooks International, Inc., B&B Laboratories, Inc. College Station, TX for analysis. Laboratory methods are available upon request from the authors. The value for each compound was summed to obtain a total for that contaminant category. The geometric mean was calculated for each category.

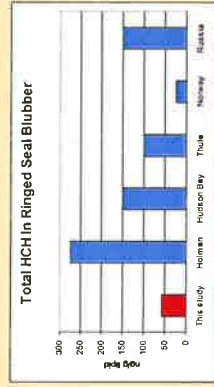


Fig.5.

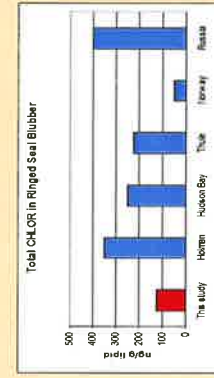


Fig.6.

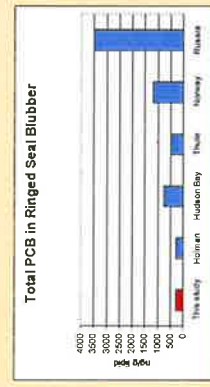


Fig.7.

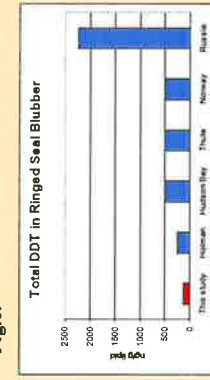


Fig.8.

**Conclusion:** Comparable data from other parts of the Arctic are only available for ringed seals (Figs. 5–8). Levels of OCs for ringed seals in this study were lower than levels reported from other Arctic regions (2002 Arctic Monitoring and Assessment Program report).

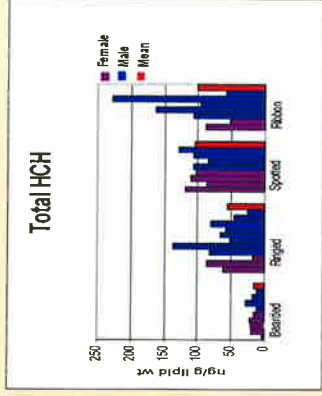


Fig.1.

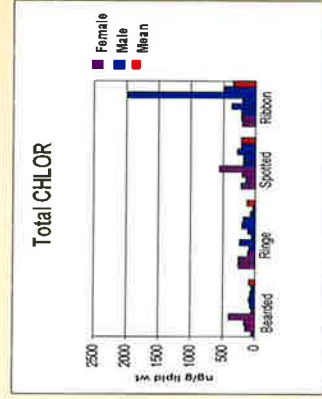


Fig.2.

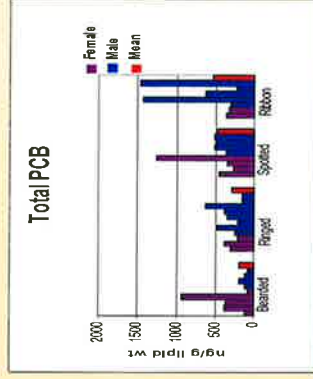


Fig.3.

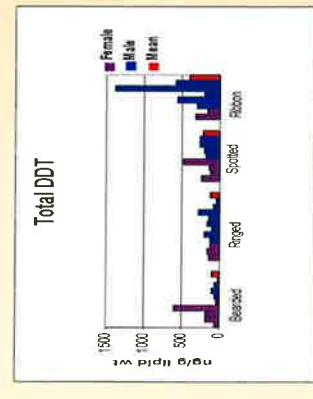


Fig.4.



**Results:** Ribbon Seals had the highest geometric mean concentrations of all categories except for HCH for which spotted seals were only slightly higher (Figs. 1–4). Bearded seals had the lowest mean concentrations of all categories. There was no significant difference ( $P > 0.05$ ) between sexes among species for any of the four OC categories. There was no within species difference in OC concentrations between seals harvested near Diomede and those harvested near Hooper Bay.

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