most widespread zoonotic pathogens in the world. *Trichinella nativa*, as opposed to *Trichinella spiralis*, is adapted for survival in the cold arctic environment, and *T. nativa* larvae have been found to tolerate several months of storage at below zero temperatures without any noticeable decrease in survival. All three parasites are of possible concern in northern Inuit communities because hunted game provides large quantities of meat which may be rapidly and widely distributed among community members. This could pose a serious food safety risk when the disease status of the food remains unknown. To better inform the communities of the risks that their food may pose to them, it is necessary to determine the distribution and prevalence *of A. simplex, T. gondii* and *T. nativa* in the arctic. Depending on these results, a food monitoring and testing program may be recommended. The second objective of this study is to prepare baseline data for future comparisons with regards to climatic changes and the impact that this has on parasite prevalence. At this time, little information is available on the impact that climate change may have on the prevalence of zoonotic pathogens in the arctic. To achieve both goals, the project will build wildlife disease surveillance capacity in Nunatsiavut by creating a small local lab and training a local resident in the techniques required to detect the three listed pathogens in wildlife food sources. We will work with traditional local hunters who will submit samples from their hunts to the local lab technician. Once data from the study begin to come in, a results database will be established and results disseminated to the community in a culturally appropriate manner.

LARGE AREA ICE THICKNESS MEASUREMENTS USING AIRBORNE ELECTROMAGNETICS

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For the prediction of sea ice conditions, consideration of sea ice thickness is inevitable. This basic parameter influences several processes like heat exchange between ocean and atmosphere, light penetration, or surface momentum balance. Since all these processes are considered in realistic sea ice models, a comprehensive and accurate input dataset of measured thickness can improve the quality of sea ice forecast models enormously. Furthermore, a thinner sea ice cover is more trafficable. But still sea ice thickness is one of the most difficult parameters to obtain via routine observations.

Airborne Electromagnetics (AEM) is a method to measure sea ice thickness directly. The basic idea behind it is to obtain two different distances with sensors mounted on an aircraft. A laser altimeter measures the distance from the sensor to the ice or snow surface, and an EM system measures the distance between sensor and ice-ocean interface. Additionally, the laser altimeter provides surface roughness data. This method was first applied by the US Army Cold Regions Research and Engineering Laboratory in 1987. The Alfred Wegener Institute (AWI) started AEM sea ice thickness measurements in 2001 on a routine basis. It owns three sensors, so called EM Birds, which can be operated from any aircraft that is capable to carry an external sling load. The spatial coverage solely depends on the range of the used aircraft, and the temporal coverage solely depends on its availability. The operating range can be significantly increased if icebreakers are uses as a platform for helicopters.

During the past years, the AWI conducted several sea ice thickness surveys of regional thickness distributions, e.g. since 2004 spring thickness distributions in the Lincoln Sea on a yearly basis. Here we present a dataset from summer 2007, collected along helicopter flight tracks of 4000 km total length covering 20 different regions of the Transpolar Drift. It shows the capability of AEM measurements to determine pan arctic thickness distributions. With these measurements, we covered approximately one third of the area of the 2007 minimum sea ice extent, most of it in the eastern part of the Arctic Ocean and around the North Pole. All over the study area, the thickness distribution was homogeneous with a single maximum around 0.9 m, which strongly supports the assumption that multi year ice has disappeared entirely from this part of the Arctic Ocean.

Furthermore, we compared the presented dataset with thickness maps of two sea ice models, one developed at the AWI and another at the Polar Science Center of the University of Washington. Both models agree with our measurements inasmuch as they predict a relatively low summer minimum ice thickness for the surveyed area. However, the actual differences between our HEM results and the models (and the differences between the two models) are typically around 0.5 m, at some locations considerably more. Measured sea ice thickness data are still to sparse for data assimilation but are important for model verification.