TITLE: Landscape Evolution, Paleoecology and Climate Change in the Tertiary of the High Arctic

The primary purpose of this field project is to improve our understanding of past High Arctic environment and landscape changes that occurred 25 to 3 million years ago. Exceptionally well preserved fossils found in various regions of the Arctic provide us a unique opportunity to reconstruct the Arctic environment and climate during the Pliocene and to test hypotheses.

Transportation and logistics will be supported by the Polar Continental Shelf Project. The field season is around 6 weeks long and will involve 4 - 5 personnel at each site. The field camp will consist of temporary structures (tents) and ground transportation will be on foot. Fossil collecting will involve surface collection, and minimal excavation with hand tools (e.g., trowel). Overall, the project will have minimal impact on the landscape.

We plan to conduct field work in three locations. The first two locations (A and B) are on Ellesmere Island. At these we will be investigating fossils deposits that are early Pliocene in age, (5 – 3 million years ago). During the Pliocene the Arctic climate was much warmer than today. Previous work on the deposits shows evidence of a boreal-type forest along with the remains of birds, mammals, fish and frogs.

The third location (C) is on Ellef Ringnes Island. This site was last visited by Fyles in 1988 and was noted to have similar deposits to the previous sites mentioned. These deposits are unique and are fossil rich and will provide critical evidence for investigating the relationship between Arctic ecosystems (plants and animal), landscapes, and changing climate.