

## **ABSTRACT**

On earth glaciers and ice sheets constitute large ecosystem covering more than 10% of the surface and containing approximately 78% of the world's fresh water, thus they form a distinct biome.

Long ago, frozen environments which cover a significant portion of the earth were considered devoid of life. Discovery of psychrophilic bacteria and their increasing understanding of their function and adaptations have increased the awareness of the diversity of microbial life on earth. Research outcome gives clear picture and base line data about cold active bacteria present in Lewis glacier. Glacial ice entraps and preserves soluble chemical species gases and particulates including pollen grains, fungal spores, bacteria, algae, seeds and insects. Bacteria seem to grow best in cracks and crevices within the ice. The cracks serve as channels for water and nutrient to circulate.

The main objective of this research is to isolate and characterize bacteria from Lewis glacier. The study aims at determination and characterization of different bacterial species and how they are adapted to grow in glaciated environments.

The sample obtained from Lewis glacier will be cultured using Nutrient agar, in Maasai Mara University laboratory. A pure colony of bacteria is isolated and the characteristic feature of the colony is noted followed by gram staining reactions and microbiological methods. The sample size will be determined through calculations of mean, mode and median and distinct characteristics of bacterial colony recorded in a table and the results obtained will then be represented in a graph.