



**BLACK RIVER FIRST NATION  
SNOW DEPTH STUDY  
MEASUREMENT PROTOCOLS**

## Temperature

Weekly temperature data (Monday through Sunday) was used to monitor the number of days the daily mean temperature was  $\leq -17^{\circ}\text{C}$ .

1. The maximum (warmest) daily temperature ( $^{\circ}\text{C}$ ).
2. The minimum (coldest) daily temperature ( $^{\circ}\text{C}$ ).
3. The daily mean temperature ( $^{\circ}\text{C}$ ).

## Snow Depth Measurements

The collection of snow depth measurements was initiated once snow remained permanently on the ground and continued throughout the winter until the ground was snow-free. The weekly snow depth data was used to monitor when snow conditions reach critical depths. Snow depths are largely characterized as follows:

- A snow depth of  $< 25$  cm allows deer to cover a greater part of their range and provides easier access to adequate food and shelter.
- Deer mobility decreases when snow depth increases to 25 cm to 35 cm.
- Deer mobility is significantly affected when snow depth exceeds 45 cm.

## Methods

For the snow monitoring stations, snow depth measurements were recorded along a straight-line transect at 10 permanent sites with each site located 20 meters (m) from adjacent sites in untracked (unpacked) snow. The mean value of the 10 measurements was recorded as the total snow depth and recorded.

1. Snow stations were located within a forested area.
2. Transect lines were located in a forested area of moderate to heavy density with an average tree height of 6 m or greater.
3. The terrain was relatively level with little or no overall gradient, straight-line transects were set-up in any suitable direction within the forested area.
4. Transect lines did not pass within 40 m of any clearing, lake, road or other opening which could lead to drifting snow.

## Materials Required to Setup a Snow Station

1. Ten (10) metal metric measuring rulers - 1 m in length
2. Ten (10) metal posts, trees or other materials can be used – posts must be a minimum of 3 m in length with a diameter of no more than 5 cm, trees must be no more than 5 cm in diameter as well.
3. Rulers are to be attached to posts, trees or other materials at ground level.