

Map Scale

A map scale is the relationship of distance on the map to distance on the ground.

A **USGS 7.5 quad topographical map**, for instance, has a scale of 1: 24,000, meaning that any given distance on the map equals 24,000 times that distance on the ground. That map distance is often some convenient unit of measure, such as an inch or a centimeter.

- **Example:** One inch on the map equals 24,000 inches (2,000 feet) on the ground.
- **Example:** One centimeter on the map equals 24,000 centimeters (240 meters) on the ground.

US Military Maps and many **Canadian and European maps** use a scale of **1:25,000**.

- **Example:** 1 centimeter on the map equals 250 meters on the ground. Logically, then, 4 centimeters on the map equal 1,000 meters (4x250) (one kilometer) on the ground. Four centimeters per kilometer (sometimes called a *klick* for short) makes for convenient measuring when using a map with a 1:25,000 scale.

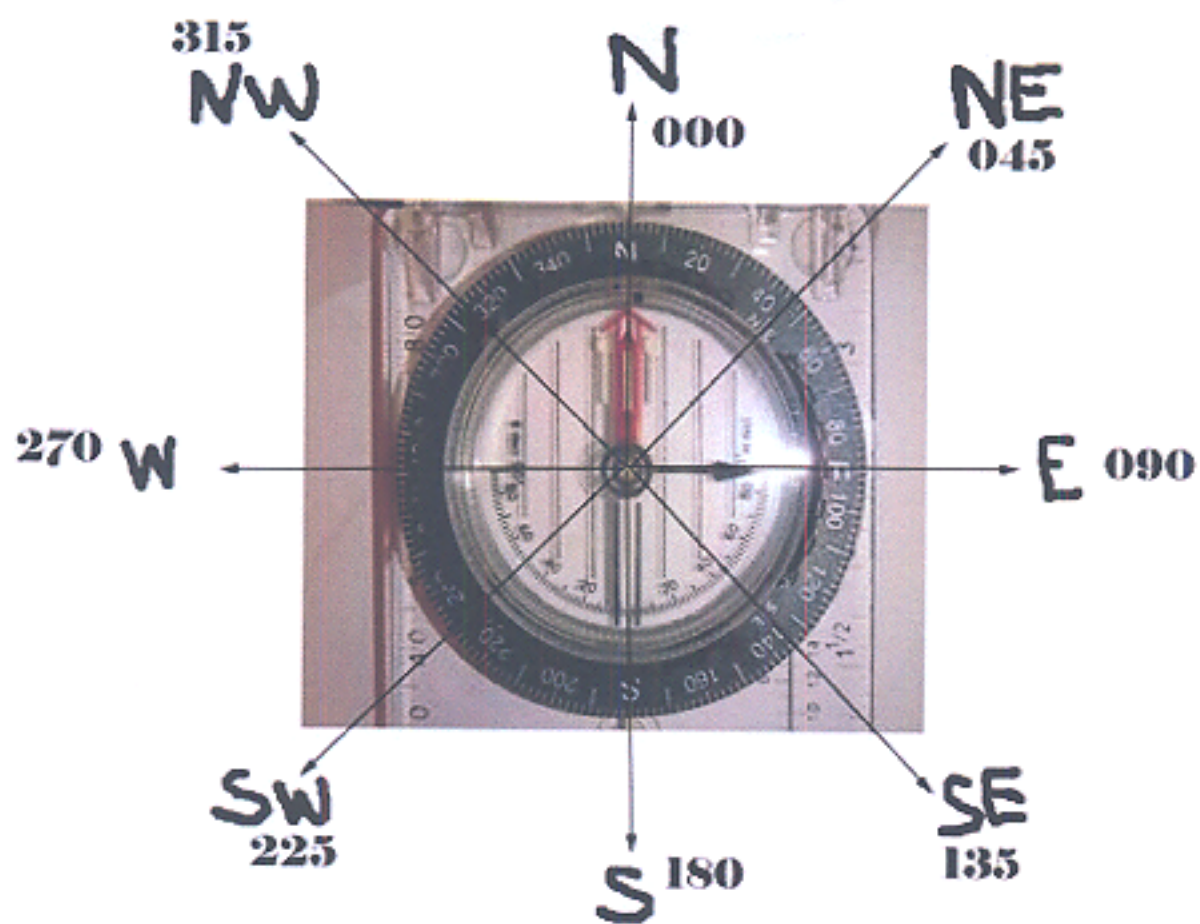
NOTE: 1 meter =100 centimeters

Reading a compass:**Cardinal directions**, as follows:

- 000 - North
- 090 - East
- 180 - South
- 270 - West

The **intercardinal directions** lie between these four points on the 360-degree dial:

- 045 Northeast
- 135 Southeast
- 225 Southwest
- 315 Northwest

**Cardinal and Intercardinal Directions**



Department of Natural Resources / Ministère des Ressources naturelles, SNB, Service New Brunswick / Service Nouveau Brunswick, Department of Environment and Local Government / Ministère de l'Environnement et des Gouvernements locaux

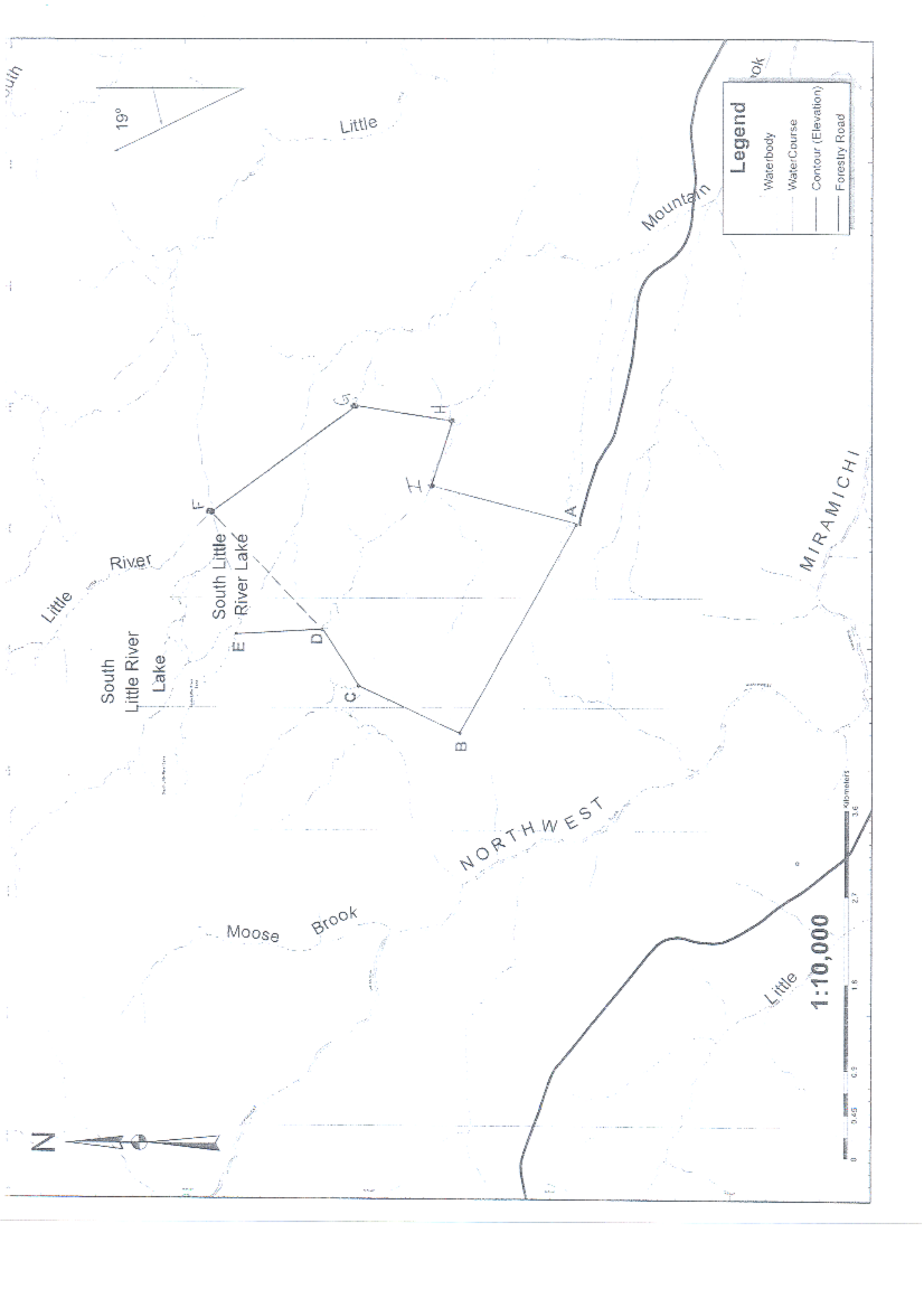
Scale/Échelle: 1:2,500

Date: 9/13/2018

Printed by/Imprimé par:

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Pacing

To measure (a distance) by walking it and counting the number of steps taken.

To determine or "calibrate" your pace follow these directions: **1m = 3.28084ft**

- Step 1: Accurately measure out a course that you will pace over several times. 200 m is a good distance.
- Step 2: Walk the course with a natural stride and count each pace (double-step).
- Step 3: Calculate your pace by dividing the length of your course by the number of paces it took to travel it. So, if my course was 200 m and I counted 40 paces then that equals a 5 ft. Pace.
 $200/40=5\text{ft (1.52m)}$ $5/ 3.2808= 1.52\text{m}$
- Step 4: Walk the course multiple times to figure your average pace. Try pacing while wearing your full backpack to see if it changes your results.

Things that will affect your pacing

Your paces will be longer while:

- going downhill
- hiking with a strong tail wind

Your paces will be shorter while:

- going uphill
- hiking against strong winds
- wearing a full backpack
- hiking on loose surfaces like sand, gravel, etc.
- going around trees, rocks, etc.

Conversions Table (average 1.3m in 1 Pace)

of Paces / your pace

Example: $300\text{p} / 1.3=230\text{m}$

3 Paces to Meters = 2.3

4 Paces to Meters = 3.0

5 Paces to Meters = 3.8

6 Paces to Meters = 4.6

90 Paces to Meters = 69.0

100 Paces to Meters = 77.0

200 Paces to Meters = 154.0

300 Paces to Meters = 230.0

*These numbers are rounded