

TELEMETRY REPORT USER GUIDE



Upper Snoqualmie Valley
Elk Management Group

SNOQUALMIEVALLEYELK.ORG

DOCUMENT VERSION 1

PAGE 1 OF 2

EQUIPMENT CHECKLIST

Telemetry receiver and antenna, extra AA batteries, GPS, compass, EMG telemetry report forms, pencil, plotting maps, protractor, plotting marker, watch.

USING THE TELEMETRY RECEIVER

There is a radio on the collar which produces a beep at a distinct frequency. A gyroscope in the machine causes a slow beep pattern when the radio is level and a faster pattern when the radio is at an angle (usually an indication that the elk is feeding). Interference is caused by power lines, dense vegetation, and hilly terrain. Avoid these locations. For best results take readings within one mile of the elk's approximate location.

The middle button on the top of the receiver is the power. The left button adjusts the gain of the signal. The goal is to find the direction of the strongest signal with a consistent power and gain setting. Each receiver has the elk collar frequencies pre-programmed. Use the up and down button to toggle through to one of the elk.

001 – Gertrude	005 – Sally	008 -- Wilma
003 – Lydia	006 – Tanya	009 -- Eunice
004 – Juju	007 – Dolores	010 -- Mitzy

IDENTIFYING YOUR LOCATION

Use a GPS unit to determine the latitude and longitude for the location where you are taking your reading. Generally, there are three types of readings. Any of these can be entered on the form (note that 47°N and 121°W is assumed so just enter the minutes/seconds, minutes and fractional minute, or fractional degree following the 47 or 121).

Examples:

Degrees/Minutes/Seconds	47° 31' 12" N	For this format please record 31/12 after the 47 for LAT.
Degrees/Minutes and fractional minute	47° 31.200' N	For this format please record 31.200 after the 47 for LAT.
Degrees and fractional degrees	47.52000° N	For this format please record .52000 after the 47 for LAT.

USING A COMPASS TO FIND THE AZIMUTH VALUE

Locate an object on the horizon in the direction of the telemetry receiver and point the compass in that direction. Holding the frame of the compass in this direction rotate the compass wheel so that the needle is in alignment with the magnetic north indicator. The azimuth value will be the number at the top of the compass wheel in the direction that you are pointing the compass. For example, if magnetic north is to your left, the azimuth value will be 90°. Note that some GPS units will provide a "true north" reading. If you use this feature, check the box at the top of the report to indicate that your azimuth value is "true north."

PLOTTING THE AZIMUTH ON A MAP

The goal of this exercise is to take azimuth readings from three locations to locate a small region where the elk is located. The azimuth taken from three locations must intersect to form a single point or a small triangular region which estimates the approximate location of the elk. Follow these steps to plot the azimuth on the plotting map:

1. Find the location where the reading was taken on the map and mark the location with a dot.
2. Add 17° to the magnetic north azimuth value to create a true north azimuth value. If the true north azimuth value exceeds 360° then subtract 360°.
3. Extend a line in the direction of the true north azimuth value.

Compass directions: N = 0° or 360°, NE = 45°, E = 90°, SE = 135°, S = 180°, SW = 225°, W = 270°, NW = 315°.

TELEMETRY REPORT USER GUIDE



Upper Snoqualmie Valley
Elk Management Group

SNOQUALMIEVALLEYELK.ORG

DOCUMENT VERSION 1
PAGE 2 OF 2

PLOTTING EXAMPLE

Each telemetry report form has room for six reports. If more than six reports are needed, please use a new report form for the additional reports.

In the example to the left there are four observations taken in a 90 minute period. Notice that this GPS unit displays latitude and longitude in degrees and fractional degrees.

The azimuth values for this report are magnetic north azimuth. Therefore we need to add the 17° E declination to convert the values to true north. For example, the magnetic azimuth value for observation A1 was 65°. The azimuth adjusted for true north is 82°.

$$65^\circ + 17^\circ = 82^\circ$$

A protractor will increase the precision of the plotting on the map. However, 82° is very close to 90° which is the heading for due east.

Therefore, 82° is just a small 8° angle barely north of east. Observe how the figures above are plotted on the map.

Notice how the first three readings create a nice relatively small triangle. This is what we are looking for.

In this particular case the elk was in the same place for a long while, but started to move in a southeast direction by the time the fourth reading was taken.

ELK REPORT A

ELK NUMBER	6 - Tanya		
OR NAME			
START TIME	4:30 p.m.	FINISH TIME	6:00 p.m.

	Latitude	Longitude	Azimuth *
A1	LAT 47 .52280	LONG 121 .77029	65
A2	LAT 47 .51902	LONG 121 .76446	10
A3	LAT 47 .52672	LONG 121 .75466	220
A4	LAT 47 .52427	LONG 121 .74987	234

