



Wild Ennerdale


THE NATIONAL TRUST



Cattle Tracking FAQ

With funding from Natural England



1) Contact details

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2) Site information

Location :- Cumbria, Ennerdale Forest, Silver Cove, Grid Ref NY129137

Area 145ha,

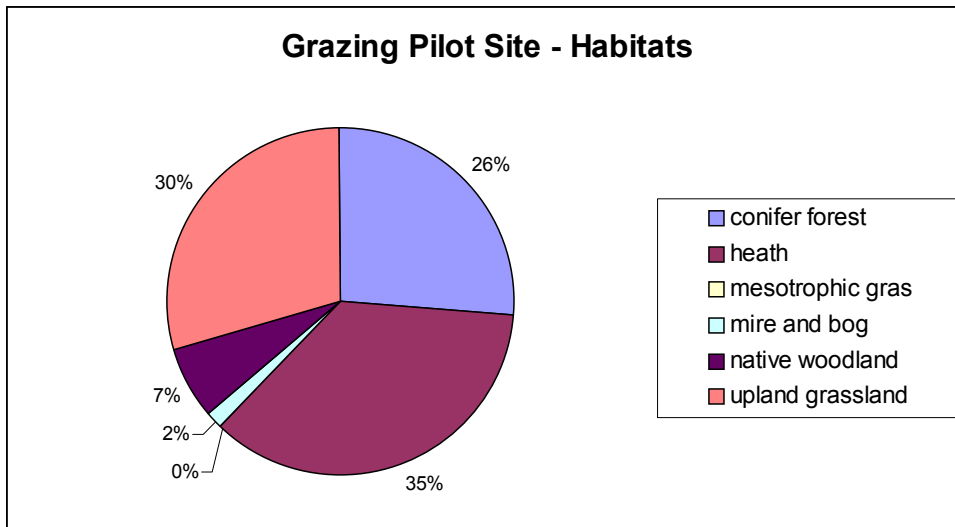
Topography :- side valley and part of main valley floor with a range of slopes and aspects. Altitude range from 120m to 400m. Craggs and scree, rivers and watercourses.

Geology :- Granite, syenite, granophyre

Average annual rainfall :- Approx 1.5m per year

Recreation and access :- 3km of public rights of way and 6Km of forest roads traverse the site.

Habitats :- 38ha of Conifer Forest, 51ha of heath, 43 ha of upland grassland, 9ha of native upland oak woodland, 2ha of mire and bog.



3) Type of tracking system used

GPS for recording locations and Radio for finding animals for welfare checks.

4) Manufacturer, model etc of tracking system

Manufacturer :-

TVP Positioning AB
Bandygatan 2
SE-71134 Lindesberg
SWEDEN
<http://www.televilt.se/>

Model of Tracking System:-

Tellus Basic 5H2D GPS Collar ver 2.0 with RX98E receiver and RX900 scanner logger and foldable YAGI antenna.

Frequency :- 173Mhz.

Data format :- Lat/Long.

Price: Collar - 1533 Euros
RX 98E Receiver for farmer - 1020 Euros
RX900 scanner logger from remote download of data - 4666 Euros
Remote VHF download option for collar - 333 Euros
Tellus project Manager Software for programming and downloading the data - 278 Euros

5) What animals is system used on and how is the tracking device attached to the animal?

12 year old Galloway Cow. Collar fitted around neck and secured with two nuts and bolts.

6) What area (approx) is the system used to cover and what topography does this include?

As of October 2006 the animals have been roaming an area of 32ha but have access to the full 145ha if they wish. The system should operate across the whole site.

7) Difficulties encountered with the system?

Main difficulties have been in learning how best to programme and download data from the collar. I would suggest these are normal difficulties with learning any new system. I have adjusted the interval between getting location fixes from an original 2 hours down to 30 minutes alternating monthly with 1 hours. This was from advice and GAP visit to Inglebrough.

8) Has the topography of the site affected use of the tracking?

No I don't believe it has.

9) How is the information recovered ?

The information can be recovered by remote download using the RX900 Scanner Logger or by directly downloading from the collar via USB to a PC/Laptop. I have done both.

The remote download is useful if the animals are far from the pen but is very slow taking half an hour or more depending on the amount of data. Also the remote download does not include data on activity and temperature which the direct download does. The remote download has to then be downloaded again from the scanner logger to the laptop.

The direct download is quick and easy to complete taking only a few minutes. I haven't done so yet but I'm sure it could be done with the collar still on the animal if the animal was calm and in a crush. The direct download saves directly to a text/csv file, which can then be imported into, excel.

10) What software programme is used?

The data files is imported into Excel and then converted into a DbaseIV (*.dbf) file. This is then imported into our ESRI's ARC9.1 using the "Tools" "Add X Y data" option. ARC 9.1 can then be used to analyse the distribution of data and compare with other data sets such as NVC vegetation survey and weather information from our weather station in the valley.

The main problem currently being encountered is that when transferred to the GIS map the data is shifted 100m west of where it should be. This is based on known boundaries and comparison with known locations on the ground. This appears to be an annoying projection error in converting from the collars Lat/Long format through the download programme and then converting to ARC9.1 and British National Grid. Hopefully a solution will be found but for the moment the locations are manually adjusted east by 100m.

11) Other information?.

The system we have bought appears to be expensive but we decided to go for a robust tried and tested system which was reprogrammable by us and had a long battery life. Assuming 24 positions per day and 9 hours a day of VHF signalling the collar battery should last 3 years, with 48 positions per day the battery life is still expected to be 2 years.

Re performance of the collar please see info below on the period July to October 2006.

- Percentage of attempts to fix location that were successful - 87% (160 out of 1239 attempts timed out)
- Percentage of successful attempts to fix location where 4 or more satellites were available - 85%
- After adjusting for projection conversion error (see previous paragraph) number of locations likely to be incorrect based on known physical boundary fences - 1.8%