

FORESTRY COMMISSION SCOTLAND

BADGER RE-LOCATION

A stone quarry in the Inverness, Ross & Skye Forest District (formally Fort Augustus Forest District), needed to be developed and preparatory work during early 2007 revealed an active badger sett comprising two holes, ultimately four, within 7m of the boundary fence but within the proposed extension area. Rock blasting had taken place during late September 2000 but at this stage the badger sett was unknown to FCS but was probably in existence at the time. Immediately Scottish Natural Heritage was consulted and a badger sett survey was requested by them.

This was an intensive survey and informed that an extensive survey would be required to establish setts, paths, feeding grounds, dung pits and latrines. Three adjacent setts were identified during the intensive survey but it was not clear if they were all within the Quarry clan's territory justifying the extensive survey. This initially covered a 1Km radius from the quarry; however, at the limits of the new survey area additional badger activity became apparent and a further ½ kilometre was added. This gave an adequate, fuller picture and provided the basic information to enable a bait marking survey to be undertaken. Bait marking is a procedure used to establish badger clan territorial boundaries, which is very important when an artificial sett needs to be constructed, which was the case in this study. Because badgers are highly territorial, marking boundaries with dung, especially during the main mating seasons, with February to April inclusive being the highest activity or between August to October inclusive showing lesser activity. We chose the former, which gave good consistent data.

Bait marking is a procedure whereby each sett is allocated a colour and respective coloured food grade plastic beads, around Ø 2mm were added to a mix of peanuts and golden syrup. This was then fed to the badgers at each sett, (no free lunch for the Quarry clan), then dung pits and latrines were visited to carefully check the colour of the beads. This can take up to three weeks on a daily basis and it became a team effort with the co-operation of excellent well informed FCS staff. Once the data were collated a map was produced and coloured lines drawn around the coloured bead locations, which informed the territorial boundaries of each badger clan. This in turn allowed a safe location to be chosen for the artificial sett, the Quarry clan's new home and well within their territorial boundary.

An excavator was then required to dig areas for tunnels and chambers, which were constructed using Ø 30cm concrete pipes linked to concrete block built chambers. There were six in all of variable sizes, with a capping of marine ply with an impermeable layer capped with large slabs to take the weight of at least 1.5m of soil cover for insulation. Blind tunnels were also constructed to allow the badgers to dig. Once the construction phase was completed a trail of peanuts laid over several days led the badgers to their new home, which they duly followed and moved in.

A license was granted from the Scottish Government and as the calendar reached 1 July 2009 the Quarry sett was prepared, to exclude the badgers with the use of modified gabion cages being employed to surround each entrance, with special one way gates embedded into the cage walls. This had the benefit of placing a section of the cage over the most vulnerable point to prevent the badgers trying to access the sett once the gates were set to one way. The one way gates were set to open for one week to acclimatise the badgers to the exit. Then the gates were set to one way for a further 17 days. At this stage Stealth Cams were used to record what happened and at the same time others were installed at the artificial sett to record activity there. There were no attempts by the badgers to re-access the Quarry sett, although they returned to inspect the cages, and during this time the artificial sett

remained active along with two other setts within the territory showing a slight increase in activity.

Following the successful exclusion, the Quarry sett was opened up using an excavator to reveal the tunnels and chambers allowing them to be mapped. During the first day of excavator digging, about half of the sett was revealed when the hydraulics failed and work was abandoned. This meant the exposed tunnels had to be sealed off to preclude any badgers from entering overnight. The remaining tunnels and chambers were successfully revealed during the following day. The tunnel depths measured between 1.5m to 2.1m in a narrow band of pale sandy substrata, which the badgers had exploited, with compacted variable sized gravel beds above and below; topped with brown forest soils. Approximately 18m of tunnels forming two legs connected to nine chambers, seven of which had bedding, but no dung was found underground. Subsequent monitoring of the artificial sett and adjacent setts showed continuing activity, which concluded a successful operation. A 100m radius around the area was then monitored for badger activity up to the point of rock blasting.



Badger inspecting gabion cage (Image FCS)



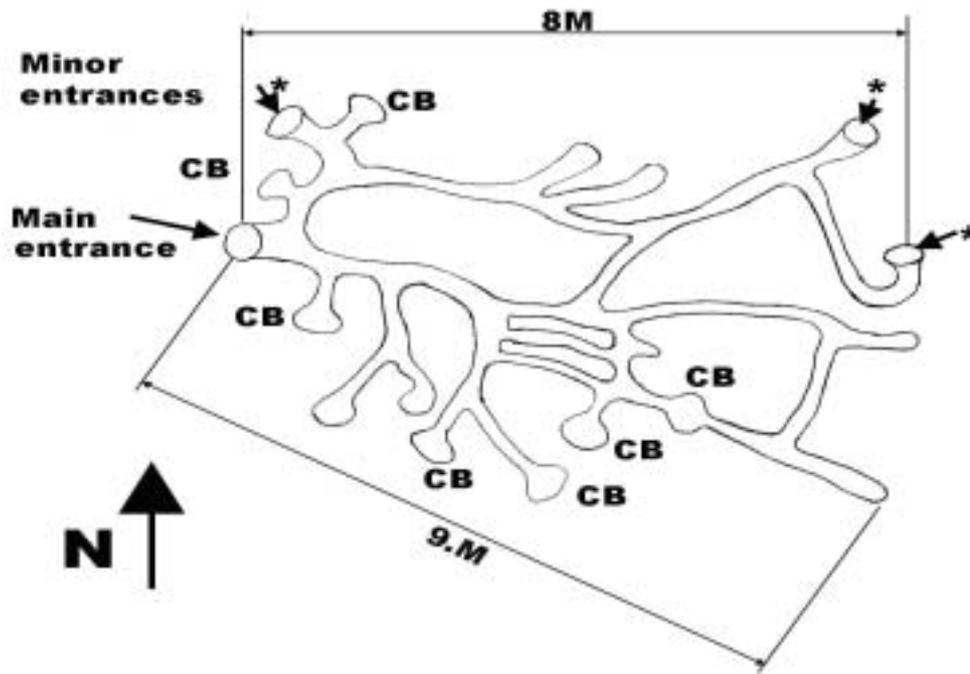
Excavating sett to reveal tunnels and chambers



Chamber with bedding



Tunnels and geology



Plan of excavated quarry sett

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