

Tayside Beaver Study Group
Beaver Lodge Productivity
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Background

The Tayside Beaver Study Group has identified the need to gather more information on lodge productivity of beaver colonies residing within the Tayside catchment. Any data collected will also supplement information gathered through the Scottish Beaver Trial on beaver reproduction in the Scottish environment, and to inform any future decision on beaver reintroduction to Scotland.

Eurasian beavers live in family units, also referred to as colonies, based around a breeding adult pair and their offspring from multiple generations. It has been estimated that 38-39 beaver colonies are present in this area and 25 lodges have previously been located (Campbell *et al.* 2012).

Colony composition is usually assessed through culling (Hay 1958), mark and release (Busher *et al.* 1983) or through repeated lodge observations (Rosell *et al.* 2006).

Objectives of the study

- i) To identify active beaver lodges within the Tayside catchment during summer 2013 and establish breeding success.
- ii) To gather information on kit emergence, including numbers and dates.
- iii) To provide an assessment on colony size and composition.

Methods

From field sign surveys conducted by Campbell *et al.* (2012) potential lodge sites will be identified and assessed for recent activity through the presence of fresh field signs including feeding stations, freshly felled woody material and evidence of recent material manipulations in the immediate lodge vicinity. Records of recent beaver observations prior to onset of the recorded observation period will also be taken into consideration. Ideally 10-15 lodges will be observed, 4 observation sessions per lodge, with each observation session lasting 3 hours.

It is proposed that lodge observations are undertaken by interested parties, although it is recommended that an experienced observer undertakes 2 of the observation sessions per lodge so that inter-observer variability can be standardised. Each observation should occur whilst natural light around dusk permits, without the aid of artificial light or night vision equipment. Binoculars are recommended. Individual beavers should be counted as they emerge (or return to the lodge) and/or when they are visible around the lodge area. As family members often emerge singularly and are hard to distinguish from each other, particularly whilst swimming and/or from a distance, it is important not to double count. Although it will be taken into consideration that some over-counting may occur, to reduce any overestimates only animals positively identified as different should be recorded, any doubts or uncertainties should be indicated on the recording sheet (see recording sheet in appendix).

Depending on distance from lodge and weather conditions, any observed beaver should be able to be classified according to age group by observer, or at a minimum be categorised as a kit from this

year or older individual. Ideally either kit/yearling or sub-adult/adult should be identified as far as possible. This should be based on size (especially head width) and amount of body visible above the water line whilst an individual is swimming (see photos in appendix)

Observation counts should take place during August to establish numbers of newly emerged kits. There have been unfounded reports of kit emergence from late June in this area, whilst at SBT kits are usually first observed mid-late July. However, it should be noted that kit emergence is likely to range between late June and early September. Therefore by concentrating observations throughout August it is hoped this will provide the most ideal evening light levels and capture the majority of lodge occupants. Scope for the use of camera traps on surveyed lodges into August and September seems a sensible measure and will have the additional benefit of recording individuals appearing after night fall, however this is likely to require 1-2 cameras per lodge, with correct camera placement an essential and potentially limiting factor.

Any kits observed outside during this observation period are most likely to be 1-2 months of age (Wilsson 1971). For consistency it is recommended these take place throughout August, so that similar light levels and start times are observed. Observers should ensure they are in place 3 hours prior to light levels becoming too low for effective visuals, note this can vary with site and habitat type. Lodges on smaller water bodies and those surrounded by dense vegetation are likely to lose suitable light for observing before those located on more open rivers for example.

A suitable observation point should be identified during the day, prior to any recording session to reduce the need for movement around the lodge and hence disturbance to beavers. Where possible, observers should sit opposite a lodge, rather than down or upstream of lodge, again to reduce disturbance. All observers should have permission from land owner and be aware and considerate of other wildlife, vegetation and land-use of the location. Suitable clothing and footwear are essential, and a light source is recommended so that people can leave the site safely at the end of any observation period. Observers should always aim to sit down wind of any emerging animals and keep a minimum of 25metres from any lodge. Noise and movement should be kept to a minimum.

References

Busher P.E., Warner R.J. & Jenkins S.H. 1983. Population density, colony composition, and local movements in two Sierra Nevadan beaver populations. *Journal of Mammalogy* 64: 314-318.

Campbell R.D., Harrington A., Ross A. & Harrington L. 2012. Distribution, population assessment and activities of beavers in Tayside. Scottish Natural Heritage Commissioned Report No. 540.

Hay K.G. 1958. Beaver census methods in the Rocky mountain region. *The Journal of Wildlife Management* 22: 395-402.

Rosell F., Parker H. & Steifetten Ø. 2006. Use of dawn and dusk sight observations to determine colony size and family composition in Eurasian beaver *Castor fiber*. *Acta Theriologica* 51: 107-112.