

SNH Beaver licensing summary 1st May to 31st December 2019

Purpose of report

Beavers received protected species status on 1st May 2019. This document provides a summary of beaver licensing from 1st May to 31st December 2019.

Background

As European Protected Species, the Conservation (Natural Habitats &c.) Regulations 1994 make certain actions in relation to wild beavers an offence unless carried out under licence. This legislation acknowledges the need to manage protected wildlife but we, as licensing authority, have to make sure that management of beavers under licence is carried out for the right reasons, only when necessary and without compromising their conservation status. Our management framework sets out how we will achieve this.

Prime Agricultural Land makes up around 13% of Scotland's land cover and, as our most productive and important farmland, it is of national importance. However, this land can be susceptible to beaver activity, particularly where it is very flat and reliant on good drainage. Unfortunately some of the most susceptible land in this respect coincides with areas of Tayside where unauthorised release or escape of beavers into the wild took place.

Whilst it is often possible to mitigate the impacts of beavers without relying on licensed activities, we know through experience, monitoring and casework that sometimes mitigation is not possible in these areas and therefore that licensed management needs to occur. We have always been clear that lethal control of beavers would be carried out under licence in these areas and the likely need for this has been acknowledged by members of the Scottish Beaver Forum. This will not preclude ongoing development and trialling of new mitigation measures and approaches to reduce these problems and therefore the need for licences in the future.

There is a requirement for those carrying out control under licence to report back to SNH annually on the activities carried out. This document provides a summary of the information we have received, covering the period 1st May to 31st December 2019. It also sets out this information in the context of our current knowledge of beaver populations in Scotland; the potential impacts of control on those populations and the role of mitigation, survey, research and monitoring, along with the potential to do more to realise the positive benefits of beavers in the future.

Beaver populations

There are two distinct beaver populations in Scotland; in Knapdale in Argyll, and in Tayside and Forth. Beavers were first introduced into Knapdale under licence as part of the Scottish Beaver Trial in 2009. This was designed as a time-limited, naturally contained trial population for scientific monitoring, rather than a founder population for a long-term reintroduction. The

population has been reinforced in subsequent years and there are currently four family groups confirmed in this area. In Tayside beavers were first recorded in the wild in around 2006 having thought to have originated by either escapes from captive collections or unauthorised releases.

Beavers are highly territorial animals; territories are established and defended by family groups which can vary significantly in size and structure. Given this, the standard means of measuring beaver populations is to count beaver territories rather than focussing on the number of individual animals.

A full survey of the Tayside population was carried out in 2012 and was repeated in 2017/18. The 2012 survey found 39 territories and the 2017/18 survey recorded 114 territories and showed that beavers had successfully established themselves in the Forth catchment. Estimating the number of animals from the number of territories should be done with caution, but the beaver population in the Tay and Forth was estimated to be 433 beavers (range 319-547) based on the 2017/18 assessment of territories.

This potentially represents a population increase of over 20% per annum between 2012 and 2017/18. If this growth rate has continued we might expect there to be over 160 territories currently present. We know from anecdotal reports and casework over the past year that beaver population expansion is occurring with new records both within existing catchments and to new catchments and sub-catchments.

However, we cannot have full confidence in the estimated nature of population changes since 2017/18 without further survey (see 'future work' below). Therefore this paper uses the 2017/18 Tayside beaver survey as our best available baseline, and uses the number of territories rather than numbers of animals as our reference point.

Licensing demand

SNH received 67 requests for licences in relation to the activities of beavers in 2019. Of those requests, 45 were awarded a licence. The remaining 22 cases (33%) were either refused on the basis that there was no legal purpose to grant a licence, no evidence to support the need for a licence or that mitigation could resolve the issues. 79% of requests were on Prime Agricultural Land. Of the 22 cases where licences were not issued, 11 were on Prime Agricultural Land.

Of the 45 licences granted, five permitted dam removal or manipulation only and 40 permitted lethal control and dam removal. One of the lethal control licences was revoked before any action was undertaken because mitigation was subsequently installed at that site which removed the need for any other action.

All lethal control licences were issued for the purpose of preventing serious damage to agriculture¹ and all but one of these (97.5%) were issued on Prime Agricultural Land. Four of the five licences for dam removal/manipulation were issued for preventing serious damage to agriculture, with the remaining licence being issued to prevent serious damage to property.

From a geographic perspective, all licences issued related to the wider Tay Catchment. No licences were sought on the Forth catchment or in Argyll. The greatest demand for lethal control licences was on the Isla sub-catchment (21 licences, representing 54% of cases), followed by the Earn (12 Licences, 31%) then the Tay (six licences, 15%).

¹ Under the Conservation (Natural Habitats, &c.) Regulations 1994, 44(2)(g) the purpose is given as 'preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other form of property or fisheries.'

One licence was granted to permit live-trapping of beavers by an experienced ecologist from sites where lethal control may otherwise have been employed. The animals trapped were translocated in line with our translocation policy to receptor sites in Knapdale and to licensed projects in England.

To help maximise the potential for live-trapping, all lethal control licence holders were contacted about the possibility of trapping on their land. 75% of those contacted were generally positive about the possibilities of live-trapping on their land, 5% did not want trapping and 20% did not provide a response. Fifteen beavers were trapped under licence from five sites after 1st May 2019 (further details are provided below).

Live-trapping is not always possible on every site for a number of reasons including the topography and general nature of the site and how beavers use it as well as the behaviour of the individual animals. However, whilst the level of willingness for trapping was relatively high, the number of instances where trapping was carried out was lower than we had hoped for and further work needs to be carried out to improve this.

The distribution of licences broadly follows expectations in terms of the overlap of beaver presence and vulnerable areas of Prime Agricultural Land and where conflicts have previously been experienced. A more detailed breakdown of the broad location of licensed management and activity is provided in Table 1.

Activities carried out under licence

87 beavers were shot under 16 licences and 83 beaver dams were removed under 19 licences in 2019. 60% of the licences issued which permitted lethal control were not used for that purpose.

15 beavers were live-trapped under licence since 1st May 2019 from sites where they may otherwise have been killed. Seven animals were translocated to Argyll for the Knapdale reinforcement project, one animal to a project on the River Otter in Devon, two to the Forest of Dean in Gloucestershire and five to Holnicote in Somerset². There remains demand for animals for projects of this kind in England and Wales.

The following table summarises licensing demand and the extent of lethal control and trapping in catchments where licences were granted, as well as the potential number of territories identified and defined during the 2017/18 survey that may have been affected as a result.

Catchment	No. Licences			No. beavers		No. territories potentially affected*
	Issued	Used	Unused	Killed	Live-trapped	
Isla	21	9	12	49	8	9/37 (24%)
Earn	12	4	8	16	4	3/25 (12%)
Tay	6	3	3	22	3	3/41 (7%)
Forth/other	0	0	0	0	0	0/11 (0%)
Total	39	16	23	87	15	15/114 (13%)

Table 1 – Catchment level lethal control and trapping summary

*Territories are based on those recorded in 2017/18 survey that have any overlap with where lethal control or trapping has been carried out. Noting that some trapping and licensed control took place outwith territories identified in the 2017/18 survey.

² Four beavers had been moved from two sites under licence prior to 1st May 2019 to the River Otter Beaver Trial and Pickering Beaver Project in Yorkshire.

Impact of licensed control and trapping on the Scottish beaver populations

We have to ensure that licensed activities will not detrimentally affect the conservation status of beavers in Scotland. In simple terms this means ensuring that the population continues to expand in numbers and range and that there is sufficient suitable habitat available.

In considering potential impacts of licensed control we have looked at the levels of licensing demand and action with reference to the territories recorded in the 2017/18 survey report.

Given that the Tayside population established itself as a result of unauthorised releases or escapes into such a 'high conflict' area, it was expected that levels of licensed control would be relatively high at a local level. Following legal protection, the 'worst-case scenario' was that every landholding on Prime Agricultural Land would seek, be granted and act upon a lethal control licence. This could have meant the loss of just less than half (47%) of the territories recorded in the 2017/18 survey across a relatively contiguous quarter of the recorded range at that time. However, from our experience and understanding of issues on the ground it was clear that this case would be unlikely for a number of reasons. This included that damage would not be likely in all places and that mitigation would be possible in some cases that would avoid the need for a licence.

The true level of licence demand and action to date has been considerably below our assessment of worst case scenario. The data provided in Table 1 shows the level of lethal control and trapping at a sub-catchment level that have been carried out since legal protection was afforded. This has shown that lethal control and trapping has taken place within around 13% of territories. The proportion of the overall range of beavers in Tayside covered by licences is difficult to accurately calculate but is likely to be less than 10%, with control being carried out on around 5%.

Licensed control has almost exclusively been restricted to farms on Prime Agricultural Land. This means that control has been highly localised, with 56% of all animals shot being from the Strathmore area (the Isla sub-catchment) and this (and trapping) potentially affecting 24% of the territories in this area. 25% of animals shot were from the Tay catchment (with trapping potentially affecting 7% of territories) and 19% from the Earn (again with trapping) potentially affecting 12% of territories.

We asked controllers to recover the carcasses of shot beavers whenever possible, but the biometric data collected is incomplete and does not allow a full assessment of how family groups have been impacted by lethal control. An indication of the age of animals killed was provided for 56 out of the 87 animals killed (64%). 46% of those animals were classed by the controller as adults, 36% as sub-adults and 18% as young (i.e. born in 2019). 21 carcasses were retrieved and measurements taken on 18 animals.

Conclusion

In considering how the Tayside population is contributing to the conservation status of beavers in Scotland we are mindful of the following;

- That prior to protection being afforded, and including the time since the last survey, lethal control was unregulated and, whilst figures are not available, anecdotally we understand that this was geographically widespread and, in some areas, very intensive.
- Despite unregulated control, survey information shows that the population increased significantly between 2012 and 2017/18.

- There could potentially have been increased levels of control prior to protection being afforded in May 2019.
- That the geographical area under which licenced control is now being undertaken will be significantly smaller than it was prior to protection being afforded.
- That around Strathmore (the Isla sub-catchment), the local population density is likely to be suppressed as a result of relatively high levels of removal (trapping and control). This may mean that the area may act to some extent as a sink, with new animals moving into the void. This could potentially impact on the population expansion rate around this area, particularly eastwards.
- The apparent population expansion north, west and south means that the population is establishing increasingly further away from the 'high-conflict' areas of Prime Agricultural Land and where we should start to see more beaver benefits and less need for management. As the overall range of beaver increases, the relative proportion of their range where management may be required is likely to decrease.

Reflecting these various uncertainties we are currently commissioning further research and monitoring work that will improve our knowledge and understanding of the impacts of current and future licensed control in order to ensure that we can have continued confidence over our approach. We will also be looking at ways to ensure that our approach is suitably adaptive and how we can reduce both the need for and impact of lethal control. This is covered in the section '*Moving Forward*' below.

Advice and the Scottish Beaver Mitigation Scheme

SNH provides advice to anyone experiencing or concerned over issues with beavers as well as materials and installation of beaver mitigation measures. In 2020 we responded to over a hundred queries and have installed or supported 20 mitigation projects. Of these, 10 related to tree protection, three to bank protection works and seven for the installation of flow-devices. We have identified another 36 potential mitigation cases and 11 cases are likely to go ahead in the near future.

These mitigation measures have helped resolve conflicts and in some cases prevented the need for any other licensed activity. In 2020 we will install and trial our first water gates, aimed at excluding beavers from areas of land where conflicts are arising or likely. Water gates are likely only to be successful in certain situations and we need to learn from our experience of these innovative techniques. We have identified a number of potential water gate sites which, if successful, have the potential to fully resolve problems on 12 current licences where lethal control is permitted (31%) and partially resolve issues on a further six licences (15%).

We will continue to seek out and trial new approaches and this year³ this includes trialling devices to detect and notify land-managers of water level changes caused by dam building to allow rapid intervention before problems occur.

Moving forward

Beavers are back in Scotland after a prolonged absence and we welcome their return and the significant benefits they will bring to people and nature. This means that we are still learning how to live alongside them, and how to maximise the benefits they will bring whilst having a proportionate and balanced approach to managing the situations where they may have impacts on other public interests.

³ Mitigation works and monitoring are currently subject to COVID 19 restrictions, but we anticipate this work will be able to proceed later in the year subject to following appropriate guidance.

Given this, our approach needs to be iterative and be able to adapt as we gain experience and understanding. This is largely covered by our Management Framework, which itself will evolve over time. However, in light of these initial results we propose the following actions;

- Research – We have commissioned a piece of research to model potential population changes based upon current levels of lethal control and a number of other scenarios. This work is underway and will be published this year.
- Survey – We will commission a full re-survey of beavers in the Tay, Forth and associated sub-catchments in 2020 to understand current population size and distribution and how this has changed since 2017/2018.
- Mitigation – Mitigation scheme work will continue, with a particular focus on those areas where we can reduce the need for licensed control.
- Trapping effort – We will work with licence-holders to maximise potential for live-trapping as an alternative to lethal control.
- Translocations – We will consider opportunities for conservation translocations of beavers from high to low conflict areas within existing catchments to improve the resilience of existing populations. With Scottish Government we will also consider other alternative measures as part of a wider beaver mitigation strategy.
- Consider rapid development of agri-environment schemes to incentivise beaver presence and benefits as a potential nature-based solution.

SNH May 2020