



SSRS Summary for SSRS NE Steering Group 8 September 2011

1. Project Officer

- Hollie Walker left us on 1st April; Dr Annie Harrison joined us on 18th April.

2. Project Surveys

- Early in March 2011, the Project met with SNH and FCS together with Dr Peter Lurz (Independent consultant, squirrel population modelling expert) – to discuss the project monitoring and data analysis protocols that will be used to demonstrate the benefits of grey squirrel control under the Project. As a result of the discussions we revised the previous monitoring plan as follows:
 - 100 presence/absence tetrads remain, but carry out 6-week survey twice in 2011 rather than once per year, as SSRS had failed to meet the target of surveying 100 tetrads in 2010.
 - Instead of sightings transects in all 3 SSRS project regions, the system of sightings transects, followed by the routine Project trapping, followed by a second set of surveys aimed at determining if population changes could be detected, we are now to concentrate on 10,000m of transect in linked woodland to west of Aberdeen. These were to be surveyed twice in 2011, before and after routine trapping. The Project Surveyor and SSRS North East Project Officer are currently engaged in the second set of transects.
 - Since some transects were already set up in other Project areas, we have retained these 2 sites in Argyll & Trossachs (west Loch Lomond and Callendar Crags), 1 in Tayside (Taymount Forest) and 3 in NE Scotland (Seaton Park, Drum Estate and Crathes Estate).
- Also at the meeting we discussed the potential analyses of the resultant data, but final analyses will very much depend on the type of results obtained and how amenable they are to different types of analysis. A follow-up meeting on is to be held with Peter Lurz on 22nd September to finalise the analysis packages to use..
- The need to carry out the tetrads twice in 2011, plus the setting up of new transects entailed a huge increase in the work required, so the Project decided to take on a Project Surveyor to supervise tetrads and carry out transects. At present this is Cara Roberts. Thank you to Aberdeen Greenspace, FC Grampian Conservancy and FE Tayside for finding the funding for this.
- 3. SWT's Data Officer, Ian MacKenzie, carried out a major update of the Scottish Squirrel Database early this year. This involved collecting in data from all the local records centres and local squirrel groups dating back to the end of 2007. These, together with the Project's own data were collated, rigorously standardised, checked for errors and duplication: 8,959 new records were added to the Scottish Squirrel Database (SSD).
- SWT is now the custodian of the SSD and will continue this role even in the absence of a SWT-run squirrel project.
- Baseline distribution maps of red and grey squirrels at the beginning of the Project were produced, as well as recent update maps.
- The whole SSD has now been added to the NBN Gateway, and should be used in preference to the previous version of the SSD which unfortunately is still on the NBN site.

4. Trapping

- Project wide, we had 169 landowners and individuals on traploan by June 2011.
- 35 landowners trapping under SRDP in 2011; Cost of £154,845 p.a.
- 38 new applications submitted to June RPAC.
- Trapping Summary produced: main points of interest:
 - Numbers of grey squirrels killed from 1 August 2009 to Mar 2011 was 2039 (as compared with, for example, 577,211 shot in a 6-month hunting season in New York state in 1994.) This is in line with our stated aim of conducting minimal grey squirrel control in order to achieve the intended beneficial outcomes for Scotland's red squirrels
 - Main trapping season was found to be January to July: a useful guide to the best timing of seasonal control if year-round control is not an option.
 - Breeding season: lactating females captured March to September. (excellent agreement between North East and Central Lowlands.)
 - There was an indication of drop in annual capture rate in NE from 2008 to 2010. There are problems with the interpretation of this, in that trapping effort has increased hugely, and many new locations are now being trapped, so we are not comparing like with like, but the general trend is encouraging.
- Matt Oliver (post-doc from Aberdeen University) undertook some exploratory modelling analysis on our North East data, which included detailed trapping results from the period September 2007 to July 2009 when SNH was contracting trappers in the Grampian area, as well as our own data to the end of 2010. For those who are interested, the details are as follows:
 - Generalised Linear Model: looks at how "rate of capture" (number caught/number of traps per month per site) changed according to the cumulative trapping effort over time.
 - The model included size of area of each trapping location (in ha.), and year (2007/8/9/10).
 - Location was fitted as a random effect, to account for non-independence and repeat measurements.
 - The response variable is the probability of a trap catching a squirrel, weighted by the binomial denominator, which is the number of trap nights.
 - The outcome was that the estimate is negative for cumulative trapping effort, i.e. as trapping effort accumulates the probability of catching a squirrel goes down, suggesting there are fewer around. This is statistically significant ($P = 0.02$), but is not a particularly powerful effect. It only explains 5% of the variation in captures (cumulative effort, size of trapping location and year together explain 22% of the variation). Matt also included year here to account for any variation in general squirrel population dynamics (good years or bad years).
 - General trend that the probability of catching squirrels is decreasing year on year, though there's a lot variation around these estimates and doesn't take into account any spatial effects, or gaps in trapping.
 - This trend is what we would hope – i.e. it gets more difficult to catch grey squirrels as numbers are depleted, eventually aiming at catching zero squirrels despite effort.

4. Evaluation

SNH has set out what is needed of an evaluation document for SSRS to secure future Project funding.

Control effort invested

- Quantify what level of grey squirrel control is attainable; detailing the different routes by which this has been achieved in SSRS and an assessment of their sustainability.
 - control officers

- land manager/householder and volunteer control
- SRDP supported control

Benefits delivered: Evidence of recovery of red squirrels relating to grey squirrel control.

- Use three tiers of survey data (sightings, tetrads, transects);
- evaluating the ability of this data to detect changes.
 - Changes in distributions.
 - Changes in abundance.
 - The correlation between control effort and changes observed.

No mention here of evaluation of whether we can actually reduce grey squirrel numbers and spread to the required degree in the long-term, but that could be included in the next section:

Case for ongoing control to include costs

- Assuming some benefits can be demonstrated, the case for future control should be explored. To include
 - recommendations for the levels of grey squirrel control necessary to limit their spread in Tayside and Loch Lomond and the Trossachs and
 - levels of grey squirrel control necessary to reduce the distribution of and ultimately eradicate grey squirrels from Aberdeen city and Aberdeenshire.
 - Several options for developing the present project beyond 2012, individually costed along with an indication of the proposed routes for delivery, e.g. SRDP, land manager and volunteer control, employment of project staff etc

5. Future of Project

- SNH has now set us a timetable to produce evidence of efficacy of grey squirrel control in the Project, in order to secure future SNH funding.
- We need to produce a report – final draft 15 October.
- Presented to SNH Management Team 15 November
- SNH Board to consider at 20 December meeting
- Decision earliest – early January 2012.
- SWT Council approved earmarking of £180,000 for continuation of (or Phase 2 of) Project. As long as SNH have approved a sufficient budget, SWT prepared to frontload financial support of Project between April 2012 and run a funding campaign during the summer for match funding. (Assuming Senior Management Team and Council are convinced by our evaluation.)

6. Other

- Project Conference was held at Battleby on 15th March; with 51 delegates coming to hear updates from all the Project regions and RSSS; some intrepid delegates braved the horribly wet weather to see Project trapping and surveying in progress in Tayout Forest.
- We are running another fortnight of Text-a-Squirrel in Aberdeen, starting on 1st October, to coincide with Red Squirrel Week. Hopefully this will give us another snapshot of red and grey squirrel distributions in the city.
- The Project produced its first copy of a new format newsletter, “The Squirrel Scoop”. It was circulated to over 1000 people who signed up on the SSRS website, and included volunteers and land-owners, SRDP recipients and others.