

## Red Squirrel (*Sciurus vulgaris*)



Photo credit: Jim Rae

**Habitat:** The mature, thinned stands of Scots Pine have a rich understory of Oak, Beech, Holly, Rowan, Birch, Willow, Hazel and Honeysuckle and a ground layer of Bilberry, Bramble, ferns, and mosses, providing the ideal habitat for this iconic species. The smaller, denser Sitka Spruce plantations have little growing beneath.

**Food:** Red Squirrels are opportunists and will make use of any available food. The most important natural food sources are the seeds from Scots Pine cones, supplemented by those of other conifers. In the event of a poor cone crop, the squirrels have a range of alternatives depending on the time of year. At the Reserve, they have access to peanuts and sunflower hearts in the feeders and hazelnuts from visiting wildlife photographers.

There is a very healthy population of Red Squirrels living in the woods next to Eskrigg Reserve. The number of squirrels in these woods and the number coming to the feeders in the Reserve varies annually, seasonally and daily depending on natural food availability, the weather and other factors. The maximum recorded at the feeders at any one time was eighteen in February 2013.

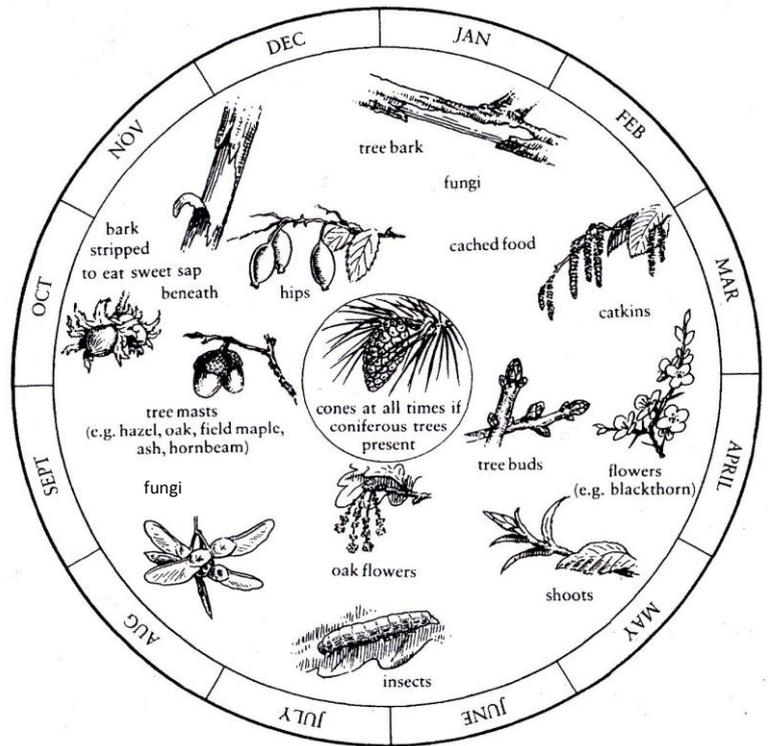
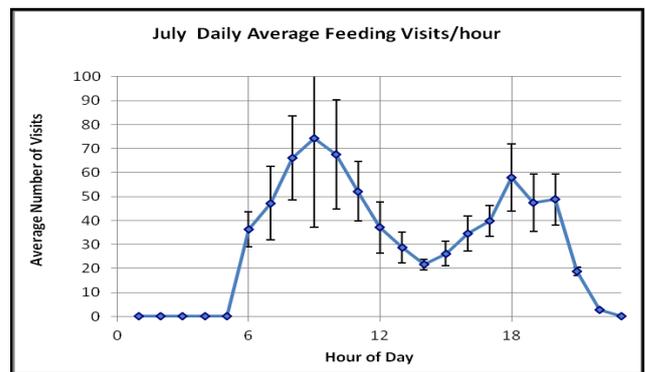
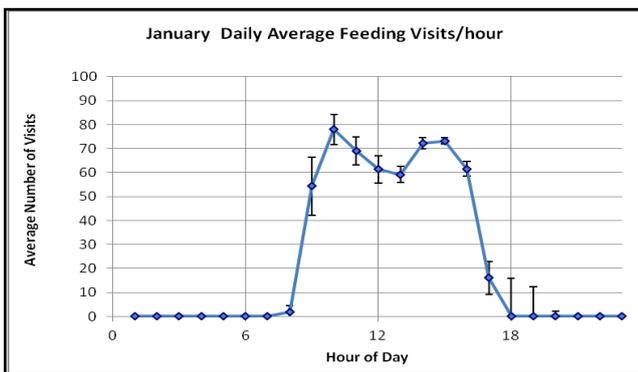


Illustration credit: Guy Troughton\* (modified by Jim Rae)

### Feeding Routine:



Graphs taken from data recorded at Eskrigg Reserve in 2012.

Squirrels do not hibernate. They are active every day and in winter you can see their tracks in the snow. The Red Squirrels spend most of their active time searching for, eating and storing food. In winter, with up to 8 hours of daylight, the squirrels are active for about 4.5 hours with peak feeding times around 10:00am and 2:00pm. In summer, with up to 19 hours of daylight, the squirrels are active for about 11.5 hours with peak feeding times around 9:00am and 6:00pm. The squirrels have a rest period in the early afternoon.

\*from 'Squirrels' by Jessica Holm and Rob Strachan, published by Whittet Books, 2010

**Breeding:** Yearling females only have one litter of young. A small proportion of older females may manage two litters in a year if they are in optimal breeding condition. This will only happen if the weather is good and there is plenty of food available.

During her pregnancy, the female will prepare the nest in which she will raise her young. This may involve the refurbishment of an existing drey or the construction of a new one. There are normally three young in a litter (but there may be between one and six). They are born deaf, blind, hairless and helpless. The female has four pairs of nipples and suckles her babies for eight to ten weeks.

By the time the young 'kittens' are three weeks old they have a fuzz of fur all over. Their eyes and ears soon open and their claws are well enough developed to support their weight when clinging to a tree. The young squirrel's teeth begin to appear and they will start to chew on bits of bark or twig inside the nest.



3 week old kittens

Photo credit: Jim Wilson,  
South of Scotland Wildlife Hospital.

At about seven weeks the young squirrels look like miniature versions of their parents but are still suckling. By ten weeks they are beginning to fend for themselves. When the kittens are between ten and fourteen weeks old the mother may move out into a new drey and leave the young to look after themselves.



Photo credit: Jim Rae

### Red Squirrel versus Grey Squirrel



Photo credit: Steven Round

In the many deciduous woodlands around the UK, the Grey Squirrels (*Sciurus carolinensis*), introduced from North America, have a competitive advantage. It is an often quoted misapprehension that Grey Squirrels tackle food items before they are ripe but reds do not. Fruits such as acorns increase their load of tannins as they ripen. Tannins bind both carbohydrate and proteins - including digestive enzymes - and can cause enteritis if too much is eaten. Grey Squirrels are the only known mammal species that can denature tannins in food with the result that they can extract more food value from an acorn than a Red Squirrel can. Red Squirrels rarely eat acorns in the wild, and when they do the acorns only form a small part their diet. In Scots pine woods the densities and breeding success of Reds are as high as Greys in deciduous woods.

Why then are the Reds under threat in the coniferous woods of south-west of Scotland? Many of the region's old plantations of Scots Pine and Norway Spruce were felled in the early part of the twentieth century and replaced with the faster growing Sitka Spruce. Unfortunately, the Sitka Spruce is not so well suited for Red Squirrels as cone production can vary considerably from year to year. The creation of large blocks of Sitka Spruce between 1940s and 1980s meant that most of the trees would be of the same age and would cone heavily in the same year. In other years, there would be few, if any, cones at all so life would be very difficult for the Red Squirrel. Many of these blocks have now reached their felling age and are being replanted with a mix of trees that are better able to support the Red Squirrel.

Over the same period, we have witnessed the intensification of agriculture and the removal of hedgerows and other field boundaries to produce bigger farms with bigger fields. The removal of the wildlife corridors

has led to fragmentation of the woodlands and the isolation of populations of Red Squirrels which are sometimes reluctant to disperse to new woodlands when food is short in their existing habitat.

However, the biggest threat to the Red Squirrel is the outbreak of disease, as this can result in populations falling dramatically or becoming locally extinct. One disease, lethal to reds, is caused by the Squirrel Poxvirus (SQPV). The impact of Greys on Reds is exacerbated in the south-west of Scotland by the fact that many of the Grey Squirrels spreading along wildlife corridors from the north of England have tested seropositive for SQPV. These act as reservoir hosts and carriers of the disease while remaining virtually unaffected by its symptoms. Contact between an infected Grey and a Red Squirrel will lead to the Red developing skin ulcers, lesions and scabs with swelling and discharge around the eyes, mouth, feet and genitalia. It will quickly become malnourished and disorientated and die within fifteen days.



Photo credit: Corrie Bruemmer

It is very encouraging that where Grey Squirrel control measures that have been in place for some time the incidence of seropositive Greys has reduced and healthy Reds persist in good numbers.

### **Conserving the Red Squirrels at Eskrigg Reserve:**

Lockerbie Wildlife Trust is working with Castle Milk and Corrie Estates, who own the woods next to the Reserve, to conserve the red squirrels in the area.

- a. The mature Scots Pine trees near the Reserve were due to be felled twenty-five years ago, when the Reserve was created. Instead, the Estate agreed to leave them standing for at least five years. In 2013, the Estate agreed to leave the trees standing for the foreseeable future, in order to provide the resident Red Squirrel population with a stable habitat.
- b. When other species of conifer are being felled in the area they are being replaced by a greater diversity of species.
- c. When trees are harvested and replanted, the work is done rotationally in small compartments over many years so as to create a mixed-age plantation that is less likely to be affected by windblow and will always contain some stands of mature, cone-bearing trees.
- d. The Reserve contains a number of well-stocked feeders to ensure that the resident squirrels can supplement their natural diet whenever necessary.
- e. The Reserve management continually monitors the numbers and health of the red squirrel population and can take action quickly if required. No Grey Squirrels have been seen with the area of the Reserve over the past twenty-five years. Nevertheless, the Reserve Manager is in regular touch with the local Grey Squirrel Control Officer in order to keep apprised of the situation elsewhere.
- f. The many visitors to the Reserve will report anything causes for concern, including signs of ill health in the Red Squirrel population and any sightings of Grey Squirrels.
- g. Lockerbie Wildlife Trust, working with Red Squirrels in South Scotland and the local Red Squirrel Conservation Officer, organises regular talks and workshops and there are displays at the Reserve to give people up-to-date information about the subject.



Photo credit: Jim Rae