



# Global Re-introduction Perspectives: 2010

Additional case-studies from around the globe  
Edited by Pritpal S. Soorae



IUCN/SSC Re-introduction Specialist Group (RSG)





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## Juniper scrub restoration at the Cample Burn, Clyde Muirshiel Regional Park, Scotland

Alan Brown

Countryside Officer, Clyde Muirshiel Regional Park, Park HQ, Barnbrock, near Lochwinnoch, Renfrewshire, PA10 2PZ, UK ([alan.brown@clydemuirshiel.co.uk](mailto:alan.brown@clydemuirshiel.co.uk))

### Introduction

Juniper (*Juniperus communis* ssp. *communis*) is a UK Biodiversity Action Plan priority species that occurs in a number of habitat types listed under the EC Habitats Directive and Juniper scrub is recognised as a nationally scarce woodland type. The above species is globally the most widespread subspecies and is relatively common throughout lowland Britain on both limestone and acid soils, especially on the Chalk Downs of southern England and the Scottish Highlands. However, within Scotland juniper has been lost from 23% of areas in which it was formerly present and in a further 34% of areas its future is under threat in the short to medium term (Sullivan, 2003).

A survey of juniper by Plantlife recorded that of 453 sites around 40% had fewer than 10 plants (Long & Williams, 2007). There is concern for the viability of fragmented populations and that regeneration is likely to be limited as 67% of all plants recorded were mature, old or dead. This lack of juniper regeneration is a significant problem at the majority of sites across the British uplands and therefore planting schemes may be necessary to ensure the survival of this species at particular sites. In Scotland juniper may be found from coastal locations to high on the mountain tops. Although juniper is recorded close to the summit of Braeriach in Aberdeenshire at 975 m around 80% of all juniper are normally found closer to 400 m (Sullivan, 2003). The juniper within CMRP all occur at an altitude of between 300 to 450 metres.

The juniper restoration project at the Cample Burn site is located within Clyde Muirshiel Regional Park, 30 km west of Glasgow and is also within a Special Protection Area for Hen Harriers.

### Goal

- Goal 1: To safeguard the existing juniper.
- Goal 2: To naturally regenerate the juniper and propagate stock from locally provident plants.



Close up of juniper berries and leaves



Guided walk to a juniper enclosure

- Goal 3: To allow regeneration or to introduce mixed scrub woodland (rowan, willow and birch) integrated with open heather moorland for nesting/hunting hen harriers.
- Goal 4: To encourage local involvement in the conservation and restoration of juniper woodland scrub.
- Goal 5: To promote the value of juniper scrub woodland in the natural heritage
- Goal 6: To extend Juniper scrub woodland across the Local Biodiversity Action Plan

area.

## Success Indicators

- Indicator 1: To safeguard all existing juniper stands within the Regional Park.
- Indicator 2: To plant out 1,000 juniper within a 17 ha enclosure.
- Indicator 3: To establish a second project area within the Clyde Muirshiel uplands for juniper scrub woodland habitat.

## Project Summary

The Cample Burn site habitat is largely a blanket mire that contains *Erica tetralix*, *Calluna vulgaris*, *Scirpus cespitosus* and *Eriophorum vaginatum*. The land is farmed for sheep and was until recently also managed for grouse shooting by the rotational burning of small patches of heather. Anecdotal evidence has suggested that juniper in the Clyde Muirshiel hills was once relatively common, but written references only give a non specific description of it being frequent in woods and heaths. Juniper appears to have been lost through muirburn and overgrazing by sheep. In the Regional Park's 281 km<sup>2</sup> there are six mature juniper plants, two of which are female. In the surrounding council areas of Glasgow, covering over 6,000 km<sup>2</sup>, there are only fifteen sites with juniper (Broome, 2008; *pers comm*). Fencing of the 17 ha moorland site was completed in January 2008 and the first thirty juniper were planted by volunteers at the Cample Burn site three months later from stock derived from local species. A group in the local village, the Lochwinnoch Community Garden, is nurturing the juniper cuttings that will be planted out over the next three years. However, the survival rate of the juniper from cuttings has been around 10% and only 60 juniper have been planted at the site so far. Juniper does grow better from seed, but berries have only been found occasionally within the Regional Park. It was suspected that the poor success rates of propagation may have been due to the mature plants and the small size of available cuttings that were less than half of the recommended length of 10 cm

(Broome, 2003). For the Cample Burn site there were only a handful of juniper bushes from upland sites in its seed zone.

Initially, the sourcing of appropriate juniper was limited by guidance on semi-natural planting that recommended the use of seed/cuttings from within the same seed zone. However, due to the high failure rate of propagated cuttings it became unlikely that enough plant material could be collected locally. A solution was reached through a

working group (South Scotland Juniper Network) where it was suggested by Forest Research that cuttings or seed collected could include sites with environmentally similar conditions. For the Cample Burn site locations were matched using a set of parameters developed by Forest Research to indicate a cool wet climate and a high nitrogen soil (Weber & Broome, 2008; unpublished). Four main areas had similar environmental conditions to Clyde Muirshiel.



Park staff with community gardener: Gordon Nicol

However, two of these areas were not suitable as some of the species plants could not be confidently distinguished as sub-species *communis* or as *ssp. Nana*. Around 300 juniper cuttings were collected from bushes in the Pentland Hills, Edinburgh and over 1,000 seeds collected with the assistance of the Borders Forest Trust from a site near Peebles, in the Scottish Borders. Following forestry guidance the juniper seeds were treated with a 1% citric acid solution for four days, stored at 4°C for 30 weeks and then planted out in seed trays (Broome, 2003). After two years the imported juniper will be transferred to the Cample Burn site.

Another aspect of the project has involved the promotion of juniper and this has been done through guided walks, treasure hunts, BBQs and interpretation panels. Leaflets on the restoration project have also been displayed at key sites across South West Central Scotland. Of the six juniper within the Regional Park area three are now fenced within the Cample Burn scheme, a small enclosure has been completed for one other site, one was already inside a fenced Reservoir and the sixth bush is relatively inaccessible in a steep sided gully. All the planted juniper have shrub tubes to guard against roe deer and mountain hares and the plants are weeded twice during the summer. A few Rowan (*Sorbus aucuparia*) have regenerated within the enclosure and it is planned to introduce some eared willow (*Salix aurita*) to the site next year. After a wet summer the first year's planting appeared to be waterlogged and this may have led to the demise of

fifteen juniper, while those planted the following year and in drier ground have displayed vigorous growth.

## Major difficulties faced

- Commercially grown on stock was sold accidentally to another project.
- Due to the old age of the local juniper plants the cuttings were less than half the length recommended by the Forest Research.
- The juniper propagation had under a 10% success rate and the lack of local bushes severely limited the amount of cuttings available for propagation.

## Major lessons learned

- Working with a cross boundary group helped to solve problems with lack of cuttings and seed and identified common propagation problems.
- The grant application benefited from being part of a joint partnership with Action for Mountain Woodlands.

## Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

## Reason(s) for success/failure:

- The project is not finished and the limited success in propagation is likely to be overcome through increased use of seed.
- Several elements of the project have been very successful such as fencing the site, promoting juniper conservation and partnership working.

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