

Guidance for Upland Management of Juniper



Scotland's Moorland Forum is preparing a range of guidance, through the Moorland Management Best Practice (MMBP) project, that provides practitioners, working in upland and moorland areas, with a source of information that reflects good practice and establishes a standard for accepted management techniques.

Information that is available elsewhere has not been duplicated, but a reference to it is included.

All the documents should be seen as representing evolving guidance. The aim is to review the documents at least annually so that they reflect the latest information.

Practices in this guidance, which are backed up by legislation and/or regulation, contain the word '**MUST**' in bold, letters. Failure to adopt these practices could lead to prosecution.

Parts of the guidance contain the word '**should**' in bold, lowercase letters. The actions identified in this way are not covered by legislation but land managers are expected to follow these parts of the guidance, as they represent sound, acceptable practices, which aim to achieve sustainable management of Juniper in the uplands.

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Introduction

Juniper is one of just three native conifer species to the British Isles and is recognised as having 'principal importance' on the Scottish Biodiversity List 2005 (Ward and Shellswell 2017). This charismatic conifer supports numerous other organisms including bryophytes, fungi, invertebrates and lichens so it is fitting that Juniper has its own Biodiversity Action Plan applicable to the United Kingdom. The dense ground cover associated with stands of Juniper also provides valuable shelter for both livestock and game birds in upland environments. Juniper has long been known for its various medicinal properties but its most marketable attribute in the present day could derive from its use as the key flavour in the production of Scottish gin. Some easy to apply management practices mean that Juniper can thrive on moorland to a greater extent than is currently the case – providing benefits for nature, farming, game and other interests.

Juniper can grow in a variety of habitats and has a widespread but declining distribution in the uplands. Upland populations of both Common Juniper (*Juniperus communis* ssp. *communis*) and Prostrate Juniper (*Juniperus communis* ssp. *nana*) are very sensitive to burning – which may even result in local extinctions. Other threats include sustained high levels of grazing preventing natural regeneration, changes of land-use including the afforestation of open moorland and Juniper die-back disease caused by *Phytophthora austrocedrae*. These need to be taken into account when deciding on the most appropriate strategy for encouraging the recovery and survival of Juniper populations on your property. [McBride \(2011\)](#) has written detailed guidance on managing Juniper in the uplands for British conservation charity, Plantlife, and this information has been sign-posted here in addition to the precautions required to reduce the risk of spreading *Phytophthora austrocedrae*.

	<p>Recognising Juniper Common Juniper can grow in different forms from spreading bushes to many-stemmed trees reaching nearly 10 m in height. It has prickly needle-like leaves in whorls of three and can have a passing resemblance to Gorse (<i>Ulex europaeus</i>) but lacks the seed pods and yellow flowers. Prostrate Juniper grows as very low sprawling mats in open heath with exposed rock.</p>			
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<p>Common Juniper</p>	<p>Prostrate Juniper</p>			

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The ability of Juniper to recover and regenerate naturally is hindered by aspects of its biology:

- Individual bushes may be either male or female; some stands can be all of one sex and too far away from each other for successful reproduction which often results in low genetic variability
- Seeds can take between 2-4 years to reach maturity on the bush and those that reach the ground then take another 2 years before germination occurs which increases the risk of being eaten
- Bushes take at least 8 years to reach sexual maturity and their notorious slow growth means they are highly susceptible to being browsed before they even get to this stage
- Germination is most successful once pressure from livestock has been removed from a stand of juniper – after a short period of medium disturbance by large herbivores has created the necessary gaps for the seedlings to establish without competition

What you can do to encourage the recovery and survival of Juniper

- Preventing the spread of *Phytophthora austrocedrae* is paramount and land managers **should** ensure that all relevant staff and contractors follow the advice provided by [Scottish Forestry](#) and [DEFRA](#) before any work occurs.
- Determine the extent and condition of Juniper populations on your property. The key threats and opportunities may also be identified at this stage. This work might be done in-house or by engaging the services of an ecological consultant.
- Establish which of the conservation zones apply to your population of Juniper by referring to the relevant map in the [Scottish Forestry](#) documentation. This information will assist you with deciding on the most appropriate action.
- Planting new stock from nurseries or elsewhere **should** be avoided in situations where there are already self-sustaining and/or strong populations of Juniper (conservation zones 1 and 2). Other management actions can still be beneficial in these situations.
- Natural regeneration in these stronger populations of Juniper is encouraged since the local gene pool is already selected for the local conditions. [McBride \(2011\)](#) describes how land managers might facilitate natural regeneration of Juniper. Steps include:
 - Ensuring that there are patches of bare ground available for seed germination
 - Removing rank vegetation growth by allowing light summer-grazing within a stand of Juniper
 - Clearing ground and creating disturbance by hand is recommended for those stands of Juniper within exclosures and may involve the careful use of approved chemicals
 - Seedlings **should** be protected for two years from grazing and this could be achieved by individual shrub guards (that also protect against vole damage)
- Existing stands of Juniper woodland **MUST** be protected from burning management in line with the regulations set out in [The Muirburn Code](#). Burning **should** not occur where there are scattered Juniper bushes in more open moorland situations.

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- Juniper populations may also be threatened by wildfire in which case land managers are advised to carry out a [wildfire risk assessment](#). Action might involve creating a suitably sized fire-break by cutting Heather (*Calluna vulgaris*). The fire-break **should** afford appropriate protection but also allow room for expanding the Juniper population; care **should** be taken that Juniper seedlings are not destroyed in the creation of the fire-break. Scotland's Moorland Forum have published best practice guidance that land managers **should** follow when [Heather cutting](#).
- Protection of Juniper populations from heavy grazing is also essential so that seedlings are able to reach maturity. Where numbers of livestock or deer cannot be reduced to an appropriate level for natural regeneration then exclosures **should** be considered. [McBride \(2011\)](#) outlines the key considerations for installing an exclosure and highlights the measures needed to reduce bird-strike.
- Planting **should** be a last resort (whilst *Phytophthora austrocedrae* remains a threat) but may then be essential to rescue those populations of Juniper considered to be so impoverished that natural regeneration is impossible (conservation zone 3). Propagation from nursery stock, grown on from both seed and cuttings that have been collected from Juniper populations local to the proposed re-planting scheme, is recommended by [McBride \(2011\)](#) for reasons of early planting (from cuttings) and longer term genetic diversity (conferred by seed).
- [McBride \(2011\)](#) provides the necessary detail for how to go about collecting seed, taking cuttings, propagating and then advises on how to plant the young Juniper. The [Scottish Forestry](#) and [DEFRA](#) document outlines the precautions that need to be taken whilst carrying out all of these steps to guard against infection from *Phytophthora austrocedrae*.
- Restoration of Prostrate Juniper **should** only ever be through natural regeneration – enhanced by preventing muirburn/wildfire and encouraging low levels of grazing. Minimal intervention is recommended by [McBride \(2011\)](#) owing to the fragile nature of the habitat in which Prostrate Juniper occurs.
- Stands of Juniper are intolerant of shading so this **should** be considered when drawing up plans for the wider afforestation of upland properties by native or exotic tree species.

How we can help you

Please contact [Plantlife](#) in the first place at scotland@plantlife.org.uk for advice and details of what funding is currently available to assist with the restoration of Juniper on your property.

References/more information

Department for Environment Food and Rural Affairs. 2017. Juniper: Management guidelines. Available at <https://www.planthealthcentre.scot/sites/www.planthealthcentre.scot/files/inline-files/JuniperManagementGuidelinesSeptember2017Published.pdf>

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Forestry Commission Scotland. 2013. Planting Juniper in Scotland: reducing the risk from *Phytophthora austrocedrae*. Forestry Commission Scotland. Available at <https://forestry.gov.scot/publications/83-planting-juniper-in-scotland-reducing-the-risk-from-phytophthora-austrocedrae>

McBride A. 2011. Managing uplands for Juniper. Plantlife Scotland (Back from the Brink Management Series). Available at <https://www.plantlife.org.uk/scotland/our-work/plantlife-library/managing-uplands-juniper>

Scotland's Moorland Forum. 2017. The muirburn code: Management of moorland by burning and cutting. Scottish Natural Heritage, Inverness. Available at <https://www.nature.scot/guidance-management-moorland-muirburn-code>

Scotland's Moorland Forum. 2018. Heather cutting guidance. Scotland's Moorland Forum. Available at <http://moorlandmanagement.org/guidance-2/heather-cutting/>

Uplands Management Group. 2019. Moorland wildfire risk assessment and management planning. Uplands Management Group. Available at <http://moorlandmanagement.org/other-info/#WRA>

Ward LK, Shellswell CH. 2017. Looking after Juniper: Ecology, conservation and folklore. Plantlife, Salisbury. Available at <https://www.plantlife.org.uk/uk/our-work/publications/looking-after-juniper>

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The members of the MMBP Steering Group are available from the [MMBP website](#), and the members of Scotland's Moorland Forum are listed on the [Forum's website](#).

Revision Table

Date	Details