

Managing forest and woodlands for pine martens

Practical measures to protect and benefit the pine marten





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Introduction

The pine marten (*Martes martes*) is one of the rarest mammals in Ireland and the UK. It is a native species and is related to the stoat, weasel (absent from Ireland), otter and badger. An adult marten is about the size of a domestic cat, has a brown coat, a large patch of pale-coloured fur over the throat and chest and a long bushy tail. Martens weigh between 1.0kg-2.2kg and the head and body measure about 60cm, with females lighter and smaller than the males.

The pine marten, as its Irish name (*cat crainn*) suggests, spends most of its time in deciduous and coniferous woodland. The pine marten is mainly nocturnal. It is an agile climber and prefers diverse woodland habitat, old trees and a well-developed ground and shrub layer, but it has adapted to scrubland. In the absence of woodland, they will use cliffs, crags and rocky mountainsides. Pine martens are solitary animals with adults of both sexes excluding other martens of the same sex from their territory. They mark their territories by depositing scats in prominent places.

Martens are slow reproducers, males mate in their third year and females in their second. Breeding occurs once a year with two or three kits born in the spring, the kits emerge from the breeding den around mid-June and are independent at about six months old.

Aims of this leaflet:

- To provide guidance on how to assess and minimise potential impacts of forest operations on the pine marten
- To recommend a set of measures to benefit martens that can be used by forest managers and owners

The importance of woodland to pine martens



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Pine martens use a range of structures in woods as denning sites - cavities in trees, squirrel dreys, windthrow and up-turned root plates, rock faces and old buildings.

They are omnivorous, taking a wide range of food including small mammals, birds, amphibians and invertebrates, but are very dependent on fruiting tree species in autumn, particularly rowan, wild and bird cherry, and hazel. Ivy berries are also eaten, as are blackberries and wild raspberries.



Forest management and the pine marten

In general, forest complexity will encourage biodiversity that will in turn benefit pine martens. Therefore, forests should be managed to create complex structures at many scales, ranging from a landscape scale with clearfells of various sizes right down to an individual tree scale with single stem selection. All forests should have areas that are managed primarily for biodiversity. Such areas should be protected and managed as non-intervention or minimum intervention; these will provide martens with shelter and food. However, in some cases, timber production can be combined as an important secondary objective.

There are two main phases of forestry management to consider when martens are present in a wood:

- **Forest planning and design phase**

It is essential to consider the woodland features used by pine martens during this phase, as forest plans are usually in place for a minimum period of 20 years, although shorter term plans may also exist for periods of ten, five or one year. The needs of the pine marten are best addressed by a long-term approach to forestry management, but suitable measures can still be incorporated into shorter planning regimes.

- **Pre-operational phase**

It is critical that key site personnel are aware of the presence of pine martens in a wood before management works commence and are fully aware of the exact location of the features that must be preserved. Maps showing the location of den sites should be supplied to personnel and in the case of a maternal den site, it is recommended that the planned operation be postponed until the young are reared or that barrier tape is used to create an exclusion zone of a minimum of 100 metres. Pine martens give birth to young (called kits) in March and April, which stay with the mother until August-September. During the period March to September, disturbance to natal den sites should be avoided.

Assessing and minimising impacts

Good quality baseline information is necessary in order to create the most beneficial forest plan and to meet management objectives. An important first step is to consult with local wildlife personnel, data record centres and other experts and organisations that may hold documentary evidence about pine martens in the wood in question (see page 6 [‘Further information’](#)).

Next, a field survey should be conducted by experts or trained personnel so that up-to-date information on the presence of martens and the features they are using can be collected and incorporated into the planning and design phase. There is a variety of survey methods used to detect signs of martens, including searches for scats and footprints, while hair tubes and trail cameras can be used to detect individuals. A road casualty near a wood is often the first sign that martens are in an area, certainly in Ireland where the population is undergoing a recovery. Suitable denning sites should be located and searched for evidence of use, bearing in mind that licences may be required (see page 5 [‘Legal protection of martens’](#)).



Practical measures to protect and benefit martens

The main points to consider in relation to the three main forestry management practices are as follows:

1. Clearfelling design

It is important to minimise clearfell size to maintain arboreal connectivity, reduce fragmentation and isolation. A range of clearfell coupe sizes should be implemented, ranging from less than a hectare to a maximum of 20 hectares. Cleared areas may also be important feeding areas for martens and therefore their shape and size are important - long sinuous coupes are preferred to wide open areas.

Photo (above): Clearfell of an upland sitka spruce coupe in the Dyfi Forest, Gwynedd © Mairi Ayres.

2. Long-term retention (LTR)

Long-term retentions are stands of trees retained for longer than standard rotation lengths and thus can be important for pine martens by providing continuity of habitat. Areas are normally managed for a number of years, then retained for a number of decades beyond rotation without active management, but are then often felled.

3. Continuous cover forest (CCF)

This practice delivers a continuous timber supply without the need to clearfell and can be undertaken in both deciduous and coniferous woodland. It creates the most suitable environment for martens because it provides the animals with a three dimensional habitat - natural dens in the form of retained deadwood and old trees and a range of food due to diverse tree species and dense ground flora, which supports small mammals, birds, invertebrates and fruits.



Photo: Mixed species noble fir plantation resembling a CCF approach, with young oak, birch, beech and hazel in amongst the conifer.



Summary of forestry practices and features

Practice or Feature	Ensure	Avoid or minimise
LTR	Manage some areas as LTRs, located adjacent to areas of permanent forestry	Isolating LTRs in the centre of large clearfells
Coupe size	Small coupes of between 0.25 to 5 hectares	Large coupes >20 hectares
Coupe shape	Long, narrow coupes that are easy for martens to cross	Large wide coupes that fragment canopy cover
Forest structure	Range of tree species, coupe sizes, diverse structure, variety of silvicultural systems	<ul style="list-style-type: none"> - Only exotic species - Monocultures - Un-thinned and even-aged management (although such areas can provide arboreal habitat and connectivity)
Species selection	Some native species, particularly those that produce edible fruits	Only planting exotic species (although such areas can provide arboreal habitat and connectivity)
Open ground	Some permanent open ground with dense ground cover and berry-bearing species, interspersed with shrubs and occasional over-mature trees	Large open ground that fragments the forest cover
Deadwood	Retain existing deadwood and trees with cavities, preferably within stands of trees; recruit new large diameter deadwood and veteran trees by ring-barking	<ul style="list-style-type: none"> - Removal or damage to existing deadwood and cavity trees - Deadwood in the middle of a clearfell - Avoid topping trees using a harvester

Photo (above): Central tree with hole used as a marten den

Practice or Feature	Ensure	Avoid or minimise
Minimum/non-intervention areas	Manage some areas as nature reserves and maintain a suitable buffer around known breeding dens	High impact forest operations in areas used by martens, particularly breeding dens
Artificial structures	Retain and protect old buildings, caves, mine addits and rock outcrops	High impact forest operations in the vicinity
Non-commercial timber	Retain and protect up-turned root plates, large stumps, large brash piles, veteran trees, windthrow	Removal or damage
Woodland margins	Retain or enhance with berry-bearing species such as <i>Vaccinium</i> , blackberries and wild raspberries	Removal or damage, particularly ivy
Staff	Adequate and appropriate training about the pine marten for all staff involved in forestry management	Using untrained or unskilled staff and contractors
Artificial den sites	Erect artificial den boxes (download our ' Construction Guidelines ') in short-term intensive plantations	
Data collection	Adequate knowledge of existing records by widespread consultation and/or field surveys	

Legal protection of martens

The pine marten is protected in Ireland and the UK by both national and international legislation. Under the Irish Wildlife Acts it is an offence, except under licence, to capture or kill a pine marten, or to destroy or disturb its breeding or resting places. For further information on licences please email: wildlifelicences@ahg.gov.ie

Under UK legislation it is an offence to kill, injure or take a marten without a licence. It also makes it illegal to damage, destroy or obstruct access to a place or structure being used by a marten for shelter or protection (e.g. a den), or to disturb a marten while it is using such a place or structure. For further information on licences please email: licensing@snh.gov.uk

The European Union's Habitats and Species Directive further obliges Ireland and the UK to maintain the favourable conservation status of the pine marten throughout its range.



Further information

National Parks and Wildlife Service
7 Ely Place
Dublin 2
Tel: 01 8883242
Email: natureconservation@ahg.gov.ie
www.npws.ie

Coillte Teoranta
Newtownmountkennedy
County Wicklow
Tel: 01 2011111
Email: info@coillte.ie
www.coillte.ie

National Biodiversity Data Centre
Beechfield House
WIT West Campus
Carriganore
Waterford
Tel: 051 306240
Email: info@biodiversityireland.ie
www.biodiversityireland.ie

*For information on a number of
non-governmental organisations that
provide advice on broadleaf forestry:*

Irish Environmental Network
MACRO Centre
1 Green Street
Dublin 7
Tel 01 8780116
www.ien.ie

Forest Service
Department of Agriculture, Food and the Marine
Agriculture House
Kildare Street
Dublin 2
Lo-call: 1890 200 510
Tel: 01 6072000
Email: info@agriculture.gov.ie
www.agriculture.gov.ie/forests-service

Recommended publications

- 'Constructing, erecting and monitoring Pine Marten Den Boxes' (VWT & IEN guidelines)
- 'How to exclude pine martens from game and poultry pens' (VWT & NPWS leaflet)
- 'The Pine Marten in Ireland' (VWT & NPWS leaflet)

Available to download from www.mammals-in-ireland.ie/downloads



Contact us

The Vincent Wildlife Trust

The Vincent Wildlife Trust has been at the forefront of wildlife conservation for 40 years. Our work is focused on British and Irish mammals and currently centres on the bats and members of the weasel family (the mustelids). Our specific niche is as an organisation that undertakes surveys to identify the current status of species of concern, carries out pioneering conservation-led research, publishes the details of this work and offers expert advice to others through practical demonstration. Our innovative research has helped provide solutions to conservation issues locally and internationally.

Since 1991, The Vincent Wildlife Trust has also been playing a key role in mammal conservation in the Republic of Ireland, specifically bat conservation. VWT staff work independently, but are in close liaison with the National Parks and Wildlife Service. Today, the Trust is currently working on a number of Irish mammal species, including the pine marten.

Contact (Ireland): The Vincent Wildlife Trust, Donaghpatrick, Headford, County Galway
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Huw Denman - SelectFor Ltd & Sylvaen Ltd

Huw is a forest manager based in west Wales. He has a background in timber harvesting and marketing, forest management and in forest certification, and specialises in the transformation of plantations to continuous cover forestry (CCF) as well as red squirrel management.

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