



## Forests and the pine marten

Forests provide pine martens with shelter (dens), food and protection from predators. Red foxes sometimes kill pine martens because they compete for similar prey, so trees are also important escape routes for a pine marten that is being chased by a fox. Pine martens use a range of structures in woodland – cavities in trees, squirrel dreys, fallen trees uprooted by wind, up-turned root plates and rock faces. They will also use buildings located in woodland, for example, workshops, tool sheds, toilet blocks and visitor centres.

Woods with a rich variety of wildlife (biodiversity) will provide pine martens with a wide range of food including small mammals, birds, amphibians and invertebrates (eg, beetles) as well as berries from trees and plants such as rowan, yew, ivy, wild and bird cherry, and hazel.

### Forestry management practices and their impact on the pine marten

The three main forestry management practices are **Clear Fell**, **Long-Term Retention (LTR)** and **Continuous Cover Forestry (CCF)**.

Large areas of **clear fell** remove shelter and food for the pine marten in a matter of days. It is important, therefore, to minimise the area being felled and to have a range of clear fell sizes ranging from less than a hectare to a maximum of 20 hectares. As cleared areas (coupes) may also be important feeding areas for martens, their shape and size are important – long, winding strips are preferred to wide open areas.

**Long-term retention** are groups of trees that are kept for longer than standard rotation periods and thus can be important for pine martens by providing continuity of habitat. These areas are normally managed for a number of years, then retained for a number of decades without active management, but are then often felled.

**Continuous cover forestry** management creates the most suitable environment for pine martens because it provides the animals with natural den sites in deadwood and old trees, and provides a variety of food from a variety of tree species. It also gives dense ground cover that supports small mammals, birds, invertebrates and fruits. This forestry practice delivers a continuous timber supply without the need to clear fell, and can be undertaken in both deciduous and coniferous woodland.

### Forest management for the pine marten – maintaining biodiversity

In general, forest complexity will encourage biodiversity that will in turn benefit pine martens. Forests, therefore, should be managed to create complex structures at many scales, ranging from a landscape scale with clearfells of various sizes down to the individual tree scale with single stem selection. 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.

All forests should have areas that are managed primarily for biodiversity. Such areas should be protected and managed as non- or minimum intervention, because these will provide pine martens with shelter and food. In some cases, however, timber production can be combined as an important secondary objective.

### **Forest management for the pine marten – first step**

It is critical that forest workers are aware of the presence of pine martens in a wood before management work starts, and are fully aware of the exact location of the features that must be preserved. Good quality baseline information, therefore, is necessary in order to create the most beneficial forest plan and to meet management objectives. An important first step is to consult with Conservation Rangers of the National Parks and Wildlife Service (NPWS) [www.npws.ie](http://www.npws.ie), National Biodiversity Data Centre (NBDC) [www.biodiversityireland.ie](http://www.biodiversityireland.ie) and other experts and organisations that may hold documentary evidence about pine martens in the wood in question.

### **Forest management for the pine marten – conducting a field survey**

A field survey is necessary to assess whether pine martens are using the wood so that this information can be incorporated into the management plan. There is a variety of survey methods used to detect the pine martens, including searches for scats (pine marten droppings) and footprints, while hair tubes and trail cameras can also be used to detect the animals. A dead marten on a road near a wood is often the first sign that pine martens are in an area. Suitable den sites should be located and searched for evidence of use, bearing in mind that licences may be required. Information on licences can be found from [www.npws.ie](http://www.npws.ie)

### **Forest management for the pine marten – natal den sites**

Where knowledge of the locations of natal den sites (breeding sites) is available, maps showing the location of these sites should be supplied to forest managers. It is recommended that any planned operation be postponed until the young are reared or that barrier tape is used to create an exclusion zone of a minimum of 100m. Pine martens give birth to young (called kits) in March and April, and the kits stay with the mother until August-September. During the period March to September, disturbance to natal den sites should be avoided, as it is an offence under Irish Wildlife Acts to disturb a pine marten breeding site.

## Summary of forestry practices and features

Practice or Feature	Do:	Don't:
Long-term retention	... manage some areas as LTRs, and locate these next to permanent forestry.	... isolate LTRs in the centre of large clear fells.
Minimum/non-intervention areas	... manage some areas as nature reserves for martens and maintain a suitable buffer around known breeding dens.	... carry out high impact forest operations in areas used by martens, particularly near breeding dens.
Diverse forest structure	... plant or keep a range of tree species, coupe sizes, and use a variety of silvicultural systems. ... minimise un-thinned and even-aged management (although such areas can provide arboreal habitat and connectivity)	... plant only exotic species or monocultures.
Coupe size	... choose small coupe sizes of between 0.25-5 hectares.	... choose large coupes (>20 hectares).
Coupe shape	... provide long, narrow coupes that are easy for martens to cross.	... select large wide coupes that fragment canopy cover.
Tree species	... incorporate some native species, particularly those that produce edible fruits.	... plant only exotic species.
Deadwood	... keep existing deadwood and trees with cavities, preferably within stands of trees. ... create new large diameter deadwood and veteran trees by ring-barking.	... remove or damage existing deadwood and cavity trees. ... isolate deadwood in the centre of a clear fell. ... top old trees with a harvester.
Woodland margins	... keep or improve margins with berry-bearing species such as bilberry, blackberries and wild raspberries.	... remove or damage trees or shrubs in these, particularly ivy.
Open ground	... keep some permanent open ground with dense ground cover and berry-bearing species, interspersed with shrubs and occasional over-mature trees.	... create large areas of open ground that fragments forest cover.
Non-commercial timber	... keep and protect up-turned root plates, large brash piles, large stumps, veteran trees and windthrow.	... remove or damage up-turned root plates, large brash piles, large stumps veteran trees and windthrow.
Artificial structures	... keep and protect old buildings, caves, mine entrances and rock outcrops.	... damage old buildings, caves, mine entrances and rock outcrops during forestry operations.
Artificial den sites	... put up artificial den boxes in short-term intensive plantations.	
Staff	... provide training about the pine marten for all staff involved in forestry management.	... employ untrained or unskilled staff or contractors.
Data collection	... source knowledge of existing records by widespread consultation and/or field surveys.	