3 Forests in flat or undulating landscapes

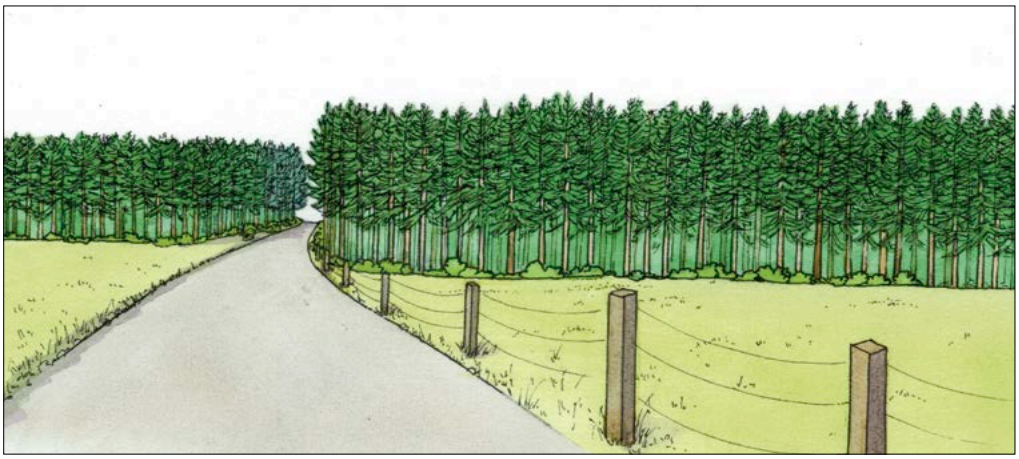
3.1 A medium-scale predominantly coniferous forest in a flat landscape

This example is in the flatter lowland heath areas where landform is slight, wind is not a serious problem, recreation access is high priority and views are limited to edges and internal landscapes. The main tree species are pines, particularly Corsican pine, which may need to be replaced due to fungal diseases. The objectives focus on timber production, although improvement of biodiversity by increasing the area of heathland within the forest and linking internal spaces with external heath areas is also important. The forest is seen mainly from along public roads or internal rides and rights of way so the edges and internal spaces need to be carefully considered. Increasing the proportion of broadleaves is also an objective. There may be some areas where low-impact silvicultural systems (LISS) may be appropriate while clearfelling is likely to be the main silvicultural approach.

Objectives

Resource	Objective	Indicator of objective being met
Timber	To produce as many quality sawlogs as possible within the framework of the environment	Pine produces high proportion of sawn timber (felled Corsican pine replaced with Scots pine) As much ground as possible is planted Efficient silviculture methods are adopted
Financial	To maintain a positive cash flow into the future	Fellings are fairly steady year on year Thinning contributes to volume
Landscape	To improve the views from inside and outside the forest	External edges are enhanced Internal shapes are organic Views along paths and roads are interesting and appear natural
Biodiversity	To enhance the value of semi-natural habitats in the forest, especially for rare species	Heathland areas are developed, maintained and connected Grassland habitats are developed Sandy areas for lizards are enhanced and new areas are introduced
Historic environment	To enhance the protection of archaeological sites in the forest	Sites will be kept open and protected from damage by forest operations or people
Public access and recreation	To maximise public benefit in terms of access and use	Trial system for a range of users is established Rights of way are maintained

Base – perspective

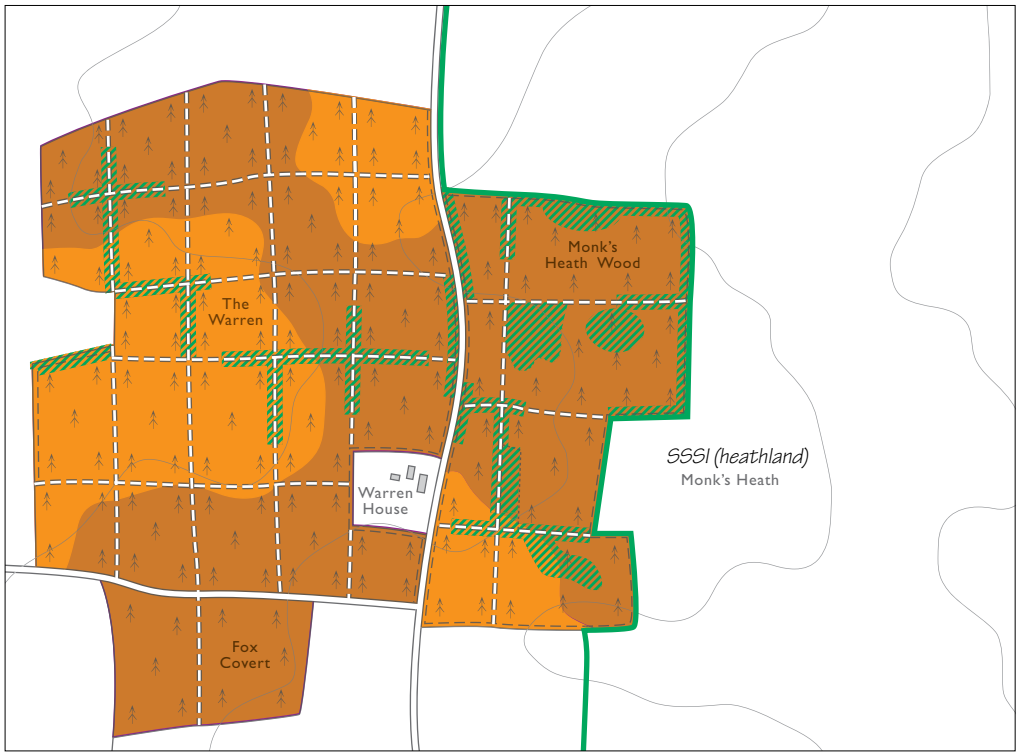


Base – plan

Access and historic environment

- Public bridleway
- Paths used by the public but not rights of way
- Forest walk
- No public access – used for shooting
- P Car park

Soils and biodiversity



Soils

- Ironpan
- Podzol

Nature conservation

- Relict heathland in forest: on rides and in sparser stands of trees
- Boundary of SSSI

Biodiversity potential

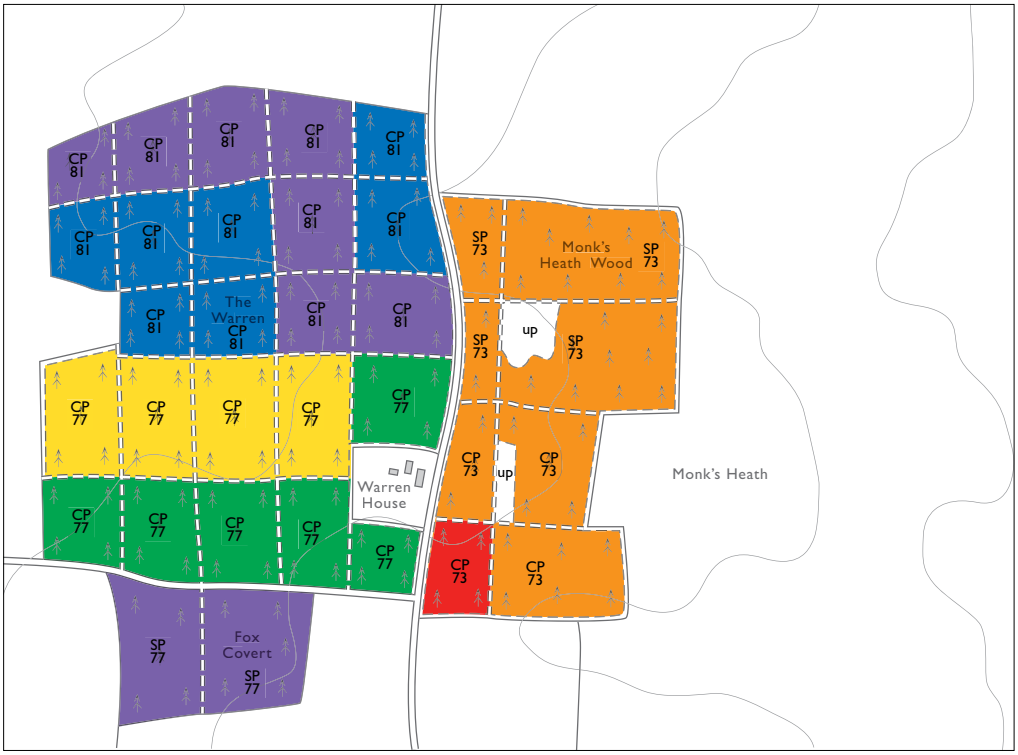
Nightjars, woodlarks, sand lizards, insects

All require healthy open space of several hectares: can be permanent or temporary

Raptors – need retained big trees

Stock map and economic felling ages

- *2014–19*
- *2019–24*
- *2024–29*
- *2029–34*
- *2034–39*
- *2039–43*



Roads and harvesting

- *Forest roads*

All the forest is accessible by wheeled vehicles.

The survey is presented in several layers as there are many different and complex factors to take into account in such a forest, especially when there are disease problems in the main species. Thus the constraints and opportunities analysis is an important part of understanding the complexities of all layers.

Constraints and opportunities analysis

Factor	Constraint	Opportunity
Age of forest	All the forest is close in age	To diversify by felling over a period as all stands are windfirm
SSSI on border	Risk of tree seeds colonising the SSSI	To clear back the edge and link SSSI with the interior of the forest
Historic environment	Sites under trees now mean loss of productivity when they cannot be replanted	To clear them and link into heathland habitats
Trails and paths	Existing use may conflict with forest operators	To reroute and make them more interesting as work proceeds
Soil	Poor soil good only for pines, some grow poorly on worst ironpan soils	To maintain the low diversity of the forest to reflect the semi-natural habitats present To use poor growth areas as open space
Old trees	Keeping old trees takes volume out of production	To keep sense of maturity in the forest To provide important habitats
Pests and diseases	Corsican pine infected with red band needle blight must be replaced by Scots pine over time	To diversify the forest to reduce the potential impact of diseases
Fire	Lack of management for structural diversity has resulted in build up of fuel material	To thin and remove fuel material in fire-susceptible areas, such as adjacent to heathland and public trails and paths

The landscape character assessment is not as important here because the main way the forest is seen is from edges and internally. Landform has no impact on the design. However, the appearance of edges and internal open spaces requires consideration at the design stage.

The concept here is to break up the forest with a pattern of clearfelling that permits new open-ground habitat to be created and provides temporary habitat for many species. The organic shapes break away from the gridiron compartments of the past and allow a more interesting landscape as seen from roads and paths. Edges are diversified, both internally and externally. The retention areas help control the relative scale of felling and provide continuity of habitat over time.

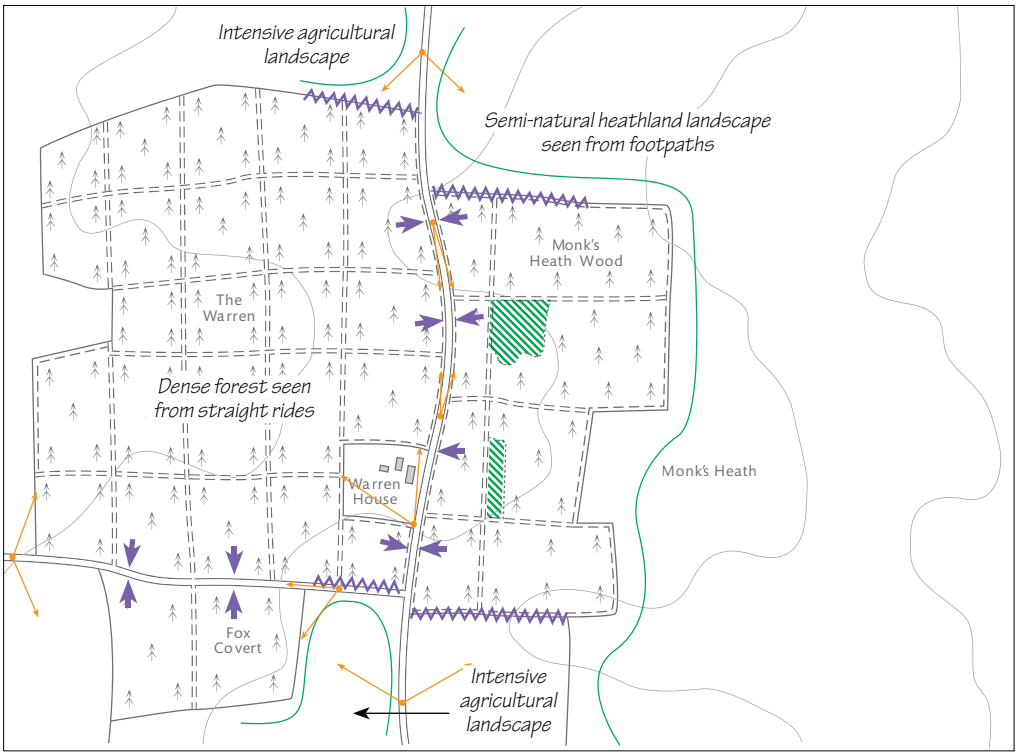
At the sketch design stage the concept is developed into a felling pattern keyed to 5-year felling periods. Most felling is at or within 5 years of economic optima. Each coupe is replanted, mainly in Scots pine, leaving the necessary open spaces for the development of grass and heathland habitats. Stability and growth rates mean that structural diversity can be achieved during one rotation. It is illustrated for sample external and internal views (one external view shown).

Constraints and opportunities analysis

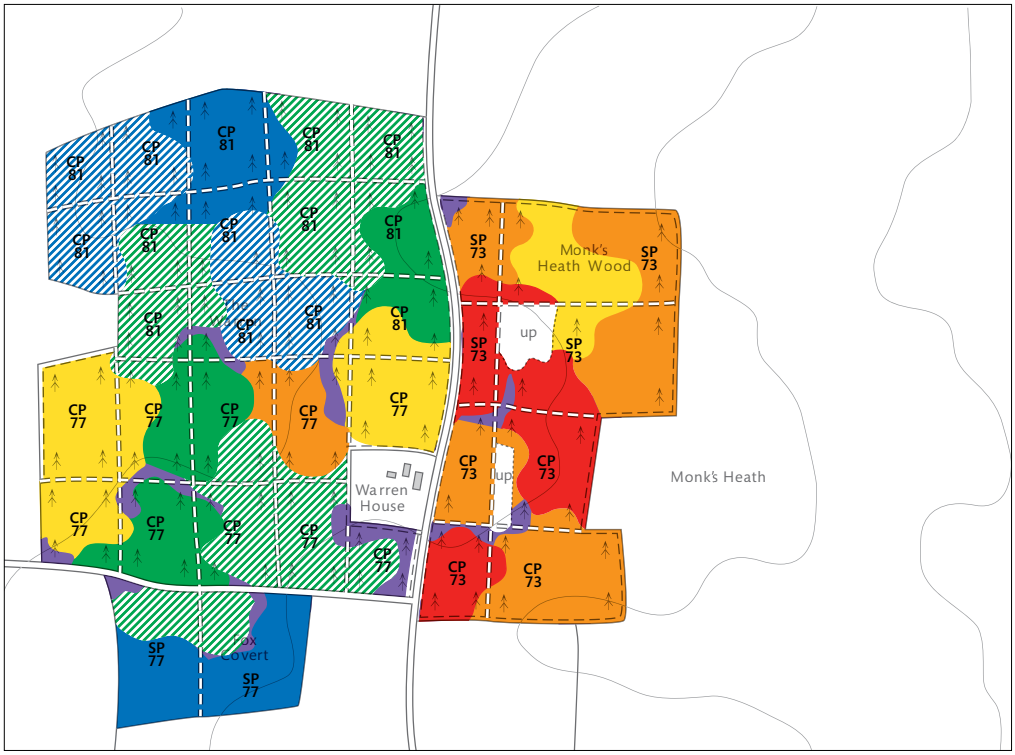
- SSSI
- Opportunities to link internal and external open spaces
- Opportunities to create open space with heathland character
- Clear and prevent tree growth on archaeological sites
- Opportunity to improve views along roadside
- Opportunity to improve edge views
- RoW – must be kept open
- Path / Trail — Opportunity to improve routes and diversify the visual experience along them

Visual factors

- Extent of views
- Tunnel effect of forest on both sides of road
- Hard edges against open space
- Open spaces in forest



Felling design – plan



Felling is mainly kept to the economic periods or ± 5 years. This breaks up the age classes while minimising economic penalties.

Restocking plan

Sketch design – projection (20 years)