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UNIT GUIDE 2023-24

4. Understand the main type of woodland management

The most recent Accredited Official Statistics concerning forestry, generated by Forest Research, were made public on *26 September 2024*, by the protocols of the UK Statistics Authority.

Key Findings

As of 31 March 2024, the estimated woodland area in the United Kingdom is *3.28 million hectares*, with 1.44 million hectares (44%) certified as sustainably managed.

This represents *14% of the total land area in the UK*, 19% in Scotland, 15% in Wales, 10% in England, and 9% in Northern Ireland.

A *total of 0.86 million hectares of the UK's woodland area* is owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales, or the Forest Service in Northern Ireland.

In the fiscal year 2023/24, the UK *created 20.66 thousand hectares of new woodland*.

In 2023, the delivery of UK roundwood (softwood and hardwood) to primary wood processors and other entities amounted to 9.8 million green tonnes, reflecting a *3% decline* compared to the previous year.

The value of wood products *imported* into the UK in 2023 reached £9.0 billion, comprising 6.2 million cubic meters of sawn wood, 3.1 million cubic meters of wood-based panels, 6.4 million tonnes of wood pellets, and 4.8 million tonnes of paper.

Approximately *74%* of participants in the UK Public Opinion of Forestry Survey 2023 indicated that they *had visited forests or woodlands* in recent years, with 22% of these respondents noting an increase in their visits over the past 12 months.

According to the Business Register and Employment Survey, the average employment in the forestry sector in 2022 was *21 thousand*.

In 2022, the Gross Value Added (GVA) from primary wood processing activities, including sawmilling, panels, and pulp & paper, was *£2.42 billion* in the UK, while *GVA* in *forestry* was recorded at *£0.68 billion*.

In 2022, the *UK* ranked as the *second-largest net importer of forest products*, following China.

https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2024/

4.1. Define *one* main type of woodland found in the UK

Woodland, as outlined in UK forestry statistics, refers to *land characterized by stands of trees covering* a *minimum area of 0.5 hectares* and possessing a *canopy cover of no less than 20%* or having the capacity to reach these criteria. This definition pertains to land use rather than land cover, thereby encompassing integral open spaces and areas that have been felled and are being restocked as part of woodland.
For a site to qualify as "woodland," it must satisfy the following criteria:

- a minimum area of 0.5 hectares

- a minimum width of 20 meters
- a potential tree canopy coverage of no less than 20%
- a canopy composed of specimens that fulfill the definition of trees

The term *"canopy cover"* refers to the extent of the area shaded by tree branches and foliage when observed from an *aerial perspective*.

For a plant to qualify as a *tree*, it must possess at *least one woody stem* and be anticipated to reach a *height of at least 5 meters*.

https://www.gov.uk/government/publications/definition-of-trees-and-woodland/definition-of-trees-and-woodland#:~:text=To%20be%20considered%20%E2%80%9Cwoodland%E2%80%9D%2C,of%20trees%20(see%20Section%203)

1. The *National Forest Inventory (NFI*) documents the size, distribution, composition, and condition of the existing forest and woodland cover. It comprises several subdivisions, including the woodland category and the "assumed woodland" category, which aids in identifying newly established woodlands that have the potential to reach 20% canopy cover. This inventory is managed by Forest Research.

2. *The Ancient Woodland Inventory (AWI)* catalogs the existence of ancient woodlands, ancient wood pastures, and parklands. This inventory is overseen by Natural England. Both inventories employ established methodologies to assess and classify land as woodland.

However, it is important to note that these inventories *do not serve as conclusive evidence* of the presence or absence of woodland at any specific location at a given time. Due to natural and management cycles that affect woodlands, an area may be classified as woodland in the inventory even if it is not currently tree-covered.
https://www.gov.uk/government/publications/definition-of-trees-and-woodland/definition-of-trees-and-woodland#:~:text=To%20be%20considered%20%E2%80%9Cwoodland%E2%80%9D%2C,of%20trees%20(see%20Section%203)

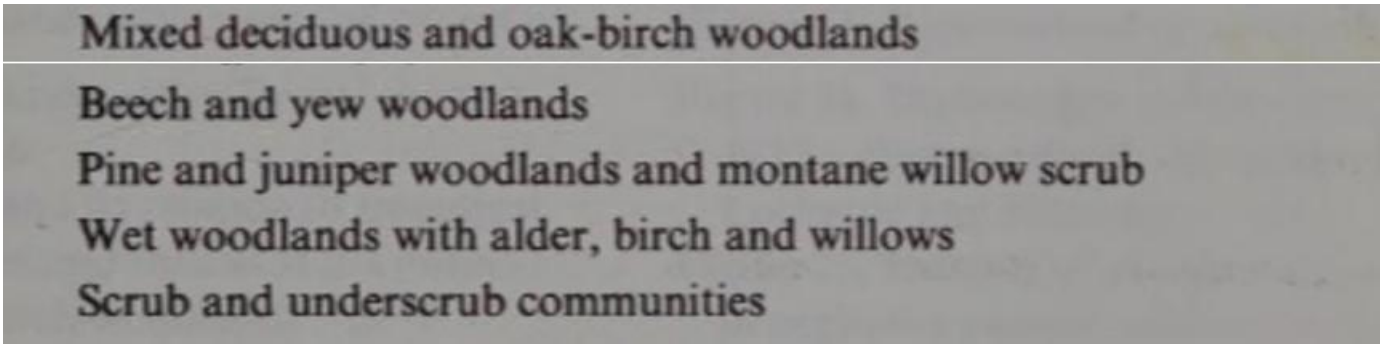
In Britain, woodland is the final stable ecosystem, known as the 'climax' ecosystem, formed following the last ice age. Trees migrated northwards from Southern Europe after the ice melted, reaching Britain before it was cut off by the English Channel flooding around 8,000 years ago. The *primary forest*, known as *'wildwood'*, covered most of Britain, dominated by lime woods in the south and pine forests in the higher grounds of Scotland. Major forest clearance began during the Neolithic period for agriculture. Today, native woodland is categorized as *ancient (existing since at least 1600 AD)* or *recent/secondary (from the 17th century onwards)*.
https://www.woodlands.co.uk/owning-a-wood/managing-your-woodland-for-wildlife/managing-your-woodland-for-wildlife.pdf

A significant portion of this recent woodland emerged through natural succession on abandoned heaths, moors, and grasslands. Both ancient and some recent woodlands are often described as *semi-natural*, as they have been influenced by both human activity and natural processes. A third category encompasses *artificial plantations*, which are created through the intentional planting of trees, *primarily for economic purposes*. The origins of these plantations can be traced back to the 17th century when they were mainly composed of *broadleaved species*. The introduction of *sweet chestnut* in southern England occurred later, predominantly in the 19th century, replacing earlier coppice crops on former woodland sites. Major conifer planting initiatives did not commence until *after* the First World War. Various open habitats, now recognized as priority habitats under the *UK Biodiversity Action Plan (BAP)*, such as heaths, moors, grasslands, bogs, and sand dunes, were systematically planted with a variety of conifers, including *Corsican*

pine, *larch*, *Western hemlock*, *spruce*, and *Scots pine*. Even ancient woodlands were sometimes cleared to establish conifer and, occasionally, broadleaved plantations, although this practice was largely *discontinued* by the *mid-1980s*. Consequently, by the *close of the 20th century*, *conifers* had become the *predominant type of forest*, comprising over half of the woodland in Britain.
In the early 21st century, there has been a significant transformation in policies, leading to a *predominance of broadleaf planting*. Additionally, certain plantations located on *ancient woodland sites (PAWS)* are now being substituted with native broadleaves or permitted to undergo natural regeneration. Current woodland creation initiatives consider habitat connectivity and the integration of ancient woodlands, emphasizing the importance of selecting appropriate tree and shrub species to *promote* the development of *semi-natural ancient woodland types* and their corresponding wildlife.

The *NVC (National Vegetation Classification)* woodland classification is derived from a comprehensive analysis of 2,648 samples collected from both ancient and contemporary woodlands across Britain (Rodwell 1991). This represents the largest dataset ever utilized for developing a woodland classification in Britain.
There exist *18 primary types of woodlands* and seven categories of scrubs or under scrubs, the majority of which are further subdivided, resulting in a total of 73 sub-communities.

These are the main four categories:



https://data.jncc.gov.uk/data/673dc337-e58f-4f6b-ac7b-717001983c2e/JNCC-NVC-FieldGuideWoodland-2004.pdf

The *National Forest Inventory (NFI*) categorized in their research report woodland into below categories:

Woodland area by forest type

• Coniferous Woodland:	This type comprises over 80% coniferous species by area.
• Broadleaved Woodland:	This category consists of more than 80% of broadleaved species by area.
• Mixed Woodland:	This classification includes both broadleaved and coniferous species, with each type occupying at least 20% of the canopy (refer to the note on Mixtures above).
• Coppice:	This refers to marketable broadleaved species that possess a minimum of two stems per stool and are either currently being managed or can be managed on a rotational basis. Except for hazel coppice, more than half of the stems should be capable of yielding 1-meter timber lengths of good quality.
• Coppice with Standards:	This type features two-story stands where the overstorey contains at least 25 stems per hectare that are older than the understorey of managed coppice by at least one coppice rotation.
• Felled Woodland:	These are areas that have been harvested or where the tree density has been reduced to below 20%, with the expectation that these sites will be replanted.
• Windblow:	This term describes areas of woodland that have been affected by windfall and remains uncleared and unregenerated.
• Open Space:	These are sections within woodland that lack tree cover but are essential to the woodland ecosystem, including clearings, stream banks, deer glades, pathways, and forest roads.

https://cdn.forestresearch.gov.uk/2022/02/nigreatbritain.pdf

UK BAP priority habitats defined woodland into two primary categories (*Broadleaved, Mixed, and YEW Woodland* and *Coniferous Woodland*) with sub-categories as in the table shown below:

Broadleaved, Mixed and Yew Woodland	Traditional Orchards
	Wood-Pasture and Parkland (updated December 2011)
	Upland Oakwood
	Lowland Beech and Yew Woodland
	Upland Mixed Ashwoods
	Wet Woodland
	Lowland Mixed Deciduous Woodland
	Upland Birchwoods
Coniferous Woodland	Native Pine Woodlands

https://jncc.gov.uk/our-work/uk-bap-priority-habitats/

For this assignment, I decided to define ancient woodland.
Ancient woodlands have remained largely untouched, serving as habitats for rare and endangered species of flora, fungi, insects, and various microorganisms. The biodiversity present in ancient woodlands is unparalleled and distinct from that found in other environments. Consequently, ancient woodlands represent a unique and invaluable component of our ecosystem; numerous plant and animal species residing here are not found in other locations. Certain species of plants, insects, lichens, and molluscs serve as indicators that a site has maintained continuous woodland cover for an extended period. These species are referred to as ancient woodland indicators, and a higher presence of these species within a woodland increases the probability of its classification as ancient.

Ancient woodland is land that has had a continuous woodland cover since at least 1600 AD and may be ancient semi-natural woodland (ASNW), which retains a native tree and shrub cover that has not been planted, although it may have been managed by coppicing or felling and allowed to regenerate naturally, or plantation on ancient woodland sites (PAWS) where the original tree cover has been felled and replaced by planting, often with conifers, and usually over the last century.

Ancient woodland is a habitat that requires centuries to develop and is regarded as an irreplaceable ecological resource.

Its significance lies in several key areas:

- Supporting wildlife, including rare and endangered species, with established guidelines for their protection
- Enhancing soil quality - Facilitating carbon capture and storage - Contributing to the seed bank and promoting genetic diversity
- Providing opportunities for recreation, health, and well-being
- Offering cultural, historical, and landscape significance

This type of woodland refers to any area that has been continuously forested since at least 1600 AD. It encompasses:

- Ancient semi-natural woodland, primarily composed of native trees and shrubs that have naturally regenerated
- Plantations on ancient woodland sites, which have been replanted with coniferous or broadleaved trees while preserving ancient woodland characteristics, such as undisturbed soil, ground flora, and fungi.

https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions

An ancient tree holds immense significance due to several key characteristics, which may encompass its:

- great age
- size
- condition
- biodiversity value because of significant wood decay and the habitat created by the aging process
- cultural and heritage value

It is noteworthy that only a limited number of trees across various species reach the status of being ancient.

4.2. Identify the key principles of managing *one* of the main types of woodlands

Five Key Principles:

- Ancient forests are complex and invaluable ecosystems. When they are damaged, they need to be carefully restored.
- If damaged ancient forests, such as those with non-native tree species, are not restored, they may deteriorate irreversibly over time.
- Restoration begins with the understanding that damaged ancient forests likely still contain some remnants of their previously rich ecological and archaeological value.
- The surviving biological remnants in these forests are often well-suited to the native woodland conditions and respond well to the management of light levels.
- Restoration is a long-term process, but there is an urgent need to begin in many cases where the remaining features are in critical condition to prevent further degradation.

Managing Key Principles Summary:

Prioritizing immediate threats:

The first step in ancient woodland restoration is to address urgent issues that could lead to further decline in critical areas. This involves targeted management interventions to stabilize the situation.

Long-term recovery:
Once immediate threats are addressed, the focus shifts to restoring the overall health of the woodland ecosystem. This involves gradual changes, managing light levels, controlling herbivore impacts, and promoting regeneration.

Balancing restoration with landowner objectives:
The management approach should align with the landowner's goals while ensuring that the woodland ecosystem continues to recover.

Ecological integrity: The aim is to create a native woodland with old-growth characteristics, appropriate levels of disturbance, and connections to the wider landscape.

In summary, ancient woodland restoration is a multi-faceted process that requires a careful balance of immediate action, long-term planning, and consideration of ecological and landowner objectives.

Assessment processes in restoration management of ancient woodlands.
Four key remnant features:

- Specialist woodland plants
- Relic deadwood and stumps
- Pre-plantation and relic native trees
- Archaeological remains

These features are assessed for their **distribution**, **abundance**, and **threat factors**.

Threats to ancient woodland remnants:

- Imbalance of light levels: Excessive shading from introduced species or excessive light due to rapid tree removal can lead to coarse vegetation dominance and threaten remnant features.
- Other threats: The text acknowledges the existence of additional threats that can contribute to the deterioration of remnants.
- Latent survival: It emphasizes that the absence of visible remnants on the woodland floor may not indicate complete loss, as plant material such as seed banks, bulbs, rhizomes, and fungi may remain dormant for most of the year.
- Soil protection: The text underscores the importance of protecting the soil in ancient woodlands. Damage to soil profiles through disturbances like unplanned or excessive timber extraction routes is considered a significant threat.

Threat Assessment and Prioritization:

Threat Level: The presence of a threat should be assessed and categorized as critical, threatened, or secure.
Prioritized Restoration Strategy: *The threat level should be used to create a prioritized restoration strategy.*
Management Plan: *The strategy should be integrated into a long-term management plan.*
Gradual Change and Vulnerability:
Avoid High-Impact Operations: *Gradual change is emphasized in the initial phase of restoration to minimize harm to vulnerable remnants.*
Sudden Changes: *Sudden changes should be avoided to prevent further stress on remnants.*
Ongoing Threat Assessment and Management:
Regular Review: *The threat assessment should be reviewed periodically (at least every 4-5 years) to ensure it remains accurate.*
Surveillance and Interventions: *Ongoing surveillance of threats should guide management interventions as needed.*

A three-phase model of restoration of ancient woodland in key points

Phase One: Halting Further Decline
Urgent Need: *For ancient woodlands in the most critical state, immediate action is required to stop further decline.*
First-Aid Management: *Targeted interventions, such as halo thinning or removing invasive plants, are essential to protect the remaining features.*
Prioritization: *Critical remnant features should receive focused attention, even if wider management interventions are planned.*

Space to Steady: *Remnants need time to stabilize before more extensive work can begin.*
Combination: *Phase one interventions can sometimes be combined with wider phase two forestry operations.*
Planning: *Phase one should not be delayed due to planning for phase two.*
Irreplaceable Features: *Critical sites must be prioritized to prevent the loss of unique remnants.*
UKFS Support: *The UK Forestry Standard emphasizes the importance of retaining remnant features.*
Ongoing Management: *First-aid interventions are not one-time solutions and require follow-up to maintain features.*

Phase Two: Recovery of the Wider Ecosystem
Long-Term Process: *Phase two is a long-term endeavour aimed at restoring the entire woodland ecosystem.*
Ongoing Threat Management: Threats to remnants must be continuously managed and reduced.
Threat to Secure: The goal is to progress from a threatened to a secure condition.
Considered Approach: A deliberate approach is necessary throughout phase two.
Gradual Restoration: Gradual methods, such as selective tree removal, are often suitable.
Site-Native Composition: The aim is to shift towards a predominantly site-native woodland structure.
Native Tree Promotion: Promoting and recruiting native trees is a key aspect of phase two.
Rapid Transformation: In some cases, a more rapid or extensive transformation may be required.
Urgency: Gradual does not mean a lack of urgency; regular management is essential.
Remnant Regression: Without ongoing management, remnants could decline or be lost.
Stand-Level Transformation: Gradual restoration involves transforming entire stands and woodlands.

Questions for Consideration:
Phase One Success: Have phase one actions been effective in stabilizing remnants?
Native Regeneration: Is native tree and shrub regeneration occurring?
Seed Sources: Are adequate seed sources available for natural regeneration?
Stand Survival: Is the current stand likely to survive long enough for gradual change?
Timber Objectives: Are timber objectives realistic given factors like access?
Constraints: Are there constraints like tree disease or wind stability that affect plans?
Silvicultural Systems: What silvicultural systems are appropriate for maintaining biodiversity?

Phase Three: Maximizing Ecological Integrity
Relevance: *Phase three applies to all ancient woodlands that have undergone restoration and to other wooded ecosystems.*
Ongoing Restoration: *Restoration is never complete; continued efforts are necessary.*
Ecological Richness: *The goal is to develop the richness and integrity of woodland ecosystems.*
Missing Elements: *Phase three involves identifying missing elements and working towards their restoration.*
Long-Term Trajectory: *Setting a long-term vision is crucial.*
Key Aspirations: *Desired characteristics include old-growth features, disturbance, dynamism, space, and physical health.*
Landscape Context: *Woodlands should be considered within the broader landscape context.*
Reintroductions and Translocations: *These may be part of phase three.*
Active and Ongoing Management: *Sustainable management is essential.*

Questions for Consideration:

Long-Term Vision: What is the desired future state of the woodland, and how does it fit into the wider landscape?

Missing Elements: What features are lacking (e.g., ancient trees, deadwood, glades), and how can they be restored?

Ongoing Management: How can management practices continue to enhance biodiversity and promote self-regulation?

External Factors: What external factors are impacting the woodland, and how can they be addressed?

The restoration and long-term stewardship of ancient woods must be included in normal sustainable forestry practices. Considering climate change, this integration is critical because it promotes biodiversity, fortifies ecosystem resilience at the landscape scale, and produces economic benefits in addition to vital environmental services.

Realizing that all forests are dynamic ecosystems prone to environmental changes is crucial. Nature is adaptive; it reacts to disturbances and changes at different rates of intensity. Over time, our historic woodlands will inevitably need to change as shifts and modifications pick up speed.

Resources:

https://hub.jncc.gov.uk/assets/2728792c-c8c6-4b8c-9ccd-a908cb0f1432
https://data.jncc.gov.uk/data/673dc337-e58f-4f6b-ac7b-717001983c2e/JNCC-NVC-FieldGuideWoodland-2004.pdf
https://archive.org/details/britishplantcomm0001unse
https://cdn.forestresearch.gov.uk/2022/02/nigreatbritain.pdf
https://publications.naturalengland.org.uk/publication/61047?category=552039
https://cdn.forestresearch.gov.uk/2010/11/fcpg201.pdf
https://www.cumbriawoodlands.co.uk/working-with-individuals/guidance/plantations-on-ancient-woodland-sites/
https://magic.defra.gov.uk/MagicMap.aspx
https://www.swog.org.uk/
https://www.smallwoods.org.uk/
https://www.coraclesociety.org.uk/