

LO 1 Principles of Woodlands, Forestry and Ecology

1.1. Understand how woodland/forestry cover has changed from 1600A.D. to the present day

1.2. Identify three major influences that have shaped woodlands in recent times

Introduction

A very brief timeline of British Woodland

- Around 1,500 BC, post-glacial Britain saw the emergence of grasslands
- Tundra and moorland dominated the landscape, with Heather adding a touch of pink and purple
- By 10,000 BC, trees such as birch, aspen, and willow began colonizing from the south
- This marked the first presence of trees in Britain post-glaciation
- The period from 8500 BC to 4500 BC saw the arrival of pine, hazel, oak, and other species, leading to stability during the Atlantic Period from 7300 BC to 4500 BC
- However, around 4500 BC, holly, ash, beech, hornbeam, and maple made their debut, signalling the decline of the wildwood
- Elm was the first to fall around 4200 BC, followed by increased human destruction for cultivation during the Neolithic period
- In the Bronze Age, wildwood clearance continued, pushing farming to higher altitudes and eventually turning them into moorlands when unsustainable
- By 500 BC, half of the wildwood was cleared for farming, leading to waste in tree-cutting
- The Romans continued extensive farming upon their invasion in AD 43, while the post-Roman recession around AD 450 resulted in a decline in population, yet intensified human management of remaining woodlands
- The Domesday Book of 1086 revealed that five-sixths of the wildwood had vanished, leaving only a fraction of woodland compared to other European countries

Conclusion:

Throughout history, the balance between human activities and woodland conservation has shaped the landscape of Britain.

Ancient woodlands require centuries to develop and are recognised as a habitat that cannot be replaced. Ancient woods refer to woodland areas that have remained intact since 1600 in England, Wales, and Northern Ireland, and since 1750 in Scotland. This period aligns with the emergence of beginning precise cartography, to determine that these regions have maintained tree cover for several centuries. Furthermore, they have experienced minimal disruption from human activities.

Characteristic:

Uninterrupted forest coverage: Ancient woodlands have maintained a forested state since at least 1600 AD, offering a stable and enduring habitat over time.

Originating species: These woodlands predominantly consist of tree and shrub species that are native to the area, thereby preserving ecological integrity.

Natural succession: Numerous ancient woodlands have evolved through natural processes, fostering a rich and self-sustaining ecosystem.

Plantations within ancient woodland areas: Although plantations may be established on sites of ancient woodlands, it is essential to preserve key elements such as undisturbed soil, ground flora, and fungi to uphold their ecological significance.

Significance:

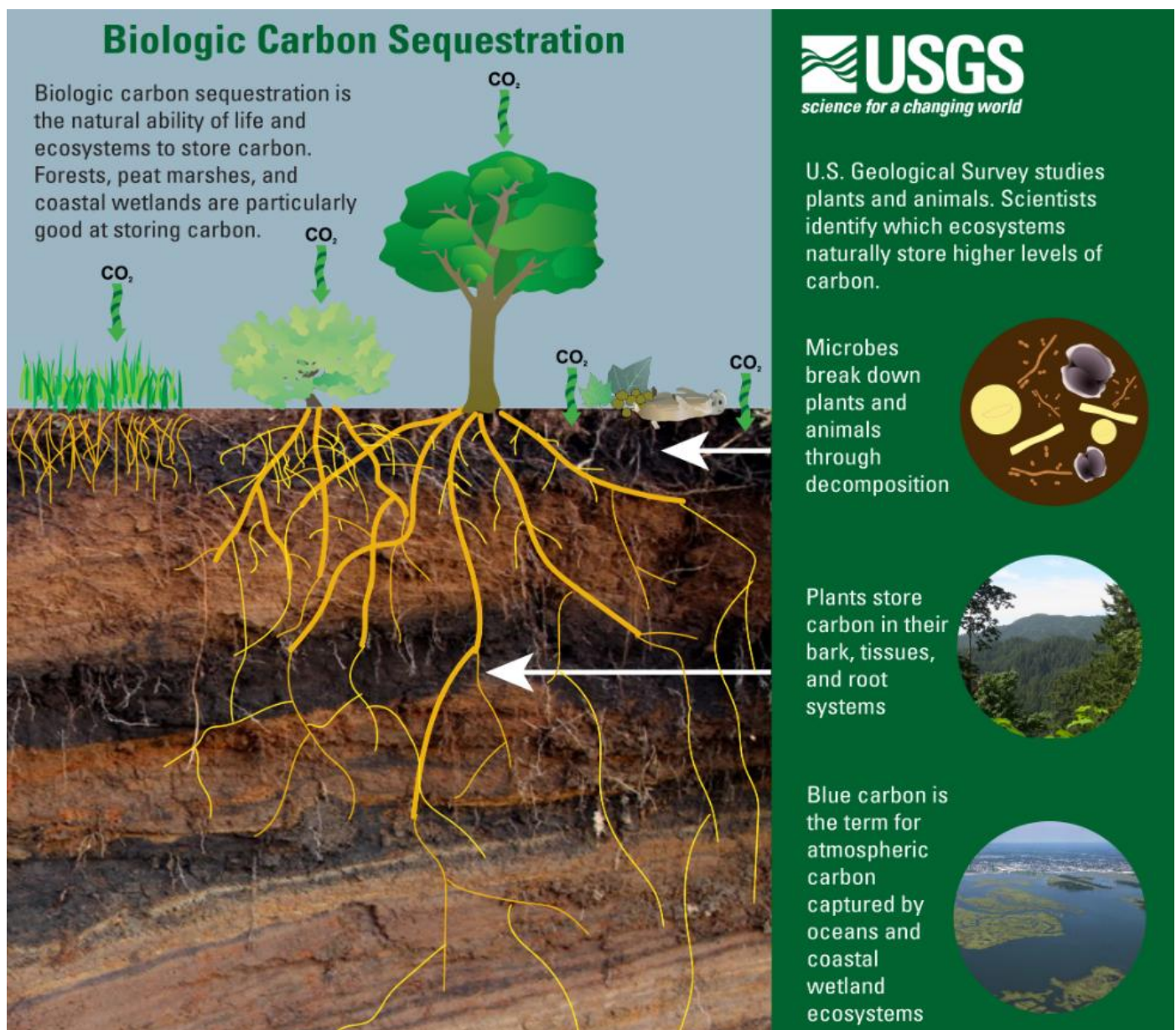
Wildlife habitat: Ancient woodlands serve as a vital and stable ecosystem for a variety of wildlife, including numerous rare and endangered species. They provide essential resources such as food, shelter, and breeding sites.

Soil health: The soils found in ancient woodlands are abundant in organic matter and microorganisms, which foster robust plant growth and facilitate nutrient cycling.

Carbon sequestration: The trees within ancient woodlands play a crucial role in absorbing carbon dioxide from the atmosphere, thereby contributing to the mitigation of climate change.

Genetic diversity: Ancient woodlands maintain a rich genetic reservoir of both plant and animal species, which is critical for the long-term resilience of ecosystems.

Recreational and cultural benefits: Ancient woodlands present opportunities for leisure, relaxation, and a deeper connection with nature. Additionally, they possess considerable cultural, historical, and aesthetic significance.



<https://www.usgs.gov/media/images/biological-carbon-sequestration>

Conservation initiatives: Safeguarding ancient woodlands is crucial for maintaining biodiversity and the services provided by ecosystems. Governments and conservation organizations must place a high priority on their protection and restoration.

Sustainable stewardship: The effective management of ancient woodlands is necessary to guarantee their enduring health and sustainability. This involves ongoing monitoring, the management of invasive species, and the encouragement of natural regeneration.

By recognizing the significance and unique attributes of ancient woodlands, we can better appreciate their worth and strive for their conservation and sustainable management.

Ancient Trees:

Ancient trees stand as enduring symbols of the passage of time, quietly witnessing the changes in their surroundings for centuries. These remarkable specimens possess a distinctive combination of age, size, health, and ecological importance that distinguishes them from other trees.

Essential Characteristics of Ancient Trees:

Significant Age: Ancient trees have existed for an extraordinarily long duration, often reaching back hundreds of years. Their longevity provides a tangible connection to historical events.

Imposing Size: Many ancient trees are notable for their substantial dimensions, featuring thick trunks and expansive canopies.

Remarkable Condition: Although ancient trees may exhibit signs of ageing, such as decay or hollowness, they often maintain an impressive overall state.

Ecological Diversity: The decay process inherent in ancient trees fosters a rich habitat for a variety of organisms, including insects, fungi, and lichens, enhancing their ecological role.

Cultural and Historical Significance: Ancient trees frequently embody cultural or historical value, acting as landmarks or symbols of a community's identity.

Veteran Trees:

While not always as old, veteran trees are equally significant due to their advanced decay stages. These characteristics create distinctive habitats and enhance their ecological and cultural relevance.

Key Considerations: All ancient trees qualify as veteran trees, yet not all veteran trees can be classified as ancient. The age at which a tree is deemed ancient, or veteran, varies among different species. Ancient trees represent a vital natural asset that warrants our protection and reverence.

Concluding: Their exceptional blend of age, size, health, and ecological importance makes them essential to our ecosystems and cultural heritage.

1.1. Identify three major influences that have shaped woodlands in recent times

Introduction:

- The Domesday Book of 1086 revealed that five-sixths of the wildwood had vanished, leaving only a fraction of woodland compared to other European countries.

The Domesday Book represents a comprehensive survey of England, initiated by King William the Conqueror in 1085 and finalized in 1086.

Purpose:

Its primary aim was to evaluate the wealth and resources of the land in England to facilitate tax collection for the king's military forces.

What it records:

The document details land ownership, the value of properties, population figures, the extent of woodlands, livestock counts, land usage, and changes that occurred since the Norman Conquest.

Coverage:

It encompasses over 13,000 entries about locations in England, along with limited information regarding certain areas in Wales.

Significance:

The Domesday Book is recognized as Britain's earliest public record, providing invaluable insights into the socio-economic landscape of 11th-century Norman England.

Late 1800s-1945:

Development of forestry: The advent of cost-effective metal and steel led to a decline in coppicing and traditional woodland management methods, as these practices were found to be less suitable for producing the large, straight timber necessary for construction.

Shift to conifer plantations: There was a significant transformation of ancient woodlands and moorlands into conifer plantations, driven by government policies that encouraged monoculture practices. Overall

stability: Despite these changes, the total area of woodlands remained largely stable during this period.

1945-1975:

Significant loss: A substantial portion of Britain's remaining ancient woodlands was eradicated during this period, mainly due to the growth of forestry plantations and agricultural expansion.

Reforestation initiatives: Certain areas of ancient woodland were replanted, primarily with conifer species, which further altered the landscape.

Decline of traditional woodland management and the subsequent rise of plantation forestry in Britain and Ireland.

Three key points:

Decline of Traditional Woodland Management

Diminished Traditional Markets: The rise of coal as a dominant fuel source, coupled with advancements in transportation infrastructure such as railways and canals, facilitated the accessibility and affordability of imported timber.

Replacement of Traditional Products: The introduction of metals, plastics, and other materials as alternatives to traditional woodland products further diminished the demand for locally sourced timber.

Emergence of Plantation Forestry

Wartime Demand: The disruption of timber imports during the First World War required a stronger focus on domestic timber production.

Formation of the Forestry Commission: Established in 1919, the Forestry Commission aimed to enhance the nation's timber reserves through afforestation initiatives.

Transition to Economic Forestry: By the 1960s, the emphasis shifted from establishing a strategic timber reserve to prioritizing economic forestry, with a focus on maximizing timber output.

Introduction of Exotic Species: Most new forestry initiatives involved planting on moorland or heath, utilizing introduced species such as Sitka spruce, Douglas fir, and Corsican pine, which displayed higher productivity and faster growth rates compared to native broadleaved species.

Effects on Native Woodlands

Conversion to Non-Native Conifers: Following the Second World War, there was a gradual transition of native woodlands to non-native conifer plantations, resulting in a decline in biological diversity.

Conservation of Ancient Woodlands: Despite these transformations, numerous ancient woodlands maintained their original vegetation structure until the latter part of the 20th century.

Conclusion

In summary, the complex interaction of economic, political, and environmental factors has influenced the development of woodland management in Britain and Ireland over the last two centuries. While the transition towards plantation forestry was primarily motivated by economic factors, it also had profound consequences for biodiversity and the landscape.

Community Forest Program

Approximately 20% of the world's forest cover is either owned or managed by communities, with an additional 5% allocated for the use of indigenous populations. In England, Scotland, and Wales, historical inequities in land ownership, differences in woodland types and ecological conditions, as well as population pressures, have influenced the potential for community-managed woodlands and forests. The swiftly evolving policy landscape throughout Great Britain encourages greater participation of civil society and community organizations in the stewardship of environmental resources.

Origins and Goals

Establishment in 1990: The Community Forest program was launched as a pilot project by the Countryside Commission.

Focus on environmental improvement: The program aimed to demonstrate the positive impact of environmental improvement on economic and social regeneration.

Expansion and partnerships

Growth into a national program: The initial three pilot projects quickly expanded into a national program.

Broad-based partnerships: The program utilized partnerships to involve various stakeholders and deliver lasting change.

Relevance in the climate emergency

Mitigation and adaptation: Forests play a crucial role in mitigating climate change by absorbing carbon emissions and adapting to its impacts.

Importance of Community Forests: The Community Forest program is more relevant than ever in addressing the challenges posed by the climate emergency.

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