Woodland Habitat

Definitions

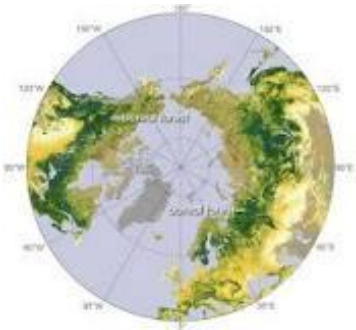
A **habitat** is a place where an organism makes its home. A habitat meets all the environmental conditions an organism needs to survive. For an animal, that means everything it needs to find and gather food, select a mate, and successfully reproduce. **Food/drink; shelter; reproduction;**

A **woodland** is where trees are the dominant plant form (i.e. a habitat OF and FOR trees). The individual tree canopies generally overlap and interlink, often forming a more or less continuous canopy which shades the ground to varying degrees.

Ancient woodland : legal definition – England & Wales, continuous cover with trees since 1600 *(Scotland - since 1750 ; N. Ireland – since 1830).* **Coombs wood** (Nr Stowmarket), records >600yrs

Woodland: often reflects coppicing and/or pollarding for 100s (1000s?) years. **Plant & animal species have developed in ways that require this intervention.**

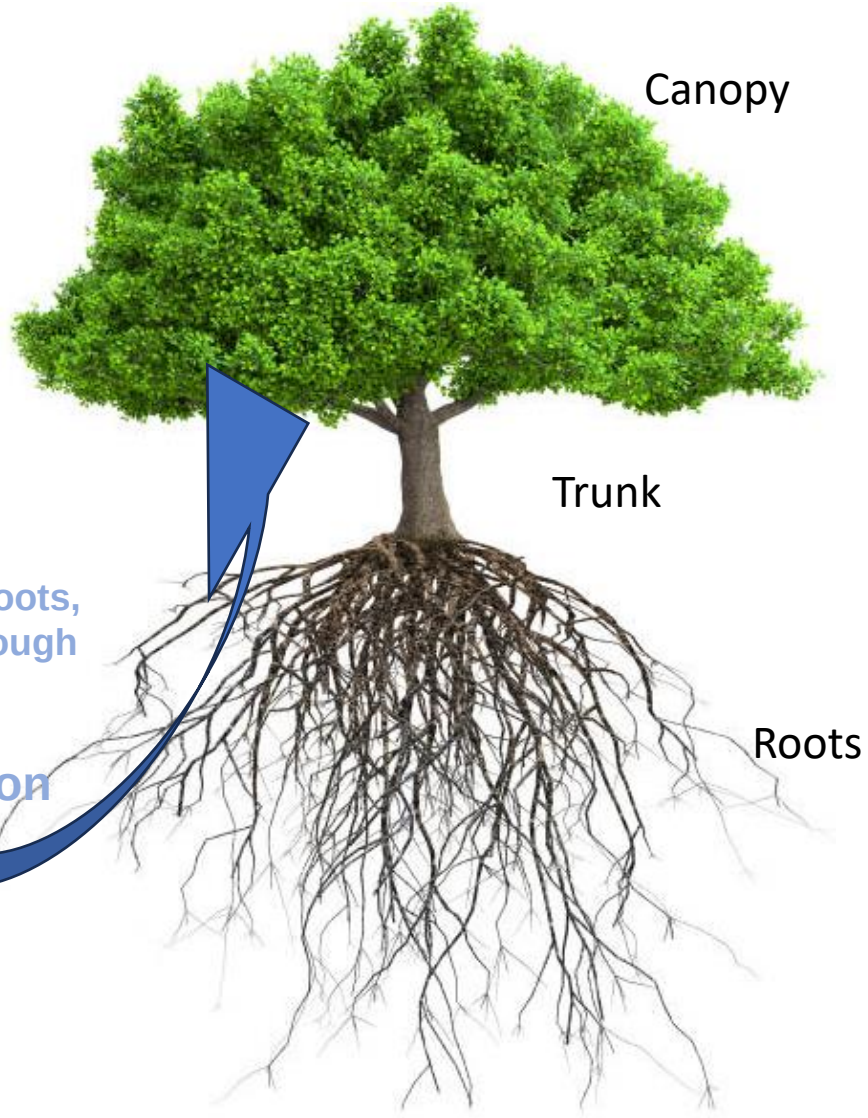
A **forest** is a large area covered chiefly with trees



Boreal aka Taiga

Woodland Habitat

ROOTS



Water and nutrients in to roots, up trunk to leaves, out through leaves as moisture

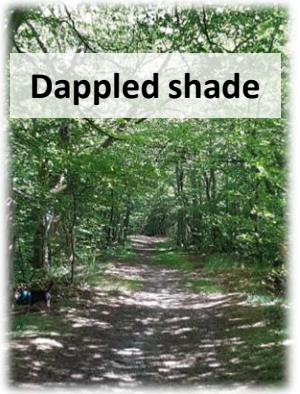
Affects **cloud formation** and hence **climate**

Woodland Habitat

ROOTS

Fungal mycorrhiza

fungal organic acids + calcium silicate + CO_2 = **soils**



Areas for warming poikilotherms including reptiles

Water raised so soil beneath and around tree is damp, moisture retained by fallen leaves and other vegetation, canopy shading decreases evaporation

Leaf litter etc = **protection, nutrition & breeding sites for**

Invertebrates

Platyhelminths
[flat worms]

Molluscs
[eg slugs & Snails]

Arthropods
[insects; centipedes; millipedes; spiders; woodlice]

Annelids
[earth worms]

Nematodes
[round worms]

Amphibians e.g. toads ; newts *(reproduction in water)*

Bacteria; Viruses; **Fungi**

Decomposition generates heat benefits pokilotherms

Fruiting bodies = **reproductive** structures

FOOD for some invertebrates

FOOD for birds and mammals

FOOD for raptors etc.

Woodland Habitat

TRUNK

Trunk holds up branches so leaves get sunlight and are above “browse line”. (saplings = **FOOD** for grazers eg deer)
Other plants *(eg honeysuckle, old man's beard, brambles, ivy)* use trunk & branches for **SUPPORT** to improve sunlight exposure, access by pollinating insects & spreading seeds [height limited by their ability to raise water].

Bark provides SHELTER for insects, spiders etc viz in winter

Harlequin ladybirds

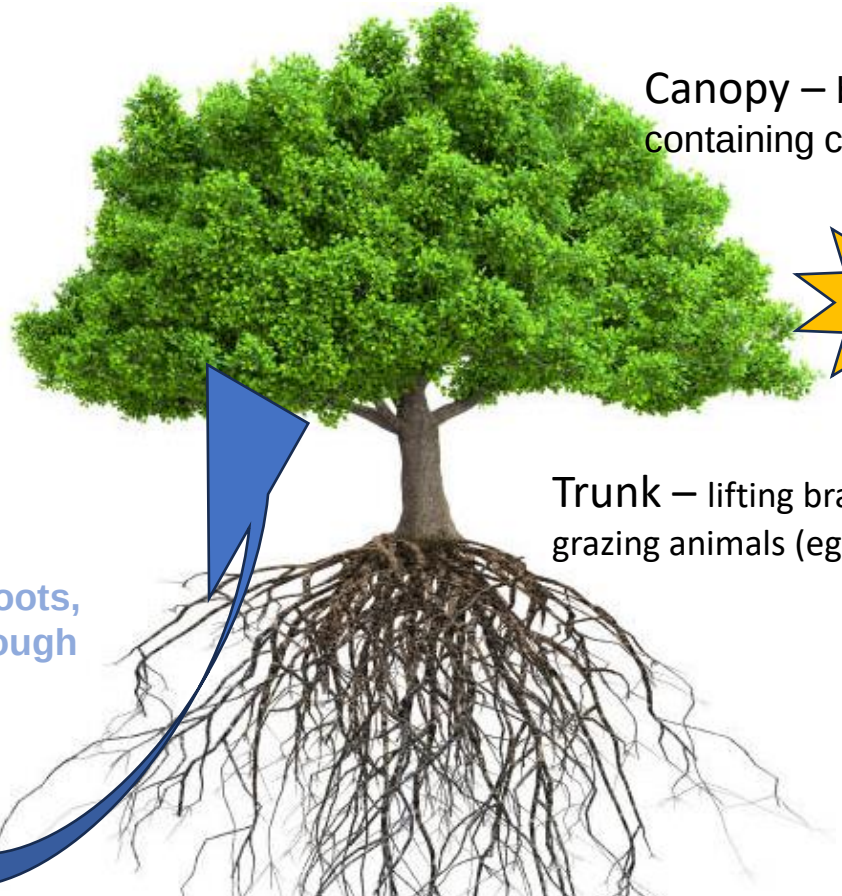
EPIPHYTES (eg mosses & lichens) use trunks & branches as **SUPPORT**; roots penetrate tree surface [not soil], benefits from humid environment

Mistletoe is **parasitic**, using tree branches for **FOOD/DRINK** & **SUPPORT & REPRODUCTION** seed distribution by birds facilitated by tree’s support

Old / hollow tree trunks provide **SHELTER**/ **REPRODUCTION** via nest opportunities viz in winter, plus habitats for specialised fungi, lichen, mosses & invertebrates,

Woodland Habitat

CANOPY



Canopy – branches & twigs supporting leaves, containing chlorophyll [$C_{55}H_{70}MgN_4O_6$] in chloroplasts

Sunlight

Chlorophyll = catalyst

CO_2 + H_2O + nutrients = **Sugars** + O_2

For plant growth

vital for all life

Photosynthesis

Trunk – lifting branches up so leaves to gain more light and away from grazing animals (eg deer) & introduced habitat modifiers eg ponies & cattle

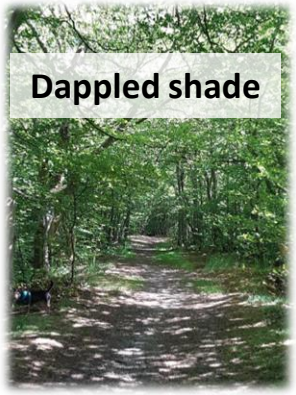
Water and nutrients in to roots, up trunk to leaves, out through leaves as moisture

Woodland Habitat

LEAVES

Main Purpose = feed tree

Additionally Oxygen (O_2)
FOOD for insects (caterpillars) which in turn feed small birds, bats etc.
FOOD for browsing animals *(dung! – fertiliser & habitats)*
SHELTER vertebrates & invertebrates from predation, excess sunlight;
SUPPORTS bird and mammals roosts & nests **REPRODUCTION**



FLOWERS & CATKINS

Main Purpose = Tree's reproduction; genetic exchange

Additionally **FOOD** for pollinating insects *(essential for main purpose)* which in turn feed birds etc
FOOD for some mammals
SHELTER invertebrates from predation, excess sunlight

SEEDS, NUTS, BERRIES

Main Purpose = Reproduction

Additionally **FOOD** for birds
FOOD for some mammals
SHELTER invertebrates from predation, excess sunlight

Woodland Habitat

Leaves shed in AUTUMN
PROTECTION from potential storm damage
NUTRITION no need to expend Energy maintaining chlorophyll; minimal sap movement, lowers risk frost damage / excessive water loss

Leaf litter / snow thermal **PROTECTION** for invertebrates & small mammals

Larger mammals & birds rely on undergrowth and/or evergreens for **PROTECTION**

SPRING
Specialist plants respond to increasing light (UV) & temperature before canopy develops. These support specialist invertebrates

Daffodils, Bluebells, Snowdrops, Primroses need moist conditions

Woodland Habitat

THANK YOU
Any Questions??

“2,300 species supported by oak
326 species depend on oak for survival
229 species rarely found on trees other than oak”
Woodland Trust

Sources

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