



Shelter Woods and Woodland Grazing

Douglas Priest – Forestry Consultant

Benefits of Woods

- Shelter
- Source of firewood / chipwood for on-site boiler
- Alternative income stream, both grants and timber
- Reduction of diffuse pollution
- Bank stabilisation
- Flood reduction
- Sporting



- Growing asset which adds value to farm
- No income tax on timber sales or grants
- No capital gains tax on the growth in value of trees
- 100% relief on inheritance tax



Shelter Woods - Benefits



Crops:

- Reduced wind speeds
 - reduced evapotranspiration
 - greater soil moisture retention
 - soil protection
 - reduced physical damage of crops
 - greatest benefit to root/vegetable crops
- Leaf fall
 - increased soil organic content, leading to:
 - improved soil water retention and nitrogen availability

Shelter Woods - Benefits



Crops:

- Buffering of features:
 - watercourses, reducing diffuse pollution and run-off
 - utilisation of marginal areas eg. seasonal flooding



Shelter Woods - Benefits



Livestock and pasture:

- Reduced wind speeds
 - reduced evaporative chilling of livestock
 - improved lamb survival
 - reduced ewe mortality after shearing
 - improved weight gain
 - improved milk yields
 - reduced feed costs

Shelter Woods - Benefits

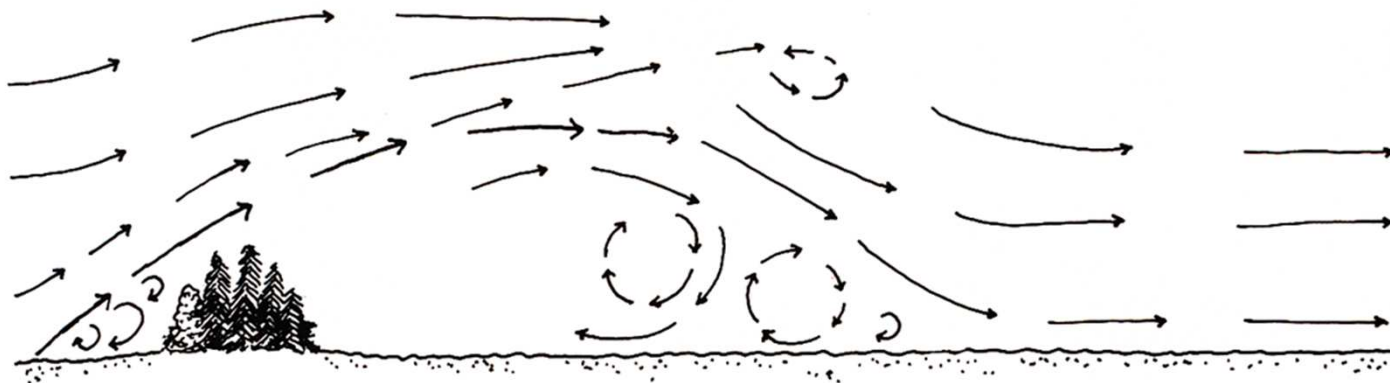


Livestock and pasture:

- Leaf fall
 - increased soil organic content, leading to:
 - improved soil water retention and nitrogen availability
- Buffering of features:
 - watercourses, reducing diffuse pollution
 - utilisation of marginal areas eg. seasonal flooding
 - ‘trapping’ features
- Animal health – separation of herds

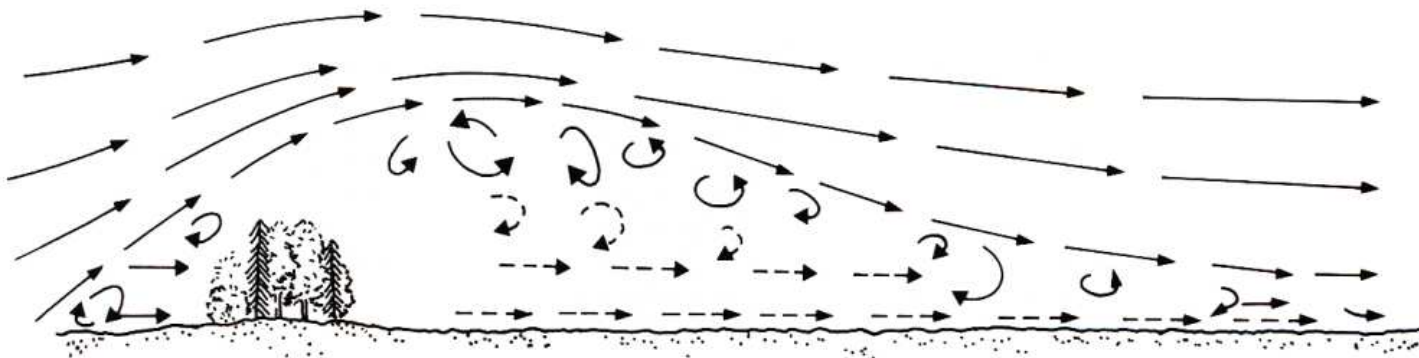
Shelter Design - Windshield

- Virtually impermeable woodland (<40% porosity)
- Reduces wind speed by up to 90%
- Wind speed reduction up to 10 times tree height
- Maximum shelter within 3 to 5 times tree height
- Completely stops wind within small area
- Best for livestock protection
- High turbulence in field



Shelter Design - Windbreak

- Permeable woodland (40 – 60% porosity)
- Reduces wind speed by up to 70%
- Wind speed reduction 20 – 30 times tree height
- Achieves reduced wind speeds across large area
- Little turbulence, well above ground
- Best for crops and silage





Shelter Woods - Existing



- Old and falling apart
 - Clear-fell and replant OR
 - Plant up gaps
- Just old
 - Fell trees to create small gaps in canopy
 - Plant trees in gaps
- Mature conifers
 - Thinning (heavily dependant on tree density and height), becomes more porous
 - Clear-fell and replant BUT loss of shelter (plant new parallel shelterbelt before felling?)

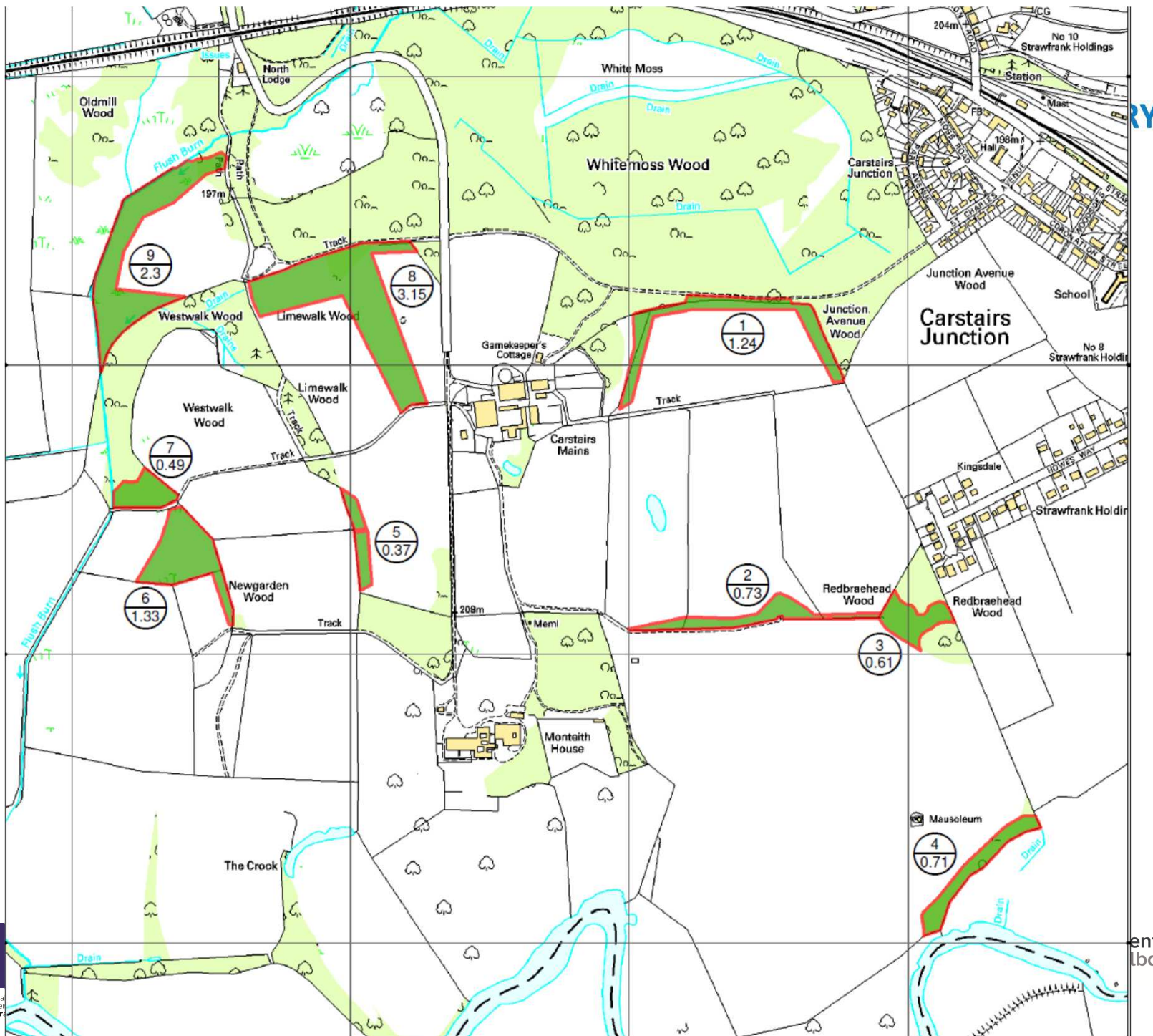
Shelter Woods - Existing



Shelter Woods - New



- Do you have any shelter, or need more shelter?
- Is it in the right place?
- Type of shelter required?
- Identify marginal ground – is it in the right place?
- Problem winds prevailing or unusual direction?
- Ideal length > 20 times tree height
- Ideal width at least 20m
- North-south orientation minimises shade
- Conifers – need harvested, loss of shelter



Shelter Woods - Grants



- Grants for existing woods
 - Restocking grant
 - Other grants viable only at large scale
- Grants available for new planting:
 - Lower density broadleaf grants
 - Maintenance payment for five years
 - Fencing and tube grants
 - BPS retained
 - Got to be sensible about shape and size to be viable

Woodland Grazing - Benefits



- Shelter from wind
- Overhead shelter (reduced rain and snow)
- Woods retain heat in winter, cool in summer
- *Can* replace need for a shed
- Improved soil nutrition
- Encourage natural regeneration (cattle)
- Timber / firewood income

Woodland Grazing - Woodland



FARM
ADVISORY
SERVICE

- Dense plantation – all shelter, no grazing
- Old shelterbelt, falling apart – all grazing, no shelter
- Conifers – larch, Scots pine
- Broadleaves – birch, oak, willow
- Mixed – combination of above
- Ideally thinned, or group felled
- Young woodland in grant contract – no grazing!!!

Woodland Grazing - Management



- Sheep
 - Graze anything, stops natural regeneration
 - If not fed trace nutrients, will strip bark on Scots pine
- Cattle
 - Break up vegetation, helps natural regeneration
 - Can damage buttress roots
- Year-round grazing – low intensity
- Seasonal grazing – higher intensity
- Ideally autumn/winter
- Different breeds, different habits

Woodland Grazing



Summary



- Shelter woods
 - Wind shield (stop wind, good for livestock)
 - Wind break (slows wind, good for crops)
 - Manage through fell/replant, thin, or group fell
 - Consider long-term when planting woods

Thank You

