



Native Woodlands – Establishment and Management for Conservation and Small Scale Wood Production

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Background

- **The Native Woodland Scheme (NWS) introduced in 2001 by Forest Service**
- **Approx 3,000 ha managed to date**
- **Conservation and biodiversity override all other objectives**
- **Wood production a secondary objective, where appropriate**
- **There is potential to produce quality wood under the NWS**



Silvicultural Guidelines

- In 2005, Woodlands of Ireland (WoI) published silvicultural guidelines for existing native woodlands
- Relevant to NWS Element 1 and addressed quality wood production whilst maintaining the over-riding conservation objective
- Drew on national and international experience
- Financial projections included all management costs, timber revenue and NWS grant and premiums



Methodology

- Six native species chosen:
(1) pedunculate oak; (2) sessile oak
(3) ash; (4) birch; (5) alder; and (6) hazel
- A forester and ecologist drew up plan
- NWS Framework Document used as template for management plans
- Conservation management requirements outlined at the outset



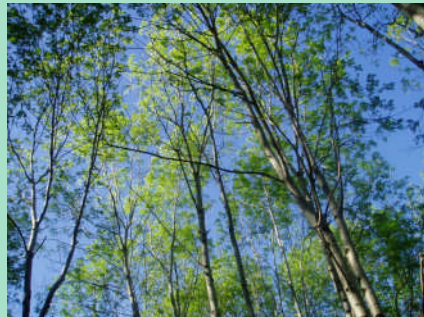
Methodology (continued)

- **Financial projections made over rotation or transformation period**
- **Net Discounted Revenue applied over financial rotation**
- **A land value was added into calculations**
- **Comparison made with a purely commercial management approach**



Results

- **All woodlands yielded an Internal Rate of Return (IRR) $\geq 5\%$ (except hazel at 4%)**
- **The purely commercial approach yielded similar or lower returns due to NWS premiums**
- **Shorter rotation species, i.e. ash, birch and alder show greatest economic potential**
 - **IRR of c. 9%**



The naturally regenerated mixed downy and silver birch woodland assessed in the silvicultural guidelines, Shelton, Co. Wicklow



New Native Woodlands

- **In 2009, WoI published guidelines for the establishment, design and stocking densities of new native woodlands**
- **Relevant to greenfield sites under NWS Element 2**
- **Addressed conservation alone**
- **Also establishment for wood production in conjunction with conservation**



The multifunctional nature of native woodlands, incorporating biodiversity enhancement, aquatic zone protection, visual appeal and recreational objectives



Establishment phase

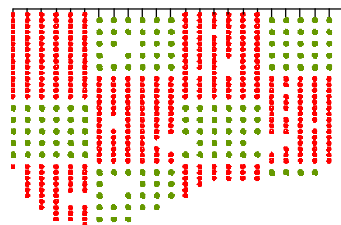
- Planting: alternate species blocks →
- Operational logistics
- Grow timber

NWU 1 - Proposed planting pattern

oak at 2 x 0.75 m spacing
in blocks of 90 (75%)
ash / understorey species
at 2 x 1.5 m spacing
in blocks of 30 (25%)

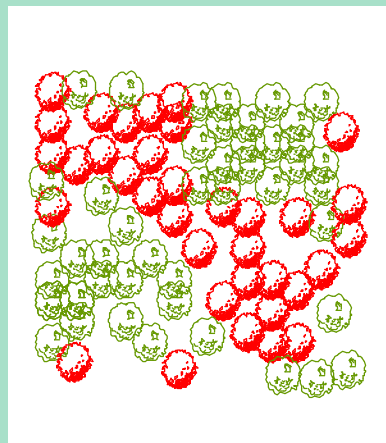
15 oak in the row / 5 other species

🔴 = oak
🟢 = other species



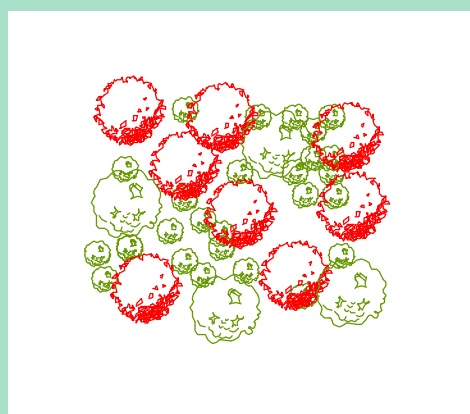
Medium term

- c. Age 40
- 15m tall
- Oak at 1000 stems per hectare
- (based on original plant locations, with limited regeneration)



Long term

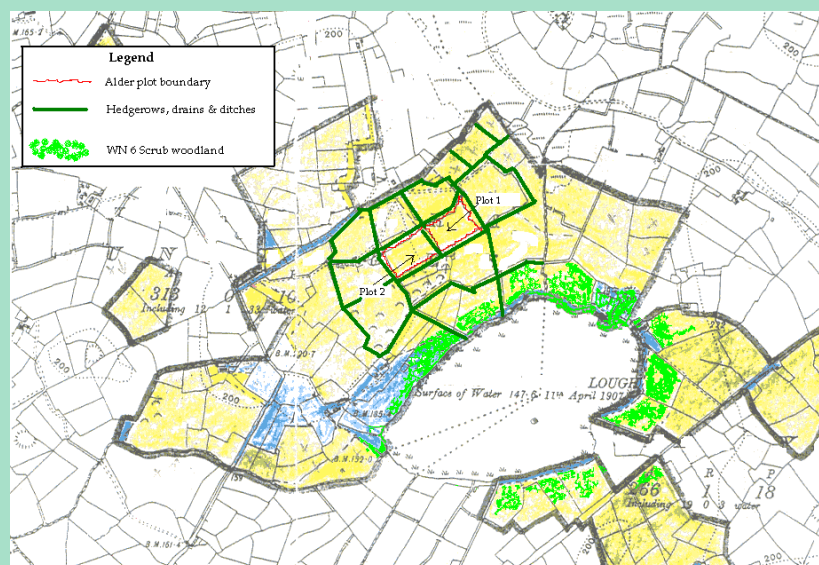
- c. 100 years old
- Oak/ash canopy, mixed understorey
- Mature crowns, on average 8 metres apart
- c. 150 oak per hectare



A view of the alder woodland assessed in this study

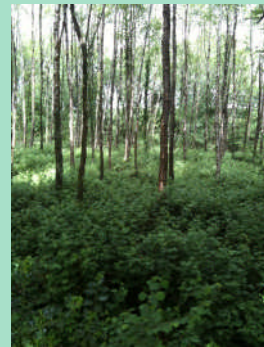


Enhancing woodland biodiversity and producing quality wood – the alder case study



Conclusions

- **Modest financial returns possible**
- **Wood production silviculture easier to apply on greenfield sites**
- **Biodiversity not unduly compromised; foresters and ecologists satisfied**
- **Old oak woodlands more difficult to manage for timber due to long transformation periods**
- **NWS Ecological premium a critical factor**



Conclusions (continued)

- **Case studies are site specific though general principles applicable elsewhere**
- **Unknowns include native provenances of minor species, future timber prices, market development, future grant aid, silvicultural skills development and deer control**



A re-spaced 15 year old downy birch stand, Killloughrim, Co. Wexford



Future potential

- **Downstream value added products, i.e. furniture, wood fuel, crafts, etc.**
- **Development of a wood culture and non-wood forest products, e.g. recreation, eco-tourism, etc.**

» Feasibility study on the development of the hardwood sector required

