# TranSSFor

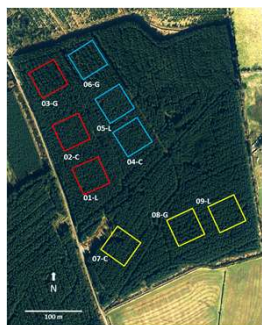# Transformation of Sitka spruce stands to CCF

Key Features of the Project

- 5-year Teagasc-UCD Project (2017-2022).
- Currently the most important study of stand transformation in Sitka spruce.
- Comparison of three thinning regimes (stand treatments): Low (Standard), Crown, Graduated Density.
- Design: 2 sites x 3 blocks x 3 treatments.
- Study initiated 2010.
- Stand Interventions: 2011, 2014 and 2018/19 (i.e., 3-4 year thinning cycle).
- Focus: tree marking, forest stand dynamics, timber production & quality.
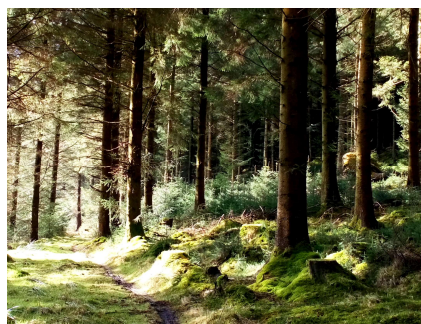
↶ Mature stand showing potential for natural regeneration

↷ Early stage interventions (thinnings) to promote stability and suitable stand structures

↶ Selecting potential quality trees in the Crown thinning treatment

Site 1: Fossyhill, Co. Laois

Site 2: Ballycullen, Co. Wicklow

Further Information:
Ian Short | Silviculture Researcher
Ian.Short@teagasc.ie

Ted Wilson | Walsh Fellow
Ted.Wilson@teagasc.ie

An Roinn Talmhaíochta, Bia agus Mara
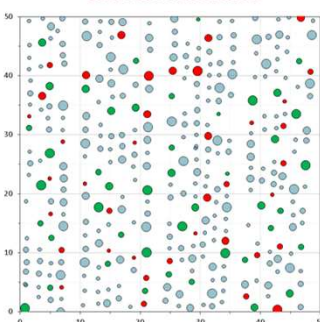Department of Agriculture, Food and the Marine

1

TranSSFor

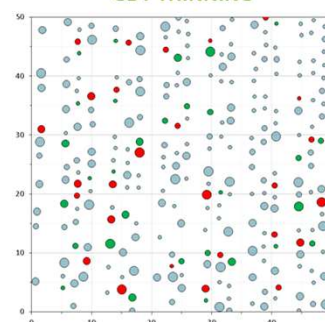## Transformation of Sitka spruce stands to CCF
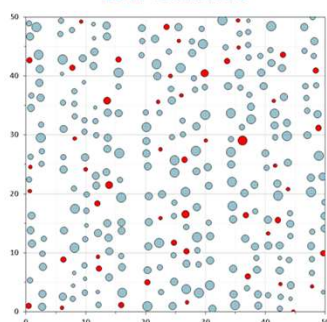
LOW THINNING **CROWN THINNING** **GDT THINNING**

↻ Example plot maps at 3rd thinning: tree size distribution and marking decisions

- Size class 1 — Standing trees
- Size class 2 — Marked trees
- Size class 3 — Frame trees
- Size class 4

↻ Major thinning effects on mean DBH and Basal Area (BA)

	Unit 01-Low	Unit 02-Crown	Unit 03-GDT
Mean DBH Stand Before Thinning (cm)	22.7	19.8	20.2
Mean DBH Marked Trees (cm)	19.8	21.2	21.6
Mean DBH Stand After Thinning (cm)	23.3	19.7	19.9
v/V ratio	0.9	1.1	1.1
Total BA Stand Before Thinning ($m^2\ ha^{-1}$)	47.8	47.2	36.2
Total BA Stand After Thinning ($m^2\ ha^{-1}$)	41.6	41.6	31.8
% BA Reduction	13.0	12.0	12.1

↻ Analysis of production
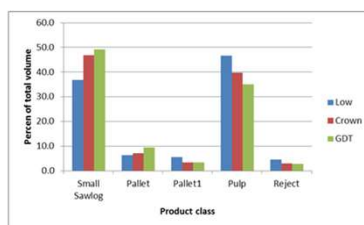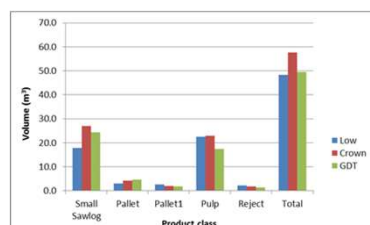
↻ Production at 3rd thinning by product class and treatment (total and percent)

↻ Monitoring regeneration

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine