



ContinuFOR & CCF Research in Ireland

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Acknowledgements

*Thank
You*

Prof. Áine Ní Dhubháin

Grace Jones

Ted Wilson



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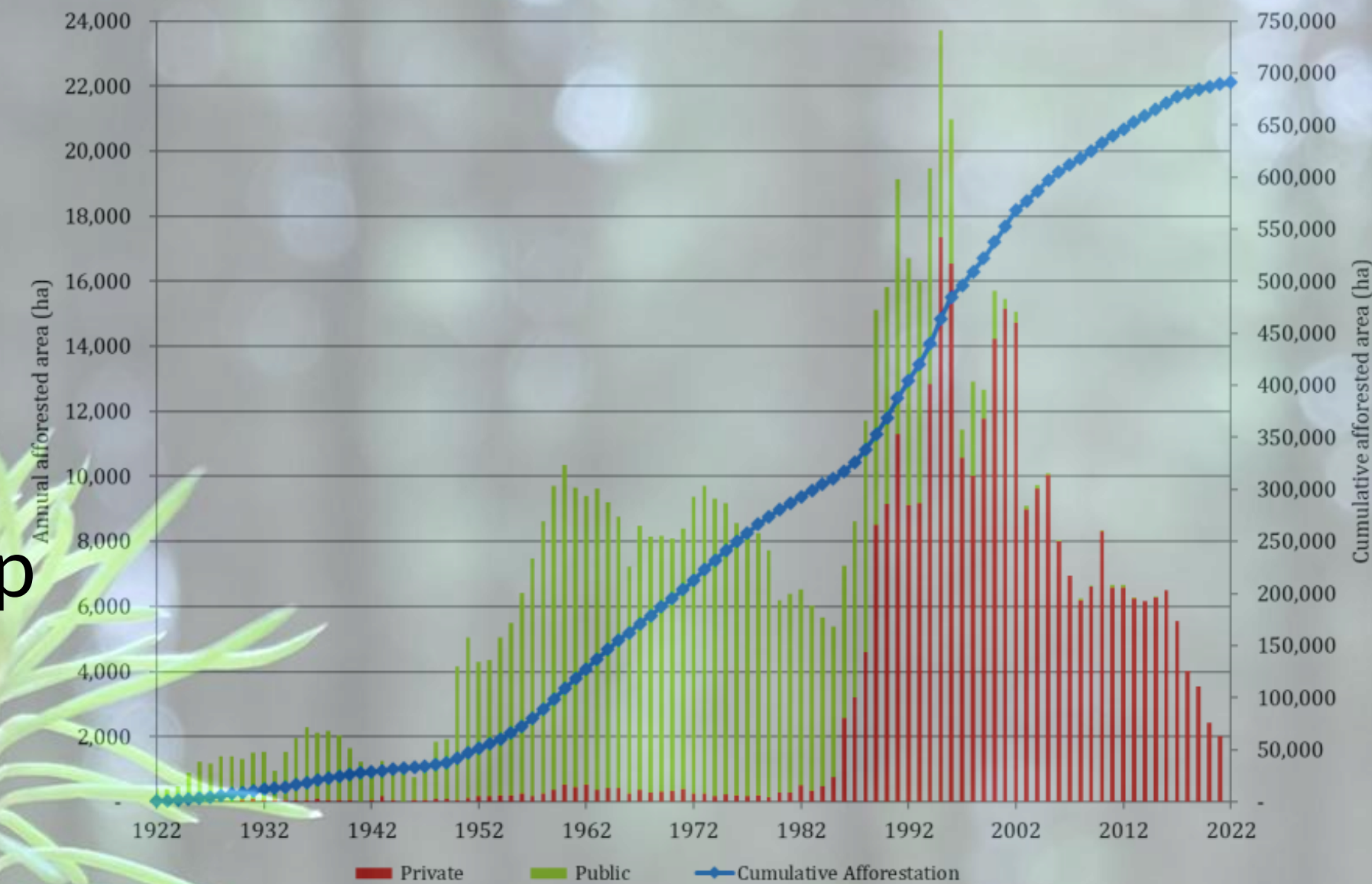
Forestry in Ireland

- 🌲 1% forest cover in 1900
- 🌲 11.6 % forest cover (809k ha)
- 🌲 49:51 Public:Private ownership
- 🌲 69 % Conifer
- 🌲 50 % Sitka spruce *Picea sitchensis*

- 🌲 70 % < 30 years old
- 🌲 Monoculture & Clearfell stands
- 🌲 Increasingly multi-functional

🤔 Societal concerns

🔍 Transformation of monocultural Sitka spruce



CCF Research in Ireland

Von Ow et al. (1996) Factors affecting the establishment of natural regeneration of Sitka spruce (*Picea sitchensis* (Bong.) Carr.) in Ireland. *Irish Forestry* **53**, (1&2): 2-18
Dagg (1998) A study of the factors contributing to the presence of natural regeneration of Sitka spruce (*Picea sitchensis* (Bong.) Carr.) on clearfell sites in Co. Wicklow. Msc thesis
Tiernan (1998) Relationship of natural regeneration of lodgepole pine (south coastal) and its distance from seed source. Unpublished report, Coillte

IRISH FORESTRY

Factors affecting the establishment of natural regeneration of Sitka spruce (*Picea sitchensis* (Bong.) Carr.) in Ireland

F. von Ow¹, P. Joyce² and M. Keane³

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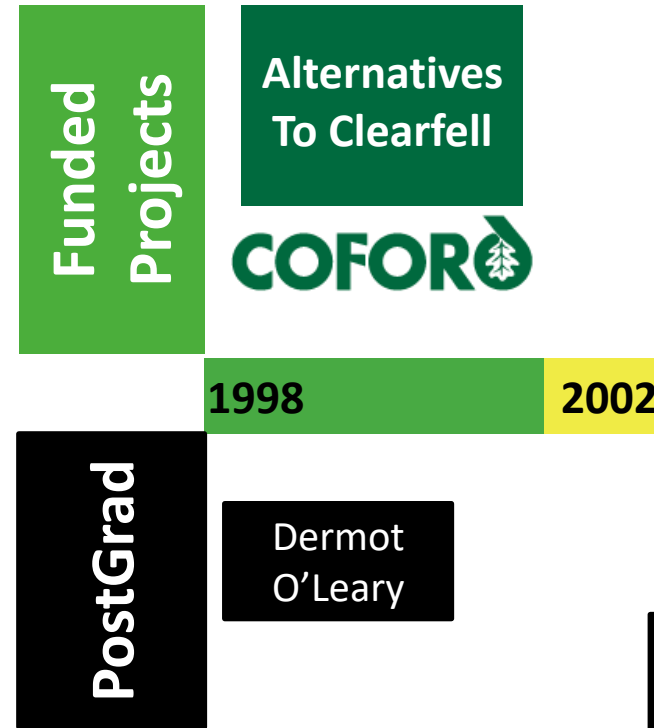
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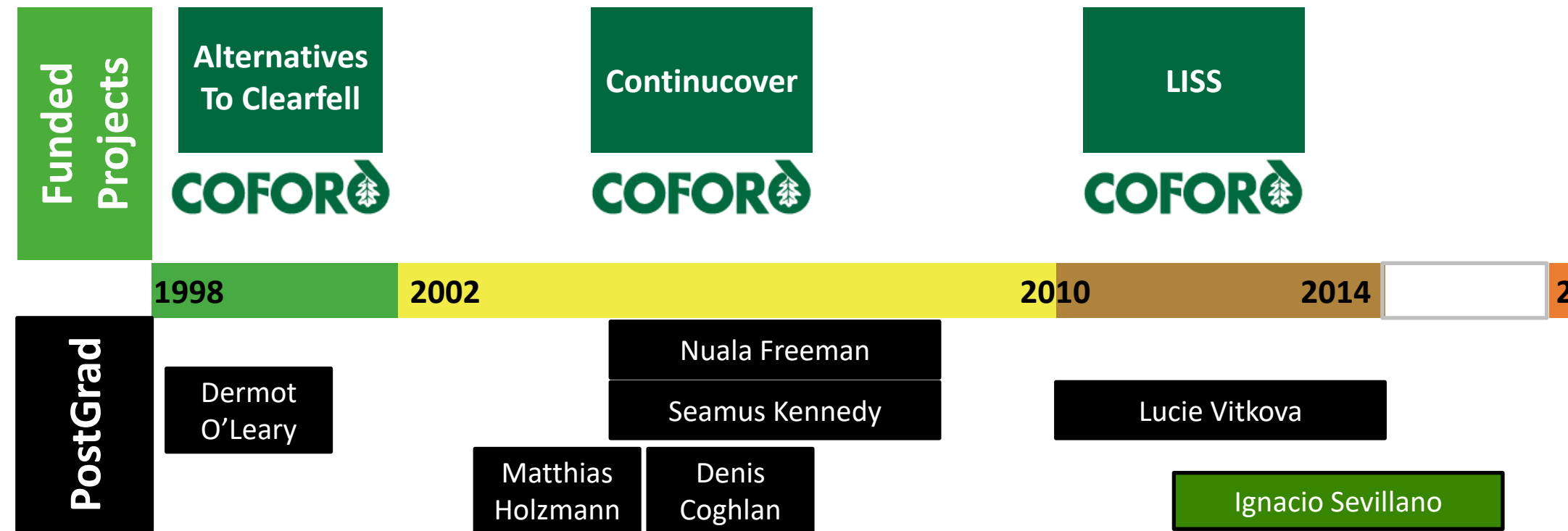
Summary

In Ireland, natural regeneration of Sitka spruce (*Picea sitchensis* (Bong.) Carr.) is becoming common on reforestation sites, especially in the eastern part of the country. The management of this phenomenon is relatively new to many foresters here, as its occurrence is often sporadic and difficult to predict accurately. Due to this novelty, its management can often be difficult. The main objective of this study was to examine the influence of various site factors on the establishment of natural regeneration, in order to make it more predictable for forest managers. It was also intended to examine the extent of natural regeneration in the study area, which was confined to State owned forests in Counties Wicklow and Dublin. Results showed extensive regeneration on sites with a previous crop of Sitka spruce. Over 50% of planted sites had an adequate cover of natural regeneration. It was found that poor soils, especially those with a peat layer which only sustain a thin cover of ground vegetation, regenerated more readily than richer soils such as brown earths or gleys. Good seed years were also shown to have a significant impact on the establishment of natural regeneration, especially on sites which are recolonized quickly by very dense vegetation. Some shade appears to favour the development of natural regeneration, probably by protecting seedlings from environmental extremes. An examination of ground cover types showed that Sitka spruce regenerates most readily on

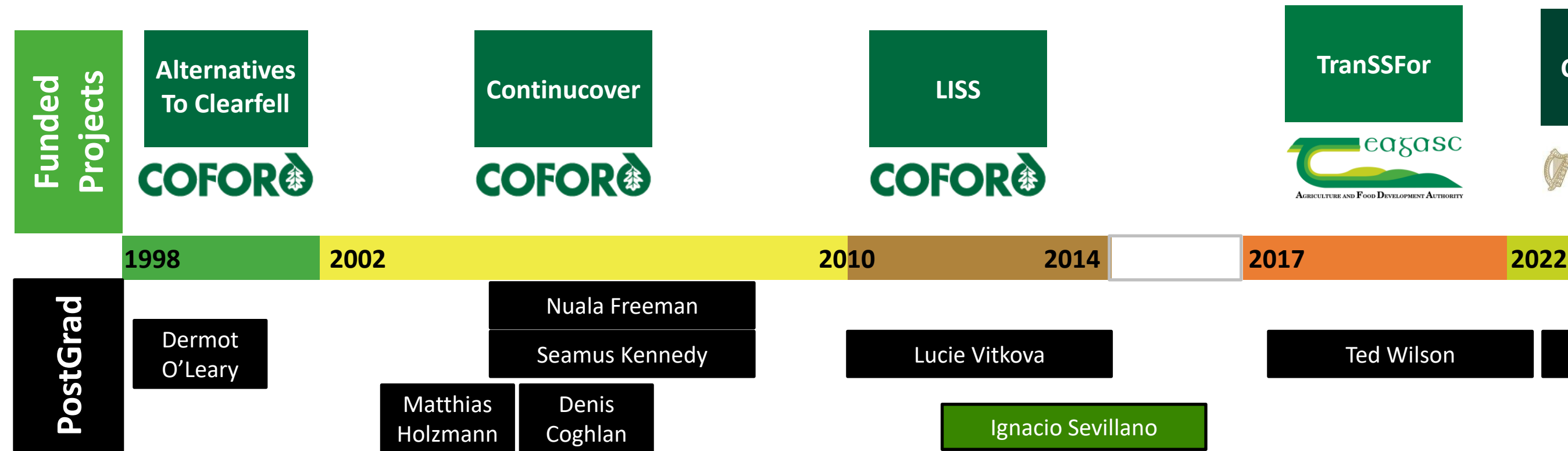
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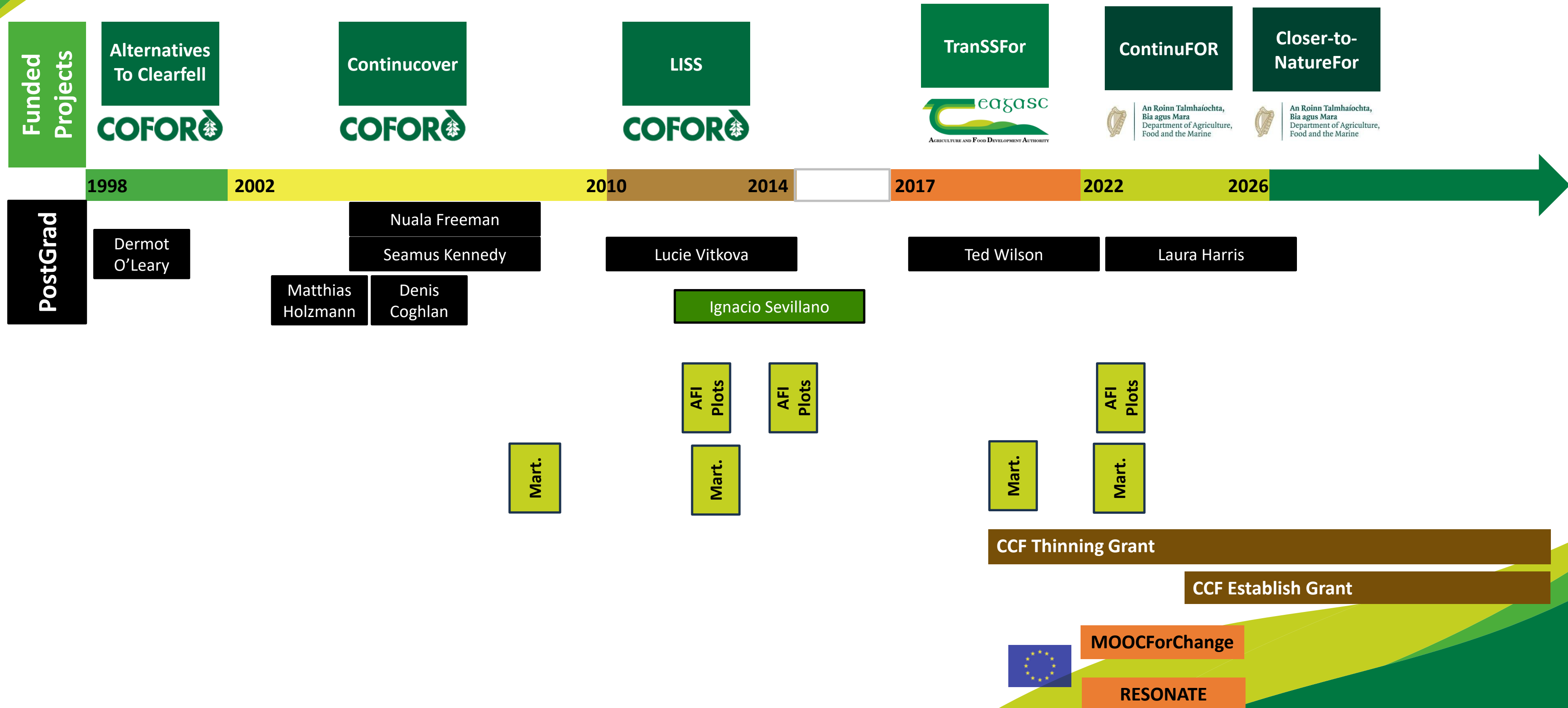
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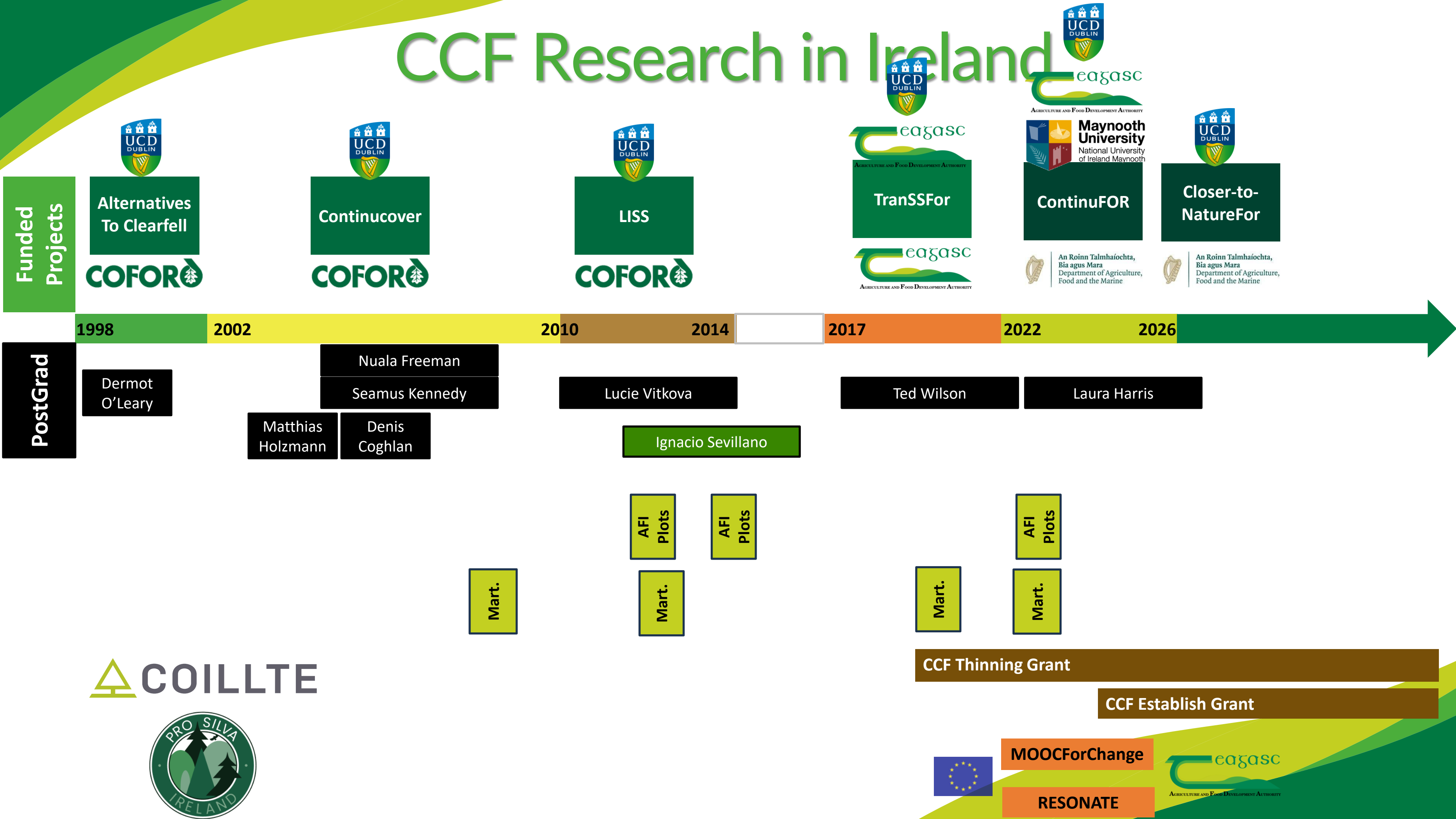
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 **COILLTE**



MOOCForChange

RESONATE



Irish CCF projects



Alternatives To Clearfell

Natural Regeneration – Extent in Coillte estate
Site factors associated with successful regeneration

Shelterwood underplanting of 42-y-o Sitka spruce
 $\approx 50 \text{ m}^2\text{ha}^{-1}$ Basal Area

Clearfell

150 stems ha^{-1} - 61% B.A. reduction

300 stems ha^{-1} - 28% B.A. reduction

Suffered extensive windsnap



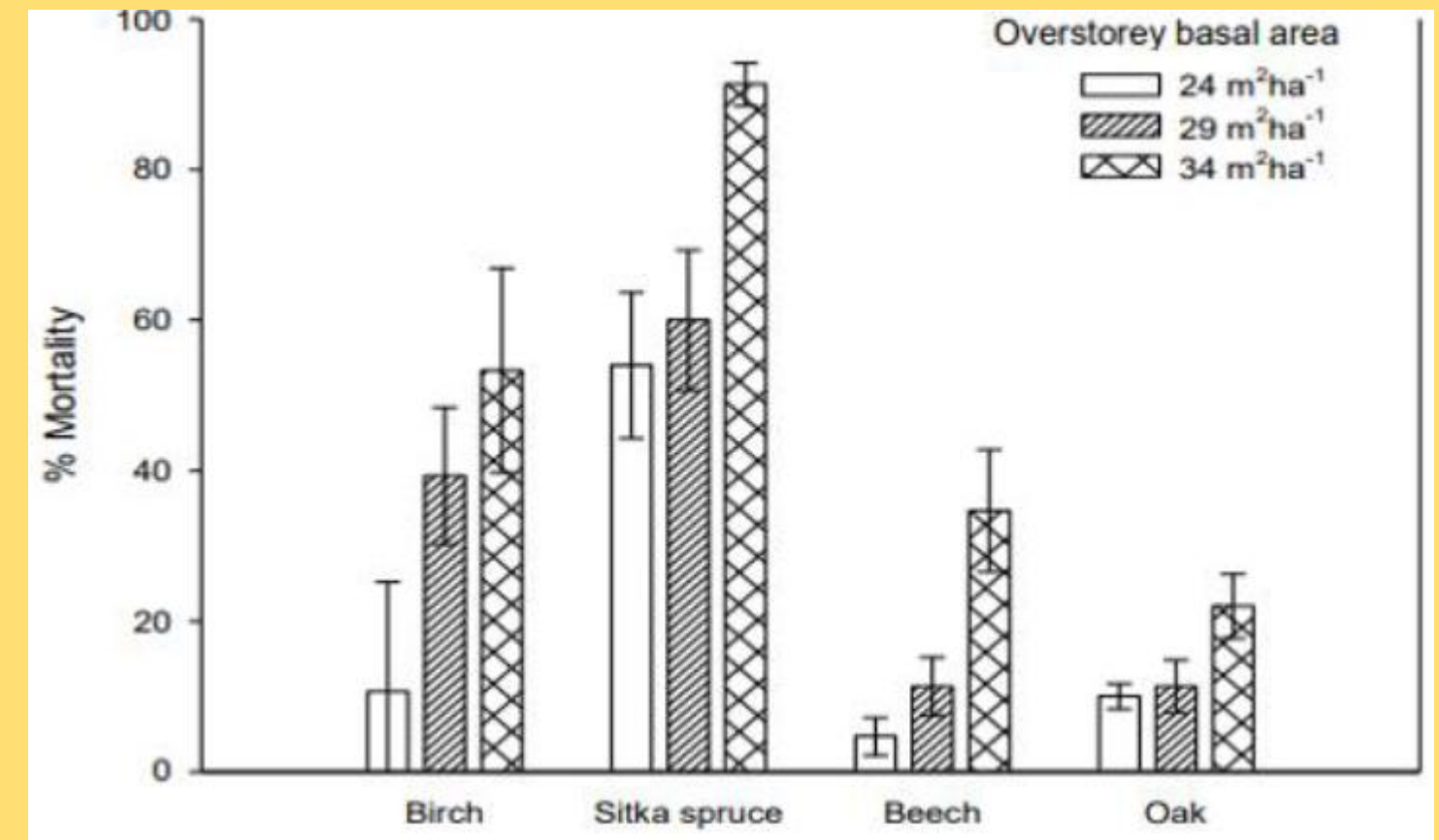


Continucover

Underplanting 6 spp. in 40-y-o Sitka spruce

Thin to Basal Area 24, 29 and unthin 34 m²ha⁻¹

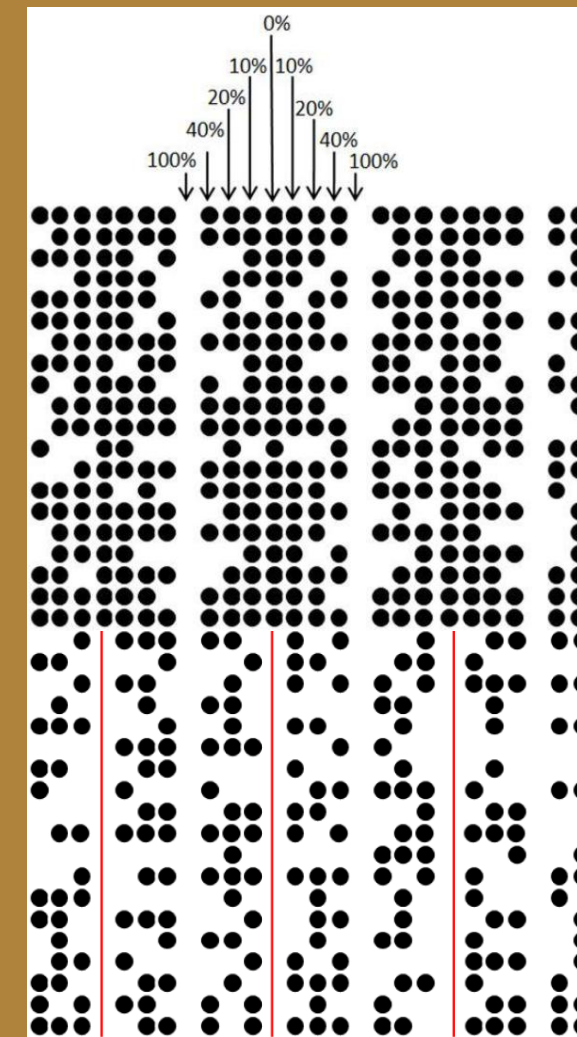
Canopy closes quickly
BA increased to 28, 33
and 39 m²ha⁻¹ after 2 years
High seedling mortality
Canopy closes very quickly
Need to open stand more
without compromising stability



Transforming young Sitka spruce Extent of CCF. Attitudes towards CCF

2 sites – 1st thin @ 16 and 19 y.o.
LOW. CROWN. GDT.
2nd thin

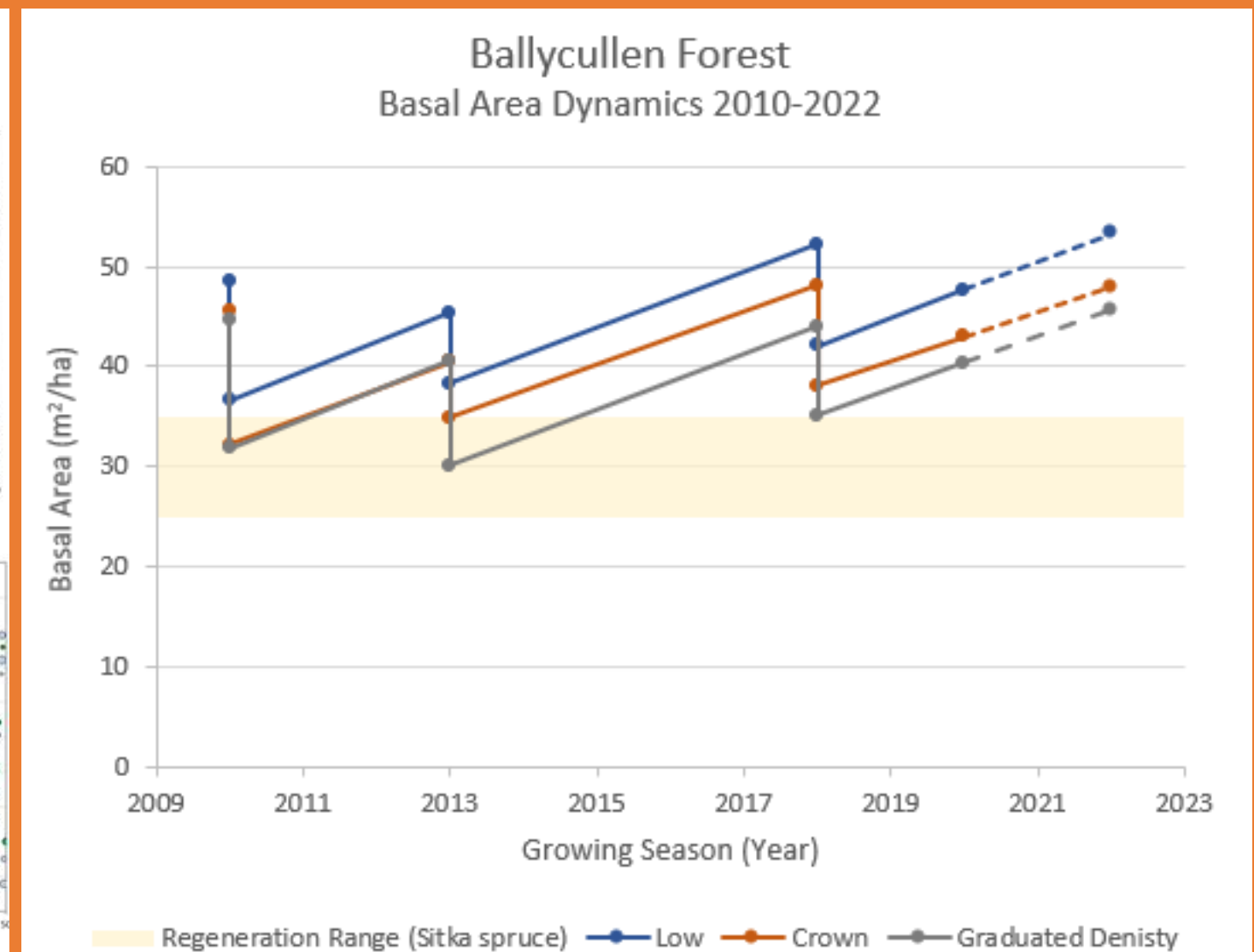
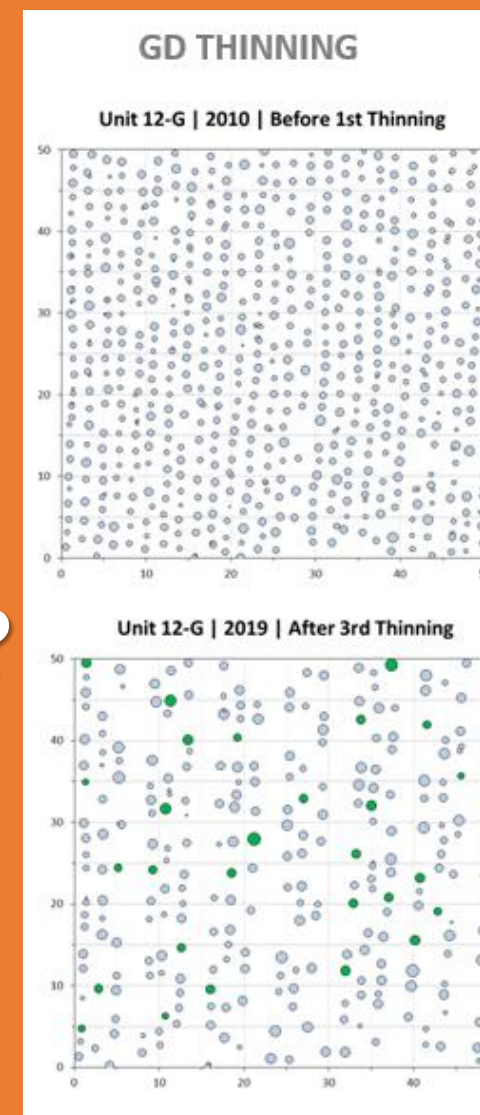
Foresters' lack of knowledge.
Wind/stability concerns
Economics of CCF?



Continue transforming young Sitka spruce
Stand structure development. Productivity.

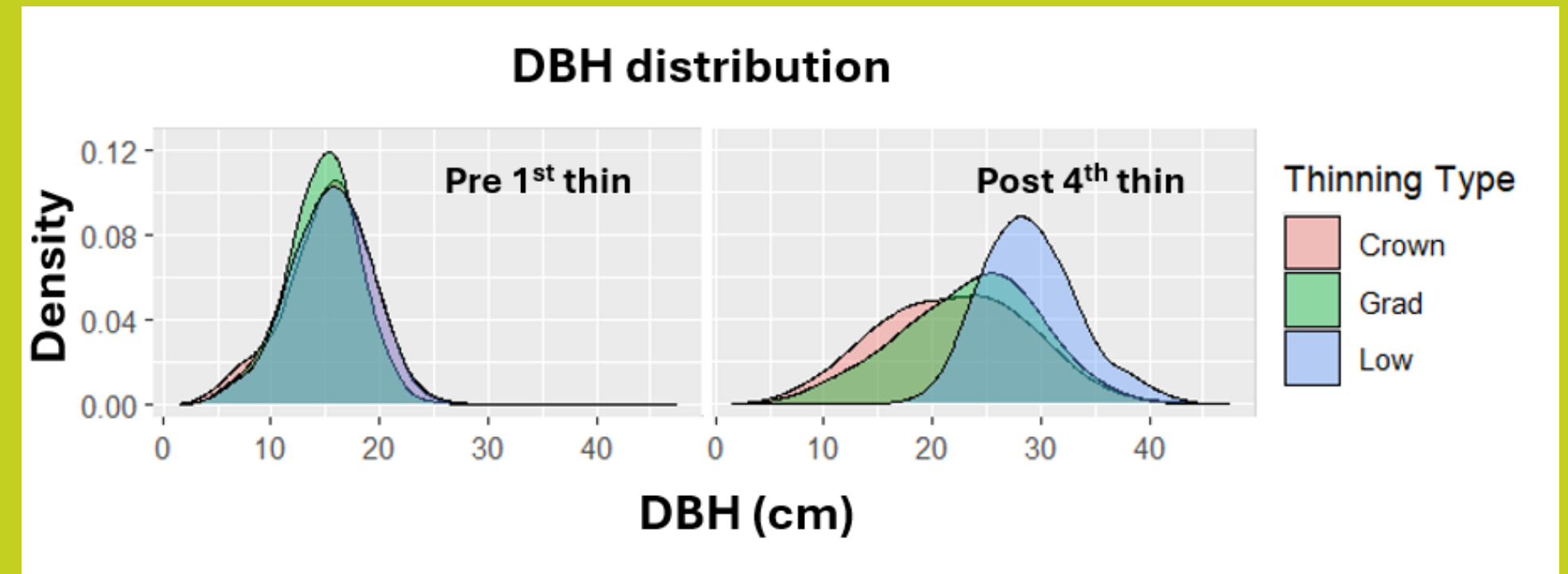
3rd thin.

Basal area reduction
and stand stability
Natural regen. opportunity?



Continue transforming young Sitka spruce Stand structure and modelling. Productivity. Quality. Underplanting.

4th thin
Modelling recruitment
Wood quality - NDT



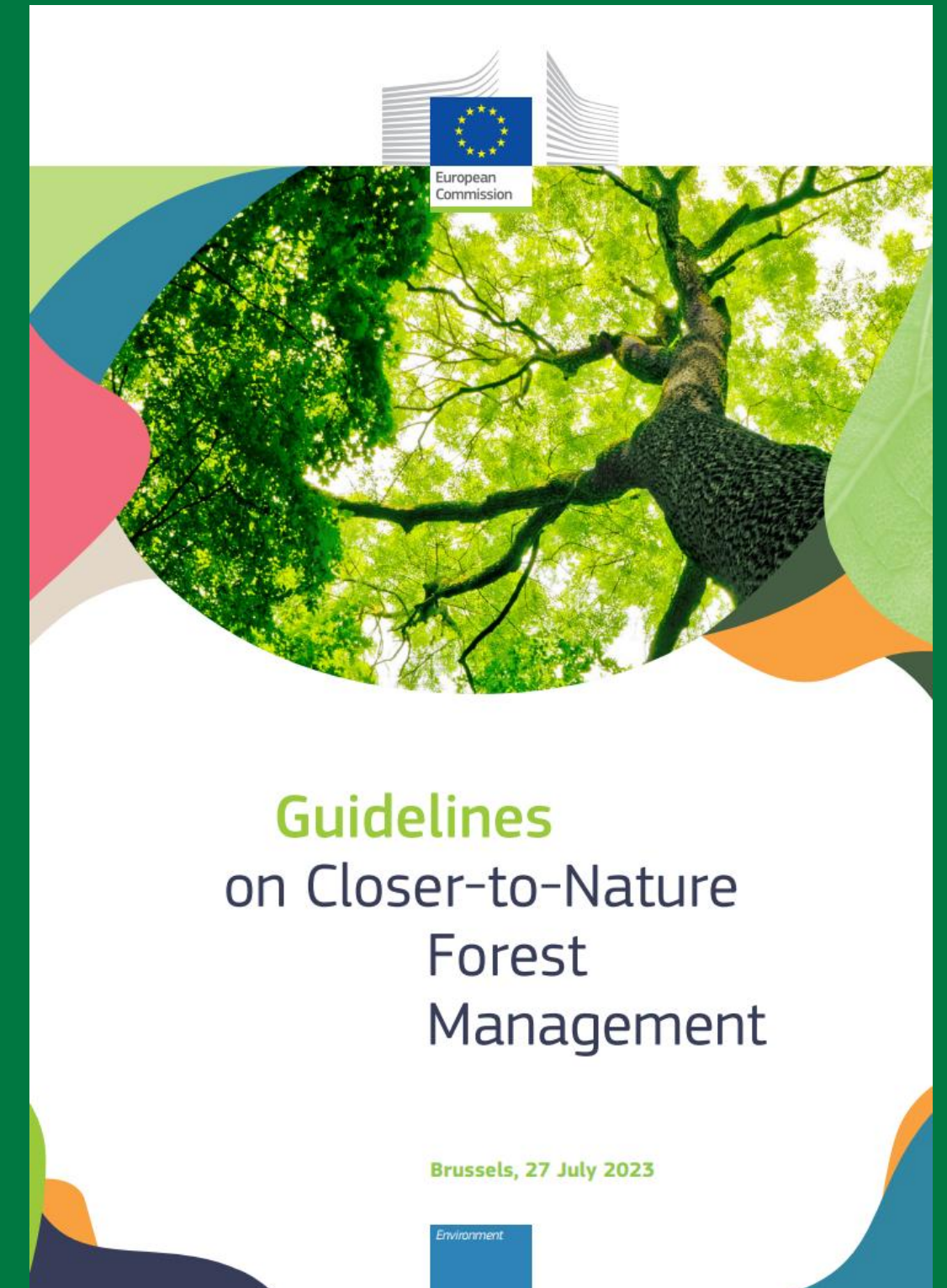
Stand structure modified
Treatment impacts log grade



Closer-to-NatureFor

EU Guidelines on Closer-to-Nature Forest Management

- Review forest types/management practices
- Estimate the area of forest managed with CtN principles
- Determine barriers to uptake
- Identify enabling factors for further uptake



Acknowledgements

Prof. Áine Ní Dhubháin

Grace Jones

Ted Wilson



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You*

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Coillte

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Questions?

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