ALTERFOR

TRAVELLAB PREPARTORY SESSION

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CSA - IRELAND

Galway

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Outline

- Irish forest history
- Irish forests statistics
- CSA
- Current FMMs
- Future FMMs

Ice age

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Last ice-age started to end 13,000 BP
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Tree colonisation

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Early human influences

6,000 BP:
Primeval broadleaf forest –Oak and Elm, Pine on poorer sites.
Neolithic stone age – first human influence

4,000 BP:
Wet climate = blanket peat formation
Mesolithic stone age = agriculture

3,000 – 1,500 BP:
Celts - Bronze age & Iron age = Better tools

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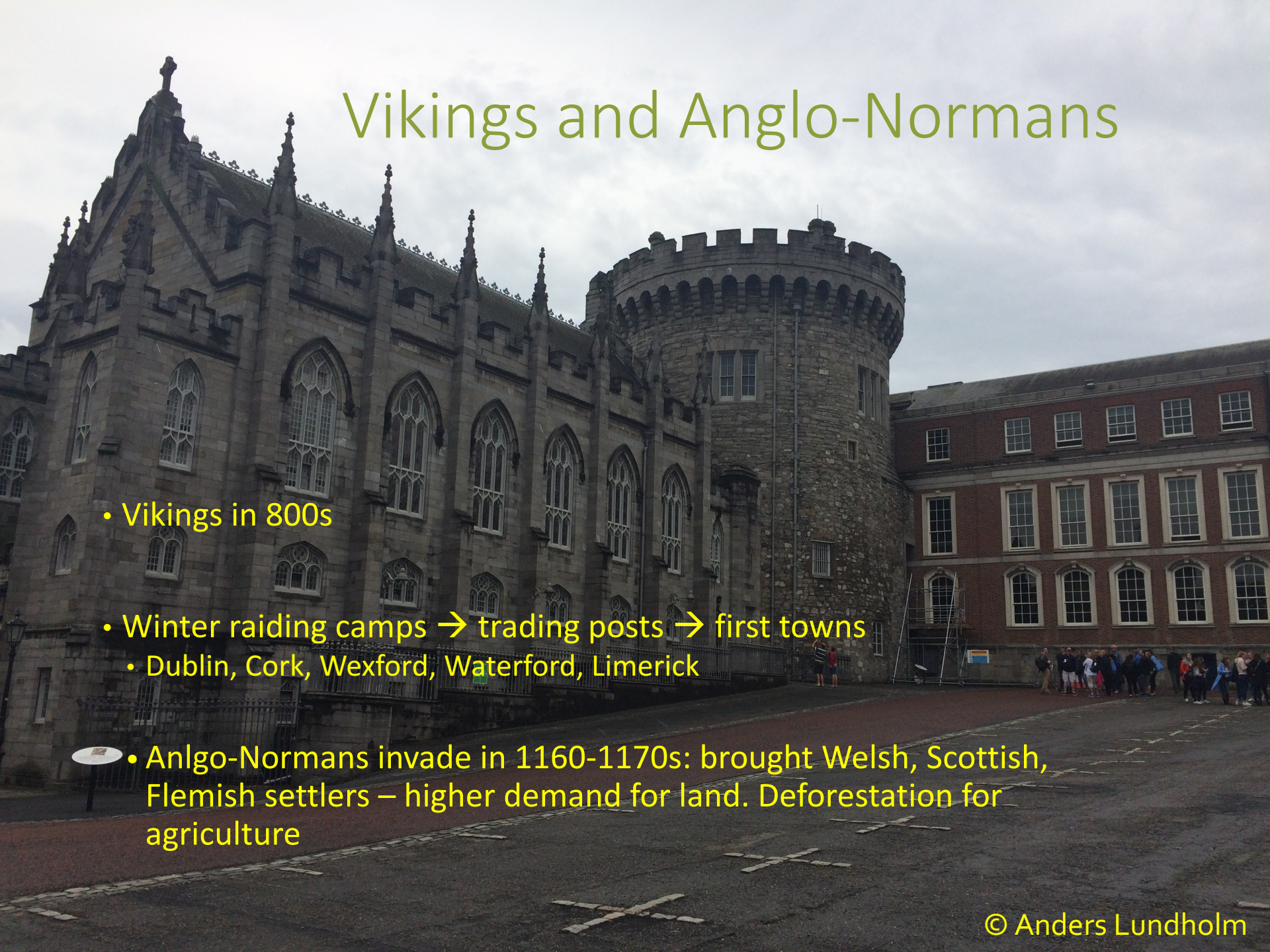
Vikings and Anglo-Normans



- Vikings in 800s
- Winter raiding camps → trading posts → first towns
  - Dublin, Cork, Wexford, Waterford, Limerick
- Anlgo-Normans invade in 1160-1170s: brought Welsh, Scottish, Flemish settlers – higher demand for land. Deforestation for agriculture

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Cromwellian conquest

- Invasion in 1650s, displacement of native Irish and major destruction of forests:

-Industry

-Shipbuilding

-Population increase

- 1600 12% cover → 1700 1% forest cover

- Reforestation initiatives by Royal Dublin Society in 1700s, mainly broadleaves

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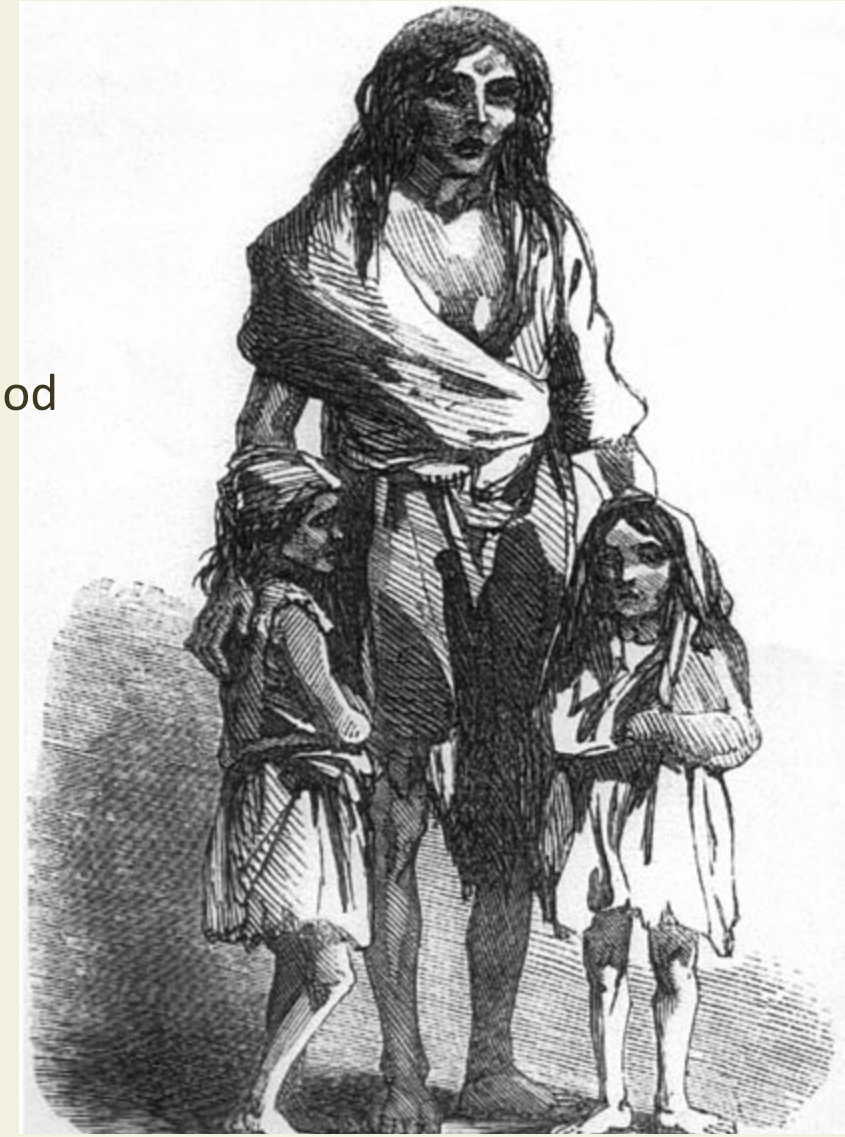
Famine

• Generations of splitting inheritance resulted in many farms >1ha

• 1845 potato famine. Of Islands ca 8 million:
1 million starve, 1 million migrate in a 7 year period

• Irish diaspora:
1845 Republic of Ireland: 6.5 million
1962 Republic of Ireland: 2.8 million



© Illustrated London News, December 22, 1849

Land Acts

- Land acts of 1880s: English estate bought and sold to Irish tenant farmers
- Memory of famine: forestry = bad, agriculture = good
- Forest liquidised to cover costs of buying land

World wars

- 1908 – Aim to establish national timber reserve
  - State involvement necessary. Land acquired at minimal price. NOT compete with agriculture!
  - 1.5% forest cover
- WW1 – devastation of Irish forest
  - Need for national timber reserve is more dire
- 1922 – Independence!
- 1928 – Irish Forestry Act. Reforestation and felling license requirement
- WW2 – further degradation
  - Need for national timber reserve even more dire!
- 1949 – Decision to afforest 10,000 ha/year

State afforestation 1908-1980s

- UK 1950s - new machinery allow planting of blanket bog
- Readily available and affordable land, suitable for exotic fast growing conifers

- Heavy use of fertiliser to ensure crop survival, increase YC
- Job creation in disadvantaged areas
- Coillte Teoranta formed 1989 to manage state forests

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Private afforestation 1980s->

- Joined EEC 1973
  - Reduction in state afforestation, increased land price
  - No more state afforestation subsidies in 1996
  - Increased Private afforestation grants
- Annual grants in 1989
- SFM implemented 1996-2000
- Currently: 10.5% forest cover
- Goal: 18% forest cover 2046

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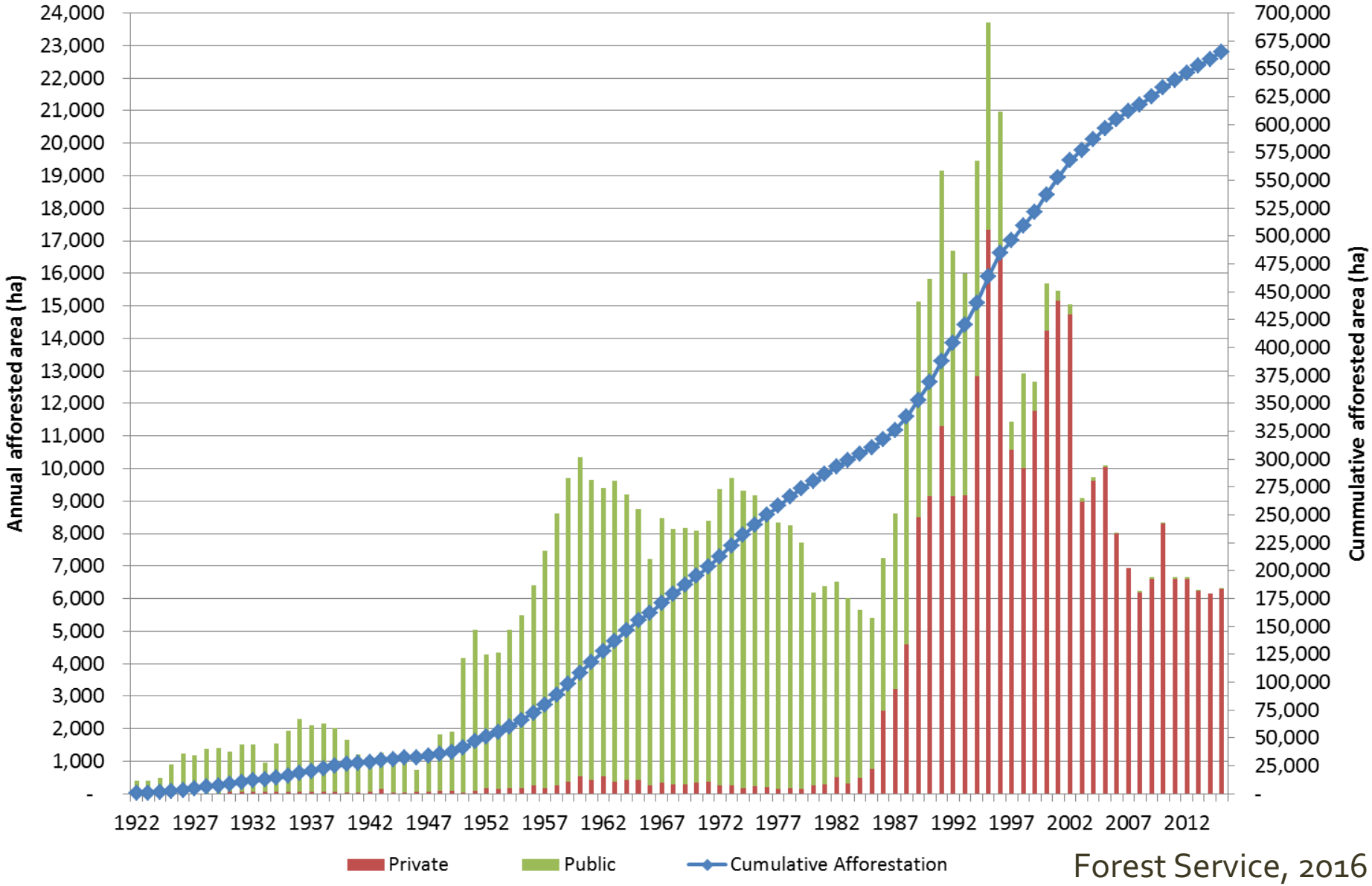


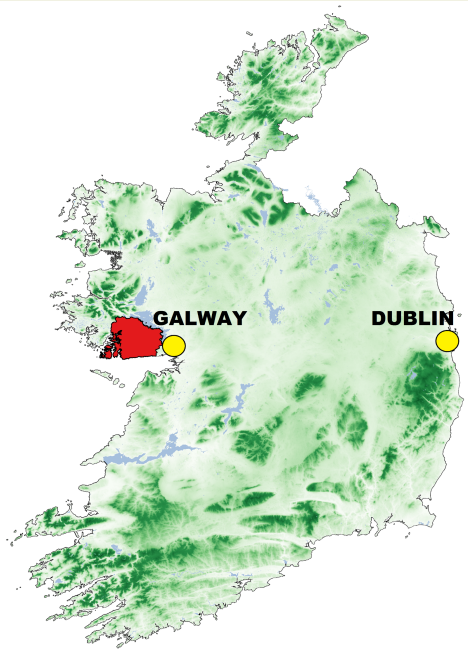
Forest Service, 2016

Current state

	Forest area - including open space (ha)	Forest ownership (%)	Forest area <20 years (%)	Growing stock (%)	Growing stock (m^3/ha)	Annual increment (m^3/ha)	Conifers species (%)	Broadleaves species (%)
Public forests (Coillte)	389,360.0	**53.2**	45.7	**62.0**	155.1	12.1	**82.0**	18.0
Private - grant aided forests	248,550.0	34.0	**83.6**	22.4	87.8	9.6	**83.6**	16.7
Private - other forests	93,740.0	12.8	24.7	15.6	162.6	6.3	18.9	**81.1**
Total forest estate	**731,650.0**	**100.0**	**55.8**	**100.0**	**133.2**	**10.5**	**74.2**	**25.8**

Forest Service, 2013

CSA – Barony of Moycullen



Description of the CSA	
Population	22 344
Area	81 853 ha
Forest	12 835 ha
Forest cover	15.7%
National forest cover	10.5%
Forest ownership – Coillte	81.1%
Forest ownership – Private	18.9%

Forest Service, 2013
Central Statistics Office – Census, 2011

	Barony of Moycullen	Republic of Ireland
Species (Latin name)	Proportion (% total area)	
Sitka spruce (Picea sitchensis)	**50.1**	**52.5**
Pines, mainly lodgepole pine (Pinus sp., Pinus contorta), excluding Scots pine (Pinus sylvestris L.)	**37.4**	**9.7**
Short lived broadleaves Birch, alder, willow, poplar etc. (Betula spp, Alnus spp, Salix sp., Populus sp.)	**6.1**	**15.5**
Long lived broadleaves Oak Beech, Ash, Maple, Sycamore, Lime, Elm etc. (Quercus sp, Fagus sylvatica, Fraxinus excelsior, Acer sp., Tilia sp., Ulmus sp.)	**1.1**	**10.3**
Norway spruce (Picea Abies (L.) H. Karst.	**0.5**	**4.1**
Larch (Larix sp.)	**2.7**	**4.4**
Scots pine (Pinus sylvestris L.)	**0.3**	**1.3**
Other conifers Douglas fir, English yew, Firs, Cedars, Hemlock (Pseudotsuga menziesii (Mirb.) Franco, Taxus baccata L., Abies sp., Cedrus sp., Thuja sp., Tsuga sp.)	**1.8**	**2.2**

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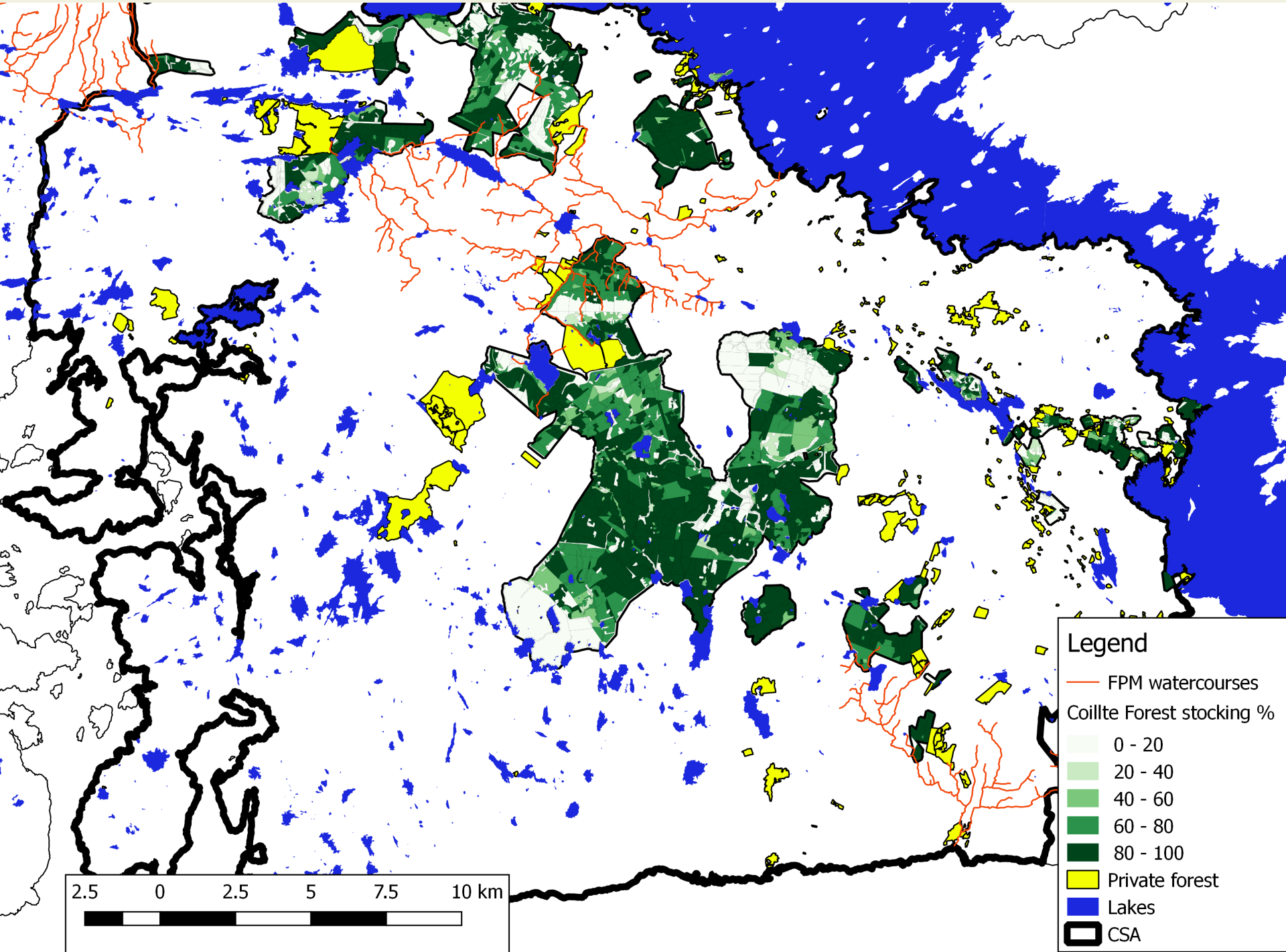
Forest Service, 2013


Legend
FPM watercourses
Coillte Forest stocking %
0 - 20
20 - 40
40 - 60
60 - 80
80 - 100
Private forest
Lakes
CSA
2.5
0
2.5
5
7.5
10 km

Current FMMs

Category	Name	% Area
Clearcutting conifer	FMM1-1 Sitka Spruce monoculture	38.9
	FMM1-2 Sitka Spruce with 10% diverse conifer mix	7.9
	FMM1-3 Sitka Spruce with 10% broadleaf mix	13.9
	FMM1-4 Diverse conifer	4.0
	FMM2 Lodgepole pine	24.6
Nature conservation and biodiversity protection	FMM3-1 Watercourse buffer zone	0.6 (1.3)
	FMM3-2 Bog habitat – non forest	0
	FMM3-3 Native Woodland Site	1.9
Broadleaf forestry	FMM4-1 CCF broadleaf	1.9
	FMM4-2 Commercial felling	0.3
	Private broadleaf – unknown species	3.5
Cleared land	Clearfells, burned, long-term unplanted	2.5

Current FMMs

Category	Name	% Area	% Area after fire
Clearcutting conifer	FMM1-1 Sitka Spruce monoculture	38.9	36.9
	FMM1-2 Sitka Spruce with 10% diverse conifer mix	7.9	7.7
	FMM1-3 Sitka Spruce with 10% broadleaf mix	13.9	12.5
	FMM1-4 Diverse conifer	4.0	4.0
	FMM2 Lodgepole pine	24.6	20.8
Nature conservation and biodiversity protection	FMM3-1 Watercourse buffer zone	0.6 (1.3)	0.6 (1.3)
	FMM3-2 Bog habitat – non forest	0	0
	FMM3-3 Native Woodland Site	1.9	1.9
Broadleaf forestry	FMM4-1 CCF broadleaf	1.9	1.7
	FMM4-2 Commercial felling	0.3	0.3
	Private broadleaf – unknown species	3.5	3.5
Cleared land	Clearfells, burned, long-term unplanted	2.5	10.1

FMM1 Sitka spruce CC

- Chosen for high production on wide type of sites
- No longer applicable as monoculture
- ES: for timber production
- SS Mixtures and diverse conifers= higher species diversity, lower timber production

- Sub FMMs (diverse conifer and SS w. mixtures) are all very similar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FMM2 Lodgepole pine CC

- Can produce merchantable timber on poor sites
- Only assortments: wood panel chips and biofuel
- ES: for wood panel and biofuel production
- Suitable for peat sites where SS is not economically viable


© ER Wilson

FMM3 Watercourse buffer

- Lots of new policy regarding nature conservation
- Stands haven’t changed since planting, often lack buffer and buffers are implementation during next rotation
- Benefits water quality and subsequently FPM


© Moorkens, Purser, Wilson and Allott. 2013

FMM3 Bog habitat

- Since 4,000 BP natural state of CSA if no human intervention
- Bog habitat can be created by restoring degraded bog
- However, 90% of CSA soil is peaty so need to find the best areas to restore to have useful impact


© Edwin Corrigan

FMM3 – Native Woodland Site

- Typically residual forest that was not degraded
- Small portion in CSA – not really suitable for BL
- Highest afforestation rates to restore NWS


© Anders Lundholm

FMM4 – Broadleaf

- Coillte policy: All BL = CCF
- Private can clearfell
- Better for biodiversity and social, but BL has poor form in Ireland so no high valued assortments


© Luke Boney

Future FMMs

- Limited by wet soils and wind exposure to explore new FMM

System	Species	Objective
Clearcut forestry	Lodgepole pine 1,600-**1,800**/ha	Fibre production on poor sites
Nature conservation and biodiversity protection	Lodgepole pine 1,100/ha	Conservation / "wilderness" forest
Deforestation	Bog restoration	Restore natural bog habitat

Clearcut conifer - Lodgepole pine 1,600-1,800/ha

- Replace fully stocked forests on blanket peat/very poor sites
- Aim of producing fibre for wood panel products and biofuel
- No intervention between planting and felling
- Long rotations: 65-80 years
- Administrative process: Need FS permission on site-by-site basis

Clearcut conifer - Lodgepole pine 1,100/ha

- Replace fully stocked forests on blanket peat/very poor sites
- Plant minimum forest cover and leave
- Alt. achieved by heavy thinning and leave
- No intervention after planting / thinning
- As lodgepole pine dies, nat. reg. of native scrub woodland?
- Administrative process: Need FS permission on site-by-site basis

Bog restoration

- Restore degraded blanket bog to natural bog habitat
- Done through EU-LIFE project nearby
- Plans to implement in CSA in near future
- Bog restoration as part of daily management vs project specific only
- Fairly expensive, ca2000€/ha
- Abandon forestry after clearfell: have to afforest elsewhere

Sources

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Thank you for listening

Questions?