EFIATLANTIC

International Summer School on
Measurement and Decision Support Tools for Forest Management

FIELD AND LABORATORY WORK SCHEDULE

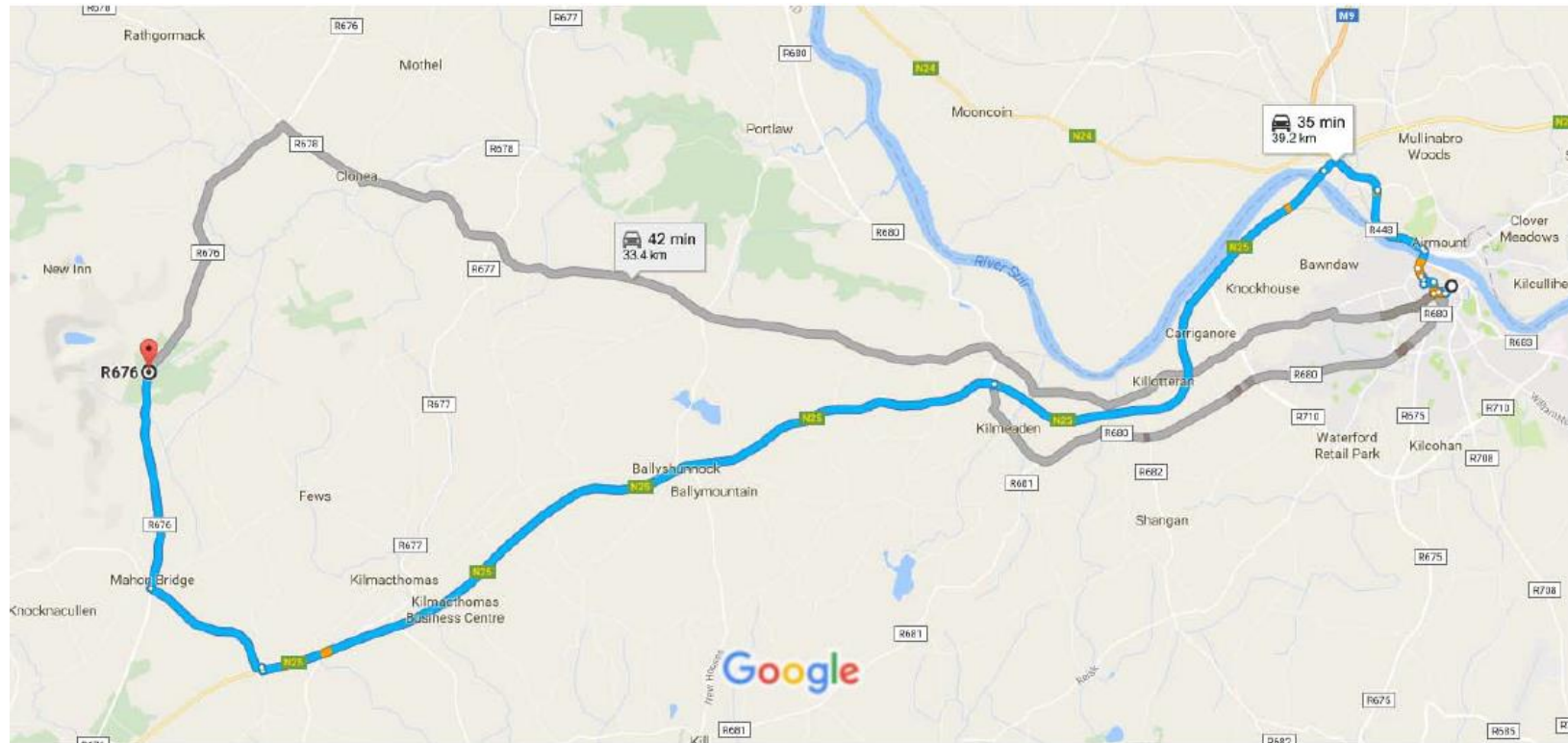*Photo : Nick Mc Carthy, WIT*

IEFC

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

Waterford Institute *of* Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

Field Work

20 June 2017	Kilclooney Forest	Map: https://goo.gl/maps/fFPRkm378862

Field Work

GROUP 1: Planning and Forecasting	Topic	Activity	Team Spruce	Team Pine	Team Larch	Team Fir
John Redmond	National Forest Inventory	Establish 3 or 4 standard plots used for national forest inventory. Measure tree diameter, heights, crown projection, height of live crown on 7 trees in each plot. Use TruPulse laser rangefinder	9:00-10:00 Location 1/Plot 1	10:00-11:00 Location 1/Plot 1	11:00-12:00 Location 1/Plot 1	13:00-14:00 Location 1/Plot 1
Myles MacDonncadha, Daniel McInerney, and Juan Suarez	GIS assessments	GIS and planning tools in the field: checking and updating information. ARCWEB smartphone application with aerial photography, LiDAR and satellite data , etc.	13:00-14:00 Location 5	9:00-10:00 Location 5	10:00-11:00 Location 5	11:00-12:00 Location 5
Enda Nolan	Forest surveying	Flights with fixed wing RTK GPS drone with RGB/Multispectral/thermal camera. Possibly muli-rotor drone giving laser scan of forest. Hand-held scanner.	11:00-12:00 Location 6	13:00-14:00 Location 6	9:00-10:00 Location 6	10:00-11:00 Location 6
Enda Keane	Forest planning	Forest HQ linked to aerial LiDAR, satellite imagery and drone data	10:00-11:00 Location 7	11:00-12:00 Location 7	13:00-14:00 Location 7	9:00-10:00 Location 7

GROUP 2: Stand and Tree Tools	Topic	Activity	Team Ash	Team Oak	Team Beech	Team Elm
Michael Pedini & Nick Mc Carthy	Tree measurements	Hypsometers, digital calipers, smart phone application measurements in the three standard plots established by John Redmond.	13:00-14:00 Location 3/Plot 3	9:00-10:00 Location 3/Plot 3	10:00-11:00 Location 3/Plot 3	11:00-12:00 Location 3/Plot 3
Enda Keane and Glen Murphy	Standing tree assessment and forest planning	Terrestrial Laser Scanner assessment of standing timber and tree form. Electronic calipers and vertex. Managed with "Forest HQ" application on smartphone	10:00-11:00 Location 2/Plot 2	11:00-12:00 Location 2/Plot 2	13:00-14:00 Location 2/Plot 2	9:00-10:00 Location 2/Plot 2
Elspeth Macdonald and Luka Kranjz	Acoustic and density measurements	HM200 and ST300 acoustic tools. 4 groups of 5 students. Repeat measurements with ST300 and Fakopp Treesonic on trees in plots set up by John Redmond. Measurements on logs with HM200. In addition wood density measurements with Resistograph	11:00-12:00 Location 4/Plot 4	13:00-14:00 Location 4/Plot 4	9:00-10:00 Location 4/Plot 2	10:00-11:00 Location 4/Plot 4
Duncan Ray & Alice Broome	Ecological Site Classification	Soil assessment (soil horizons, colour, roots, stoniness, texture, parent material, etc.) and plant identification in order to determine soil moisture and nutrient status.	9:00-10:00 Location 8	10:00-11:00 Location 8	11:00-12:00 Location 8	13:00-14:00 Location 8

Laboratory Work

GROUP 1: Planning and Forecasting	Topic	Measurements/Model/Tools	Wednesday Afternoon 21st June		Thursday Morning 22nd June		Thursday Afternoon 22nd June	
			14:00-15:30	15:30-17:00	09:00-10:30	10:30-12:00	14:00-15:30	15:30-17:00
John Redmond	National Forest Inventory	Ireland's National Forest Inventory	All Group 1 Lab 1					
Frank Barrett, Edwin Corrigan, Frank Barrett and Cian O'Connor	Planning & Forecasting Ireland's Private Forest Estate	• Forest Data Input • Modelling – Remsoft Woodstock • Results Dissemination • Research on future developments.		All Group 1 Lab 2				
Daniel McInerney & Juan Suarez	GIS assessments	Downloading of remotes sensing data (satellite and airborne data) and GIS mapping. Analysis of changes in forest with time			Teams Spruce + Pine Lab 1	Teams Larch + Fir Lab 1		
Barry Gardiner	Risk Modelling	Investigating species and silviculture choices with ForestGALES wind risk model			Teams Larch + Fir Lab 2	Teams Spruce + Pine Lab 2		
John Landy and John Casey	Economic planning	REMSOFT optimization software. Modelling different scenarios. Economic planning versus silvicultural planning. Effect of input changes from forest measurements.					Teams Spruce + Pine Lab 1	Teams Larch + Fir Lab 1
Ola Eriksson	Optimisation, artificial intelligence and heuristic techniques	• Linear programming (LP) – the workhorse of optimization in forest planning • Heureka – a state-of-the-art tool integrating LP • Spatial planning – a case for heuristics					Teams Larch + Fir Lab 2	Teams Spruce + Pine Lab 2

GROUP 2: Stand and Tree Tools	Topic	Measurements/Model/Tools	Wednesday Afternoon 21st June		Thursday Morning 22nd June		Thursday Afternoon 22nd June	
			14:00-15:30	15:30-17:00	09:00-10:30	10:30-12:00	14:00-15:30	15:30-17:00
Duncan Ray and Alice Broome	Ecological Site Classification	Ecological Site Classification online program (Irish ESC)	All Group 2 Lab 3					
Celine Meredieu	Growth and Risk Modelling	CAPSIS forest simulator for modelling tree growth and risk		All Group 2 Lab 3				
Paddy Purser	Stand Growth Modelling	GROWFOR growth model			All Group 2 Lab 3			
Liam Malone	Harvester Operations and Harvest Monitoring	SATMODO project				All Group 2 Lab 3		
Enda Keane and Glen Murphy	Standing tree assessment and forest planning	Tree volume and stand output					All Group 2 Lab 3	
Elspeth Macdonald and Luka Kranjz	Acoustic and density measurements	Acoustic measurements on small clear wood specimens with Pundit tester to measure elastic modulus.						All Group 2 Lab 3
		Comparison of Resistograph measurements with x-ray densitometry measurements						