

Proposal for a FLUXNET synthesis paper

Title: The effects of harvesting, thinning and fire on forest carbon exchange

Leading authors: Asko Noormets, Beverly Law, Hank Margolis, Ernst-Detlef Schulze, Jiquan Chen, John Grace, Alan Barr

Contributing authors: We plan to be very open in offering co-authorship, and acknowledge the policies of individual networks. Tentatively, up to 5 authors per site could be considered if the site contributes significantly to the dataset and analysis. Intellectual input in the writing process is expected.

Intended scope: The study will address two major goals: (1) review existing post-disturbance chronosequence studies, and (2) summarize current FLUXNET data on the effects of harvesting, thinning, and fire on forest carbon exchange. Evaluate continental and regional differences in management practices, and their effects on forest carbon fluxes. Each disturbance type will be analyzed for two major classes of data – (i) within-site analysis in a “before and after” scenario, and (ii) chronosequence analysis of multiple sites following or bracketing the disturbance. The effects of thinning are assessed using data from a single site, or simultaneous measurements in two differently treated stands. Existing evidence suggests that thinning effects are relatively small, which may complicate the analysis of data that encompass both temporal variation and treatment differences.

Required data: eddy covariance fluxes, micrometeorological parameters

Desired data: chamber measurements (soil respiration, coarse woody debris respiration), biometric estimation of standing biomass and coarse woody debris decay rate

Sites included (tentative):

BR-Sa1	CA-NS7	CA-TP1	RU-Fyo	US-Ho1	US-SP3
BR-Sa3	CA-NS8	CA-TP2	RU-Ha1	US-Ho2	US-SP4
CA-Ca1	CA-Oas	CA-TP3	RU-Ha2	US-Ho3	US-Wi1
CA-Ca2	CA-Obs	CA-TP4	RU-Ha3	US-Me1	US-Wi0
CA-Ca3	CA-Ojp	CN-Ku1	SE-Fla	US-Me2	US-Wi2
CA-Cbo	CA-Qcu	CN-Ku2	SE-Kno	US-Me3	US-Wi3
CA-Gro	CA-Qfo	DE-Tha	SE-Nor	US-Me4	US-Wi4
CA-Man	CA-SF1	FI-Hyy	SE-Sk1	US-Me5	US-Wi5
CA-NS1	CA-SF2	FR-Bil	SE-Sk2	US-NC1	US-Wi6
CA-NS2	CA-SF3	FR-Bi2	SE-St1	US-NC2	US-Wi7
CA-NS3	CA-SFe	FR-Gri	US-Blo	US-SO2	US-Wi8
CA-NS4	CA-SJ1	FR-Gr2	US-Bn1	US-SO3	US-Wi9
CA-NS5	CA-SJ2	FR-Hes	US-Bn2	US-SP1	
CA-NS6	CA-SJ3	RU-Fy2	US-Bn3	US-SP2	