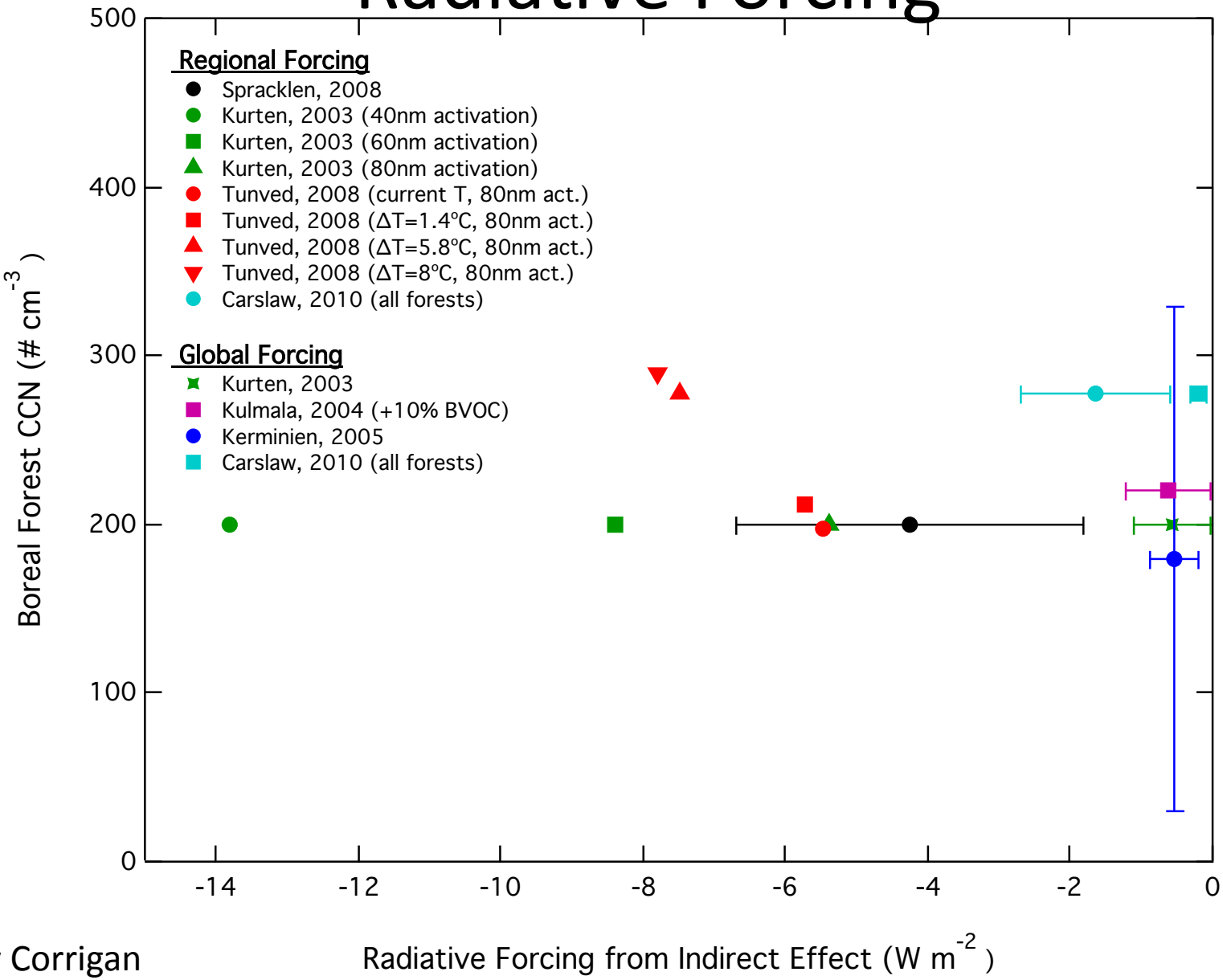
Article	Method	Results
Spracklen, et al., 2008	Global atmospheric model (GLOMAP): includes frequent nucleation events seen at Hyytiala, Finland	Change in cloud albedo: $\Delta Rc = (1/3)Rc(1-Rc)\Delta CDNC/CDNC$. Boreal forest emissions increases cloud albedo 3-8%. Resulting in -1.8 to -6.7 W m^{-2}, regionally averaged for 60-90° N. Nucleation events double the impact of BVOC emissions on [CCN].
Kurten et al., 2003	Field Data- Hyytiala, Finland: estimate number of biogenic aerosols capable of CCN activation	Annually averaged, global boreal forest radiative forcing estimated to be -0.03 to -1.1 W m^{-2}. Using per square meter of boreal forest and 60nm CCN activation threshold: -8.4 W m^{-2}.
Kerminen, et al., 2005	Field Data- Pallas, Finland	Estimate perturbations in cloud albedo from changes in CCN. Change in radiative forcing is a function of average cloud cover, atmospheric transmission, and change in albedo. Regional radiative forcing: -0.18 to -0.88 W m^{-2}
Kulmala et al., 2004	Theory, Field Data: Hyytiala, Finland	A doubling of CO_2 results in increased CO_2 assimilation and BVOC emission (~10%, due to temperature increase alone). BVOC increase from increased photosynthesis is unknown. A 10% increase in BVOC, causes 10% increase in CCN, and 10% increase in radiative forcing.
Tunved et al., 2008	Parameterization model to link monoterpene emissions to particle size distributions and mass over the boreal forest.	Roughly 12–50% of today's CCN in the boundary layer over Scandinavia from the forest. The boreal forest can produce up to 200 CCN cm^{-3} on average over Scandinavia. An increase in temperature by 5.8 ◦C could increase this CCN population by 40%.
Carslaw et al., 2010	Review: aerosol-cloud interactions of natural aerosols and their feedbacks in the earth system	Assuming 40% increase of CCN at 5.8°C temperature increase, all CCN activate, regional indirect radiative forcing: -0.6 to -2.7 W m^{-2}. Extrapolating to the globe and assuming boreal forest is proxy for all forest systems, global mean of: -0.07 to -0.30 W m^{-2}.
Tunved et al., 2006	Parameterization model: accumulation of mass is in turn closely related to the time the air parcel spent over the source (Boreal forest)	Substantial gas-to-particle formation of BVOC to SOA takes place over the boreal forest in northern Europe. Boreal forest typically sustains 1000 to 2000 particles cm^{-3} in a climatic relevant size range (40 to 100 nm).
Lathiere et al., 2006	Global Models: ORCHIDEE and SECHIBA	Global BVOC increase of 8.5% from climate change, includes 29% decrease in tropical isoprene emissions, and 54% increase in European Terpene emissions from land use changes.
Arneth et al., 2010	Review Article: terrestrial biogeochemical feedbacks in the climate system	Total positive radiative forcings resulting from feedbacks between the terrestrial biosphere and the atmosphere are estimated to reach up to 0.9 - 1.5 W m^{-2} the end of 2100, depending on the extent to which interactions with the N-cycle stimulate or limit carbon sequestration.
Takemura et al., 2005	Global Model: SPRINTARS global aerosol model – direct and indirect aerosol forcings	In comparison, anthropogenic aerosol indirect effect was found to be -0.52 W m^{-2} (global average), or -1.14 W m^{-2} over land, -0.28 over ocean.

Impact of Biogenic Aerosol on Radiative Forcing



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