Forest carbon stock

C-flux route

Mass change:
- Biomass (gain/loss)

Photosynthesis in vegetation:
- Trees
- Ground vegetation

Respiration in vegetation:
- Tree canopy
- Tree roots
- Ground vegetation canopy
- Ground vegetation roots

Respiration by microbes:
- Litter decomposition
- Soil OM decomposition

Mass change:
- Litter (gain/loss)
- Soil (gain/loss)

C fluxes included in monitoring

Soil inventory methods
- Soil C-stock differences

Eddy covariance methods
- Net ecosystem exchange (NEE)

Chamber (dark) methods
- (I) Soil surface CO₂ flux with litter and tree roots and without ground vegetation
- (II) Soil surface CO₂ flux with litter, tree roots and ground vegetation
- (III) Soil surface CO₂ flux without litter, tree roots and ground vegetation
- (IV) Soil surface CO₂ flux with litter and without tree roots and ground vegetation

Data sources for completing soil CO₂ balance

Soil CO₂ balance

Litter deposition
Root mortality

Above-ground biomass
Below-ground biomass

Litter (including harvest residues)

Soil

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