



# CO<sub>2</sub> stored in biomass and residues under different maintenance forms

- example from private gardens

## **Per Gundersen**

Section for Forest, Nature and Biomass

Dept. of Geosciences and Natural Resource Management



Where is the material in a tree coming from?



Photosynthesis → biomass → decomposition → CO<sub>2</sub>

0.01% carbon (as CO<sub>2</sub>) in air → 50% in wood - via photosynthesis

Not 'dust-to-dust'  
but 'air-to-air'



## Solid 'air' – waste or resource?



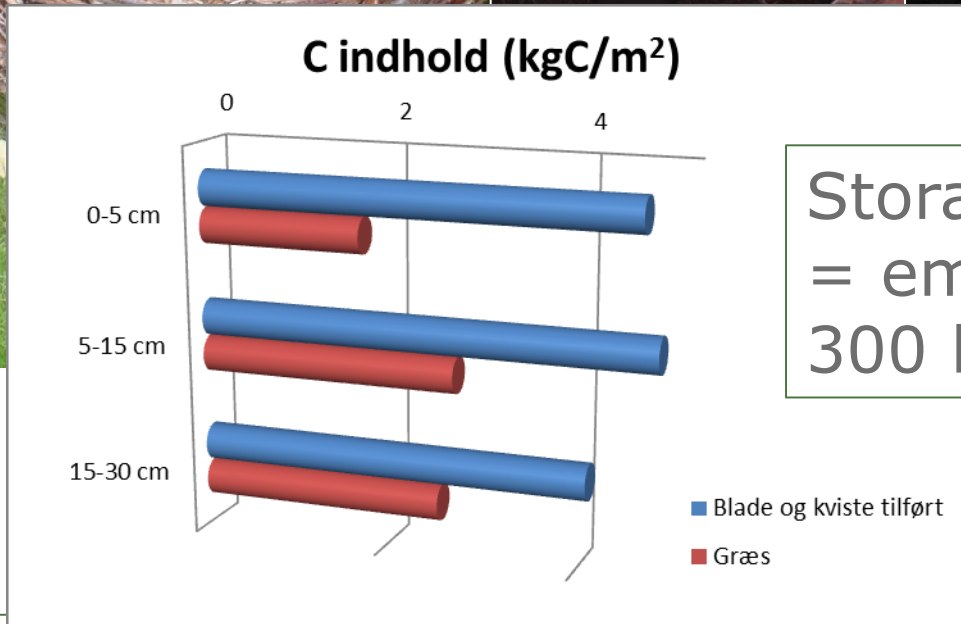
- Carbon sequestration and storage
- Potential for biodiversity (energy)



**C sinks**



## Brash dump – carbon sink, even deep in the soil



Storage per m<sup>2</sup>  
= emission from  
300 km in a car

## Difference – carbon retaining garden **vs** modern grass garden (860 m<sup>2</sup> – housing 170 m<sup>2</sup>)



	kg C	
Biomass	500	
Dead wood	300	
'Forest floors' + brash	200	
Mineral soil	600	
<u>Total</u>	<u>1600</u>	= 5,9 t CO <sub>2</sub> = 50.000 km in car
Potential (old growth forest) = 14 x more C stored		

## Conclusions on **urban carbon**

- We can **increase the carbon density** of urban areas:
  - ~ equivalent to **extra 1 tCO<sub>2</sub>/100 m<sup>2</sup>**.
  - in more biomass, dead wood and in soil.
  - ~ **half** of the C will be **sequestered in soil** organic matter leading to better nutrient and water retention capacities.
- We can **reduce transport** of garden waste (= 'solid air' that with time return to the atmosphere anyway).
- "We are all just air" ..... Thanks for listening.

