

# **LWF-Pfynwald Workshop 2015**

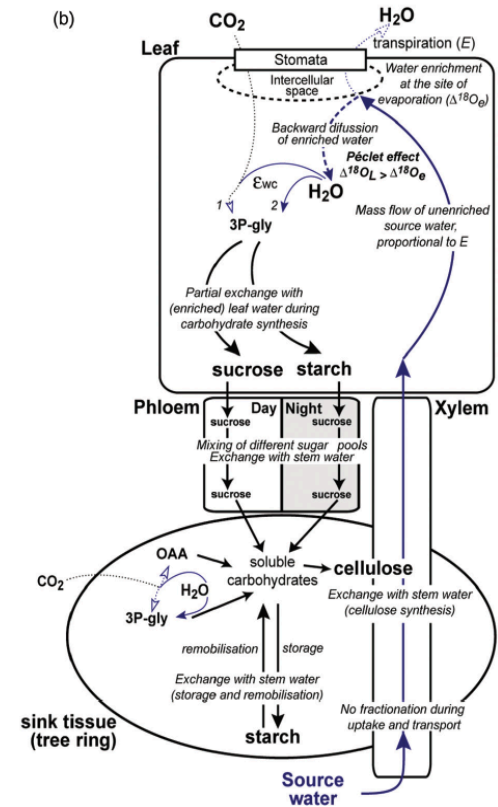
**16. November 2015**

**Swiss Federal Research Institute WSL**

# Ecosystem services under pressure

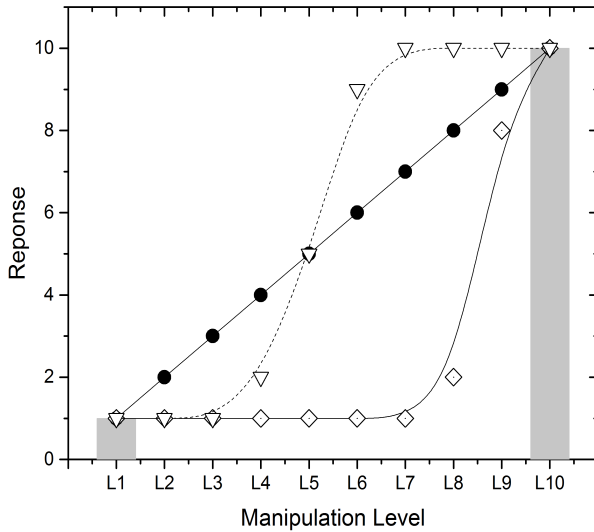
- 1) Temperature (McDowell, pers. Comm.) and precipitation are two of the key drivers of ecosystem processes (Luyssaert *et al.*, 2010)
- 2) Drought is assumed to be a major driver of tree mortality and C metabolism (Allen *et al.*, 2010)
- 3) Under current climate projections drought will be an important factor that determines the performance of particular tree species (Brandes *et al.*, 2007) and of ecosystem services for society (Hanewinkel *et al.*, 2013; Lindner *et al.*, 2014).

***As a consequence, we need more mechanistic information to better predict the trajectories of forest ecosystem functioning and services in a changing climate.***

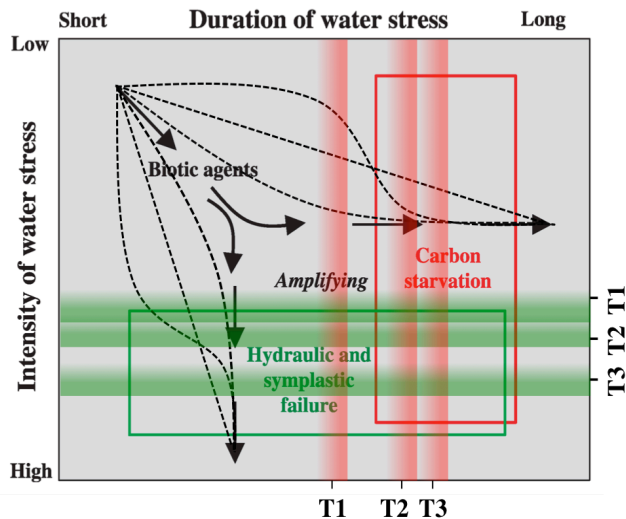




# Principle challenges



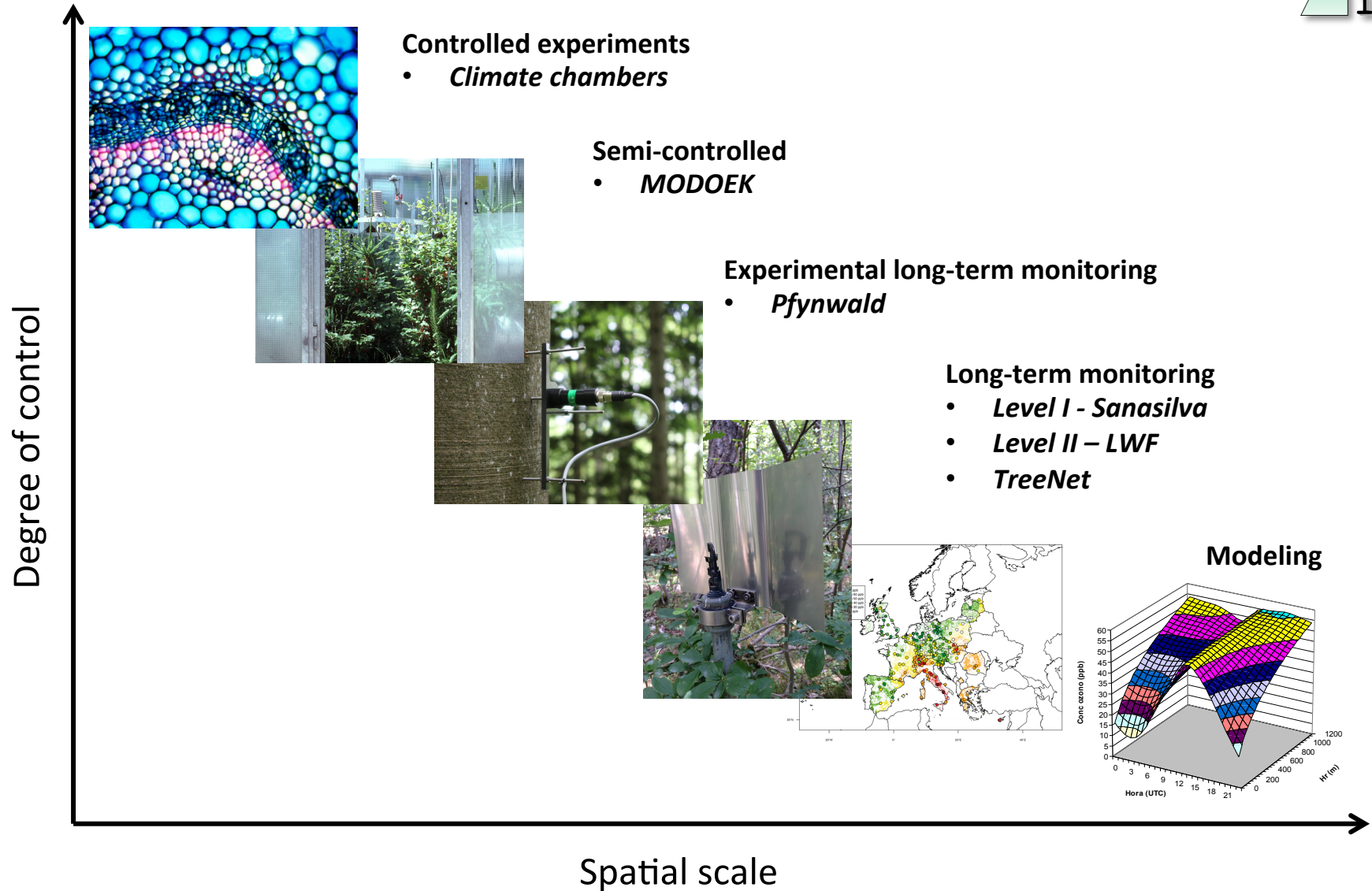
Linearity or non-linearity?



Different thresholds and tipping points?

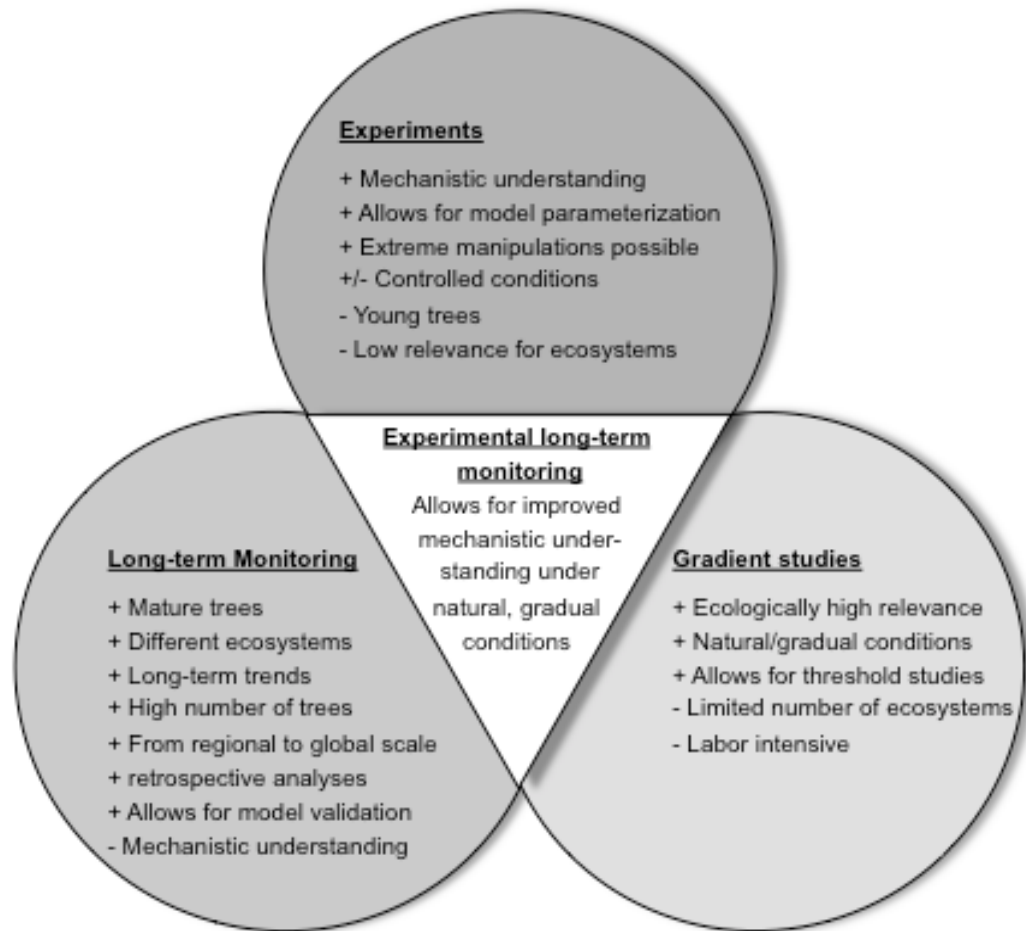
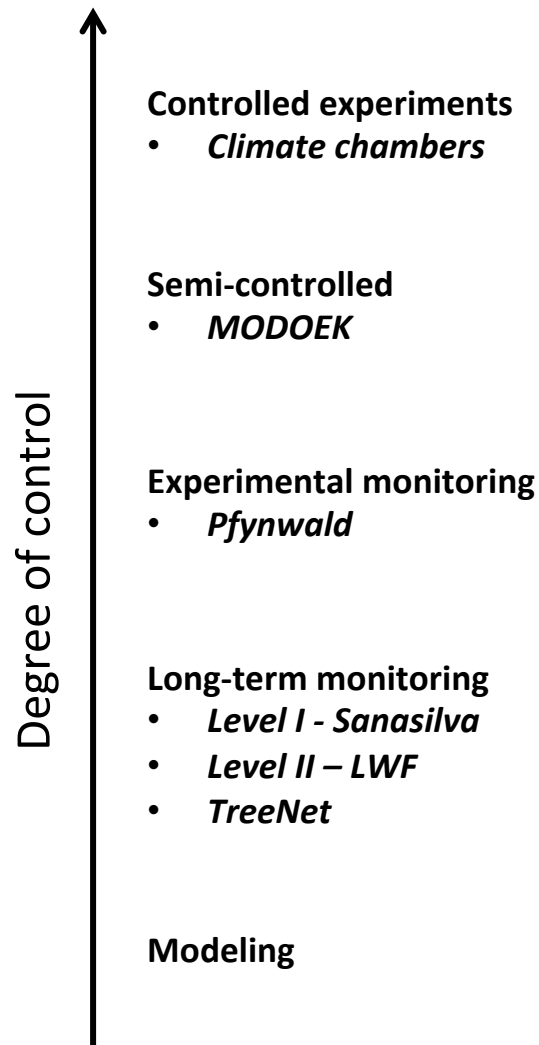
(adapted figure from McDowell *et al.*, 2008)

# Analytical chain of LWF program





# Analytical chain



# The Swiss LWF program



Level I

**Level II**

TreeNet (WSL,ETHZ,IAP)

Eddy flux (WSL, ETHZ)

