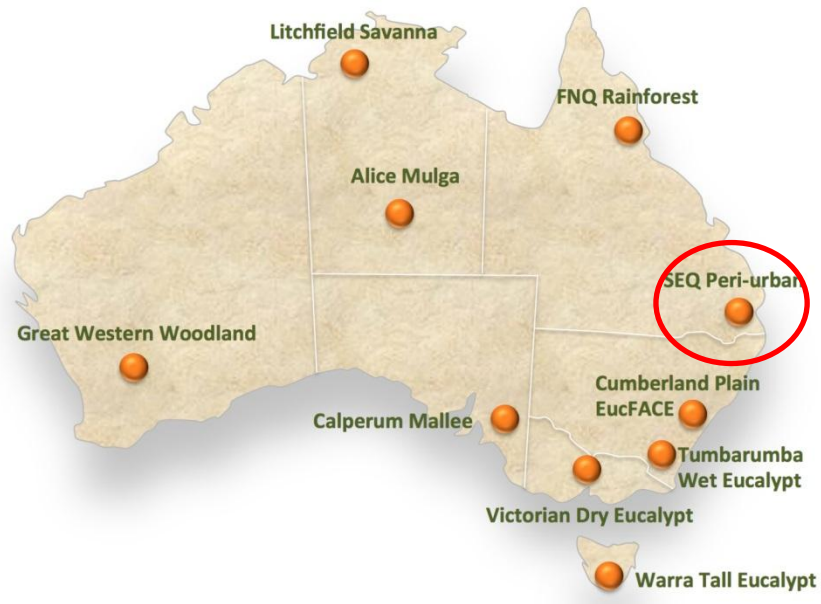




# Samford Ecological Research Facility (SERF)

# SERF



- 1016.6 mm MAP
- 25.6 °C max AT, 13.0 °C min AT
- Humid subtropics
- Flux Tower setup:  
June 2010



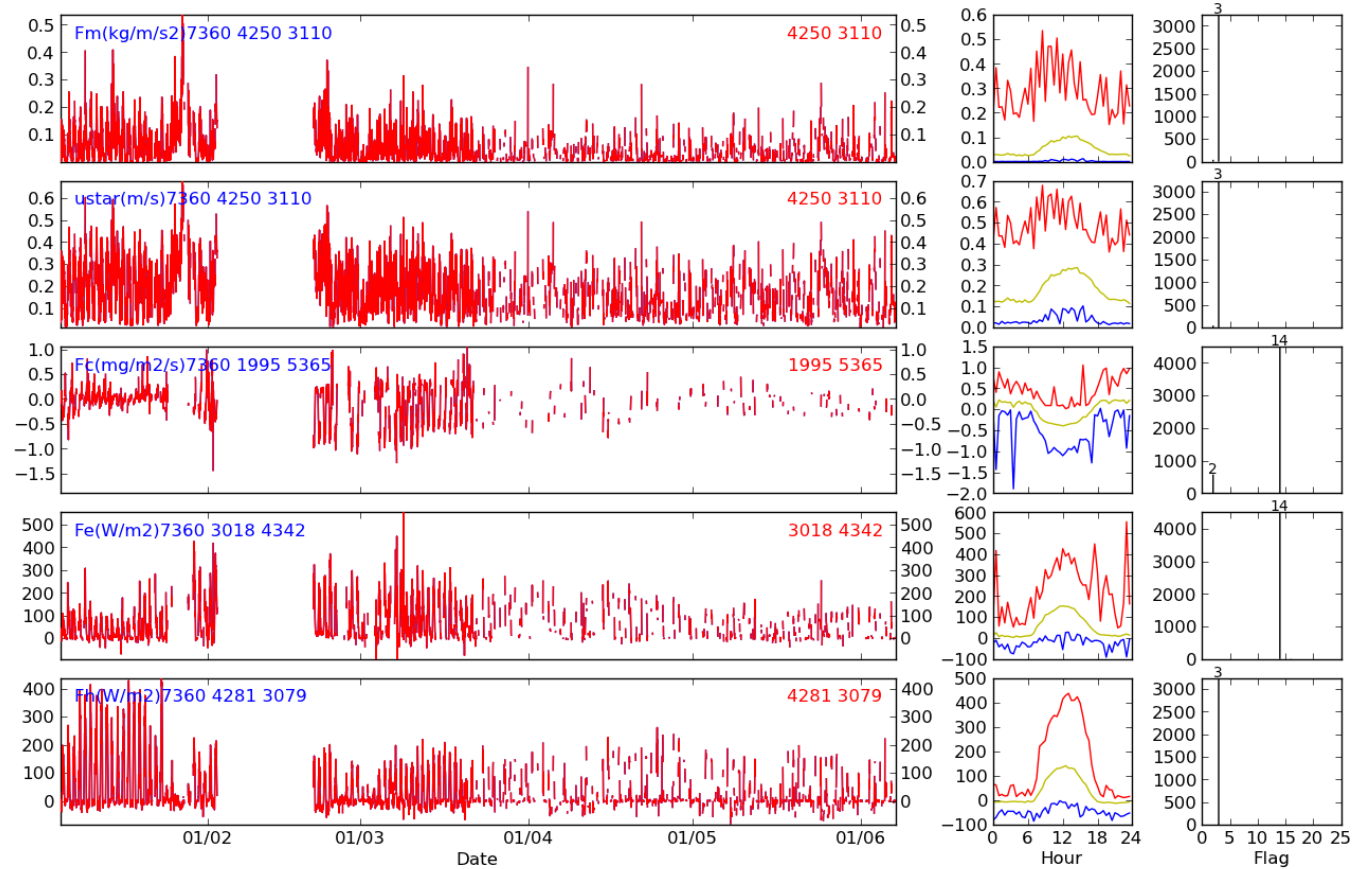
# SERF





# SERF

Samford: Turbulent fluxes



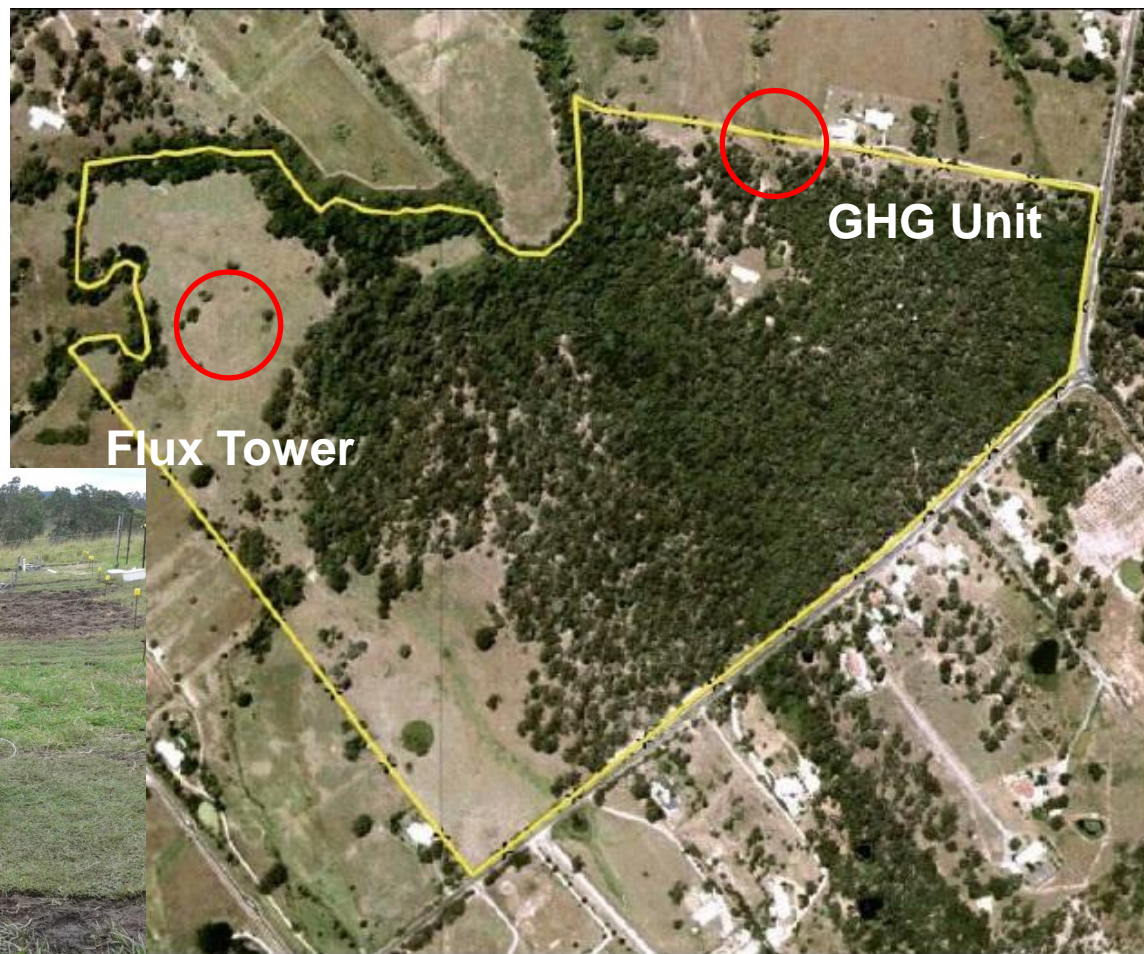


# PhD

Proposed Title:

Land use change and its impact on the carbon  
cycle in urban soils of southeast Queensland,  
Australia

# GHG unit



# GHG unit

- Automatic chamber unit ( $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{N}_2\text{O}$ )
- 4 treatments x 3 replicates
- Forest, pasture, lawn (turf grass), fallow
- Conversion to  $\text{CO}_2$  equivalent for C budget calculations
- 2 years data set
- Management:
  - Lawn: fertilization, irrigation, cut intervals
  - Fallow: herbicides

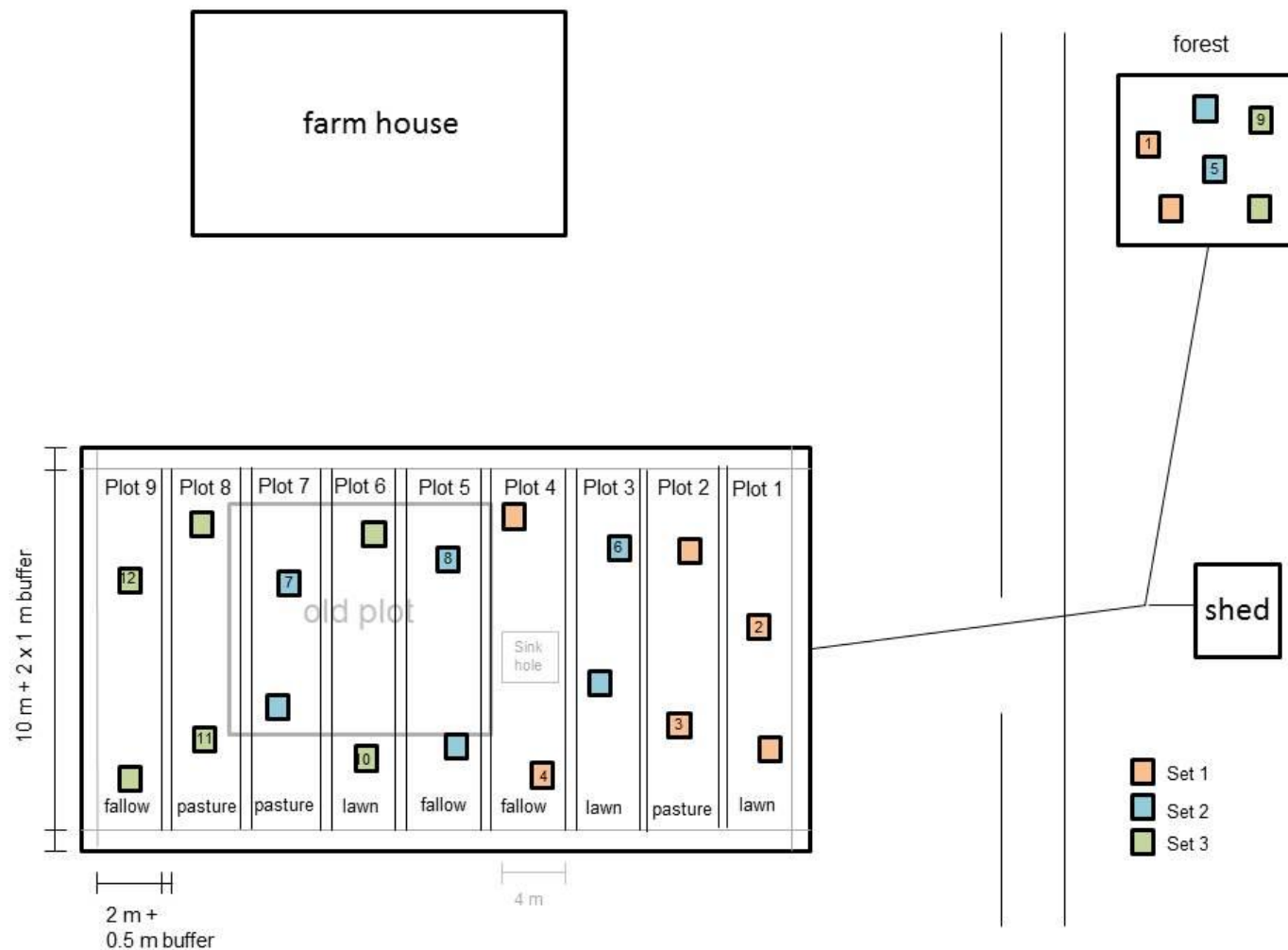


# GHG unit





# GHG unit



# GHG unit





# Soil Survey

## Analysis:

- C/N
- SOC
- C fractions
- C isotopes
- Mineralization rates
- Texture, pH, EC, CEC, BD





# Soil respiration

Comparison of low and high managed lawns and age of land use

- LI-8100A unit
- Fortnightly
- Soil temperature and moisture additionally
- Heterotrophic vs. total soil respiration

# Modelling

- Calibration of ecosystem model (DayCent) with GHG data set
- Validation and extent of the model with soil survey and respiration data
- Future scenarios for different land use



# OzFlux + PhD?

- C budget calculation
- SEQ climate model
- (Sub)Urban ecosystems
- Land use change



Thanks

