

Monitoring irrigation in a production nursery

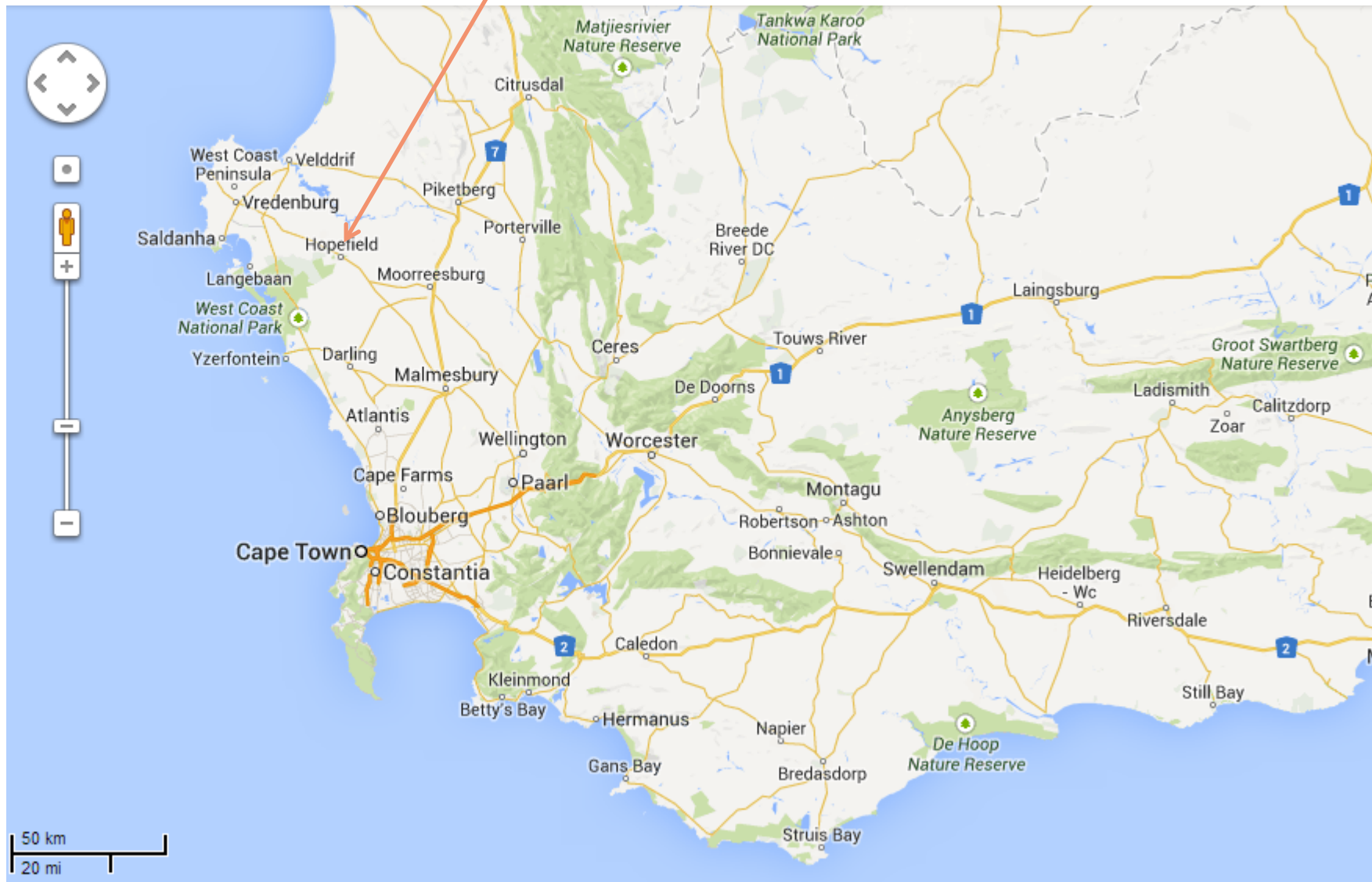


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ARNELIA



ARNELIA

Produces 150 000 potted plants annually

- *Leucospermum*
- *Leucadendron*
- *Protea*
- *Chamelaucium*
- *Erica*
- *Brunia* and *Berzelia*



Cut flowers for export – 20 ha

Rooted cuttings for producers on order

Propagation

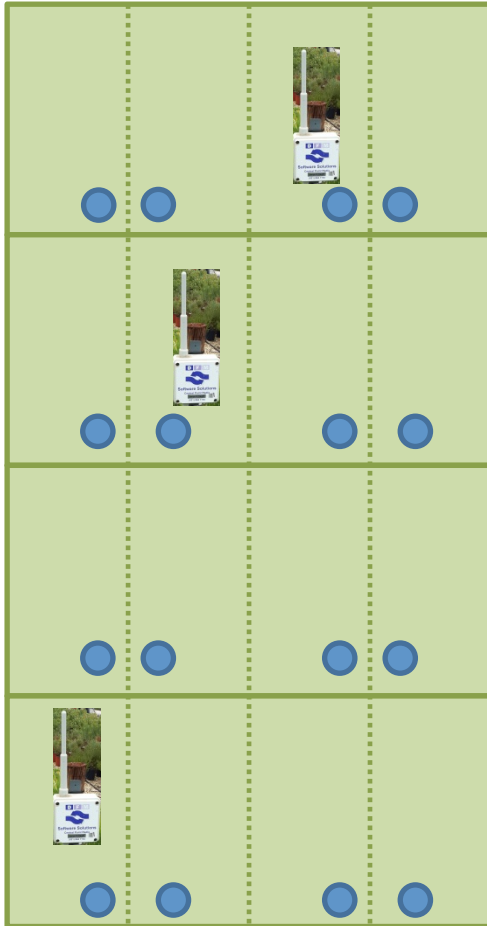


Mother stock

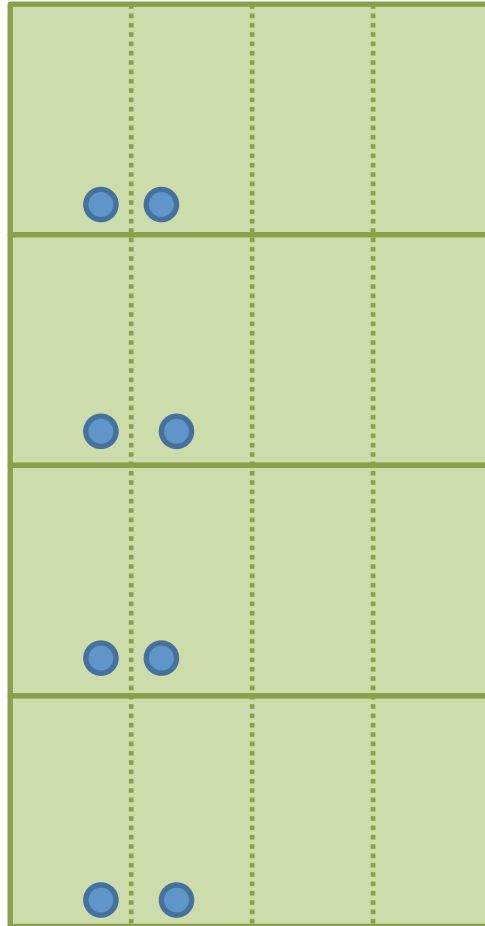


Mother stock

1



2



3



 Drainage saucer



Probe

Mother stock – What do we measure?



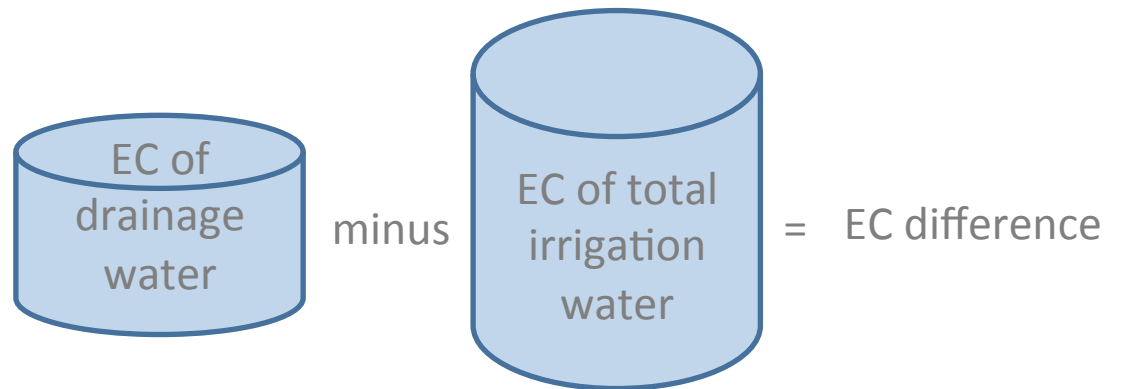
Mother stock – What do we measure?



Mother stock – What do we measure?



EC difference:



EC difference increase: less drainage

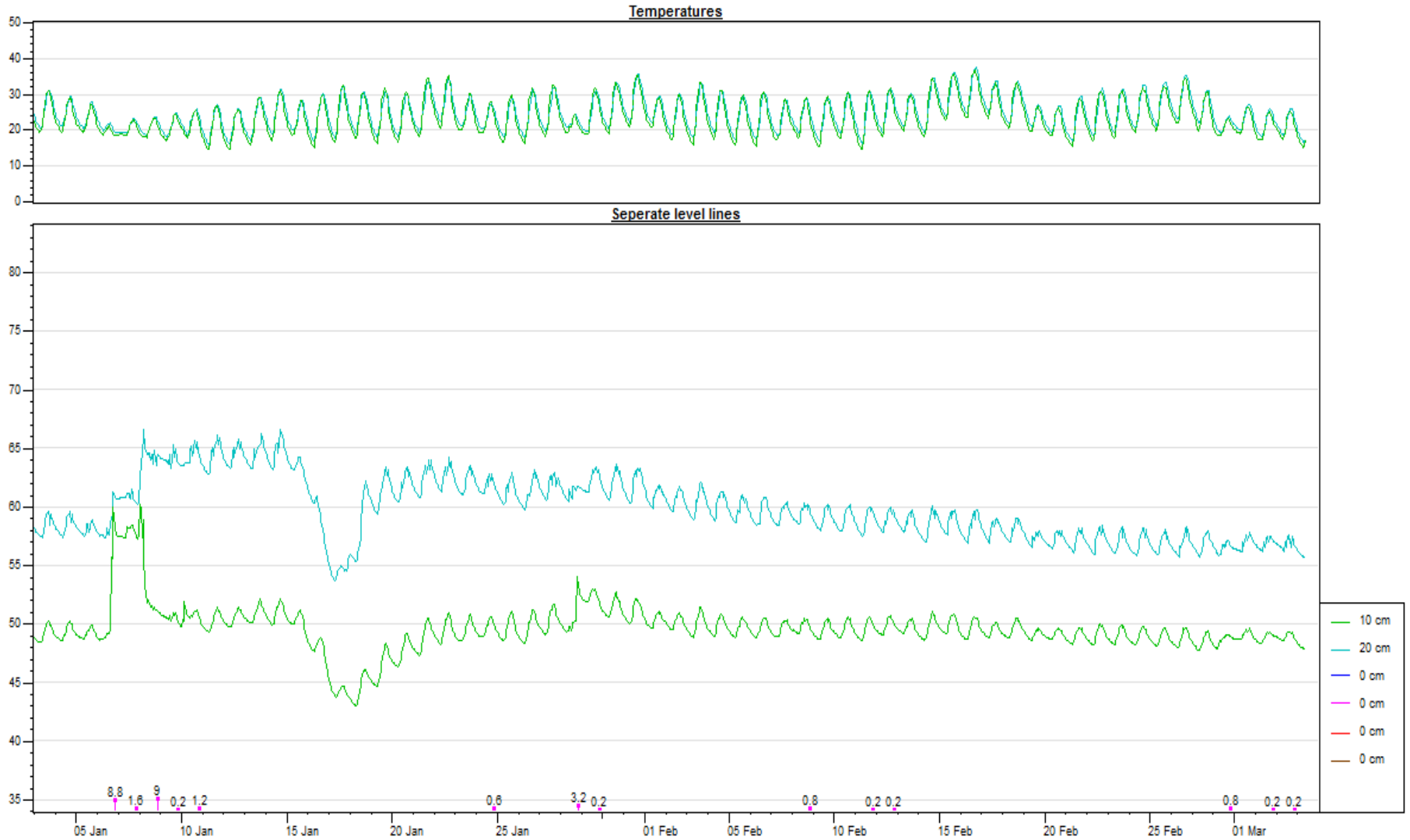
ED difference decrease: more drainage

Mother stock – What do we record?



Typical graph on DFM probe Utilities

Block seperate level lines: (2147) N20 Safari S2 /



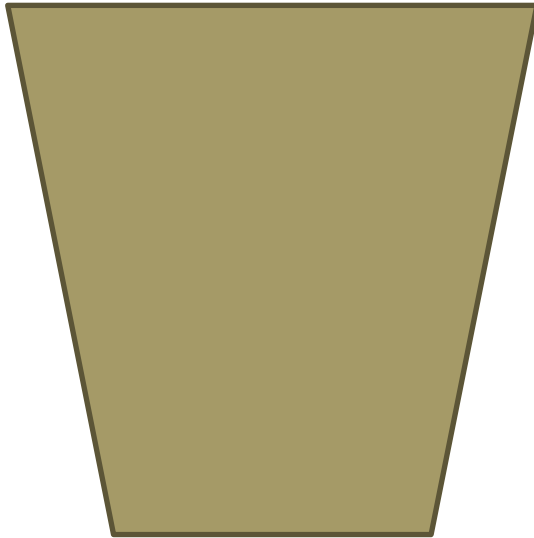
Mother stock – What do we record?



Davis weather station



Mother stock – What else do we measure?



Once a month:

1:1.5 v/v water extract

pH

EC

Nitrate

Phosphorous



Every second week:

Growth tracking

Irrigation control points

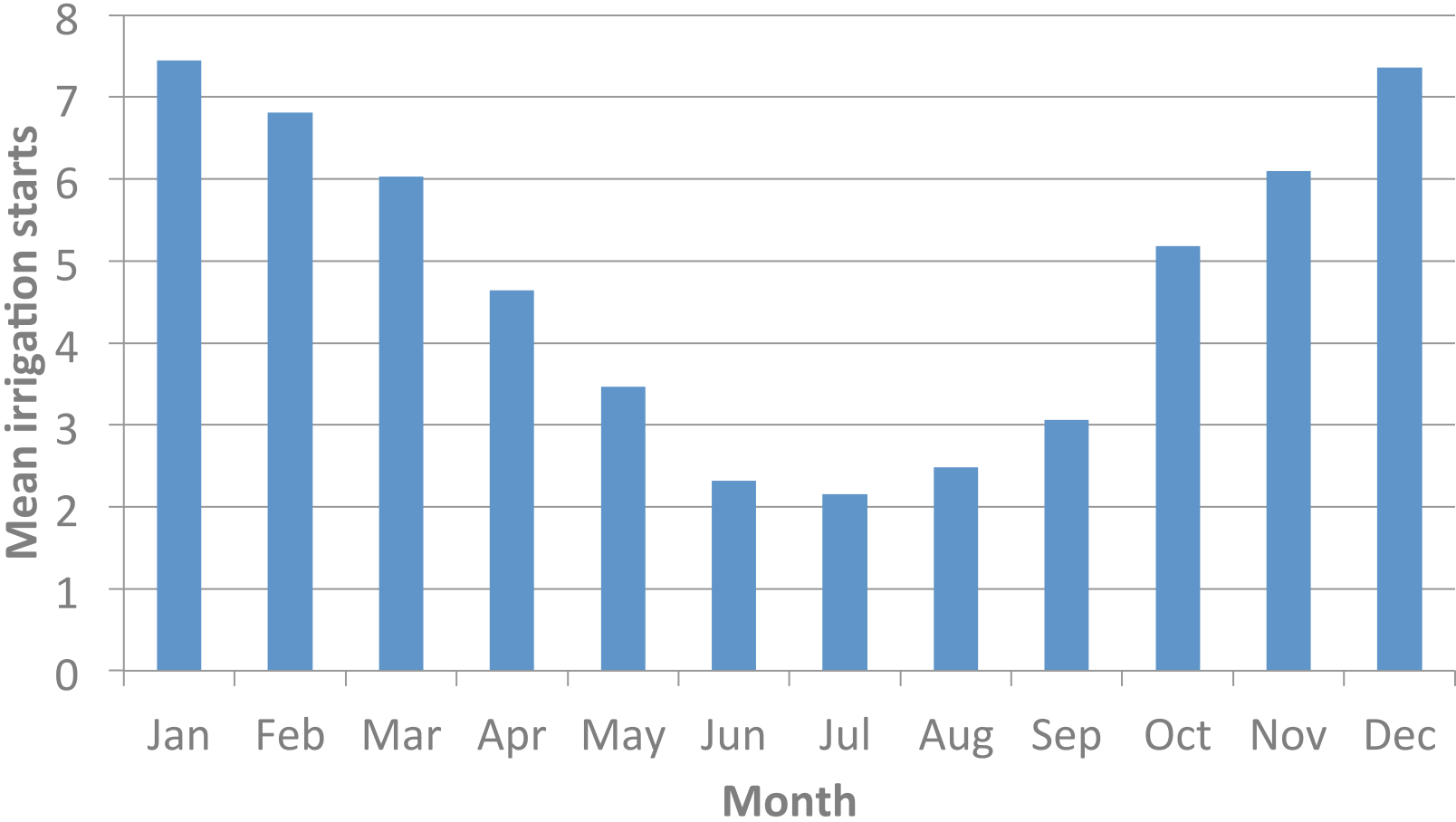
1. Solar Counter



2. Irrigation time

What do we record?

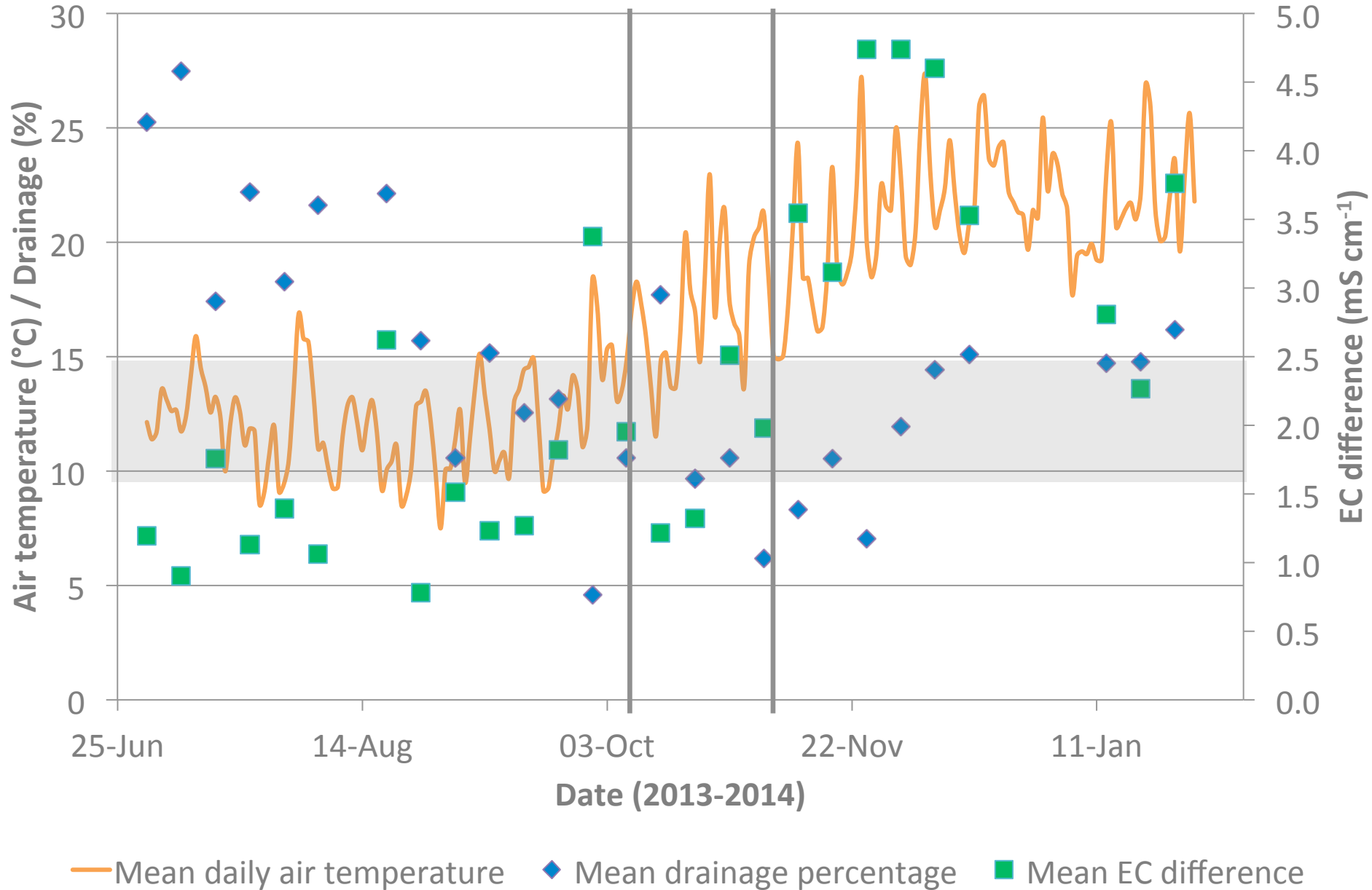
Mean irrigation starts per month



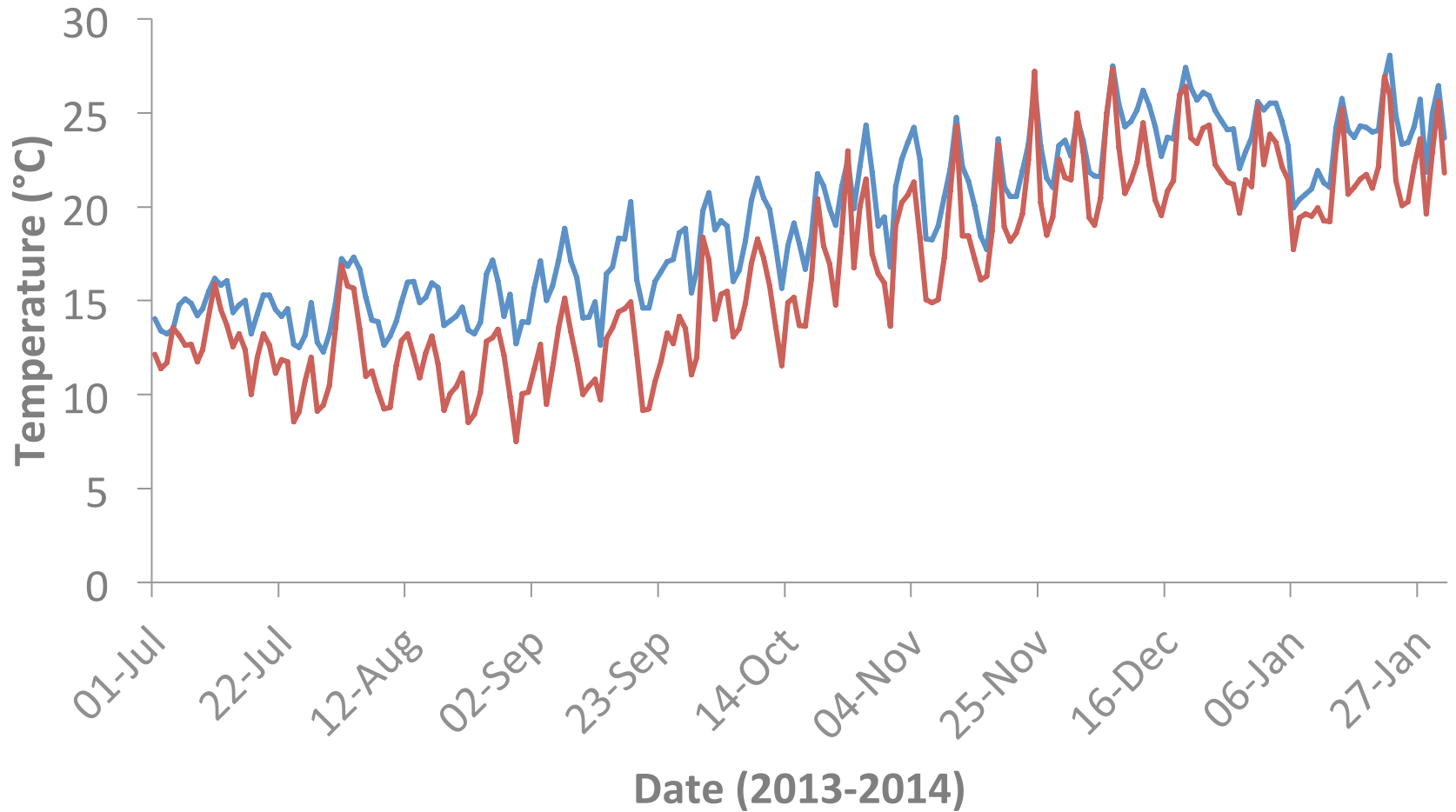
Correlations between measurements and temperature

	Mean soil moisture (%)	Mean weekly drainage (%)	EC difference calculated weekly (mS cm ⁻¹)
Mean daily air temperature (°C)	-0.61	-0.56	0.75
Mean daily maximum air temperature (°C)	-0.59	-0.56	0.71

Temperature, EC difference and drainage



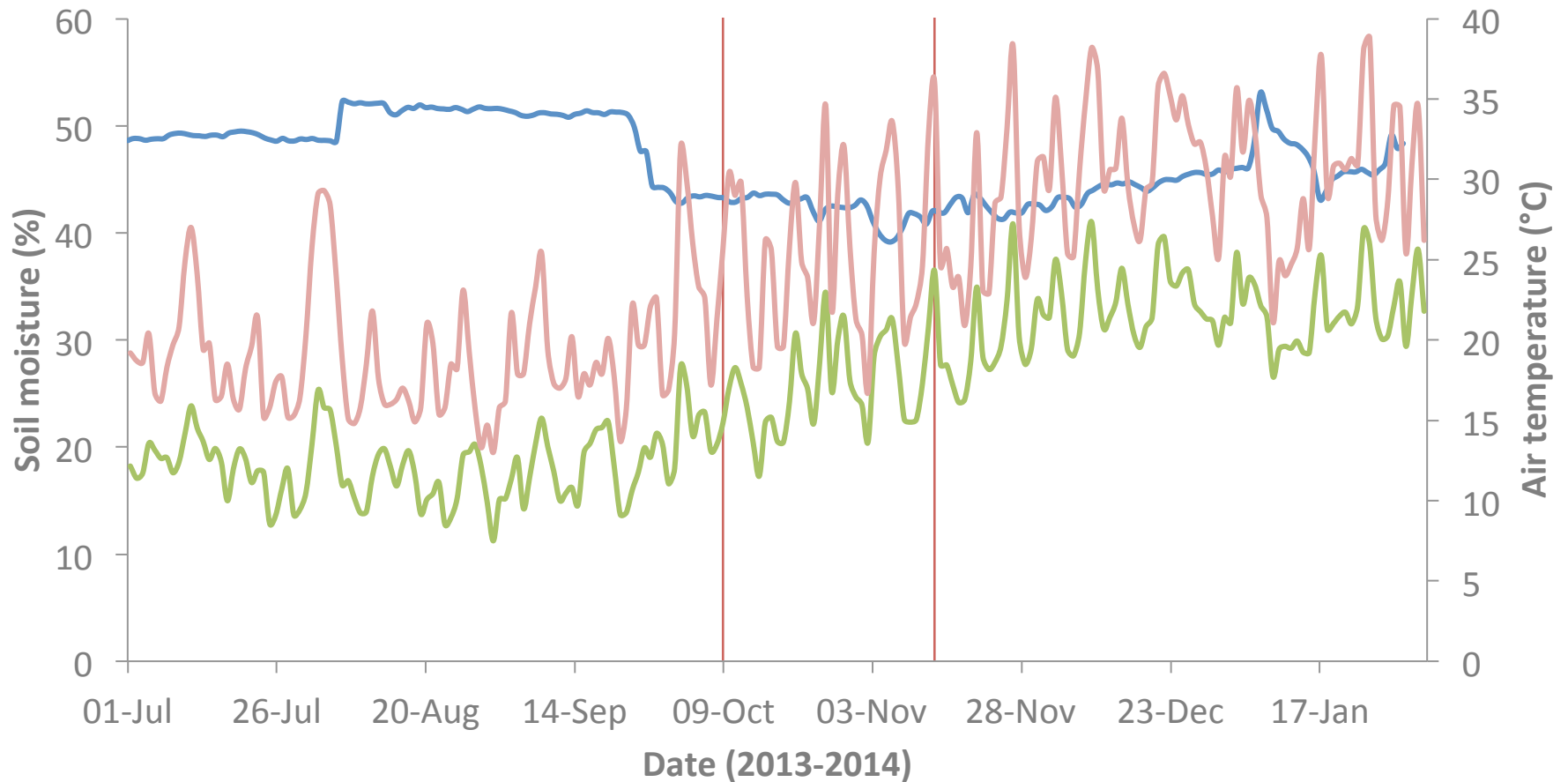
Air and probe temperature



— Mean daily probe temperature

— Mean daily air temperature

Probes and temperature



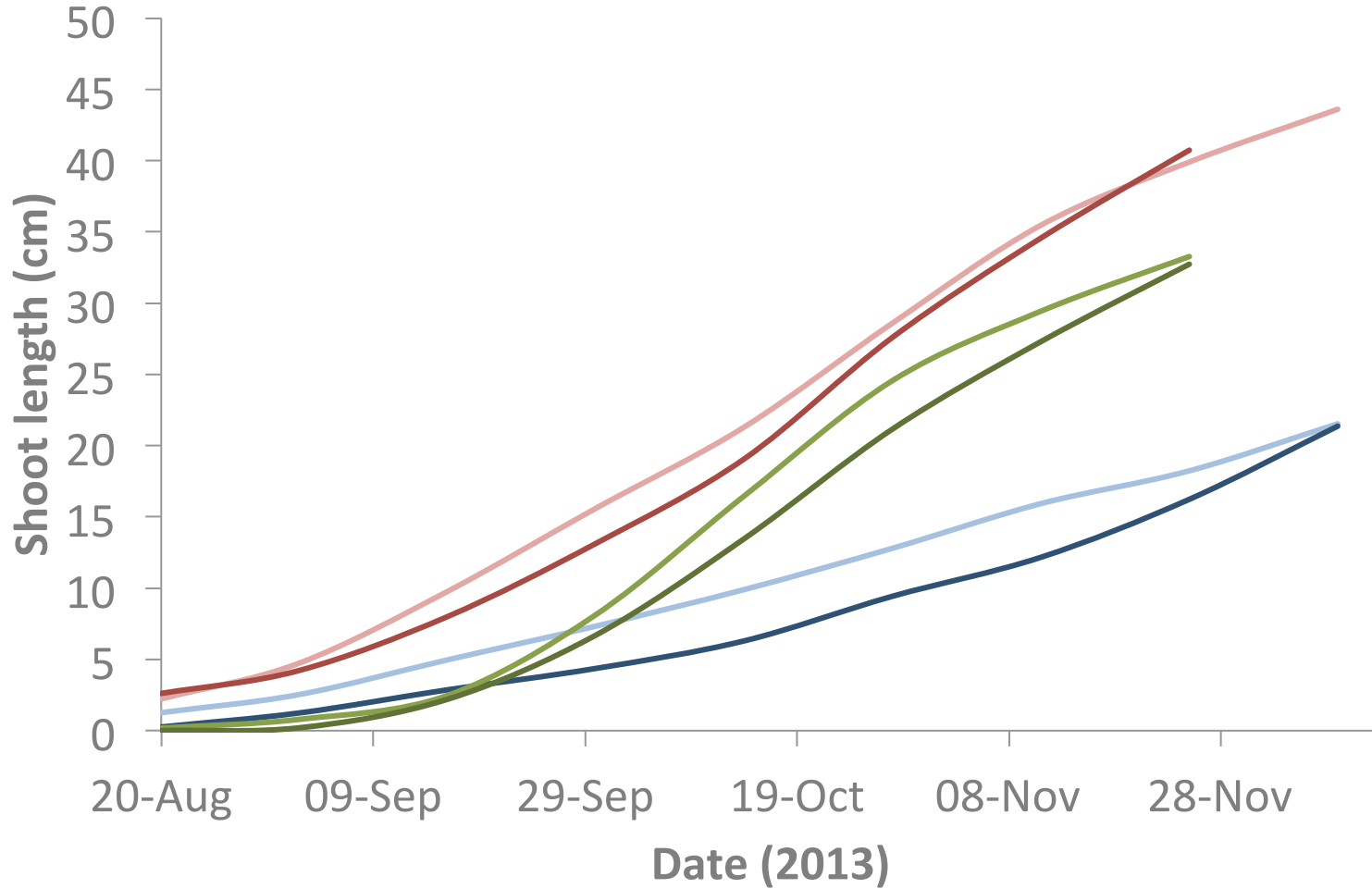
Count changes

Mean daily air temperature

Mean daily soil moisture

Mean daily maximum air temperature

Growth tracking - last graph...



- Jester Y2
- Safari Sunset Y2
- Tango Y2
- Jester Y1
- Safari Sunset Y1
- Tango Y1

Thank you!

