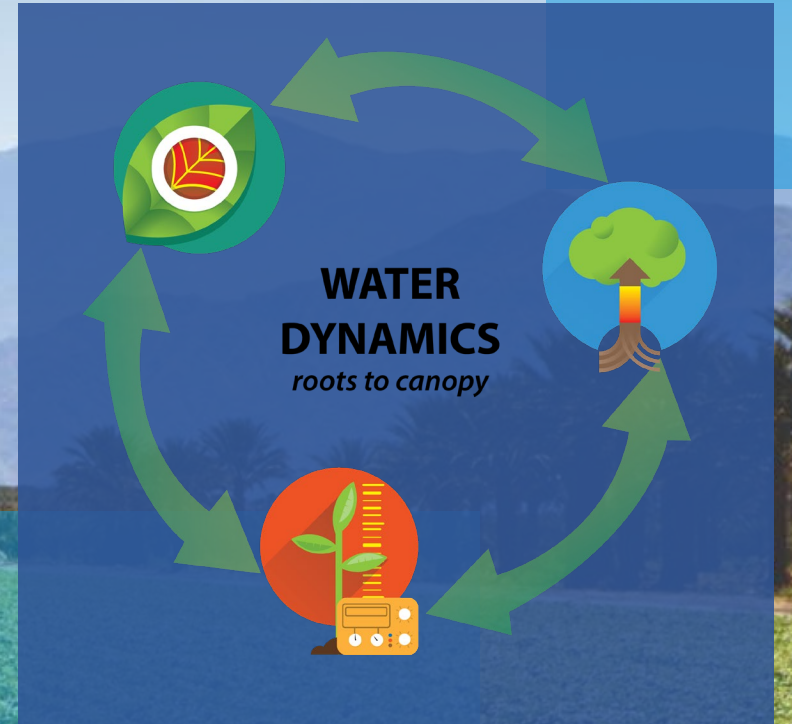


Grape Installation Presentation



Dynamax



Melissa Paris



Dynamax – The Company

- 25+ Years of Experience in Sap Flow Technology
- (4) Patents related to sap flow sensors and irrigation control
- Main office in Houston, Western Office in Fresno
- Worldwide Distribution – 30 countries
- US Distributor for Delta-T Devices, Gill Instruments, and ForceA
- Systems integrators for Campbell Scientific
- World Leading Precision Ag Electronics / Plant Science Research



Dynamax – Leading precision sensors to agriculture

Dynamax
Delta-T
ForceA
Gill

Canopy Analysis -
Nitrogen
Polyphenols
Anthocyanins
Leaf Temp - Stress

Soil Moisture & Temperature

EC- Conductivity

Hydraulic Properties

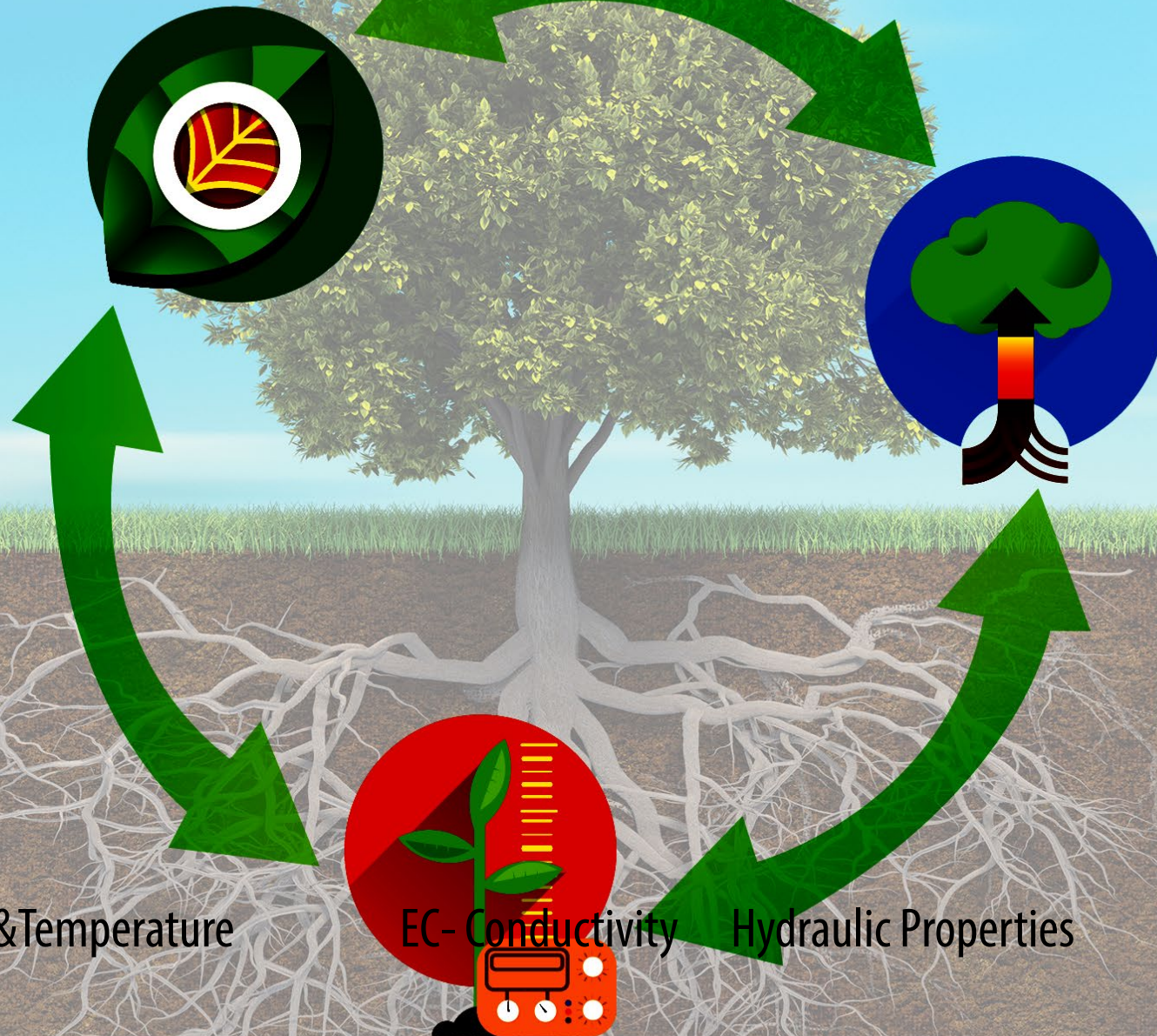
Sap Flow

Water
Dynamics

Transpiration

ET & weather

Crop Coefficient





Dynamax Customers & Markets

Universities, Research Institutions

USDA-ARS, Forest Service, NRCS

EPA, NASA, USGS, DOD, US Army, Navy

Agricultural Research Companies

Viticulture, Fruition Sciences

Growers, Farmers, Orchards & Field Crops

Wind & Solar Energy

Ships, Offshore, Data Buoys

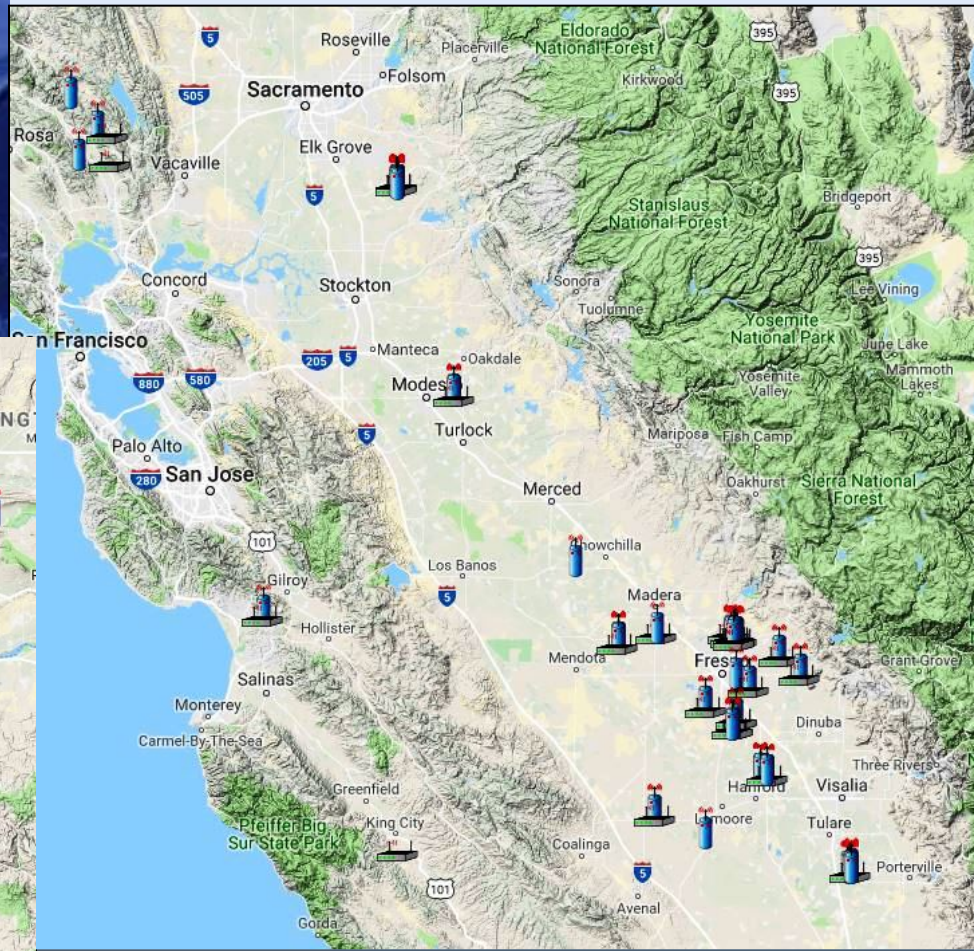
Sports Fields & Turf Grass Managers





Dynamax – Commercial Sensors for Agriculture

Sap Flow – 4th Generation by Dynamax
Soil Moisture – 5th Generation by Delta-T





Sap Flow Sensors

Measurement of Plant Transpiration

g/hr, Gals/hr, Gals/Day, mm/d

Heat Balance

$\text{Heat}_{in} = \text{Heat Sap Flow } (Q_f) + (Q_r) \text{ (heat out)}$

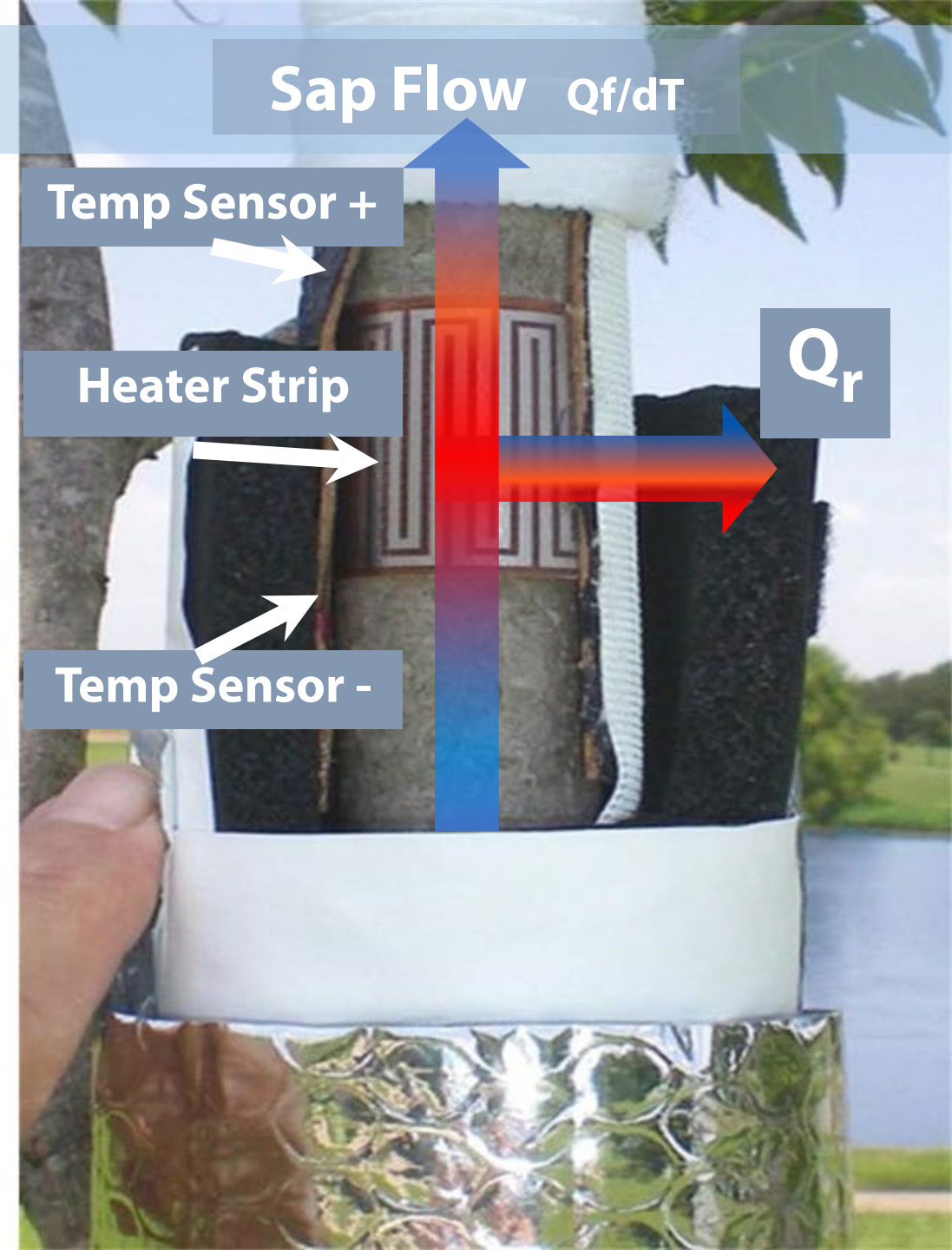
*Converted by Temperature (~2-3 deg) and C_p

Range of Sizes

2 mm up to 150 mm (6")

Works on Most Crops and Trees

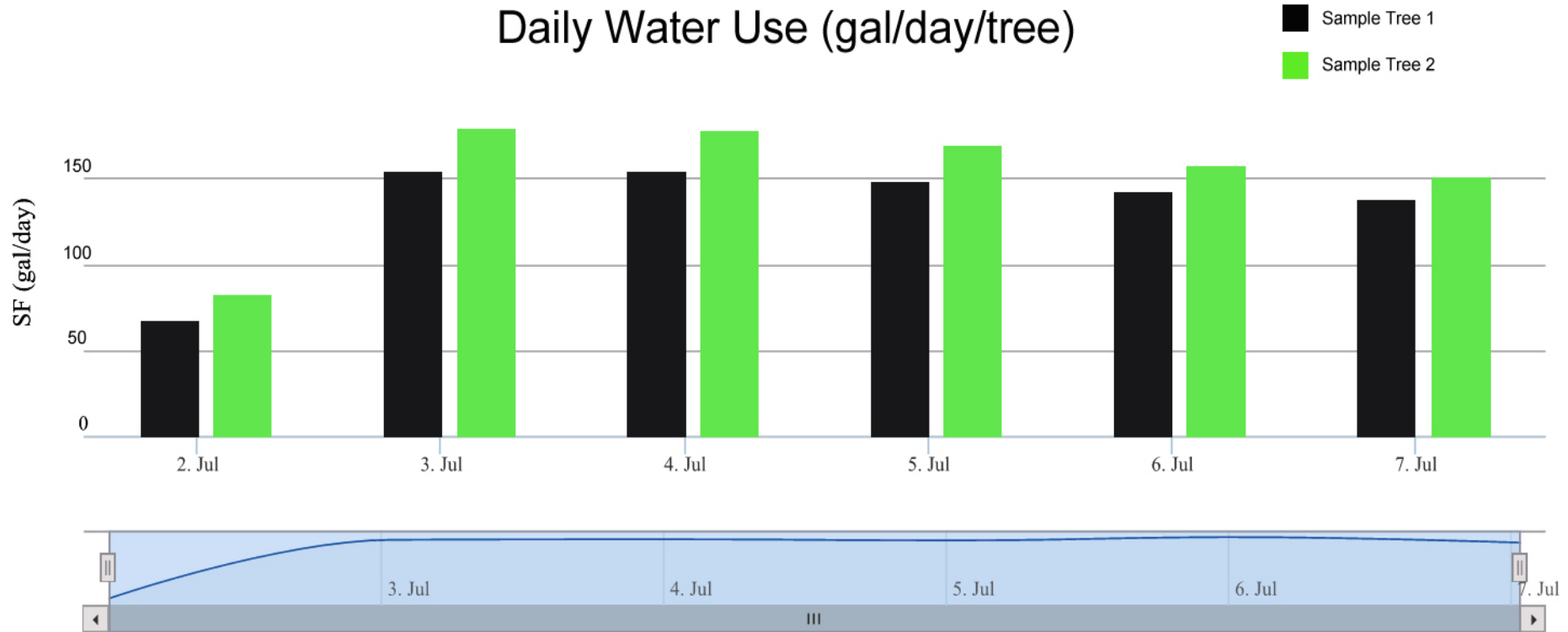
Woody or Herbaceous Plants





SapIP Wireless System

Create Water Budgets and Conserve Water Usage



Per tree water use is extrapolated to entire irrigation zone, trees/acre



Add SapIP-IRT Infrared Temperature Sensor



- Add IRT Sensors to SapIP Wireless Network
- Monitor Leaf Temp & Plant Stress
- 0.5 C Degrees Accuracy
- Wireless, Analog, or SDI12 Versions
- Can be used with Center Pivot systems
- SALH Stress Accumulator Logger
- CWSI or iDANS Models Built In
- Receive Frost Warnings
- Developed in conjunction with USDA-ARS

Installation of Sap Flow Sensors on Grape Plants

SGEX25 sap flow sensors

Grape Cordons



Prepare the stem by smoothing the thin bark, or removing thick bark with sandpaper if necessary.

Wash with soapy water.

Measure the stem diameter in mm..

Spray a thin layer of canola oil around the stem.

Add a small amount of G4 grease and coat the insides of the sensor.

Install the sensor around the stem. Tuck in and overlap the heater strip.



Wrap the stretchable Velcro strap around the sensor from top to bottom.

Attach the cable.

Install the white waterproof membrane cloth with tape at the top and at the bottom.



Install the (3) foam bodies with Velcro straps.



Install bubble shield around the entire sensor and tape in place.

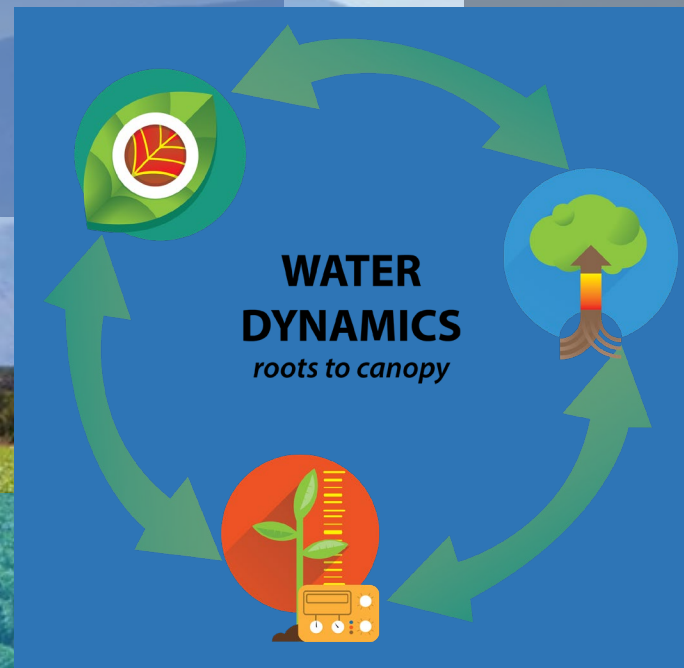




Dynamax



THANK YOU



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