Discussion Topics

Soil Web Survey
- Define an AOI
- Retrieve soil information
  - Texture, EC, AWHC
- Generate a soil report

CIMIS
- Different uses for ET₀ values
  - Irrigation scheduling
  - Water budget
- CIMIS-based resources
  - WaterRight
  - Water Destination Graph

Water Destination Graph
- NRCS Irrigation Visualizer
Discussion Topics
Soil Web Survey
• Define an AOI

**Step 1**
Click - opens new tab

**Step 2**
Grey Font - inactive tab; Single tier
Expand/collapse menu
Soil Web Survey

- Define an AOI

**Step 3**

Type in address & click view

**Step 4**

Rectangular or irregular shape AOI
Zoom in/out, move map
AOI marker
Soil Web Survey
- Define an AOI

**Step 5**

- Edge of AOI boundary;
- Single click sets point; double click closes polygon

Tab still greyed out

Note AOI type selected
Soil Web Survey

- Define an AOI

**Step 6**

Tabs now active

Once AOI is set, NRCS server loads data for area.
Soil Web Survey

• Retrieve soil information
  • Texture, EC, AWHC

Step 1

Variety of tabs now available; Note single tier

Click on tab
Soil Web Survey

- Retrieve soil information
  - Texture, EC, AWHC

**Step 2**

Note that a second tier is available.

Texture, EC, AWHC

Soil map
Soil Web Survey

- Retrieve soil information
  - Texture, EC, AWHC

Step 3

We’ve switched to a new tab in the second tier; nothing has changed in the first tier

Information classes and menu expand/collapse

We want these two
Soil Web Survey

• Retrieve soil information
  • Texture, EC, AWHC

**Step 4**

- Click EC
- Data Visuals
- Cutoffs
- Get Data
Soil Web Survey

- Retrieve soil information
  - Texture, EC, AWHC

**Step 5**

Processing request; note Greyed-out background

Data layered onto soil map and listed in table as per prior selection

Look at top of page

Mostly clay loam

Running "Electrical Conductivity (EC)"...
Soil Web Survey

- Retrieve soil information
  - Texture, EC, AWHC

**Step 6**

Can personalize it a bit

Tells server what data set to queue
Soil Web Survey

- Generate a soil report

**Step 1**

We’re going here

Can add more personalized information

Can’t remove greyed selections

Our previous selections add automatically
Soil Web Survey

- Generate a soil report

Step 2 +

Get now opens tab with pdf

pdf is being generated

Generating custom soil resource report...

Here it is!

Custom Soil Resource Report for Ventura Area, California

WSARE Demo Report
Discussion Topics
Soil Web Survey
CIMIS

Dispersed, so easy for growers to question relevance...

Geographic zones... doesn’t address microclimates, transitional areas...

On-site instruments ideal but do the growers know how to use the data?
Discussion Topics
Soil Web Survey

CIMIS - GROUND TRUTH! Approach isn’t simple or foolproof....

- Different uses for $E_{To}$ and system variability makes it complicated and tough to dial in....
  - Irrigation scheduling = sensitive to emission deviations and crop coefficients
  - Water budget = sensitive to placement and wetted area values
  - So to help mitigate disaster...take it Slooow and Ground Truth!

Soil sensors measure how “thirsty” soil is - this correlates with plant water stress.

Sensors above & below the root zone help monitor soil moisture & limit plant water stress and leaching.
CIMIS
- CIMIS-based resources
  - WaterRight

Web Link
Edit existing or add new

Helpful Links
Please note that CIMIS is not responsible for the content of these sites.

Water Use and Efficiency Branch (WUE)
California Department of Water Resources (DWR)
WATERIGHT
California Data Exchange Center (CDEC)
California Land & Water Use
CIMIS
- CIMIS-based resources
  - WaterRight

Need to populate, some are self generated

Output!
Irrigation scheduling is based on concrete principles but just talking about those principles makes them abstract.

WDG may help put things into relative perspective....

ALL CREDIT TO MARK BARNETT ET AL. & NRCS
Water Destination Graph
- NRCS Irrigation Schedule Visualizer

Standard input field; edit yellow cells

Calculation Field

ET water loss (Grey)

Applied water depth (Green)

Irrigation management curve (Blue)
Water Destination Graph

- NRCS Irrigation Schedule Visualizer

“In Your Dreams” scenario...

ET = applied water & perfect DU

All curves are now lined up; water budget is balanced
Water Destination Graph
• NRCS Irrigation Schedule Visualizer

An ET increase...

NOTE: There’s been no “water” or “management” change; crop is now being under-irrigated

... shows as deeper water loss
Water Destination Graph
• NRCS Irrigation Schedule Visualizer

What about a return to 0.05 ET but an increase in applied water?

Depth of water loss is shallow...

... applied water depth is deeper.
Water Destination Graph

- NRCS Irrigation Schedule Visualizer

What about a return to 0.05 ET and 4 hour set, but a poor DU?

All low quarter trees under-irrigated

Only half of entire population getting adequate irrigation.
Water Destination Graph
• NRCS Irrigation Schedule Visualizer

No worries…

- Correct the DU
- Adjust the set time

…and…

- GROUND TRUTH!

“Real-world” water use, in balance with a minimal amount of leaching.