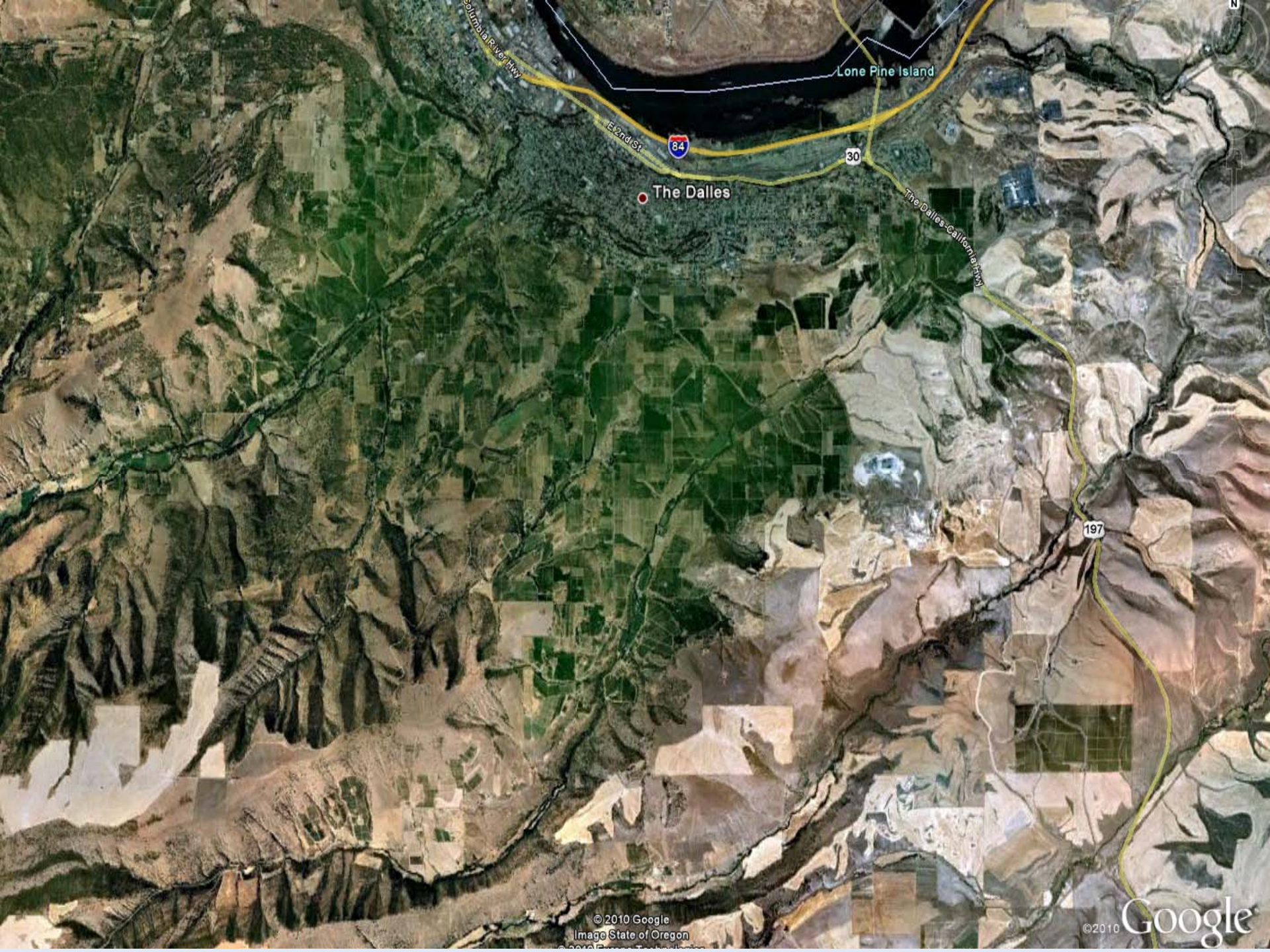
SWD Management at Omeg Family Orchards

Presented by

Mike Omeg

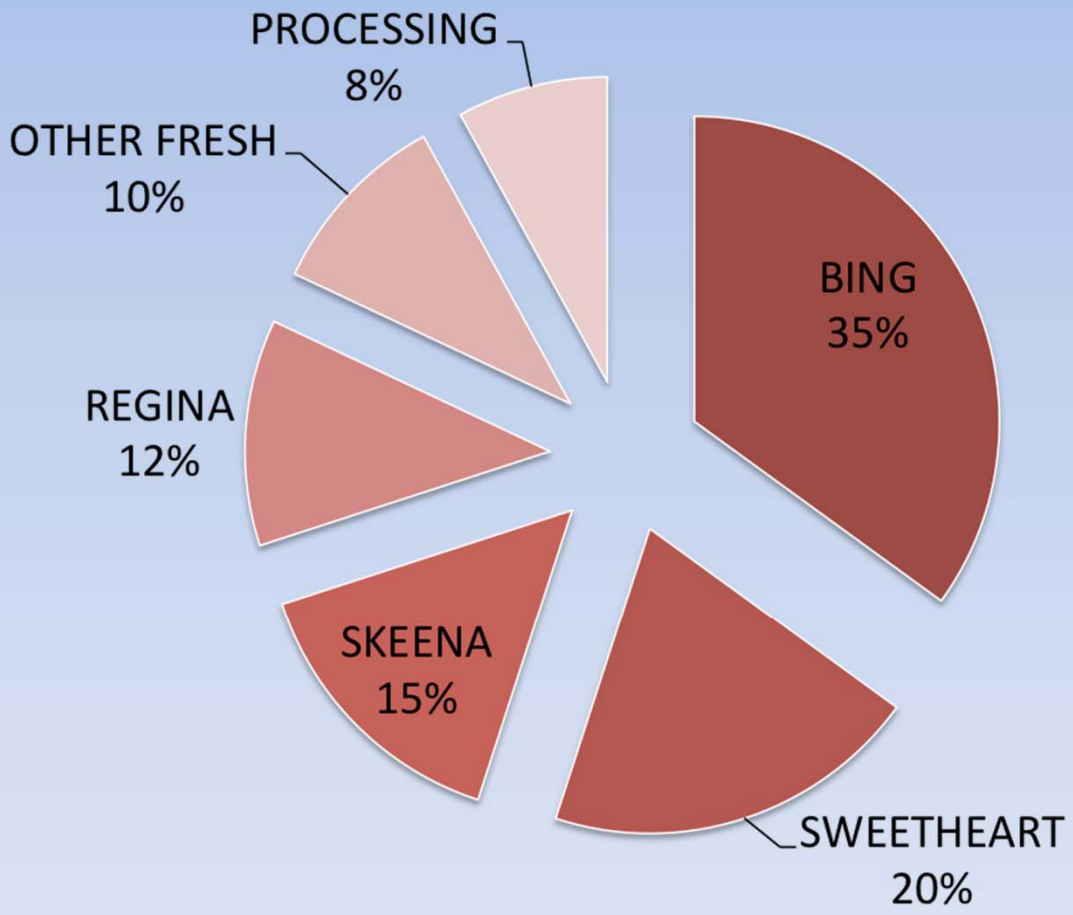

Lone Pine Island
E 2nd St
84
30
The Dalles
The Dalles-California Hwy
197
© 2010 Google
Image State of Oregon
©2010 Google

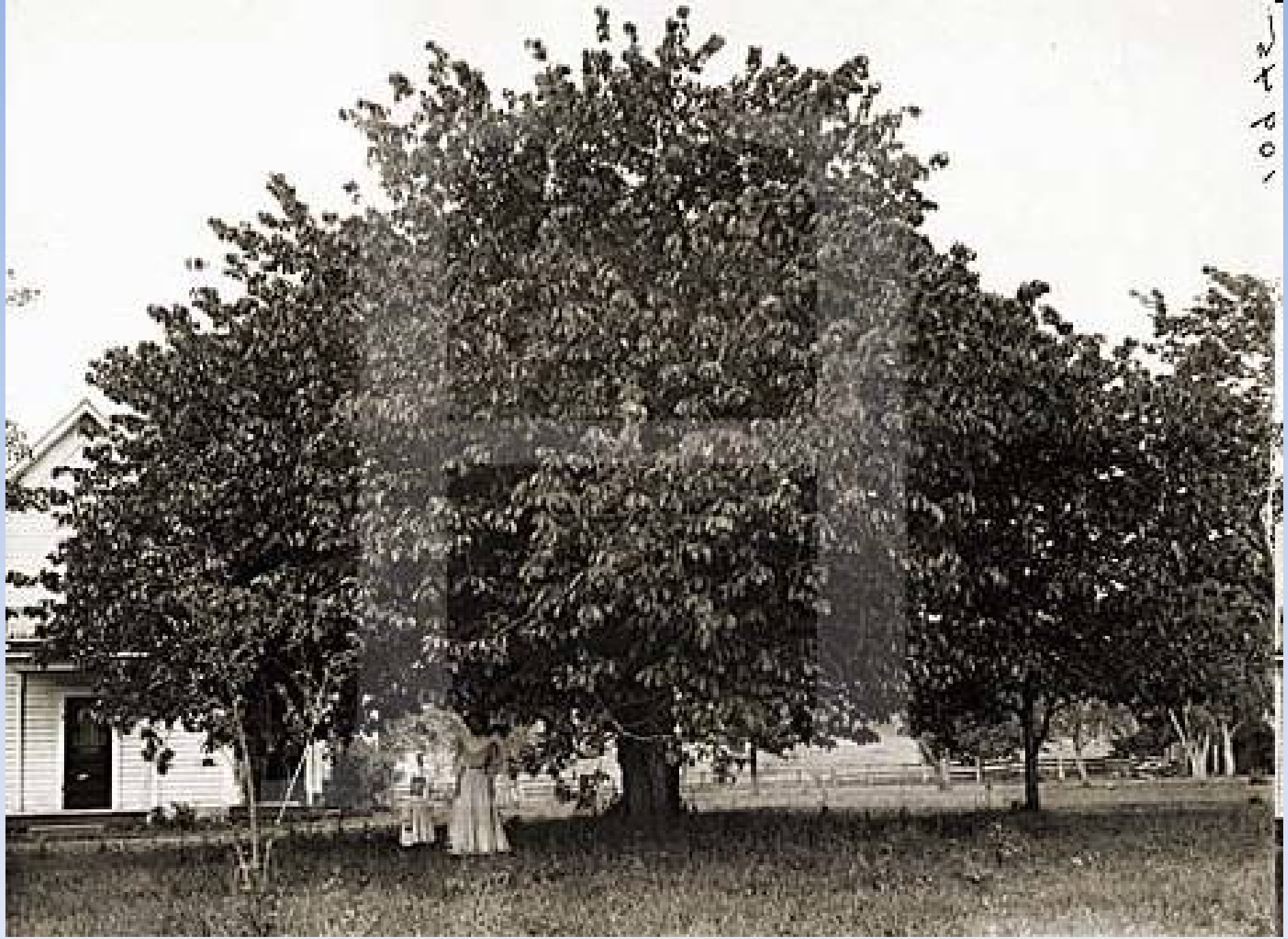
About Omeg Orchards

- Five generation farm established in 1908
- 23 field staff
- 2½ support staff: office and mechanics
- 2 production managers
- 260 additional seasonal staff in harvest
- Picked 3,660 tons total over 45 days in 2012

Export is our target market

2,000 tons picked in 2012





This cherry tree yielded 2034 pounds of fruit in 1908, Creswell, Oregon

Culture of conservation and innovation

- Weather stations to run degree-day models for pest and disease management.
- Soil moisture monitoring for irrigation water management.
- Nutrient management including monitoring, mulches, compost and cover crops
- Maintain habitat for natural allies
  - Native pollinators
  - Predator/parasitoid insects
  - Winged allies- Bluebirds, Kestrels, Owls and Bats
  - Practice IPM principles
- Cooperating with Extension and our own on-farm trials to research
  - Cherry varieties
  - Pruning techniques
  - Nutrient programs
  - Pest and disease management


SeaHelix

Flow Meter Display

Soil Moisture Probes

- Monitor changes in soil moisture levels.
- Allow growers to see effects of irrigation sets.
- Let growers double check irrigation scheduling programs.
- Not all are created equal. Some are much better than others!
- Whatever you use you need to understand what the numbers mean.
- Proper installation and placement is critical.

Photo by M. Stewart

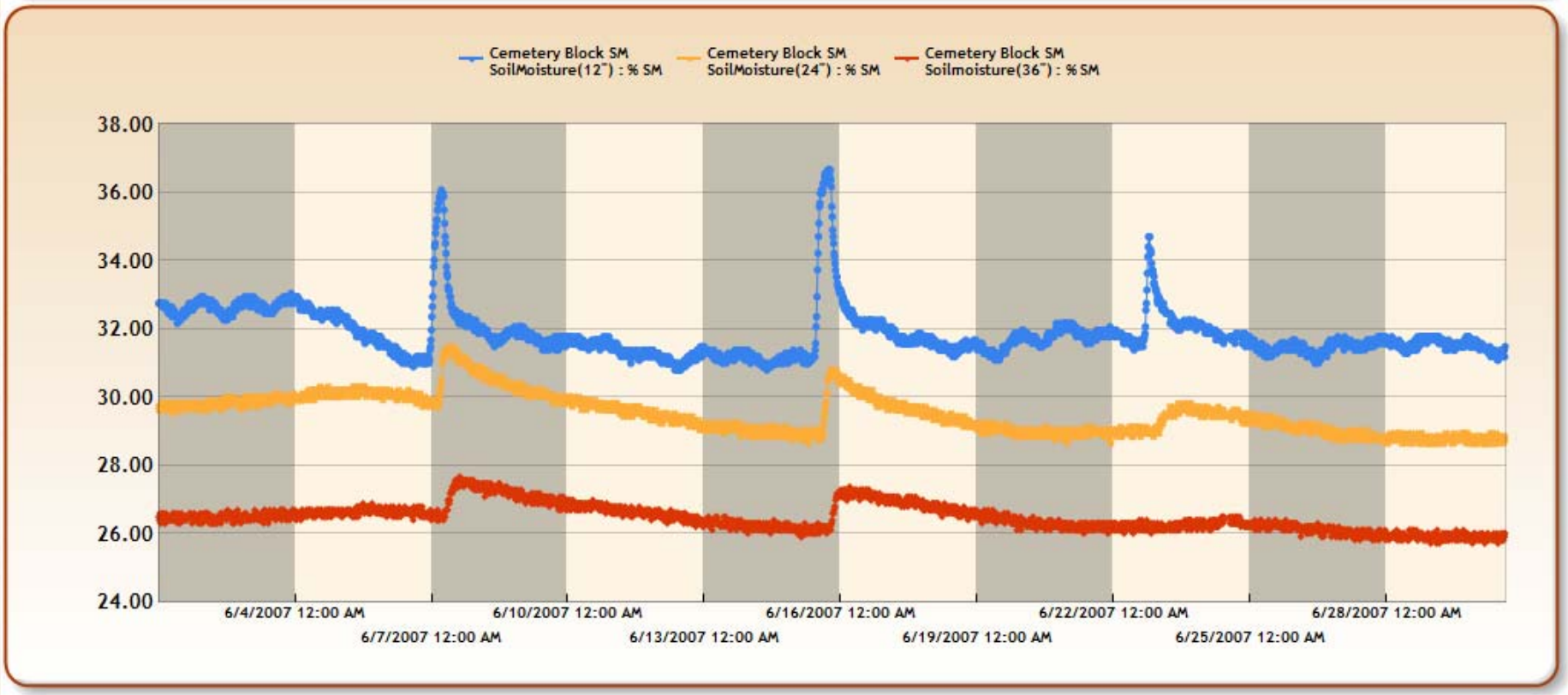
STATION GRAPH

IFPnet
INTEGRATED FRUIT PRODUCTION

Home Help Links About Syster | Admin Menu | Go

Station_Data | **Station_Graph** | Alarms | Digital_I/O | Irrigation | Models | Sensor_Map | Graph Models

This is the new graphing page, if you wish to use the old one, it is here:



Add Sensor to Graph | WyEast | Cemetery Block SM | Soilmoisture(36") | Add Sensor

From: 06-01-2007 00 00 00

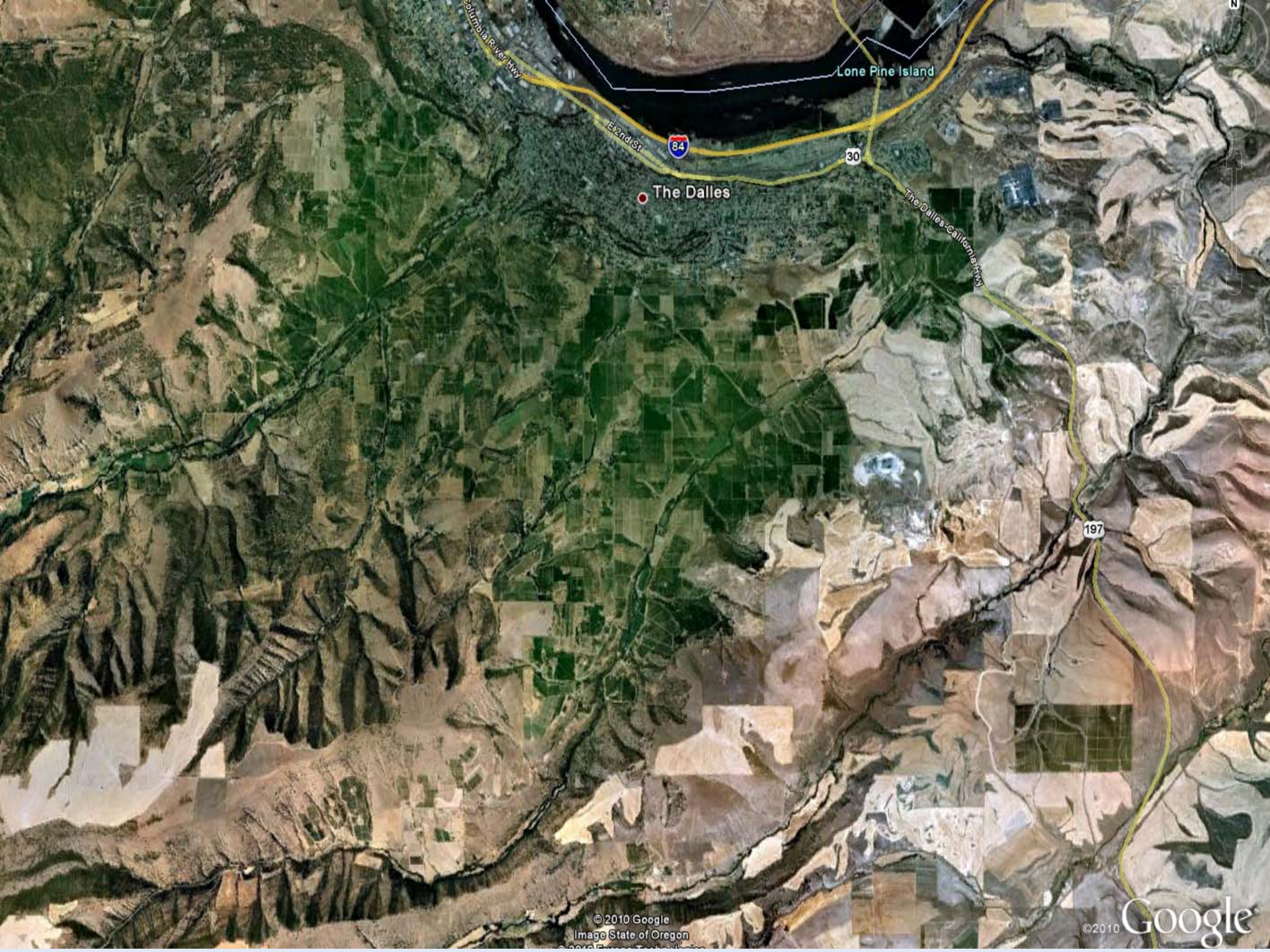
To: 06-30-2007 14 47 51

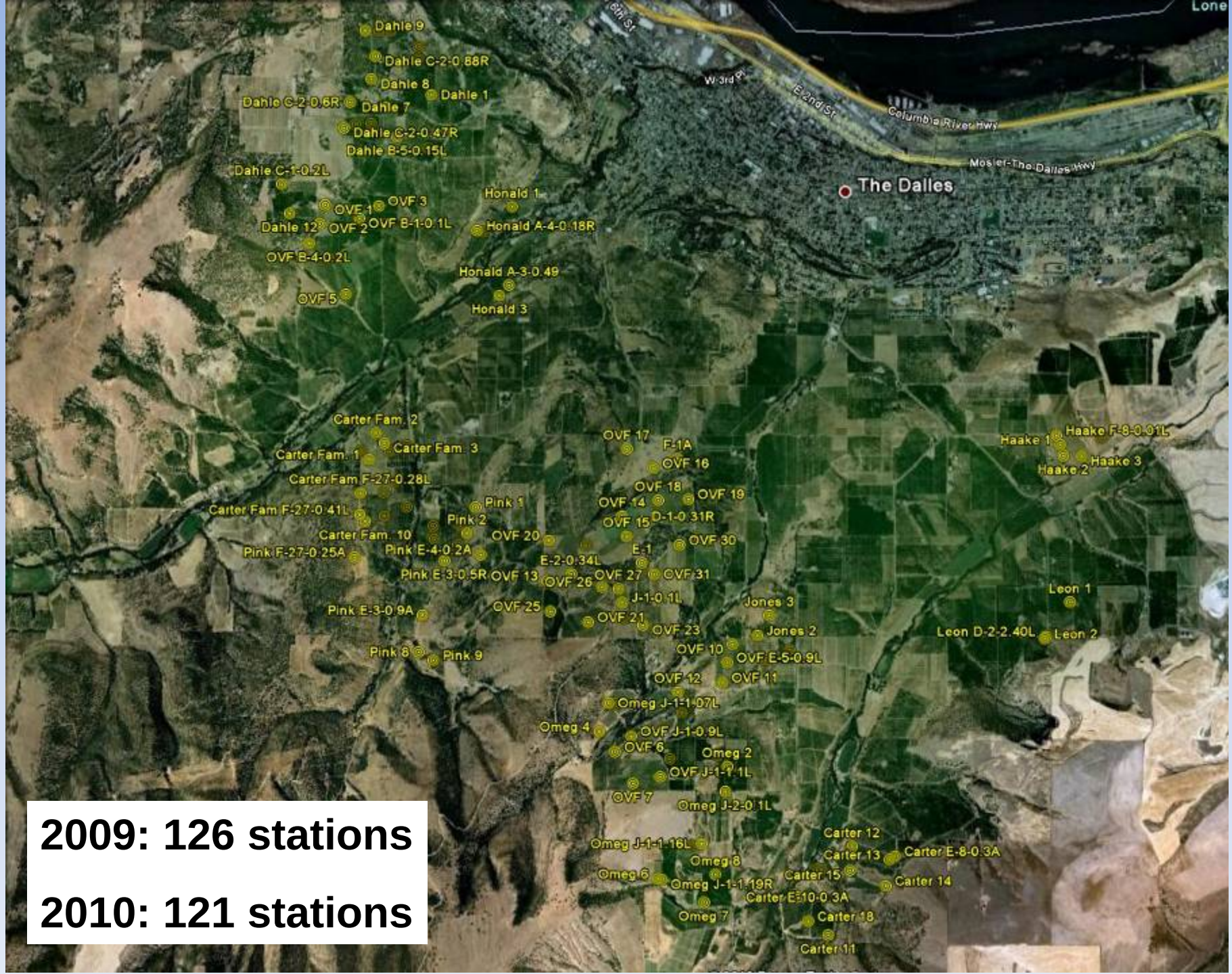
Select Group to Graph | Cherry Valley | Delete

Add These Sensors to new Graphing Group

Redraw Graph

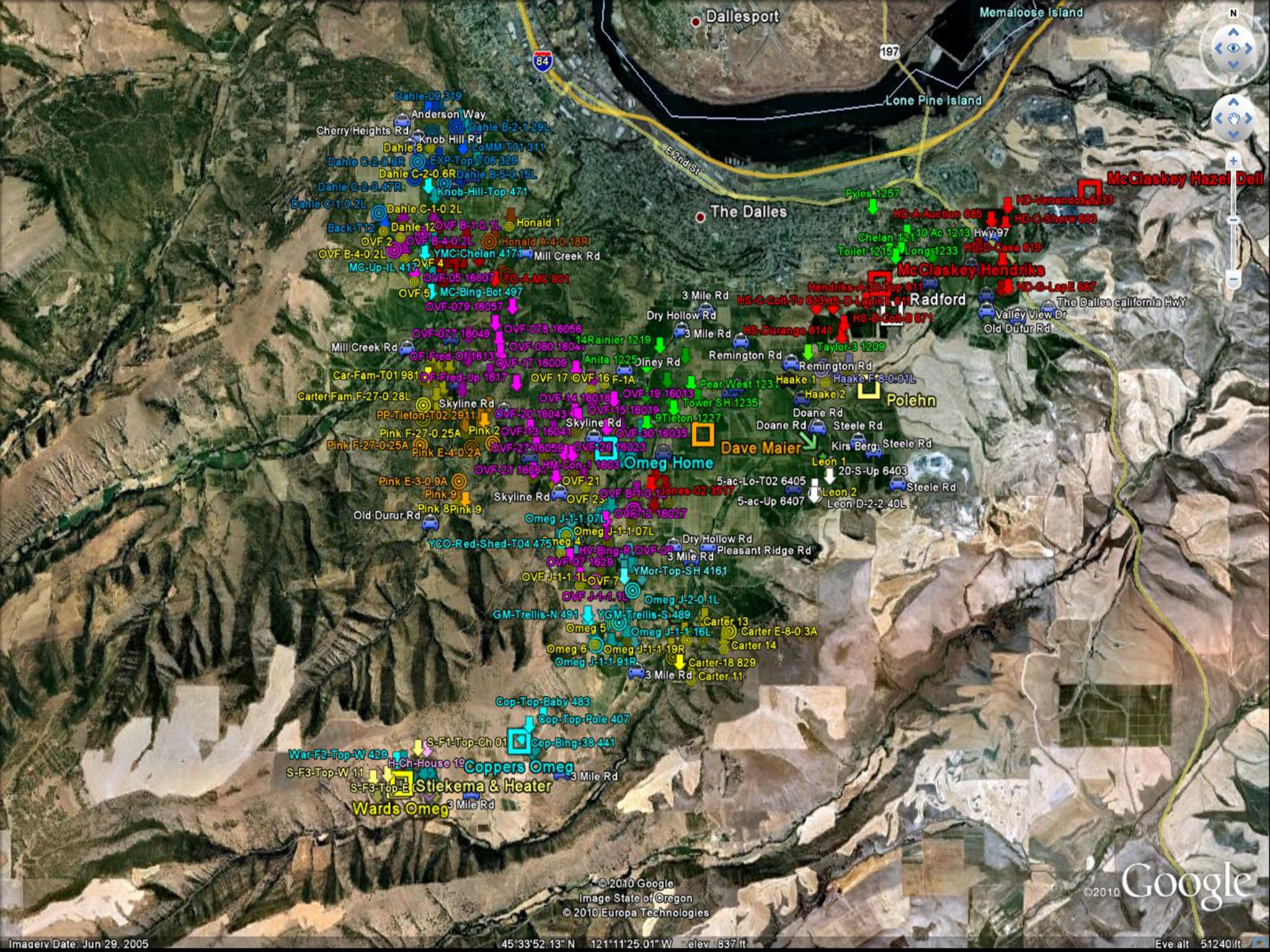
Clear Graph


Lone Pine Island
E 2nd St
84
30
The Dalles
The Dalles-California Hwy
197
© 2010 Google
Image State of Oregon
©2010 Google



2009: 126 stations

2010: 121 stations


Dallesport
Memaloose Island
Lone Pine Island
The Dalles
Radford
Polehn
Dave Maier
Omeg Home
Coppers Omeg
Stiekema & Heater
Wards Omeg
McClaskey Hazel Dell
McClaskey Hendriks
Anderson Way
Cherry Heights Rd
Knob Hill Rd
Mill Creek Rd
Skyline Rd
Old Dufur Rd
Dry Hollow Rd
Pleasant Ridge Rd
Remington Rd
Steele Rd
Doane Rd
3 Mile Rd
Valley View Dr
The Dalles california HwY
Hwy 97
E 2nd St
Dahle-09 319
Dahle B-2-1.29L
Dahle 8
LoMM-T01 311
EXP-Top-T06 329
Dahle C-2-0.6R
Dahle B-5-0.15L
Dahle C-2-0.47R
Knob-Hill-Top 471
Dahle C-1-0.2L
Back-T12
Dahle 12
OVF B-1-0.1L
Honald 1
OVF 2
OVF B-4-0.2L
Honald A-4-0.18R
OVF B-4-0.2L
YMC-Chelan 4171
MC-Up-IL 417
OVF 4
OVF-05 16007
TO-A-MC 901
OVF 5
MC-Bing-Bot 497
OVF-079 16057
OVF-077 16049
OVF-078 16056
OVF-080 16047
14Rainier 1219
Mill Creek Rd
OF-Fred-OT 1613
OVF-17 16009
Anita 1225
Diney Rd
Car-Fam-T01 981
OF-Fred-Up 1617
OVF 17
OVF 16
F-1A
Pear West 123
Carter Fam F-27-0.28L
Skyline Rd
OVF-14 16018
OVF-19 16013
Tower SH 1235
PP-Tieton-T02 2911
OVF-20 16043
OVF-15 16019
Tieton 1227
Pink F-27-0.25A
Pink 2
OVF-13 16041
OVF 30 16035
Pink F-27-0.25A
Pink E-4-0.2A
OVF-27 16059
OVF-26 16023
OVF-21 16061
HM-Con-1 1603
Pink E-3-0.9A
OVF 21
Pink 9
Skyline Rd
OVF 25
OVF B-1-0.1
Jones-02 3517
Pink 8
Pink 9
Old Durur Rd
OVF-12 16027
Omeg J-1-1.07L
Omeg J-1-1.07L
YCO-Red-Shed-T04 475
Omeg 4
HV-Bing-R OVF-08
OVF-07 1629
YMor-Top-SH 4161
OVF J-1-1.1L
OVF 7
OVF J-1-1.1L
Omeg J-2-0.1L
GM-Trellis-N 491
YGM-Trellis-S 489
Carter 13
Omeg 5
Omeg J-1-1.16L
Carter E-8-0.3A
Omeg 6
Omeg J-1-1.19R
Carter 14
Omeg J-1-1.91R
Carter-18 829
3 Mile Rd
Carter 11
Cop-Top-Baby 483
Cop-Top-Pole 407
S-F1-Top-Ch 01
Cop-Bing-38 441
War-F2-Top-W 429
H-Ch-House 19
S-F3-Top-W 11
3 Mile Rd
S-F3-Top-E
3 Mile Rd
Pylee 1257
HD-Venandoah 6133
HD-A-Auction 685
HD-C-Sherw 683
Chelan 1211
10 Ac 1213
Toilet 1215
Long 1233
HD-D-Case 619
Hendriks-A-30-Top 611
HD-C-LapE 687
HS-C-Colt-To 603
HS-D-Lapine 615
HS-B-Colt-B 671
HS-Durango 6141
Taylor-3 1209
Haake 1
Haake F-8-0.01L
Haake 2
Doane Rd
Steele Rd
Kirs Berg
Leon 1
20-S-Up 6403
5-ac-Lo-T02 6405
Leon 2
5-ac-Up 6407
Leon D-2-2.40L
©2010 Google
Image State of Oregon
© 2010 Europa Technologies
Imagery Date: Jun 29, 2005
45°33'52.13" N 121°11'25.01" W elev 837 ft
Eye alt 51240 ft

Pollinator Habitat at Orchards

1995 pest management

- ULV Malathion for CFF control
- Lorsban for Scale/Leafroller control
- Provado for aphid control
- Dimilin for leafminer control
- Sevin for leafhopper control
- Generally didn’t have mite problems unless we used Guthion for CFF or leafrollers.

Pest Management Pre-SWD

- We had a very soft and fully implemented IPM program and it was a dream. We had worked years to get the program in place.
- No OP insecticides applied for 9 years.
- Used GF 120 to control CFF
- Used Intrepid and Bt to control leafrollers
- Sometimes used Esteem for scale control- but rarely
- Sometimes used Success for thrips control
- No sprays applied for:
  - Aphids
  - Leafminers
  - Leafhoppers
  - Mites
  - All of the above controlled by beneficial insects

Impact of SWD at Omeg Orchards

- Destroyed our IPM systems
- Increased cost of production
- Increased pesticide use significantly
- Caused economic losses due to fruit damaged by larvae

History of SWD

- Fall 2010- OSU begins trapping and detects massive numbers of flies.
- 2011 Season:
  - Continued with “standard” CFF program- GF120 every 7 days
  - Added Success for SWD in the last two mildew sprays before harvest.
  - The Dalles area had no SWD, Washington had detections in fruit.

2012

- SWD larvae were detected in first fruit to ripen in the area (last week of June).
- Total of 5 sprays applied against SWD
  - Delegate/Success
  - Lambda-Cy
  - Aerial ULV malathion
- Had detections in late Sweethearts (last week of July).
- Late fruit harvested into August had larvae even when sprayed every 7 days with aerial ULV malathion.

2013?

Trapping

- Baits
- Cost effectiveness- labor vs. benefit
- False negatives
- Thresholds?

Factors affecting my management decisions

- Resistance
- Export tolerances
- Worker/food safety
- Beneficial insects & secondary pests
- Drift Issues
- Biggest issue- I cant have worms in fruit

2013 SWD Spray Program

Day	Spray	Early Season	Late Season
0	Mildew 3-straw color	Delegate	Delegate
5	ULV 1	Malathion ULV	Malathion ULV
10	Mildew 4	Danitol	Carbaryl
15	ULV 2	Malathion ULV	Malathion ULV
20	Mildew 5	--	Danitol
25	ULV 3	--	Malathion ULV
30	Mildew 6	--	Success
35	ULV 4	--	Malathion ULV

Potential impacts of an intense SWD program

- Increased costs from spraying more often
- Secondary pests
  - Direct damage
  - Indirect damage
- Resistance in SWD and other pests

Export Tolerances

CONTACT: For additional information contact Debbie Carter or Dr. Mike Willett, Northwest Horticultural Council at 509/453-3193.

Comparison of Maximum Residue Levels for Pesticides Used on Cherries

a - Established until December 31, 2014. Then 0.05 ppm unless modified by a regulation.
c - Codex
p - Proposed

Chemical	Trade Name	U.S.	Codex	EU/UK	Australia	Canada	Japan	Korea	Taiwan
Acetamiprid	**Assail**	1.2	1.5	0.5	1	1.2	2	1.5[c] ←	1←
Azinphos-Methyl	**Guthion**	2	2	0.05	2	1	2	1	2 ←
Azoxystrobin	**Abound**	1.5	2	2	1.5		3	2←	1←
Bifenazate	**Acramite**	2.5	2	0.01	2.5		2	0.3	2

Collapse of IPM Program

- GF-120, Intrepid, Bt and Success/Delegate allowed us to have a textbook IPM program.

- SWD has destroyed our IPM program
  - Disruptive materials – Malathion & Pyrethroids (Danitol, Mustang Max, Asana, etc)
  - Many pesticide applications over a long portion of the growing season.

- We are now spraying for pests once controlled by beneficial insects- aphids, leafminer, leafhopper and mites. Maybe more??

Research Needed for Management

- At present there is very little management of SWD because we don't know much about this pest.
- Effective traps & thresholds
- Temperature models- overwintering survival
- Spray materials – toxicity and residual activity
- IPM techniques
  - Biological control agents
  - Cultural controls
- New spray materials that are attract and kill- like GF-120

Hope for the future

- 50 years ago San Jose scale was the number one pest in cherries. It ruined entire crops and killed acres of trees at a time.
- We have many talented minds working on this pest.
- Many crops worldwide now being affected.

Protect your customers

Thank you!

- To learn more go to:
  - Omegorchards.com
  - Goodfruit.com
  - Google