

Water Farming Pilot Study Status and Initial Results

*Rivers Coalition Meeting
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The Water Farming Concept



- **The Challenge:**

- Damaging wet-season discharges
- State struggling to fund long-term projects for water resource restoration (CERP)
- Citrus industry devastated by Citrus Greening, etc.

- **The Opportunity:**

- Lots of fallow citrus land in watershed
- Significant infrastructure already in place

- **The Concept:**

- Brought to us by the Indian River Citrus League
- Utilize fallow citrus lands for near-term storage of excess wet season flows
- Compensate citrus owner for providing environmental service as a commodity
- “Build the bridge”

Water Farming

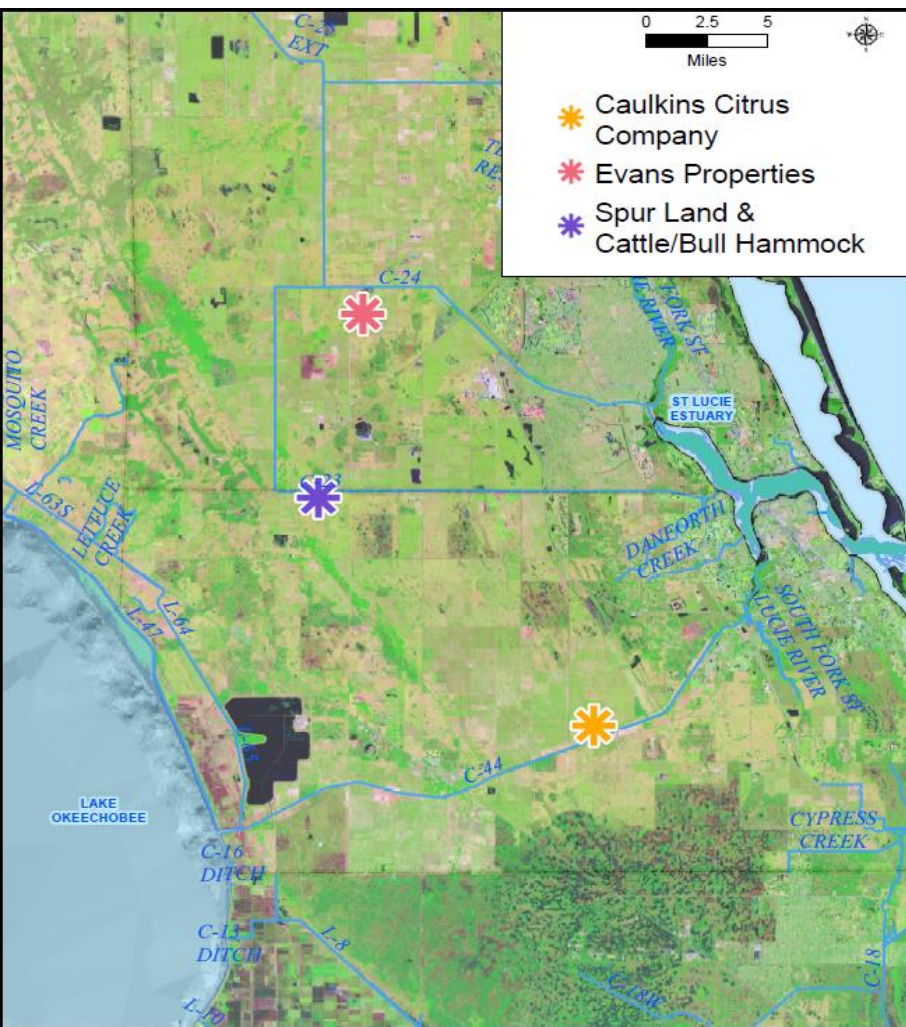
Cooperative Agreements for Feasibility Studies

- **Indian River Citrus League**
 - Studied multiple WMAs on two privately-owned fallow sites
 - Report completed April 2012
 - Recommended moving forward with pilot testing (underway)
- **Gulf Citrus Growers Association**
 - Studied storage potential on public and private sites
 - Completed October 2013
 - Pilots and future projects pending additional funding source



Water Farming

St. Lucie River Basin Pilot Study



- **Request for Proposals**
 - Above-ground flooding of fallow grove
 - Retention in existing facilities only
 - High percolation sites

- **Five Competitive Submittals**
 - Three selected pilot sites
 - Pilot Study Funding
 - \$1.6M SFWMD Funds
 - \$1.5M FDEP 319 Grant
 - 3-Year Agreements

Water Farming

St. Lucie River Basin Pilot Study



- **Goals of Pilot Study**
 - Reduce volume discharged from direct rainfall
 - Reduce regional system volume being discharged to estuary
 - Reduce load of TN and TP to estuary
 - Monitor and document costs and benefits
 - Make an **informed decision** regarding future role of Water Farming.

Water Farming

Pilot Site 1 – Caulkins Citrus



PROJECT SUMMARY

- 450 Acre Fallow Grove
- Construction of perimeter levee
- Water diverted via pump from C-44 Canal
- 413-acre impoundment – 4 feet deep
- Deep sands with no confining layer
 - Anticipated high percolation rate
- Proposed retention = 6,780 ac-feet / yr

Water Farming

Pilot Site 1 – Caulkins Citrus (cont.)



- Construction is complete
- Operational Feb. 1, 2014
- Volume Pumped 2014:
11,840 ac-ft (including
2900 ac-ft from test fill)
- Volume Pumped 2015:
7,476 ac-ft (Feb – May)

Water Farming

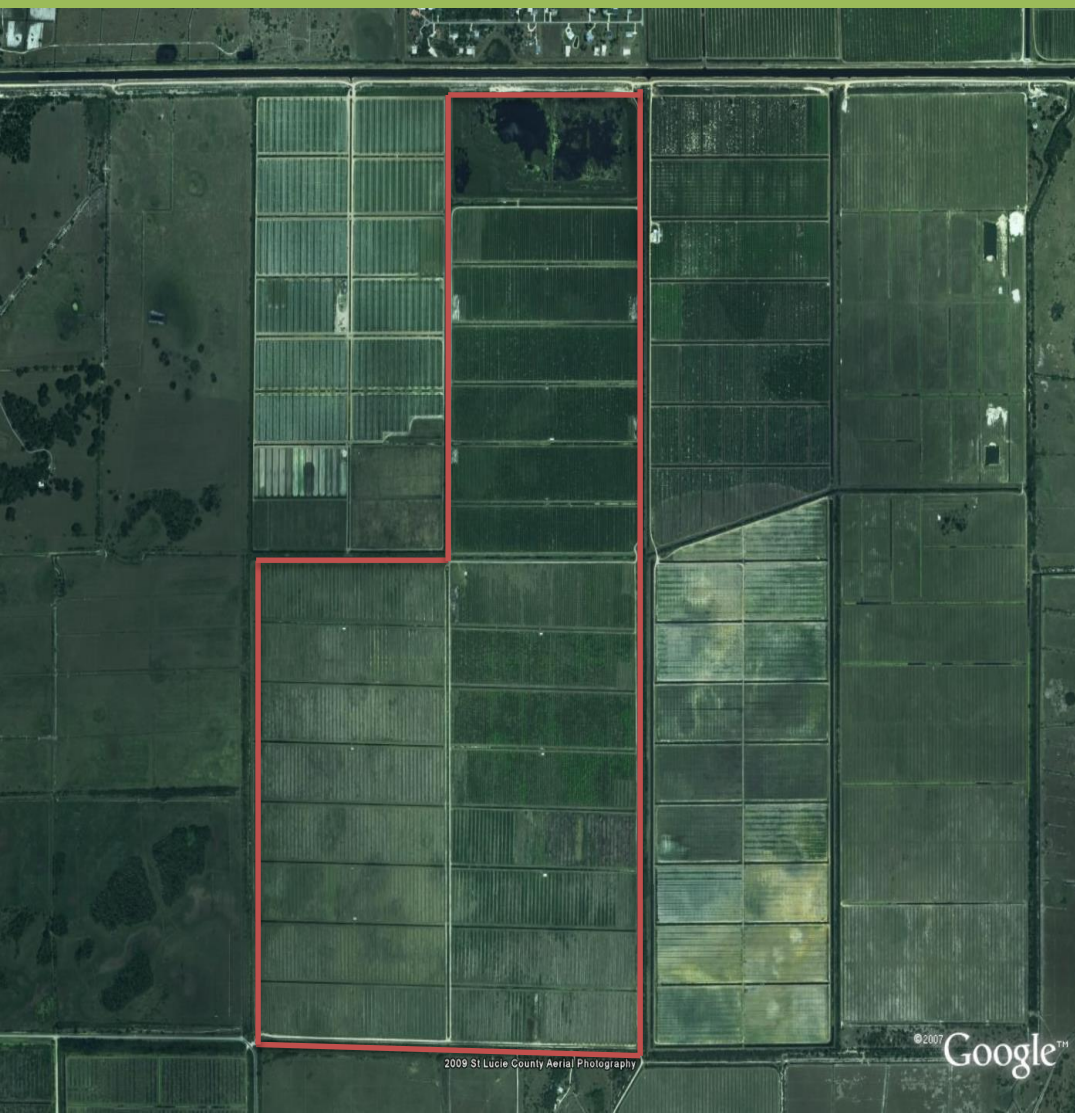
Pilot Site 1 – Caulkins Citrus (cont.)

- Total P Diverted from C-44: 3.6 Metric Tons
- Total N Diverted from C-44: 27.1 Metric Tons
- All Direct Rainfall Maintained On-Site (No Discharge)
- Water Budget/Seepage Analysis Study Ongoing
 - Year 1 Analysis and Report Nearing Completion



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Pilot Site 2 – Evans Ideal 1000



- Project Summary
 - 970-ac. fallow grove
 - Estimated annual retention volume 3,635 ac-ft
 - Water staged to top of bed, and utilizing existing above-ground impoundment
 - Operational May 2015
 - 14" Rainfall Retained to date (minor pumping)

Water Farming

Pilot Site 3 – Spur Land & Cattle



- Project Summary
 - 60-ac. fallow grove
 - Water stored 4 feet deep
 - Estimated Annual retention volume 870 ac-ft
 - Utilizing adjacent wetland/slough for additional water quality treatment
 - Operational January 2015
 - 199 ac-ft Pumped to Date
 - Diverted .04 MT TP From C-23
 - Diverted .24 MT TN From C-23

Water Farming

What's Next?

- Pilot Study Completion
 - Data collection
 - Storage capabilities
 - Water quality
 - Contract optimization
 - Cost
 - Structure
 - Seasonal analysis
- Explore Funding Options
 - Legislative
 - Sister agencies
- Long-term projects?
 - Depends on pilot results



An aerial photograph of a large-scale water management project. In the foreground, there are rows of young trees planted in a grid pattern. A wide canal with a dam structure runs horizontally across the middle of the image. Beyond the canal, a vast, flat landscape is divided into rectangular sections by a network of smaller canals and roads. The sky is overcast with grey clouds.

Questions?