

An Actual ET-Based Site-Specific Plant Water Relations Model for Generating Water Stress Forecasts and Irrigation Recommendations

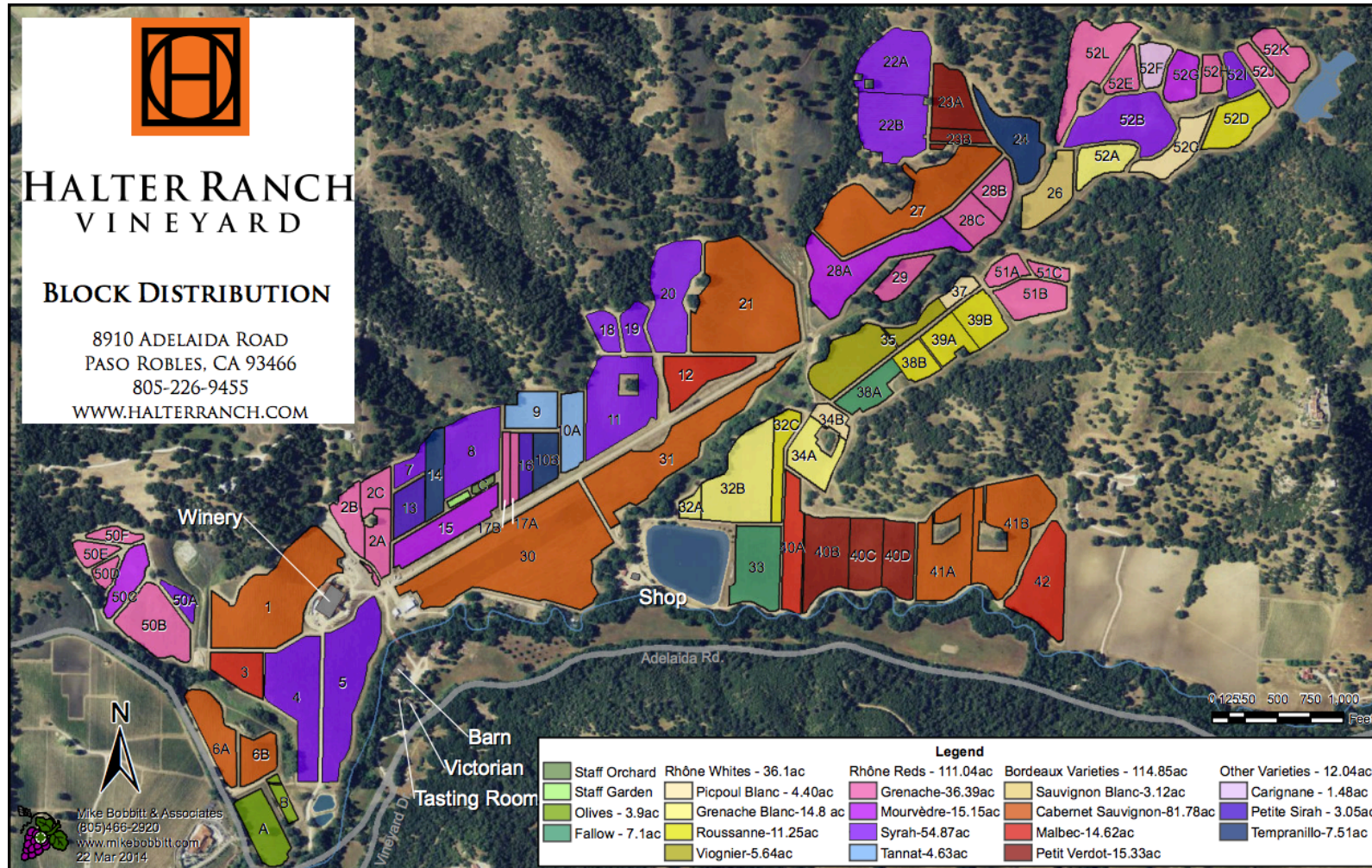
Tom Shapland, PhD
Tule



How Do Growers Make Irrigation Decisions?

- Pre-Season
 - Determine production goal (yield, quality)
 - Set water stress target from production goals
- Growing Season
 - Measure water status compared to water stress target
 - Irrigate to maintain or to correct water status

How Do Growers Make Irrigation Decisions?



- Growers have a mental model of the plant-water relations of each block to help them answer:
 - What is water status compared to water stress target?
 - How much do I irrigate to maintain or to correct water status?

Tule Background



Measure Actual Evapotranspiration and water stress over a broad area



Monitor applied water



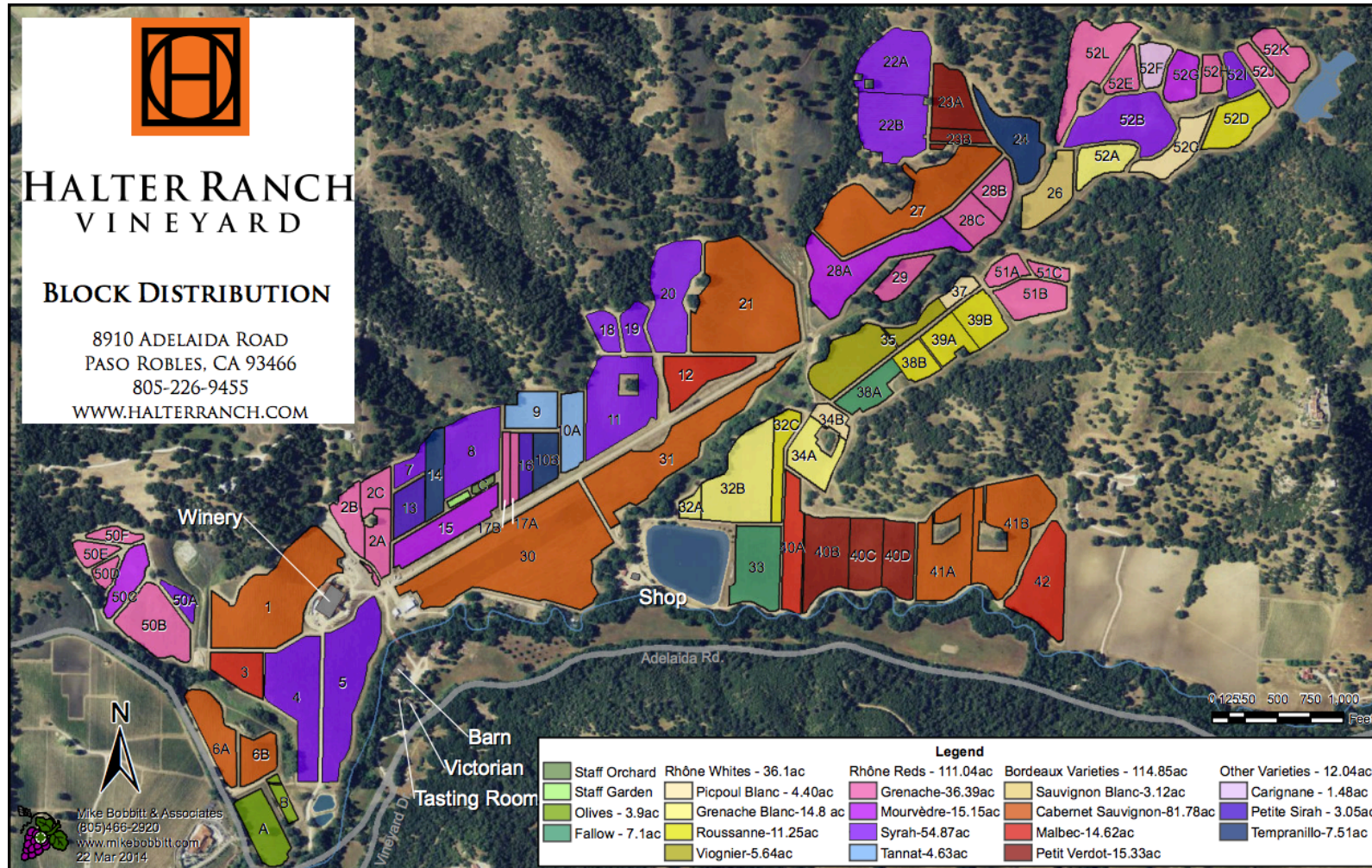
Provide irrigation recommendations using block-specific plant-water relations models



Technology developed at UC Davis
Viticulture & Enology and Atmospheric Science

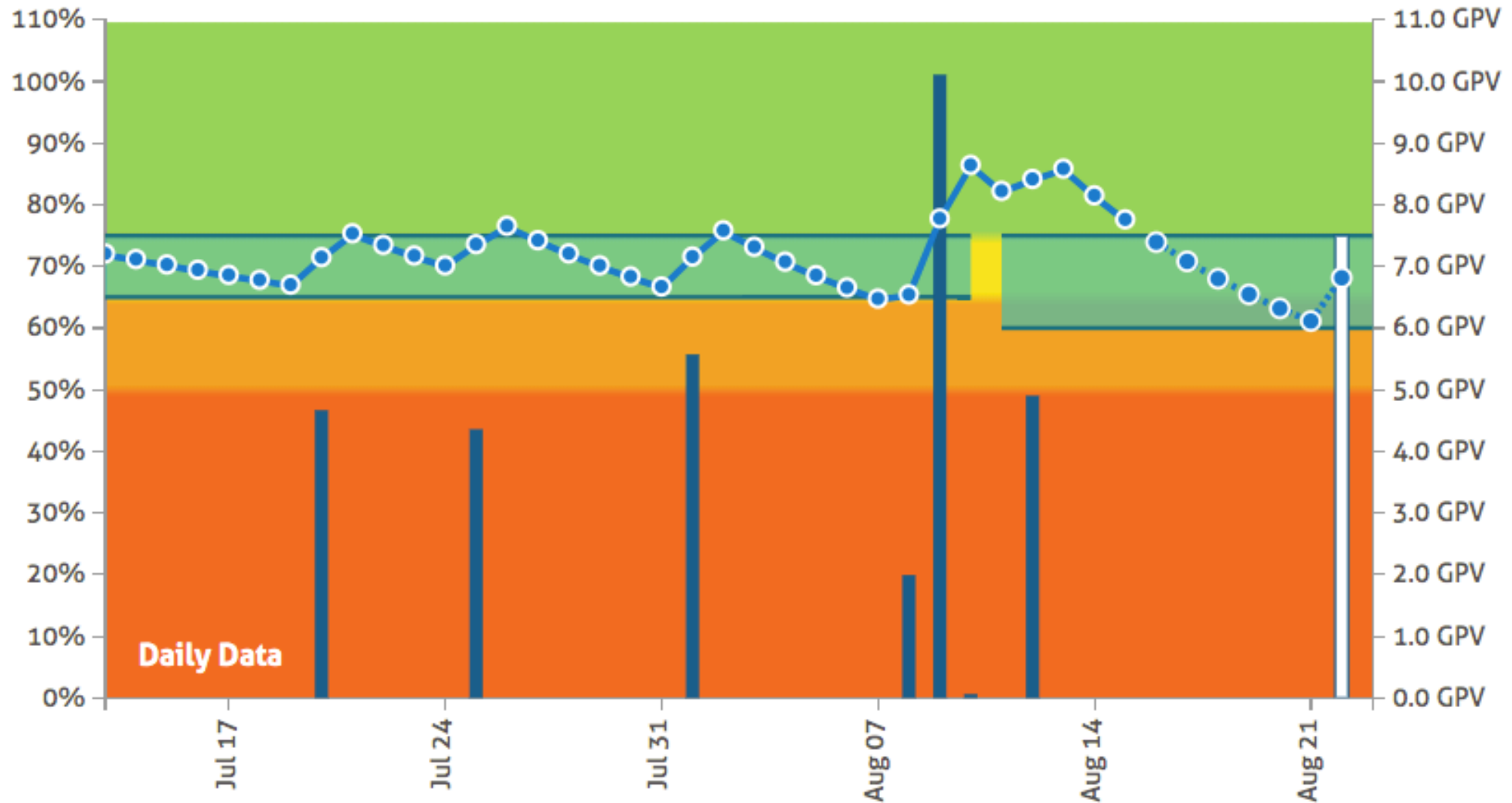


How Do Growers Make Irrigation Decisions?

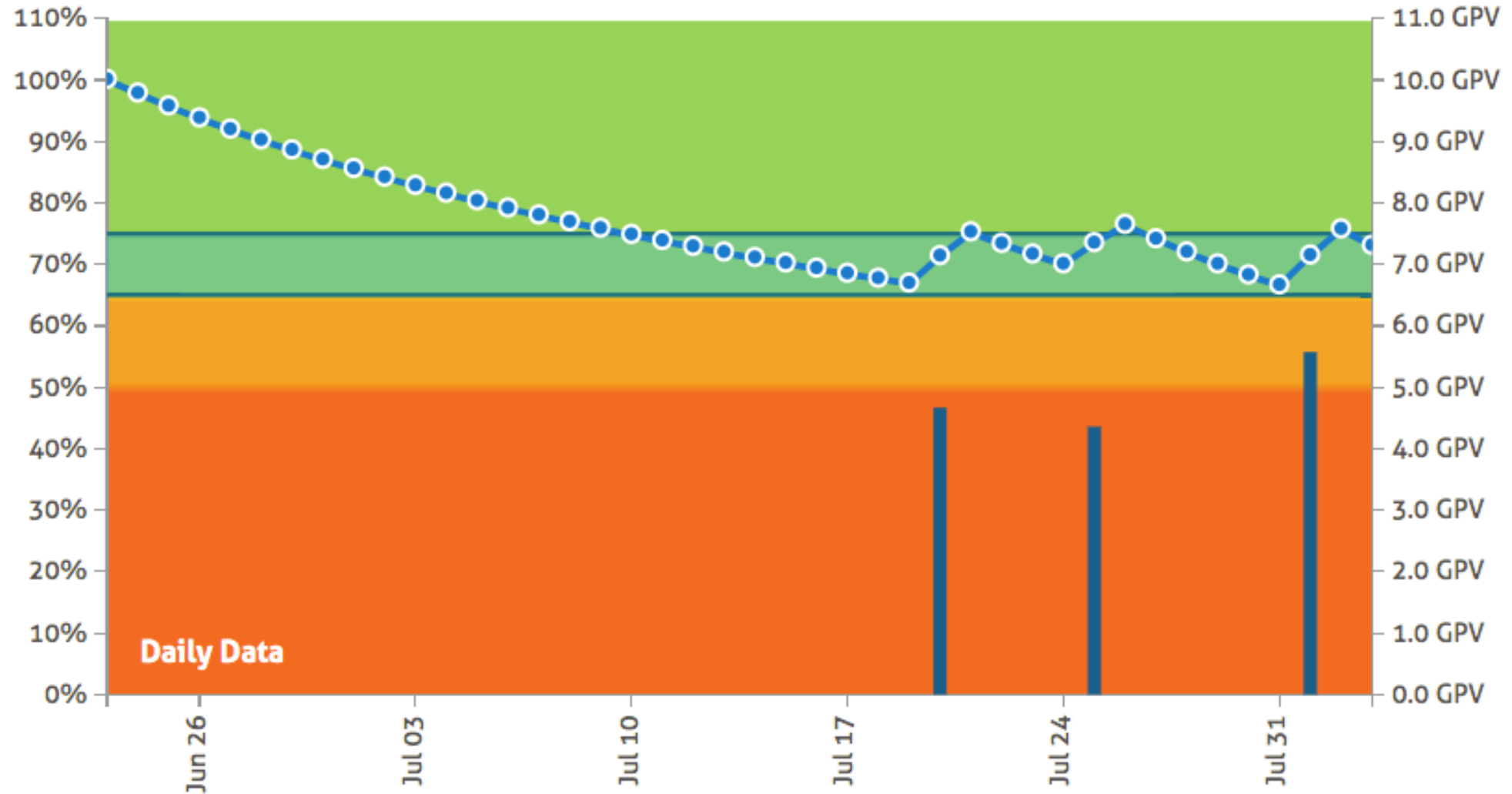


- Actual ET, Water Stress, and Applied Water to rebuilt a grower's mental models on the cloud
 - What is water status compared to water stress target?
 - How much do I irrigate to maintain or to correct water status?

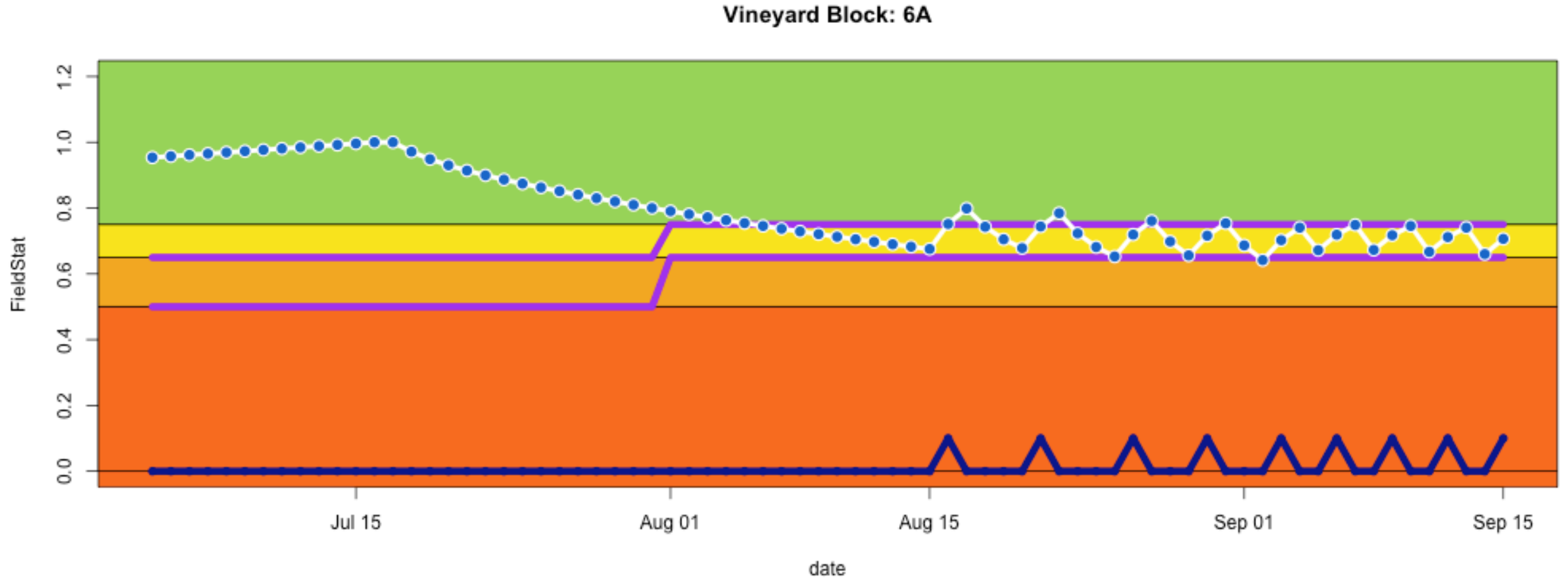
How Much Do You Apply Once Irrigation Commences?



How Do You Determine When To Start Irrigating?

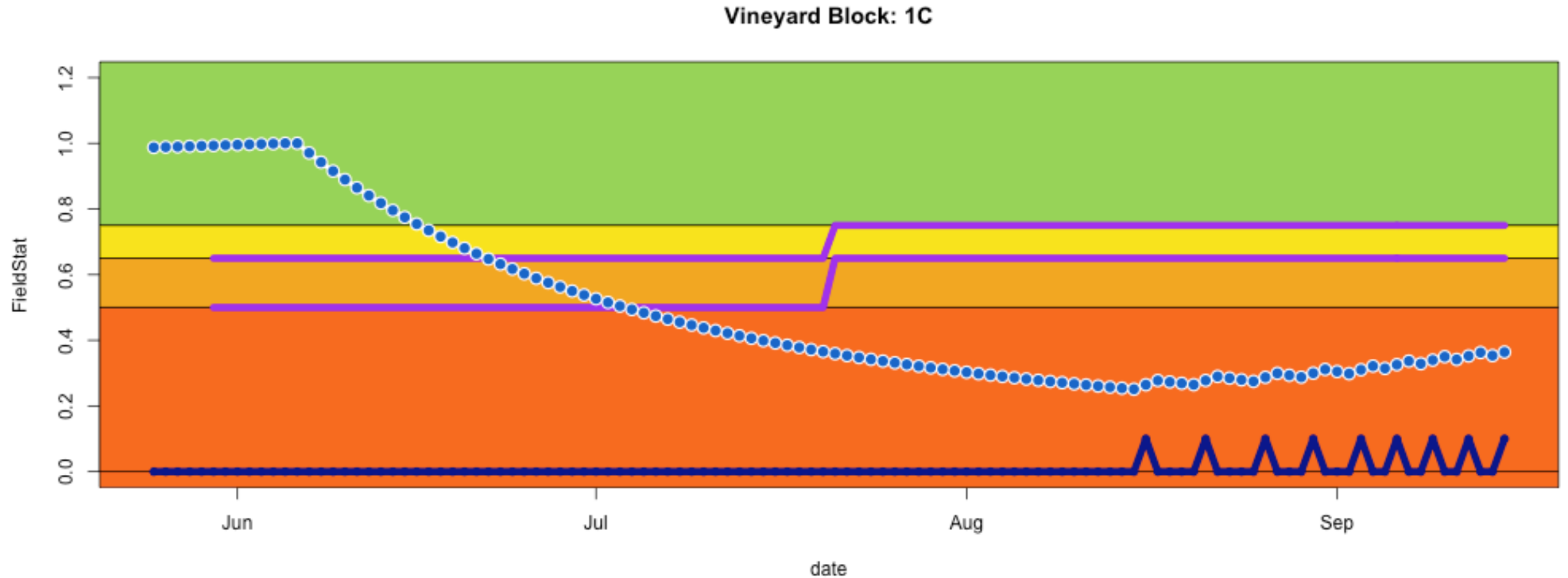


How Accurate Do You Need To Be Regarding Timing and Amount?



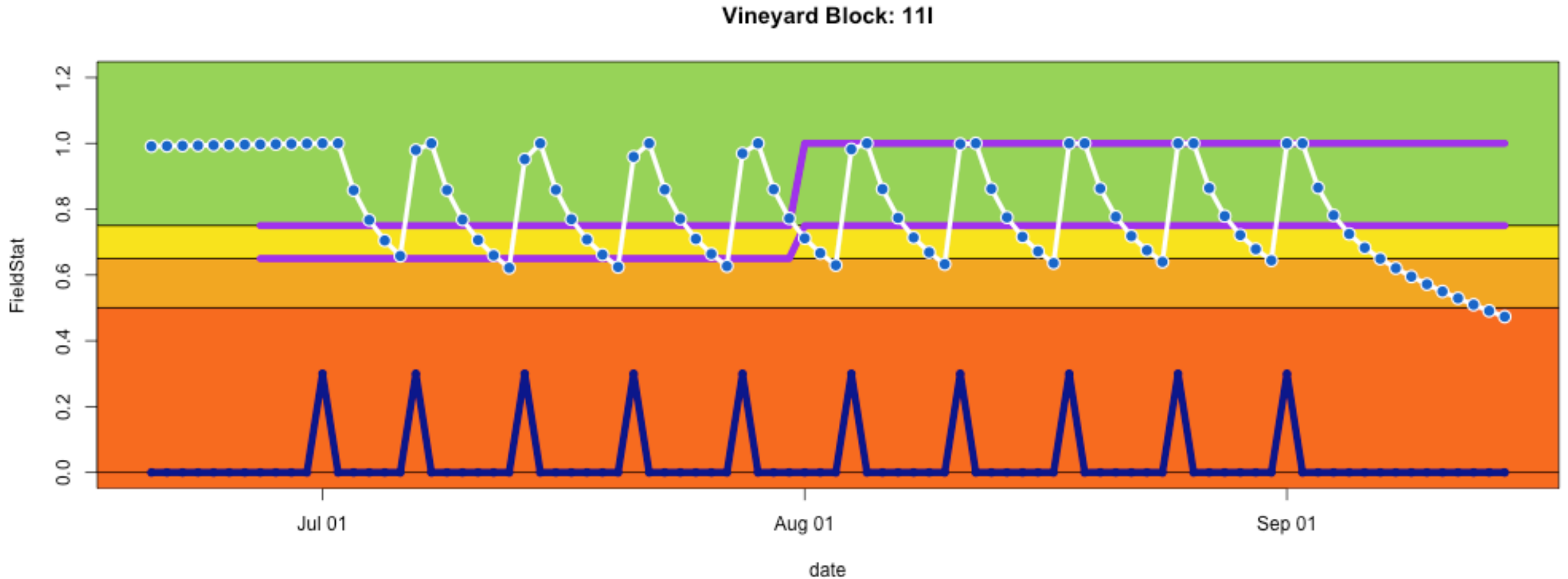
Napa. Block 6A. Season 2016.

How Accurate Do You Need To Be Regarding Timing and Amount?



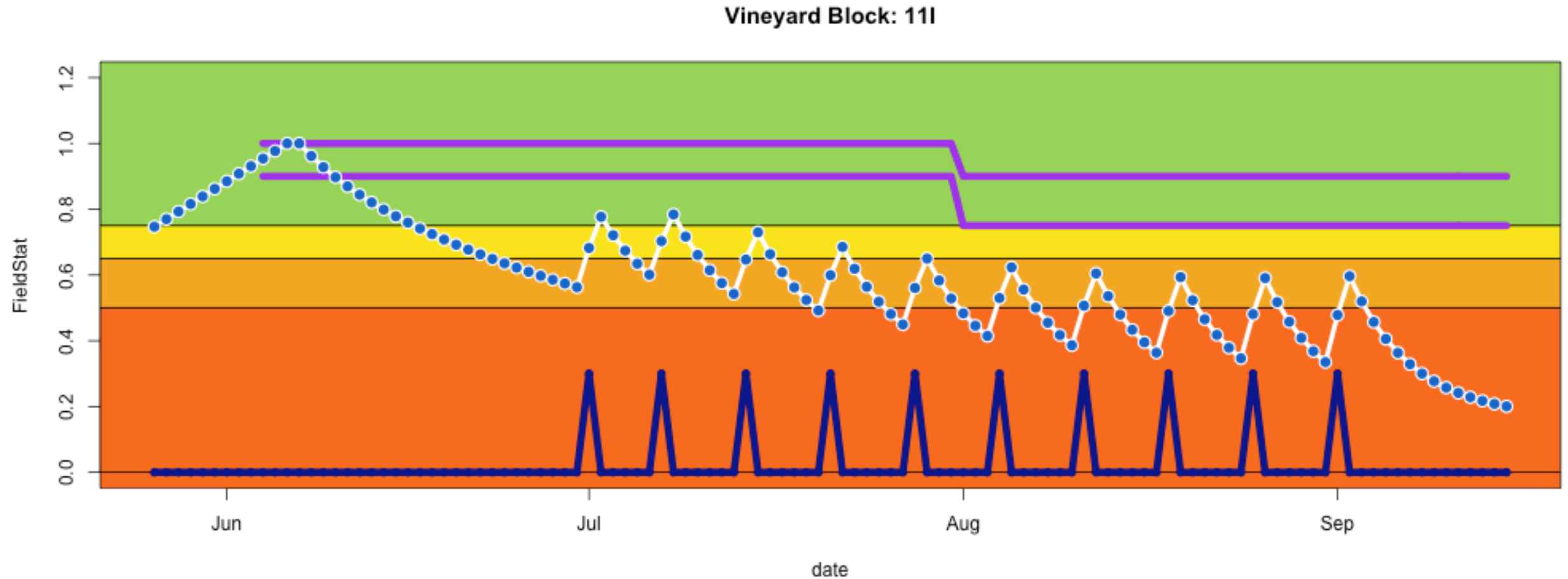
Napa. Block 1C. Season 2016.

How Accurate Do You Need To Be Regarding Timing and Amount?



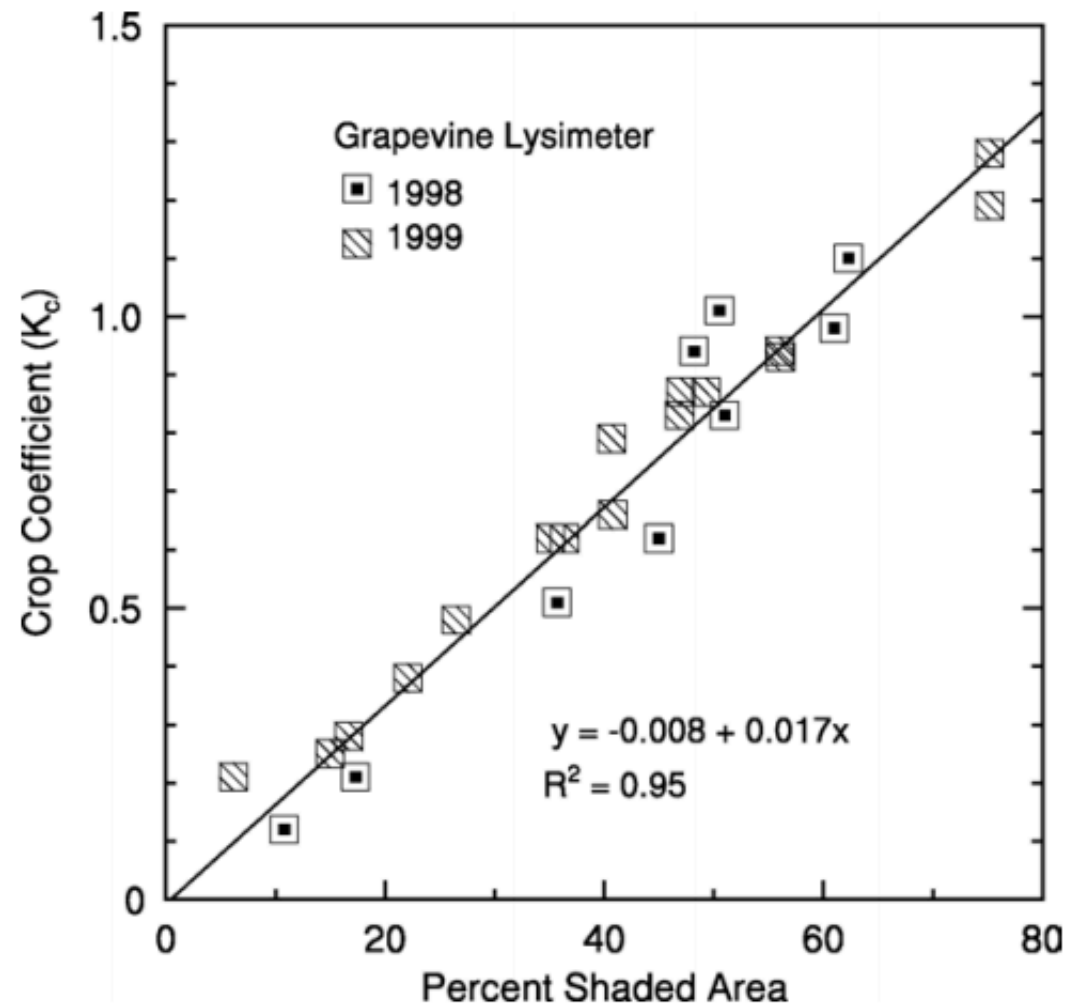
Lodi. Block 11I. Season 2017.

How Accurate Do You Need To Be Regarding Timing and Amount?



Lodi. Block 11I. Season 2018.

Thoughts On Larry





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