

2012 Almond Crop Production Predicted from CASA 2100 Systems

Christopher Potter

Email: christopher@casa2100.com Telephone: 408-838-4513 Website: www.casa2100.com

Conditional Use Agreement

By reading of this document, you agree to the following conditions: (1) All the data analysis contained in this document is owned solely by Christopher Potter, Consultant, to whom belong all proprietary rights, including (but not limited to) copyrighted material, trademarks, and other intellectual property rights; (2) The data and information presented in this document shall not be copied, altered, or reproduced by the reader for any purpose, including the selling of the information contained therein to third parties; (3) No warranty is made by Christopher Potter as to the reliability or accuracy of the information contained in this report.

Background

Western growers face many challenges to the success of their field operations. Uncertainties in weather conditions and outbreaks of pathogens and pests are constant threats to production. The ability to accurately predict and prepare for changes in crop yields from one year to the next is a pressing need. Adapting growing practices to cope with climate change is now a concern for many field managers as well.

CASA2100 and the 2012 California Almond Crop

CASA2100 is an operational system that begins from historical satellite remote sensing data collected at the level of individual agricultural fields. Crop yields are predicted from a combination of weather station records, soil properties, grower management data, and observed crop growth stage from satellite imagery.

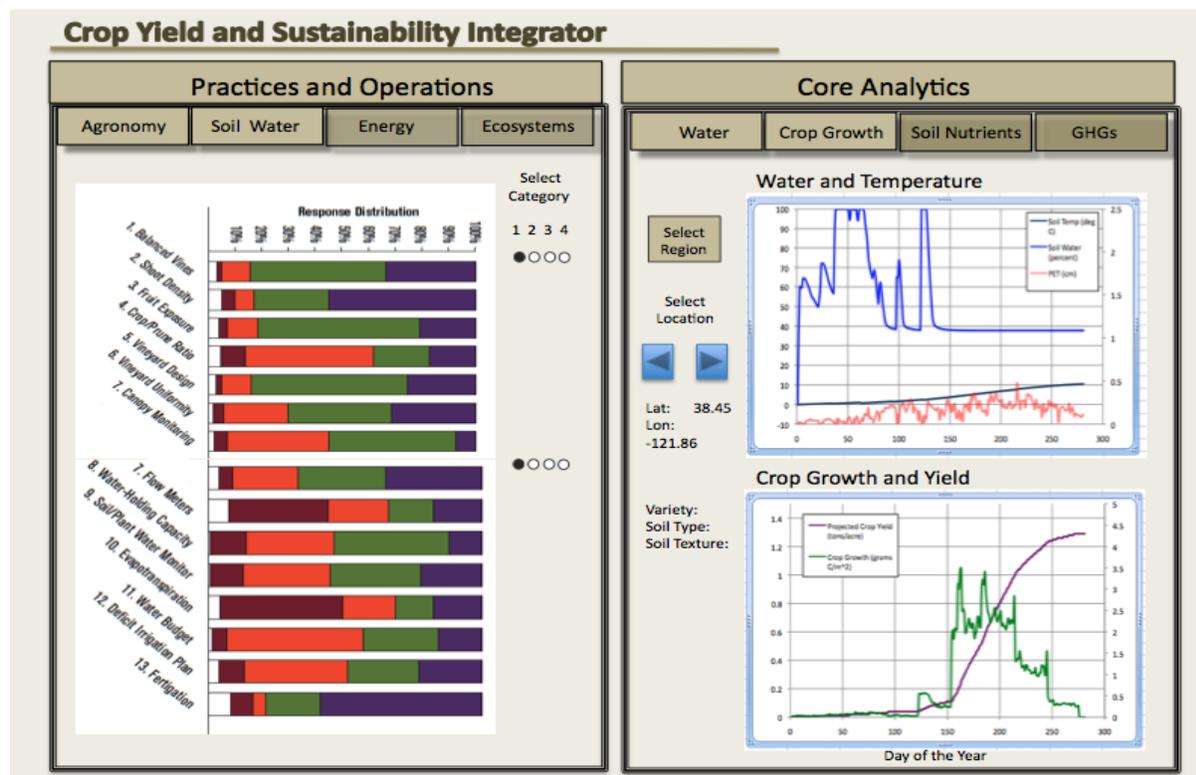


Almond production has been projected for 2012 across the CA Central Valley-wide by CASA 2100 based on early-season weather patterns. Applying time-proven algorithms, 2012 is NOT projected as a highly productive year for almonds, with typical yields per acre projected only at around those recorded in 2006 and 2009. Nevertheless, depending on localized weather patterns and management practices, growers may achieve yields much better than these predicted Valley-wide estimates for 2012. CASA Systems 2100 can map out the predicted almond yields for all California growers, block-by-block, with satellite image integration.

Operational Services Now Available from CASA2100

Services now available from the CASA2100 system include analysis of past and present satellite remote sensing data sets for estimation of crop yields at the individual field level, plus modeling* analysis of crop water use and soil greenhouse gas emissions (Example in Figure below). Such data provision services include the delivery of digital daily summaries, namely estimates of **crop production, annual crop yield, soil water and nutrient use, greenhouse gas (soil carbon dioxide and nitrous oxide) emission fluxes, for selected field locations or scaled-out for entire growing regions of the country.**

Prototype of CASA2100 display window for review and analysis of crop growth and yield predictions, according to reported management practices and field operations provided by growers. Multiple fields may be displayed for comparison of the outcomes of different grower management decisions.



* Based on CASA model as previously developed in 2007 and described in the peer-reviewed journal publication: Potter, C., S. Klooster, A. Huete, and V. Genovese, 2007, Terrestrial carbon sinks for the United States predicted from MODIS satellite data and ecosystem modeling, *Earth Interactions*, 11: 1-21.