

**Metadata Records**  
**Irrigation Innovation Consortium-Supported Project Datasets**

Please use a separate sheet for each dataset. Answers are automatically saved.  
 Questions? Contact Diane DeJong: [diane.de\\_jong@colostate.edu](mailto:diane.de_jong@colostate.edu).

Thank you!

Question	Answer
<b>Project name</b>	A Remote Sensing Approach to Identify Critical Areas in California Orchards for Improving Irrigation Water Management through Precision Agriculture Technology
<b>Project background</b>	In 2013, California growers from 18 counties (Fresno, Kern, Kings, Madera, Merced, Monterey, San Joaquin, Santa Cruz, Stanislaus, Sutter, Tulare, Ventura, Napa, Yolo, San Luis Obispo, Riverside, Colusa, and Glenn) responded to a survey on their perceived changes in irrigation water use due to adopting precision agriculture technology such as soil moisture sensors as part of a study conducted by CIT, Fresno State funded by PG&E. That study indicated significant opportunities to improve irrigation efficiency through adopting technology such as soil moisture sensors. In that context, this project proposes a remote sensing approach to evaluate crop water status in the orchards of the same counties in California. This project is outlined toward the following specific objectives: 1) Identify and map orchards that are consistently facing water stress issues throughout 18 California counties using available satellite imageries from different sources 2) Identify areas where grower community are not utilizing any precision agriculture technology 3) Outline orchard areas where irrigation management can potentially be improved through use of available precision agriculture technologies.
<b>Dataset name</b>	Orchard Area Shape Files
<b>Primary author</b> Include first & last name, institution affiliation, and email address.	Dilruba Yeasmin, Center of Irrigation Technology, California State University, Fresno, <a href="mailto:dyeasmin@csufresno.edu">dyeasmin@csufresno.edu</a>
<b>Primary contact</b> The primary contact may be the same or different from the primary author. Include first & last name, institution affiliation, and email address.	Dilruba Yeasmin, Center of Irrigation Technology, California State University, Fresno, <a href="mailto:dyeasmin@csufresno.edu">dyeasmin@csufresno.edu</a>
<b>Dataset description</b> Please provide a brief, clear summary description of the dataset contents. Indicate as applicable: purpose and scope; time period; areas of investigation; and any other special characteristics.	From the generated NDVI and SAVI images of the 18 counties, boundaries of grower orchards were also extracted and shape files were created. Data was collected for each year from April to September since it is the active growing season for most crops. Data sometimes came countywide, sometimes half of the county in one dataset and the other half in another dataset depending on the path of the satellite. Two sets of data per month (as available) was collected for the whole or each part of the counties. The general style for naming these datasets are "CountyName_Orchard Name _Date".
<b>Spatial coverage</b> Please be specific as possible about the geographic coverage of your data, and record the information according to defined standards, such as FGDC or the Getty Thesaurus of Geographic Names. You can enter lat/long data, county names, state names, etc.	18 California Counties: Fresno, Kern, Kings, Madera, Merced, Monterey, San Joaquin, Santa Cruz, Stanislaus, Sutter, Tulare, Ventura, Napa, Yolo, San Luis Obispo, Riverside, Colusa, and Glenn

<p><b>Temporal coverage</b> Describe the temporal coverage of your dataset: Start: Time of day, Date, Month, Year Finish: Time of day, Date, Month Year</p>	2016 - 2019
<p><b>Re-use limitations</b> Describe known problems or caveats that would limit reuse of the data (e.g., uncertainty, sampling problems, blanks, quality control samples) and/or that future potential users of your dataset should know about. Or indicate "None."</p>	Some orchard boundaries were difficult to delineate as adjacent houses, office buildings, working shades etc. were within the boundaries.
<p><b>Citations</b> Please include full citations and DOIs for articles published based on or related to this dataset. Or indicate "None."</p>	None
<p><b>Keywords</b> Please add a few appropriate National Agricultural Library keywords: <a href="https://agclass.nal.usda.gov/vocabularies/nalt">https://agclass.nal.usda.gov/vocabularies/nalt</a></p>	California; orchards; remote sensing; precision agriculture; normalized difference vegetation index; Landsat; irrigation
<p><b>Tags</b> Please add a few of your own user-defined tags that would be useful to others who might use your dataset in the future.</p>	
<p><b>Acronyms &amp; abbreviations</b> Please define any acronyms, site abbreviations, or other project specific designations used in your dataset. Or indicate "none."</p>	NDVI - Normalized Difference Vegetation Index; SAVI - Soil Adjusted Vegetation Index
<p><b>Other dataset storage location</b> Has this dataset already been uploaded elsewhere? Yes or No  Reasons may include a requirement as part of publishing a paper or storing data on GitHub or other locations to make accessible to others.  If yes, please provide the link or other information to explain where the dataset is located and where or how it can be accessed.</p>	No