

Gold Leaf Farming – Water Overview

GOLD LEAF
FARMING

Executive Summary

- California has a complicated water system with multiple tiers of water rights. Farmers with strong water rights have ample, cheap water (and can often sell excess water) while other farms with lower quality rights may not have enough water in dry years

- GLF focuses exclusively on properties with secure water rights

  - In its 6 years of operating history, GLF has never had a lack of water on a property

  - All orchards had adequate water supply during the 2021/2022 droughts and surplus water during wet years like 2023

- Gold Leaf Farms generally have multiple sources of water (surface water and groundwater). The only farms that do not have multiple sources of water are farms where a single source of water is extremely reliable

- GLF utilizes ag-tech to minimize water usage. Water makes up ~1/4 of our cost structure so we are incentivized to minimize water usage – there is an economic and sustainability impact

- Gold Leaf spends a substantial amount of time on water diligence. Diligence resources include multiple lawyers on retainers, hydrological and water engineering consultants on retainer and an in-house GIS map of water resources

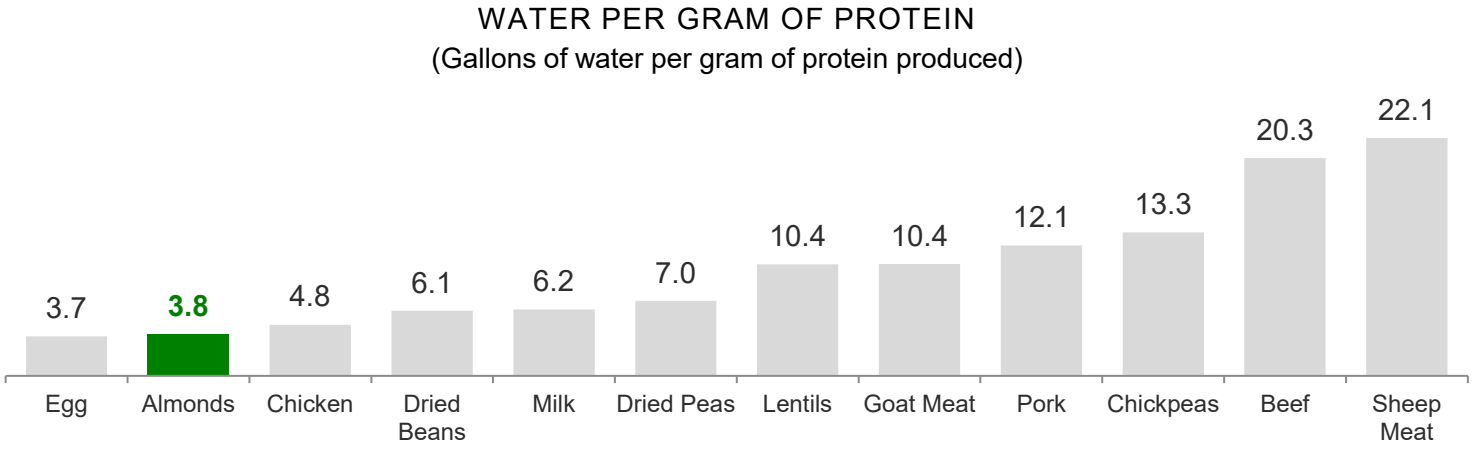
  - GLF passes on ~50% of deals due to poor water rights. We will only buy deals with adequate water assets

- Gold Leaf has assets across the state in multiple water districts which diversifies our water risk

Almonds – Water Usage / Sustainability

Almonds vs. Other Food:

Almonds Consume Less Water vs. Most Meats and Other Sources of Protein

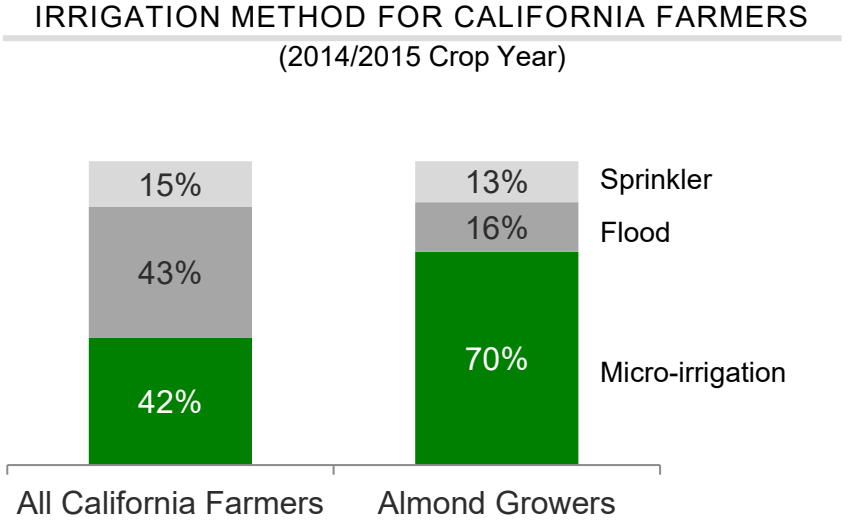


Almond Industry Sustainability:

33% Reduction in Water Use Since 1994

"Water-saving micro-irrigation technologies have helped farmers reduce the amount of water it takes to grow an almond by 33% since 1994."

-Almond Board of California



Almonds consume less water than other protein, and still improving

Source: GLF Farming Team

GLF will continue to implement our water efficiency playbook

Drip and Micro Irrigation



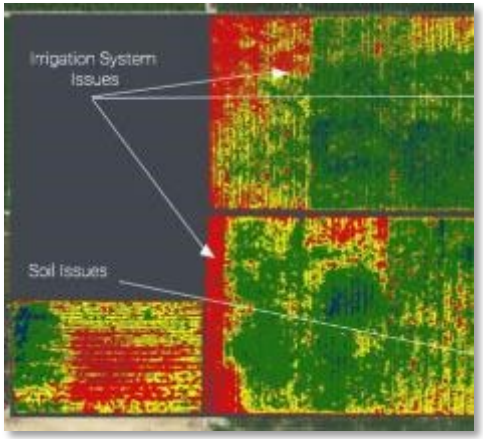
GLF will use drip and micro-irrigation on new developments which deliver waters with >90% efficiency

Infield Irrigation Monitoring



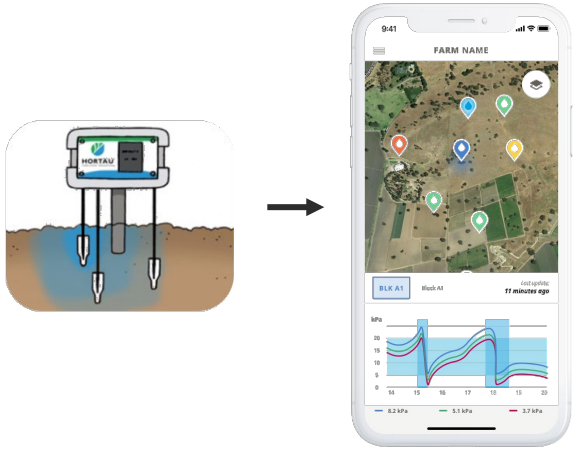
GLF uses sensors to measure soil moisture 24/7 and optimize water use

Aerial Imagery



Regular flyovers and aerial imagery allow GLF to spot over- and under-irrigated areas and conserve water

Hortau Irrigation



- GLF uses Hortau sensors to monitor rootzone hydration at different depths of the tree
- Using the mobile app, our Farm Managers can track the tree's water needs in real time

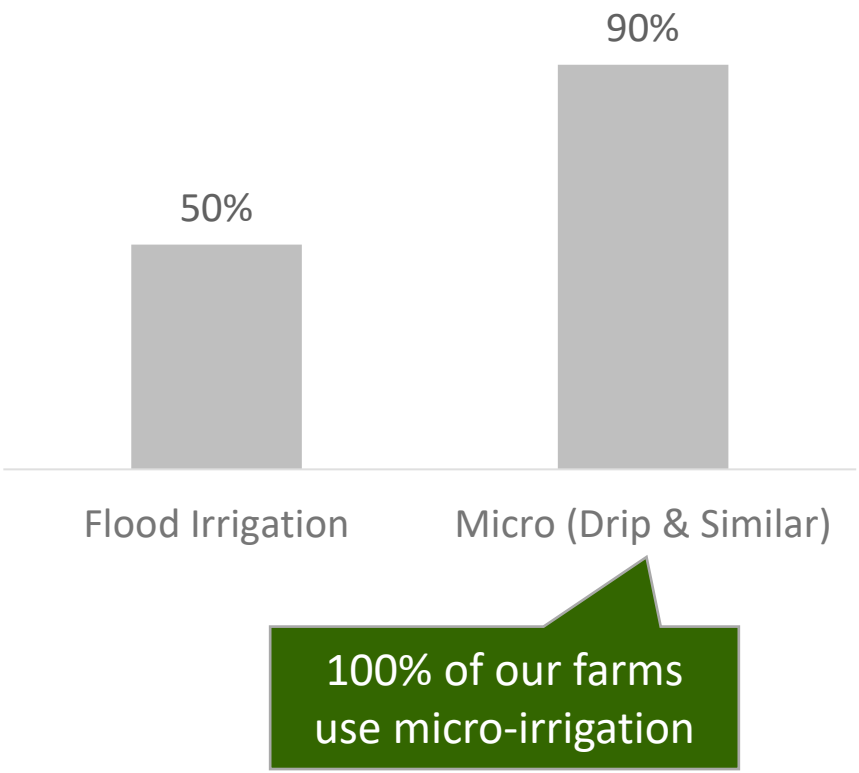
Source: GLF Analysis

Water: biggest driver of yield – if we can't measure it, we can't manage it

Start with the most efficient irrigation

Irrigation Efficiency

% of Water Used by Trees

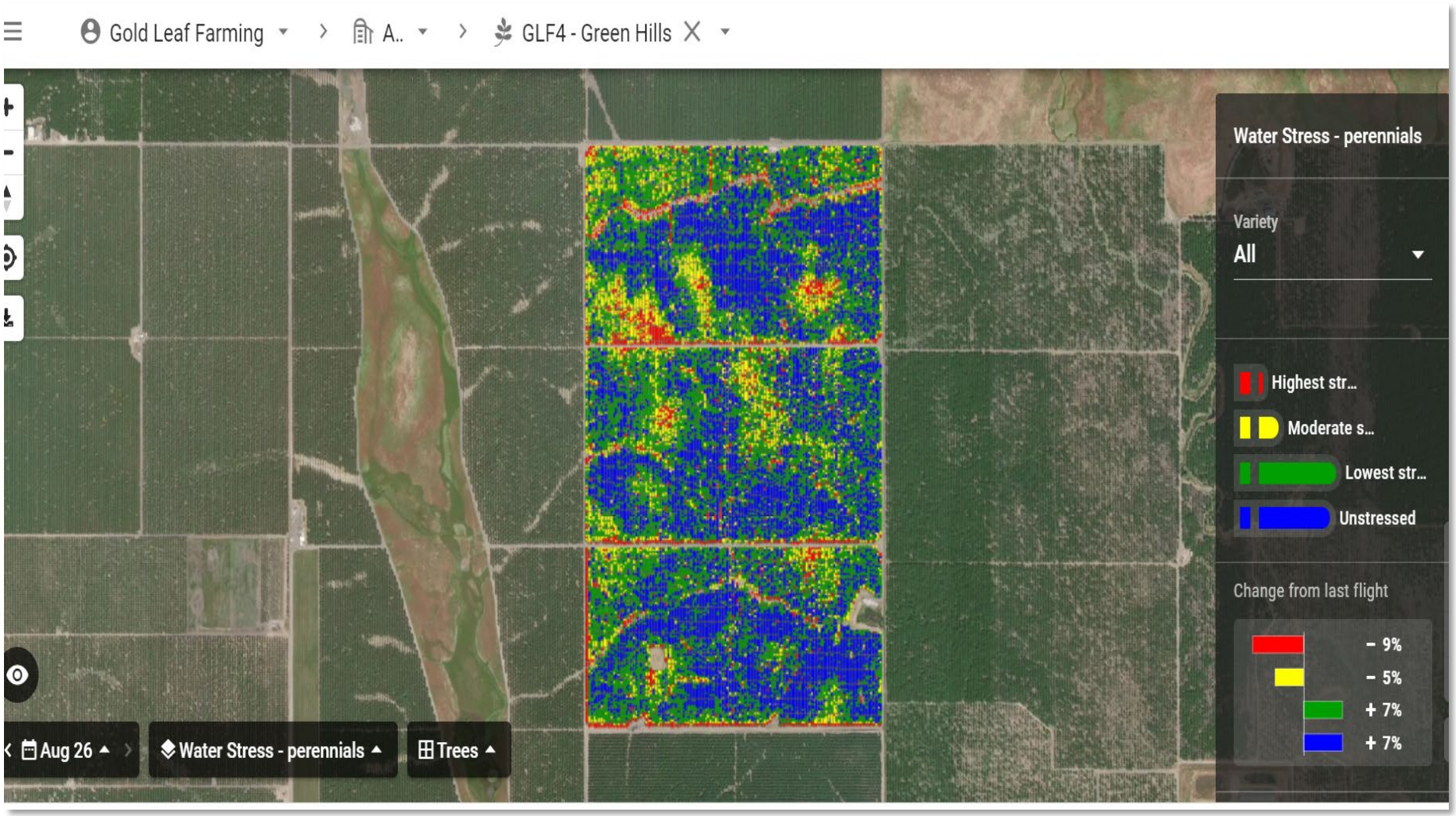


Then, dial it in

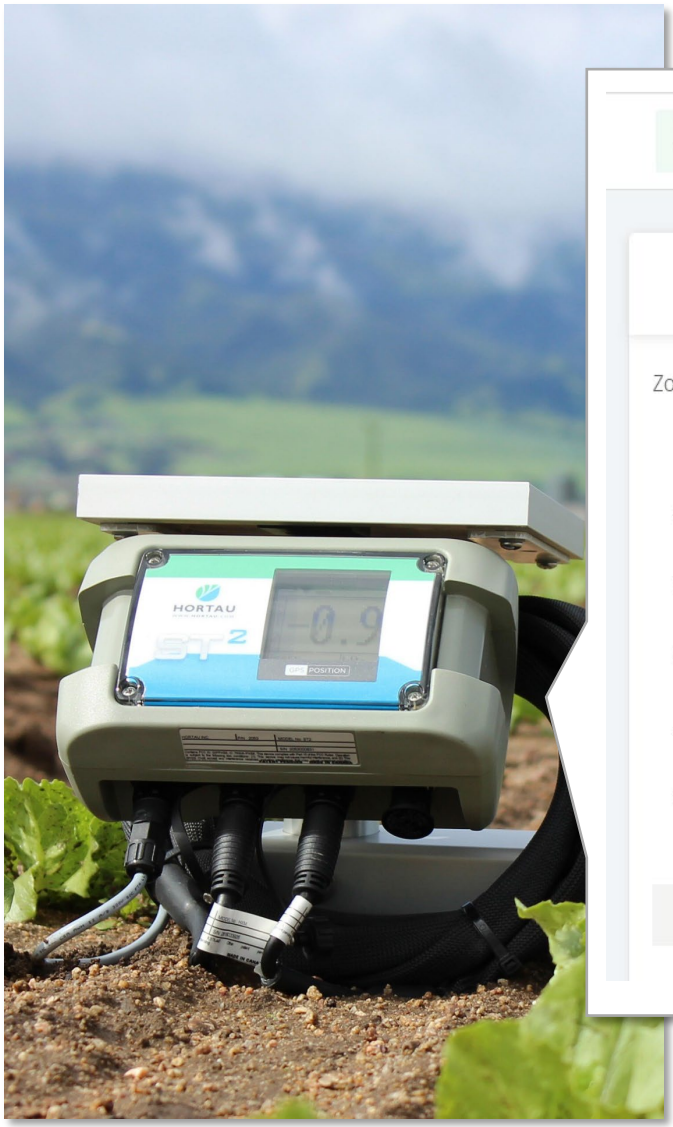
Three legs to the stool:

- Ceres (scouting)
- Semios (ET)
- Hortau (root tension)

Ceres Imaging: saves water by helping us focus on weak areas



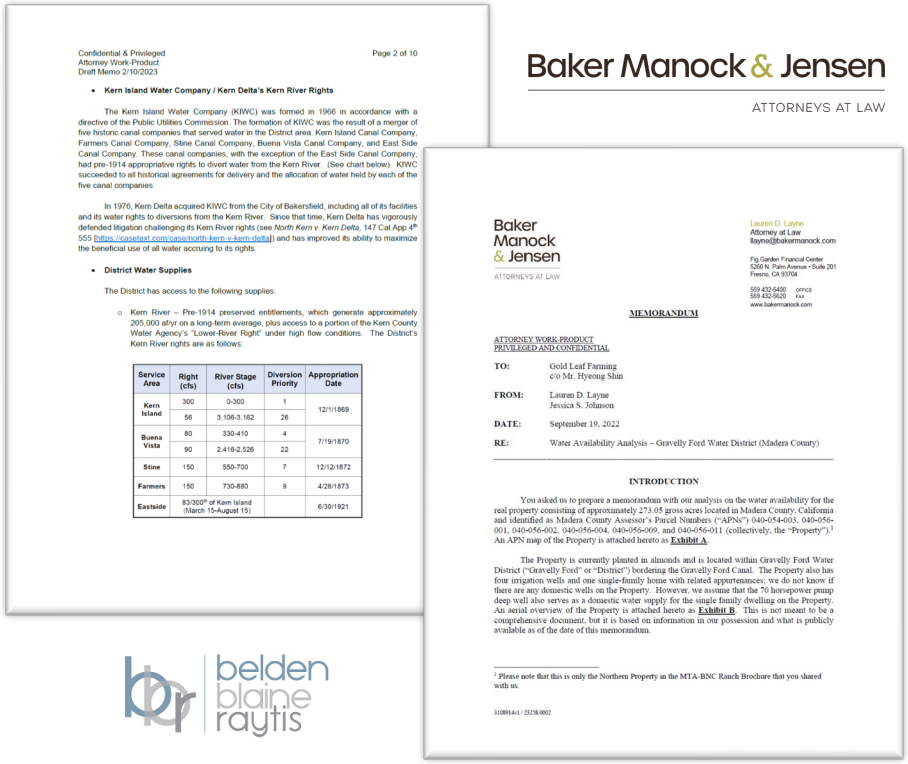
Hortau: saves water by ensuring we provide only what the roots are asking for





GLF Water Diligence Overview

Surface Water Diligence



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- **Kern Island Water Company / Kern Delta's Kern River Rights**

The Kern Island Water Company (KIWC) was formed in 1966 in accordance with a directive of the Public Utilities Commission. The formation of KIWC was the result of a merger of five historic canal companies that served water in the District area: Kern Island Canal Company, Farmers Canal Company, Stine Canal Company, Buena Vista Canal Company, and East Side Canal Company. These canal companies, with the exception of the East Side Canal Company, had pre-1914 appropriative rights to divert water from the Kern River. (See chart below). KIWC succeeded to all historical agreements for delivery and the allocation of water held by each of the five canal companies.

In 1976, Kern Delta acquired KIWC from the City of Bakersfield, including all of its facilities and its water rights to diversions from the Kern River. Since that time, Kern Delta has vigorously defended litigation challenging its Kern River rights (see *North Kern v. Kern Delta*, 147 Cal.App.4th 555 (https://caselaw.vlex.com/cases/north-kern-v-kern-delta)) and has improved its ability to maximize the beneficial use of all water accruing to its rights.

- **District Water Supplies**

The District has access to the following supplies:

- Kern River – Pre-1914 preserved entitlements, which generate approximately 205,000 af/yr on a long-term average, plus access to a portion of the Kern County Water Agency's "Lower-River Right" under high flow conditions. The District's Kern River rights are as follows:

Service Area	Right (cfs)	River Stage (cfs)	Diversion Priority	Appropriation Date
Kern Island	300	0-300	1	12/1/1869
	58	3,106-3,162	26	
Buena Vista	80	330-410	4	7/19/1870
	90	2,416-2,526	22	
Stine	150	550-700	7	12/12/1872
Farmers	150	730-880	9	4/28/1873
Eastside	83/300[a] of Kern Island (March 15-August 15)			6/30/1921

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MEMORANDUM

ATTORNEY WORK PRODUCT
PRIVILEGED AND CONFIDENTIAL

TO: Gold Leaf Farming
c/o Mr. Hyeong Shin

FROM: Lauren D. Layne
Jessica S. Johnson

DATE: September 19, 2022

RE: Water Availability Analysis – Gravelly Ford Water District (Madera County)

INTRODUCTION

You asked us to prepare a memorandum with our analysis on the water availability for the real property consisting of approximately 273.05 gross acres located in Madera County, California and identified as Madera County Assessor's Parcel Numbers ("APNs") 040-054-003, 040-056-001, 040-056-002, 040-056-004, 040-056-009, and 040-056-011 (collectively, the "Property").[1] An APN map of the Property is attached hereto as **Exhibit A**.

The Property is currently planted in almonds and is located within Gravelly Ford Water District ("Gravelly Ford" or "District") bordering the Gravelly Ford Canal. The Property also has four irrigation wells and one single-family home with related appurtenances; we do not know if there are any domestic wells on the Property. However, we assume that the 70 horsepower pump deep well also serves as a domestic water supply for the single family dwelling on the Property. An aerial overview of the Property is attached hereto as **Exhibit B**. This is not meant to be a comprehensive document, but it is based on information in our possession and what is publicly available as of the date of this memorandum.

[1] Please note that this is only the Northern Property in the MTA-BNC Ranch Brochure that you shared with us.

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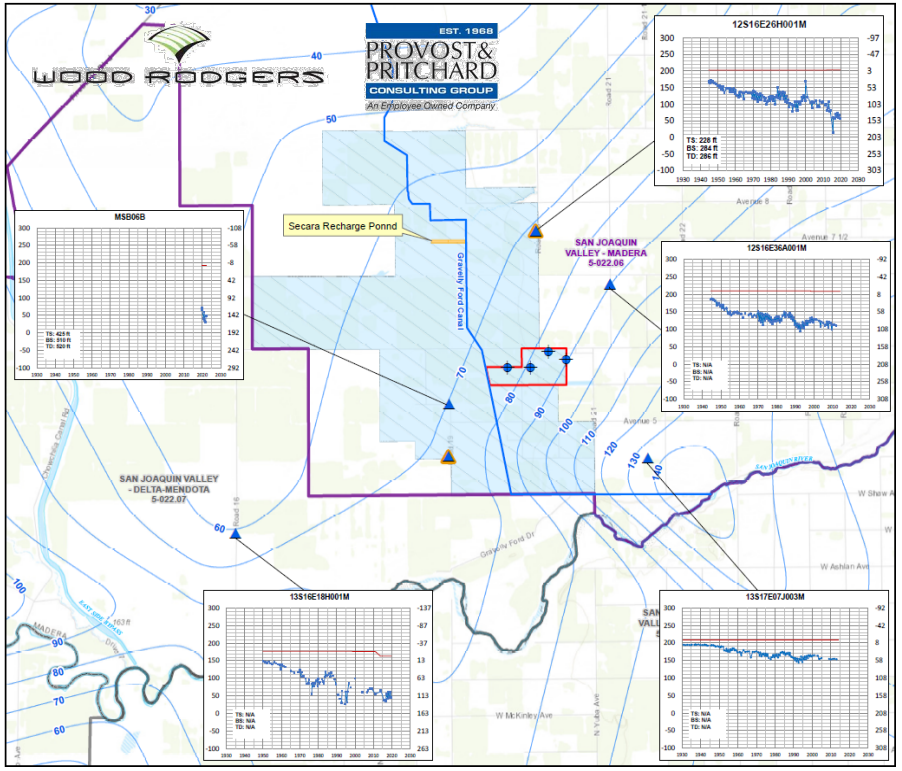
Groundwater Diligence



- GLF performs extensive diligence on all the possible water supply of the acquisition using our proprietary database, network and industry experts
- For surface water, we engage lawyers who have worked with the water district previously and understand groundwater pumping regulations for the water district. GLF also does diligence calls with the district's general manager, hydrologist, etc. to comprehend the district's water management practices
- For groundwater, we engage hydrologists and environmental engineers who have expertise in the geologic makeup and aquifers in the region to understand how groundwater levels have been trending historically
- GLF kills 99% of all deals that don't have 2 sources of water supply (surface water and groundwater). We will only purchase a farm with one source of water if that source of water is guaranteed to provide sufficient water for the duration of the investment

California Water Overview

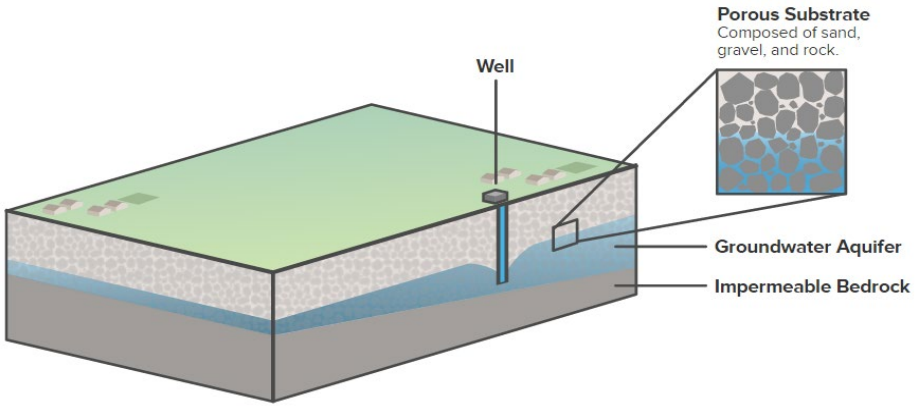
Sources of Water

Surface Water



- **Surface water:** lakes, rivers, and streams; includes irrigation districts that allocate across multiple parties
- **Regulated:** according to both riparian (adjacent land gets water) and appropriative (other water diverted to land) legal frameworks. Rights, from senior to junior:
  - Riparian: water adjacent to land
  - Appropriative: water redirected to land without water; generally oldest rights have seniority
  - Prescriptive: open, continuous use of unused water
- **More volatile:** in rainy years (like 2017) can supply much of water; in drought years (2011-2016) cutbacks cause reliance on groundwater

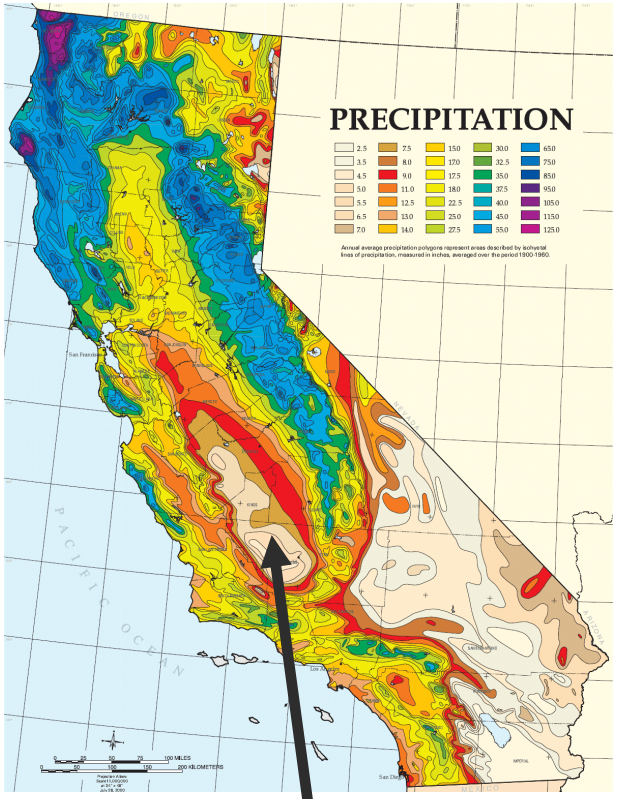
Groundwater



- **Groundwater:** underground aquifers (not including streams flowing in known & definite channel)
- **Largely unregulated:** overlying landowners may use a reasonable share of underlying groundwater basin
  - Exceptions include adjudicated groundwater (court ordered system of sharing water from an aquifer) and appropriated (groundwater sold to a 3rd party)
- **Recent push to regulate:** Sustainable Groundwater Management Act (SGMA) passed in 2014 to regulate all groundwater basins by 2042
- **Focus will be on overdrafted aquifers and land with one source of water**

California Water Overview

Precipitation in Northern CA and Federal & State Water Projects

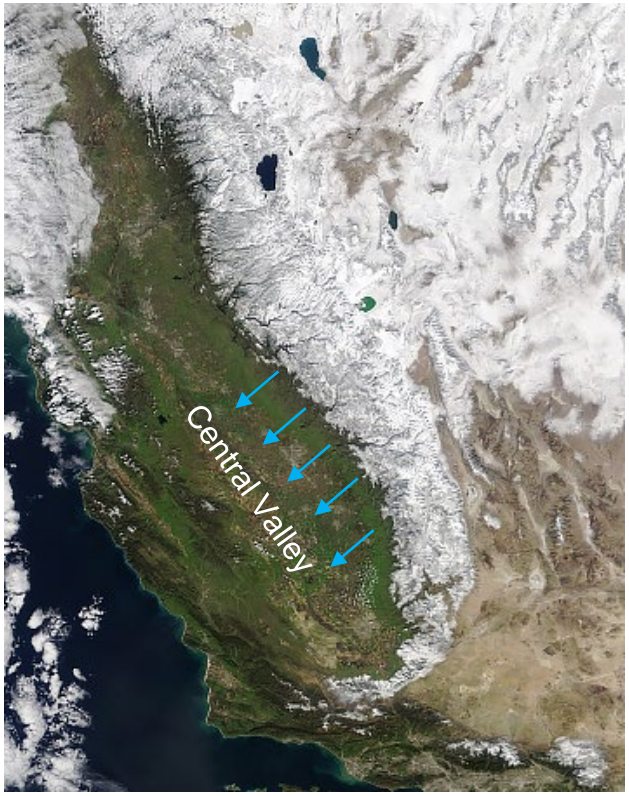


- Most of the natural rainfall occurs up in Northern and Eastern California
- However, almost all of California's agriculture is grown in the Central Valley due to its accommodating climate, soil and flat lands
- Extensive infrastructure transports water from wet areas to the central valley



- The Federal and State Government built a series of dams, aqueducts and pipelines that transport water from Northern California through the Central Valley and all the way down to Southern California
- The two main projects are called State Water Project and Central Valley Project

Sierra Nevada Snowpacks



- During the summer, growers in the Central Valley get water from melted snowpacks from the Sierra Nevada (snow that fell during winter)
- Melted snow flows downstream from Sierra Nevada via rivers such as the San Joaquin River and Kern River, which are two key sources of water for GLF's portfolio

California Water Projects Overview

California Water Projects



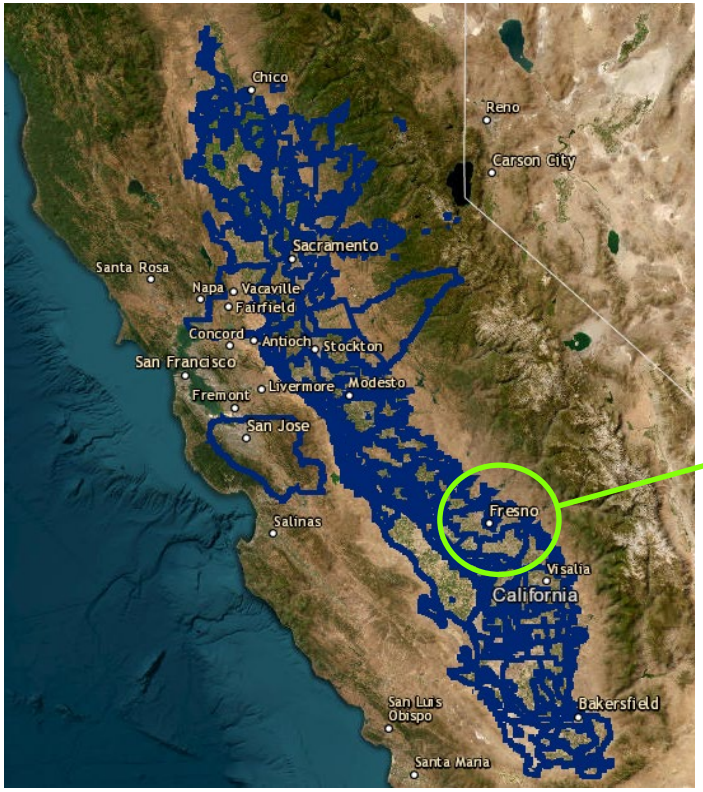




- There are two main water projects within California that enable residential, municipal, industrial and agriculture water usage within the Central Valley – the State Water Project (SWP) and Central Valley Project (CVP)
- The SWP is a multi-purpose water storage and delivery system that extends more than 705 miles – two-thirds the length of California. A collection of canals, pipelines, reservoirs, and hydroelectric power facilities delivers clean water to 27 million Californians, 750,000 acres of farmland, and businesses throughout CA
- Extending 400 miles through central California, the Central Valley Project (CVP) is a complex, multi-purpose network of dams, reservoirs, canals, hydroelectric powerplants and other facilities
- Both projects play a critical role in managing California's water supply during wet and dry years and is also a major source of hydroelectric power deliveries for the State's power grid

What is a Water District?

Water Districts within California



Zoomed: Water Districts within Fresno County



- Starting in the late 1800's, groups of neighboring farmers formed water districts to negotiate water rights on behalf of the entire group
- Water districts negotiated claims to river water rights and eventually water claims on the State Water Project and the Central Valley Project to determine how much surface water the district would receive every year
- Water districts also manage groundwater pumping within the region to avoid over pumping and land subsidence
- There are currently 130+ water districts within California and each water district has varying seniority rights to surface water sources. Land that is not in a water district is known as "white area" land, and its only source of water is groundwater