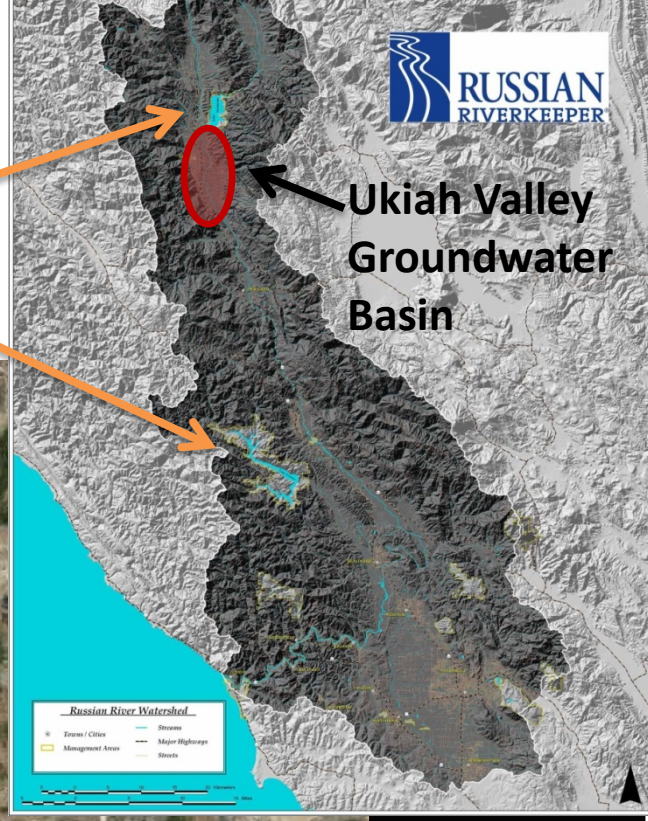
Length: 110 mi (177 km)
Reservoir: flood protection and water supply
Coyote Valley Dam (1959) Lake Mendocino: 122,000 acre-feet
Warm Springs Dam (1983) Lake Sonoma: 381,000 acre-feet

Russian River Basin

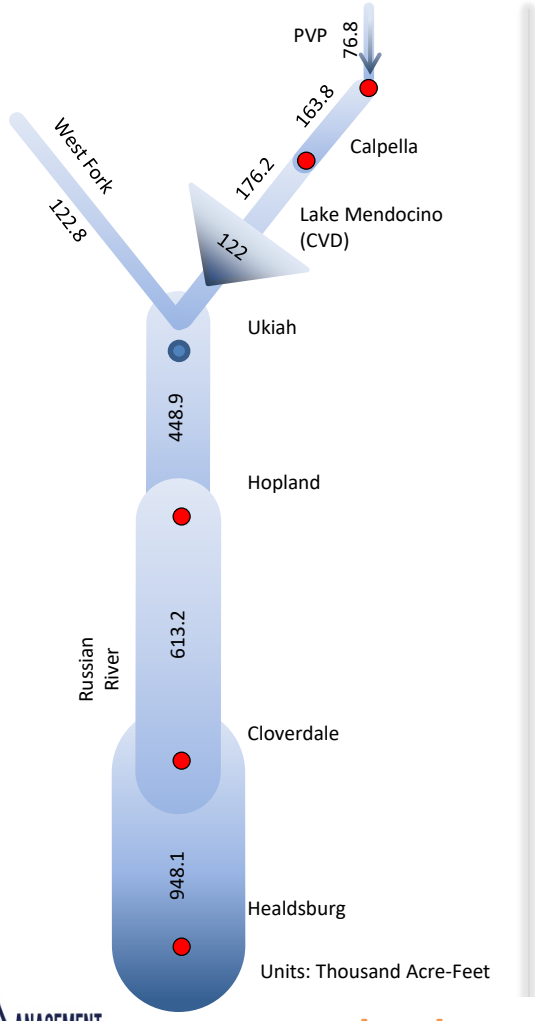


ANAGEMENT LAB

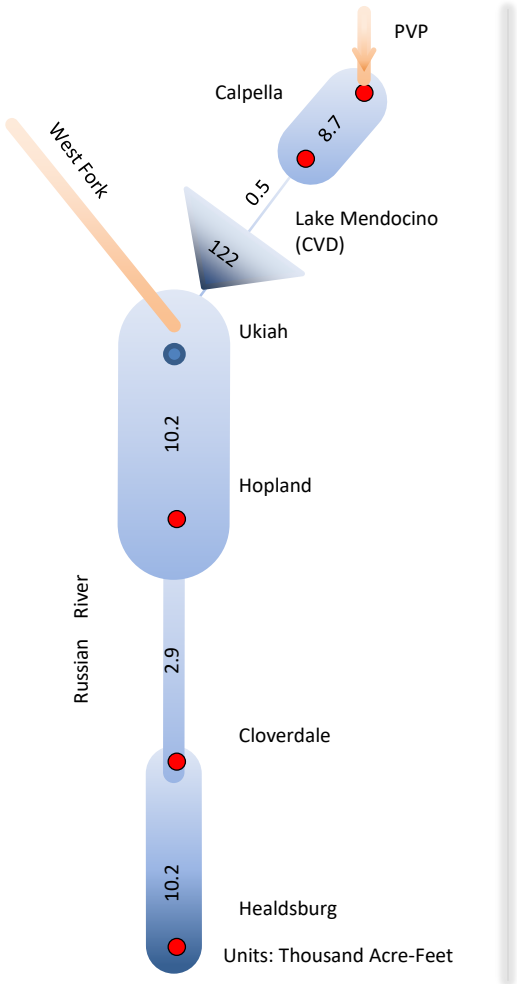
ersity of California

Russian River System - Characterization

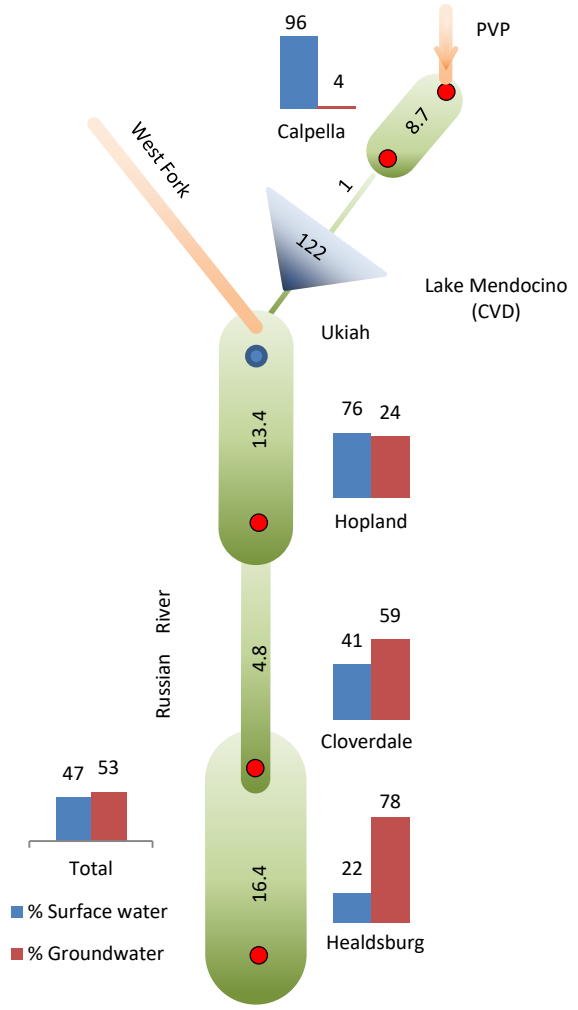
Cumulative Unimpaired Flows



Surface Water Demands per Reach



Agricultural Water Demands per Reach[2]

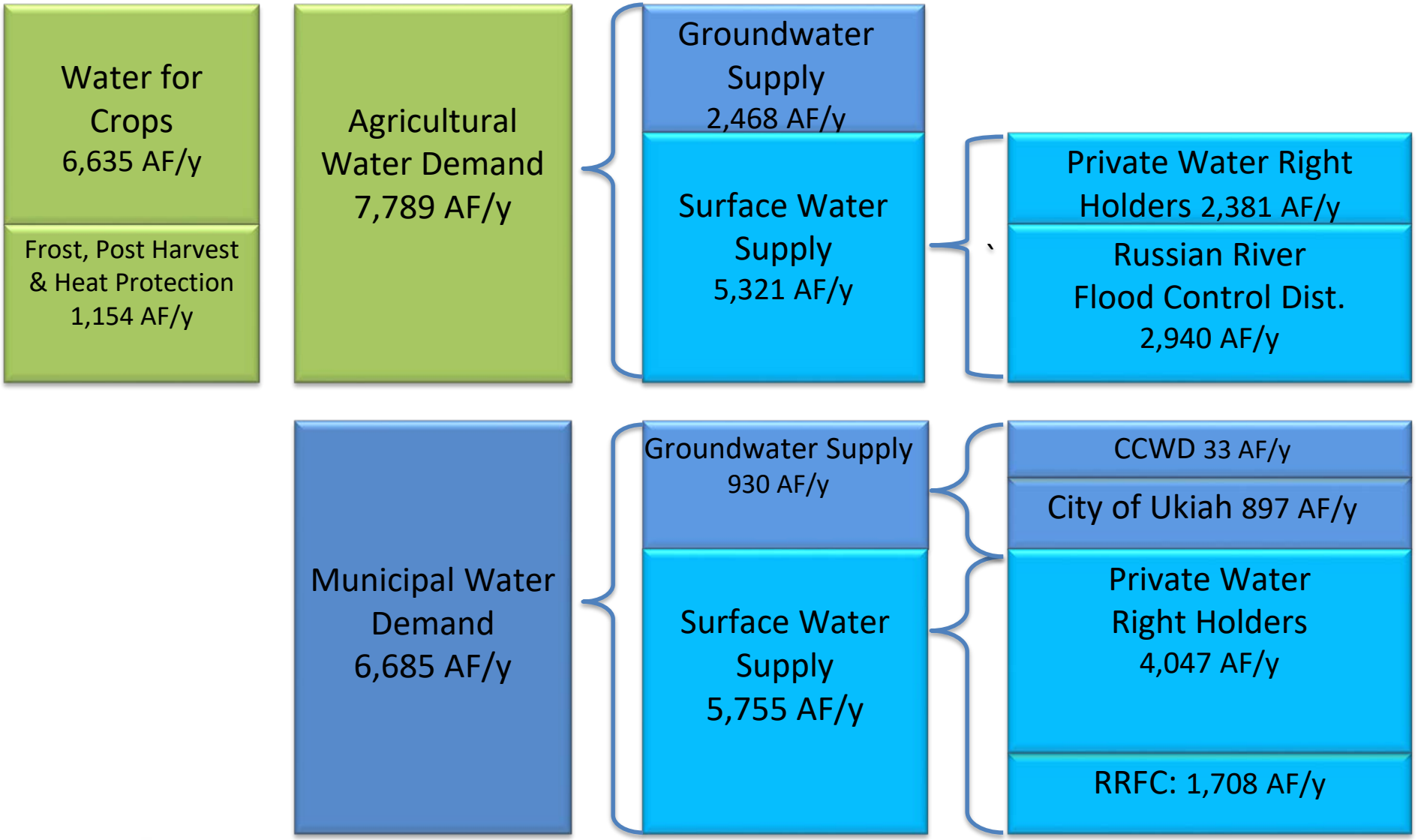


Hopland Research and Extension Center

University of California Agriculture and Natural Resources

(1) Flint, L., et al. (2015). *Unimpaired Mean Daily Streamflow in the Russian River and Upper Eel River Basins, California under Historical and Projected Future Climates: U.S.G.S.* doi:10.5066/F71C1TX4.
(2) SCWAgency. (2015). *Lake Mendocino Water Supply Reliability Evaluation Report - Term 17.*

Ukiah Valley Water Demands[1]



UC DAVIS WATER MANAGEMENT LAB

Hopland Research and Extension Center

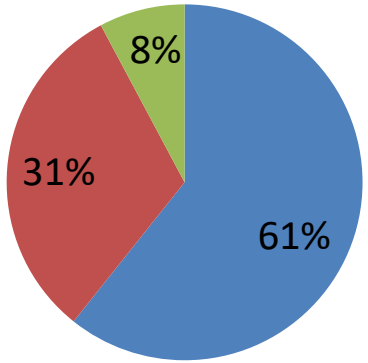
University of California Agriculture and Natural Resources

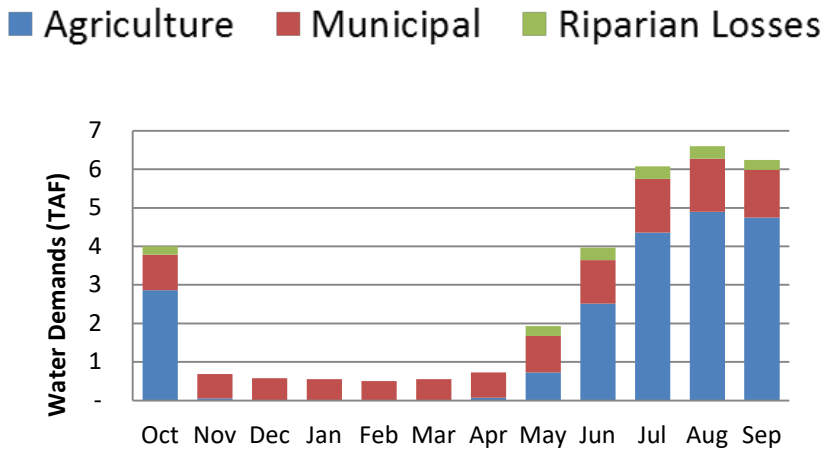
(1) Flores-Marquez M. (2017). *Water budget for the Ukiah Valley groundwater basin. University of California, Davis. Davis. California.*

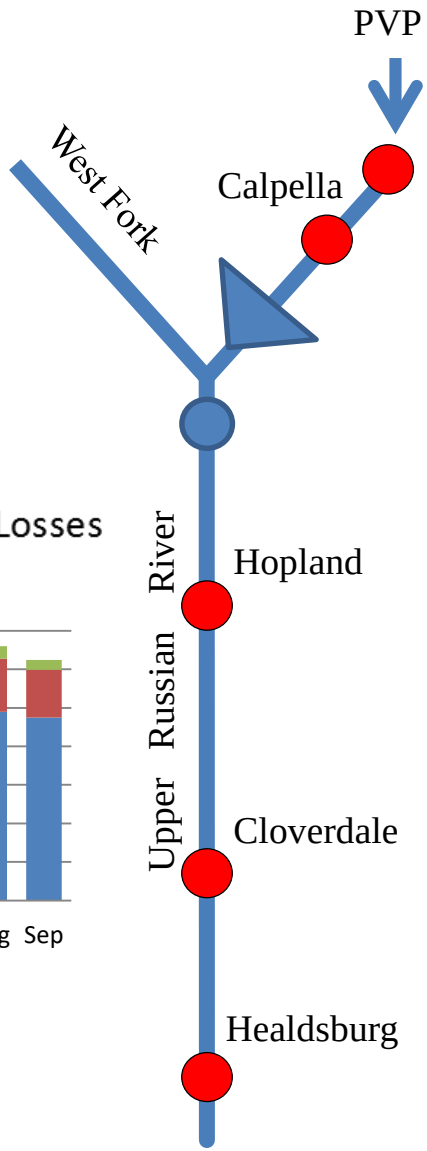
Russian River System - Characterization

Water Allocation Model (Continuity Equation)

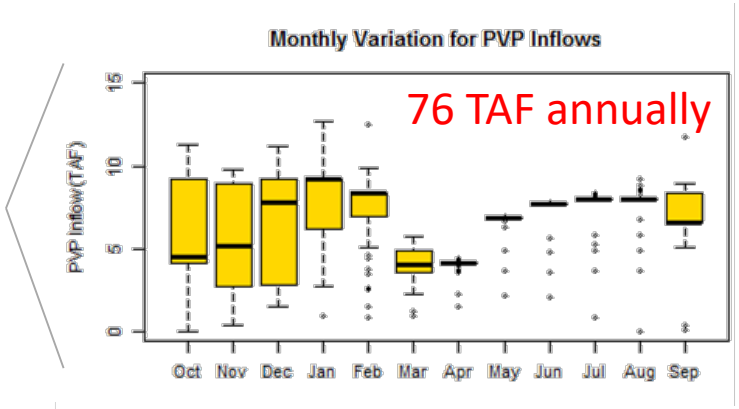
Surface Water Demands

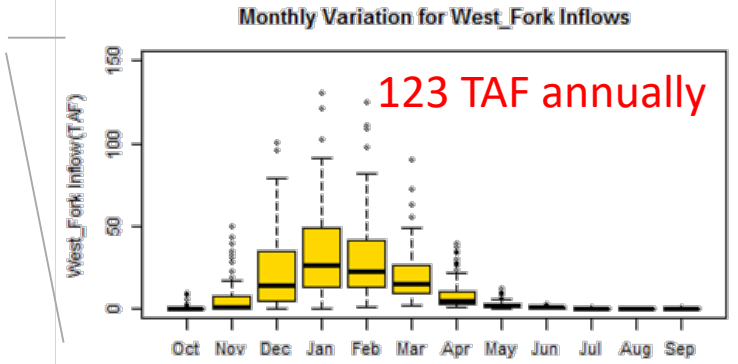


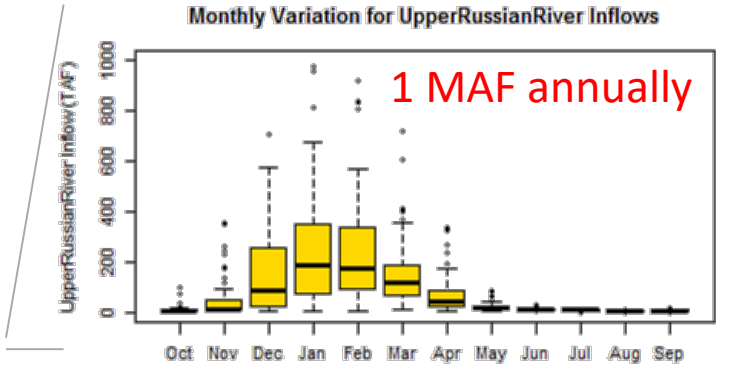




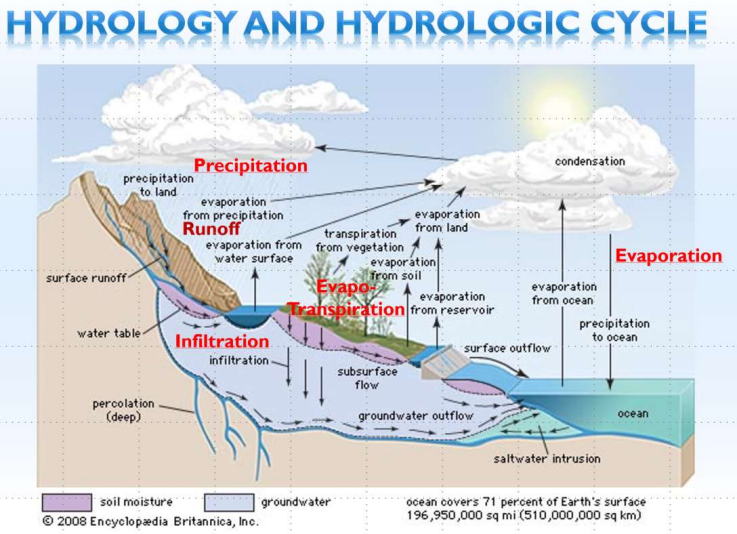
Water Availability







UC DAVIS WATER MANAGEMENT LAB



(Drainage) Basin: is any area of land where precipitation collects and drains off into a common outlet, such as into a river, bay, or other body of water. Other terms used interchangeably with drainage basin are catchment area, catchment basin, drainage area, river basin, and water basin.

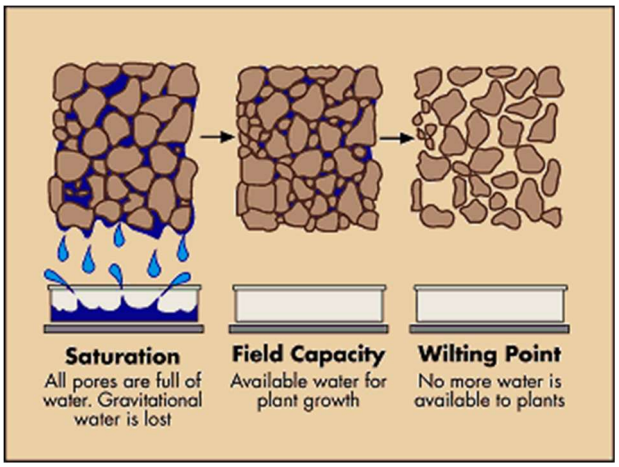
Water vapor: is the gaseous phase of water

Dew: is water in the form of droplets that appears on thin, exposed objects in the morning or evening due to condensation.

Dew Point Temperature: Water vapor will condense into droplets depending on the temperature. The temperature at which droplets form is called the dew point.

Precipitation: rainfall and snowfall

Rainfall intensity: the ratio of the total amount of rain (rainfall depth) falling during a given period to the duration of the period It is expressed in depth units per unit time, usually as mm per hour (mm/h)



Infiltration: Infiltration is the process by which water on the ground surface enters the soil.

Infiltration rate: is a measure of the rate at which soil is able to absorb rainfall or irrigation often measured in millimetres per hour or inches per hour.

When soil is **saturated**, all the pores are full of water, but after a day, all gravitational water drains out, leaving the soil at **field capacity**. Plants then draw water out of the capillary pores, readily at first and then with greater difficulty, until no more can be withdrawn and the only water left is in the micro-pores. The soil is then at **wilting point** and without water additions, plants die.

Field capacity: field capacity which is the maximum amount of water the soil can hold

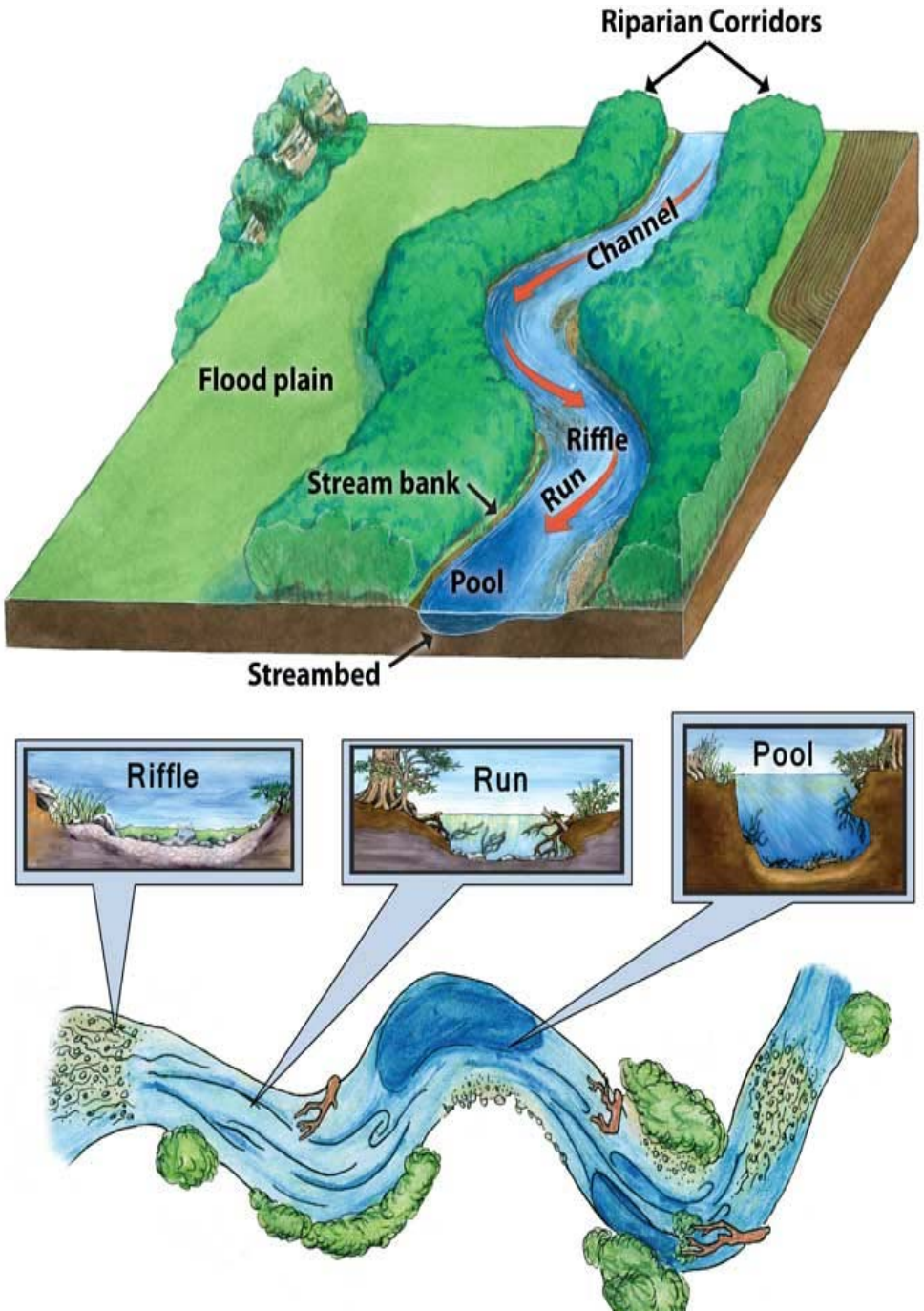
Water holding capacity: is the total amount of water a soil can hold at field capacity.

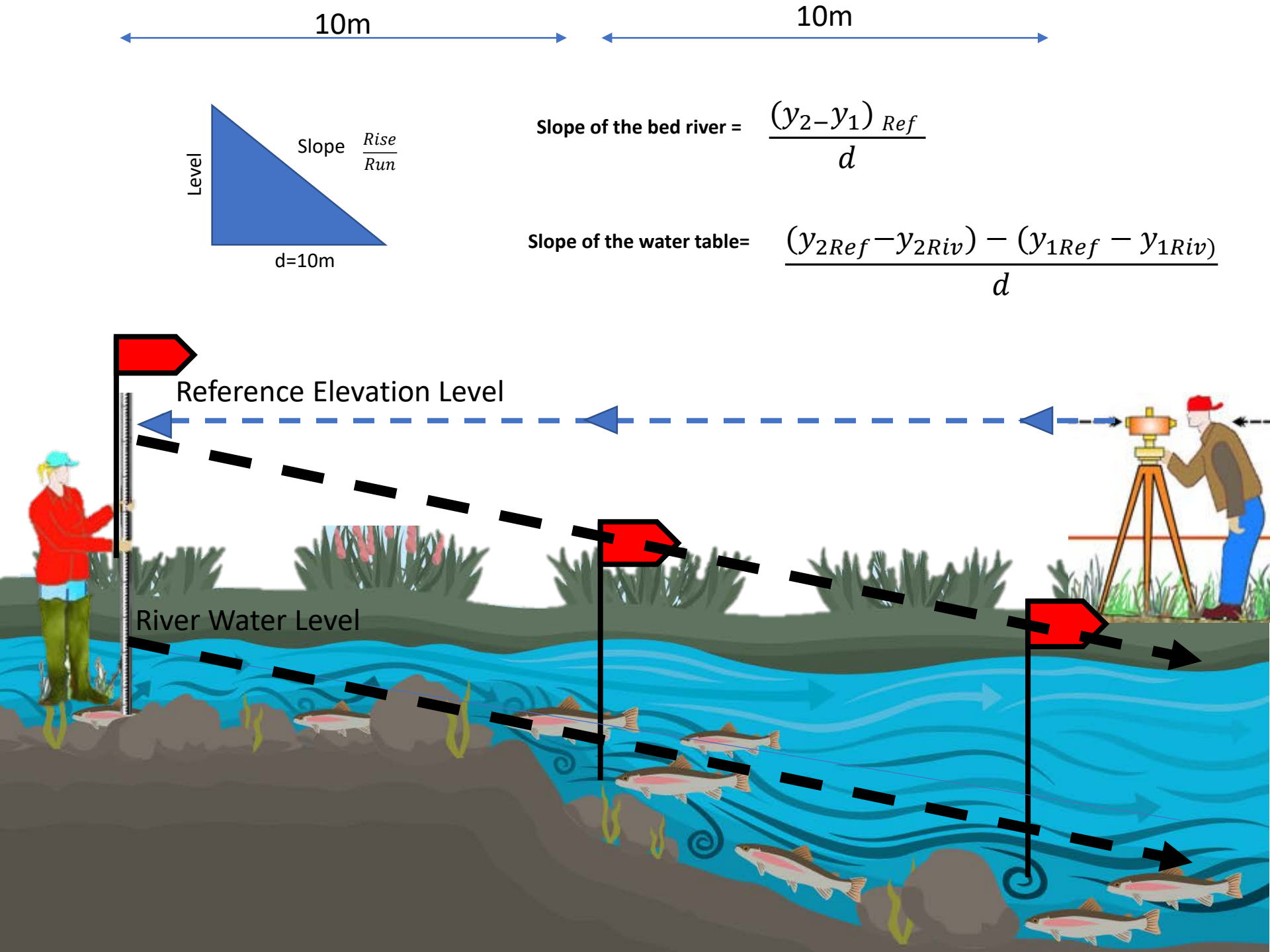
Wilting point: wilting point where the plant can no longer extract water from the soil

Available water: is the difference between field capacity and wilting point.

Subsurface flow: is the flow of water beneath earth's surface

Surface flow, Runoff, surface runoff overland flow: is the flow of water that occurs when excess stormwater, meltwater, or other sources flows over the Earth's surface.


Riparian Corridors
Channel
Flood plain
Riffle
Stream bank
Run
Pool
Streambed
Riffle
Run
Pool


10m
10m
Level
Slope $\frac{Rise}{Run}$
d=10m
Slope of the bed river = $\frac{(y_2 - y_1)_{Ref}}{d}$
Slope of the water table= $\frac{(y_{2Ref} - y_{2Riv}) - (y_{1Ref} - y_{1Riv})}{d}$
Reference Elevation Level
River Water Level

Cross Section	Reference Elevation Level (Surveyor)	Water Level (Thalweg)	Slope


THE RUSSIAN RIVER
More than 600,000 residents in portions of Sonoma and Marin counties rely on the water released from storage and then delivered from the Russian River by the Sonoma County Water Agency. Wildlife—including endangered and threatened species such as coho and Chinook salmon and steelhead—recreational interests, and agricultural crops also rely on this water to thrive.
The Russian River originates in central Mendocino County, draining 1,485 square miles, including much of Sonoma and Mendocino counties, with a main channel 110 miles long. Two major reservoirs maintain water supply and provide flood protection for the Russian River watershed: Lake Mendocino and Lake Sonoma. Releases from both reservoirs provide water for municipal and industrial uses, in addition to maintaining the minimum stream flows required by the State Water Resources Control Board. These minimum flows provide for recreation as well as fish passage for salmon and steelhead.
Realizing the importance of protecting and preserving water resources for future generations, the Sonoma County Water Agency has taken a proactive role in implementing an array of water supply, conservation, and fisheries enhancement programs. To learn more about these programs and the Russian River, visit www.sonomacountywater.org.
SONOMA COUNTY WATER AGENCY
EEL RIVER
CAPE HORN DAM
SCOTT DAM
LAKE PILLSBURY
TUNNEL
VAN ARSDALE RESERVOIR
REDWOOD VALLEY
POTTER VALLEY
LAKE MENDOCINO
UKIAH
COYOTE VALLEY DAM
HOPLAND
THE GEYSERS
CLOVERDALE
ALEXANDER VALLEY
WARM SPRINGS DAM
FISH GLADDEN FISH HATCHERY
GEYSERVILLE
RUSSIAN RIVER
MAYACAMAS CREEK
DRY CREEK VALLEY
HEALDSBURG
LAKE SONOMA
AUSTIN CREEK STATE RECREATION AREA
ARMSTRONG REDWOODS STATE RESERVE
HEALDSBURG VETERANS MEMORIAL BEACH
GUERNEVILLE
MIRABEL WATER SUPPLY FACILITIES
JOHNSONS BEACH
WINDSOR
RIVERFRONT REGIONAL PARK
JENNER
MONTE RIO
RUSSIAN RIVER
WOHLER COLLECTOR WELLS
SUMMER HOME PARK REGIONAL PARK
FORESTVILLE
101
SANTA ROSA
PACIFIC OCEAN
1
LAGUNA DE SANTA ROSA