

RISE Planning Committee



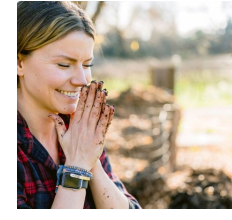
ANNA BRITTAIN
Executive Director
Napa Green



MICHELLE NOVI
Industry Relations and Regulatory
Affairs Director, Napa Valley
Vintners



DAN PETROSKI
Winemaker, Massican Winery and
Board Member, Napa Valley
Grapegrowers



MOLLY (SHEPPARD) BURROUGHS
Assistant Winemaker & Environmental
Manager at Spottswoode Estate
Vineyard & Winery



EVYN CAMERON
Consulting Winemaker



MARTIN REYES, MW
Partner, WineWise; Founder, Reyes Wine
Group and Co-Founder, Wine Unify



TOD MOSTERO
Director of Viticulture &
Winemaking at Dominus Estate

Napa Green Team



ANNA BRITTAIN
Executive Director



MEGAN SCOTT
Winery Program Manager



BEN MACKIE
Vineyard Program Manager



SIERRA MINCHACA
Climate & Soil Specialist



MARISA TAYLOR
Program Coordinator



MEGHAN VERGARA
Social Media Manager



BILL BENNETT
Winery Program Engineer

A scenic landscape featuring rolling green hills, a river, and trees under a hazy sky. The text is overlaid on the image.

If not here,
WHERE?

If not now,
WHEN?

LIVING ROOM SALON: GROWING RESILIENCE AS HEAT RISES



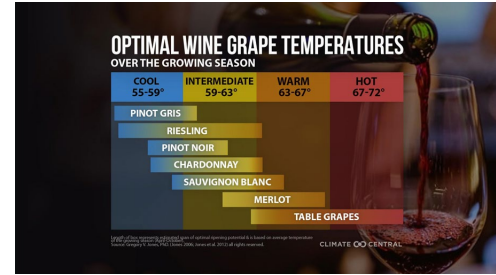
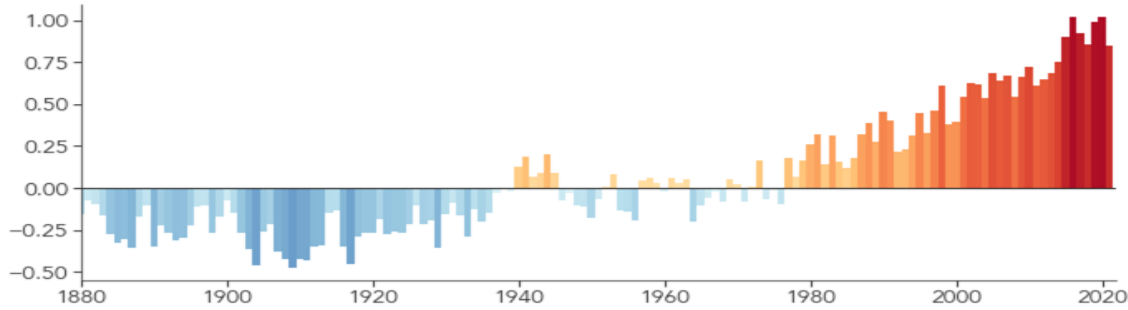
Expert Speakers:

- Matt Brain, Winemaker at Alpha Omega
- Tod Mostero, Director of Viticulture & Winemaking at Dominus Estate
- Steve McIntyre, Founder & Owner of Monterey Pacific
- Beth Forrestel PhD, Asst. Professor of Viticulture and Enology at UC Davis

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www.RISEGreen.org

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Global Temperature Anomaly (°C compared to the 1951-1980 average)



Spring Frost



Drought



Wildfires



Heatwaves



Heatwaves, W arming & W ater Demand

↑ Number of heatwaves

↑ Potential ET

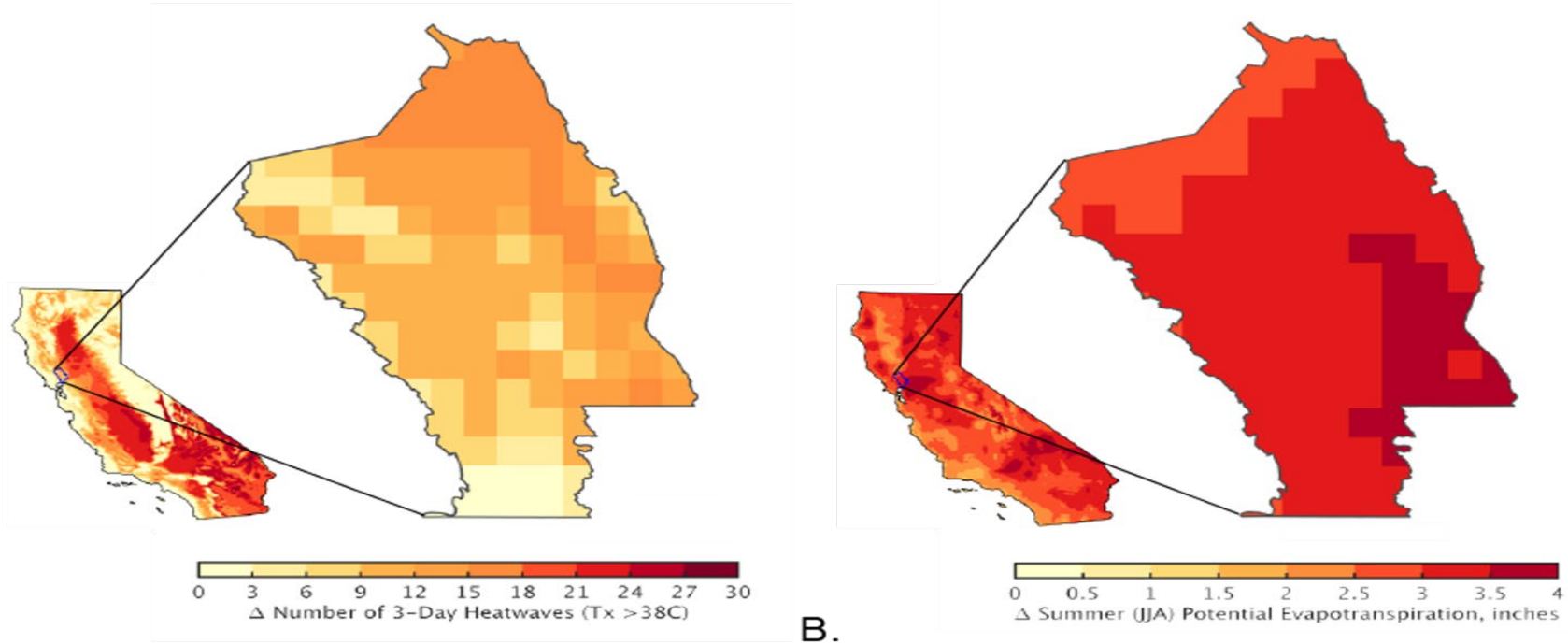
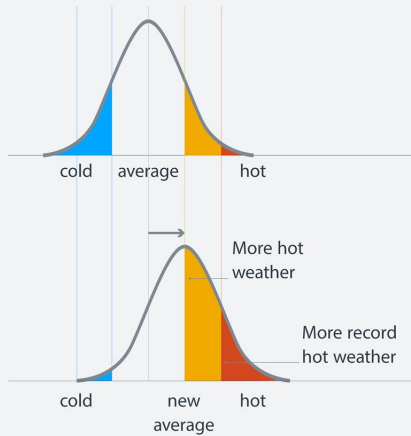


Figure 1. Napa Valley observed climate means (1981-2100) minus end of century (2071-2100) projections for: (A) Change in number of heatwaves where maximum temperatures exceed $38^{\circ} C$ ($100^{\circ} F$) for three consecutive days, and (B) Change in potential evapotranspiration in units of inches. Climate data are from CMIP5 RCP 8.5 20 model-means at 4 km grid cell resolution.

Trends in Extreme Temperatures in California

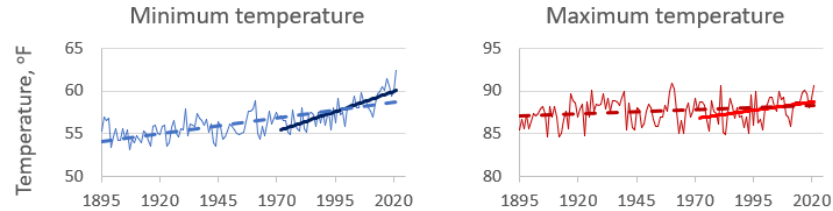
Climate change has made heat waves stronger

Probability distribution of temperature

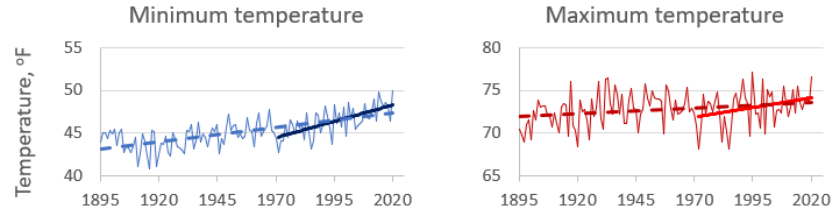


Source: Adapted from IPCC

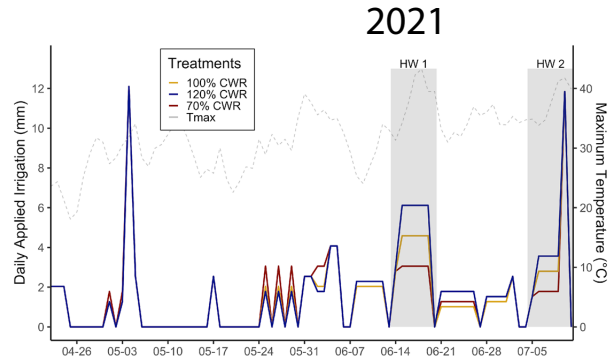
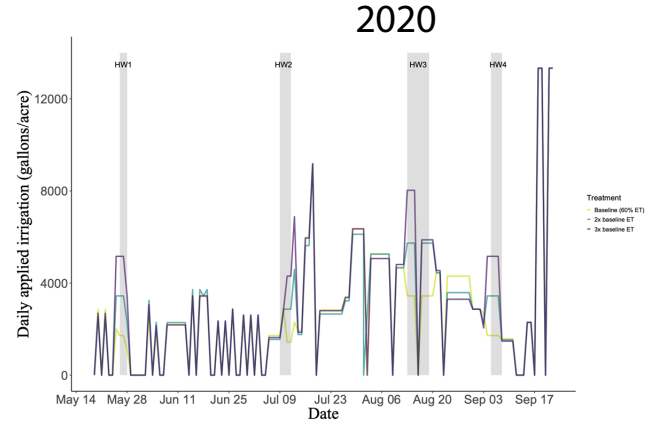
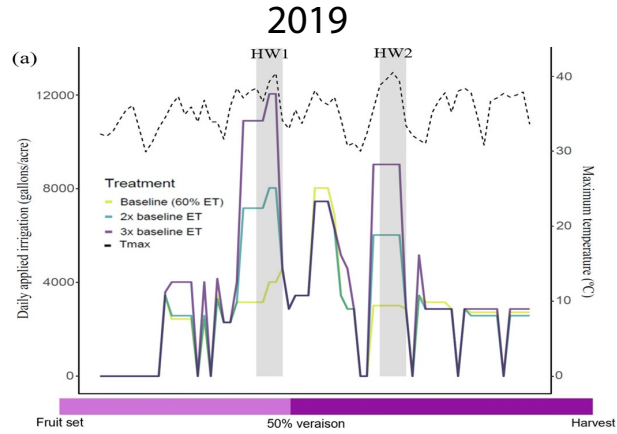
Summer (June-August)



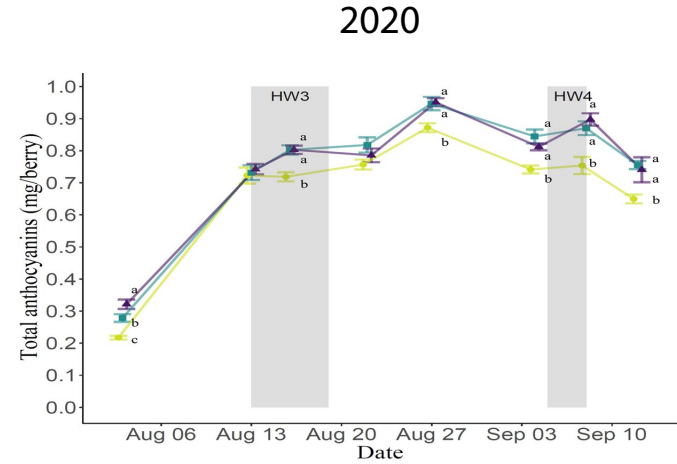
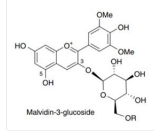
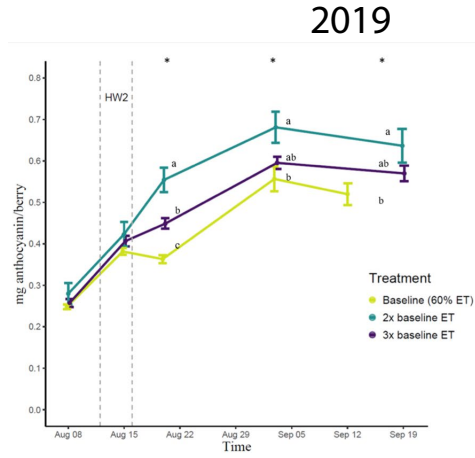
Fall (September-November)



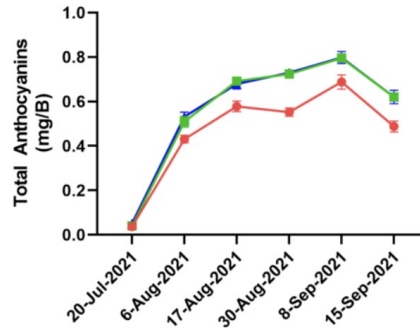
Heatwaves of 2019-2021 Field Seasons



Berry Phenolics: Total Anthocyanins



2021 Anthocyanin Data



- Baseline
- Baseline 2X
- Baseline 3X

Baseline (60% ET)
 1.5x baseline (100% ET)
 2x baseline (120% ET)

Winkler Study: Climatic and Agronomic Impacts on Berry Chemistry

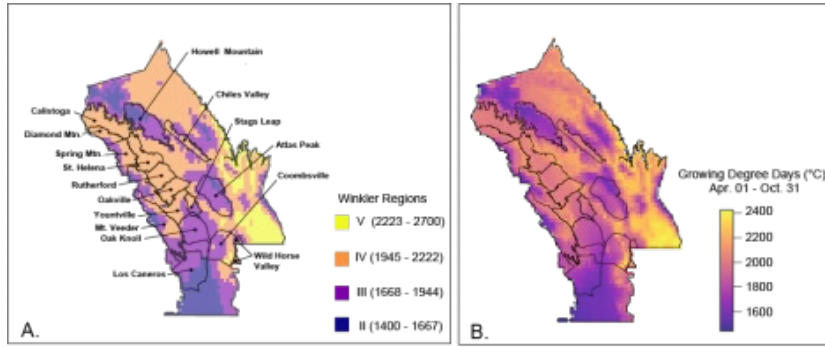
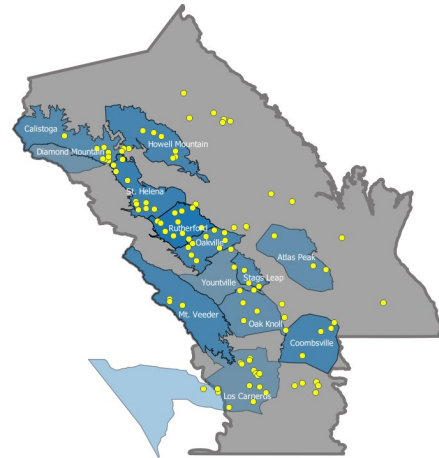
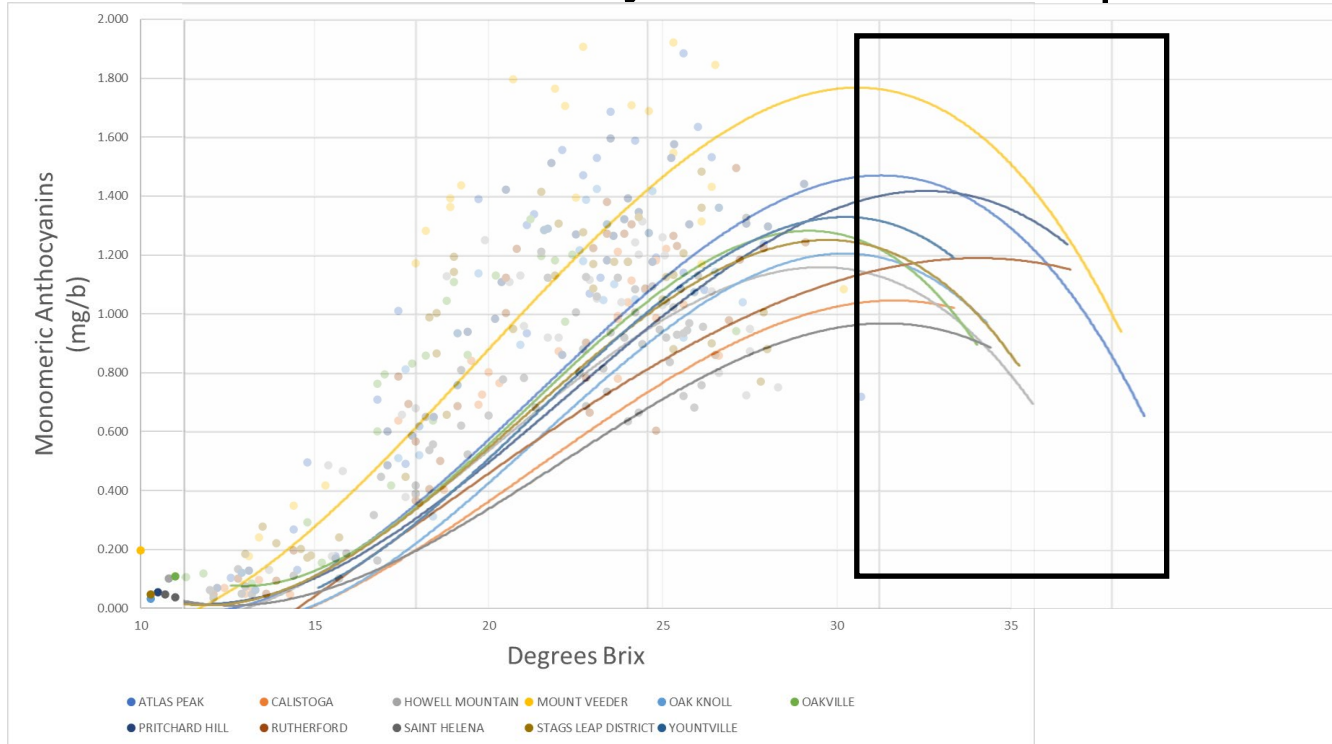


Figure 2. (A) Winkler Regions for American Viticultural Areas (AVA) within the Napa Valley and associated range of growing degree days, (B) and growing degree days above a base temperature of 10 degrees Celsius between April 1 and October 31st calculated according to Winkler & Amerine 1944. Degree days were calculated from the 1980-2010 climate normals at 800 meter grid cell resolution from the PRISM downscaled climate dataset (Daly et al. 2015).



- 50 blocks across Napa covering all AVAs; 24 participating wineries/growers
- Historical on-site phenological, irrigation and weather data
- Longitudinal study of climate and environmental impacts on berry chemistry; primary chemistry
- In conjunction with 2015 dataset, sampled in 2021 & 2022, initially Cabernet

2015 Monomeric Anthocyanins Across Napa AVAs



Acknowledgments

Collaborators and labs:

Dario Cantu (U.C. Davis)
Jason Londo (USDA-ARS, Geneva)
Andrew McElrone (U.C. Davis)
Mina Momayyezi (U.C. Davis)
Lauren Parker (U.C. Davis)
Susanne Tittman (Geisenheim U.)
Andy Walker (U.C. Davis)
Marjorie Weber (Michigan State U.)

Forrestel Lab

Martina Galeano
James Campbell
Sophia Bagshaw
Chaiti Bhagawat
Paul Bringas
Kayla Elmendorf
Paige Breen
Rowan Halsey
Iona Joseph

Forrestel Lab

Nico Raab
Martina Galeano
Chaiti Bhagawat
Sophia Bagshaw
Paul Bringas
Kayla Elmendorf



Funding & Support:



TJ & Valeta Rodgers
Warren Winiarski





Napa RISE

CLIMATE ACTION & REGENERATIVE AGRICULTURE

APRIL 20, 2023

STEVE MCINTYRE – MONTEREY PACIFIC, INC

Vineyard Development

High Wire Trellis for Climate Resilience



High Wire Extension for Modified VSP Conversion



Shade Cloth – 40%



Shade Cloth/ Bird Netting



Sitos Monterey One

Closed System Pyrolysis System - Biochar





Thank You!





AS HEAT RISES

Tod Mostero

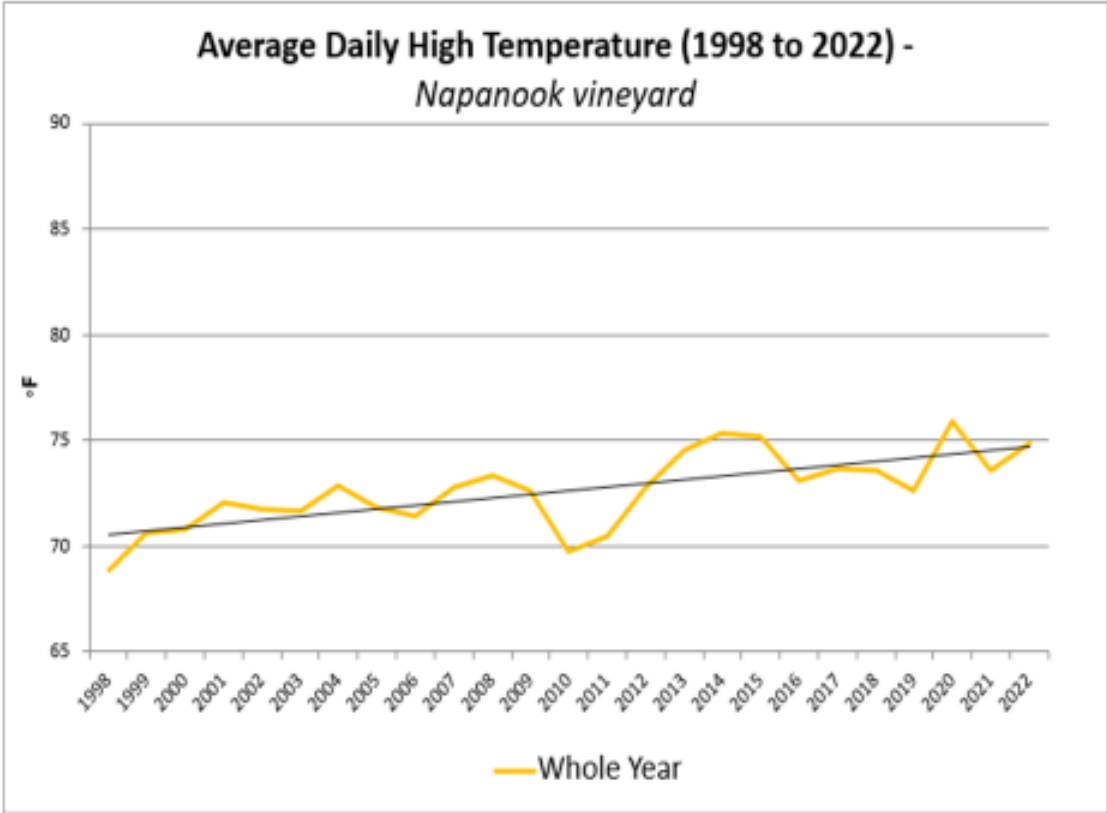
Dominus Estate

Director of Viticulture and Winemaking

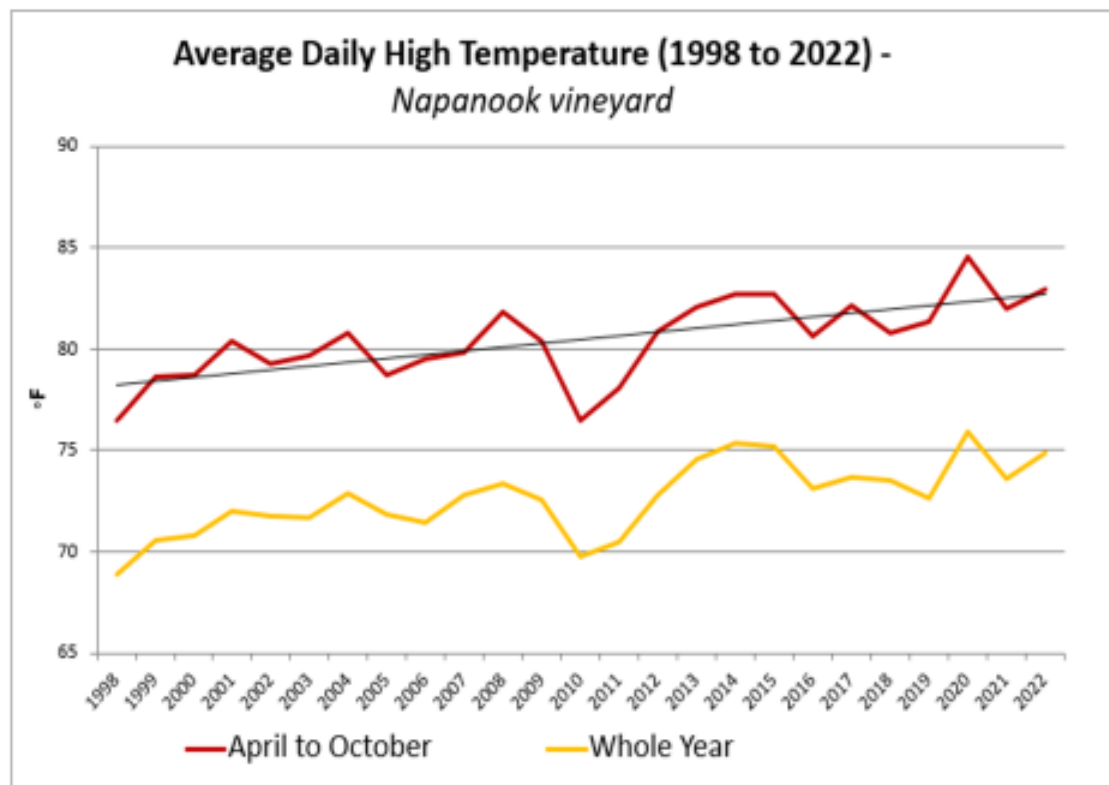
WHAT'S LOVE GOT TO DO WITH IT?



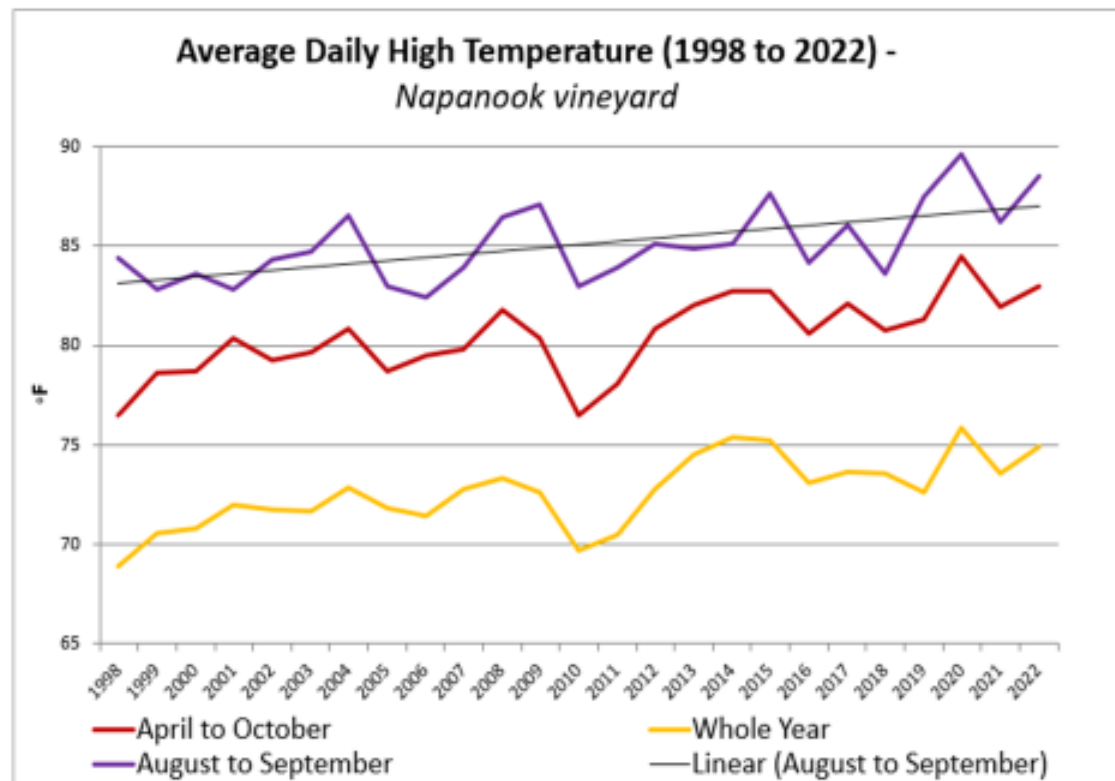
DAILY HIGHS
WHOLE YEAR



DAILY HIGHS
APRIL - OCTOBER



DAILY HIGHS
AUGUST - SEPT





VAPEUR PRESSURE DEFICIT (VPD)

The Moisture-Sucking capacity of the air.

It gets higher when it is hotter.

SHADE STRATEGIES

ORIENTATION

Rows parallel to the sun's rays at the hottest time of the day.

TRELLISING

Trellises that increase overhead shading.

CANOPY

Laterals trimmed to protect clusters.

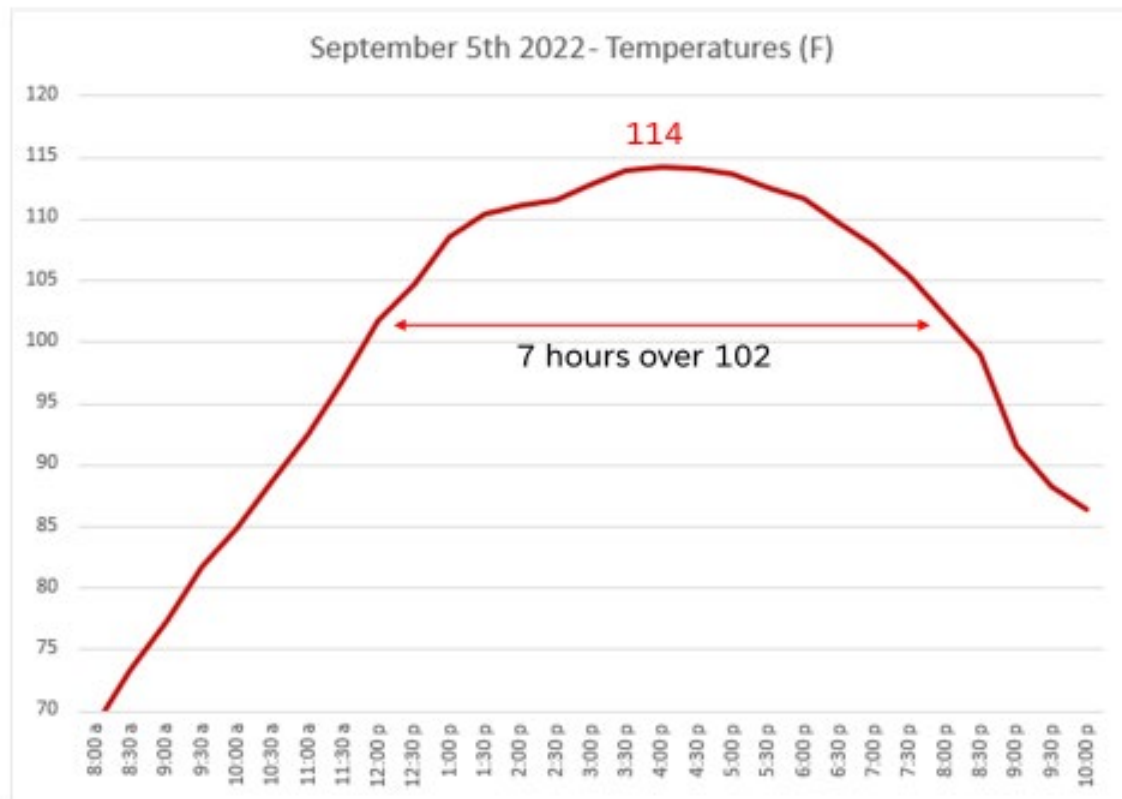


VINTAGE 2022

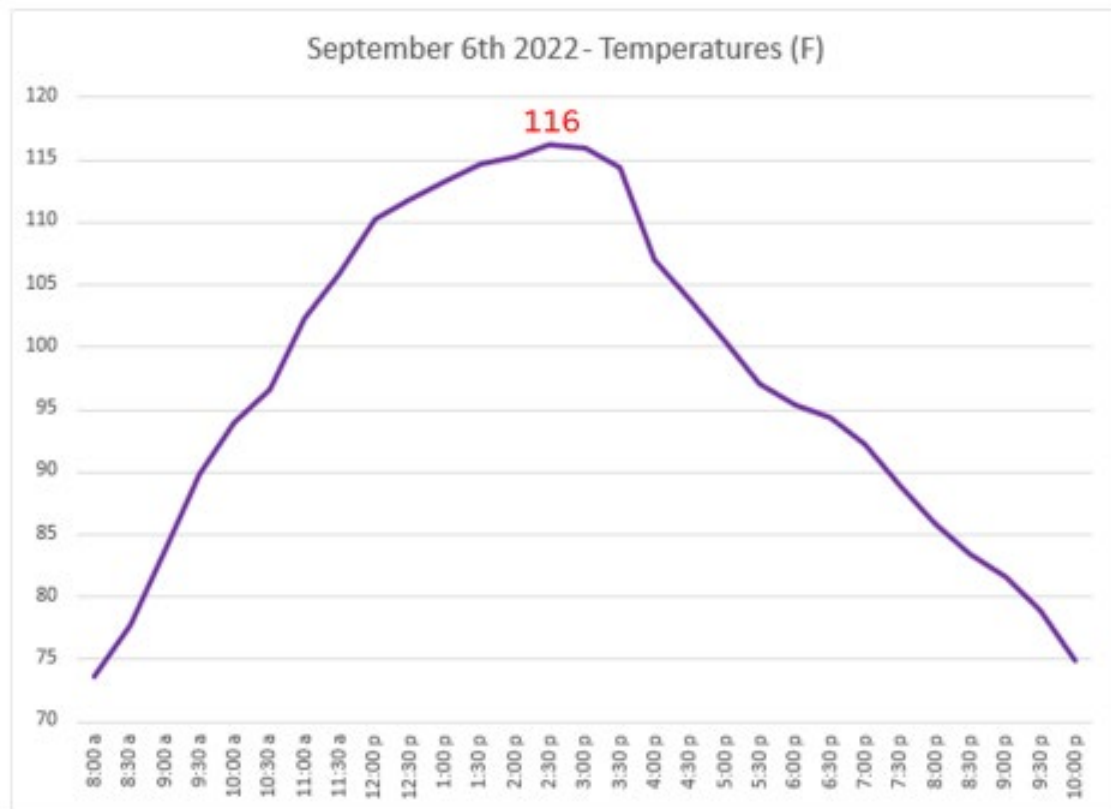
The perfect set-up.



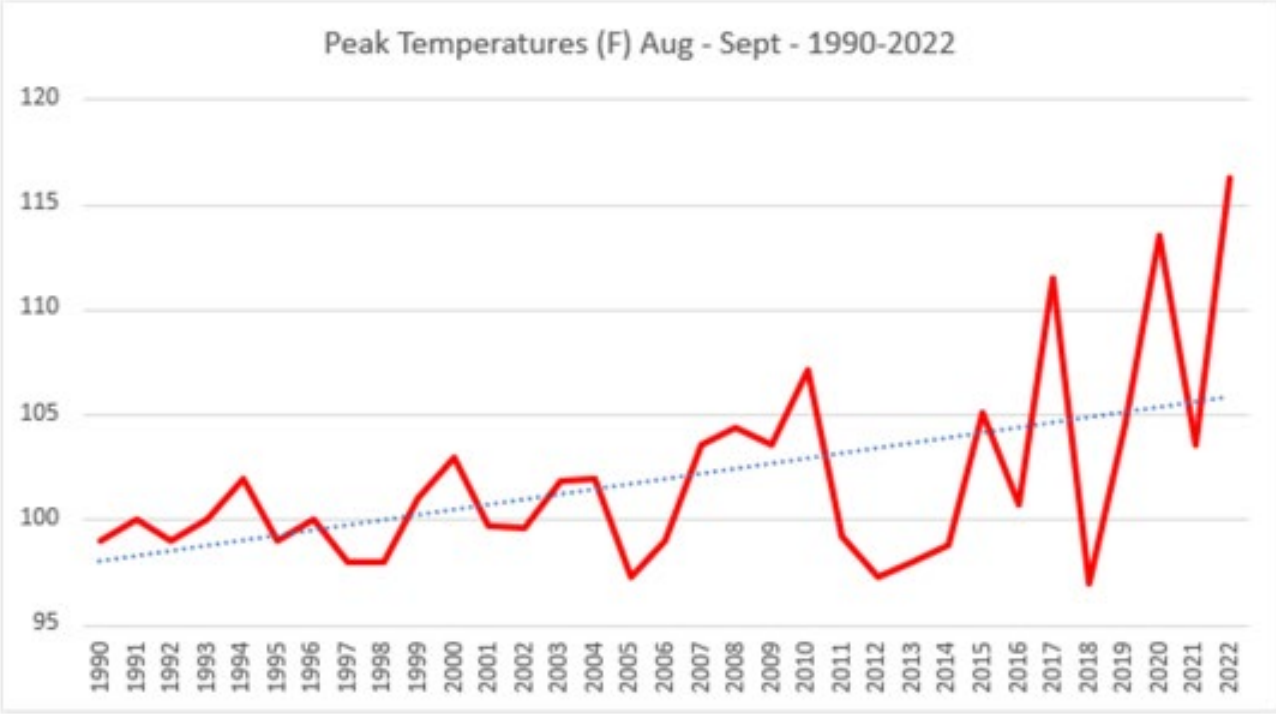
SEPTEMBER 5



SEPTEMBER 6



PEAK TEMPS
1990-2022





TEMP THRESHOLDS?

HARVEST EARLY?

IRRIGATION?

MISTERS?



TEMP THRESHOLDS?

SHADE CLOTH?

HARVEST EARLY?

COVER CROPS?

IRRIGATION?

SHADE STRUCTURES?

MISTERS?

NEW VARIETIES?

HELP

Tod Mostero

707-312-9001

tmostero@dominusestate.com



**MARQUEE CONVERSATION:
MICHAEL SILACCI, OPUS ONE WINEMAKER
ANNA BRITTAIN,
NAPA GREEN EXECUTIVE DIRECTOR**

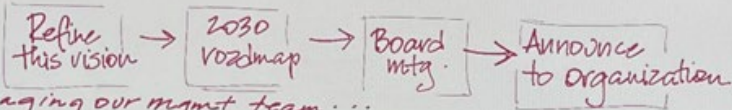


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NEXT STEPS...



... engaging our mgmt team ...

OUR 2030 VISION--

WERE PRACTICING HOLISTIC SUSTAINABILITY



QUALITY INNOVATION + CREATIVITY



OPRS ONE 3. OVERTURE by OPRS ONE
 OUR WINES are one of the WORLD'S
 #1 WUXURY BRANDS

rarity/quality balance
 purity of flavors...

A GREAT PLACE TO WORK



Preserved, protected, & enhanced our 4 estate vineyards

from here for employees: what does a vine need to live to 40y?

LEGACY + TRADITION



It's ABOUT HOW... leadership in the vineyard ...

WE CONTINUE TO BOLD STRATEGIC PARTNERSHIPS & COLLABORATION

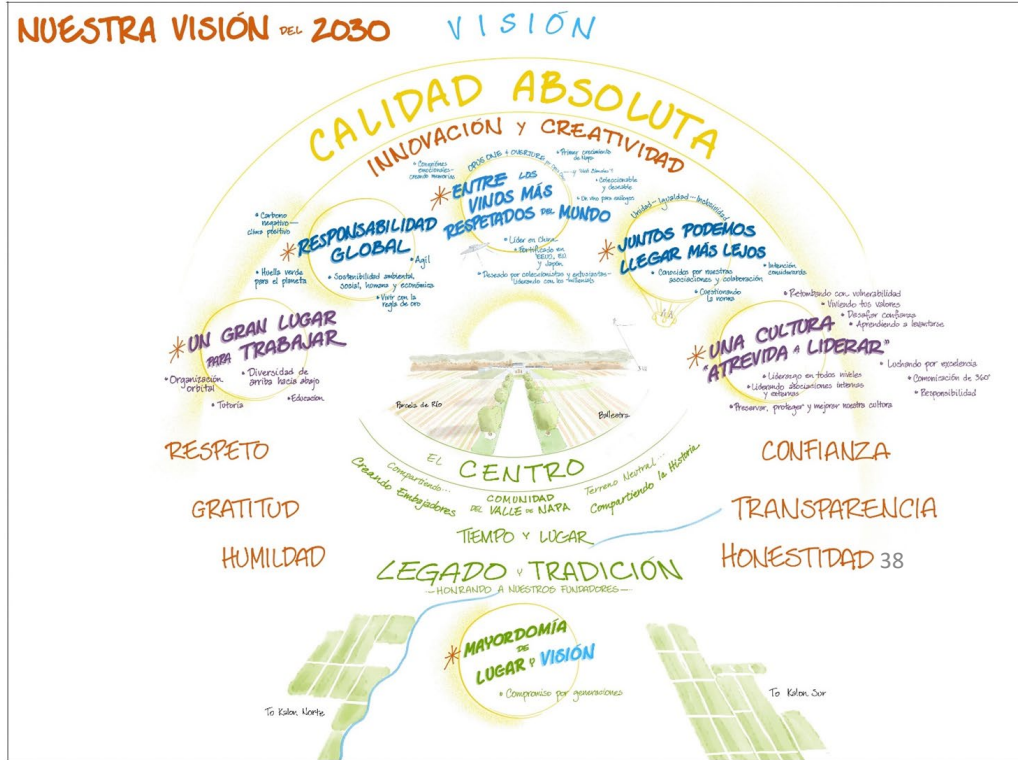


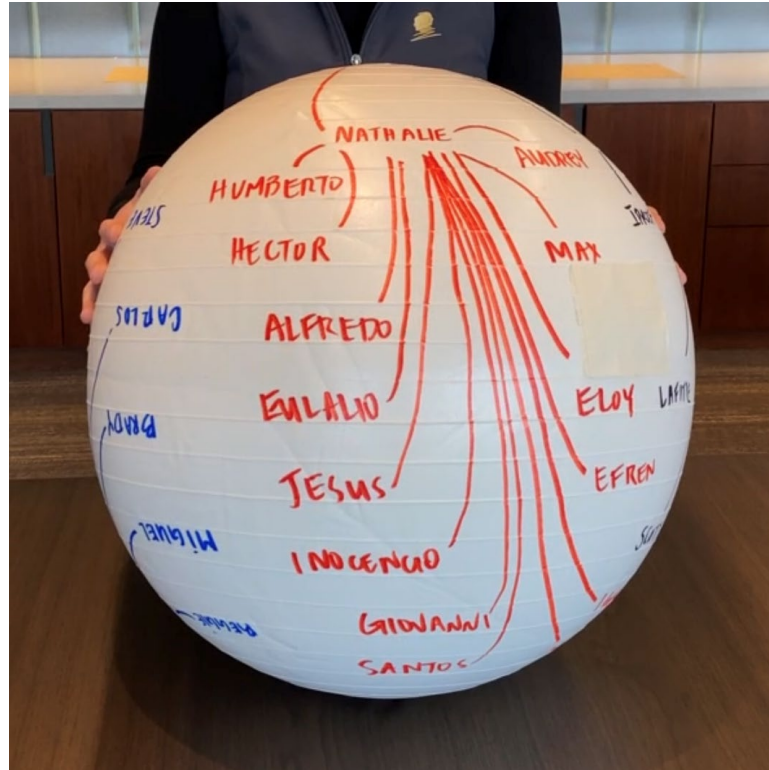
COMMUNICATION 360° ... Omnidirectional Accountable

VP of history.



NUESTRA VISIÓN DEL 2030 VISION





Six Elements

I. Social Justice, Diversity & Inclusion

I. Regenerative Carbon Farming

- Custom Carbon Farm Plan for every vineyard property & Scope 1&2 emissions inventory
- Assistance with soil sampling and analysis
- Implementation funding – E.g., Zero Foodprint, Healthy Soils, SWEEP
- Pilot partnerships – E.g., CharBoss, Agrology realtime carbon monitoring

I. Irrigation Assessments & Water Efficiency

- DU Assessment and Recommendations report

I. Forest Health & Fire Risk Reduction

- Connections with resources including Resource Conservation District, North Bay Forest Improvement Program, The Clean Burn Company

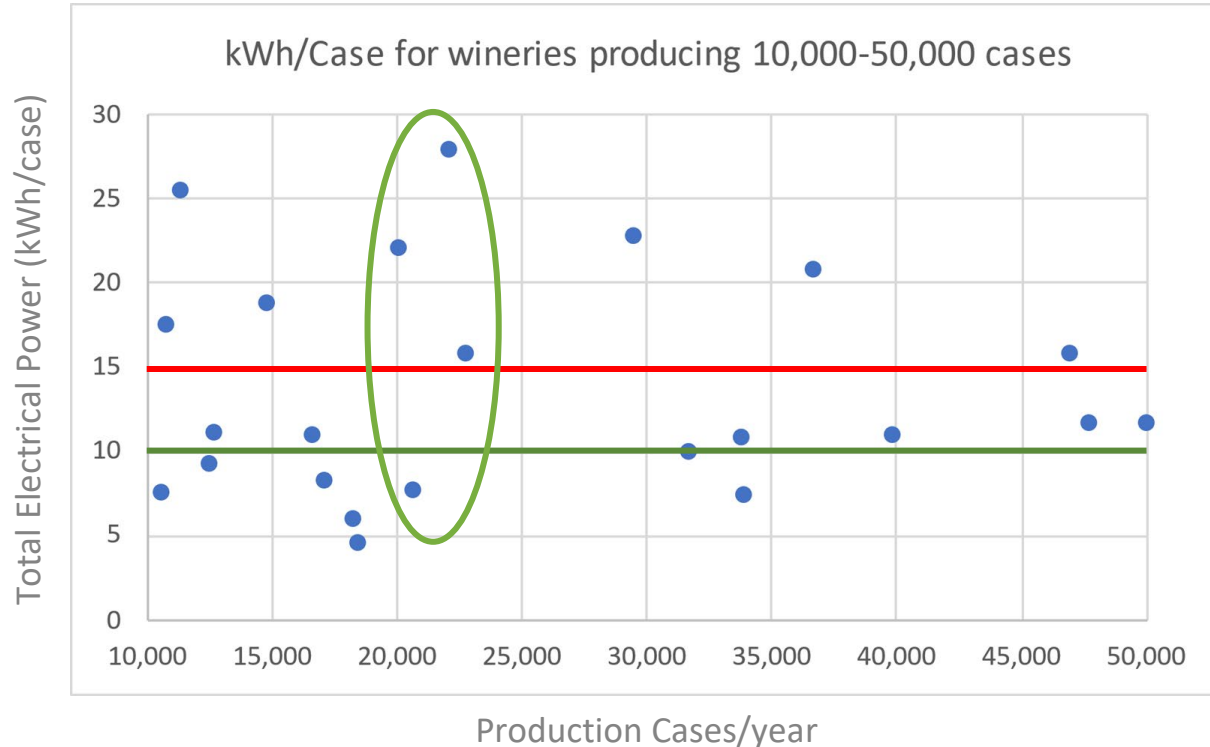
I. Prohibited & Restricted Pesticides

I. Climate-Smart Burning

- Conservation/low-smoke burn, flame-cap kiln and Air Curtain Burner demonstrations and training

Energy Intensity Metrics 10,000-50,000 Cases

kWh/case for TOTAL energy use — Grid + Solar (if applicable)



Two wineries making 20-25k cases of wine.


Efficiency Difference:

\$140,000 a YEAR in savings

- Okay Efficiency (<15 kWh/case)
- Excellent Efficiency(<10 kWh/case)
- Total Electrical Usage

A scenic landscape featuring rolling green hills and a river valley. In the foreground, a large, leafy tree stands prominently. The middle ground shows a river winding through a valley, with a utility pole visible. The background consists of more hills and a hazy sky, suggesting a distant horizon. The overall atmosphere is peaceful and natural.

Missing the
Climate for
the weeds.



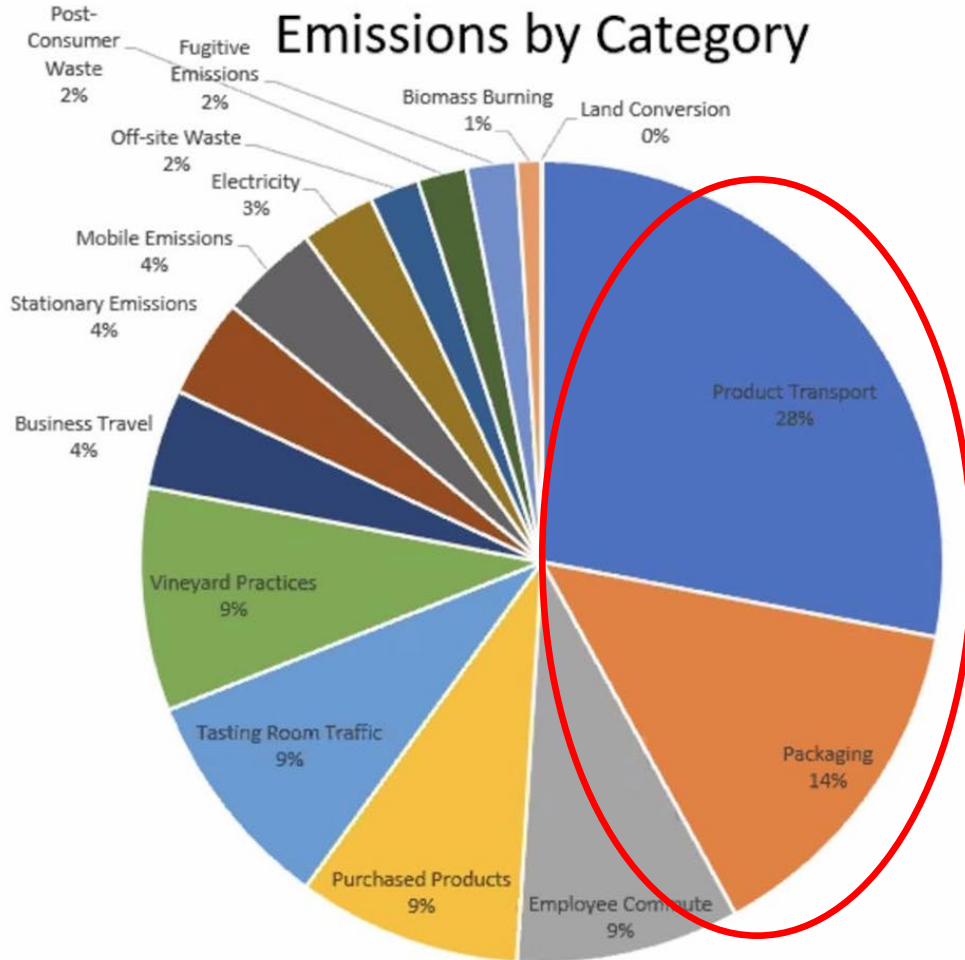
"Organic is about to undergo global scrutiny under the microscope of ESG reporting. Environmental. Social. Governance.

Detailed ESG strategies, metrics, and measurements are being required of every entity that has customers, lenders, or shareholders: that's everyone.

But USDA Organic standards address only a small part of only one of the ESG reporting requirements. It appears we have fallen into the trap of using the Organic Seal as a Shield against anything inconvenient."

-Alan Lewis, Natural Grocers

Emissions by Category





GOVERNMENT WARNING: (1) ACCORDING TO THE NATIONAL INSTITUTE ON DRUG ABUSE, REGULAR AND HEAVY DRINKING OF ALCOHOLIC BEVERAGES IS A MAJOR CAUSE OF ACCIDENTS, BODILY INJURY, AND DEATH. (2) DRINKING ALCOHOLIC BEVERAGES WHILE DRIVING A MOTOR VEHICLE IS A MAJOR CAUSE OF ACCIDENTS, BODILY INJURY, AND DEATH. Represented by American Wine Makers

Qualitätswein
aus der
Rebschneise
Deutschland
Produktion
100%
Rebschneise
Produktion
100%
Rebschneise
Produktion
100%

GOVERNMENT WARNING: (1) ACCORDING TO THE NATIONAL INSTITUTE ON DRUG ABUSE, REGULAR AND HEAVY DRINKING OF ALCOHOLIC BEVERAGES IS A MAJOR CAUSE OF ACCIDENTS, BODILY INJURY, AND DEATH. (2) DRINKING ALCOHOLIC BEVERAGES WHILE DRIVING A MOTOR VEHICLE IS A MAJOR CAUSE OF ACCIDENTS, BODILY INJURY, AND DEATH. Represented by American Wine Makers & Producers

Value: \$100
Bottle
Weight: 650 g
1.4 lbs.



Value: \$100
Bottle
Weight: 580 g
1.3 lbs.



Value: \$50
Bottle
Weight: 470 g
1 lb.



Value: \$30
Bottle
Weight: 880 g
1.9 lbs.



Value: \$300
Bottle
Weight: 560 g
1.2 lbs.



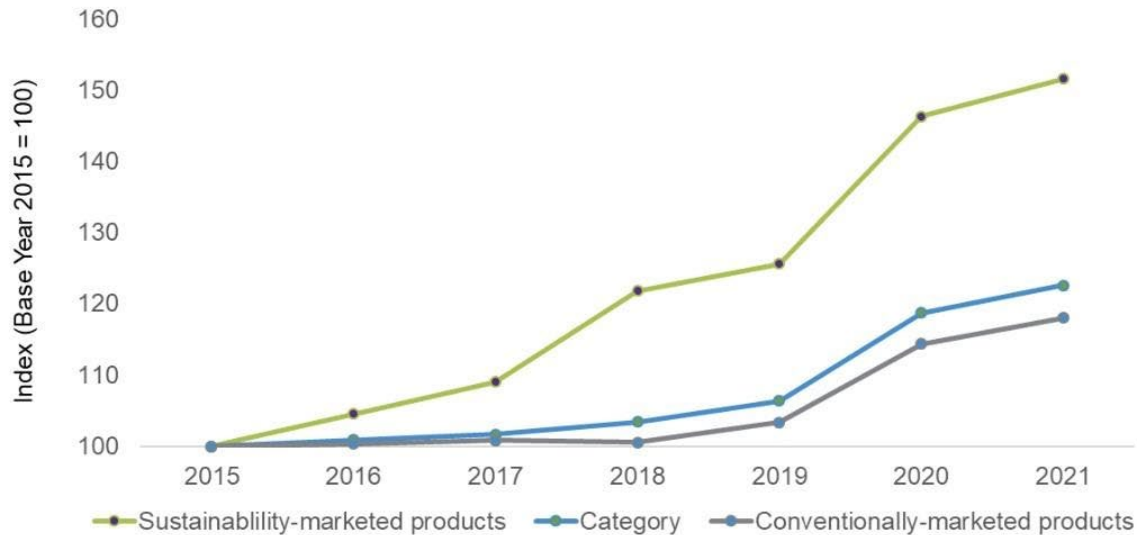
25,000 cases: ADDITIONAL 210,000 lbs. or 105 tons

CONSUMER-GOODS' BRANDS THAT DEMONSTRATE
COMMITMENT TO SUSTAINABILITY OUTPERFORM
THOSE THAT DON'T

2021 Sustainable Market Share Index
NYU Stern Center for Sustainable Business

- Products marketed as sustainable now hold a 17% market share, +3.3% versus 2015, with significant growth during the pandemic.
- Carbon labeled products now account for \$3.4B in sales, doubling from \$1.7B in 2020.
- Products marketed as sustainable grew **2.7x faster** than products not marketed as sustainable and achieved a **6-YR CAGR of 7.3% vs. 2.8%** for its conventional counterparts.
- Sustainability-marketed branded products have a **price premium of 28%** vs. their conventionally marketed branded counterparts, but the *differential has decreased 11.8 pts since 2018 as more historically conventional products adopt sustainable benefits.*


Sustainability-marketed products grew more than twice as fast as conventionally marketed products and the CPG market.



Sustainability-marketed
6-YR CAGR:
7.34%

Total Market 6-YR CAGR:
3.45%

Conventionally-marketed
6-YR CAGR:
2.76%



What if you could build consumer loyalty that transcends traditional marketing approaches, help your company build share and revenue while doing good, and come home at night and feel a sense of ownership and meaning in making the world a greener place?

**NielsenIQ Product Insight Study
2022**

LIVING ROOM SALON: THE STATE OF SUSTAINABILITY



Expert Speakers:

- Moderator: Andrea Robinson, Master Sommelier
- Esther Mobley, Senior Wine Critic for the San Francisco Chronicle
- Will Drayton, Director of Technical Viticulture, Sustainability & Research at Treasury Wine Estates
- Kia Behnia, Owner of Neotempo Wines & KiaTra Vineyards
- Marlén Garcia, Executive Director & Director of Law & Policy at Earth Uprising

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STERLING
VINEYARDS

Source: Treasury Wine
Estates



Source: The Guardian



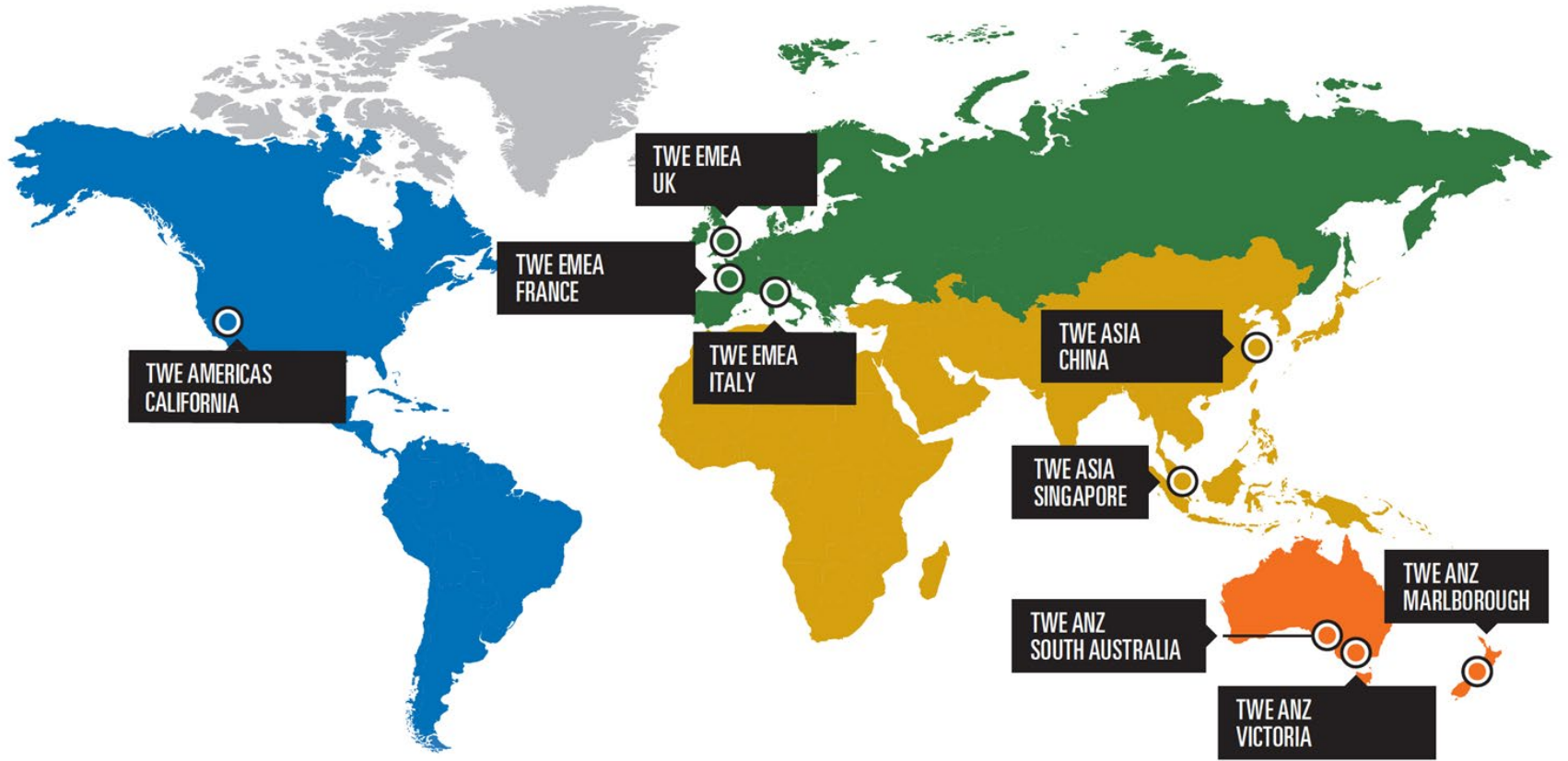
MAIN POSTING BOARD

Source: Treasury Wine

Estates



Source: Treasury Wine Estates



Source: Treasury Wine Estates

F23 COMMITMENTS

Building a resilient business



CLIMATE RISK
AND GHG
EMISSIONS

TARGET

100% renewable electricity by 2024
Net zero by 2030 (Scope 1 and 2)



WATER
STEWARDSHIP

TARGET

Establish a global TWE water strategy that adopts key recommendations from the water review conducted in F22, including the establishment of material targets

Fostering healthy and inclusive communities



HEALTH,
SAFETY AND
WELLBEING

TARGET

10% reduction in Serious Incident Frequency Rate (1:26)



INCLUSION,
EQUITY AND
DIVERSITY

TARGET

50% women in senior leadership by F25
42% female representation overall by F25
30% female representation on Board



CONSUMER
HEALTH AND
RESPONSIBLE
DRINKING

TARGET

100% of TWE brand product labelled from 2025 will include energy information (excluding products below 375ml)

100% of TWE brand product labelled from 2025 will include a general health warning

Producing sustainable wine



SUSTAINABLE
GROWING AND
PRODUCTION

TARGET

Implement our plan to increase sustainability certification of our brands



RESPONSIBLE
SUPPLY CHAIN

TARGET

Complete supplier risk assessments for 100% of contracted spend¹



SUSTAINABLE
PACKAGING
AND CIRCULAR
ECONOMY

TARGET

100% of packaging to be recyclable, reusable, or compostable by end of CY2022

100% of product packaging to comprise 50% average recycled content by end of CY2025

Collaborate with glass and carton partners on a closed loop packaging solution by end of CY2025

Source: Treasury Wine Estates



Source: Treasury Wine
Estates



Source: Treasury Wine



Sarah Bakx



April 5 at 12:52 PM · 📷

I've interviewed 5 people in NY this week and one of my standard questions is "Why TAM, why not apply for one of the dozens of open roles available with our competitors?" 3 of the 5 responded with varying versions of - "your culture and action around sustainability! " We are leading the industry with real action, not PR stunts, and it's unintended benefits are amazing. We need to ensure that distributors, trade and most importantly CONSUMERS know that this is an authentic commitment and we are first and best in class! #twedna

NINTH ANNUAL CALIFORNIA GREEN MEDAL

Sustainable Winegrowing Leadership Awards



Source: Treasury Wine Estates



Source: Georg
Salzner



Kia Behnia

Proprietor
Neotempo Wines
Kiatra Vineyards
kia@kiatra.com





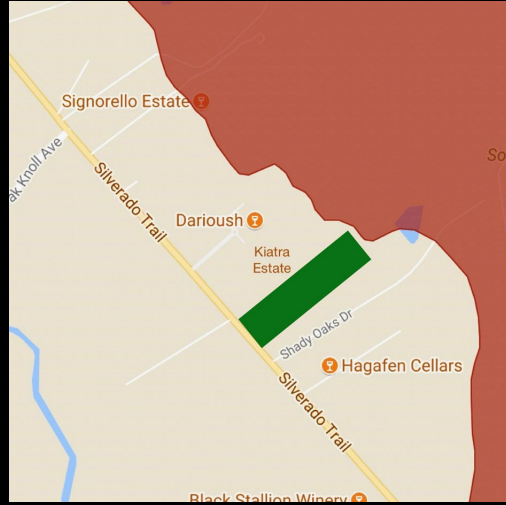
Kiatria vineyard was planted in 2012 - organic farming from the outset





On Sunday October 8th 2017 everything changed for many of us...







NEOTEMPO



A systems approach to modern sustainable farming: S.M.A.R.T. Vineyards

Sustainable - Focus on soil health, no synthetic fertilizers, no herbicides, modern IPM, conserve and reuse of natural resources.

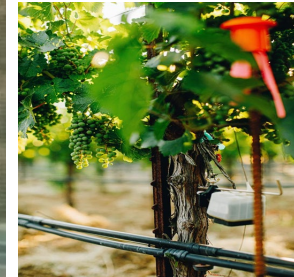
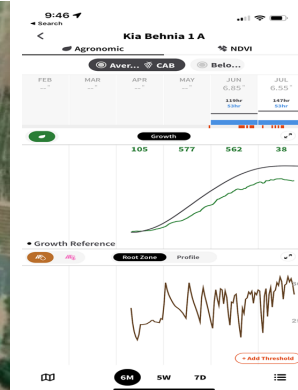
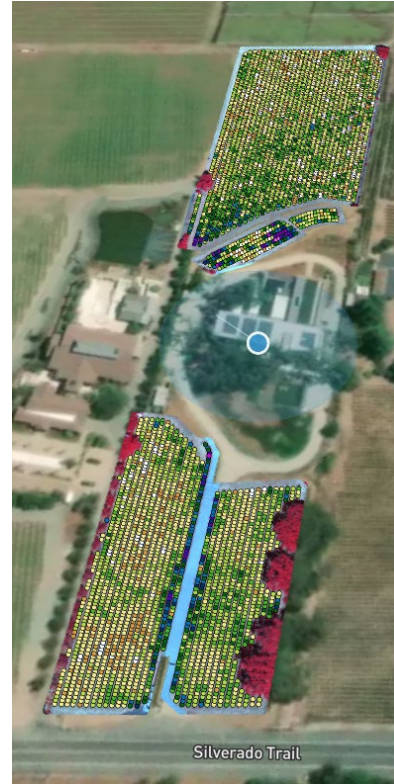
Monitored – 360° High resolution telemetry: Temperature, moisture and growth are measured at block and vine level from ground and air.

Automated – Automate highly repetitive or very complex tasks (i.e. irrigation, weeding)

Resilient – Climate resilience playbook researched and deployed.

Technology Enabled for data driven decision making throughout the growing process

www.smart-farm.ai





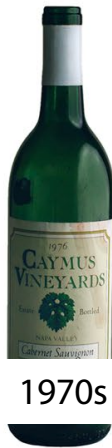
High resolution telemetry:
Temperature, moisture and growth are measured at block and vine level



Electric, zero emissions farm operations:
Monarch + Implements for mowing, weeding



Climate resilience playbook: researched and pilot to prepare for uncertain climate adversity: Frost, Fire Prevention, Extreme Heat



1970s

1980s

1990s



2000s

2010s

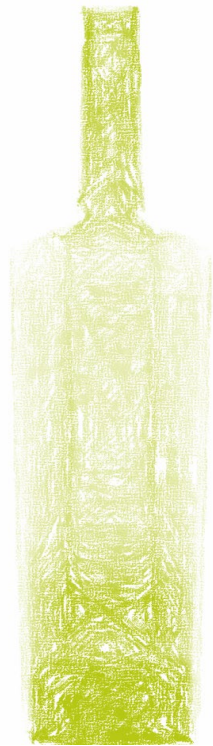




1 ton of
natural
resources
saved for
every ton
of recycled
glass

1 ton of
CO²
reduced for
every six
tons of
recycled
glass

US
Recycling
rate for
glass is
39.8% vs
74% in
Europe



FORM

- Timeless modern design – with a nod to the past
- Reductive design process
- Replace tactile reaction with modern smooth straight lines creating facets

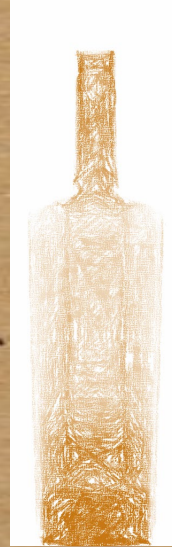
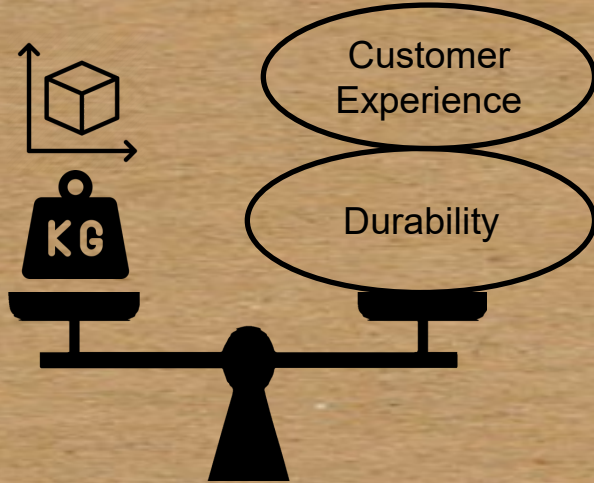


FUNCTION

- Light weight
- Structural re-enforced support for the bottle
- Fits existing wine racks, cellars, retail racks, etc.
- Space efficient with nesting

Patent Pending*

A Systems approach to packaging design



Upcycle
Post Consumer
Recycled
Material



Wild Glass – 100% Recycled Glass - efficient with less energy and waste

Wild Glass, is Estal's 100% recycled PCR glass.

- 15% - 20% temperature reduction compared to regular glass production
- CO2 Footprint is 30% - 40% down
- Rejection rate goes from 25% to 10%
- Creates Circular Economy

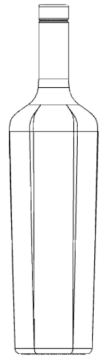
estal
GLASS ATTITUDE

COLLECTION AVAILABLE IN 100% RECYCLED GLASS PCR

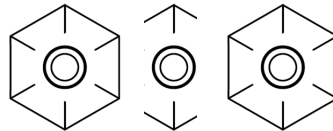
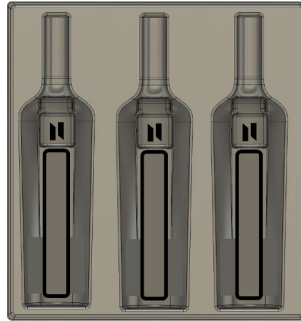


Great green & innovative products for shipping protection

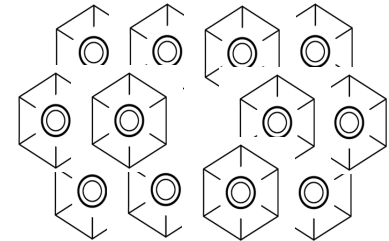
FLEXI-HEX[®]



M



GREENCELLFOAM[™]



Build a roadmap with system mindset

Technology can scale Sustainability

Innovation is our greatest opportunity

We need more work done on recycling



Viticulture & Environmental Justice

Hope towards a just & regenerative future!

Hi everyone,



I am Marlen Garcia. I will graduate this spring from UC Davis with a BS in Community & Regional Development (CRD) and a BA in Political Science. I was born in LA and raised in the the city of Fontana (IE area). Currently I am the executive director for Earth Uprising & Community Educator with Youth vs Apocalypse.

Her academic and professional experiences along with her personal ones—being raised in a city with a low socioeconomic status and poor environmental conditions, being a first generation college student, and being part of a family of immigrants—has played a vital role in the social and environmental justice work that she does. I'm so happy to be here today and tell y'all a little bit about my experience as a youth in EJ.

Throughout my work, I focus on centering the voices and experiences of communities that are in the frontlines of this climate crisis. I know that the voices of the most marginalized communities must be front and center when educating about and advocating for real climate change solutions.



YOUTH vs APOCALYPSE



Napa's vineyard workers are retiring — and the next generation doesn't want their jobs



Climate change is set to shake up the fine wine industry – here's how

Europe's wine industry is facing an uncertain future as global warming threatens the viability of today's vineyards. Winegrowing is a profession rooted in tradition, but the modern industry must embrace change



JUST ADD WATER

Wine grapes aren't a water-greedy crop. But as the state's wine industry began booming in the 1980s, vineyards started using irrigation to boost productivity, squeezing as many grapes as possible from each acre. Now, most California vineyards rely on some form of irrigation.

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325,000

Number of Californians employed directly and indirectly by California wineries and vineyards in 2015.

MY CUP RUNNETH OVER

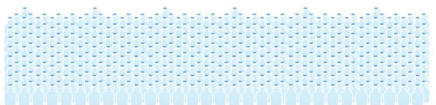
In 2015, California pumped out 638 million gallons—85% of all wine produced in the US.

In the global market, the state might as well be a country: Only France, Italy, and Spain produce more wine.



DRY WINE

Climate scientists predict more major droughts, higher temperatures, and erratic weather patterns in California in the years to come. The state's wine industry is currently stable, and some vineyards are actually flourishing in response to higher temperatures. But if current trends continue, California's vineyards could become more heavily dependent on water from irrigation, putting increased pressure on precious water supplies.



496 GALLONS
Estimated amount of water needed to produce a gallon of California wine.

It's all connected!!!



Pesticides & climate change: A vicious cycle



LET'S GREEN CA!

Hispanic Heritage Month

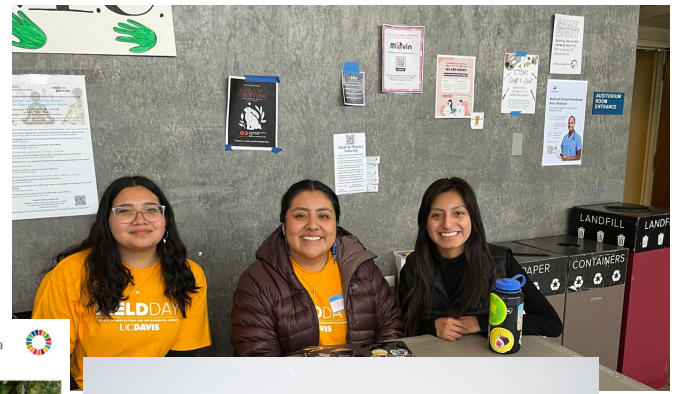
Why Latine workers are on the frontlines of California's climate crisis

EDUCATE





Who are we ▾ Where we work ▾ What we do ▾ Publications & Data 



There's HOPE for our FUTURE!!!



Youth are taking action! You can too! Be a FAN of
the Youth Climate Movement!



LIVING ROOM SALON: THE STATE OF SUSTAINABILITY



Expert Speakers:

- Moderator: Andrea Robinson, Master Sommelier
- Esther Mobley, Senior Wine Critic for the San Francisco Chronicle
- Will Drayton, Director of Technical Viticulture, Sustainability & Research at Treasury Wine Estates
- Kia Behnia, Owner of Neotempo Wines & KiaTra Vineyards
- Marlén Garcia, Executive Director & Director of Law & Policy at Earth Uprising

Learn More

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