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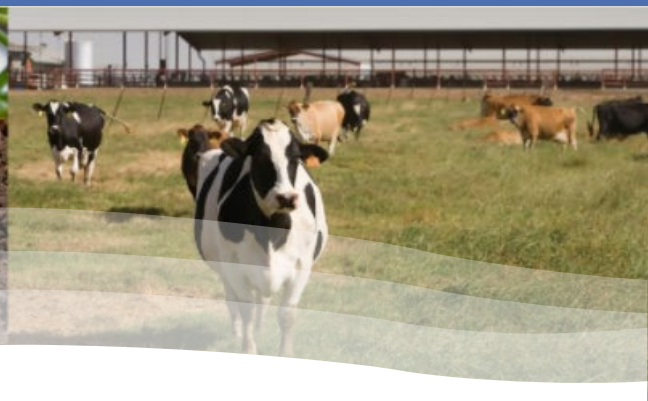
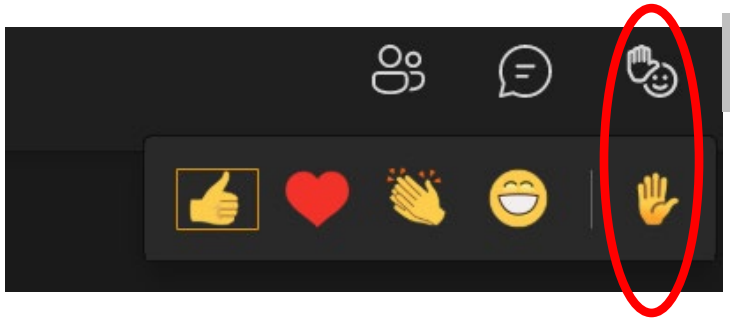
Welcome!

Hi, my name is ….
Please use the chat to introduce yourself
Name & Organization



State Technical Advisory Committee

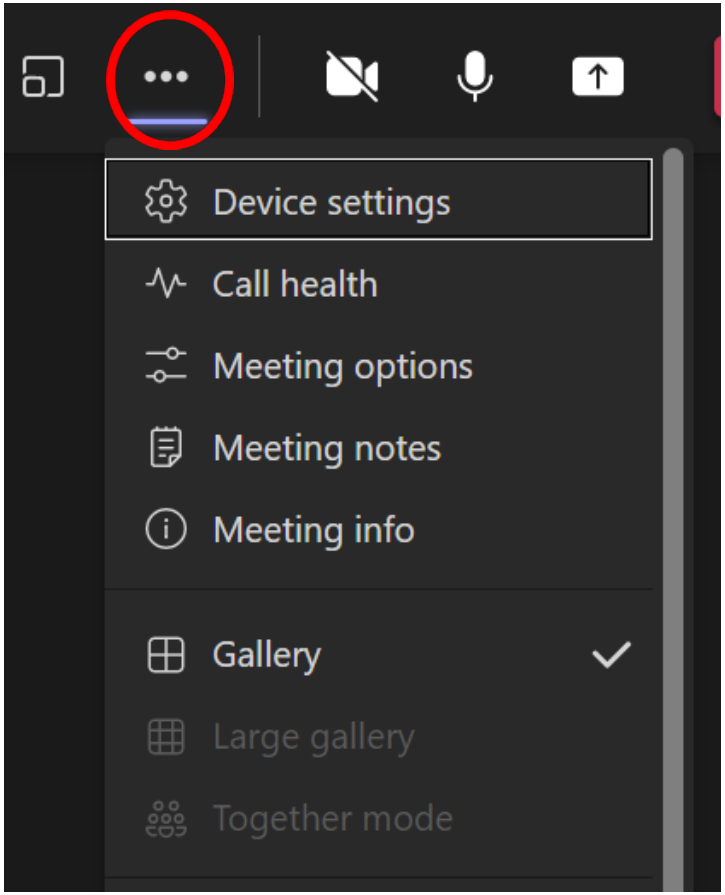
November 2, 2022

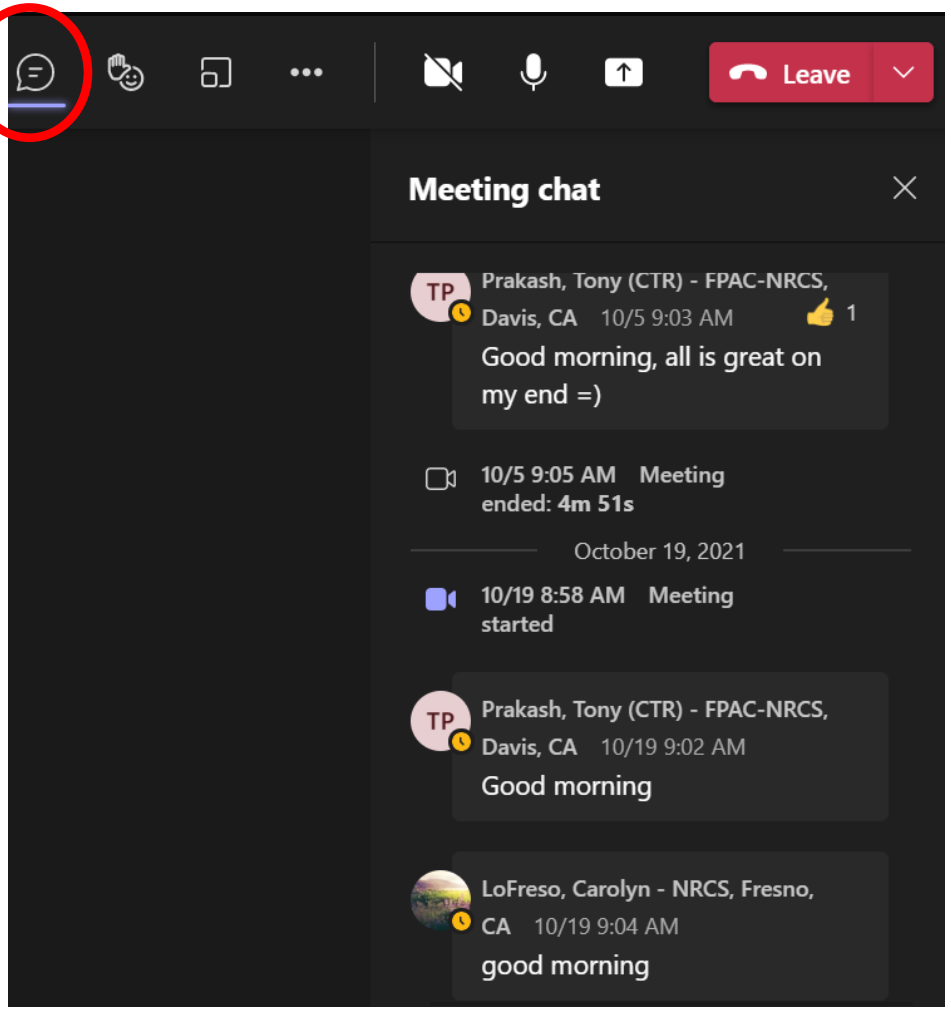


Raise hand to speak

Use chat panel to leave messages and ask questions

Use … to open menu and adjust settings (speakers, mic)





STAC Agenda

November 2, 2022

9 am - Noon

Housekeeping – RaeAnn Dubay, Assistant State Conservationist for Management & Strategy

9:00 Opening Remarks – Carlos Suarez, State Conservationist

9:15 Water-Limited Agriculture in the San Joaquin Valley - Caitlin Peterson, Public Policy Institute of California (PPIC) & Mark Lundy, UC Davis Cooperative Extension

10:00 Inflation Reduction Act of 2022 & Implications for NRCS Conservation Investments – Carlos Suarez, State Conservationist

10:30 California Planning Partnership - MOA for Technical Assistance – Hue Dang, State Conservationist Planning Leader

11:00 Groundwater Recharge – Greg Norris, State Engineer

11:30 Conservation Program Reports & End of Year Update - Andrea Casey, Acting Assistant State Conservationist for Programs

11:45 Closing Remarks – Carlos Suarez, State Conservationist

Housekeeping

RaeAnn Dubay, Assistant State Conservationist for Management & Strategy

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Opening Remarks

Carlos Suarez, State Conservationist for California

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Water-Limited Agriculture in the San Joaquin Valley

Caitlin Peterson, Public Policy Institute of California (PPIC)
&
Mark Lundy, UC Davis Cooperative Extension

Exploring the Potential for Water-Limited Agriculture in the SJV

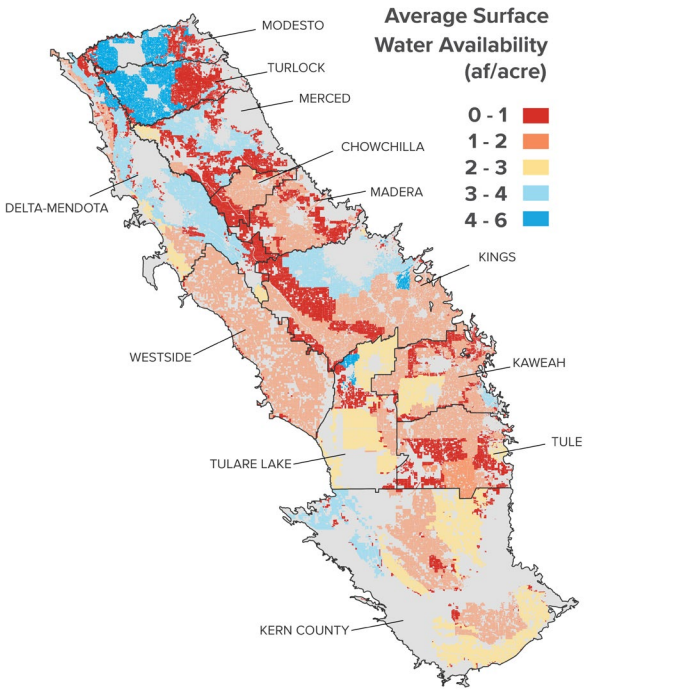
NRCS State Technical Advisory Committee meeting
November 2, 2022

Caitlin Peterson, Cameron Pittelkow, Mark Lundy

Supported with funding from the S. D. Bechtel, Jr. Foundation, the California Strategic Growth Council's Climate Change Research Program with funds from California Climate Investments, the Morgan Family Foundation, and the USDA Office of Environmental Markets.

Valley's irrigated footprint will shrink with SGMA

- 500,000 acres could come out of irrigated production across the SJV
- Widespread concern about fallowed land becoming a liability
  - Weeds, pests, dust, lost economic opportunity
- Challenge: can the Valley do better than unplanned, haphazard fallowing…
  - …while still meeting SGMA goals?



Source: PPIC 2021

Characterizing benefits and costs of fallow alternatives

Air quality impacts

Dryland cropping

Solar energy

Intermittent wetlands

Riparian habitat

Upland habitat (SJ desert)

Water-limited crops could keep some affected land in production

- Models for wheat showed that minimal irrigation reduces crop failure risk substantially
- Forage products may prove a high-value use of water
- And there may be other public/private benefits to keeping crops in the ground

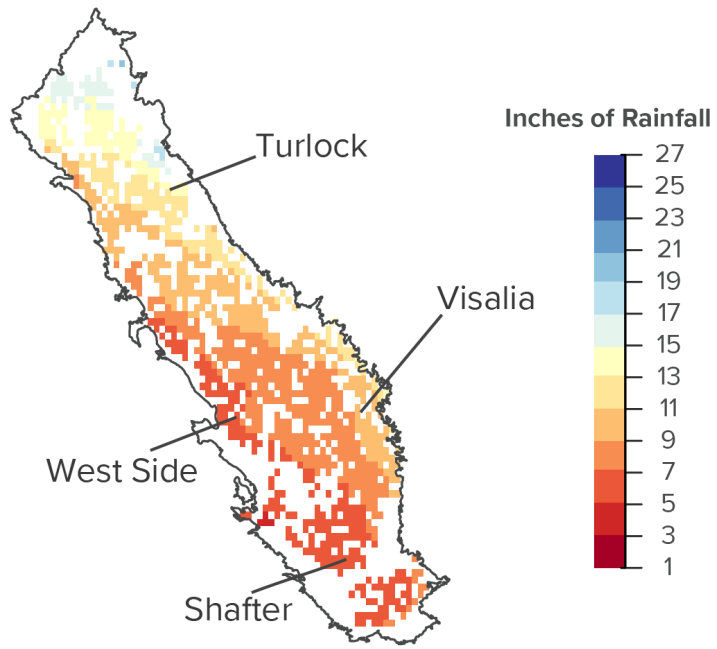
What do we mean by “dryland” and “water-limited”?

- Dryland
  - Precipitation, soil water only
  - Semi-arid areas of the world
- Water-Limited
  - Dryland plus a few inches of irrigation

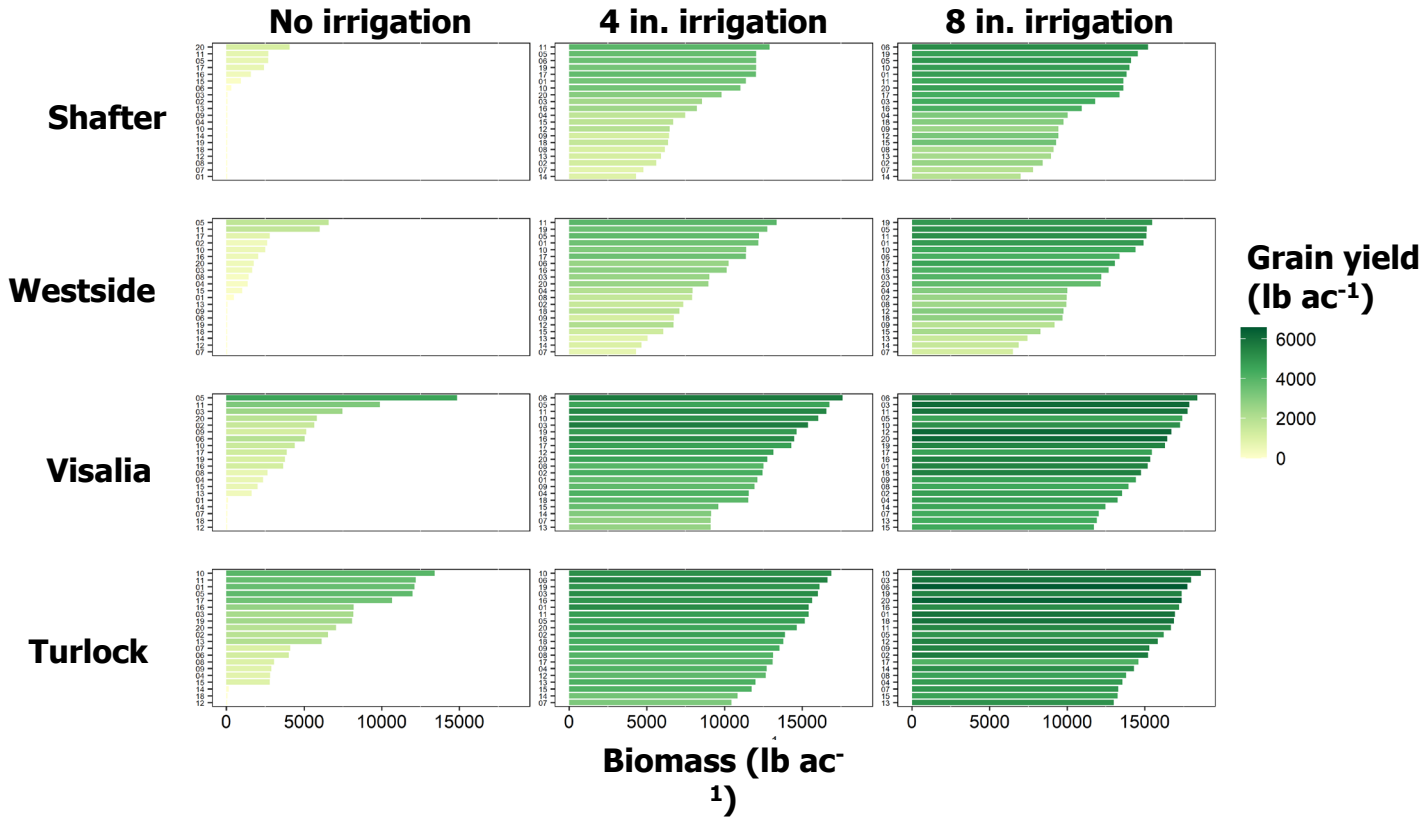
Exploring the potential for water-limited winter crops

- We explored this question with crop models and conversations with growers and other experts
- Winter wheat case study
  - Common in dryland settings
  - Robust research base
- Rainfall quantity and variability a big constraint

Average annual rainfall, 2011-20



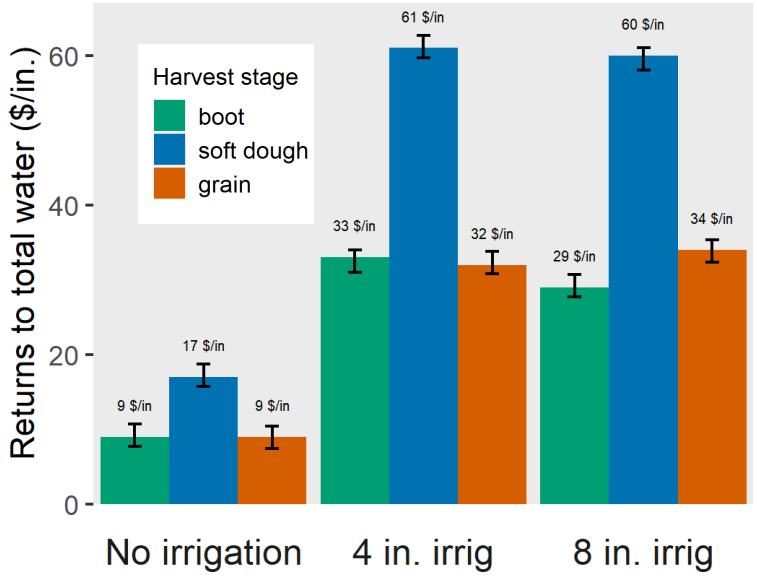
With 4–8 inches of irrigation, establishment and yields improve



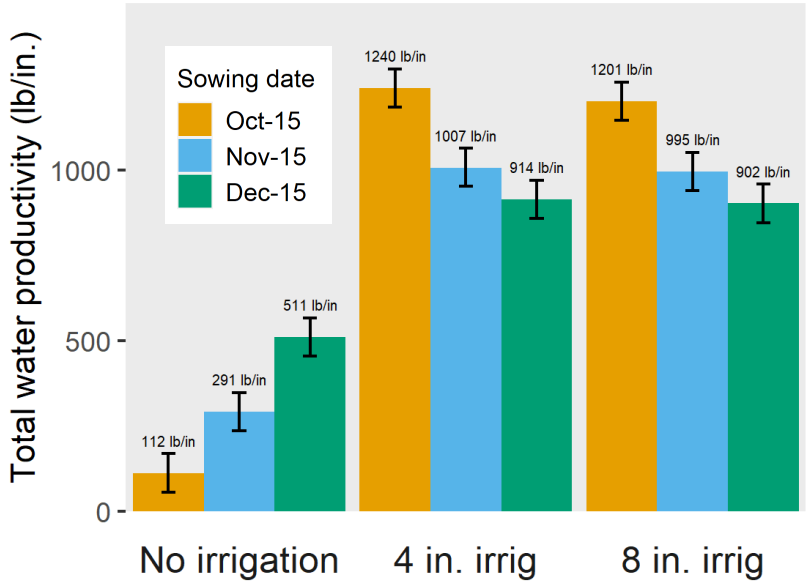
Harvest stage affects economic water productivity

Planting date affects agronomic water productivity

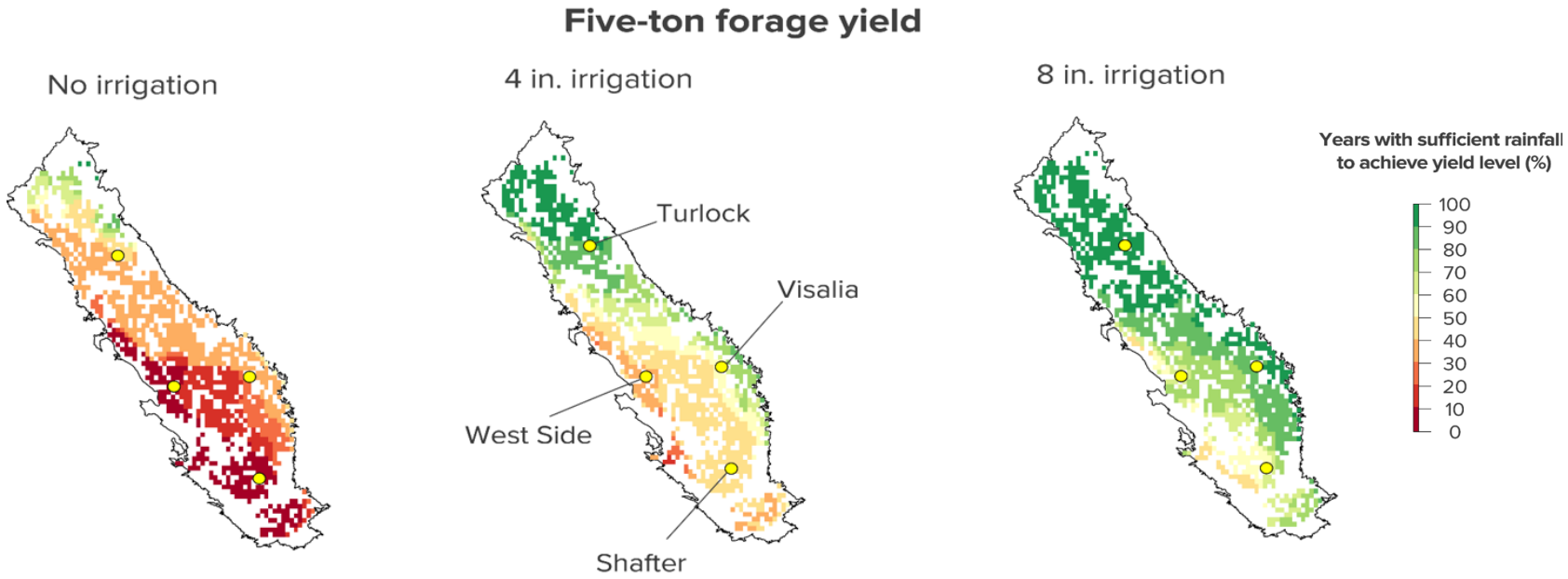
Economic water productivity



Agronomic water productivity



Success will vary widely across the valley floor



Agronomic potential is only one part of the equation

- There are also economic, operational factors to consider
  - Profit potential
  - Market for forage crops
  - Cost of maintaining irrigation systems; ability to make targeted applications
- And there are other crop-related dynamics not captured by our modeling
  - Salt, weed pressure may further limit yields over time

Water-limited crops offer other benefits

- Public benefits such as dust mitigation, surrogate habitat for wildlife
- Private benefits to the grower
  - Maintaining soil quality
  - Keeping land operational
  - Building flexibility into operations
- Net water use – on balance, might not be much more than fallow

Research needs

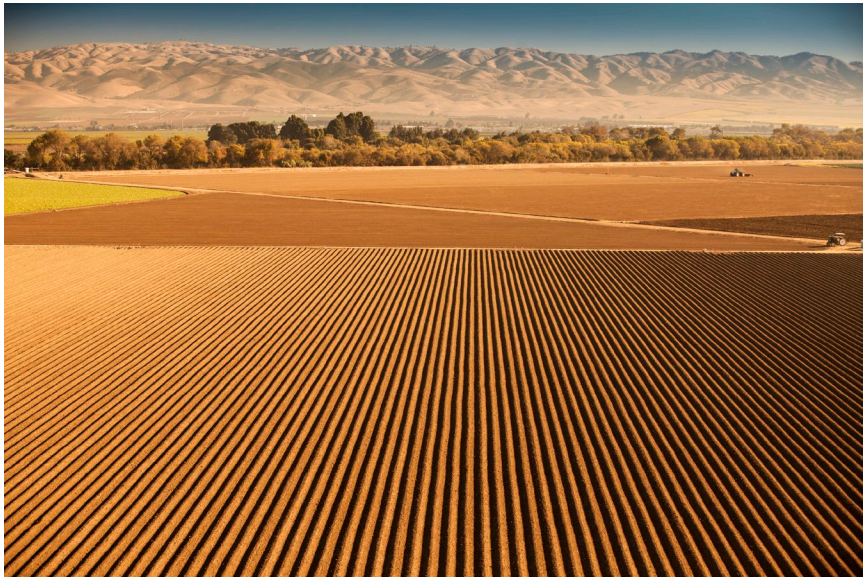
- Conduct on-farm trials to verify results, build grower familiarity
- Evaluate market opportunities
- Develop improved varieties and techniques
- Explore other winter and drought-adapted crops
- Explore role of grazing systems and rangelands

Policy considerations

- Investments in safety nets and incentives to promote public benefits
  - Pooling, redirecting funding
- Account for net water use from fallow in local water budgets

Key takeaways:

- Good potential in wetter areas, w/ supplemental irrigation
- Good potential as “flex” crops
- Something better than nothing?
- Part of the toolkit for transitioning farmland



Further resources

- Exploring the Potential for Water-Limited Agriculture in the San Joaquin Valley (Peterson et al. 2022)
- Land Transitions and Dust in the San Joaquin Valley (Ayres et al. 2022a)
- Solar Energy and Groundwater in the San Joaquin Valley (Ayres et al. 2022b)
- Water and the Future of the San Joaquin Valley (Hanak et al. 2019)
- Surface water availability dataset

Note on the use of these slides

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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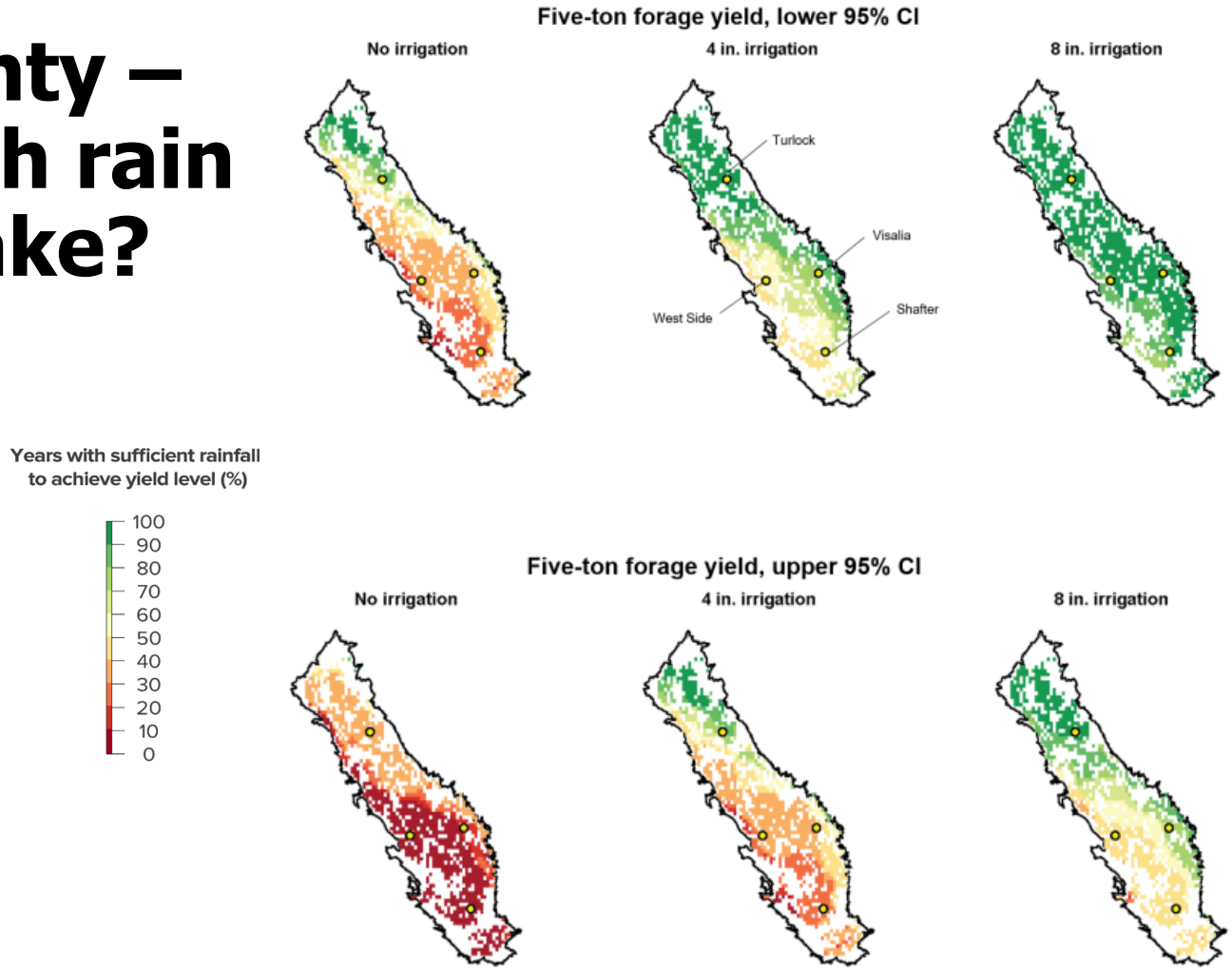
415-291-4435
@caitypeterson

Mark Lundy
melundy@ucdavis.edu
530-902-7295

Thank you for your interest in this work.

Uncertainty – how much rain does it take?



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Inflation Reduction Act of 2022 & Implications for NRCS Conservation Investments

Carlos Suarez, State Conservationist

United States Department of Agriculture

Fall 2022 STAC Meeting

IRA Briefing

Carlos Suarez, NRCS CA STC

Natural Resources Conservation Service

nrcs.usda.gov/

USDA United States Department of Agriculture

Inflation Reduction Act (IRA) Brief Overview of NRCS Provisions

- Signed into law August 18, 2022
- Single largest investment in climate and clean energy solutions in American history
- Will help producers stay on the farm and increase access to conservation assistance.
- Promotes climate-smart agriculture and forestry
- Protects communities from climate impacts
- Provides approximately $20 billion to support conservation programs that yield climate-related benefits

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Key Points

- Climate Smart Ag and Forestry Focus
  - Practices need to focus on emission reduction
  - Climate mitigation
- Funds expiration
  - IRA agreements cannot be for a term beyond September 30, 2031.
  - Additionally, the funds have an expiration date of September 30, 2031, and ***MUST BE EXPENDED*** by that date.
  - No other funds, such as regular program funds, can be used to fulfill obligations initially made with IRA funds.

IRA Funding

	Fiscal Year (dollars in millions)					
Program	**2022**	**2023**	**2024**	**2025**	**2026**	**Notes**
Environmental Quality Incentives Program (EQIP)	-	250	1,750	3,000	3,450	
Conservation Stewardship Program (CSP)	-	250	500	1,000	1,500	
Regional Conservation Partnership Program (RCPP)	-	250	800	1,500	2,400	
Agricultural Conservation Easement Program (ACEP)	-	100	200	500	600	
Conservation Technical Assistance (CTA);	1,000					Available until September 30, 2031
Quantify Carbon Sequestration Program ($300)	300					Available until September 30, 2031
Administrative Costs for this section	100					Remain available until September 30, 2028,

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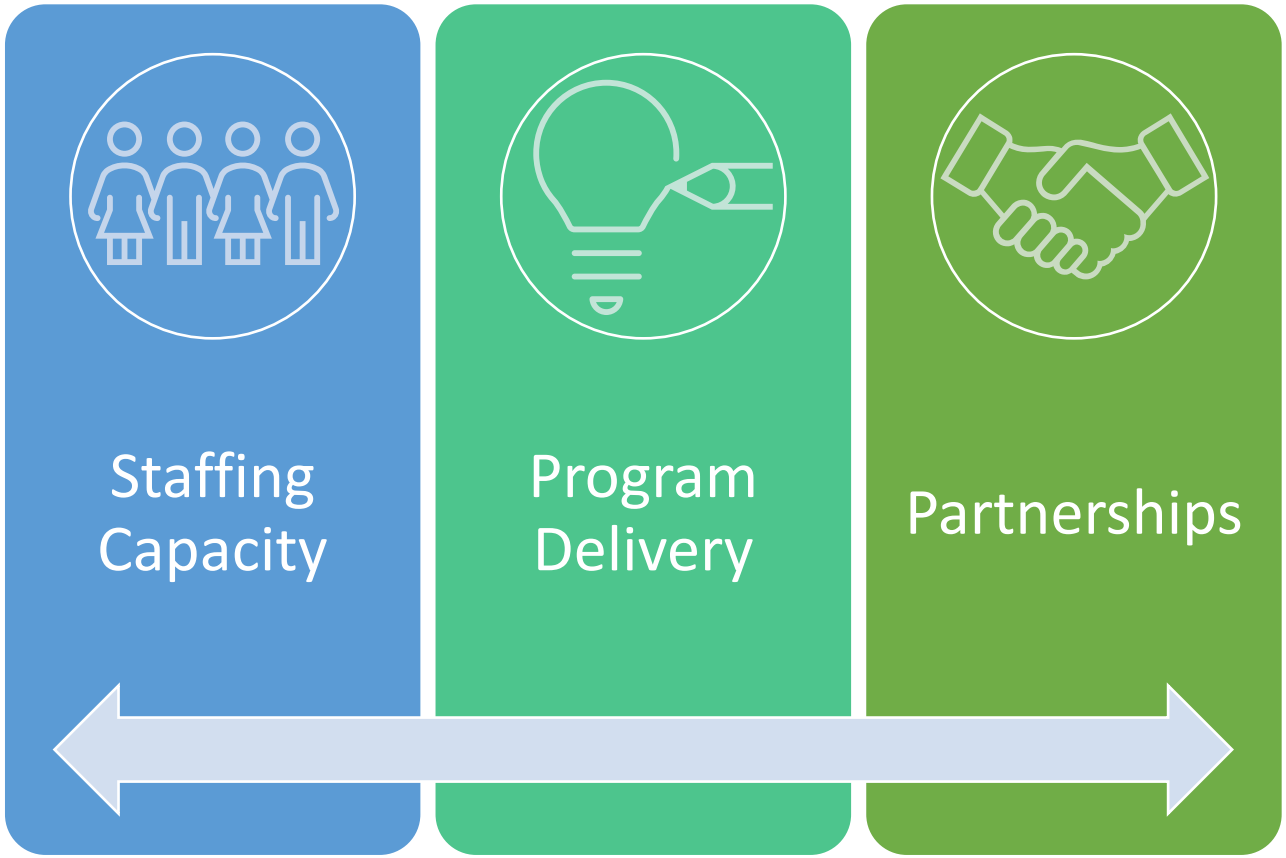
Major Focus Areas for Success



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Program Delivery

- Innovation
- Think creatively
- IRA is not a new "program“
- A new day in NRCS

Partnerships

- Traditional
- Innovative
- New partners
- Expand Historically Underserved partnerships
- Expand Tribal Nations partnerships

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California Planning Partnership - MOA for Technical Assistance

Hue Dang, State Conservationist Planning Leader

CALIFORNIA CONSERVATION PLANNING PARTNERSHIP "C2P2"

Hue Dang, State Conservation Planning Leader

Presentation to STAC

11/2/22

TECHNICAL ASSISTANCE

- Technical consultation, “how to”
- Needed to understand producers’ needs and conservation opportunities
- Often needed to access financial programs

Participating Organizations

USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

cdfa
CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

CALIFORNIA ASSOCIATION OF RESOURCE CONSERVATION DISTRICTS

Four Principal Orgarnizations in CA

CDFA: Policy and Funding Support
Cropping systems and Conservation

UC ANR
Research and Outreach:
Cropping systems and conservation practices

Farmer

Farm profitability: Conservation and sustainability

NRCS
1) **Conservation planning and implementation**,
2) **Funding** for given conservation practices

RCDs
Outreach on Conservation
Leverage Resources

MEMORANDUM OF AGREEMENT

BETWEEN THE

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

And the

CALIFORNIA ASSOCIATION OF RESOURCE CONSERVATION DISTRICTS

And the

UC AGRICULTURE AND NATURAL RESOURCES

And the

UNITED STATES DEPARTMENT OF AGRICULTURE

This Memorandum of Agreement (MOA) is made and entered into by and between California Department of Food and Agriculture (CDFA), California Association of Resource Conservation Districts (CARCD), University of California Agriculture and Natural Resources (UCANR), and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), hereinafter referred to as "the Parties."

I. PURPOSE

The purpose of this MOA is to encourage strong partnerships as well as to strengthen cooperation among the Parties that result in coordinated interagency delivery of conservation assistance to private landowners and others and to sustain the health, diversity, and productivity of the California's natural resources. The Parties' vision is to collectively have greater impact on resource protection and to accelerate conservation on the ground. The Parties share a long-term commitment to the federal/state/local government conservation delivery system to help private landowners, communities, and others conserve natural resources across the nation. This system supports local level and private landowner decision making and advocacy for conservation planning that will result in sound solutions that are practical and economical and lead to wise use and management of natural resources. This mutual goal is to provide locally led natural resource conservation that addresses local, state, national and Tribal priorities while

VISION

Accelerate Conservation on the Ground Through Coordinated Assistance

PRINCIPLES

FOCUS ON CUSTOMER NEEDS

PRIVATE/WORKING LANDS

SCIENCE-BASED

VOLUNTARY

MOA Elements – the “how to” integrate TA

Equity in Delivery of Technical Assistance

Interagency collaboration to address equity

Conservation Innovation and Practice Adoption

TA Pipeline (research to impact); Conservation economics and C impact; Practice alignment across organizations

Coordination

Improve both program accessibility and seamless support across organizations (“The Hand-Off”)

Technical Capacity (through training collobaration)

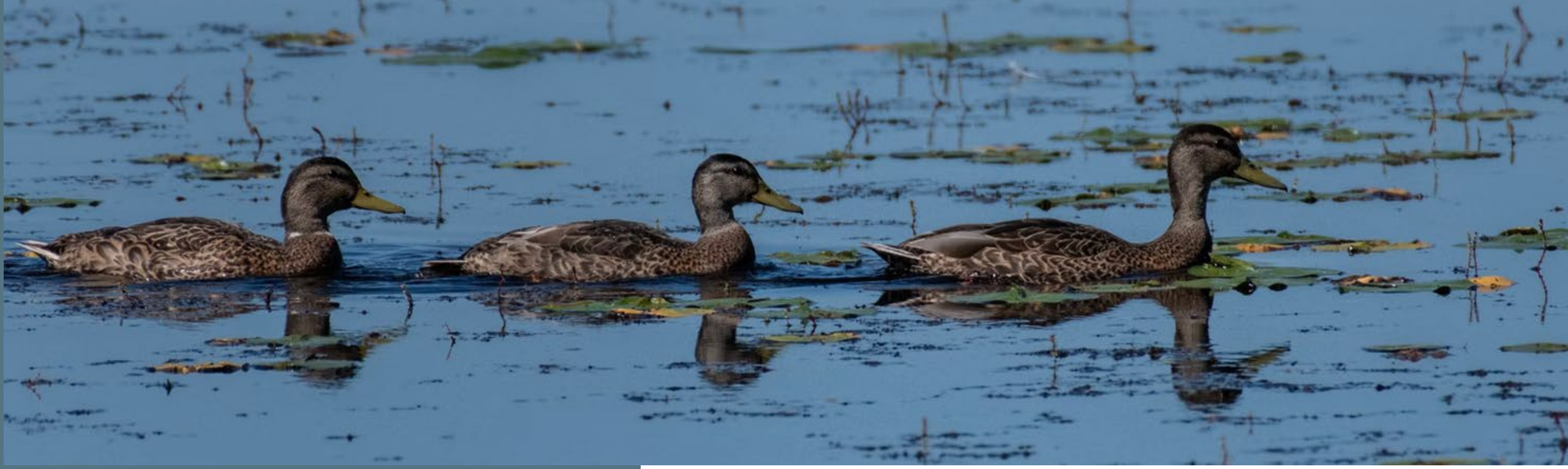
Enhance strong, consistent and complementary technical capacity at Federal, State and local levels to better deliver assistance

Maintain Consistent Locally Led Technical Assistance

Engage stakeholders and strive to share resources when feasible and work together to ensure there is capacity to deliver TA locally

Collective Impact and Communication

Better share and promote stories and impact across organizations



BENEFITS

- Having the ducks in a row (MOA) will help accelerate impact.
- Alignment at the state level will make it easier to collaborate and make a difference at the local level.


NEXT STEPS

THANK YOU

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Groundwater Recharge

Greg Norris, State Engineer

United States Department of Agriculture
Natural Resources Conservation Service

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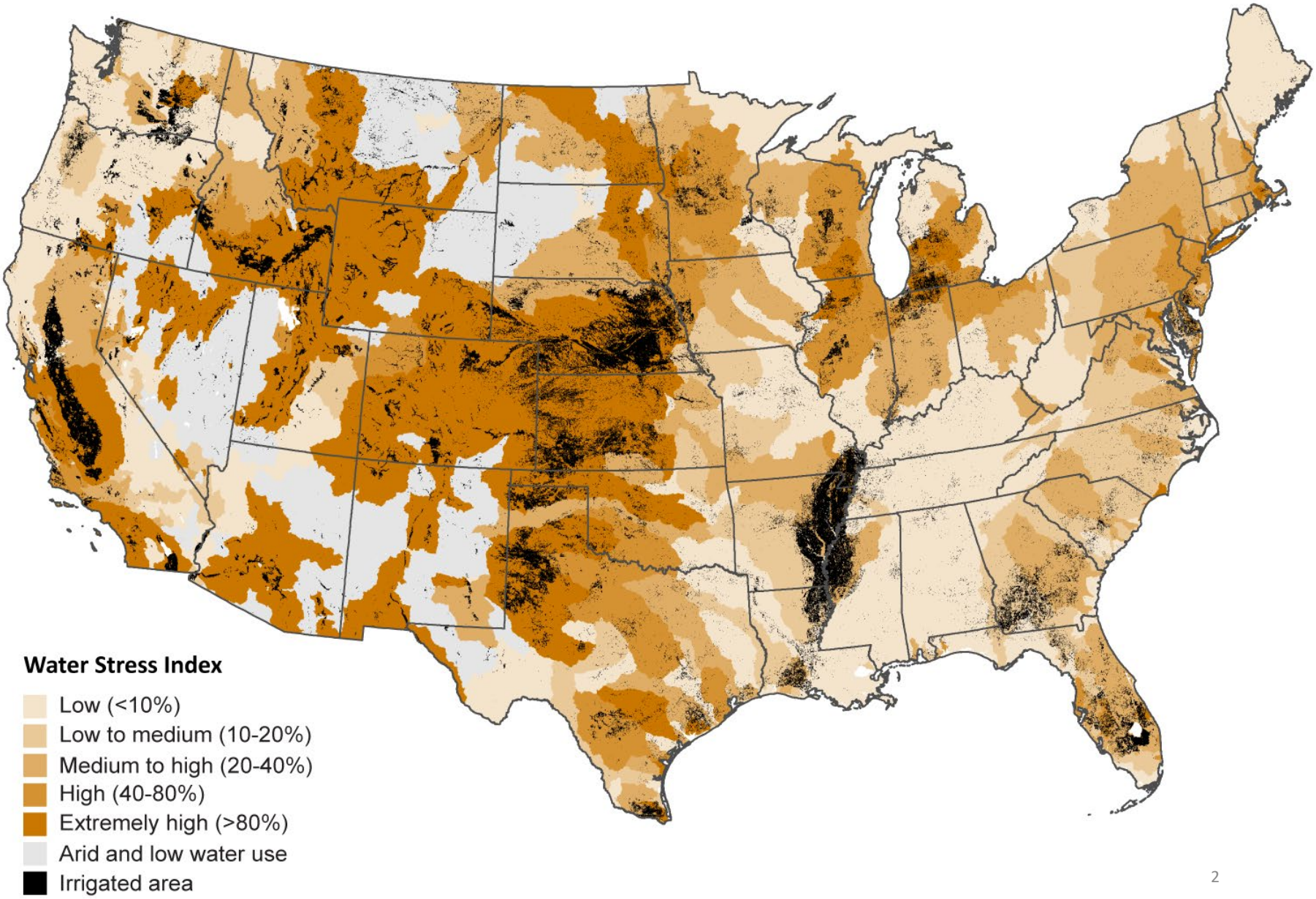
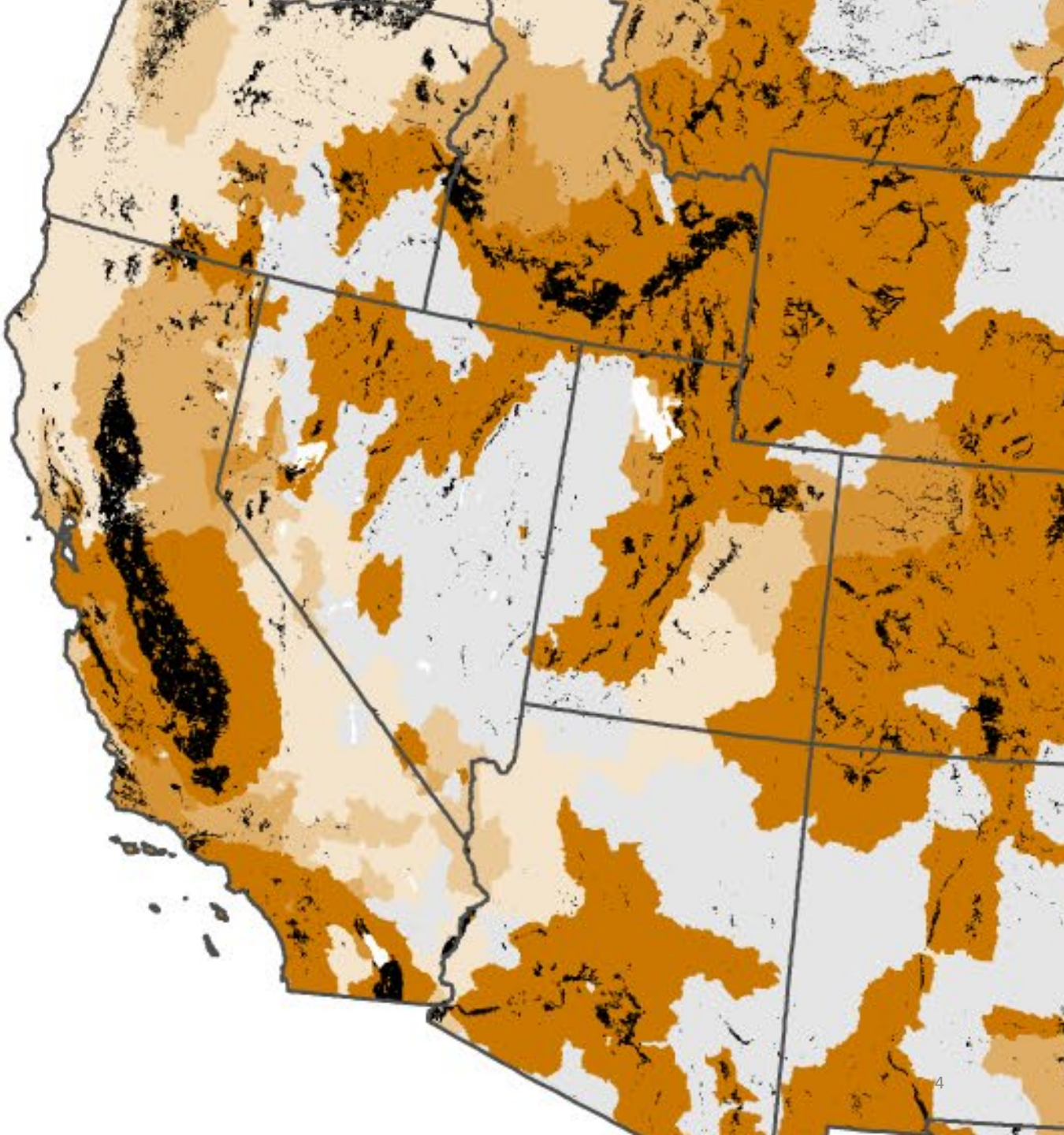
Western Water Quantity
California Strategies & Approach

Irrigated Cropland Areas



California Focus Areas

1. Salinas Valley
2. San Joaquin Valley
3. Sacramento Valley
4. Imperial Valley
5. Coachella Valley
6. Delta
7. Palo Verde Valley
8. Klamath Basin
9. Other areas identified by the STC.



NRCS Planned Technical Strategies for California

1. Evaluate Practice Enhancements for applicability to California and the West. Develop new enhancements as needed that are applicable to the agricultural industry such as:

- Deficit Irrigation: Grower purposely under irrigates to save water with the full understanding of reduced production. A trade off between production and water savings.
- Irrigation System Automation: Automation of agricultural systems is the direction and demand of the industry. NRCS-CA is evaluating how automation can be tied or incorporated into water conservation benefits.

In 2022, Developed and Proposed a new scenario under 449 enhancement for deficit irrigation that included Foregone Income. Scenario was denied due to limitations in the use of FI. We are exploring potential alternatives for implementing deficit irrigation.

NRCS Planned Technical Strategies for California

2. Evaluate Practice Standards for opportunities to apply water that better matches actual demand. Currently Irrigation System standards (441, 442) are focused on distribution uniformity. There are opportunities to supplement the standards with additional criteria that can increase an irrigation system's overall efficiency such as:

- Add criteria requiring an irrigation system to be designed that recognizes crop demands in different parts of a field due varying soils or crop water use. This will require systems to be organized with additional pipes and valves so that the irrigator has the flexibility to meet demand in different parts of a field, orchard, or vineyard.

In FY2022, added criteria in the 441 standard that gives guidance on partitioning systems to accommodate different water requirements due to changes in the soil or differing crop demands.

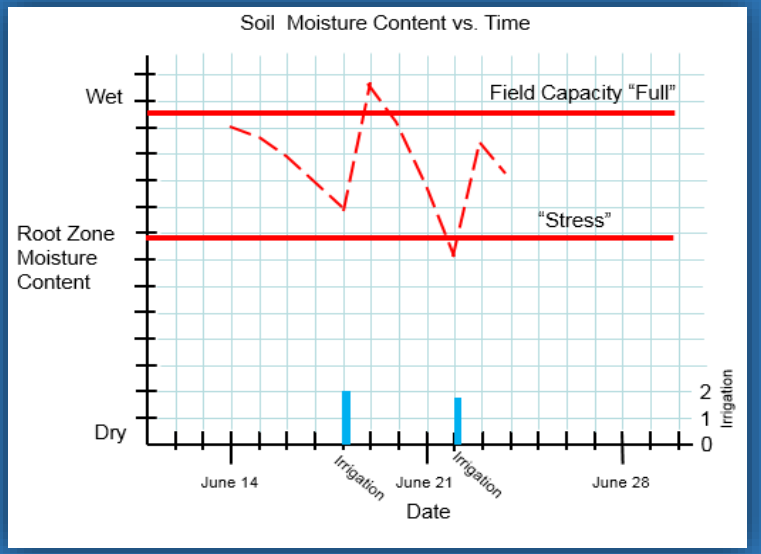
Developed 2 new payment scenarios to facilitate the changes in the standard, plus turned a scenario on that allows for retrofitting nozzles on center pivots. Guidance was developed for using this scenario.

California Technical Strategies (cont.)

3. Expand the use of 449-Irrigation Water Management (IWM). NRCS-CA has invested a decade in developing a new standard process for planning and applying 449-IWM. For many years, the practice became a requirement that had no value to the producer or to NRCS.

After finalizing the new process in 2018, the producers are now getting a product that is meaningful to them which they can use to make informed decisions about how much and how often they should irrigate. NRCS is getting a standardized product format in the form a graph that show a continuous soil moisture graph. This graph is simple documentation that NRCS can use to certify the practice.

Continued use. One of the most contracted practices by NRCS.



California Technical Strategies (cont.)

4. Implement Interim Practices for Groundwater Recharge (815 and 817). These interim practices were approved in 2020 and associated payment schedules were approved in 2021. The goal is to apply these practices in 2022 in strategic areas within the state so that they can be easily monitored and assessed. The CEAP program is being used to help determine effectiveness of the practices.

For 2022, we implemented a Pilot program-

- **16 projects total (~$1.3M)**
- **12 On-Farm Recharge projects, over 3,000 acres of farm fields**
- **4 basins, one of which is a large-scale project with an irrigation district**
- **Monitoring this winter-water levels,water quality, quantify amount recharged, qualitative information about performance**
- **Next year: Same pilot area, adding RCPP area (Fresno and Stanislaus counties)**

California Technical Strategies (cont.)

5. Evaluate and develop technology with customer buy-in opportunities to convert from flood irrigation to overhead sprinklers to promote the use of cover crops. Resource concerns for 441, 442 CPSs be expanded to Soil Health.

Presented this concept to Dept Chief for Soil Health.

6. Developing planning criteria for fallowed land or land no longer irrigated due to state groundwater requirements (SGMA) or loss of irrigation allocations because of drought. 500K-1M acres are expected to go out of production due to groundwater use restrictions.

In development……

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FY 22 Conservation Program Summary

Andrea Casey, Acting Assistant State Conservationist for Programs
RCPP Coordinator and CIG Program Manager

United States Department of Agriculture
Natural Resources Conservation Service

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$120 Million in Conservation Work

Environmental Quality Incentives Program (EQIP)	$84,821,028
Conservation Stewardship Program (CSP)	$5,779,847
Regional Conservation Partnership Program (RCPP)	$10,315,557
Agricultural Conservation Easement Program (ACEP)	$17,900,385
Conservation Innovation Grants (CIG)	$195,025

Top 10 Conservation Practices in CA

Fiscal Year 2021

NRCS Practice	Contracted Count
Woody Residue Treatment	800
Irrigation Water Management	787
Watering Facility	677
Forest Stand Improvement	593
Cover Crop	459
Livestock Pipeline	416
Fence	351
Irrigation System, Microirrigation	337
Pumping Plant	299
Tree/Shrub Pruning	287

Fiscal Year 2022

NRCS Practice	Contracted Count
Cover Crop	615
Watering Facility	595
Woody Residue Treatment	471
Irrigation Water Management	470
Combustion System Improvement	397
Forest Stand Improvement	370
Livestock Pipeline	294
Brush Management	288
Fence	266
Irrigation System, Microirrigation	251

Agricultural Conservation Easement Program (ACEP) Wetland Reserve Easement (WRE)

- Received 14 wetland easement applications
- Enrolled 4 properties - totaling 2,070 acres
- Closed 3 permanent easements – totaling 1,428 acres
- Restoration & enhancement contracts – 11 agreements for 2,751 acres
- Geographic Area Rate Caps (GARC) for wetland easements to be published soon to NRCS website
- **Application deadline for FY 2023 – December 16, 2022**

Agricultural Conservation Easement Program (ACEP) Agricultural Land Easements (ALE)

- Received 7 agricultural easement applications
- Enrolled 4 properties – totaling 14,627 acres
- Closed 4 permanent easements – totaling 2,745 acres
- **Application Deadline for FY 2023 : December 16, 2022**

Regional Conservation Partnership Program (RCPP)

RCPP is an opportunity for NRCS and partners to **co-manage innovative projects** with dedicated funding to address on-farm, watershed and regional resource concerns, but it is **not a grant program**

- Since 2019 CA has been awarded 11 RCPP projects that are a combination of land management (producer) contracts, and easements
- These projects address water quality, forest health, soil health, wildlife habitat and several other resource concerns
- Approximately $43 million dollars has been awarded through these projects.
- The most recent award was provided in August 2022 for $1.7 million to address Pollinator Habitat

EQIP Conservation Incentive Contract (CIC)

* Pilot program in 2021

* FY 22 - $2.6 million has been obligated

- CIC has similar features as EQIP and CSP.
- CIC is available nationally this year.
- States to allocate at least 5% of EQIP budget.

CSP State Priority Resource Concerns

1. **Air Quality**
2. **Soil Quality Limitations**
3. **Degraded Plant Condition**
4. **Field Pesticide Loss**
5. **Field Sediment, nutrient and pathogen loss**
6. **Fire Management**
7. **Livestock production limitation**
8. **Terrestrial habitat**

Balance priorities

For Land Uses: Crop, Range, Forest, Pasture

State Strategic Plan Priorities:

- Plant and forest health/productivity
- Air quality
- Surface and groundwater quality and quantity
- Improve soil health
- Terrestrial Habitat

Funding Timeline FY 23

Batching Period	Applicable Ranking Pool	Application Deadline	Workload Prioritization Tool	Ranking Deadline	Funding Selections	Participant must turn in paperwork	Applicant Eligibility determination complete	100% Obligation Deadline
1	All EQIP and CSP Ranking Pools	Friday, December 9, 2022	TBA	Wednesday March 1, 2023	Wednesday March 15, 2023	Friday, April 14, 2023	Friday, May 12, 2023	Wednesday June 7, 2023
2	Select Fund Pools	TBD	TBD	TBD	TBD	TBD	TBD	August 30, 2023

RCPP Land Management application deadlines vary from project to project. Deadlines will be posted 30 days ahead of the application cut off

Closing Remarks
Carlos Suarez

Thank you for participating!