



CALIFORNIA  
WATER EFFICIENCY  
PARTNERSHIP



EAGLE AERIAL  
SOLUTIONS



Alliance  
*for* Water  
Efficiency

EMERGING TRENDS IN

# Non-Functional Turf

## Regulatory Trends

Lisa Cuellar, California Water Efficiency Partnership  
Ron Burke, Alliance for Water Efficiency

# Today's Speakers



**Jazmine Molloy**

Eagle Aerial Solutions



**JC Davis**

Southern Nevada  
Water Authority



**Christine Chavez**

City of Santa Fe, NM



**Carlos Bustos**

Albuquerque Bernalillo  
County Water Utility  
Authority



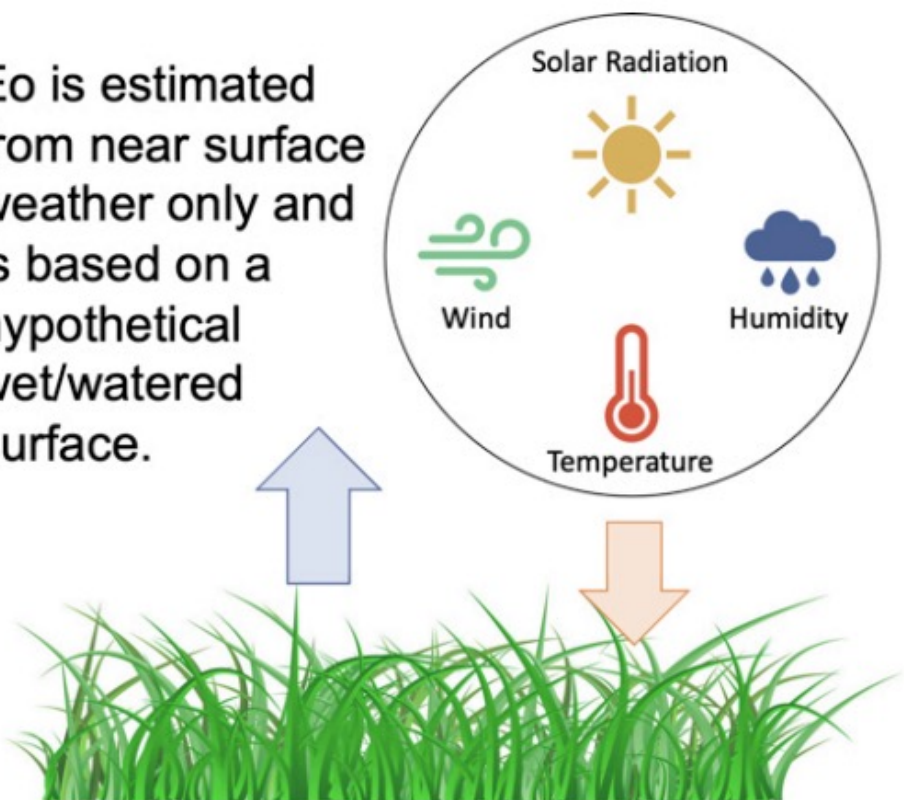
**Carrie Pollard**

Marin Water

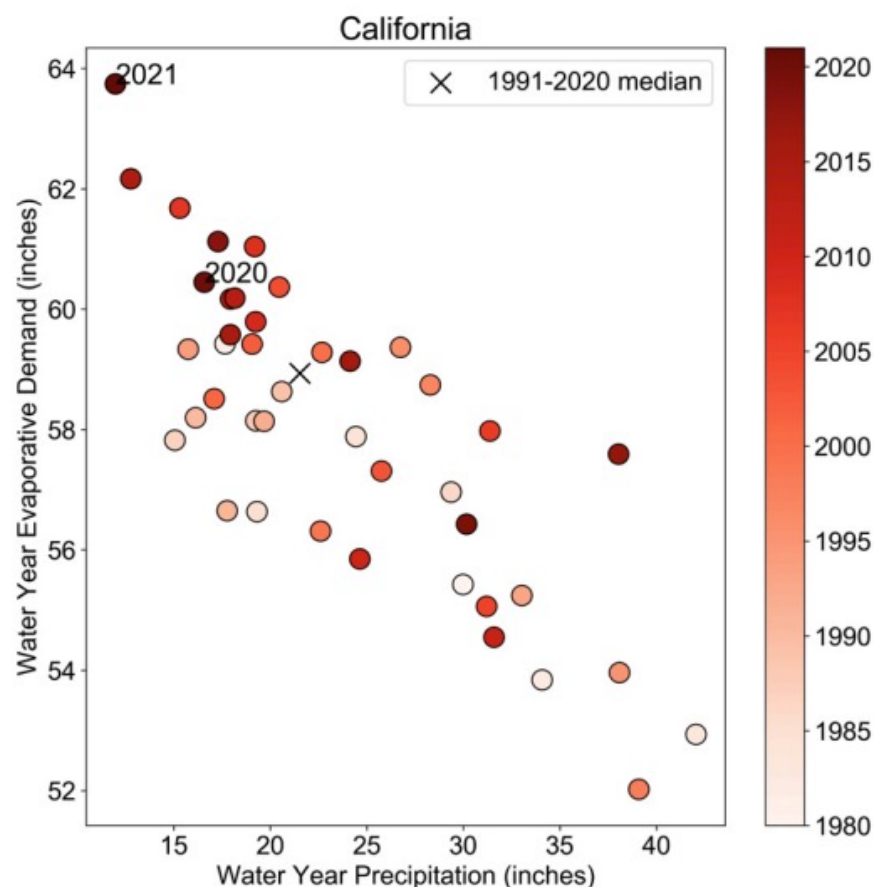


# California Climate Trends – Evaporative Demand

E<sub>o</sub> is estimated from near surface weather only and is based on a hypothetical wet/watered surface.



**Figure 1.** Schematic illustrating the atmospheric drivers of evaporative demand (labeled E<sub>o</sub> in the figure) from a well-watered reference surface. Credit: Christine Albano/DRI.

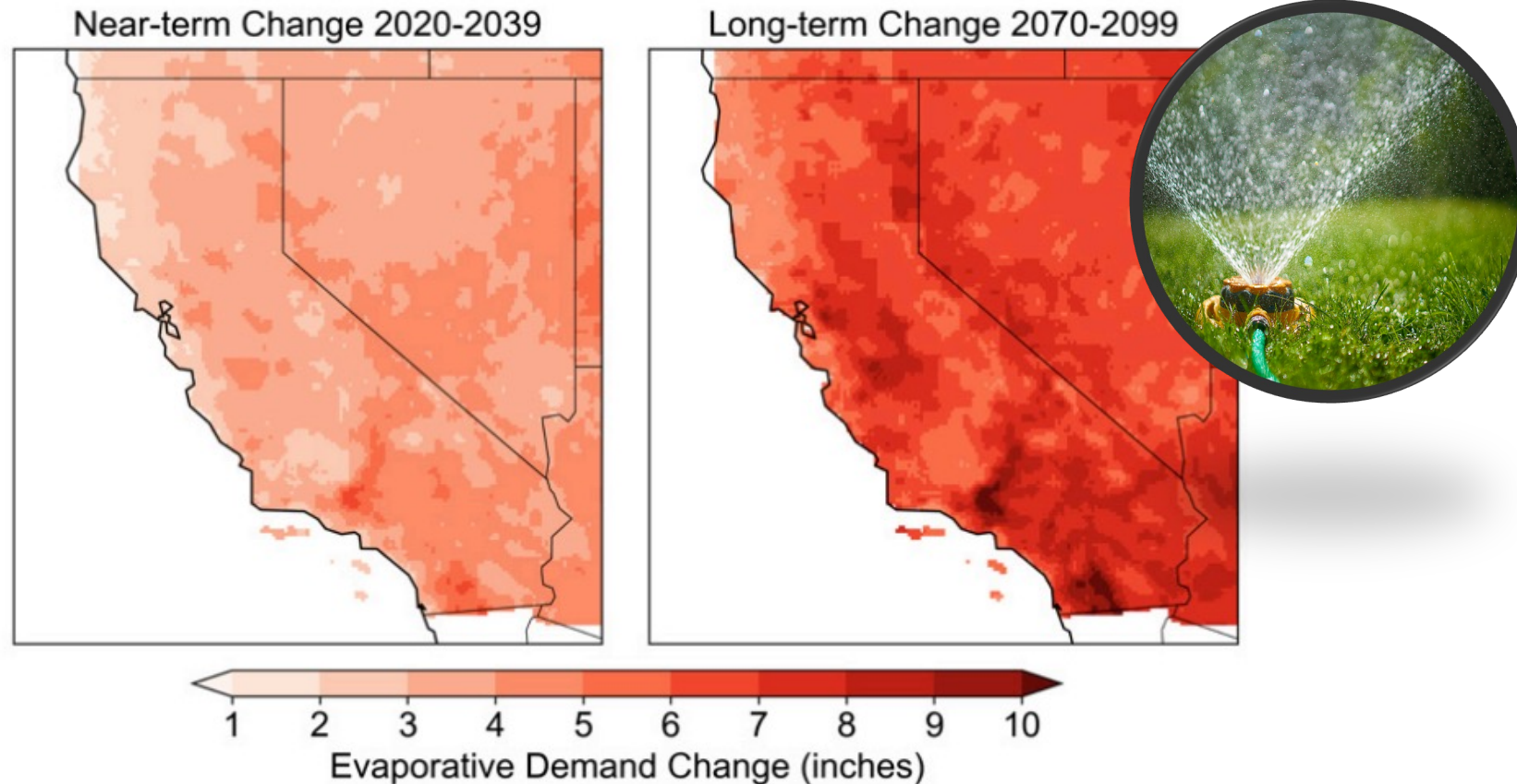


**Figure 2.** A comparison of water year evaporative demand against water year precipitation for California. 2021 stands out as the year with the highest evaporative demand and lowest precipitation since 1980 with 2020 not far behind on both metrics. These extremes combined over two years have led to critically dry forests in the region. Six out of seven of California's largest wildfires on record occurred in 2020 and 2021. Data: gridMET/Climate Engine.

Source: NOAA, CA-NV Climate Applications Program, *Evaporative Demand* (Feb. 2022)  
[https://cnap.ucsd.edu/wp-content/uploads/sites/430/2022/02/CNAPEvaporativeDemand\\_final.pdf](https://cnap.ucsd.edu/wp-content/uploads/sites/430/2022/02/CNAPEvaporativeDemand_final.pdf)



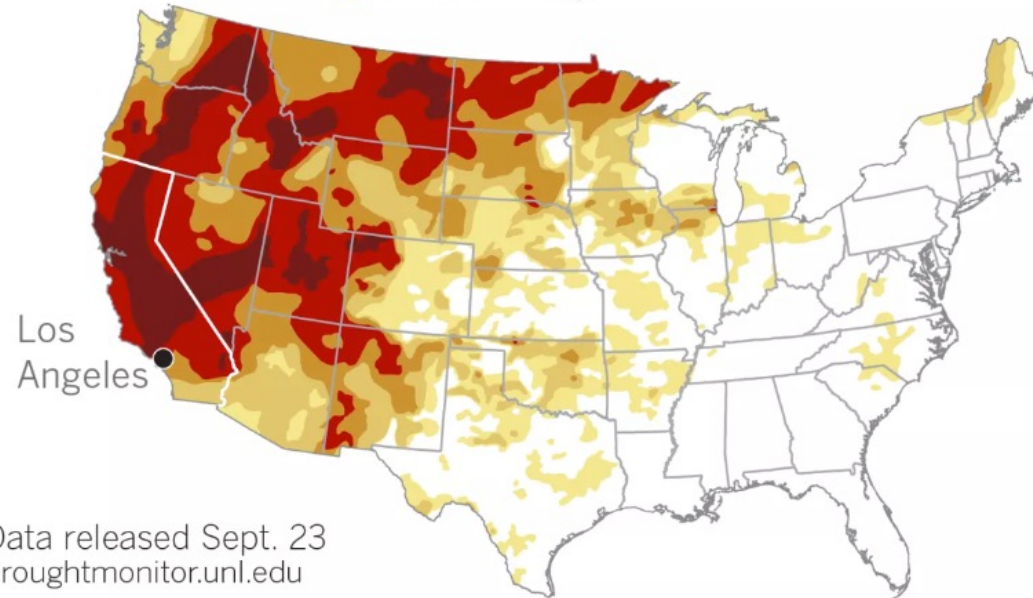
# California Climate Trends — Projected Evaporative Demand



**Figure 4.** Climate model simulations showing the difference in average annual evaporative demand from the baseline period (1950-2019) average. Increases in evaporative demand are projected across the entire region. Results are based on the lower emissions scenario RCP 4.5. Data from LOCA; analysis from McEvoy et al. (2020).

# A 'thirsty' atmosphere is propelling Northern California's drought into the record books

## U.S. drought conditions



Data released Sept. 23  
droughtmonitor.unl.edu

Almost half of California is in what the U.S. Drought Monitor calls "exceptional drought." (Paul Duginski / Los Angeles Times)

BY PAUL DUGINSKI | GRAPHICS AND DATA JOURNALIST

SEPT. 25, 2021 5 AM PT

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# California Regulatory Trends



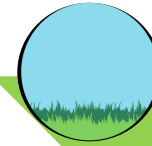
## Drought Emergency Regulations (January 2022)

- Prohibits common-sense water waste
- **Extended** for another year in 2023



## CII NFT Irrigation Ban (June 2022)

- Ban on the use of potable water to irrigate “decorative grass” (aka NFT) on CII landscapes
- **Expires** June 2023



## AB 1572 (Friedman) (February 17, 2023 )

- Established **permanent ban** on the use of potable water to irrigate NFT on CII landscapes including MFR



# CA Emergency Drought Regulations

- Effective through Jan. 2024
- **Prohibits irrigation** of grass on public medians or landscaped areas between the street and the sidewalk using **potable water**.
- No exceptions for golf courses or recreational areas
- **\$500/day** penalty
- Enforcement:
  - ✓ State Water Board will fine suppliers and cities
  - ✓ Local agencies to enforce at the individual customer level



# STATEWIDE WATER RESTRICTIONS

FOR ALL CALIFORNIANS

IN EFFECT SINCE 2022

## EMERGENCY REGULATIONS TO SAVE WATER

- X No watering **decorative grass** in commercial, industrial, and institutional areas, including common areas of homeowners' associations (HOAs)
- X No outdoor watering that lets **water run onto sidewalks** or other areas
- X No washing **hard surfaces** that don't absorb water, like driveways or sidewalks
- X No washing **vehicles** without using an automatic shutoff nozzle
- X No outdoor watering within 48 hours after at least 1/4 inch of **rainfall**
- X No using drinking water for **street cleaning** or **construction site preparation**
- X No filling **decorative fountains, lakes, or ponds**

These regulations do not prohibit watering trees or using water for immediate health and safety needs.

Local water suppliers may have adopted stricter water conservation measures, so please check for additional restrictions in your area.

Violations may be punishable by fine up to \$500 per day.

**SAVE OUR WATER.com**

Report potential  
water-use violations:  
**SaveWater.CA.Gov**

Discover water-saving  
tips and ideas:  
**SaveOurWater.com**

Learn more about these  
and other statewide  
water restrictions:  
**bit.ly/conservationreg**



flyer version 2022.12.12



# CII Non-Functional Turf Irrigation Ban



- Irrigation ban applies to **potable water** use on NFT at Commercial, Industrial, and Institutional (CII) sites and some HOA landscaped areas.
- Some turf at **cemeteries, parks** and **golf courses** could be considered non-functional.



- 
- Irrigating NFT with **recycled water** is permitted.
  - Irrigating turf areas used for **recreation** and **community activities** is still permitted.
  - Watering **trees** and other **plants** is still permitted.

## **What is “non-functional turf” or “decorative grass”?**

Non-functional turf is a ground cover surface of mowed grass that is ornamental and not otherwise used for human recreation purposes. Non-functional turf does not include school fields, sports fields, and areas regularly used for civic or community events. To use more everyday language, this document intends for “decorative grass” to have the same meaning that non-functional turf does in the regulation.



# CII Non-Functional Turf Irrigation Ban

- At property owner's discretion to define NFT
- Issues with tree mortality and irrigation management
- Enforcement:
  - ✓ State Water Board will fine suppliers and cities
  - ✓ Local agencies to enforce at the individual customer level

# How to Protect Trees

Trees planted in turf have some unique challenges:

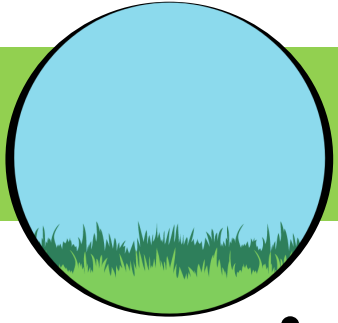
1. Improper tree selection
2. Overall poor irrigation management
3. Shallow root systems



# Tree Ring Irrigation Contraption (TRIC)

- Developed by UC Davis, UCANR, and Ewing Irrigation
- 100' drip tubing is placed around the tree one foot outside the drip line in one-foot increments
- Larger or more mature trees can be irrigated with multiple drip lines connected together.
- Total cost: ~\$100 per tree
- Visit for detailed instructions:  
<https://ccuh.ucdavis.edu/tric>





# AB 1572 - CII NFT Irrigation Ban

- Directs all appropriate state agencies to encourage and support the elimination of irrigation of nonfunctional turf with potable water on CII and MFR properties.
- State Water Resources Control Board to establish, no later than **July 1, 2025**, specified compliance, certification, and reporting requirements.
- Owners required to certify their compliance with these provisions.
- Authorizes an urban water supplier, city, county, or city and county to enforce these provisions.



# Water Agency Response

## Local Ordinances to Ban CII NFT Irrigation (Retailers):

- Marin Municipal Water District
- 2 Metropolitan Water District of So. Cal (MWD) retailers

## Resolution (Wholesaler):

- MWD's Board adopted a resolution on Oct. 11, 2022 that strongly recommends cities and water agencies across So. Cal pass ordinances permanently prohibiting NFT installation.
- Directed at existing and new CII properties and HOAs.

\*In August of 2022, MWD joined urban water agencies across the CO River Basin to sign a MOU committing to reducing non-functional turf.



News for Immediate Release\_\_

# Metropolitan Board Calls for Banning Non-Functional Turf on Commercial, Industrial, Public Properties

Oct. 17, 2022

*Board supports permanent ban of grass that is not regularly used for recreation, other purposes*



## Recommended Ordinance Language:

1. Prohibit the use of potable water to irrigate non-functional turf in existing and new non-residential properties.
2. Prohibit the installation of non-functional turf in non-residential and new residential properties
3. Require the removal of all non-functional turf in non-residential properties by a certain date



# Water Agency Response

## Typical Enforcement

- Notifications & Education
- Fines (\$)

## Ex. Water Budget Reductions (So. Cal Retailer)

- Eligible CII customers (70% ET reduced to 50% ET)
- Customers that exceed budget will be financially penalized through water bills
- Online waiver request process available
- Starting January 2023, subsequent penalties may be assessed for customers who continue to irrigate nonfunctional turf after budgets are reduced, including maximum \$500/day fines.

# Emerging Trends Across the Colorado Basin

**Ron Burke, Alliance for Water Efficiency**

# Statewide Responses

## What we'll cover today:

- ✓ California Emergency Drought Ordinance and CII NFT Ban
- ✓ Nevada law (AB 365) directed the Southern Nevada Water Authority to develop a plan to remove NFT in its service area.
- ✓ New Mexico: HB 352 currently under consideration; phases in bans on installation and watering of NFT at non-residential properties.

## Other cities and agencies have limited turf installation and watering more generally without referencing NFT. For example:

- Central Utah Water Conservancy District
  - Caps turf in new developments to 35% of the yard area
  - No lawn in areas less than 8' wide at their narrowest point, e.g., park strips
  - For CUWCD communities, additional allocations of water are contingent on adopting these standards; CUWCD also limits funding and programs to communities that adopt standards.
  - Everything must be irrigated by drip systems outside of lawns

## **MOU signed by 30 Municipal and Public Water Providers with commitments to:**

- Take additional steps to reduce water demand through efficiency, conservation, reuse, and recycling
- Collaborate with other water users in the Colorado River basin to bring the supply and use of the river into balance
- Choose from a menu of 7 different programs/tactics best suited for their communities
- A specific commitment to introduce “a program to reduce the quantity of non-functional turf grass by 30% through replacement with drought- and climate-resilient landscaping, while maintaining vital urban landscapes and tree canopies that benefit our communities, wildlife, and the environment.”
  - Policies that limit installation/watering of NFT
  - Programs to incentivize landscape transformations
  - Effective program implementation, including irrigation optimization, key.

# 2023 AWE Research Project

## Evaluating & Optimizing Large-Scale Landscape Irrigation Management and Transformation Strategies

- Estimate water savings from CII landscape transformations and use of water budget programs/portals
- Analyze water use impacts for a subset of irrigation optimization strategies across multiple utilities and climates.
- Evaluate efficacy of new residential landscape strategies (e.g. direct install, design services, mulch drop off, etc.)
- Recruiting participants/funders and sponsors now! Contact [Liesel@a4we.org](mailto:Liesel@a4we.org) for more information.