



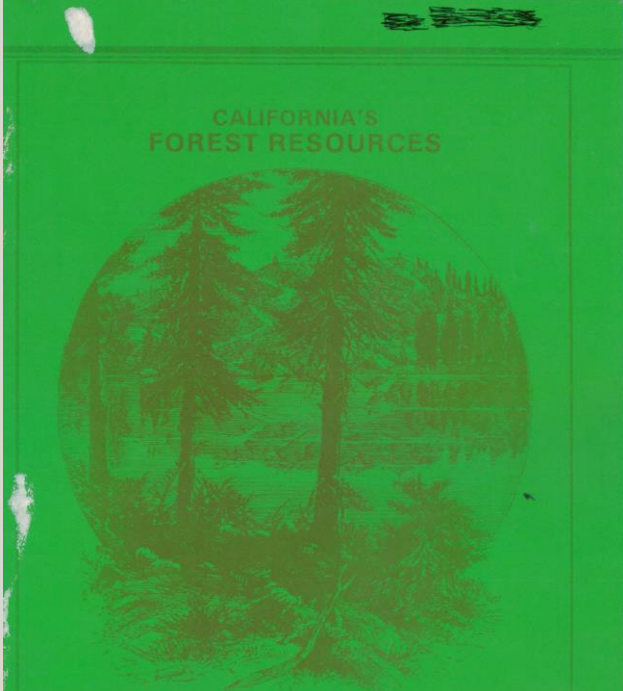
The Forest and Rangeland Assessment 2022

Briefing to RMAC 9/6/23

CAL FIRE Fire and Resource Assessment Program

Briefing

- The FRAP Mandate (PRC 4789, from 1977)
- The current edition: Assessment 2022 (in process)
 - Content overview – 13 Chapter topics; 51 total Indicators
- Some overarching trends (w/ focus on Rangelands)
- Timeline to completion
- Open Forum: Questions/Comments from the Committee



CALIFORNIA'S FORESTS AND RANGELANDS:

Growing Conflict Over Changing Uses




ANNUAL ASSESSMENT
CALIFORNIA DEPARTMENT OF FORESTRY
1979

California's Forests and Rangelands: 2010 ASSESSMENT

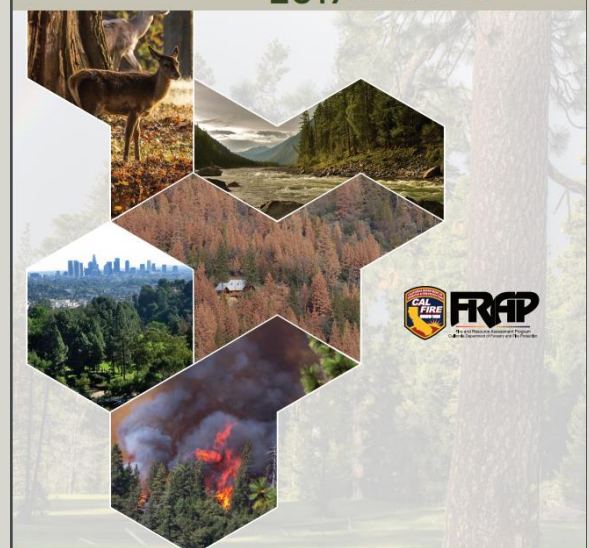


CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
FIRE AND RESOURCE ASSESSMENT PROGRAM

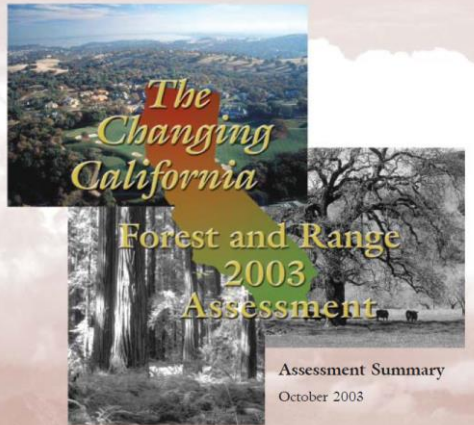


Rangeland Resources Assessment
Department of Forestry and Fire Protection

CALIFORNIA'S FORESTS AND RANGELANDS 2017 ASSESSMENT



California Department of Forestry and Fire Protection
Fire and Resource Assessment Program



The Changing California
Forest and Range
2003
Assessment

Assessment Summary
October 2003

On-line 2003 Assessment
<http://www.frapp.edf.ca.gov/assessment2003>

Assessment 2022 Chapter Topics

- Sustainable Working Forests
- Urban Forests
- Forest Pests and Diseases
- Climate Change
- Water Resources
- Communities-at-Risk
- Institutional Responses (new)
- **Sustainable Rangelands**
- Wildfire
- Population and Development
- Non-metro Economies
- Wildlife Habitat
- Renewable Energy

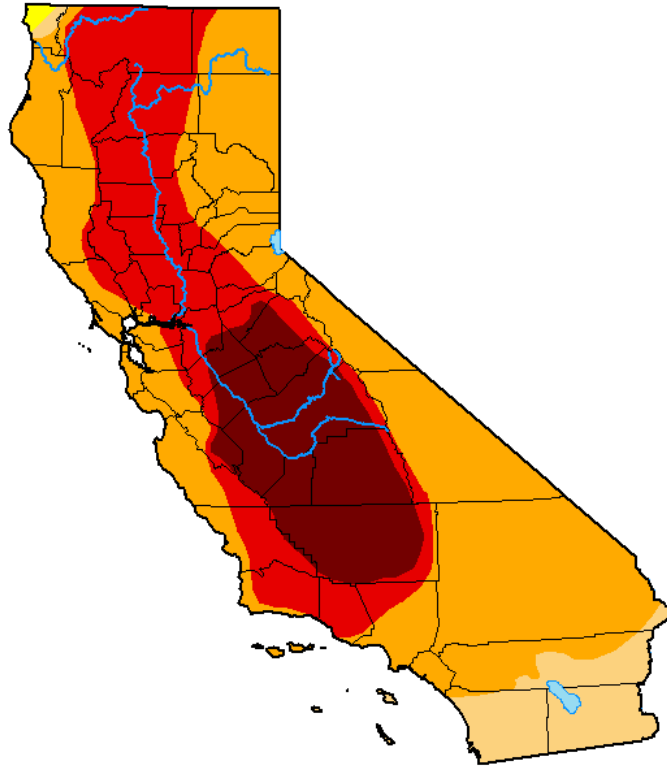
Some “Big Picture” CA Trends

- Climate change, and “mega-drought” are having major impacts on wildland ecosystems, and working landscapes
 - Two deepest 3-year droughts of record, both in past 10 years:
 - 1) 2019-2021
 - 2) 2012-2015
 - Increased forest mortality; expanding and more intense wildfires, and longer fire seasons; Shifting forage dominants
- “Climate whiplash” – e.g. between WY 2022 and WY 2023

Weather (Climate) Whiplash, 6-month period

U.S. Drought Monitor California

November 1, 2022
(Released Thursday, Nov. 3, 2022)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

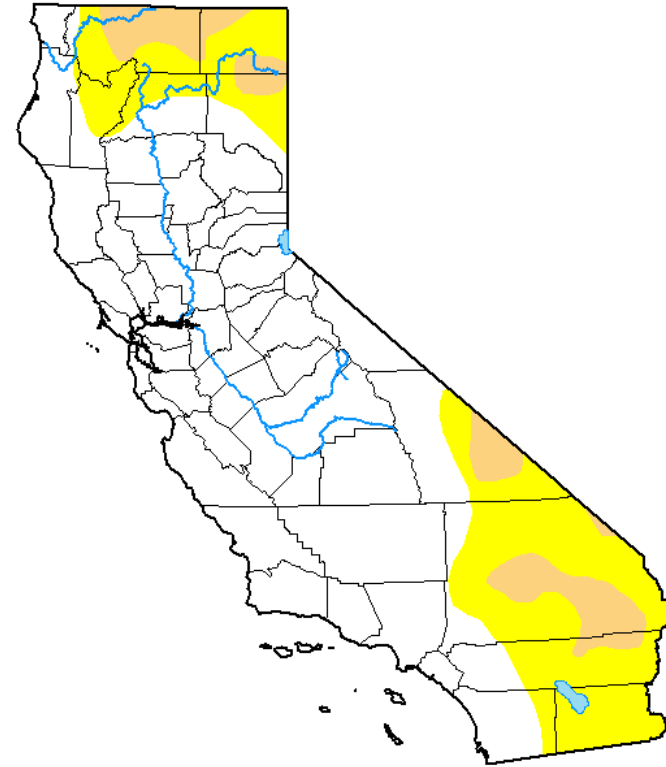
Brian Fuchs
National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor California

April 25, 2023
(Released Thursday, Apr. 27, 2023)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

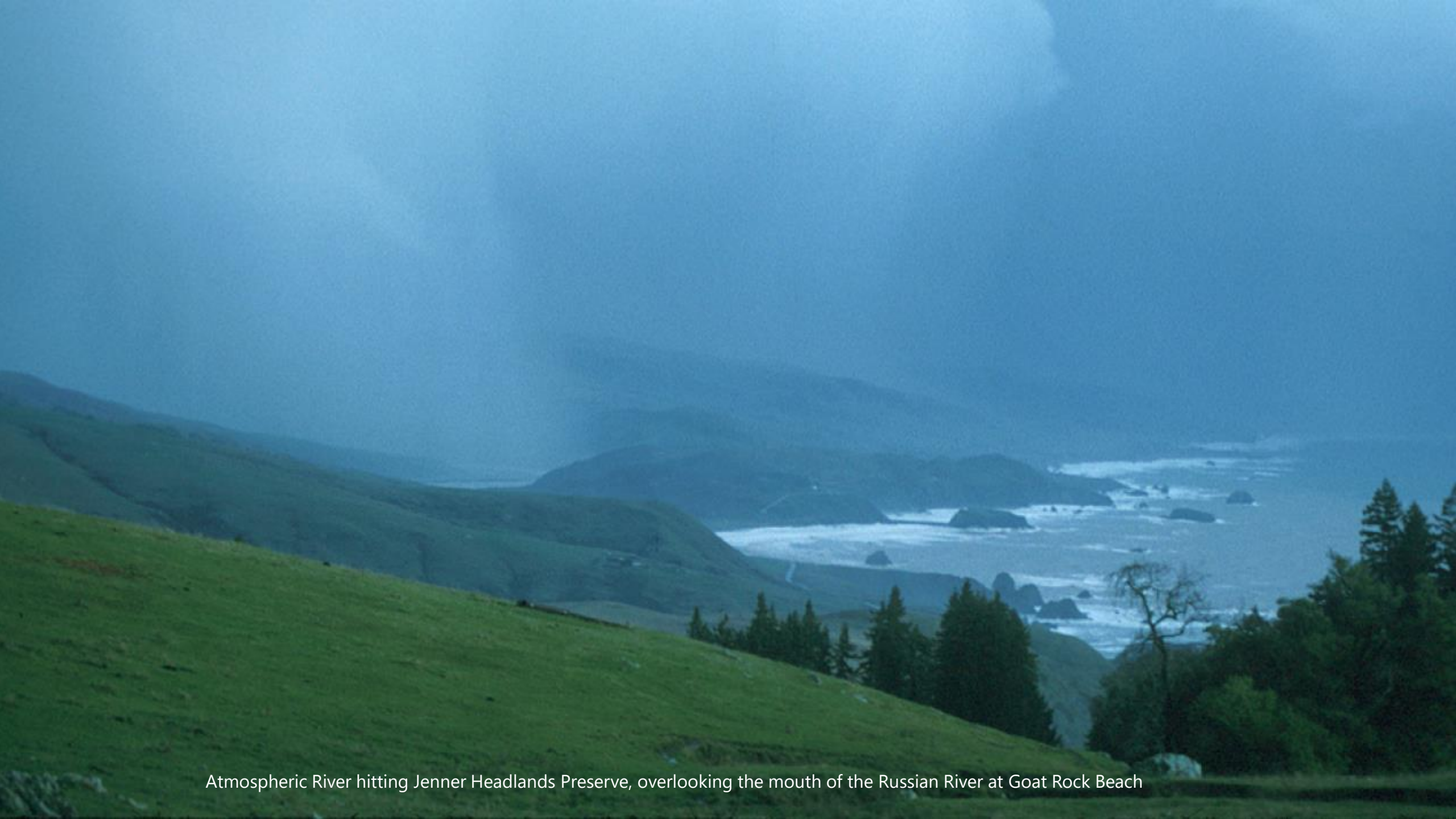
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Author:

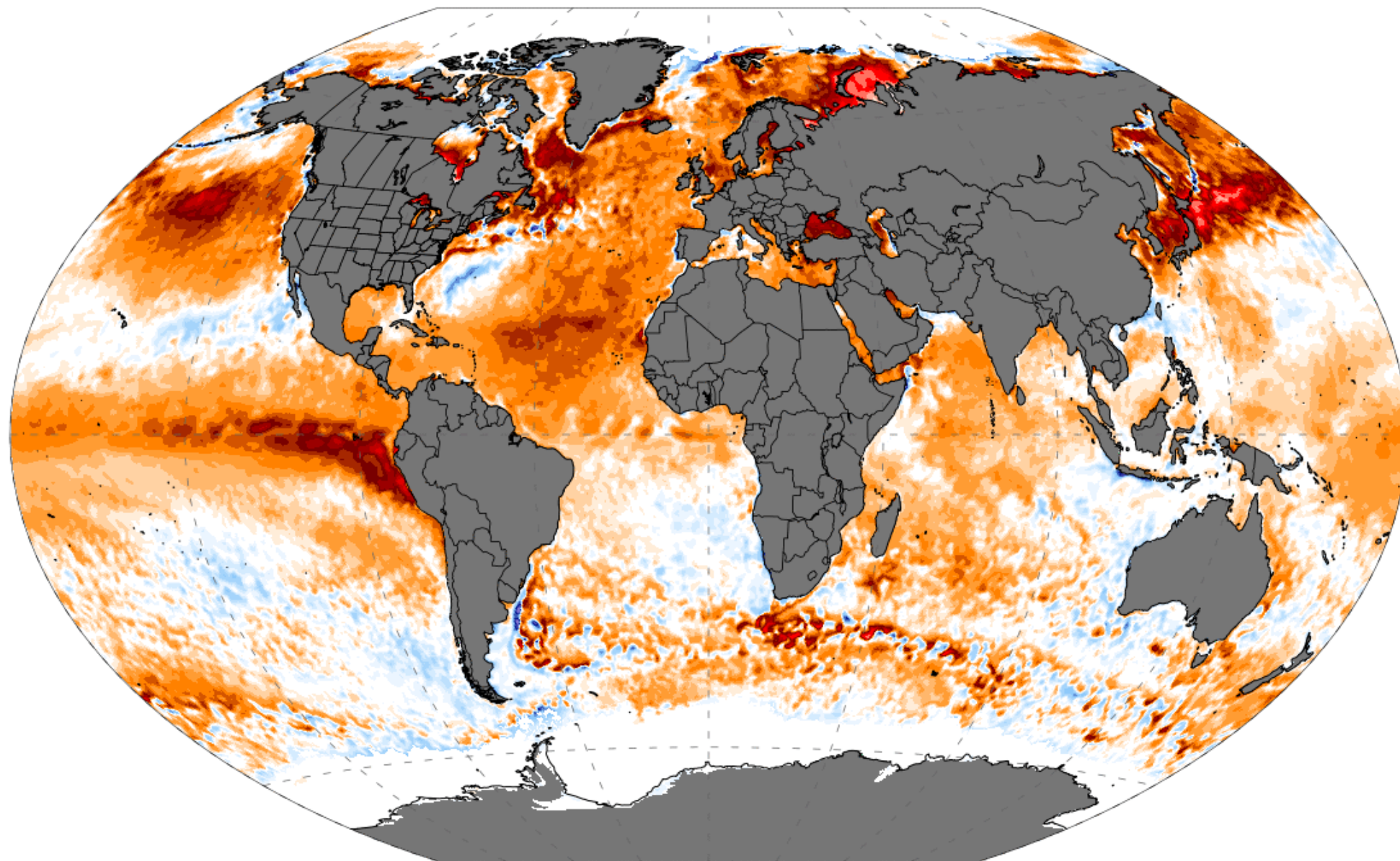
Richard Tinker
CPC/NOAA/NWS/NCEP



droughtmonitor.unl.edu



Atmospheric River hitting Jenner Headlands Preserve, overlooking the mouth of the Russian River at Goat Rock Beach



Some Societal Trends

- Population has declined 2019-2023 (July 2023 report)
 - About **-650,000** total residents (mostly urban)
- New housing construction (in 2022) at highest level since 2008
 - Relieves building pressures on Rangelands and in Forests
 - New development occurring on Rangelands has stabilized at a low level
- COVID pushed some people out of high density urban into rural rangeland fringes of metro areas
- Williamson Act contracts in limbo: No restart of State subvention payments to counties; May be sunseting? Implications for ranchers / farmers?

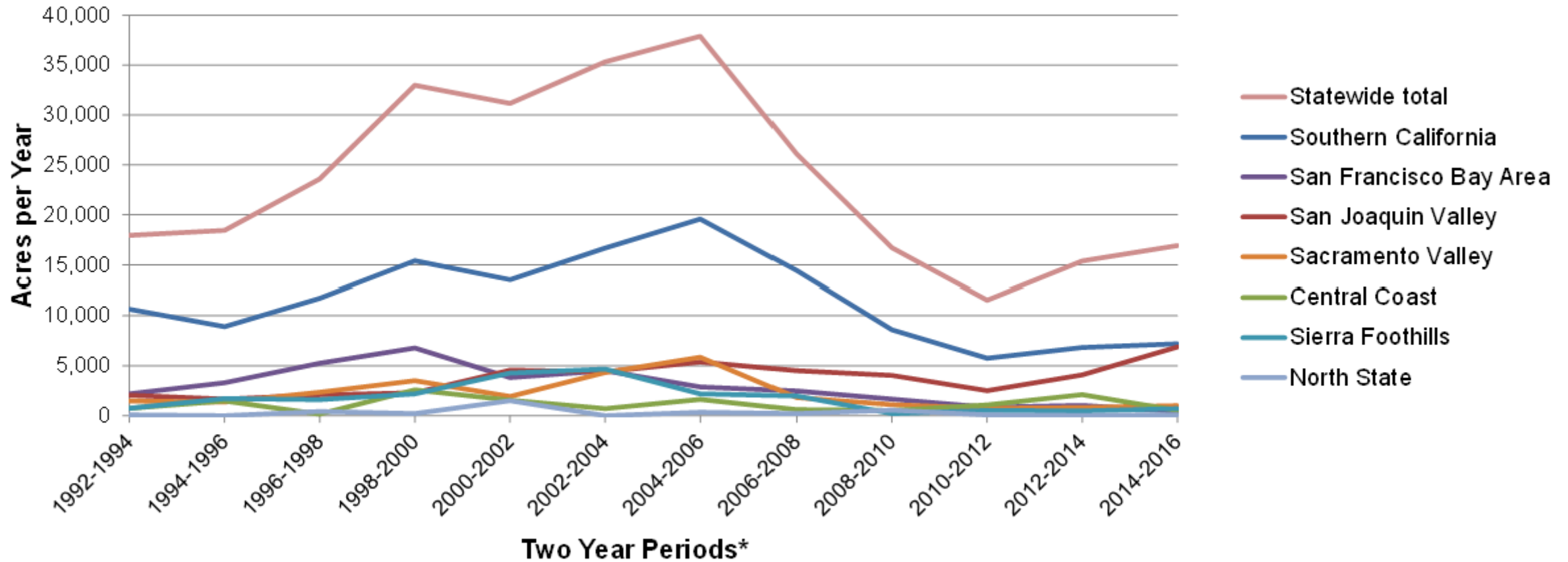
Rangeland Chapter Indicators; Recent Trends in:

- Rangeland Conversion (to Development) (2.1)
- Beef Cattle Farms (2.2)
- Federal Grazing Allotments (2.3)
- Grassland Forage Productivity (new) (2.4)

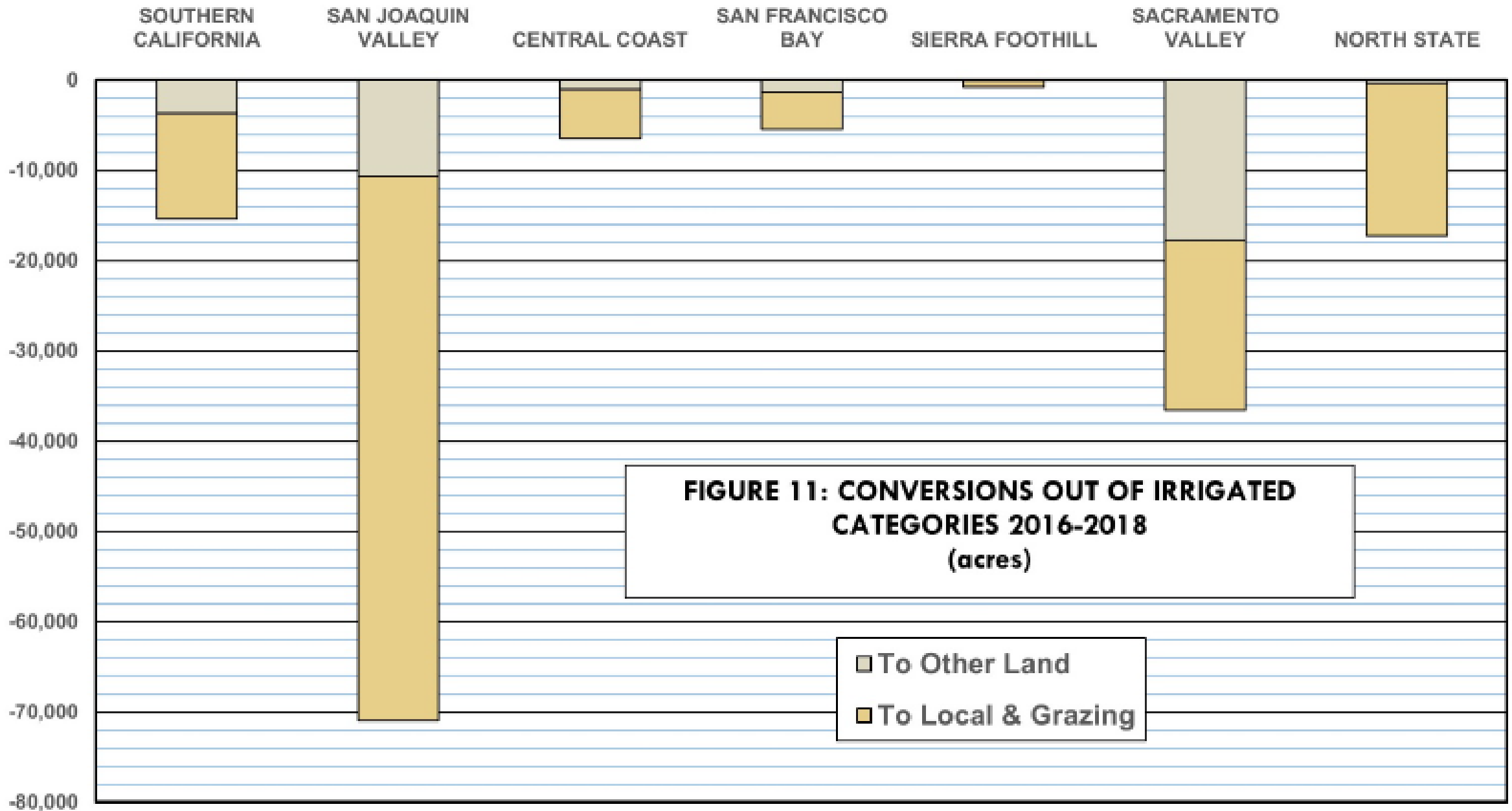


2.1 Conversions of Rangelands

Rangeland Conversion to Urban, 1992–2016



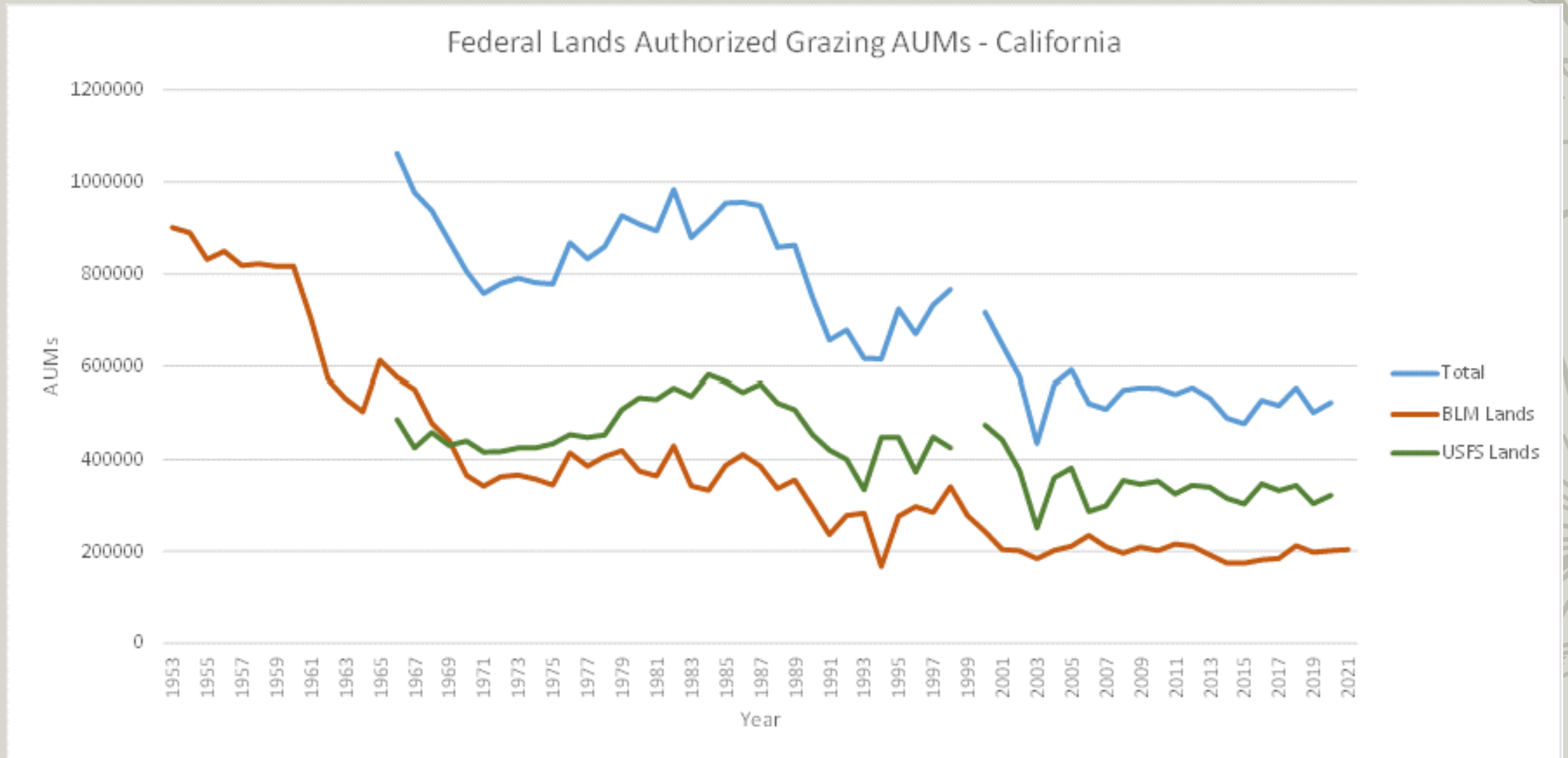
* Farmland is mapped in both years and compared to determine changes over the two year period.



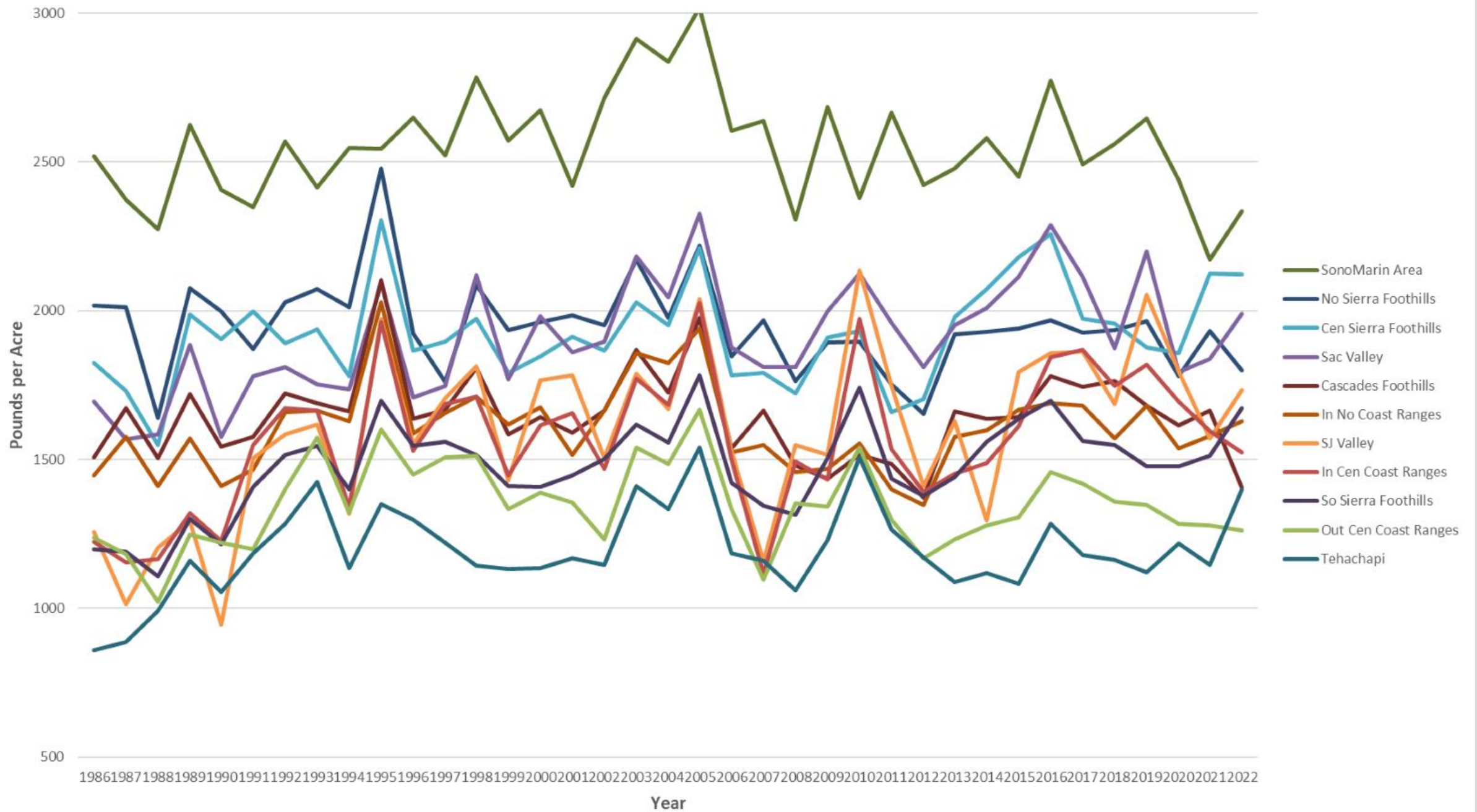
Conversions to “Rangelands” from Irrigated Aglands

- Farmland Mapping and Monitoring Program:
 - 2016 – 2018: ~76,000 acres/yr
 - 2014 – 2016: ~64,000 acres/yr
- Sustainable Groundwater Management Act (SGMA)
 - ~500,000 acres removed from irrigation by 2040 in the SJ Valley and Tulare Basin
 - Fallowed land will need to be managed for either grazing, or as restored rangeland vegetation types (all critically historically reduced):
 - Riparian Forests
 - Tule Marsh Wetlands
 - Valley Oak Woodland

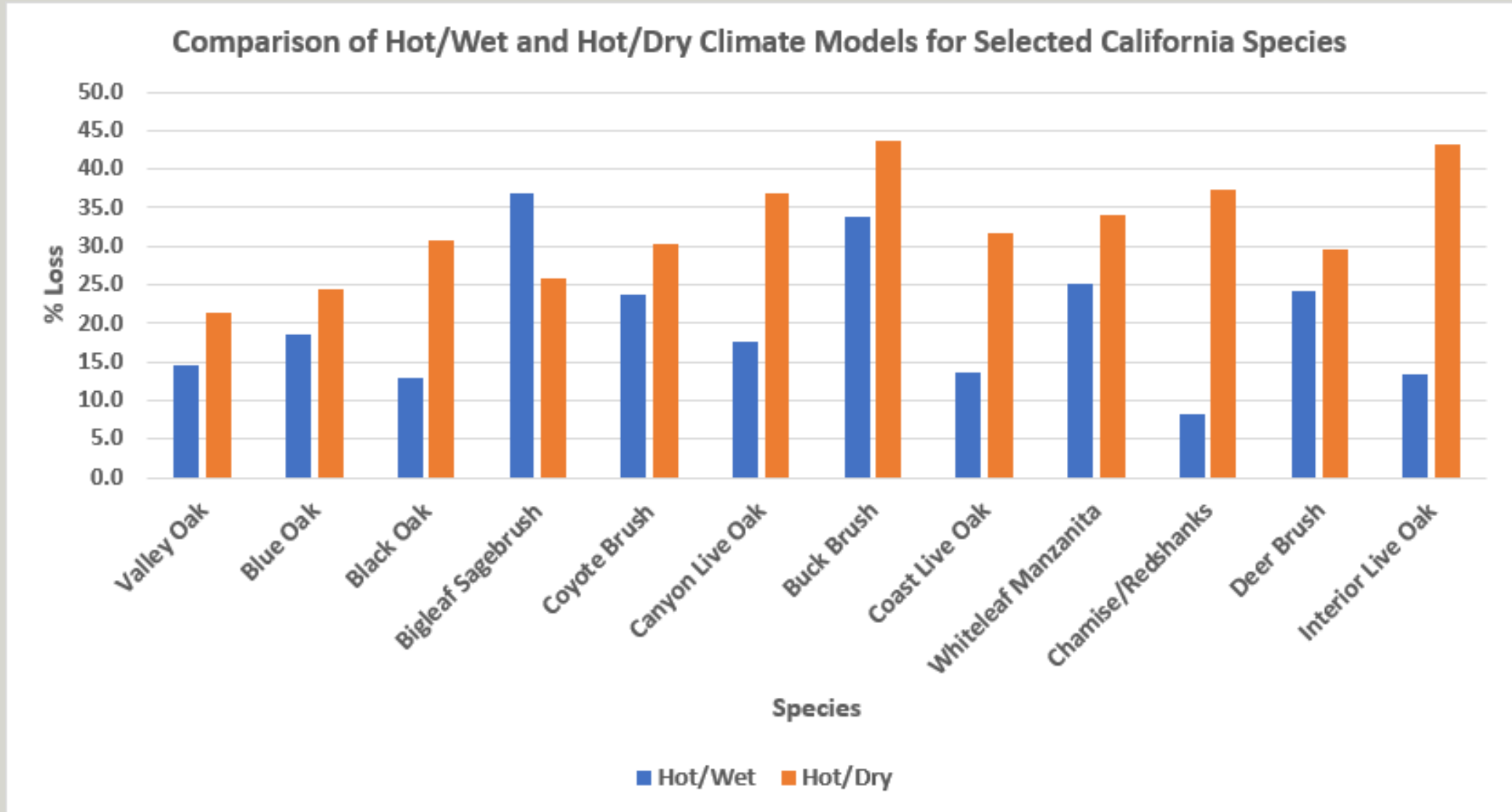
Rangelands Indicator 2.3: Federal Grazing Allotments



Grass Forage Production (lbs/ac) Yearly Average by Region



Climate Change and Rangeland Dominants



Rangelands Status

- Severe droughts pushing grassland forage dominants to less-desirable species, lowered annual yield per acre
 - Spread of cheatgrass, medusahead, red brome, star thistle
 - Red brome's desert expansion is changing wildfire behavior; e.g. 93,000-acre York fire - largest in CA this season
- Federal land grazing allotments holding +/- steady; large forest wildfires changing vegetation to be more palatable
 - Forest wildfires opening up new areas for fuels management grazing

Related Trends

- Sea change in the past 5 or so years in public and government awareness of wildfire trends, smoke, and climate change
 - Budgets for forest and wildfire related management programs and grants have increased
 - New Assessment Chapter 13: Institutional Responses
- Projections of wildfire smoke vulnerability; also wildfire evacuation routes for communities-at-risk (Chapter 11)
- Office of the State Fire Marshall Land Use Planning Program assists counties with planning new subdivisions in rangelands

WILDLAND-URBAN INTERFACE PLANNING GUIDE

*Examples and Best Practices for
California Communities*

August 2022



Cattle Ranching Challenges Continue

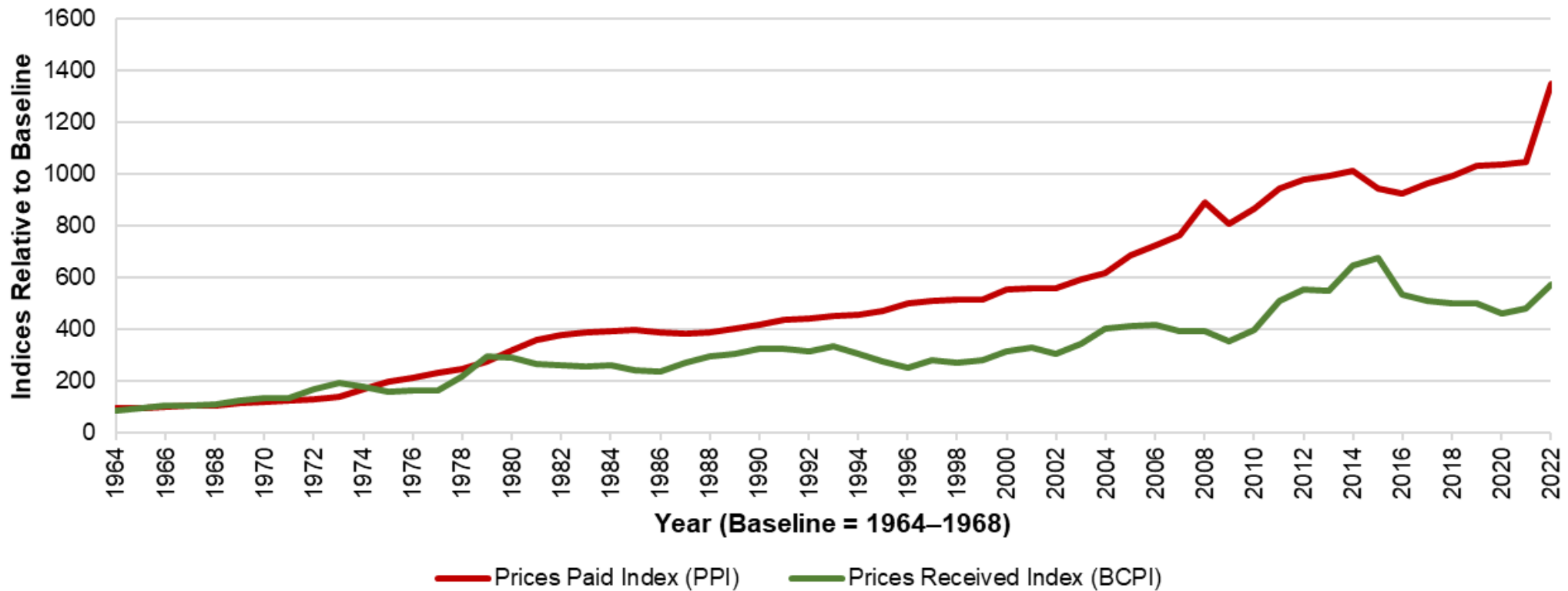
- Rising Costs of Cattle Production; Prices at Auction not keeping pace
- Aging ranch infrastructure needs maintenance and upgrades to new codes
- Proprietor age and intergenerational-transfer ranch legacy issues
- Property tax relief from Williamson Act may be in jeopardy
- Wildfires increasing statewide

+++++

- Conservation easements and ownership keep expanding in acreage
- Growing acceptance of livestock grazing for wildland fuels maintenance
 - E.g. use for wildfire fuel control post-Creek Fire

Cattle Ranching – Beef Costs v. Prices

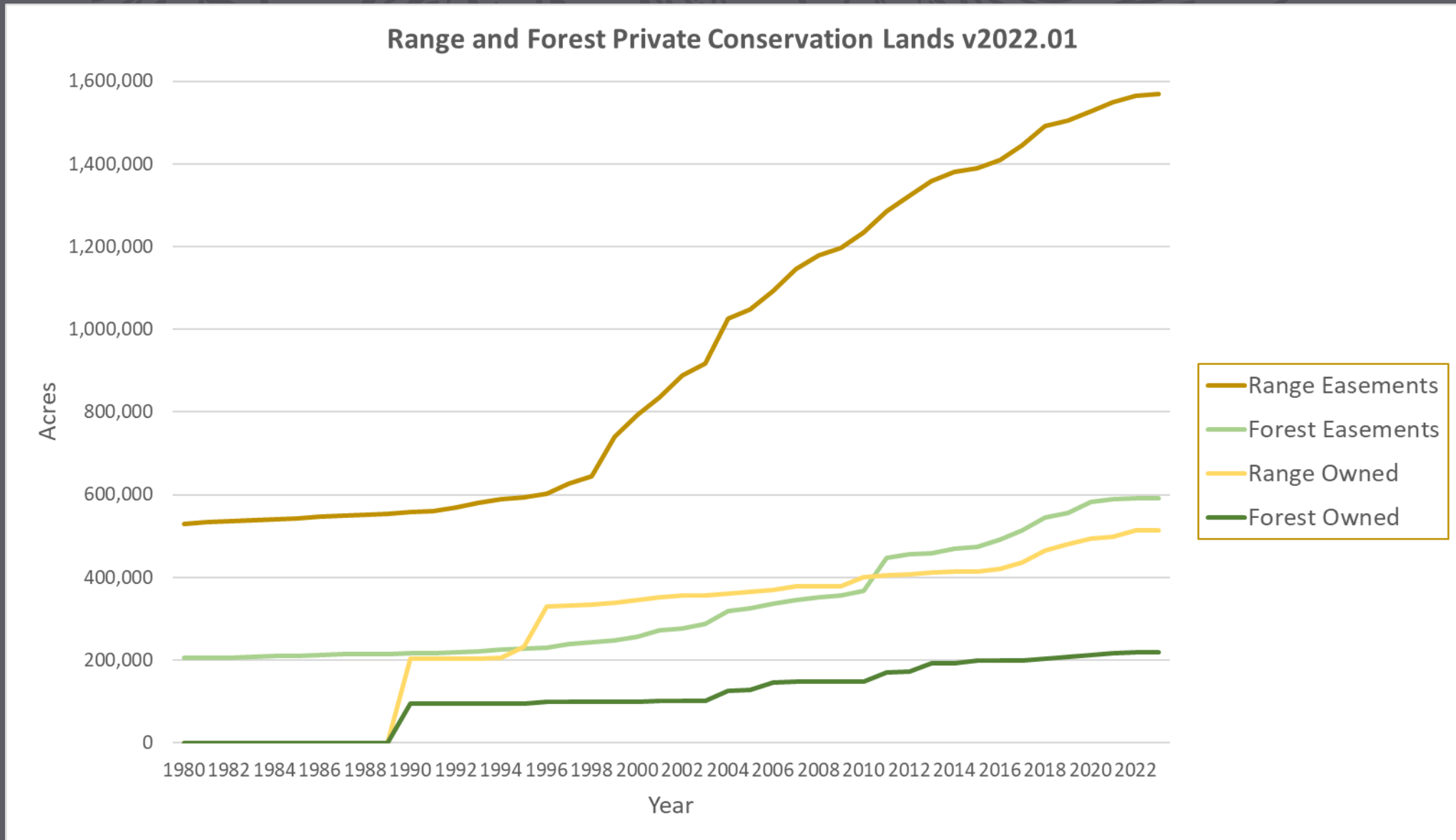
Beef Cattle Prices Paid Index (PPI*) and Prices Received Index (BCPI)**



* PPI is the Prices Paid Index for Beef Cattle Production

** BCPI is the Beef Cattle Price Index (i.e. Prices Received for Beef Cattle) for the 11 Western States

Conservation Easements/Ownership



A decorative background pattern of stylized leaves and branches, rendered in a light grey color against a dark grey background. The leaves are detailed with veins and are arranged in a flowing, organic pattern across the top half of the slide.

The Assessment 2022 Executive Advisory Team (AEAT)

Outreach: 13-member group that we requested assist in reviewing the Assessment 2022. A mix of internal and external affiliations.

Next meeting is 21 September.

FRAP Assessments Going Forward

- Move towards:
 - Web-based content, updated as data come online, with interactive graphics
 - Leveraging content of core pertinent web sites, e.g.:
 - Rangeland Analysis Platform (used by Region 5 range management)
 - <https://rangelands.app/>
 - California Forest Observatory
 - <https://forestobservatory.com/>
 - EarthKnowledge (Basin Model; Climate Water Deficit; VPD)
 - Natural Climate Solutions Data Atlas
 - <https://cecs.ess.uci.edu/data-atlas/>
 - US Forest Change Assessment Tool
 - <https://forwarn.foresthreats.org/fcav2/>

The “State of Wildlands in the State”

- We are living in interesting times.
- Major changes are occurring rapidly on California wildlands; Assessments are more challenging
 - Move to web-based data and narratives
- The State of California is a world leader in responding to changes
 - Chapter 13 will document much of the efforts to address changes



Timeline to Completion

- 31 August Chapters in draft form and submitted to FRAP exec group
- 30 September Executive Summary Drafted; Internal chapter reviews completed (FRAP; CAL FIRE; Board of Forestry; RMAC)
- 31 October External reviews completed and submitted
- 30 November Chapter revisions completed
- 15 December First Complete Publication Draft completed
- Q1 2024 Public release
- Q3 2024 Web version rollout

A decorative background element consisting of a stylized, dark grey leaf pattern with detailed vein structures, extending across the top half of the slide.

Forum: Comments/concerns?

Thank you!

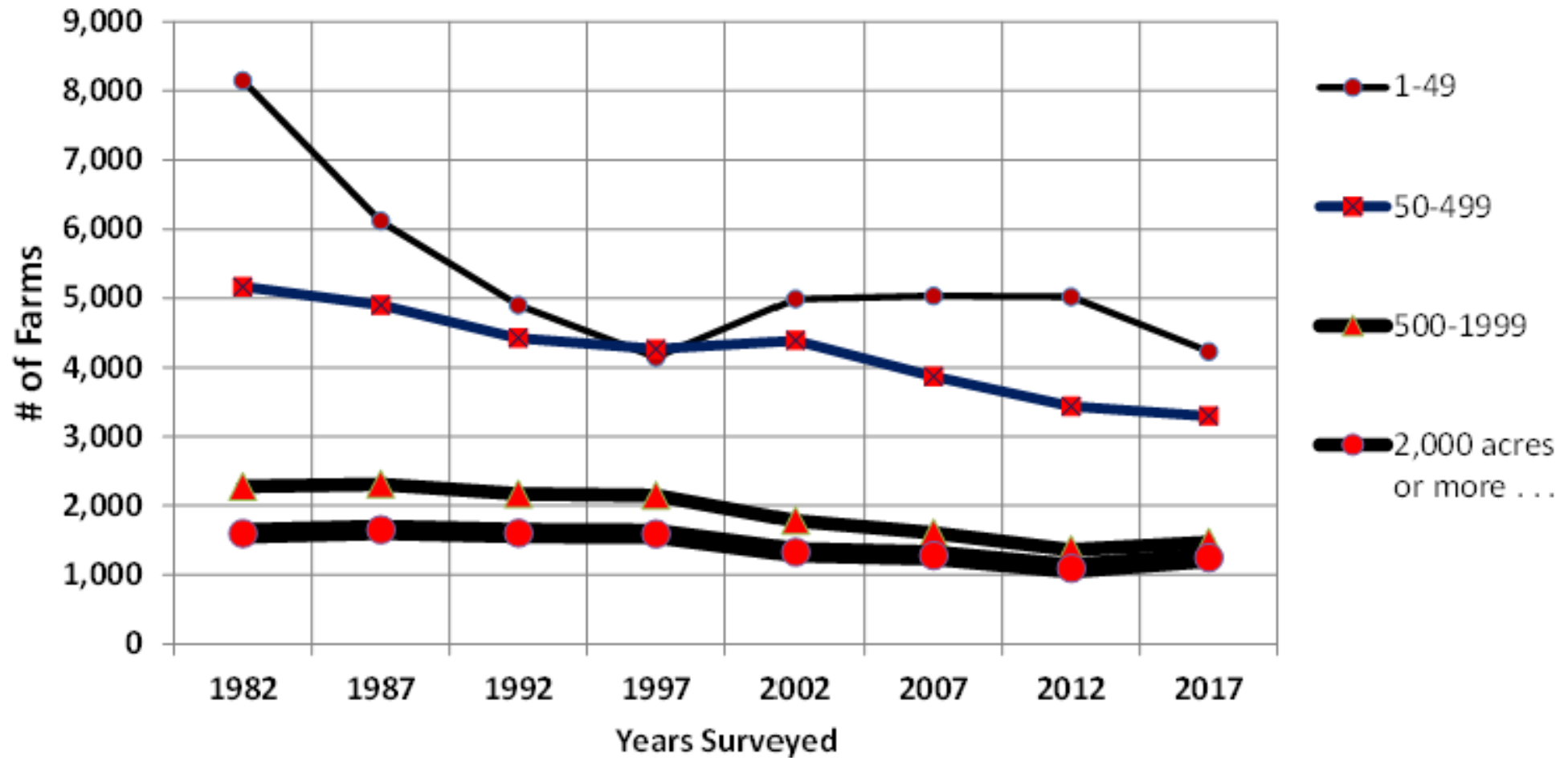
rich.walker@fire.ca.gov



End

Rangelands Indicator 2.2

Beef Cattle Farms by Size Class 1982 - 2017



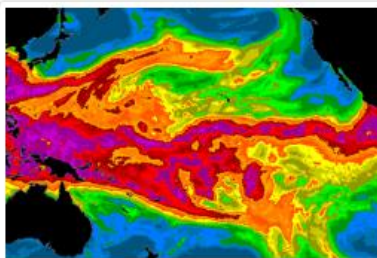


Atmospheric River Portal

Access information, images, analyses, diagnostics of current conditions, forecasts, and projects related to atmospheric rivers (ARs).

[More on ARs...](#)

Current Conditions



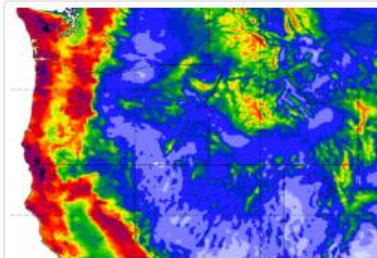
SSM/I Water Vapor Imagery »

Latest integrated water vapor, cloud liquid water, and rain rate.



GOES West Satellite Imagery »

Infrared, visible, and water vapor satellite images.



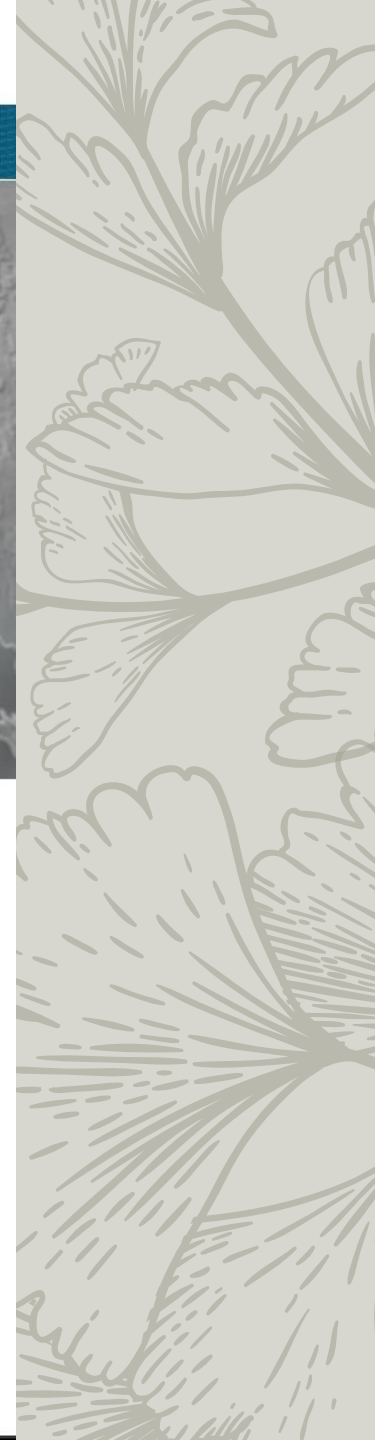
AR Precipitation Observations »

Gridded precipitation products at several timescales.



Atmospheric River Observatories »

Analyses of water vapor flux, radar and disdrometer, and snow level.





Challenges to Completion Remain

- Timeline is tight
 - Internal chapter drafts (with graphics) completed late summer
 - External (to CAL FIRE) reviews
 - **We plan to request reviews of pertinent chapters from this group during October 2023**
- How best to fold in non-FRAP Internet links; strategy for staying up-to-date with rapidly evolving, high-quality Internet web map applications



Appendix

List of Chapter Indicators 47 + 5

Assessment 2017/2022 Indicators

1. Sustainable Forests

- ① 1.1 Growth, Removals, Mortality (FIA)
- ① 1.2 Timberland Restoration (FIA)
- ① 1.3 Silvicultural Methods (FPGIS CAL FIRE)
- ① 1.4 Timber Harvest (FPGIS CAL FIRE and USFS FACTS)
- ① 1.5 Sustainability initiatives
- ① 1.6 Carbon Offset Projects

2. Sustainable Rangelands

- ① 2.1 Rangeland Conversion
- ① 2.2 Beef Cattle Farms
- ① 2.3 Federal Grazing Allotments
- ① 2.4 *Grassland Forage Productivity (new)*

Assessment 2017/2022 Indicators

3. Urban Forests

- ① 3.1 Tree Canopy Cover
- ① 3.2 Impervious Surfaces
- ① 3.3 Air Pollution
- ① 3.4 Urban Heat

4. Wildfire

- ① 4.1 Fire Return Interval Departure
- ① 4.2 Fire Threat
- ① 4.3 Wildfire Activity
- ① 4.4 Wildfire Severity
- ① 4.5 Vegetation Treatments

Assessment 2017/2022 Indicators

5. Forest Pests and Diseases

- ① 5.1 Tree Mortality
- ① 5.2 Native and Exotic Pests

6. Population and Development Threat

- ① 6.1 Population Trends
- ① 6.2 Rangeland under Williamson Act
- ① 6.3 Protected Private Wildlands

7. Climate Change

- ① 7.1 Temperature
- ① 7.2 Precipitation
- ① 7.3 Carbon Storage - Forests
- ① 7.4 Carbon Sequestration
- ① 7.5 *Vapor Pressure Deficit (new)*

Assessment 2017/2022 Indicators

8. Rural Economies

- ① 8.1 Relative Performance
- ① 8.2 Economic Trends
- ① 8.3 Economic Prosperity
- ① 8.4 Social Stress
- ① 8.5 Economic Structure
- ① 8.6 *Economic Vulnerability Index (new)*

9. Water

- ① 9.1 Water Quality
- ① 9.2 Snow Pack
- ① 9.3 Spring Runoff
- ① 9.4 Climatic Water Deficit

Assessment 2017/2022 Indicators

10. Wildlife Habitat

- ① 10.1 Species at Risk
- ① 10.2 Habitat Structure
- ① 10.3 Habitat Degradation
- ① 10.4 Habitat Vulnerability to Climate Change
- ① 10.5 Protected Habitat

11. Communities at Risk of Wildfire

- ① 11.1 Structure Loss
- ① 11.2 Housing by Hazard Class
- ① 11.3 Housing in WUI
- ① 11.4 Community Planning
- ① 11.5 *Smoke Exposure (new)*
- ① 11.6 *Wildfire Evacuation Index (new)*

Assessment 2017/2022 Indicators

12. Renewable Energy

① 12.1 Renewable Energy

① 12.2 Biomass Energy

13. Institutional Response

(no indicators planned)