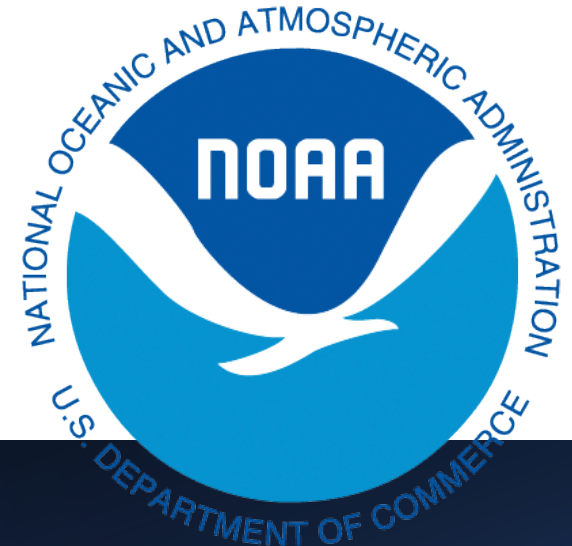


Voluntary Drought Initiative



Shay Richardson, California Department of Fish and Wildlife

Rick Rogers, NOAA National Marine Fisheries Service

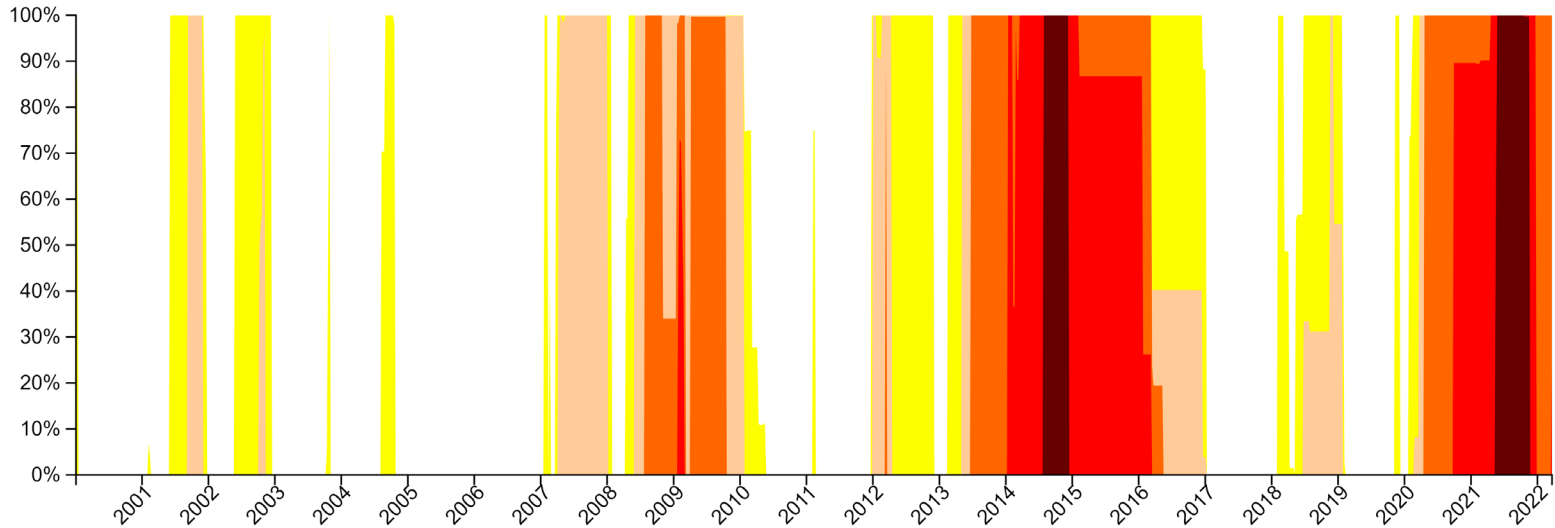


Overview

- Current Drought Conditions in Napa County
- Drought Impacts to Summer Rearing Salmon and Steelhead
- Tributaries of Concern in Napa River Watershed
- Overview of Voluntary Drought Initiative “VDI” Program
- Incentives for Participating in VDI Program
- VDI Agreements from Previous Drought in 2014-2016
- Vision of “Success” for VDI Program
- How to Participate or Contact VDI Program Partners

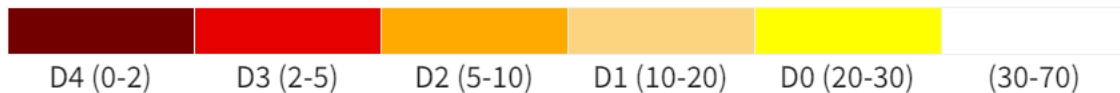
Drought Conditions in Napa County

- Mediterranean climate, summers are dry and majority of rainfall occurs during the winter season – drought prone!
- Water demand in Napa County much higher in summer than winter
- Driest year to date over the past 128 years (Jan-March '22)
- Rainfall 15.6 inches below normal



Dry Conditions (Percentile Categories)

Drought Monitor in Napa County, CA



D1 - Moderate Drought

- Dryland pasture growth is stunted; producers give supplemental feed to cattle
- Landscaping and gardens need irrigation earlier; wildlife patterns begin to change
- Stock ponds and creeks are lower than usual

100.00%
of Napa
County
(D1-D4)

D2 - Severe Drought

- Grazing land is inadequate
- Fire season is longer, with high burn intensity, dry fuels, and large fire spatial extent
- Trees are stressed; plants increase reproductive mechanisms; wildlife diseases increase

100.00%
of Napa
County
(D2-D4)

D3 - Extreme Drought

- Livestock need expensive supplemental feed; cattle and horses are sold; little pasture remains; fruit trees bud early; producers begin irrigating in the winter
- Fire season lasts year-round; fires occur in typically wet parts of state; burn bans are implemented
- Water is inadequate for agriculture, wildlife, and urban needs; reservoirs are extremely low; hydropower is restricted

23.94%
of Napa
County
(D3-D4)



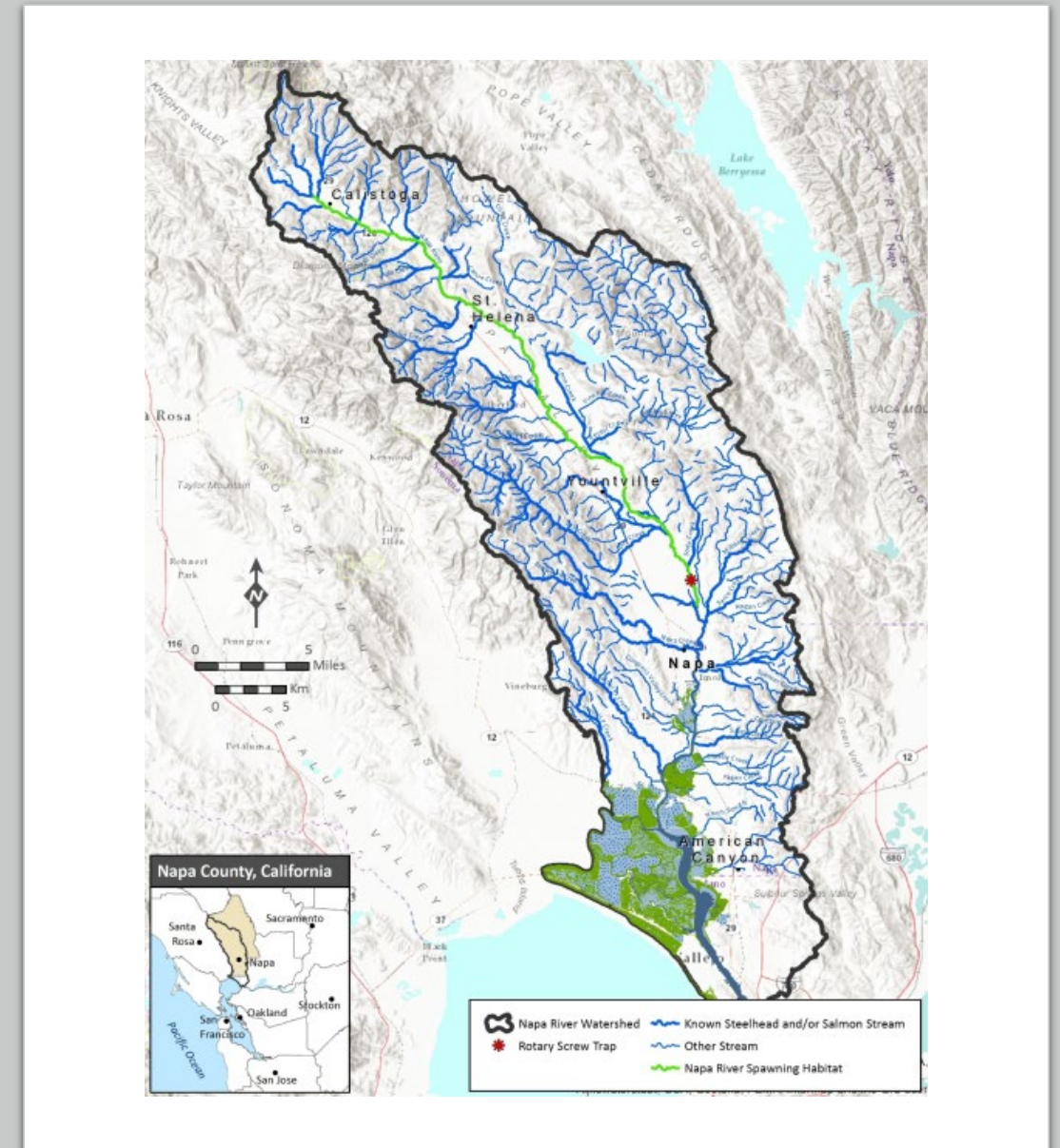
Drought Impacts to Salmon and Steelhead

- Juvenile salmon and steelhead rear in small freshwater streams before migrating to the ocean
- In dry summer months, lack of flowing water traps juvenile salmon and steelhead in drying pools resulting in high mortality
- Small amounts of flow provide food and maintain survivable temperature and oxygen levels in pools
- Even a trickle of water flowing through rearing pools can keep salmon and steelhead alive

Tributary Watersheds of Concern

Salmon and steelhead rearing streams in Napa River watershed with highest likelihood of streamflow disconnection resulting in isolated pools this summer:

- York Creek
- Sulphur Creek
- Dry Creek
- Redwood Creek



Voluntary Drought Initiative Program

Joint initiative declaring the agencies' intent to work with Landowners or Water Users to reduce the negative effects of the drought on salmon, steelhead, and sturgeon listed under the Federal Endangered Species Act or the California Endangered Species Act

Five actions for drought impact minimization:

- Targeted flow augmentation
- Water storage and/or forbearance
- Monitoring
- Fish rescue
- Winter floodplain inundation and groundwater recharge



Incentives for Participating in VDI Program

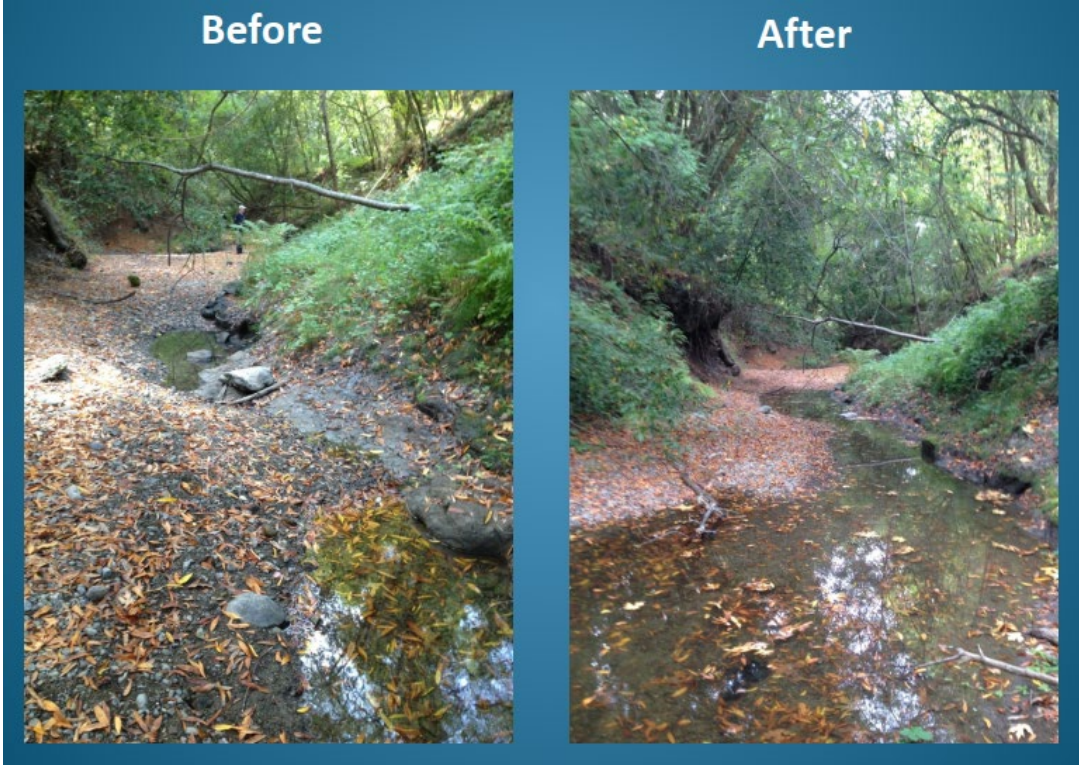
- Demonstrated improvements to instream habitat and water quality for fish
- Funding available for direct project costs (i.e., infrastructure, permitting, utility fees)
 - No formal solicitation process or deadlines to apply for funds
 - Funds disbursed as reimbursable grant
- Technical assistance with infrastructure, permitting, project implementation, etc.
- Improves ecosystem function on property
- May support a business model or goal (i.e., “green” or “fish friendly”)
- Opportunity for local communities to develop cooperative solutions to water conservation and potentially offset curtailment actions



Past VDI Agreements from Drought in 2014-2016

Russian River Watershed Case Study

Jackson Family Wines – “Bones Road” VDI



Downstream Reach



Upstream Reach

Camp Meeker VDI *Dutch Bill Creek*



- Camp Meeker Recreation and Parks District volunteered to enhance critically low summer flows by releasing water continuously through November 2015 or until flows were restored from rainfall events
- Approx. 3,400 juvenile coho salmon and steelhead likely would have perished without flow augmentation
- Site utilized as refuge habitat for relocated coho in summer 2021

E & J Gallo Winery VDI *Porter Creek*

- Flow release from an existing water storage reservoir reconnected Porter Creek allowing trapped coho salmon to emigrate from Porter Creek to the Russian River
- Recurring flow release covered under Safe Harbor Agreement with NOAA Fisheries
- Study of past flow augmentation in Porter Creek (Rossi 2020) found that releases significantly improved dissolved oxygen levels from 4.5 mg/L to 7.2 mg/L



Vision of “Success” for VDI Program

- High levels of participation in VDI Program covering wide range of projects and diversion types:
 - Surface and groundwater users
 - Agricultural and residential diverters
- Collaborative efforts in pursuing grant funds and implementing projects in priority watersheds
 - Need assistance finding a third party to receive and distribute grant dollars
- Maintain pool connectivity throughout dry season

How to Participate in VDI Program or Contact Program Partners

- If you are interested in participating and for additional information, please contact:
BDRDrought@wildlife.ca.gov
and/or calcoastalvdi.wcr@noaa.gov
- CDFW Drought Webpage:
<https://www.wildlife.ca.gov/Drought>
- NOAA Fisheries Drought Webpage:
<https://www.fisheries.noaa.gov/west-coast/climate/drought-west-coast-region>



Questions?