

# Emergency Water Drafting Rules Plead

Presentation to the Board of Forestry and Fire Protection

July 21 and 23, 2015

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California Department of Fish and Wildlife

# Emergency Water Drafting Rules Plead

- What and Where the plead covers
- Impetus for the plead (why warranted?)
- Additional awareness, focus and due diligence needed and achieved through emergency ASP water drafting rules



# Emergency Water Drafting Rules Plead

## What:

- Rules plead nearly the same as CalFire's proposed plead, May 2014
- Includes under Section 923.7(I) :
  - (1) Compliance w/ F&GC Sec. 1600 *et seq.*
  - (2) Description of water drafting site conditions and proposed activity
  - (3) Water drafting requirements

# Emergency Water Drafting Rules Plead- What

(3) All water drafting ....are subject to each requirement...**unless....Lake or Streambed Alteration agreement** [*emphasis added*]...

(A) All intakes shall be screened....[screen specifications, diversion less than 350 gpm]

(B) ...drafting locations....shall be surfaced....

(C) Barriers to sediment transport....installed...

(D) ....drafting trucks....shall use drip pans....



Sec.923.7(I)

(3)

(A) All intakes shall be screened....[screen specifications, diversion less than 350 gpm]

(B) ...drafting locations....shall be surfaced....

(C) Barriers to sediment transport....installed...

(D) ....drafting trucks....shall use drip pans....

# Emergency Water Drafting Rules Plead- What:

(3) [continued]

(E) Bypass flows for Class I....avoid dewatering  
...maintain aquatic life.....

1. Bypass flows....at least 2 [cfs]

2. Diversion....not exceed [10 %]...of  
surface flow

3. Pool volume reduction [ $\leq$  10 %]

(F) The drafting operator shall keep a log....

(G) ...RPF and the drafting operator....pre-operations  
field review.....

# Emergency Water Drafting Rules Plead

## Why? **Includes same reasons as last year**

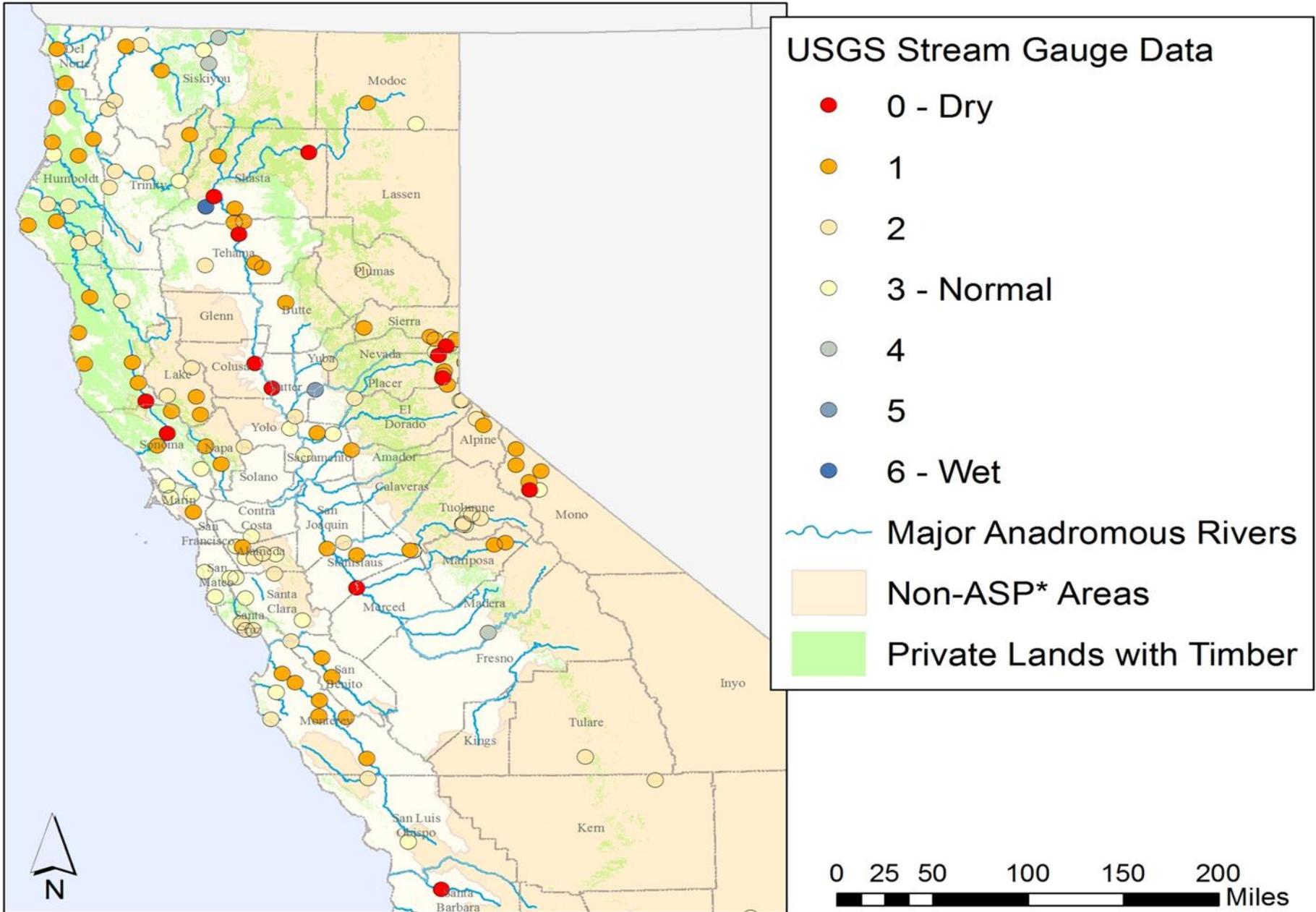
- “This expedited action was taken to reduce the harmful impacts from drought as the state’s weather patterns shift towards several months of rainless conditions during severe drought conditions.”
- “This emergency regulation also conforms to the Administration’s Proclamations of a State of Emergencies [sic] issued as Executive Orders on January 17<sup>th</sup>, 2014 and April 25<sup>th</sup>, 2014 [and on April 1, 2015] response to unprecedented drought conditions that the State is currently experiencing.”

# Emergency Water Drafting Rules Plead

## WHY? **Continuing Adverse**

### **Conditions**

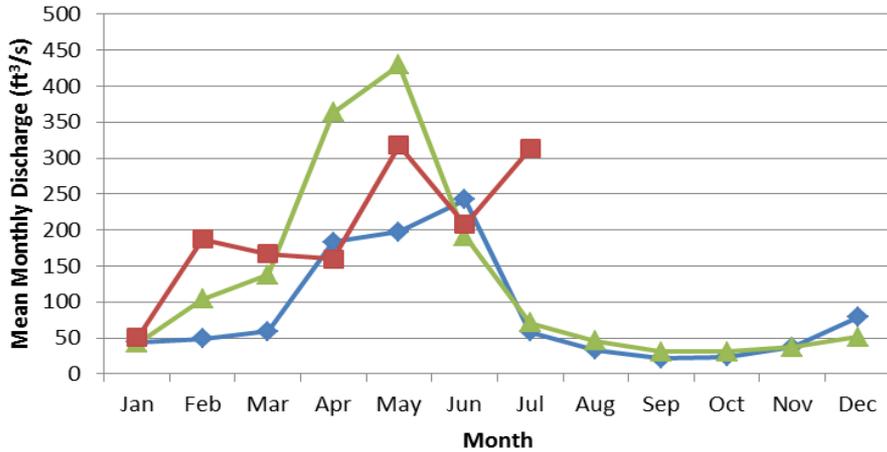
- We are now in the fourth year of drought.
- USGS Stream Gauge data indicate many in-stream flows equivalent to or less than those of the 1977 drought
- Aquatic species are potentially at risk
- DFW has engaged in numerous fish rescue actions in 2014 and 2015
- Sample of THPs in non-ASP counties indicate questionable compliance with Sec. 1600 *et seq.* agreements covering water drafting
- On-going demands from extensive illegal marijuana “grows”
- Challenges in evaluating stream flow and effects



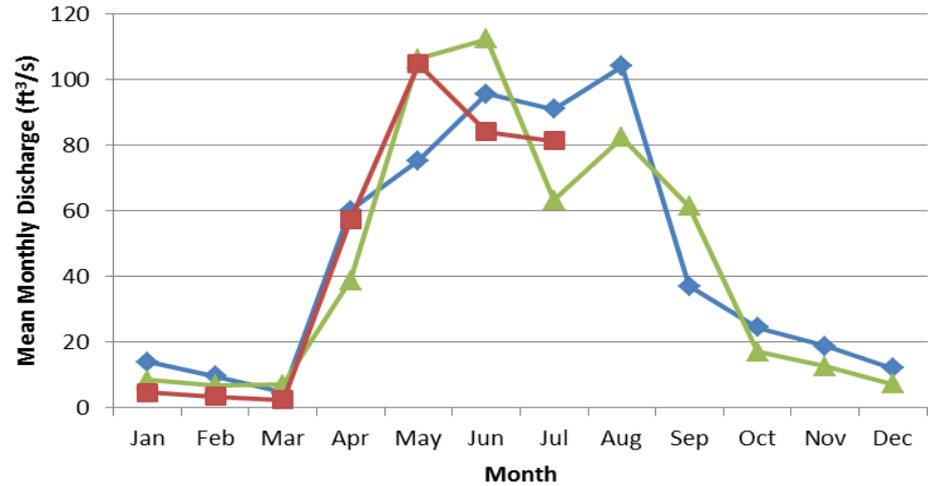
\*Anadromous Salmonid Protection

# Discharge of USGS Gauges in non-ASP Areas

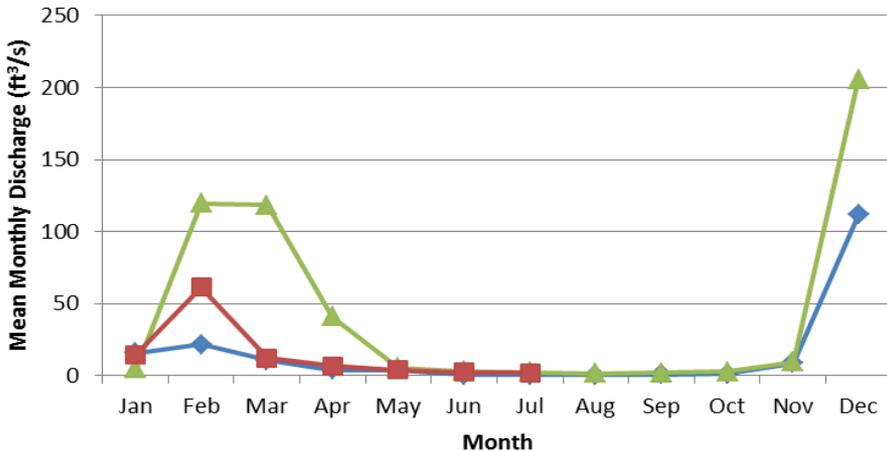
USGS 10308200 E FK CARSON RV BLW MARKLEEVILLE CK  
NR MARKLEEVILLE: ALPINE COUNTY



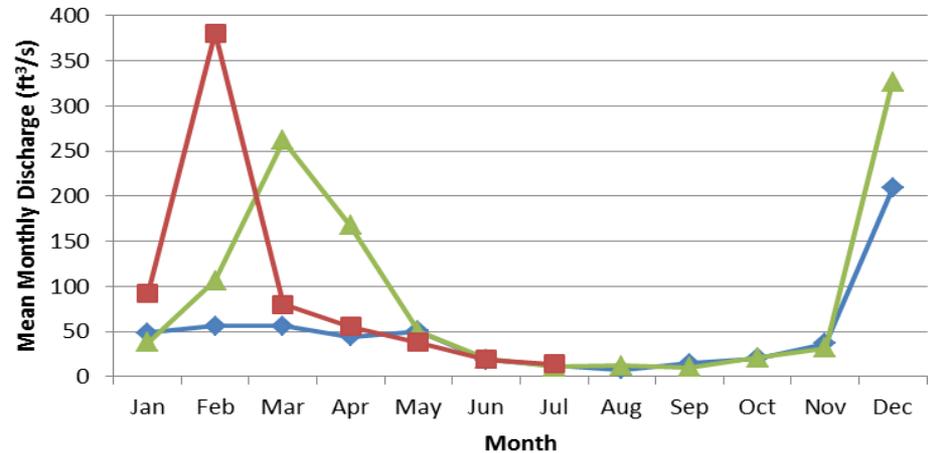
USGS 11345500 SF PIT R NR LIKELY CA: MODOC COUNTY



USGS 11418500 DEER C NR SMARTSVILLE CA: NEVADA COUNTY



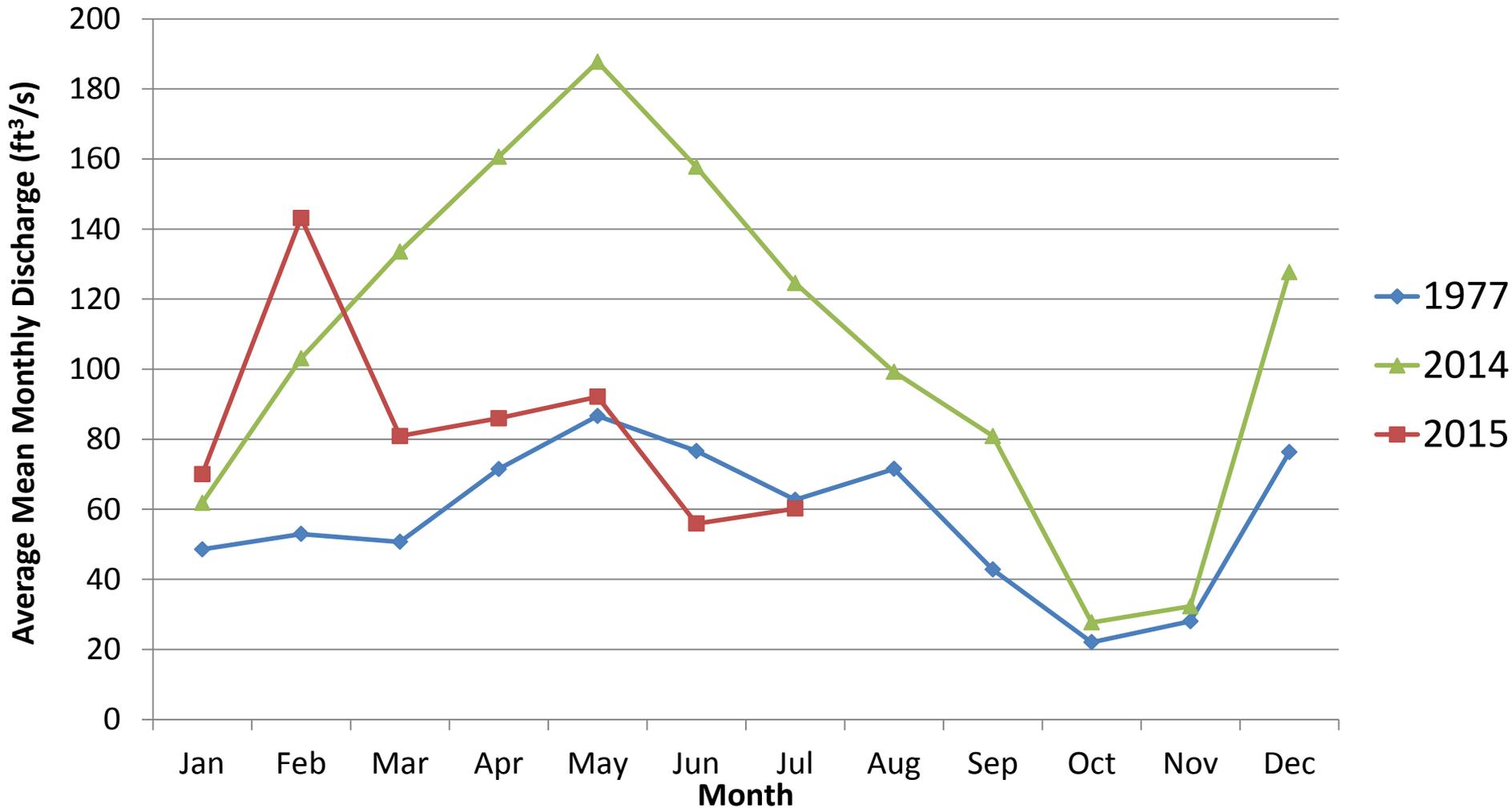
USGS 11402000 SPANISH C AB BLACKHAWK C AT KEDDIE CA: PLUMAS COUNTY



—◆— 1977    —▲— 2014    —■— 2015

\*Data source USGS: Oct 2014-July 2015 is provisional data subject to revision. Data for July was calculated for the first half of the month (1st-14<sup>th</sup> or 15<sup>th</sup>)

# Average Discharge for 19 Sites In Non-ASP Areas

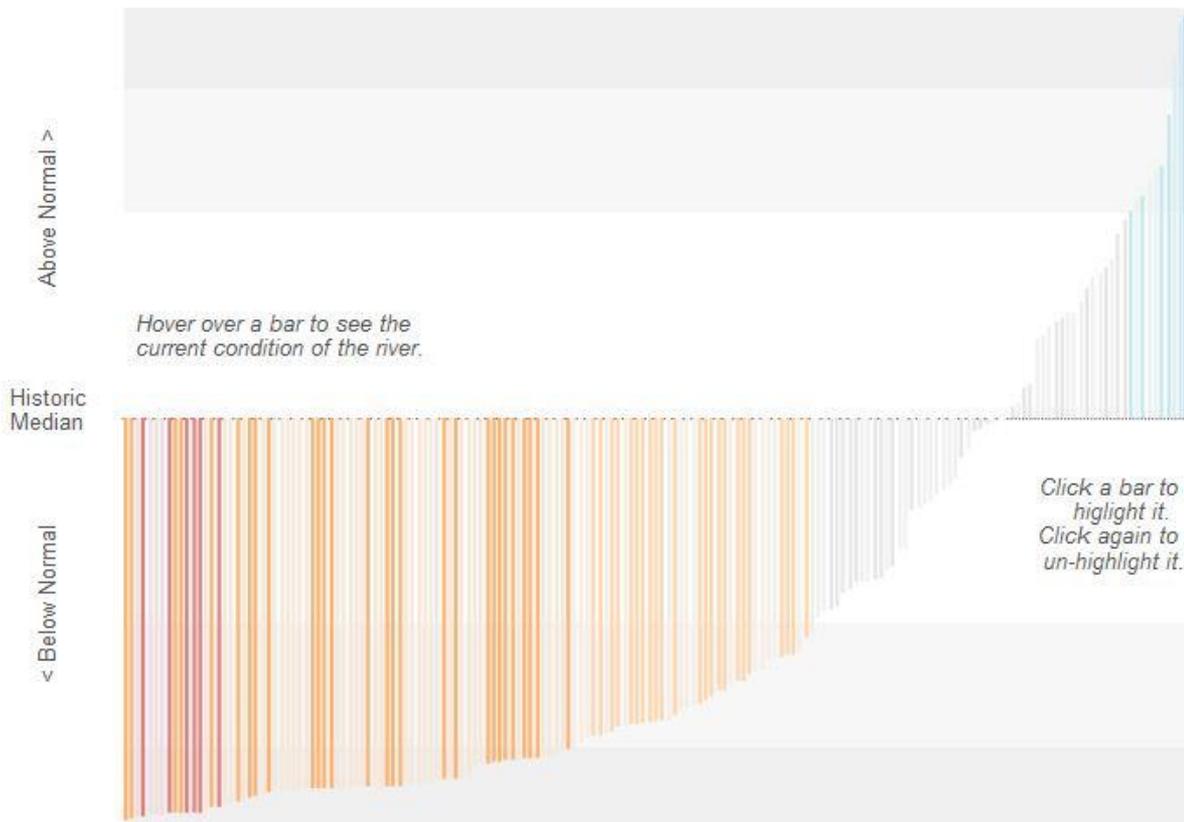


\* Data source USGS: Oct 2014-July 2015 is provisional data subject to revision. Data for July was calculated for the first half of the month (1st-14<sup>th</sup> or 15<sup>th</sup>)

**Most rivers in California are below normal** – some flows are *the lowest ever recorded* ("new low"). Extended low flows can kill the plants and animals that rely on the river for habitat.

Click the count of river gages to highlight the category below:

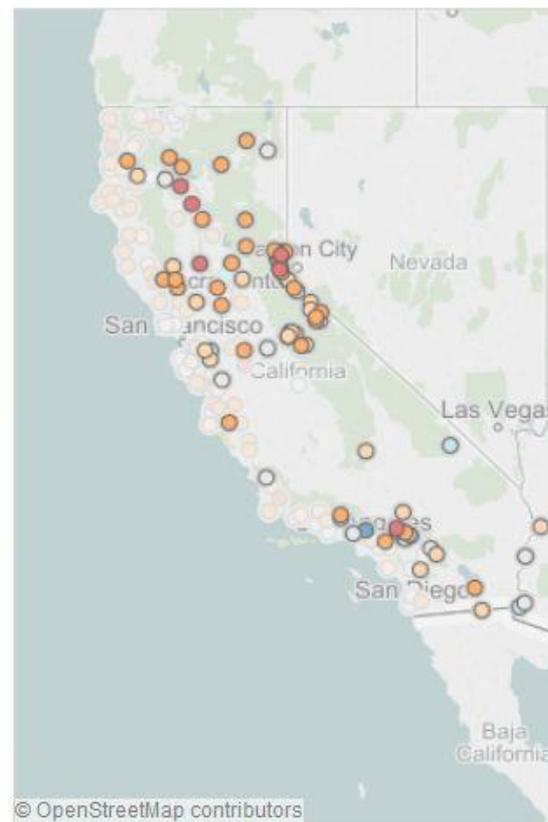
New Low	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal	New High
10	62	39	50	7	1	2



River Gages in California

Select a river to highlight below:

Upper Truckee River	1
Van Duzen River	1
Ventura River	1
Walker Creek	1
Ward Creek	1
West Fork Carson River	1
West Walker River	2
Yolo Bypass	1

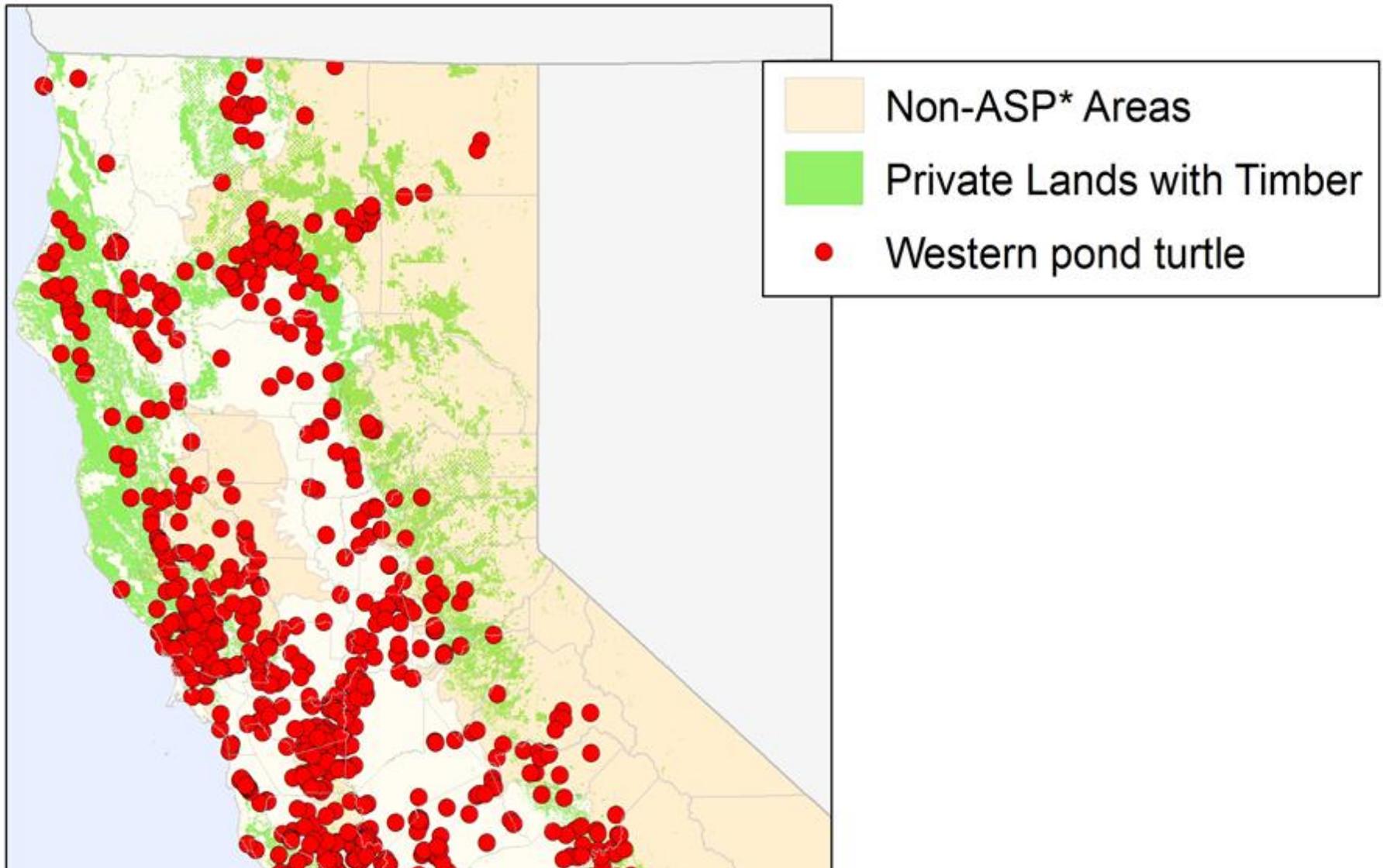


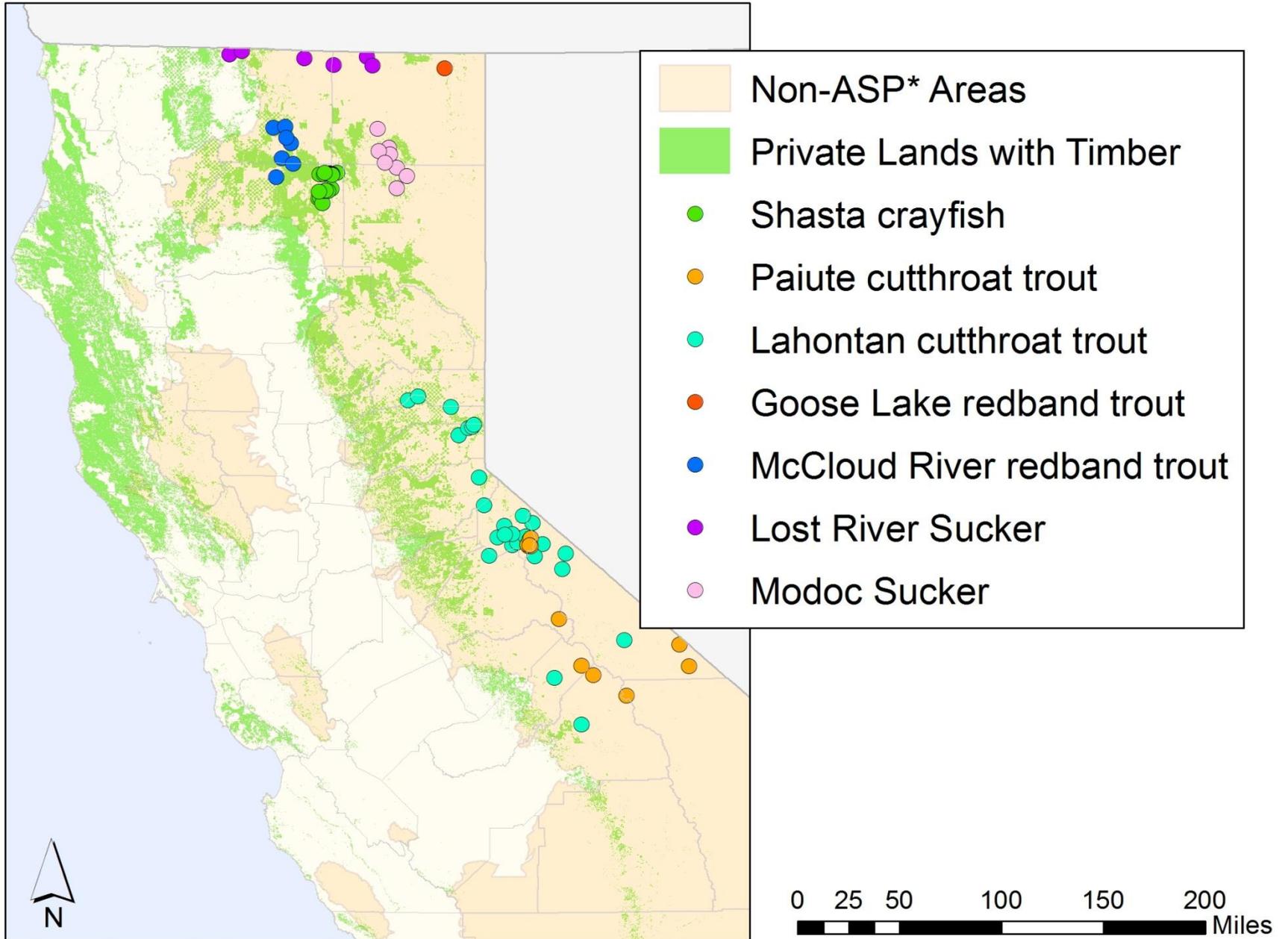
**River flow current for the week ending on July 14, 2015**

Created by the GeoDesign team of The Nature Conservancy, California. Contact: Kirk Klausmeyer, [kklausmeyer@tnc.org](mailto:kklausmeyer@tnc.org). Source data from the U.S. Geological Survey Waterwatch webpage (<http://waterwatch.usgs.gov>) last accessed on July 15, 2015. Stream gages are assigned to a stream flow category if they have recorded data for a given date for at least 30 years in the past. The weekly average flow for each gage is compared with historical values for the same gage location for the same week of the year to determine if the stream flow is normal, above normal, or below normal.

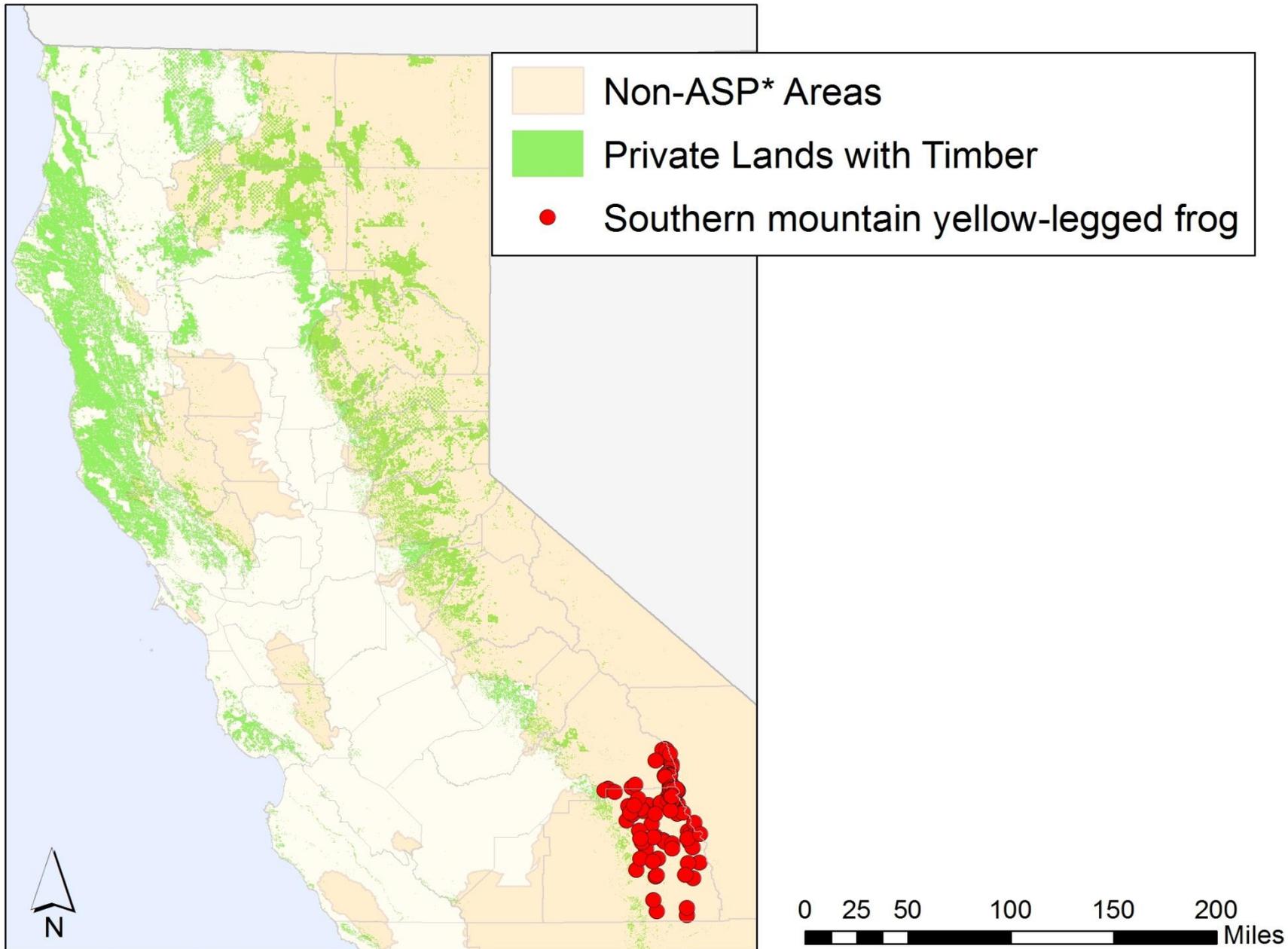


# Emergency Water Drafting Rules Plead WHY ? Aquatic Species At Risk

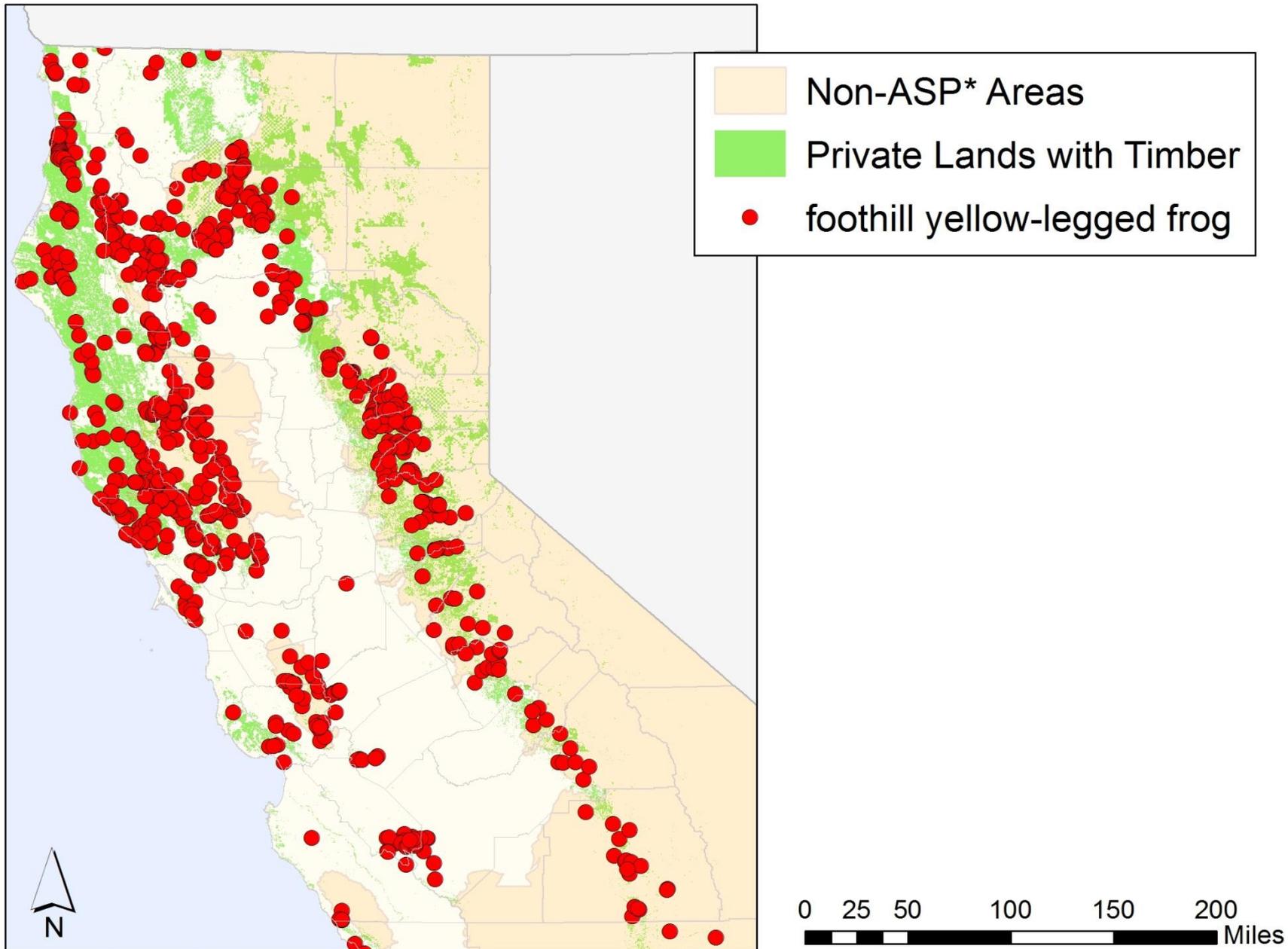




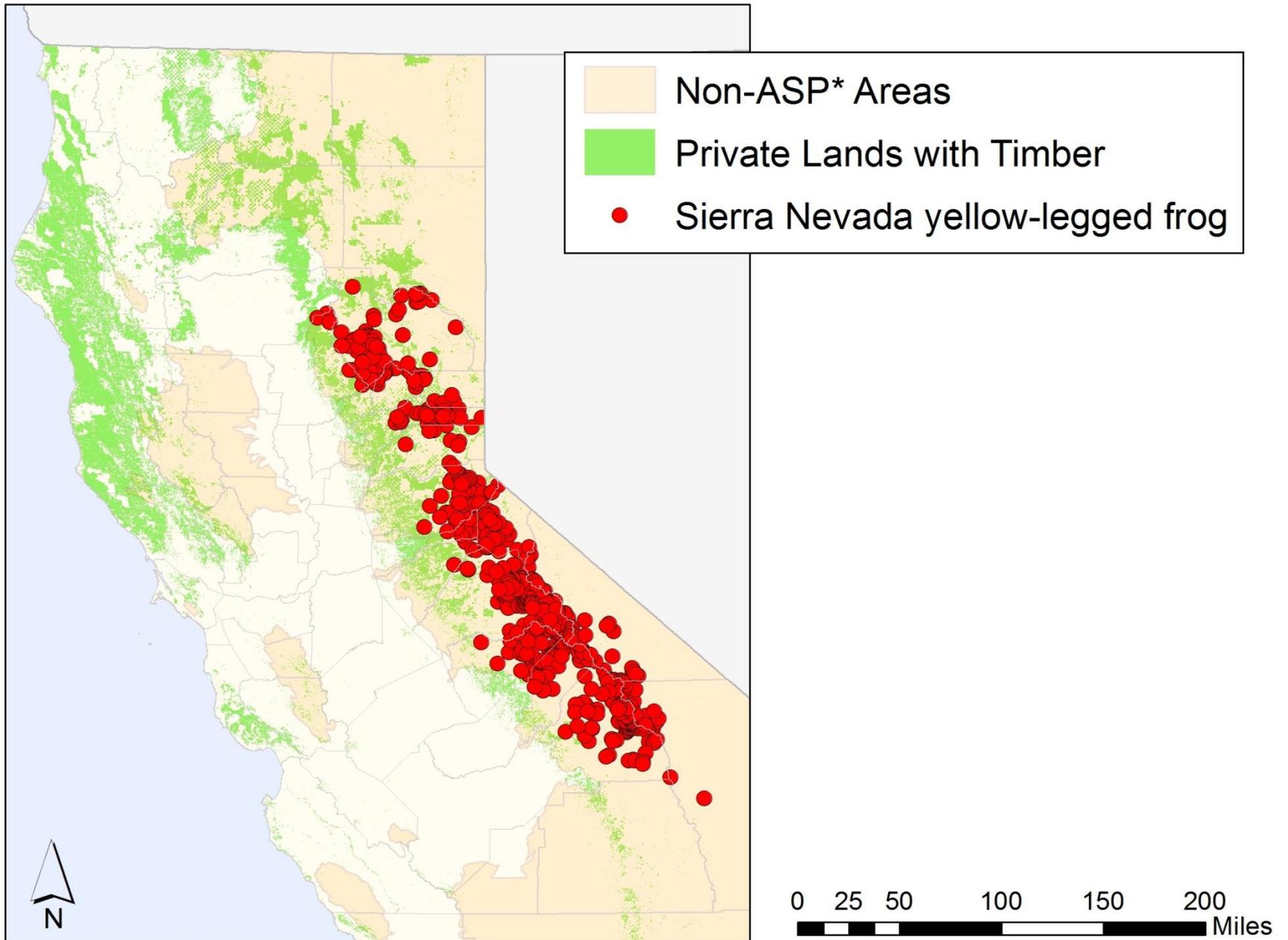
\*Anadromous Salmonid Protection



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Emergency Water Drafting Rules Plead

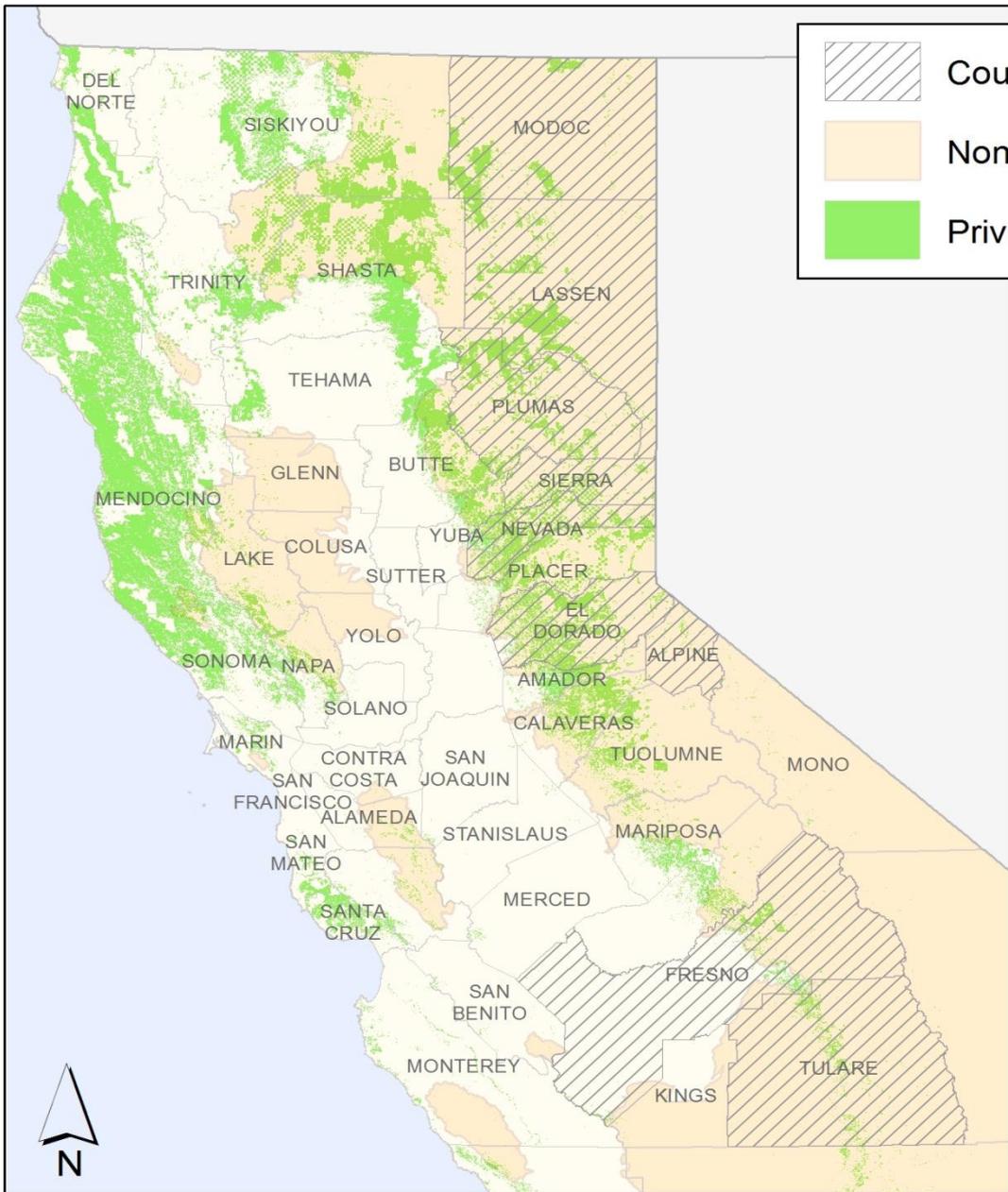
## WHY? **Continuing Adverse Conditions: Fish Rescues**

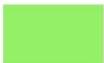
- From March 1, 2014 to May 20, 2015, DFW rescued 172,221 fish (45 species) and 80 western pond turtles.
- There were 529 rescues on 41 watersheds spanning 22 counties.

<b>FISH RESCUE EVENTS</b>	
March 1, 2014 - June 30, 2015	
<b>County</b>	<b># rescues</b>
Alameda	2
Lake	6
Lassen	4
Los Angeles	4
Marin	3
Merced	26
Modoc	3
Monterey	170
Nevada	1
San Joaquin	36
San Mateo	1
Santa Barbara	9
Shasta	20
Siskiyou	109
Sonoma	8
Sutter	2
Tehama	35
Trinity	4
Ventura	7
Yolo	148
<b>TOTAL</b>	<b>598</b>

<b>FISH RESCUES 2014*</b>		
March to December		
<b>species</b>	<b>stage</b>	<b>#</b>
brown trout		50
Clear Lake hitch		1,772
Coho salmon	juv	186
fall Chinook salmon		756
mountain whitefish		25
Paiute sculpin		20
resident rainbow trout		149
Sacramento perch		386
Sacramento sucker		4,041
Santa Ana stickleback		2
sculpin spp.		95
steelhead	adult	99
steelhead	juv	3,704
Steelhead	smolt	623
three-spined stickleback		4,014
western pond turtle		28
<b>TOTAL (*incomplete)</b>		<b>15,950</b>

<b>FISH RESCUES 2015</b>		
January to June		
<b>Species</b>	<b>stage</b>	<b>#</b>
Coho salmon	juv	3,467
fall Chinook salmon	juv	34,696
late-fall Chinook salmon	juv	4,922
resident rainbow trout		1
spring Chinook salmon	adult	6
spring Chinook salmon	juv	10
Steelhead	adult	253
Steelhead	juv	46,981
Steelhead	smolt	56
western.pond turtle		52
winter Chinook salmon	adult	1
winter Chinook salmon	juv	806
<b>TOTAL</b>		<b>91,251</b>

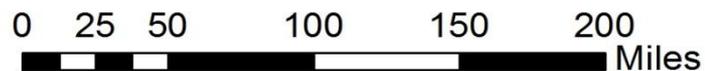


-  Counties Analyzed for Water Drafting "1600's"
-  Non-ASP\* Areas
-  Private Lands with Timber

\*Anadromous Salmonid Protection

# Emergency Water Drafting Rules Plead WHY?

## “1600” Compliance?

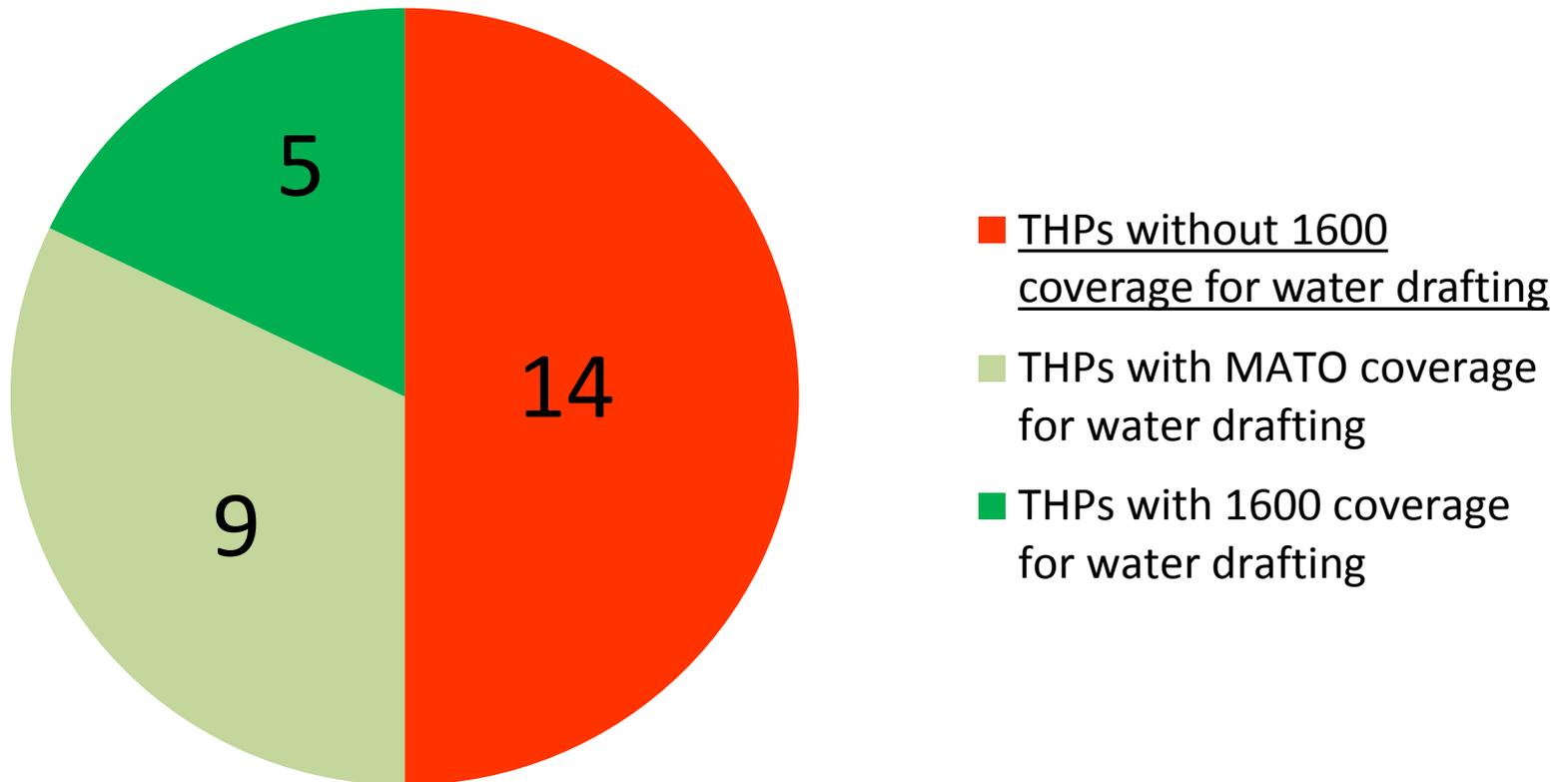


# **“1600” Jurisdiction?: 2014-June 2015 THPs In 9 Selected Counties Outside ASP Rules Watersheds**

<b>Total THPs</b>	<b>Total Approved THPs</b>	<b>Total THPs with Water Drafting</b>
<b>71</b>	<b>43</b>	<b>28</b>

\*Data obtained from CalFire FTP site.

# “1600” Jurisdiction?: 2014-June 2015 THPs in 9 Selected Counties Outside ASP Rules Watersheds



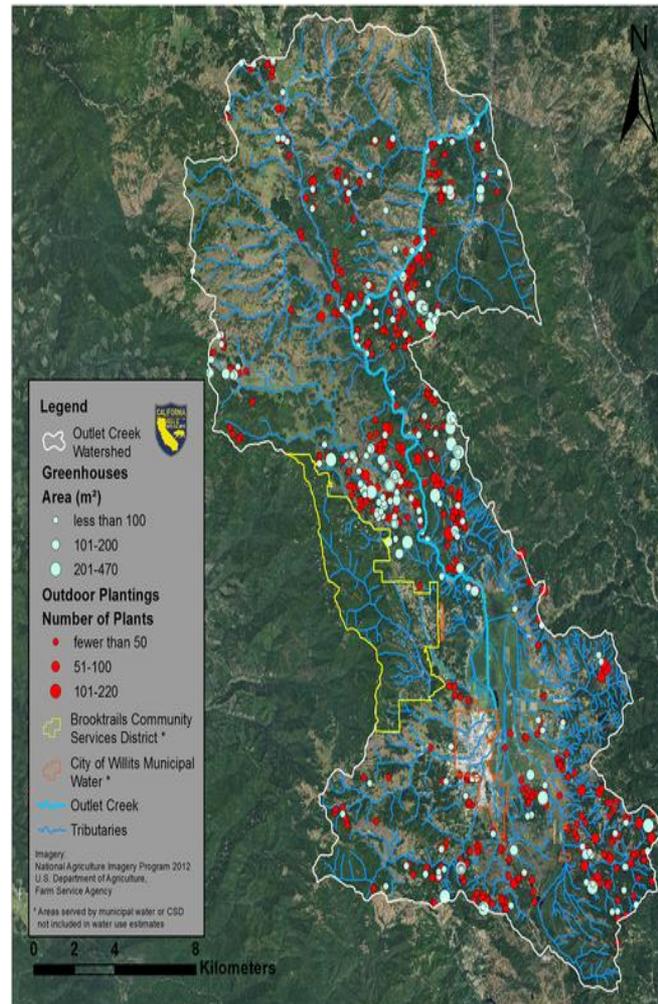
\*None of the 1600s include a drafting log book.

**Emergency Water Drafting Rules Plead**  
**WHY? Continuing Adverse Conditions:**  
**Illegal Marijuana Cultivation**



Bauer S, Olson J, Cockrill A, van Hattem M, Miller L, Tauzer M, et al. (2015) *Impacts of surface water diversions for marijuana cultivation on aquatic habitat in four northwestern California watersheds*. PLoS ONE 10(3): e0120016.  
doi:10.1371/journal.pone.0120016

## Outlet Creek Watershed



Bauer S, Olson J, Cockrill A, van Hattem M, Miller L, et al. (2015) Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds. PLoS ONE 10(3): e0120016. doi:10.1371/journal.pone.0120016

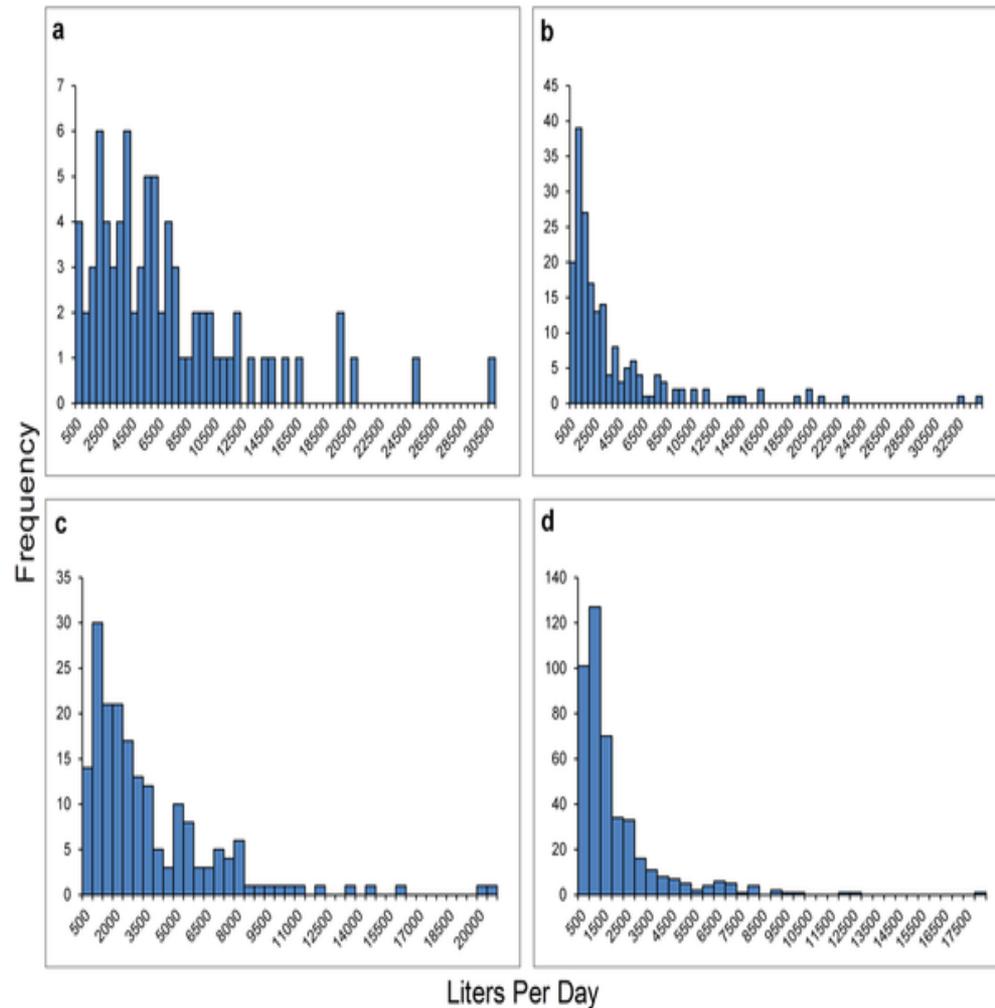
<http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0120016>



***Figure 1. Land clearing, habitat conversion, and road building associated with marijuana cultivation in the Trinity River watershed (a) before conversion, 2004, and (b) after conversion, 2012. Source: Jennifer Carah; base imagery US Department of Agriculture Farm Service Agency through Google Earth (2004), and Google Earth (2012).***

***From:*** BioScience. Published online: June24, 2015

## Frequency distribution of the water demand in liters per day (LPD) required per parcel for marijuana cultivation for each study watershed



Bauer S, Olson J, Cockrill A, van Hattem M, Miller L, et al. (2015) Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds. *PLoS ONE* 10(3): e0120016. doi:10.1371/journal.pone.0120016

<http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0120016>

## **Study Findings:** Illegal Marijuana Cultivation and Water Use

“Our results indicate that water demand for marijuana cultivation has the potential to divert substantial portions of streamflow in the study watersheds, **with an estimated flow reduction of up to 23% of the annual seven-day low flow in the least impacted of the study watersheds.** Estimates from the other study watersheds indicate that **water demand for marijuana cultivation exceeds streamflow during the low-flow period** .....likely to have lethal or sub-lethal effects on state-and federally-listed salmon and steelhead trout and to cause further decline of sensitive amphibian species.” (Bauer et al., 2015)

# Emergency Water Drafting Rules Plead WHY? The Technical Challenge of Measuring Stream Flow and Assessing Effects



Drafting pool at mid-morning where water pumped to specifications. Tape shows location where flow was measured.

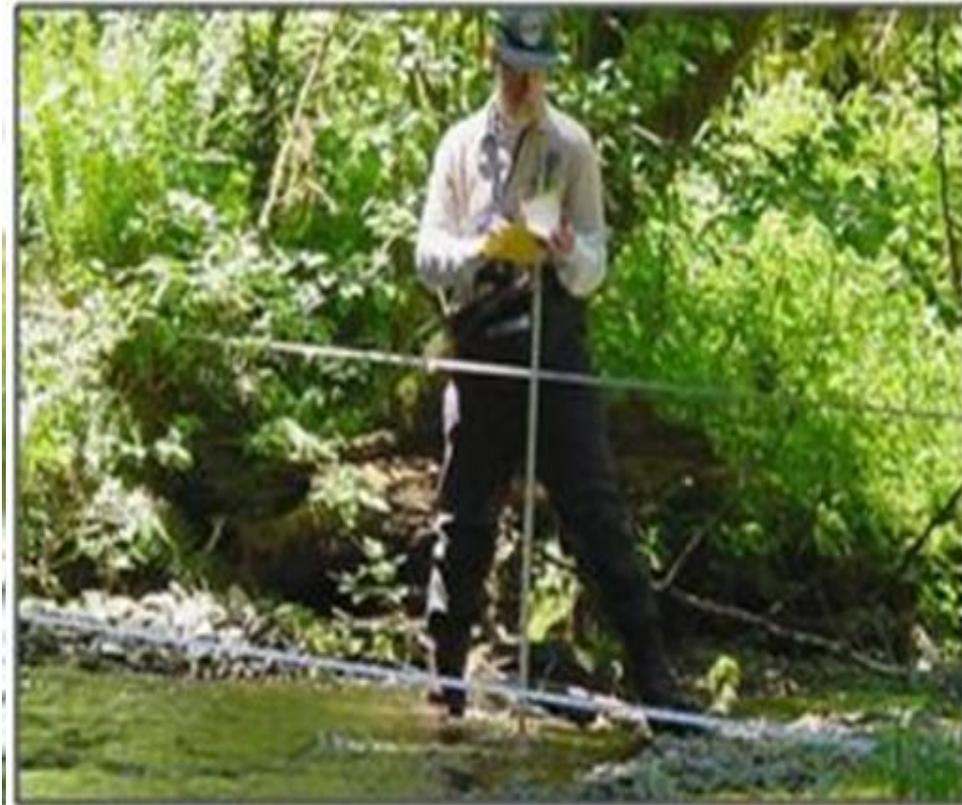
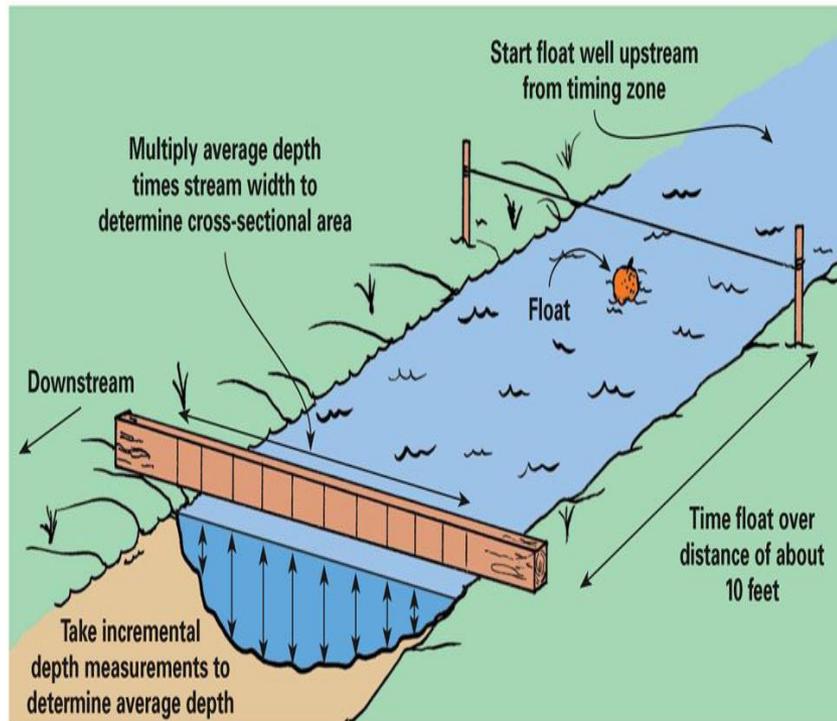
# The Technical Challenge of Measuring Stream Flow and Assessing Effects



Looking upstream at large pool located about 300 feet downstream of the drafting site. Photo taken nearly 3 hours after pumping. The upper pool margins have decreased ~ 3-6 feet.

# The Technical Challenge of Measuring Stream Flow and Assessing Effects

## The Float Method of Estimating Flow



**Biologist taking stream measurements: measuring depth and velocity and recording information on substrate (river bottom) and cover.**

# Technical Challenge: screen criteria of Section 923.7.(1)(3)(A)



## WATER DRAFTING SPECIFICATIONS

National Marine Fish Service  
Southwest Region

August 2001

“Water-drafting” is a short-duration, small-pump operation that withdraws water from streams or impoundments to fill conventional tank trucks or trailers. Usually, this water is used to control road dust, or for wildfire management.<sup>1</sup> Short term water drafting is also used to temporarily de-water a construction site, or to temporarily divert water around a construction site.

The specifications below are given primarily for the protection of juvenile anadromous salmonids, in waters where they are known to exist; but they also may be applied to protect a host of other aquatic organisms as well. The issue of sufficient in-stream flow for life support of the aquatic ecosystem should be addressed by a local Fish & Game biologist. Temporal and cumulative effects should be considered on a watershed scale. While we give some guidelines in that area, the actual impact of water drafting on stream ecology should be assessed and monitored at the local level by qualified personnel.

# Technical Specifications (**correct intake screens**)

Screen for Class II  
watercourse



Screen for  
4-inch pump  
rated @ 750  
gpm



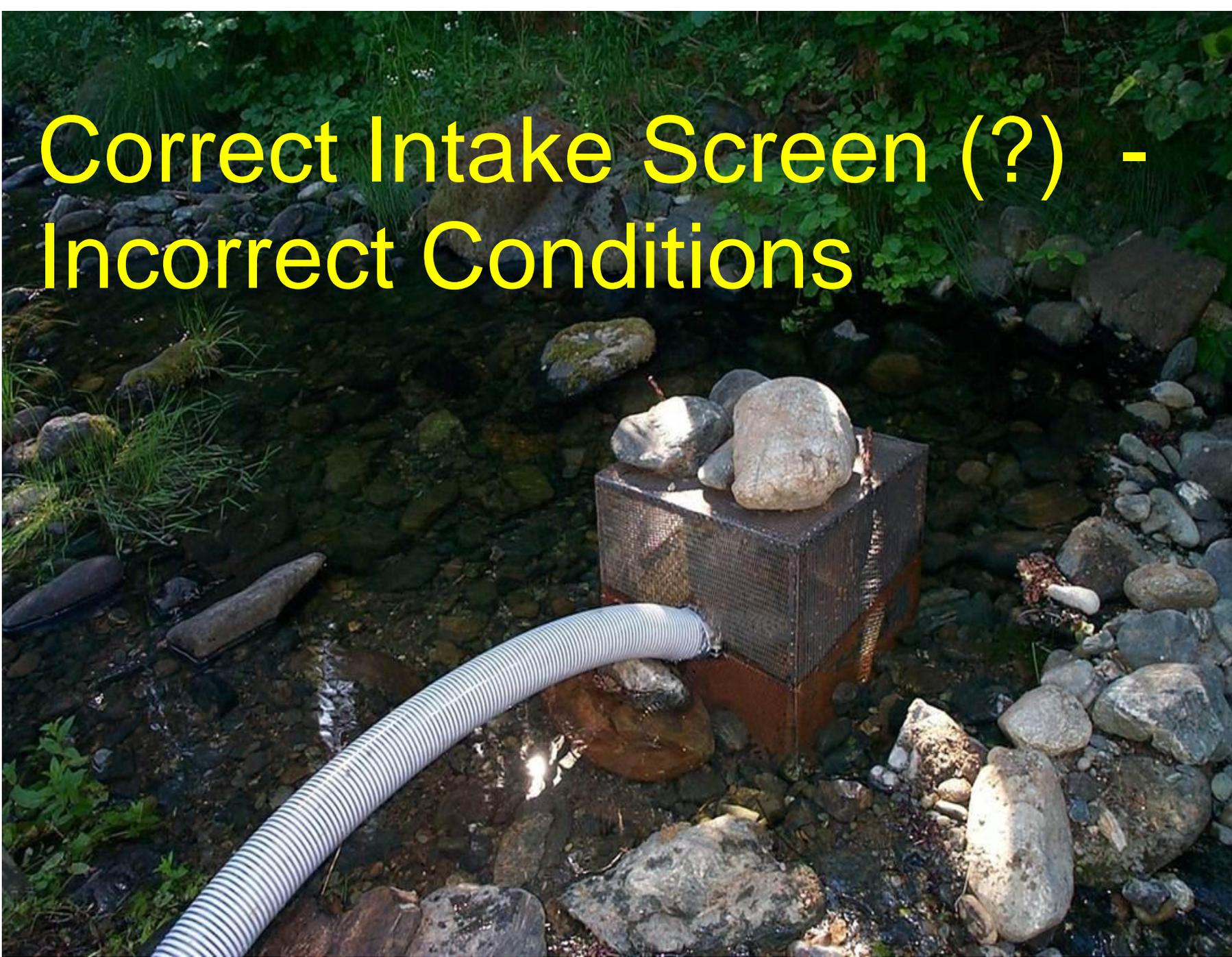
# Technical Specifications (**incorrect intake screens**)



# Technical Specifications (**correct intake screen**)



# Correct Intake Screen (?) - Incorrect Conditions



# **Conclusion: Emergency Water Drafting Rules Warranted**

## **1. Continuing paucity of water**

- Continue to be in declared State of Emergency. We are now in the fourth year of drought
- USGS Stream Gauge data indicate many in-stream flows equivalent to or less than those of the 1977 drought
- Aquatic species are potentially at risk; unprecedented fish rescue actions in 2014 and 2015
- Unabated water withdrawals from extensive illegal marijuana “grows”; paucity of water will persist

# **Conclusion: Emergency Water Drafting Rules Warranted**

- 1. Continuing paucity of water for legal uses**
  - 2. Additional awareness, focus and due diligence needed and achieved through emergency ASP water drafting rules**
- Effectiveness of existing regulatory mechanisms and awareness questionable
  - Challenges in evaluating stream flows and effects; prevailing expertise not likely sufficient
  - Emergency regulations needed to leverage required attention and resources