



# CDFW/CAL FIRE WATER DRAFTING WORKSHOP OVERVIEW

PRESENTATION TO THE BOARD OF FORESTRY  
JULY 21, 2016

# WORKSHOP GOALS

- Understand regulatory requirements for water drafting in the Forest Practice Rules and Fish and Game Code
- Learn common water drafting/diversion types
- Understand techniques and standard operating procedures to measure stream flow
- Implement and assess water drafting best management practices to reduce potential impacts on aquatic resources

# AUDIENCE

Agency personnel, RPFs, and LTOs involved in preparing, reviewing, or implementing Timber Harvesting Plans and other harvesting documents submitted on non-federal timberlands in California.



# LOCATIONS

- Redwood Region Logging Conference: March 18, 2016, 12:00-1:00 PM
- Korbels: March 22, 2016
- Willits: March 29, 2016
- Redding: April 20, 2016
- Rancho Cordova: April 26, 2016

# AGENDA

## Indoor Session 9:00-12:00

- Effects of Drafting on Aquatic Organisms
- Regulatory Considerations
- Common Drafting/Diversion Types
- Hydrology/Geomorphology Considerations
- Methods of Streamflow Measurement
- Alternatives to Drafting
- Protective Measures
- Current CDFW Study
- Available Resources

## Field Session 12:30-4:30

- Inspect water drafting site
- Observe flow measurement techniques in streams on timberlands



# EFFECTS ON FISH AND AMPHIBIANS

- Immediate:

- Stranding
- Impingement
- Predation
- Egg desiccation



- Long-term

- Reduced food base (stream invertebrates)
- Species displacement
- Water Quality



# CUMULATIVE EFFECTS

Multiple water users on a single stream or within a watershed

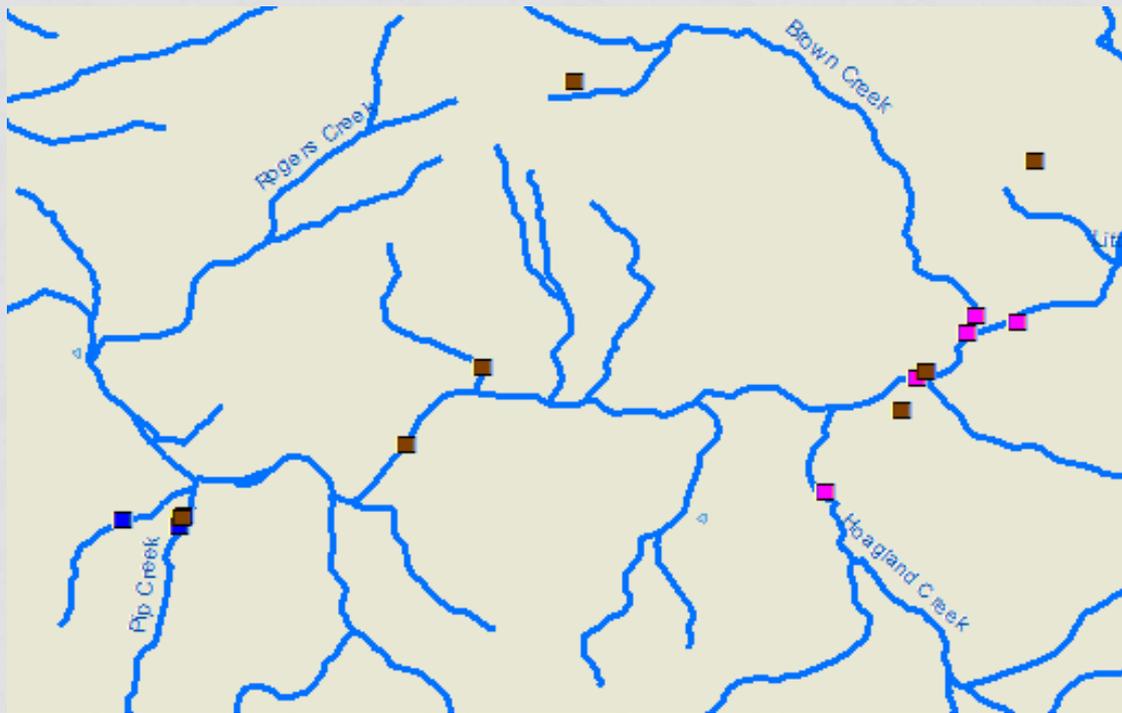
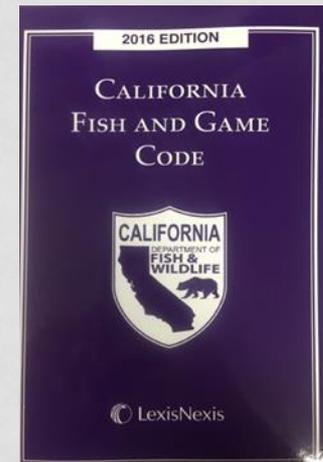
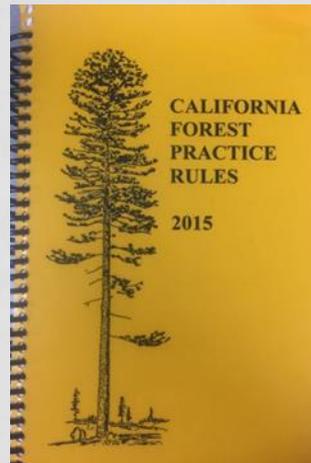


Image from eWRIMS web mapping application, showing the registered water users along an Eel River tributary

# REGULATORY CONSIDERATIONS

- CEQA and Regulations
- Forest Practice Rules
- Protected Species: CESA and ESA
- Fish and Game Code § 1600 *et seq.*
- Reporting



# COMMON WATER DRAFTING/DIVERSION TYPES

- Direct Drafting
  - In-channel
    - Instream with or without impoundments
  - Off-channel
    - Isolated ponds
    - Excavated basin

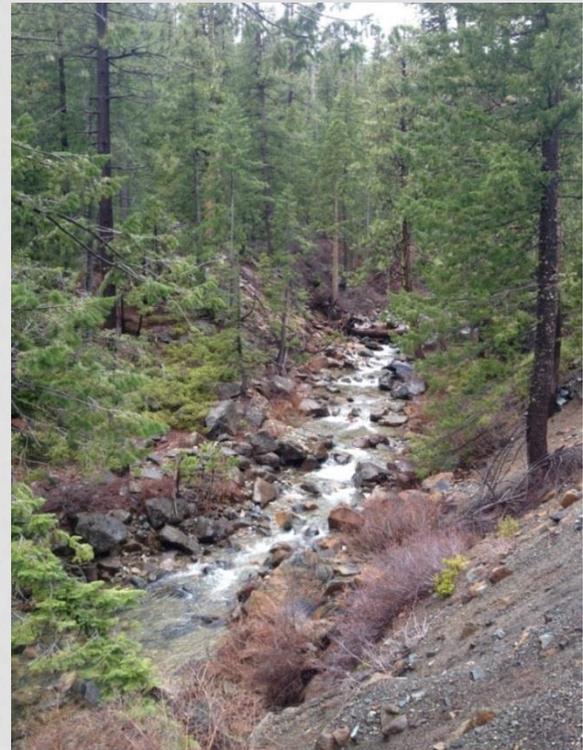


- Diversion and Storage
  - Tanks
  - Wells



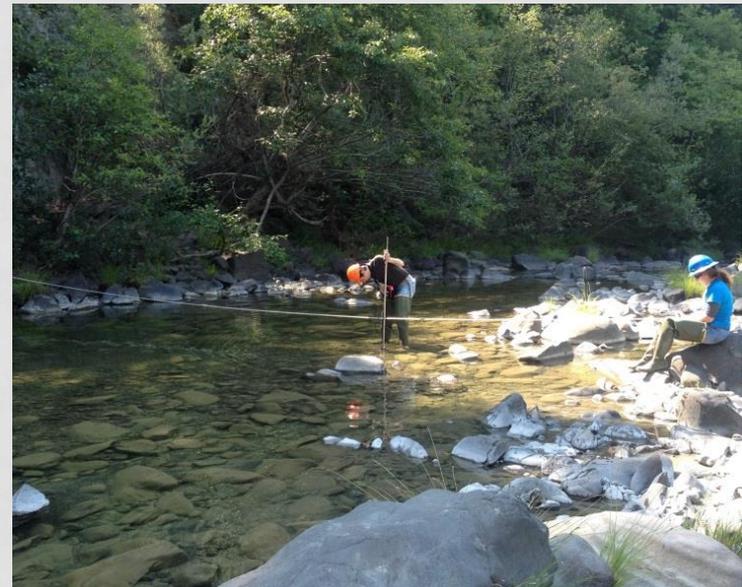
# HYDROLOGY AND GEOMORPHOLOGY CONSIDERATIONS

- Planning for and identifying the best sites and drafting methods
  - Water availability
  - Site constraints



# METHODS OF STREAMFLOW MEASUREMENT

- What is Streamflow?
- Determination of Estimated Flow Prior to Use
- Stream Flow Measurement Methods:
  - Flow Meter
  - Float
  - Bucket
  - Weir
  - Riffle Crest Depth
  - Wetted Perimeter
  - Pressure Transducers
- Field Material Costs



# MINIMIZING WATER USE AND ALTERNATIVES TO DRAFTING

- Rocking or Paving Roads
- Dust Palliatives
- Relocation of Sites
- Water Tanks



<http://www.garfield-county.com/road-bridge/mag-chloride.aspx>

# PROTECTION MEASURES/ BMPS

- Develop a Drafting Plan
- Stream Drafting Rates
- Temporal and Spatial Variation in Streamflow
- Pond Drafting Rates
- Screened Intakes
- Treatment of Approaches
- Hazardous Wastes
- Prevent the Spread of Disease and Invasive Species

# AVAILABLE RESOURCES

- CDFW Document Library:  
THP Water Drafting Folder  
<https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=THP-WaterDrafting>
- CDFW Water Branch's  
Instream Flow Program  
<https://www.wildlife.ca.gov/Conservation/Watersheds/instream-Flow>
- CNDDDB/BIOS  
<http://www.dfg.ca.gov/biogeodata/bios/>
- CDFW Aquatic Invasive  
Species Decontamination  
Protocol  
[nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=43333](http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=43333)
- eWRIMS website: Map viewer  
of all water rights in California  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/ewrims/index.shtml](http://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/index.shtml)
- NOAA Water Drafting  
Specifications  
[http://www.westcoast.fisheries.noaa.gov/publications/hydroponer/water\\_drafting\\_specification\\_guidelines.pdf](http://www.westcoast.fisheries.noaa.gov/publications/hydroponer/water_drafting_specification_guidelines.pdf)

# CONCLUSION

## TAKE-HOME MESSAGES

- Many different variables to consider when assessing water drafting/diversion impacts
- Choosing best management practices is site-specific
- An entity may not “substantially divert” without complying with FGC § 1602
- Consultation with local agencies is available



# KORBEL FIELD SESSION SULLIVAN GULCH AND NF MAD RIVER



Velocity Method

Station	Depth (ft)	Velocity (ft/s)	Q (ft <sup>3</sup> /s)
1	2.5	1.2	0.56
2	1.9	1.7	4.12
3	1.9	2.24	6.04
4	1.7	2.30	6.44
5	1.8	1.95	6.03
6	1.8	2.97	4.46
7	1.7	2.97	5.46
8	1.1	3.68	2.91
9	1.3	1.57	2.05
10	0.7	1.67	1.64
11	0.7	1.67	0.94
12	0.4	1.39	0.20
13	0.4	0.51	0.16
14	0.2	0.51	0.16
15	0.2	0.51	0.16
16	0.2	0.51	0.16
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18	0.2	0.51	0.16
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96	0.2	0.51	0.16
97	0.2	0.51	0.16
98	0.2	0.51	0.16
99	0.2	0.51	0.16
100	0.2	0.51	0.16
Total			40.35

# WILLITS FIELD SESSION NF BIG RIVER, JACKSON DEMONSTRATION STATE FOREST



# REDDING FIELD SESSION BRANDY CREEK, WHISKEYTOWN



# RANCHO CORDOVA FIELD SESSION ESMERALDA CREEK, NEAR FRESH POND



# OUTCOME

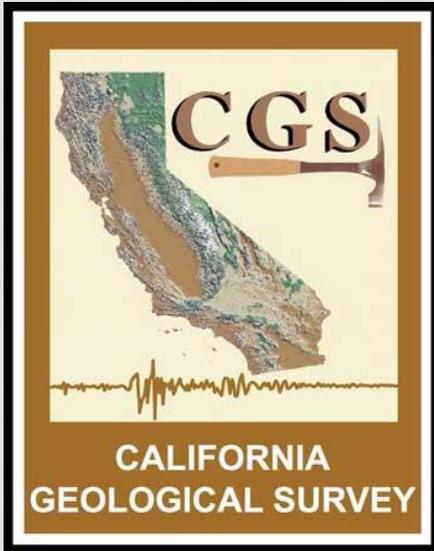
Total # of participants: 159

	Location			
Participants	Korbel	Willits	Redding	Rancho Cordova
CDFW	2	9	4	10
CAL FIRE	3	8	9	8
CGS	3	3	2	4
Waterboards	1	4	1	3
Non-agency	21	12	32	20
Total	30	36	48	45

# NEXT STEPS

- Film the field session
- Post the Q&A document, presentation and field session film on CAL FIRE's website
- Continue outreach to RPFs and LTOs
  - Water drafting consultations
  - CDFW Northern Region/Redding: Plan subsequent workshop with SPI in the spring of next year
  - CDFW Northern Region/Fort Bragg: Inquire on presenting at Howard Forest during upcoming LTO training in the winter
  - CDFW North Central Region/Rancho Cordova: Continue trainings/discussions with SPI Camino, Martell, and Sonora districts in the Fall

# ADDITIONAL CONTRIBUTORS



# QUESTIONS?

