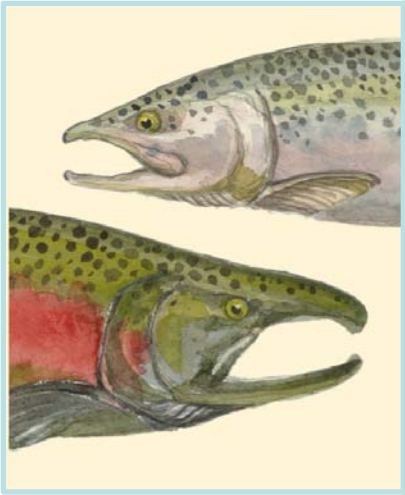
Dry Creek Habitat Enhancement

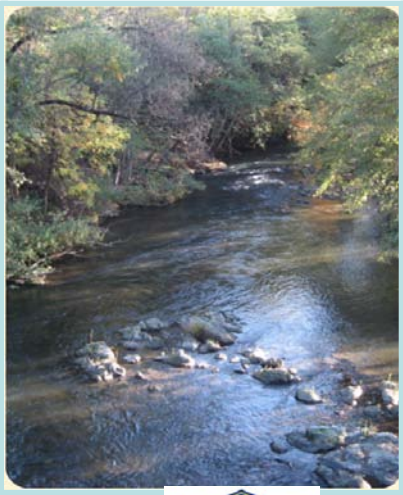
Public Policy Facilitating Committee Meeting, December 20, 2012

David Manning, Principal Environmental Specialist

Dennis Daly, Principal Engineer

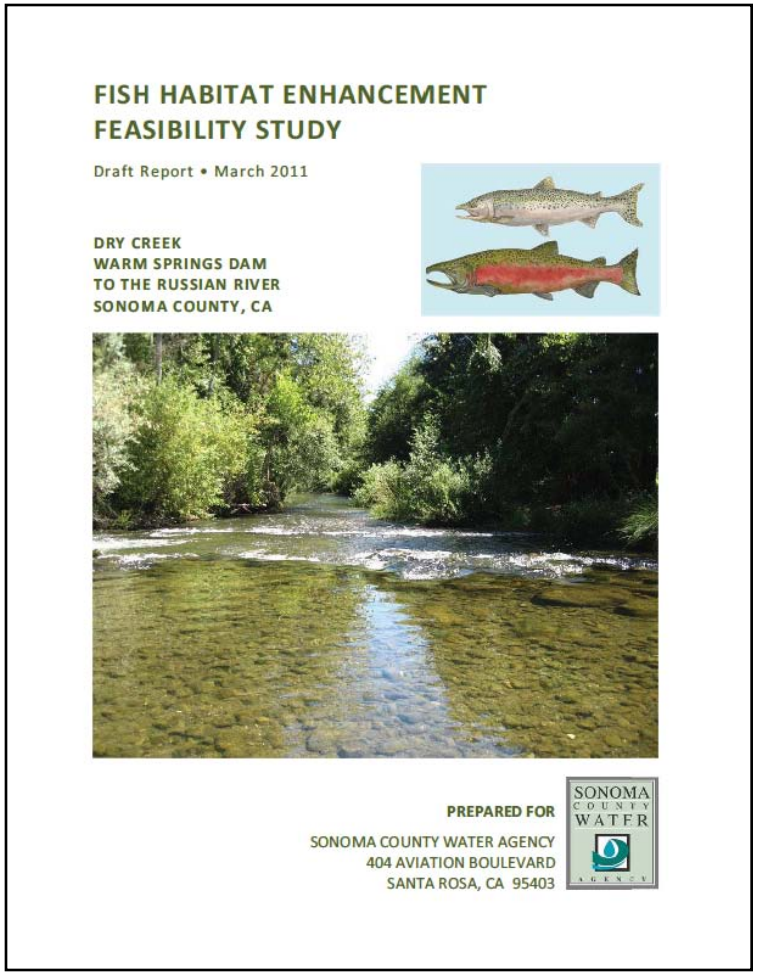
David Cuneo, Senior Environmental Specialist



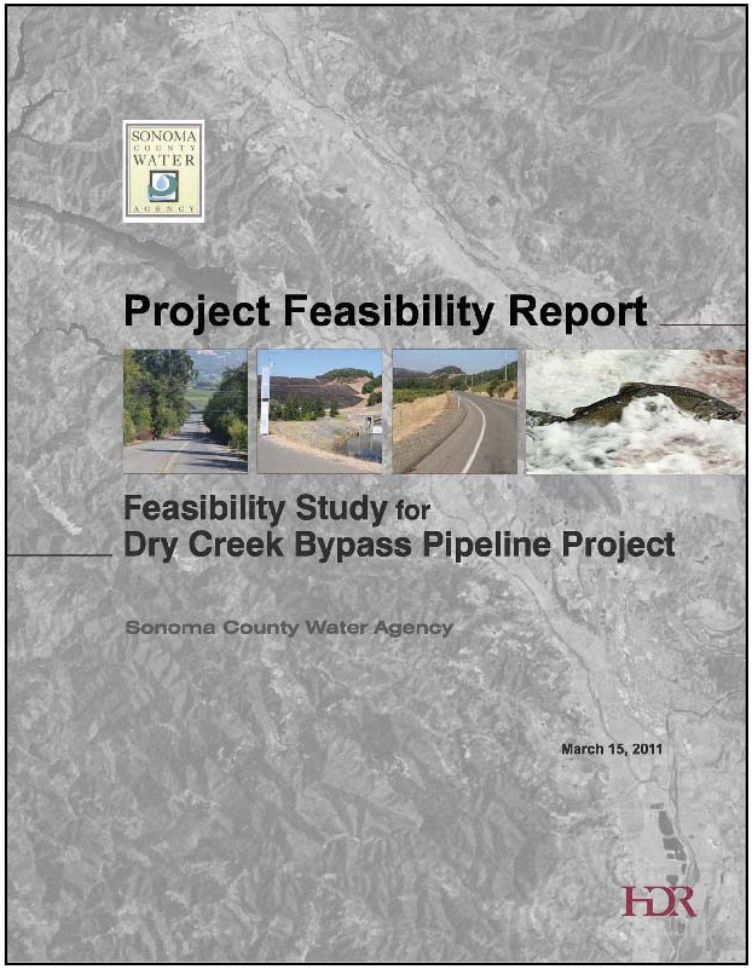


www.sonomacountywater.org

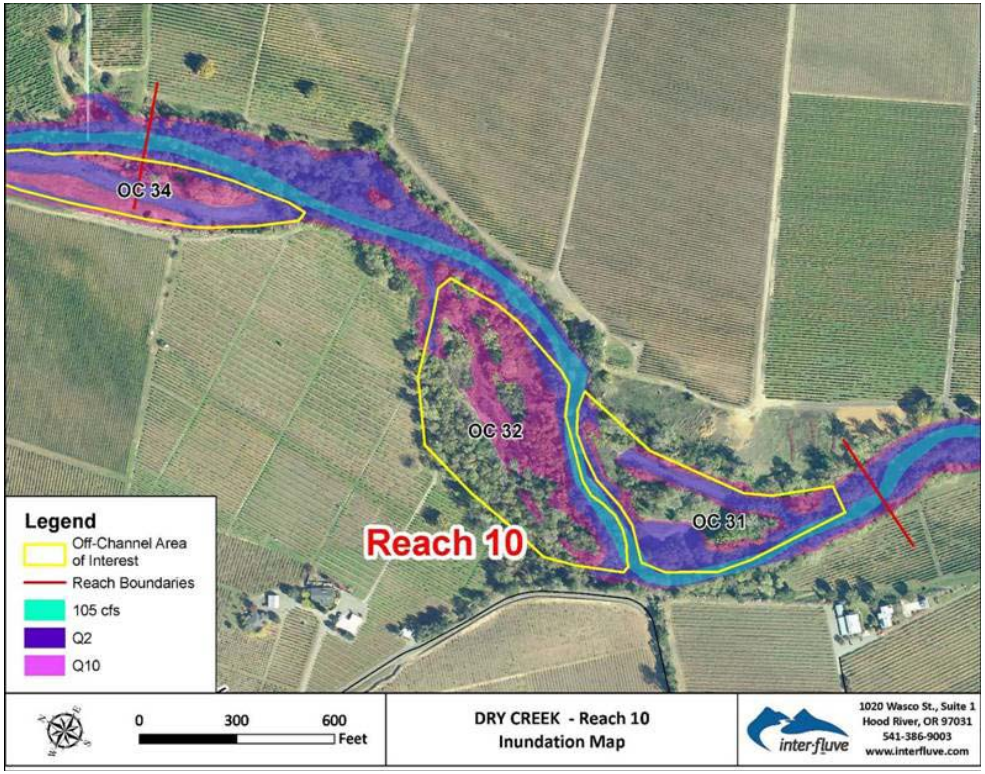
Plan "A"
Habitat Enhancement



Plan "B"
Bypass Pipeline



Habitat Feasibility Study Results



- 26 Sub Reaches with Potential project opportunities
- Distributed throughout 14 miles
- 9 miles of off channel habitat
- Total cost for 6 mile objective = $36 to $48 Million

DRY CREEK HABITAT ENHANCEMENT REACHES

PREPARED BY SONOMA COUNTY WATER AGENCY | FEBRUARY 2012

2012	MILESTONE 1 2014	MILESTONE 2 2017	DECISION POINT 2018	MILESTONE 3 2020
Complete design phase. Permitting. Landowner agreements. Begin construction	1 mile of habitat in Dry Creek completed and work on miles 2 & 3 begins	Complete enhancement of miles 2 and 3	Evaluate the success of the enhancement projects	Enhance 3 additional miles of habitat in Dry Creek for a total of 6 miles

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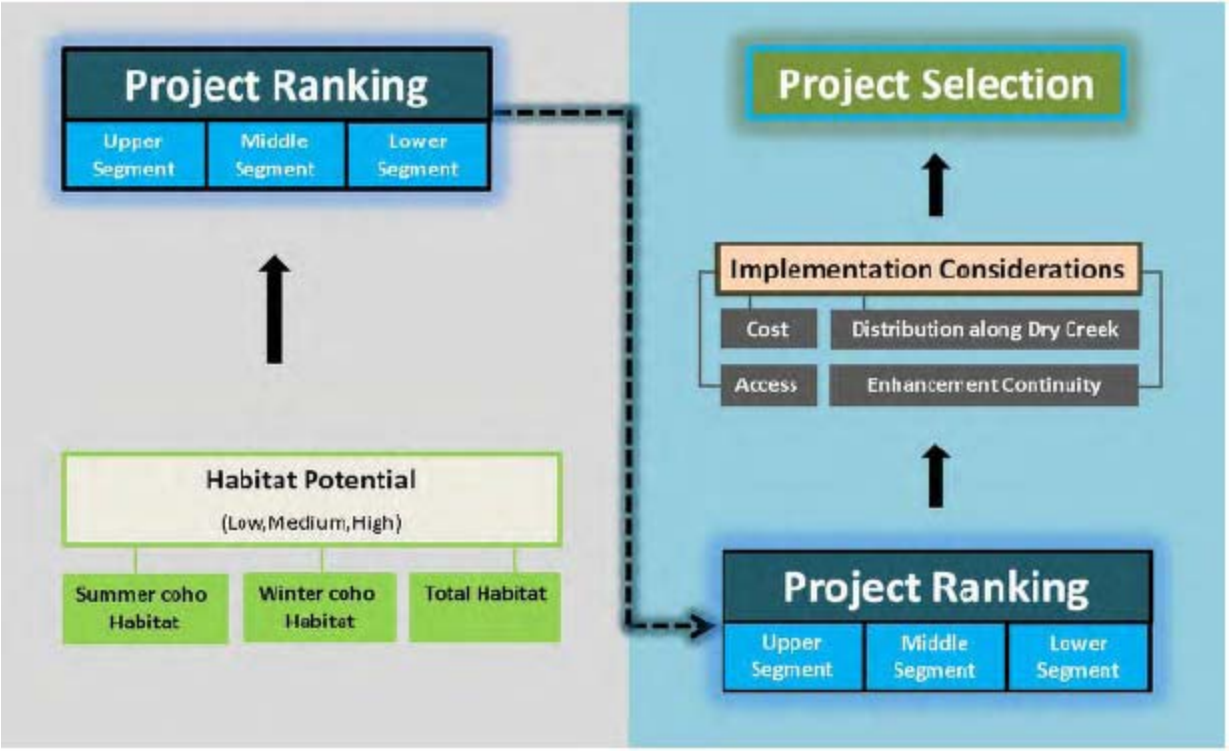
Future Habitat Projects In Dry Creek

- Miles 2-3 - 2015-2017
- Miles 4-6 – 2018-2020
- Site Evaluation and Ranking
- Landowner Outreach
- Additional CEQA, Permitting, Right of Way



Dry Creek Habitat Construction 2012

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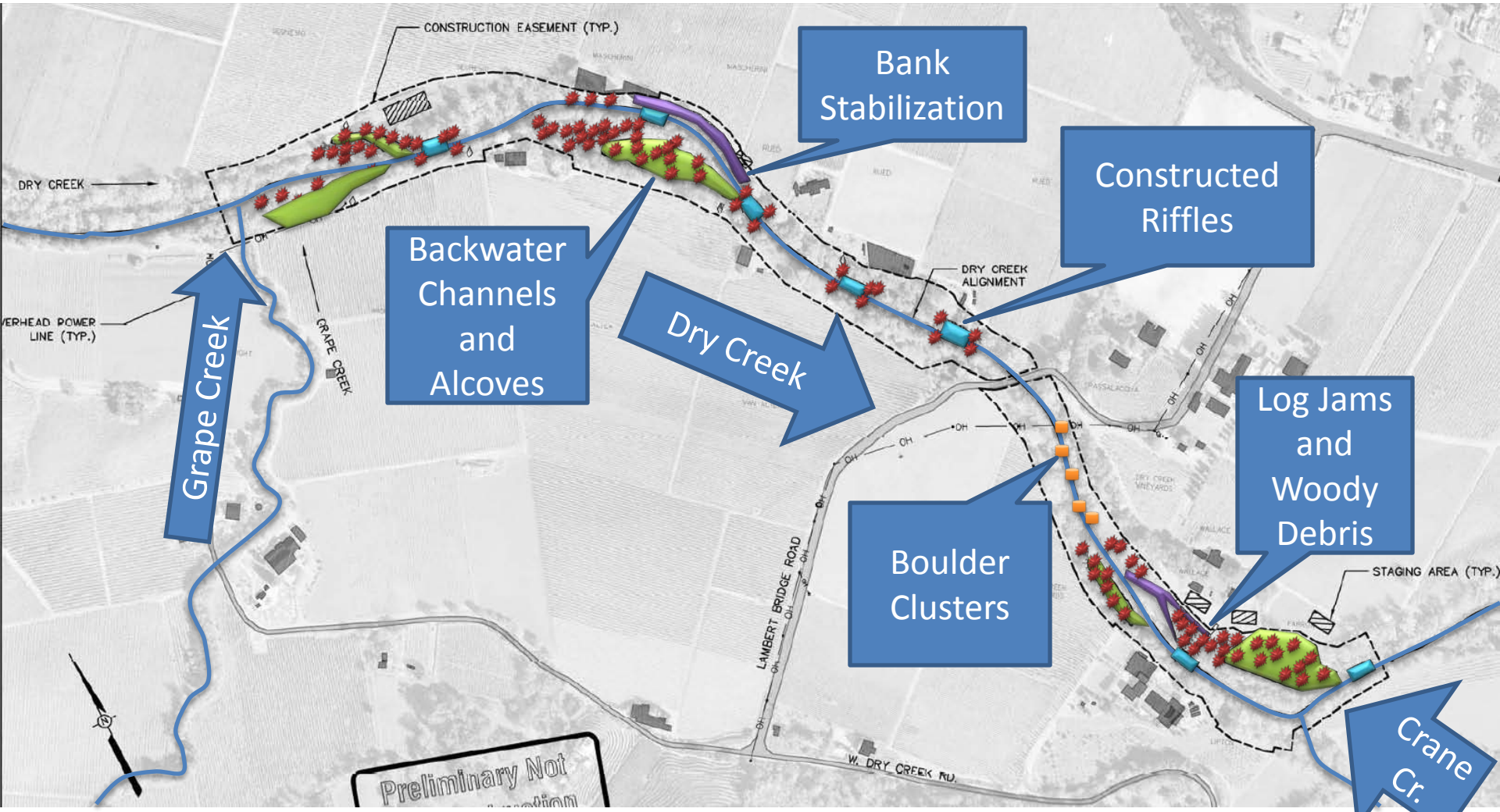
Overview

- Demonstration Project (Mile One)
  - Materials, Techniques
- Phase One: Quivira Vineyard & Winery Component
- Upcoming Work
  - Timeline, challenges

Demonstration Project Design Details



Demonstration Project: Materials

- "Large Woody Debris"

Demonstration Project: Materials

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Demonstration Project: Techniques

- Log structures
- Backwaters
- Riffles
- Boulder clusters
- Native plants

Quivira Project – Pre-Construction

Quivira: Project Description

- Inter-Fluve
- Bioengineering
- Backwater channel

Quivira: Project Description

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Quivira: Project Description

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Upcoming Work: Mile One

- Timing
- Challenges
  - Short season
  - Nesting birds
  - Winery/Vineyard needs
  - Dewatering

Dry Creek Habitat Demonstration Project

David Cuneo Senior Environmental Specialist

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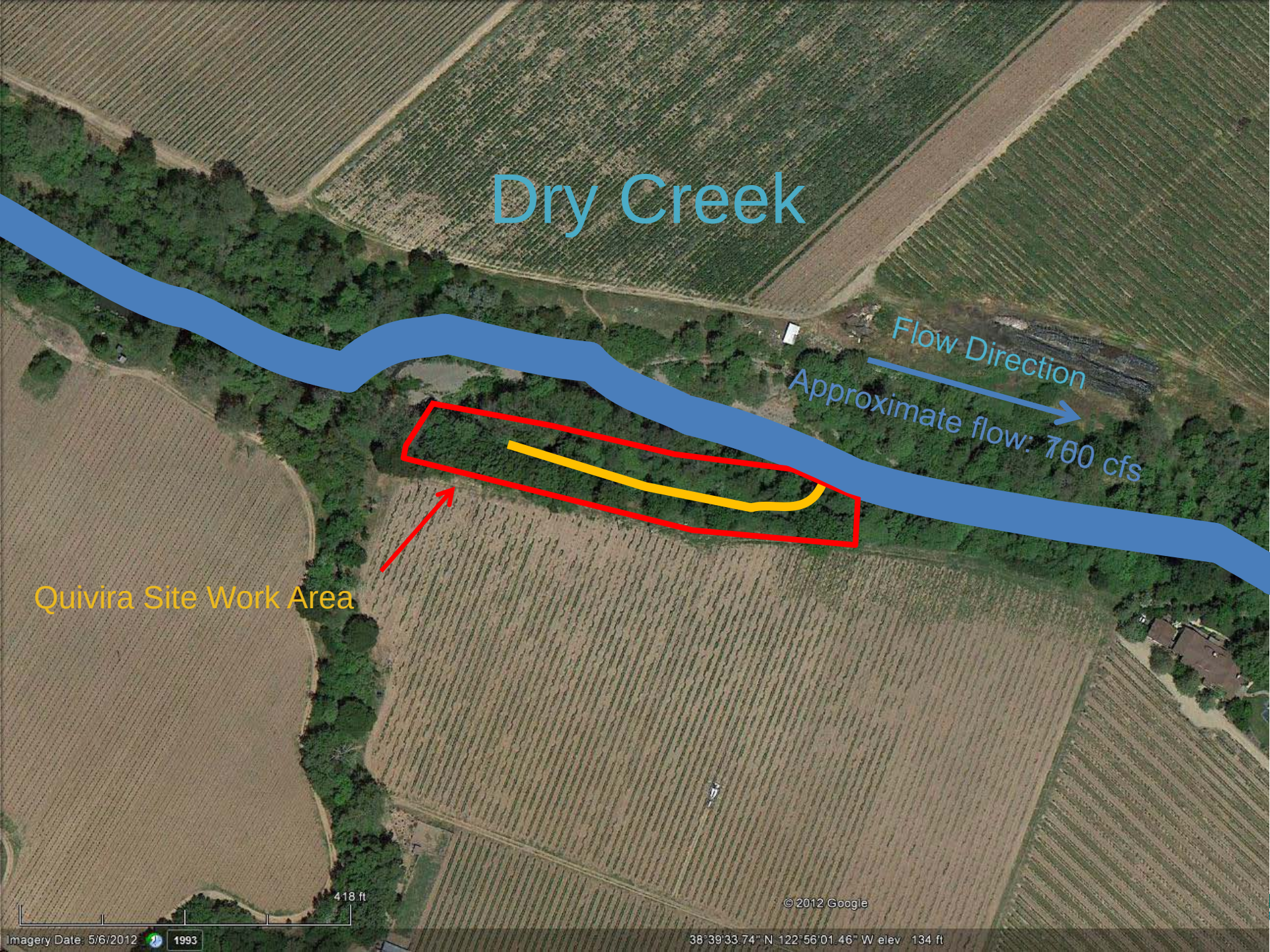
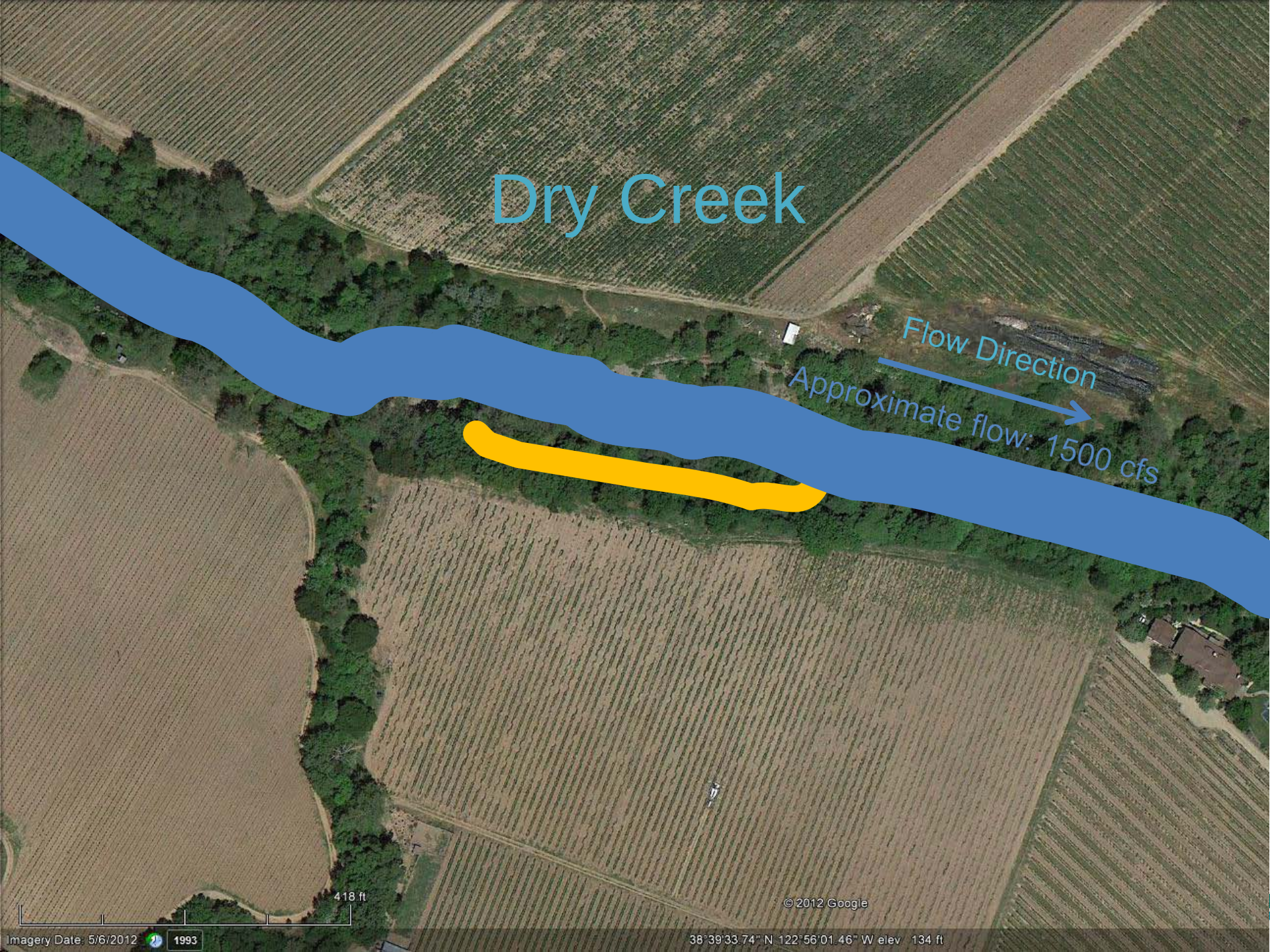
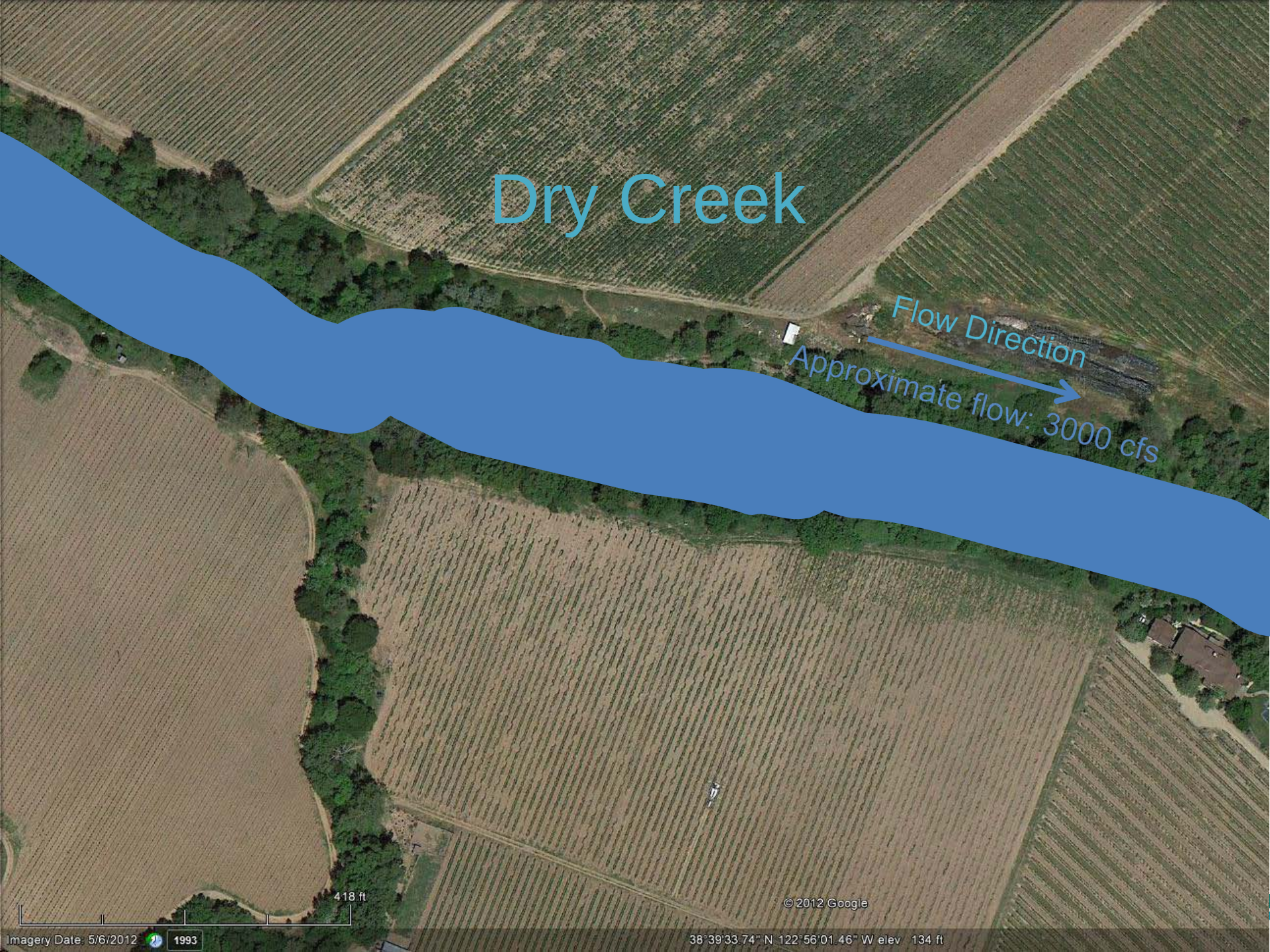

Dry Creek
Flow Direction
Approximate flow: 160 cfs
Quivira Site Work Area
418 ft
© 2012 Google
Imagery Date: 5/6/2012
1993
38°39'33.74" N 122°56'01.46" W elev 134 ft


Dry Creek
Flow Direction
Approximate flow: 1500 cfs
418 ft
© 2012 Google
Imagery Date: 5/6/2012
1993
38°39'33.74" N 122°56'01.46" W elev 134 ft


Dry Creek
Flow Direction
Approximate flow: 3000 cfs
418 ft
© 2012 Google
Imagery Date: 5/6/2012
1993
38°39'33.74" N 122°56'01.46" W elev 134 ft

November 29, 2012 – December 3, 2012 Storm Events

- First Backwatering of New Habitat Area
- Photo Monitoring
- PIT Tag Antenna Monitoring

11/30/2012 08:26

11/30/2012 08:37

11/29/2012 12:29
USGS Dry Creek Geyserville Gage Flow: 170 cfs

11/29/2012 14:14
USGS Dry Creek Geyserville Gage Flow: 175 cfs

11/29/2012 15:59
USGS Dry Creek Geyserville Gage Flow: 207 cfs

11/29/2012 16:14
USGS Dry Creek Geyserville Gage Flow: 213 cfs

11/29/2012 16:29
USGS Dry Creek Geyserville Gage Flow: 222 cfs

11/29/2012 16:44
USGS Dry Creek Geyserville Gage Flow: 229 cfs

11/29/2012 16:59
USGS Dry Creek Geyserville Gage Flow: 233 cfs

Flows Peaked Overnight

USGS Dry Creek at Geyserville Gage:

3170 cfs at 4:15 a.m.

11/30/2012 06:59
USGS Dry Creek Geyserville Gage Flow: 1500 cfs

11/30/2012 07:29
USGS Dry Creek Geyserville Gage Flow: 1350 cfs

11/30/2012 10:44
USGS Dry Creek Geyserville Gage Flow: 1040 cfs

11/30/2012 15:44
USGS Dry Creek Geyserville Gage Flow: 914 cfs

12/01/2012 07:59
USGS Dry Creek Geyserville Gage Flow: 746 cfs

12/01/2012 08:29
USGS Dry Creek Geyserville Gage Flow: 720 cfs

12/02/2012 06:59
USGS Dry Creek Geyserville Gage Flow: 3300 cfs

12/02/2012 07:14
USGS Dry Creek Geyserville Gage Flow: 3480 cfs

12/02/2012 07:29
USGS Dry Creek Geyserville Gage Flow: 3630 cfs

12/02/2012 07:44
USGS Dry Creek Geyserville Gage Flow: 3720 cfs

12/02/2012 07:59
USGS Dry Creek Geyserville Gage Flow: 3700 cfs

12/02/2012 08:14
USGS Dry Creek Geyserville Gage Flow: 3670 cfs

12/02/2012 08:29
USGS Dry Creek Geyserville Gage Flow: 3580 cfs

12/02/2012 08:44
USGS Dry Creek Geyserville Gage Flow: 3480 cfs

12/02/2012 08:59
USGS Dry Creek Geyserville Gage Flow: 3320 cfs

12/02/2012 09:14
USGS Dry Creek Geyserville Gage Flow: 3200 cfs

12/02/2012 09:29
USGS Dry Creek Geyserville Gage Flow: 3100 cfs

12/02/2012 09:44
USGS Dry Creek Geyserville Gage Flow: 3040 cfs

12/02/2012 09:59
USGS Dry Creek Geyserville Gage Flow: 2910 cfs

12/02/2012 10:14
USGS Dry Creek Geyserville Gage Flow: 2810 cfs

12/02/2012 10:29
USGS Dry Creek Geyserville Gage Flow: 2680 cfs

12/02/2012 10:44
USGS Dry Creek Geyserville Gage Flow: 2560 cfs

12/02/2012 10:59
USGS Dry Creek Geyserville Gage Flow: 2440 cfs

12/02/2012 11:14
USGS Dry Creek Geyserville Gage Flow: 2320 cfs

12/02/2012 11:29
USGS Dry Creek Geyserville Gage Flow: 2230 cfs

12/02/2012 11:44
USGS Dry Creek Geyserville Gage Flow: 2110 cfs

12/02/2012 11:59
USGS Dry Creek Geyserville Gage Flow: 2030 cfs

12/02/2012 12:14
USGS Dry Creek Geyserville Gage Flow: 1940 cfs

12/02/2012 12:29
USGS Dry Creek Geyserville Gage Flow: 1860 cfs

12/02/2012 12:44
USGS Dry Creek Geyserville Gage Flow: 1800 cfs

12/02/2012 12:59
USGS Dry Creek Geyserville Gage Flow: 1730 cfs

12/02/2012 13:14
USGS Dry Creek Geyserville Gage Flow: 1660 cfs

12/02/2012 13:29
USGS Dry Creek Geyserville Gage Flow: 1620 cfs

12/02/2012 13:44
USGS Dry Creek Geyserville Gage Flow: 1560 cfs

12/02/2012 13:59
USGS Dry Creek Geyserville Gage Flow: 1510 cfs

12/02/2012 14:14
USGS Dry Creek Geyserville Gage Flow: 1470 cfs

12/02/2012 14:29
USGS Dry Creek Geyserville Gage Flow: 1420 cfs

12/02/2012 14:44
USGS Dry Creek Geyserville Gage Flow: 1390 cfs

12/02/2012 14:59
USGS Dry Creek Geyserville Gage Flow: 1350 cfs

12/02/2012 15:14
USGS Dry Creek Geyserville Gage Flow: 1310 cfs

12/02/2012 15:29
USGS Dry Creek Geyserville Gage Flow: 1270 cfs

12/02/2012 15:59
USGS Dry Creek Geyserville Gage Flow: 1250 cfs

12/02/2012 16:14
USGS Dry Creek Geyserville Gage Flow: 1190 cfs

12/02/2012 16:29
USGS Dry Creek Geyserville Gage Flow: 1160 cfs

12/02/2012 16:44
USGS Dry Creek Geyserville Gage Flow: 1130 cfs

12/03/2012 13:25
USGS Dry Creek Geyserville Gage Flow: 413 cfs

Post Storm Evaluation

- No Damage to Structures
- No Significant Deposition
- No Strandings or Stranding Potential

PIT Antenna Data

- 11 PIT Tagged Juvenile Salmonids Detected
  - 9 Steelhead – Tagged in Dry Creek
  - 2 Coho – Grape Creek
- Numerous (>100) Detections Over Several Days
- PIT Tags in Small Percentage of Population

Grape Creek Fish Passage Improvement Project

- Tributary Enhancement Project
- Removal of Barrier at West Dry Creek Road
- Sotoyome RCD
- GHD
- Harborth Enterprise

YANMAR

YANMAR

Questions

David Manning

Principal Environmental Specialist

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707-547-1988