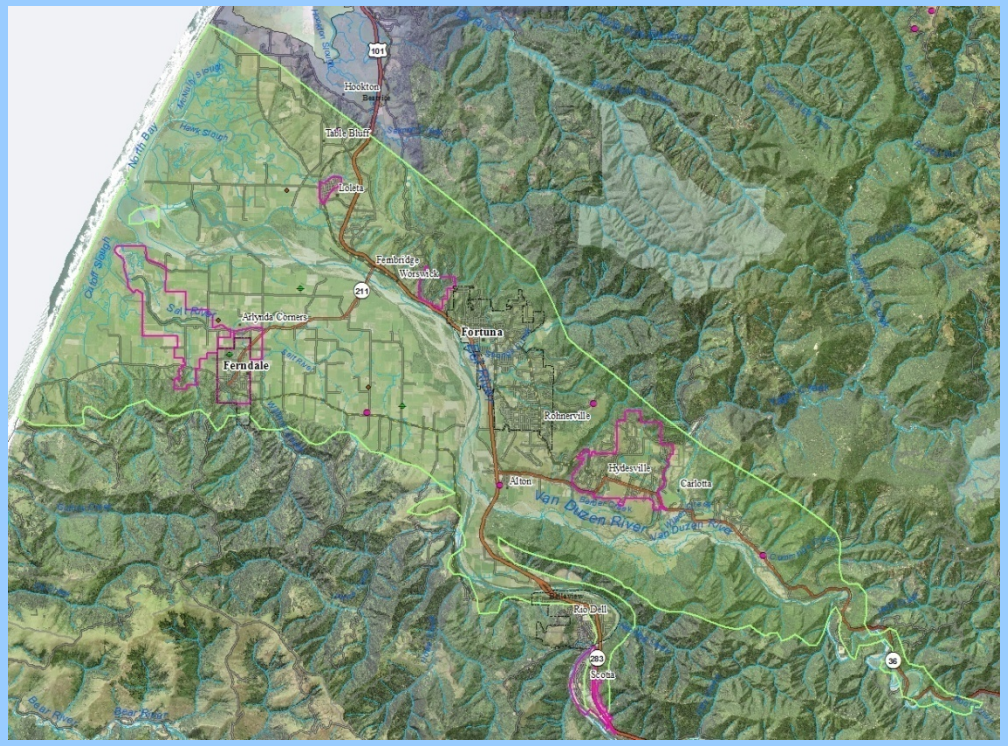
Eel River Valley Groundwater Working Group

Meeting No. 5

September 12, 2016 // 1:00 pm – 2:00 pm

Humboldt County Agricultural Center



Department of Public Works

http://humboldtgov.org/groundwater

Today's agenda

1. Introduction (review agenda and personal introductions)

2. Review current compliance approach for Sustainable Groundwater Management Act and purpose/membership of Working Group (20 min.)

3. Review previous meeting (3 min.)

4. Update on Groundwater Basin Assessment (15-20 min.)

5. Brief updates / other topics (5-10 minutes)

6. Set next meeting date

2. Review current compliance approach for Sustainable Groundwater Management Act and purpose/membership of Working Group

State groundwater policy established by the Sustainable Groundwater Management Act (2014)

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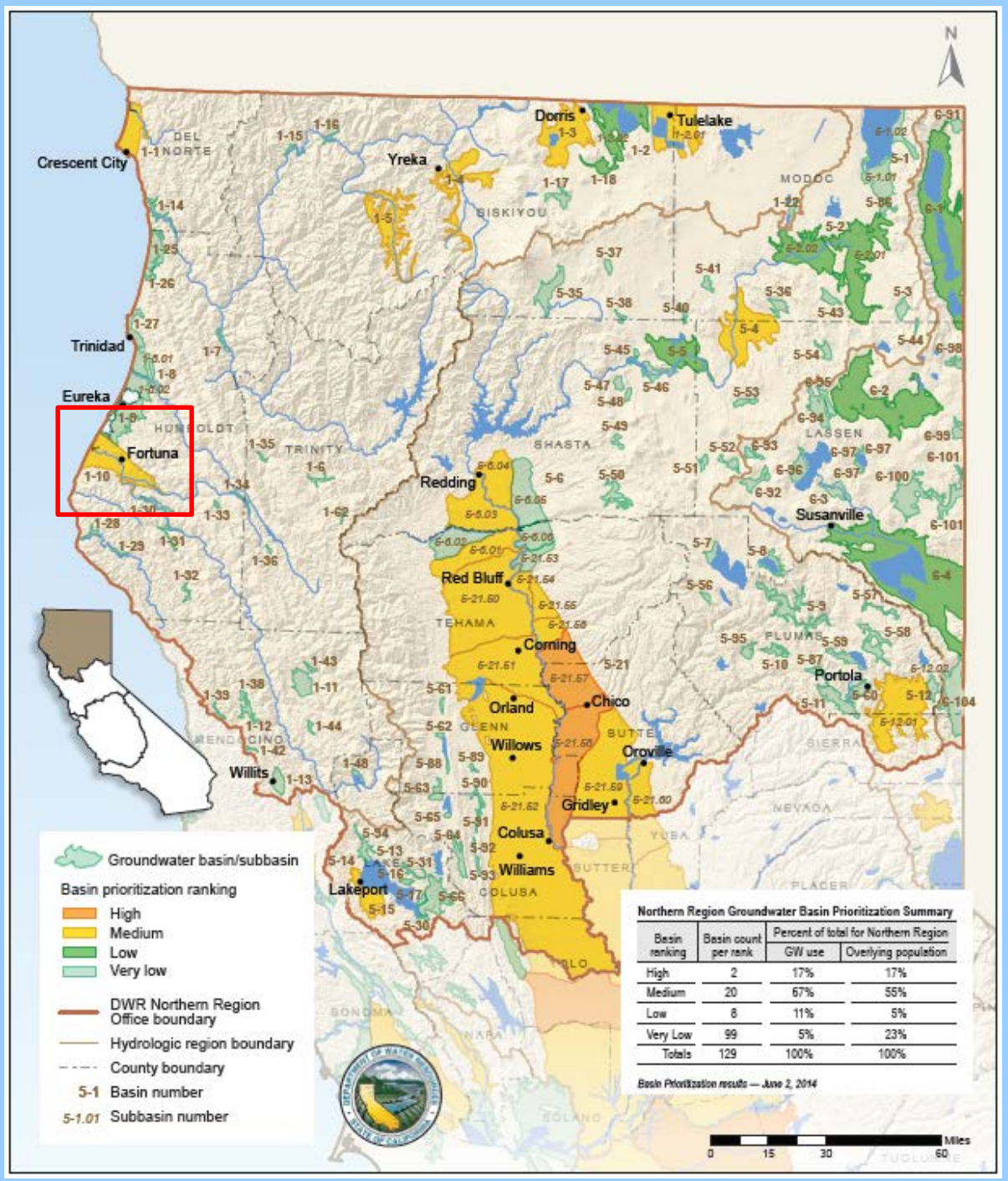
Water Code Section 113

It is the policy of the state that groundwater resources be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. Sustainable groundwater management is best achieved locally through the development, implementation, and updating of plans and programs based on the best available science.

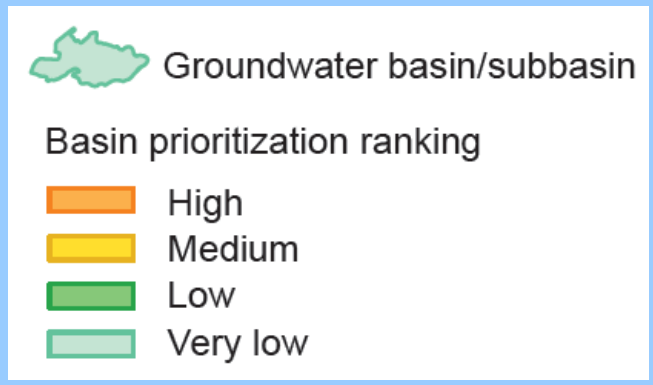
Ranking of Groundwater Basin Importance – Northern California



Northern Region Groundwater Basin Prioritization Summary

Basin ranking	Basin count per rank	Percent of total for Northern Region	
		GW use	Overlying population
High	2	17%	17%
Medium	20	67%	55%
Low	8	11%	5%
Very Low	99	5%	23%
Totals	129	100%	100%

Basin Prioritization results — June 2, 2014



Source: DWR Bulletin 118

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It is the policy of the state that groundwater resources be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. Sustainable groundwater management is best achieved locally through the development, implementation, and updating of plans and programs based on the best available science.

Sustainable groundwater management: the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results

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Undesirable results means one or more of the following effects caused by groundwater conditions occurring throughout the basin:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply	4. Significant and unreasonable degraded water quality
2. Significant and unreasonable reduction of groundwater storage	5. Significant unreasonable land subsidence
3. Significant and unreasonable seawater intrusion	6. Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

(Six sustainability indicators)

SGMA compliance – three potential pathways

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1. DWR changes prioritization level of Eel River Valley groundwater basin from Medium to Low
   - DWR's ranking system discussed at December 14, 2015 meeting
   - 8 criteria; currently 2.82 points above medium-priority threshold
   - Improved data to be collected on irrigated acreage, groundwater reliance
2. Alternative Submittal
   - Need to demonstrate basin has been managed sustainably for last 10 years (no undesirable results)
   - Prop. 1 technical studies will determine if evidence supports finding
   - Due January 1, 2017; would require five-year updates
   - "Local agency" can make submittal; GSA not required
3. Groundwater Sustainability Agency / Sustainability Plan
   - GSA required to prepare, adopt, implement a GSP
   - GSAs need to be established by June 30, 2017 (Plans due January 2022)

Eel River Valley Groundwater Working Group

Stakeholders

- Agricultural producers
- Municipal water suppliers
- Environmental interests
- Domestic users
- Well drillers and equipment suppliers
- Local agencies
- State/federal regulatory agencies
- General public

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Conditions for being a Working Group Member

1. Agree to Working Group's purpose and scope
2. Pledge to attend at least half of meetings
3. Agree to follow meeting ground rules

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Benefits of being a Working Group Member

1. We acknowledge your representation of a stakeholder interest
2. We will actively solicit your input

Eel River Valley Groundwater Working Group

Working Group Members (as of Sept. 12, 2016)

Ben Dolf	Dave Fisch	Frances Tjarnstrom	John Vevoda	Merritt Perry	Tom Gast
Bob McPherson	Dave Rodrigues	Jay Russ	Joseph Alexandre	Michael Wheeler	Tracy Boobar
Brad Job	Denver Nelson	Jeff Dolf	Katherine Ziemer	Patrick Sullivan	Troy Hubner
Chad Lake	Doreen Hansen	Jeff Stackhouse	Kevin Farmer	Ryan Rice	Yana Valachovic
Cheryl Laffranchi	Emily Afriat-Hyman	Jill Demers	Lee Mora	Stuart Dickey	
Clif Clendenen	Estelle Fennell	John Corbett	Marcus Drumm	Summer Daugherty	

Interested Parties: Anyone else who desires to attend and participate or follow developments

Working Group ground rules

1. Use people's time wisely; make comments concise
2. Stay on topic, follow the agenda
3. Be respectful of other speakers, refrain from talking over others
4. Continuity of members and regular attendance is important
5. Set goals or desired outcomes for meeting
6. Meeting dates should be scheduled in advance

Working Group – Original Purpose/Scope (October 6, 2015)

Purpose: Guide the local response to the Sustainable Groundwater Management Act

1. Provide information and viewpoints regarding groundwater issues in the Eel River Valley.
2. Support the collection and analysis of groundwater data to understand conditions and trends.
3. Provide input in the application for funds from a California Department of Water Resources Proposition 1 grant program to support local groundwater planning efforts.
4. Discuss selection and formation of a Groundwater Sustainability Agency (GSA).
5. Discuss the framework and management objectives of a future Groundwater Sustainability Plan (GSP).

Scope: The scope of the Working Group is limited to the Eel River Valley.

Working Group – Updated Purpose/Scope (Sept. 12, 2016)

Purpose: Guide the local response to the Sustainable Groundwater Management Act

1. Provide information and viewpoints regarding groundwater issues in the Eel River Valley.
2. Support the collection and analysis of ~~groundwater~~ technical data and information to understand conditions and trends.
3. ~~Provide input in the application for funds from a California Department of Water Resources Proposition 1 grant program to support local groundwater planning efforts.~~
4. Discuss selection and formation of a Groundwater Sustainability Agency (GSA), if applicable.
5. Discuss the framework and sustainable management criteria ~~objectives of~~ for an Alternative Submittal or future Groundwater Sustainability Plan (GSP).

Scope: The scope of the Working Group is limited to the Eel River Valley.

3. Review previous meeting

Last Meeting (April 26, 2016)

1. Reviewed DWR's 3/29/2016 monitoring data
2. Noted that DWR is adopting compliance standards for SGMA
3. Reviewed scope and timeline for Prop. 1 technical studies (Groundwater Basin Assessment)
4. Reviewed next steps (contracting)
5. Initial discussion of future GSA formation, if applicable

CALIFORNIA CODE OF REGULATIONS

TITLE 23. WATERS

DIVISION 2. DEPARTMENT OF WATER RESOURCES

CHAPTER 1.5. GROUNDWATER MANAGEMENT

SUBCHAPTER 2. GROUNDWATER SUSTAINABILITY PLANS

§ 358.2. Alternatives to Groundwater Sustainability Plans

(c) An Alternative submitted to the Department shall include the following information:

(1) An Alternative submitted pursuant to Water Code Section 10733.6(b)(1) shall include a copy of the groundwater management plan.

(2) An Alternative submitted pursuant to Water Code Section 10733.6(b)(2) that is not an adjudicated area described in Water Code Section 10720.8 shall include the following:

(A) Information demonstrating that the adjudication submitted to the Department as an Alternative is a comprehensive adjudication as defined by Chapter 7 of Title 10 of Part 2 of the Code of Civil Procedure (commencing with Section 830).

(B) A copy of the proposed stipulated judgment.

(3) An Alternative submitted pursuant to Water Code Section 10733.6(b)(3) shall provide information that demonstrates the basin has operated within its sustainable yield over a period of at least 10 years. Data submitted in support of this Alternative shall include continuous data from the end of that 10-year period to current conditions.

(d) The entity submitting an Alternative shall explain how the elements of the Alternative are functionally equivalent to the elements of a Plan required by Articles 5 and 7 of this Subchapter and are sufficient to demonstrate the ability of the Alternative to achieve the objectives of the Act.

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Required content

- Basin setting, hydrogeologic conceptual model, groundwater conditions
- Water budget
- Sustainable management criteria: thresholds for “undesirable results”

Substantial compliance standard

- Supporting information is sufficiently detailed
- Analyses are sufficiently thorough and reasonable
- Any discrepancy would not materially affect achievement of sustainability goal
- Sustainable management criteria are commensurate with level of understanding of the basin setting, based on the level of uncertainty and data gaps

4. Update on Groundwater Basin Assessment

Recent Activities and Milestones

Recent Activities and Milestones

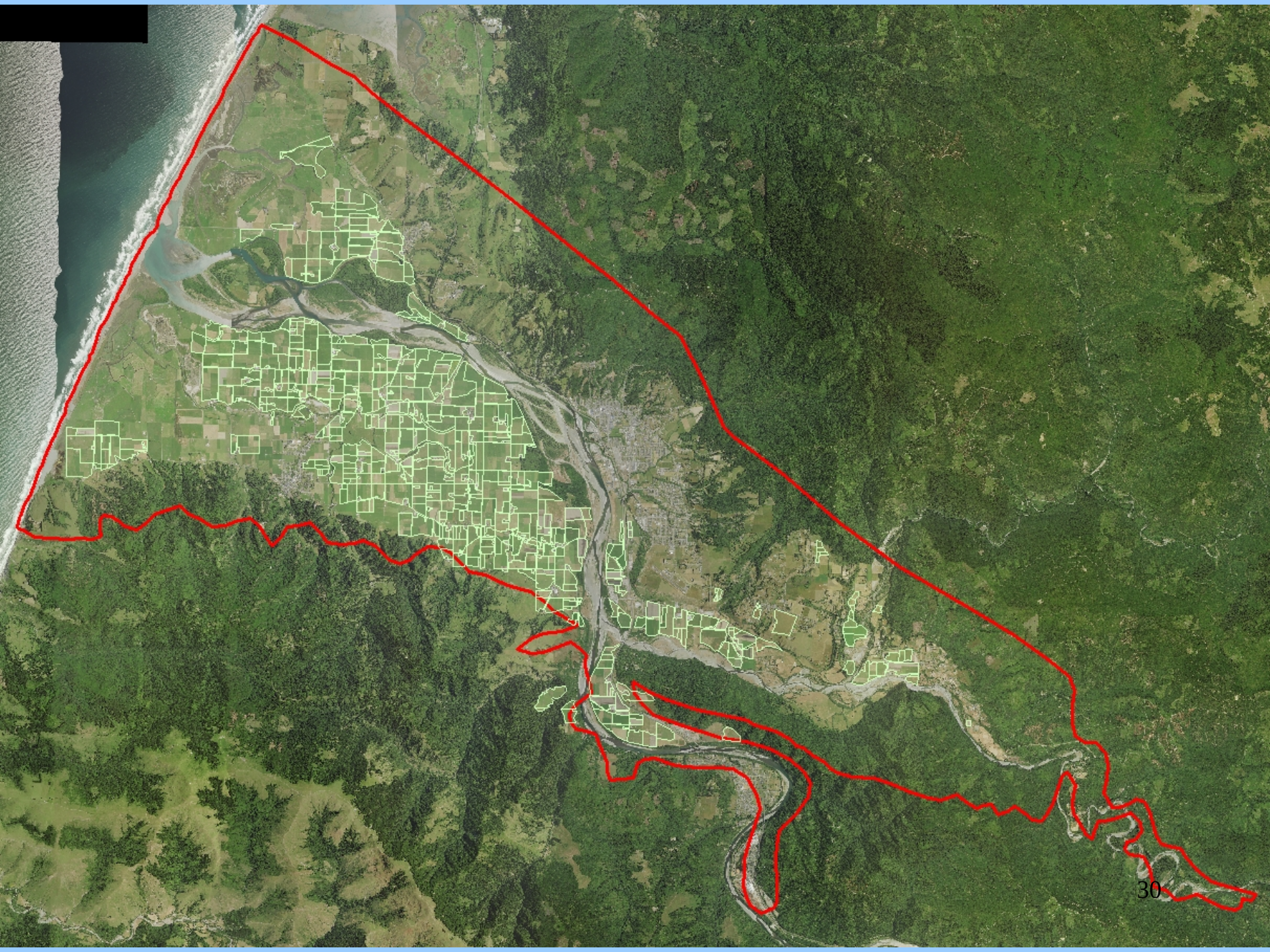
1. Grant agreement executed with DWR (July 2016)

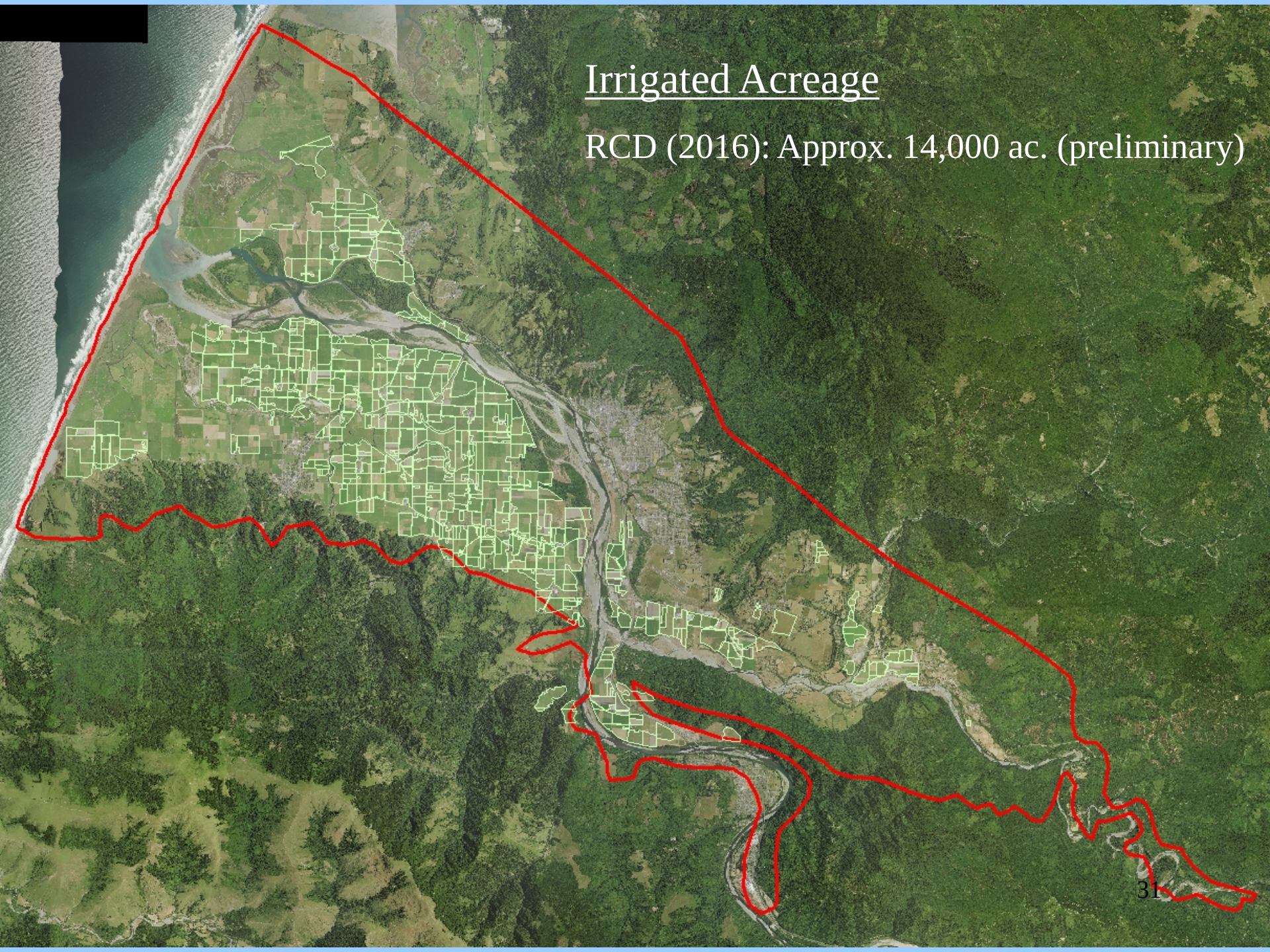
2. SHN Consulting Engineers and Geologists, Inc. (with Palmer Environmental and Thomas Gast & Associates) and Fisch Drilling selected for professional services

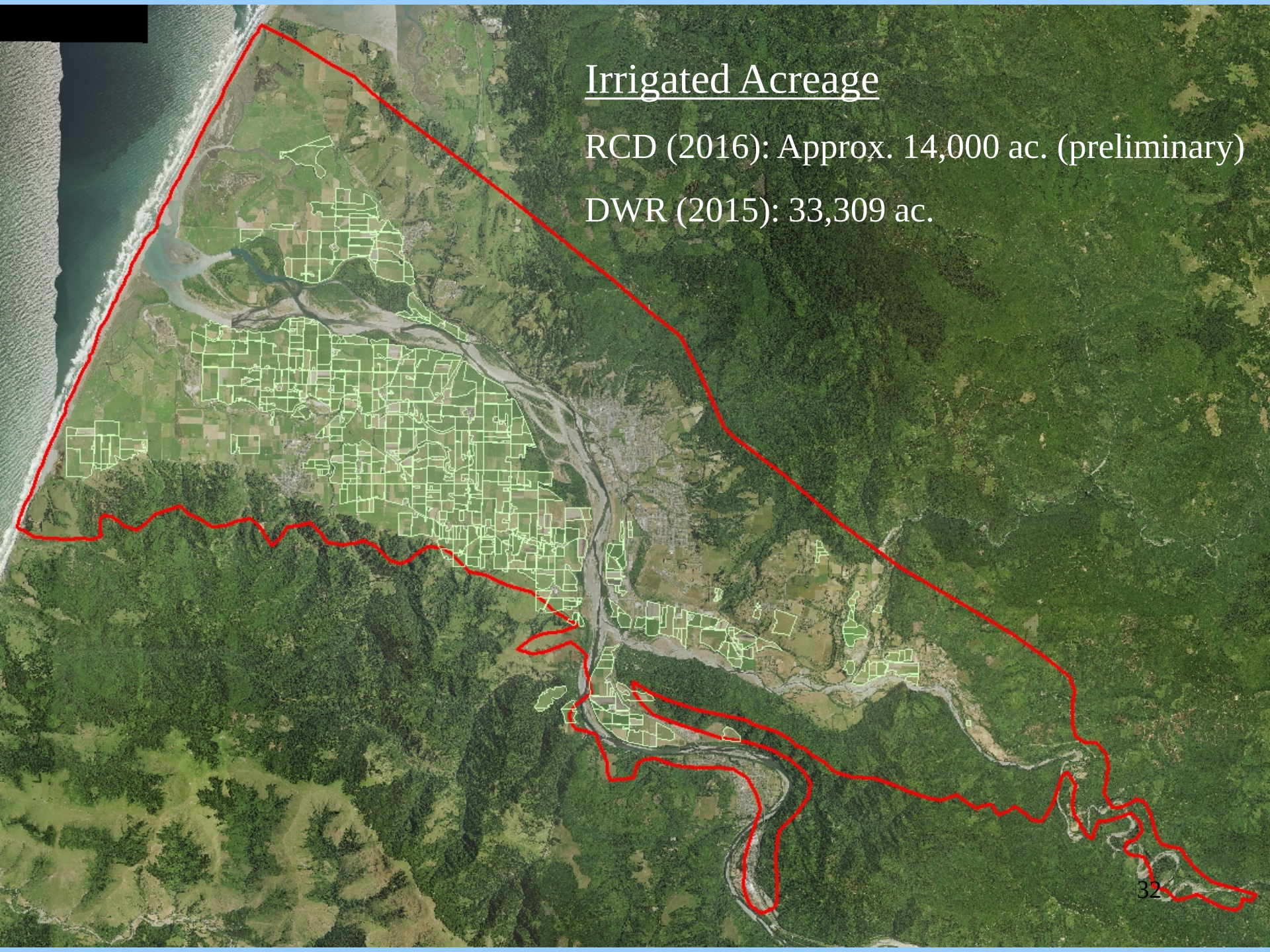
3. Evaluation of irrigated acreage (RCD, Cheryl Laffranchi, NRCS, UC-CE)

4. Evaluation of agricultural water use (RCD, Cheryl Laffranchi, NRCS, UC-CE)

5. Field program initiated




Irrigated Acreage
RCD (2016): Approx. 14,000 ac. (preliminary)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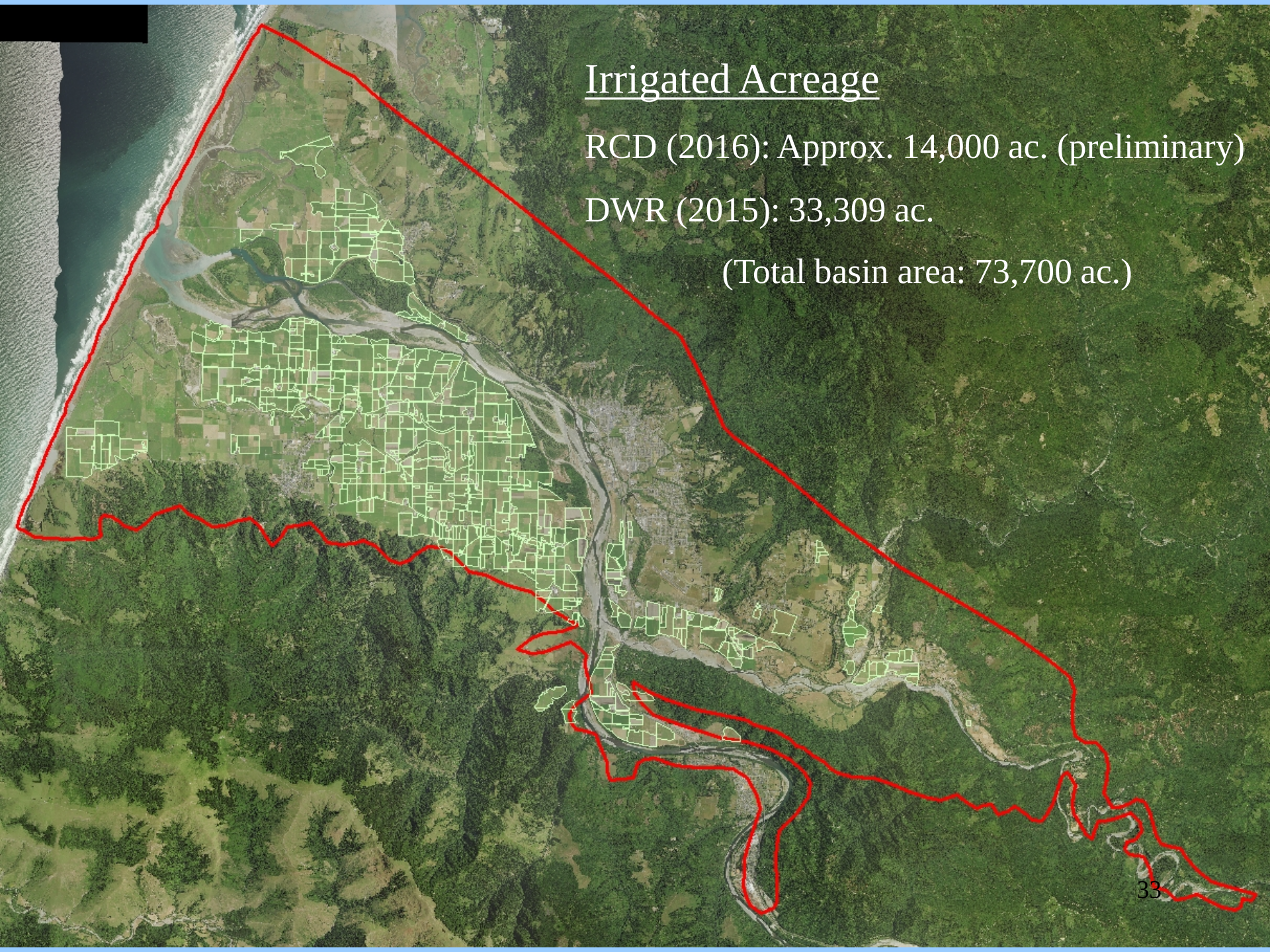
RCD (2016): Approx. 14,000 ac. (preliminary)
DWR (2015): 33,309 ac.


Irrigated Acreage
RCD (2016): Approx. 14,000 ac. (preliminary)
DWR (2015): 33,309 ac.
(Total basin area: 73,700 ac.)

Eel River Valley Groundwater Basin Assessment

Eel River Valley Groundwater Basin Assessment

Task 1: Compilation of existing data and previous studies

Task 2: New data collection

Task 3: Conceptualization of basin hydrogeology and river-aquifer exchange

Task 4: Water balance

Task 5: Stakeholder involvement and initial management planning

Task 6: Grant administration

Eel River Valley Groundwater Basin Assessment

Task 1: Compilation of existing data and previous studies

Task 2: New data collection

Subtask 2.1: Exploratory borings

- Five coupled GeoProbe wells (40/80 ft BGS)
- Four nested Hollow-Stem Auger wells (2x100 ft and 2x300 ft BGS)

Subtask 2.2: Surface water/groundwater level coupled monitoring

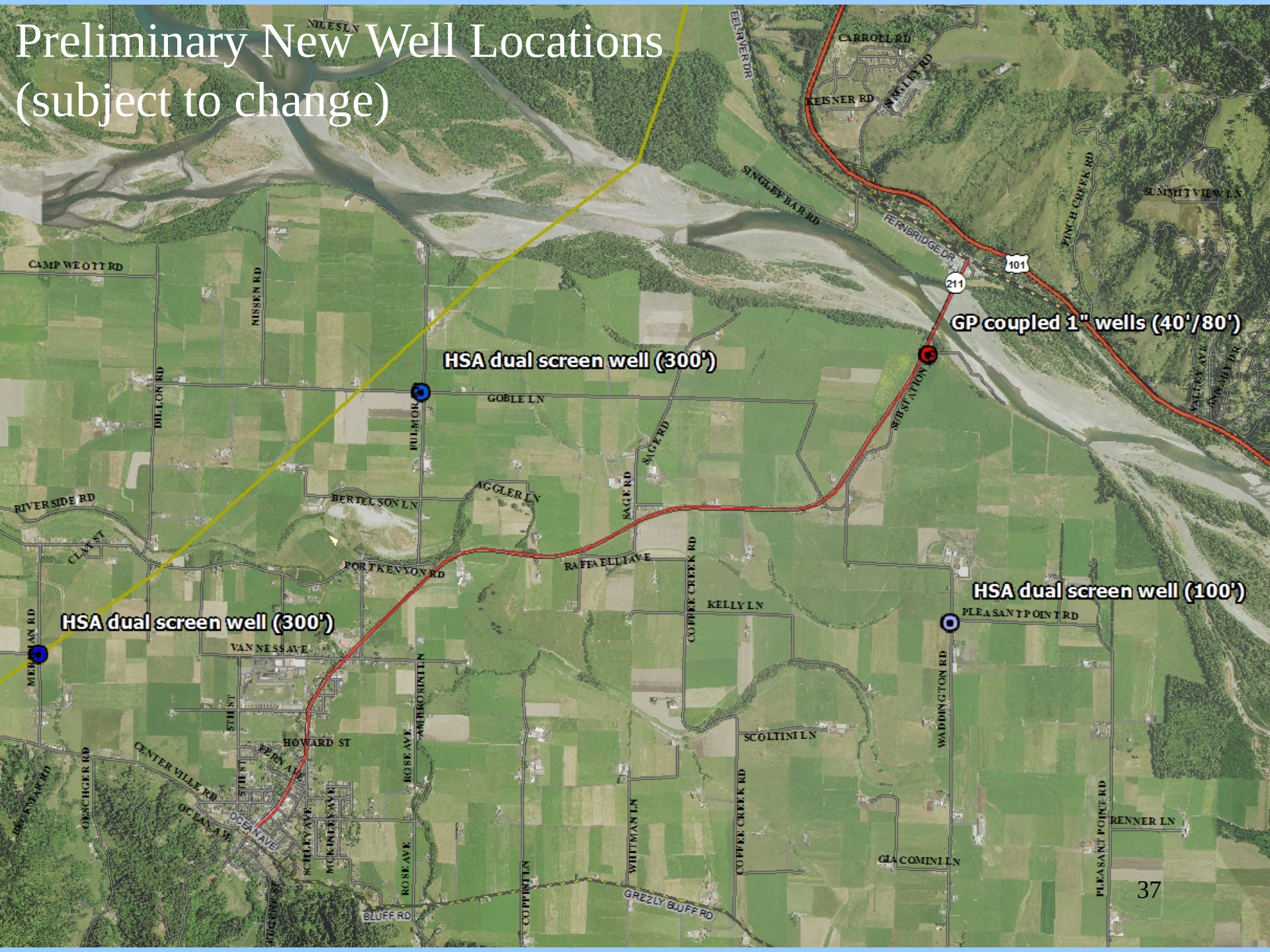
- Continuous hydrographs with dataloggers at three groundwater monitoring wells and two river monitoring sites for at least six months

Subtask 2.3: Testing to measure hydraulic conductivity

Subtask 2.4: Surface water flow measurements during dry season

- Measure Eel River discharge at four locations (min. 4 sampling events)

Preliminary New Well Locations (subject to change)



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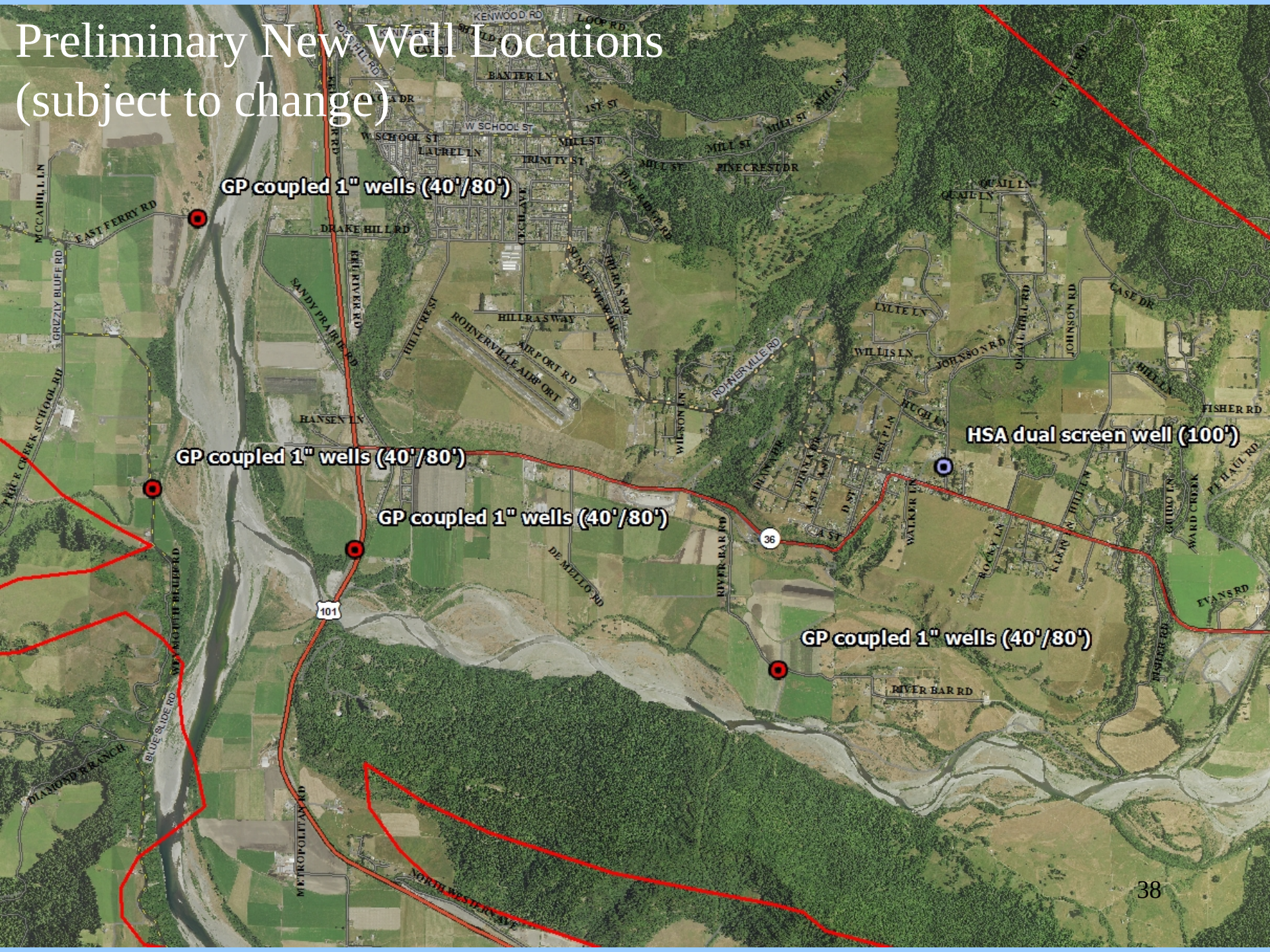

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Eel River Valley Groundwater Basin Assessment

Task 2: New data collection (continued)

Subtask 2.5: Irrigation pumpage estimation

Subtask 2.6: Water level measurements and chloride testing

- Measure groundwater levels and collect samples for chloride testing
- Minimum two sampling events (in conjunction with DWR monitoring)
- Minimum 40 monitoring wells (to supplement the seven DWR wells)

Task 3: Conceptualization of basin hydrogeology and river-aquifer exchange

- Analyze and describe the size, structure, composition, and characteristics of the basin
- Address interactions between water-bearing units, geographic areas
- Address seasonal variability

Eel River Valley Groundwater Basin Assessment

Task 4: Water balance

- Evaluate and quantify the primary water balance components:

Inputs	Outputs
- Deep percolation of rainfall	- Agricultural pumping
- Irrigation/water supply return flows	- Municipal pumping
- Stream infiltration	- Stream discharge
- Subsurface inflow	- Subsurface outflow

- Develop best estimate and reasonable range for each component
- Discuss variability and uncertainty
- Estimate sustainable yield

Eel River Valley Groundwater Basin Assessment

Task 5: Stakeholder involvement and initial management planning

- Assist in the development of sustainable management criteria
- Define thresholds for each sustainability indicator, to determine what would constitute an “undesirable result” caused by groundwater conditions

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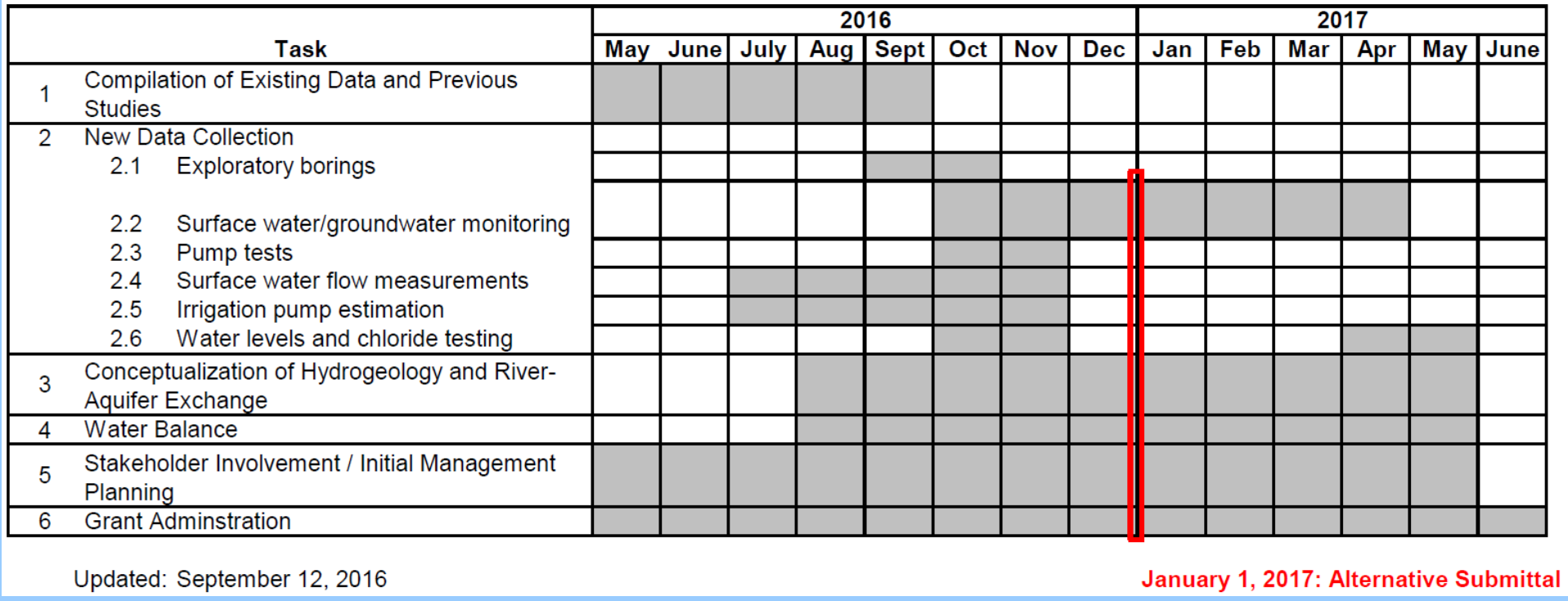
This will increasingly become a point of focus at the next Working Group meetings, as data and information is developed regarding basin conditions

Eel River Valley Groundwater Basin Assessment



5. Brief updates / other topics

5. Set next meeting date

Information will be posted at

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