



EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Board of Directors Meeting

AGENDA

Wednesday, July 11, 2018

11:00 a.m. – 12:00 p.m.

San Joaquin County – Robert J. Cabral Agricultural Center
2101 E. Earhart Avenue – Assembly Room #1, Stockton, California

- I. **Call to Order/Pledge of Allegiance & Safety Announcement/Roll Call**
- II. **SCHEDULED ITEMS – *Presentation materials to be posted on ESJGroundwater.org and emailed prior to the meeting. Copies of presentation materials will be available at the meeting.***
 - A. **Discussion/Action Items:**
 1. Approval of Minutes of June 13, 2018 (See Attached)
 2. Roadmap Update and Project Schedule
 3. Outreach & Groundwater Sustainability Workgroup Update
 4. GSP Update
 5. Hydrogeologic Conceptual Model
 6. Update from the Department of Water Resources
 7. Schedule Recap
 8. Facilitator Transition
 - B. **Informational Items (see attached):**
 1. April 3, 2018, Letter on Behalf of the Eastern San Joaquin IRWM Region, “Support of the San Joaquin River Funding Area Application for DAC Involvement Funding”
 2. June 12, 2018, Email and Letter from Mary Elizabeth, Sierra Club/Delta-Sierra Group, “Comments for the Technical Advisory Committee and Eastern San Joaquin Groundwater Authority”
 3. June 18, 2018, Letter from Sandi Matsumoto, The Nature Conservancy, “1) Encourage Your GSA to Include an Environmental Representative on Your GSA Board or Advisory Committee, and 2) Share a Resource: Groundwater Resource Hub”

(Continued on next page)

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Board of Directors Meeting

AGENDA

(Continued)

4. June 22, 2018, newsdeeply.com, "A New Groundwater Market Emerges in California. Are More on the Way?"
5. June 22, 2018, weatherwest.com, "The California Weather Blog: An Unremarkable Solstice in California; But a Hot Second Half of Summer (And What About El Niño)?"

III. Public Comment (non-agendized items)

IV. Directors' Comments

V. Future Agenda Items

VI. Adjournment

Next Regular Meeting

August 8, 2018 at 11:00 a.m.

San Joaquin County - Robert J. Cabral Agricultural Center
2101 E. Earhart Ave., Assembly Rm. #1, Stockton, California

Action may be taken on any item

Agendas and Minutes may also be found at <http://www.ESJGroundwater.org>

Note: If you need disability-related modification or accommodation in order to participate in this meeting, please contact San Joaquin County Public Works Water Resources Staff at (209) 468-3089 at least 48 hours prior to the start of the meeting.

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY
Board Meeting Minutes
June 13, 2018

I. Call to Order/Pledge of Allegiance & Safety Announcement/Roll Call

The Eastern San Joaquin Groundwater Authority (GWA) Board meeting was convened by Chair Chuck Winn at 11:03 a.m., on June 13, 2018, at the Robert J. Cabral Agricultural Center, 2101 E. Earhart Ave. Stockton, CA. Following the Pledge of Allegiance, the required safety information was provided.

In attendance were Chair Chuck Winn, Vice-Chair Mel Panizza, Secretary Kris Balaji, Directors George Biagi, Jr, Stephen Salvatore, Alan Nakanishi, Rich Silverman, Elbert Holman, Russ Thomas, David Fletcher, Mike Henry, Tom Flinn, Eric Thorburn, John Herrick, Alternate Directors Steven Cavallini and Doug Heberle.

II. SCHEDULED ITEMS

A. Discussion/Action Items:

1. Approval of Minutes of May 9, 2018

Ms. Mary Elizabeth corrected her previous public comment regarding outreach efforts to the Sierra Club and Delta Sierra Group. At a previous GWA meeting, Ms. Elizabeth stated that no one from these groups had received the Stakeholder Committee invitation, but clarified that several people did in fact receive the invitation. Margo Praus, Kathryn Phillips (Sierra Club California), Charlotte Allan (Sierra Club National), and Sonia Diermayer (Co-Chair, Water Committee Sierra Club San Francisco Chapter) received invitations.

Motion:

Vice-Chair Panizza moved, and Director Holman seconded, the approval of the May 9, 2018 minutes. The motion passed unanimously.

2. Presentation by RD38 Staten Island

Mr. Brandon Nakagawa, Water Resources Coordinator, San Joaquin County – Department of Public Works, provided an introduction prior to the presentation by RD38 Staten Island. He stated that he was contacted by Erik Ringelberg and the attorney for the North Delta Agencies with a request to make a presentation to the GWA Board regarding the Northern Delta GSA's efforts to modify the existing groundwater basin boundary to more accurately reflect the overlying management boundaries and of local groundwater conditions. Mr. Ringelberg gave a presentation stating that Staten Island is within the Northern Delta GSA and currently overlays a portion of the Eastern San Joaquin Subbasin. He explained the rationale for requesting a basin boundary modification, highlighted statistics, and provided a handout with supporting information. He stated the request is on behalf of RD38 Staten Island and they are seeking a letter of support from the GWA Board of Directors to provide to the Department of Water Resources on the matter.

Following the presentation, Director Tom Flinn asked what the staff recommendation is on this item.

Mr. Nakagawa answered that the modeling consultants were asked to examine the water balance for Staten Island and stated there is a very small net gain to the Eastern San Joaquin Groundwater Subbasin for Staten Island. He noted that the Nature Conservancy is the sole owner on the island and further indicated that there are no wells on the island with minimal groundwater use due to take up of shallow groundwater by crops and vegetation. From the perspective of the groundwater balance, Staten Island is an area with a net gain to the groundwater basin. Staff recommends that a basin boundary modification be supported and to work toward getting Staten Island GSA status in the near future.

Chair Chuck Winn asked how their plan will interact with the Eastern San Joaquin plan. Mr. Nakagawa answered that DWR indicated that the new basin would need to go through the process of priority ranking. Coordination would be similar to how coordination with other neighboring basins is currently approached. Director Russ Thomas asked how this is different from the Lathrop Basin Boundary Modification, where there was a similar request but no Board action taken. Chair Chuck Winn answered that there was not unanimity, and that support was left with individual agencies.

Motion:

In a motion to support, Director Silverman moved and Vice-Chair Panizza seconded. The motion passed with unanimous support.

3. Roadmap Update and Project Schedule

Ms. Alyson Watson of Woodard & Curran provided an update that the group is tracking on-schedule for the project.

4. Outreach and Stakeholder Committee Update

Ms. Watson provided an update on how to get involved and stay informed, along with an update on the Stakeholder Committee activities. The first Stakeholder Committee meeting was held on the previous day, June 12, with 17 representatives attending. It was noted that 22 organizations applied to be on the Stakeholder Committee, all of which have been invited to participate on the Committee. The Stakeholder Committee is in the process of planning its next meeting. Public meetings are expected to be held quarterly, with the first to occur most likely in August. Meeting materials from each of the various meetings will be posted on ESJGroundwater.org. Ms. Watson concluded by stating that special presentations can also be requested.

5. GSP Update

Ms. Watson provided an overview of the work being done in the Advisory Committee with regard to the Projected Water Budget, Minimum Thresholds, and the Historical Water Budget. Mr. Ali Taghavi (Woodard & Curran) provided an update on the model updates and calibration work. Following the presentation, Chair Chuck Winn commented on the baseline analysis presented at the Advisory Committee meeting, asking the group to be creative in looking for solutions for future water sustainability. He encouraged the Board to aim high in their propositions as opposed to maintaining the status quo.

6. Discussion of Budget for Next Year

Mr. Nakagawa walked through the proposed budget for Fiscal Year 2018-2019. He also gave an accounting of revenues and expenditures to date, as well as year-end projected expenditures. Alternate Director Doug Heberle noted that the 2018-2019 budget looked consistent with prior discussions the GWA Board has had regarding the upcoming budget. Director Alan Nakanishi suggested that because there was nothing new in the cost allocation numbers, it would not need to be brought back to his council for consideration again. Alternate Director Heberle and Director Thomas agreed.

A Motion was called to approve the budget.

Motion:

Director Russ Thomas moved, and Director Holman seconded the approval of the budget. The motion passed unanimously.

7. Presentation on the Data Management System (DMS)

Ms. Jeanna Long of Woodard & Curran presented the Data Management System that is being developed for the Basin. Director Thomas asked how the maintaining of the database will be paid for after the GSP is

adopted. Mr. Nakagawa noted that payment of the future items coming out of GSP still need to be discussed (i.e., data management, data collection, monitoring wells, reporting, etc.).

Director John Herrick asked if it will be required that GSAs input groundwater extractions or consumptive information yearly. Mr. Nakagawa noted that regulations are flexible in how certain items are reported, and that these are questions that are yet to be answered. He additionally noted that this tool can be used for that and there are other available tools which can be explored.

8. Update from DWR

Mr. Paul Wells of the Department of Water Resources (DWR) indicated that the grant agreement is almost finalized, and that Mr. Nakagawa as Basin Coordinator is working on finalizing the Technical Support Services (TSS) umbrella application. Ms. Watson stated that the general TSS funding application will be submitted after receiving pending information from GSAs. Mr. Wells reminded the Board that Basin Boundary Modification proposals have to be submitted by the end of the month, and there will be a 30 day comment period after June 30.

9. Schedule Recap

Ms. Watson noted the July topics for the GWA Board will be Minimum Thresholds and the Hydrogeologic Conceptual Model.

B. Informational Items:

III. Public Comment (non-agendized items):

Ms. Mary Elizabeth (Sierra Club) indicated that she inquired with the outreach consultant regarding attending the San Joaquin County Fair this coming weekend and was informed that it was not in the scope of work. She encouraged, on behalf of all well-owners, that if GSAs have a booths at the fair, she suggested providing information or a flyer about the SGMA process.

IV. Directors' Comments:

None

V. Future Agenda Items:

None

VI. Adjournment:

The meeting was closed at 11:56 am.

Next Regular Meeting: July 11, 2018 at 11:00 a.m.

San Joaquin County - Robert J. Cabral Agricultural Center, 2101 E. Earhart Ave., Assembly Rm. #1, Stockton, CA



MEMBER SIGN-IN SHEET

Location: SJ COUNTY ROBERT J. CABRAL AG CENTER Date: 6/13/18 Time: 11:00 AM

INITIAL	Member's Name	GSA	Phone	Email
	John Freeman	Cal Water Member	209-547-7900	jfreeman@calwater.com
SC	Steve Cavallini	Cal Water Alternate	209-464-8311	scavallini@calwater.com
GB	George Biagi, Jr.	Central Delta Water Agency Member	209-481-5201	gbiagi@deltabluegrass.com
	Dante Nomellini	Central Delta Water Agency Alternate	209-465-5883	ngmplcs@pacbell.net
	Grant Thompson	Central San Joaquin Water Conservation District Member	209-639-1580	gton@velociter.net
	Reid Roberts	Central San Joaquin Water Conservation District Alternate	209-941-8714	reidwroberts@gmail.com
	Stephen Salavatore	City of Lathrop Member	209-941-7430	ssalvatore@ci.lathrop.ca.us
		City of Lathrop Alternate		
AK	Alan Nakanishi	City of Lodi Member	209-333-6702	anakanishi@lodi.gov
	Charlie Swimley	City of Lodi Alternate	209-333-6706	cswimley@lodi.gov
	Rich Silverman	City of Manteca Member	209-456-8017	rsilverman@ci.manteca.ca.us
	Mark Houghton	City of Manteca Alternate	209-456-8416	mhoughton@ci.manteca.ca.us
EH	Elbert Holman	City of Stockton Member	209-937-8244	hoytjr63@yahoo.com
W	Mel Lytle	City of Stockton Alternate	209-937-5614	mel.lytle@stocktonca.gov

INITIAL	Member's Name	GSA	Phone	Email
RT	Russ Thomas	Eastside San Joaquin GSA Member	209-480-8968	rthomasccwd@hotmail.com
	Walter Ward	Eastside San Joaquin GSA Alternate	209-525-6710	wward@envres.org
DF	David Fletcher	Linden County Water District Member	209-887-3202	dqfpe@comcast.net
	Paul Brennan	Linden County Water District Alternate	209-403-1537	ptbrennan@verizon.net
MH	Mike Henry	Lockeford Community Services District Member	209-712-4014	midot@att.net
	Joseph Salzman	Lockeford Community Services District Alternate	209-727-5035	lcsd@softcom.net
E.S.	Eric Schmid	Lockeford Community Services District Alternate	209-727-5035	lcsd@softcom.net
	Tom Flinn	North San Joaquin Water Conservation District Member	209-663-8760	tomflinn2@me.com
	Joe Valente	North San Joaquin Water Conservation District Alternate	209-334-4786	jcvalente@softcom.net
ET	Eric Thorburn, P.E.	Oakdale Irrigation District Member	209-840-5525	ethorburn@oakdaleirrigation.com
		Oakdale Irrigation District Alternate		
CW	Chuck Winn	San Joaquin County Member	209-953-1160	cwinn@sigov.org
	Kathy Miller	San Joaquin County Alternate	209-953-1161	kmiller@sigov.org
JH	John Herrick, Esq.	South Delta Water Agency Member	209-956-0150	jherrlaw@aol.com
	Jerry Robinson	South Delta Water Agency Alternate	209-471-4025	N/A
	Dale Kuil	South San Joaquin GSA Member	209-670-5829	dkuil@ssjid.com
	Robert Holmes	South San Joaquin GSA Alternate	209-484-7678	rholmes@ssjid.com
MP	Melvin Panizza	Stockton East Water District Member	209-948-0333	melpanizza@aol.com
AW	Andrew Watkins	Stockton East Water District Alternate	209-948-0333	watkins.andrew@verizon.net
	Anders Christensen	Woodbridge Irrigation District Member	209-625-8438	widirrigation@gmail.com
AD	Doug Heberle	Woodbridge Irrigation District Alternate	209-625-8438	heberlewid@gmail.com

Eastern San Joaquin Groundwater Authority Staff & Support

INITIAL	Member's Name	Organization	Phone	Email
<i>KB</i>	Kris Balaji	San Joaquin County	468-3100	kbalani@sjgov.org
	Fritz Buchman	San Joaquin County	468-3034	fbuchman@sjgov.org
<i>BN</i>	Brandon Nakagawa	San Joaquin County	468-3089	bnakagawa@sjgov.org
<i>M</i>	Mike Callahan	San Joaquin County	468-9360	mcallahan@sjgov.org
	Lynn Hoffman	San Joaquin County	468-3531	mlhoffman@sjgov.org
<i>KV</i>	Kelly Villalpando	San Joaquin County	468-3073	krvillalpando@sjgov.org
<i>DB</i>	Danielle Barney	San Joaquin County	468-3089	dbarney@sjgov.org
<i>CL</i>	Carolyn Lott	Carlton Consulting / Facilitator	402-2024	carolynlott@sbcglobal.net
<i>RA</i>	Rod Attebery	Neumiller & Beardslee / Legal Counsel	948-8200	rattebery@neumiller.com

Monica Street



OTHER INTERESTED PARTIES - SIGN-IN SHEET

Location: SJ COUNTY ROBERT J. CABRAL AG CENTER Date: 6/13/18 Time: 11:00 AM

INITIAL	Member's Name	Organization	Phone	Email
	Ken Vogel	Farm Bureau	209-815-5803	kensvogel@yahoo.com
	Edmund	EDMUD	6636291	
NL	Noel Limer	City of Lodi	209-333-6800	nlimer@lodi.gov
	Fitz Buchman	SJ County		
	Kris Balaji	"	209-468-3100	
	Paul Wells	CA DWR	916-376-2656	paul.wells@dwr.ca.gov
	Mary Elizabeth	Sierra Club & Community		
J.P.	Jason Preece	DWR	916-651-9636	jason.preece@dwr.ca.gov
	Bill Brewster	DWR	916-376-9627	bill.brewster@dwr.ca.gov
	Ali Tashari	Woodard & Curran	916-999-8700	atashari@woodardcurran.com
	Aaron Lewis	EKI	970-491-6295	alewis@ekiconsult.com
	Yolanda Park	Catholke Clewiner		ypark@cestoch.com
	Grace Su	EBMUD		
	Elba Mijango	City of Manteca		

ATTACHMENT II
B.1-5.



EASTERN SAN JOAQUIN COUNTY GROUNDWATER BASIN AUTHORITY

1810 EAST HAZELTON AVENUE
STOCKTON, CALIFORNIA 95205
(209) 468-3531
(209) 468-2999/FAX
www.GBAwater.org

CHUCK WINN
CHAIRMAN

KRIS BALAJI
SECRETARY

April 3, 2018

GBA MEMBERS

CALIFORNIA WATER SERVICE COMPANY
CENTRAL DELTA WATER AGENCY
CENTRAL SAN JOAQUIN
WATER CONSERVATION DISTRICT
CITY OF LATHROP
CITY OF LODI
CITY OF MANTECA
CITY OF STOCKTON
NORTH SAN JOAQUIN
WATER CONSERVATION DISTRICT
STOCKTON EAST WATER DISTRICT
SAN JOAQUIN COUNTY
SOUTH DELTA WATER AGENCY
SOUTH SAN JOAQUIN IRRIGATION DISTRICT
WOODBRIDGE IRRIGATION DISTRICT
SAN JOAQUIN FARM BUREAU FEDERATION
ASSOCIATE MEMBER

Desiree Ramirez
Department of Water Resources
Division of Integrated Regional Water Management
Post Office Box 942836
Sacramento, California 94236-0001

SUBJECT: SUPPORT OF THE SAN JOAQUIN RIVER FUNDING AREA
APPLICATION FOR DAC INVOLVEMENT FUNDING

Dear Ms. Ramirez:

I am writing on behalf of the Eastern San Joaquin Integrated Regional Water Management (IRWM) Region in support of the San Joaquin River Funding Area's proposal for Disadvantaged Community (DAC) Involvement Funding. The IRWM regions and associated Regional Water Management Groups (RWMGs) participating in this effort are: American River Basin, East Contra Costa County, East Stanislaus, Eastern San Joaquin, Madera, Merced, and Westside-San Joaquin. The Eastern San Joaquin IRWM Region has participated in San Joaquin River Funding Area Coordination Meetings along with the other participating RWMGs. The Funding Area RWMGs collaborated during Funding Area Coordination Meetings to jointly develop an approach to preparing and submitting a DAC Involvement Grant Proposal to the Department of Water Resources (DWR).

The San Joaquin River Funding Area RWMGs agree on the importance of ensuring the involvement of DACs, economically distressed areas (EDAs) and underrepresented communities in IRWM planning efforts, and have historically made efforts to ensure this involvement through IRWM planning and project development. The Funding Area RWMGs agreed upon the planning activities included in the DAC Involvement Funding Application.

The Eastern San Joaquin IRWM Region supports the submittal of the DAC Involvement Funding Application by Contra Costa Water District (CCWD) on behalf of the San Joaquin River Funding Area. At this time, the Eastern San Joaquin IRWM Region supports the selection of CCWD as the grantee for the San Joaquin River DAC Involvement Funding as CCWD has a history of successfully completing State grant-funded projects, including those funded by the IRWM Grant Program. The Eastern San Joaquin IRWM Region is confident in CCWD's ability to serve as the contracting entity for the DAC Involvement grant for each participating RWMG within the San Joaquin River Funding Area.

Desiree Ramirez -2-
SUPPORT OF THE SAN JOAQUIN RIVER FUNDING AREA
APPLICATION FOR DAC INVOLVEMENT FUNDING

Should you have any questions, please contact me at (209) 468-3089, or by email at bnakagawa@sjgov.org

Sincerely,



BRANDON NAKAGAWA, P.E.
Water Resources Coordinator
on behalf of the Eastern San Joaquin IRWM Region

BN:DB:me
WR-18C041-ME1

c: Eastern San Joaquin County Groundwater Basin Authority Board
Eastern San Joaquin County Groundwater Basin Authority Coordinating Committee
Fritz Buchman, Deputy Director/Development

Villalpando, Kelly

From: Mary Elizabeth <mebeth@outlook.com>
Sent: Tuesday, June 12, 2018 6:11 AM
To: ESJGroundwater; Paul.wells@water.ca.gov; Coreen Weintraub; jclary@cleanwater.org; Restore the Delta; ypark@ccstockton.org; Jane Wagner-Tyack; Dfries.audubon@gmail.com; colin@ejcw.org; editor@recordnet.com; DSG-EXCOM-LISTSERV
Subject: ESJ Subbasin Model and Water Budget 061218 DSG
Attachments: DSG Model Water Budget 061218 final.pdf

Attached are my comments for the Technical Advisory Committee and Eastern San Joaquin Groundwater Authority. I plan to attend the June 12, 2018 Stakeholder Committee meeting and the June 13, 2018 Technical Advisory Committee and Groundwater Authority meetings.

Sincerely,

Mary Elizabeth M.S., R.E.H.S

Delta Sierra Group Conservation Chair

Sierra Club



Delta-Sierra Group
Mother Lode Chapter
P.O. Box 9258, Stockton CA 95208

Eastern San Joaquin Groundwater Authority
P. O. Box 1810
Stockton, CA 95201

11 June 2018

Re: Model and Water Budget

The Sierra Club Water has adopted a water policy to promote proper management for a healthful and aesthetically pleasing natural environment. The policy calls for thorough water inventories including historic water yields and uses, with priority where substantial demands are anticipated. The Eastern San Joaquin Subbasin is a high priority basin which is critically overdrafted requiring that managers of the resource, the Eastern San Joaquin Groundwater Authority, develop a groundwater sustainability plan by January 2020 that must contain four main components:

1. A description of the plan area and groundwater basin setting (including an assessment of current and future groundwater conditions) and a **water budget**.
2. Sustainability goal which must avoid all six undesirable results
3. Projects and management actions that will achieve the community's sustainability goal, and
4. A monitoring plan that will measure progress over time.

I began asking for model and water budget information in 2017, continuing by email in February and April 2018 and was told that water budget information was not available for public review. On May 8, 2018 at 10:47 AM a pdf of the presentation of the model and water budget was sent out to interested parties on the ESJGA email list. On May 9, 2018 the Eastern San Joaquin Groundwater Authority unanimously approved the motion: approve of the use of the groundwater model in support of the development of the GSP, which include efforts to verify calibration with specific water agencies that have been identified. The model and water budget which was approved did not include references and descriptions of the source of information used.

May 9, 2018 Presentation Water Budget Summary

We were informed that the Model Development was open and transparent with the following Stakeholder Participation:

-
- | | | |
|-----------------------------------|---|---|
| • California Water Services | • Linden County Water District | • Ripon, City of |
| • Calaveras County Water District | • Lockeford Comm. Services District | • San Joaquin County |
| • Central Delta | • Lodi, City of | • South San Joaquin Irrigation District |
| • DWR North Central District | • Manteca, City of | • Stanislaus County |
| • Escalon, City of | • North San Joaquin Water Conservation District | • Stockton, City of |
| • Lathrop, City of | • Oakdale Irrigation District | • Stockton East Water District |
| | | • Woodbridge Irrigation District |
-

This list does not include many of the SGMA identified stakeholders, general public, domestic well owners, public water systems, environmental interests, the federal government, California Native American tribes and disadvantaged communities.

We were informed that the Integrated Water Flow Model (IWFM) used is a public domain model developed and maintained by the California Department of Water Resources and has the same model platform as C2VSim. The model includes land-surface processes, groundwater flow, streamflow, physical systems integration and water budgets. Of concern is that details were missing about how the summary values were derived and the sources of data. Also, cropping patterns have changed considerably since 2015 as reflected in the recent increased numbers of permanent crops seen within the basin. The model's ability to capture this crop distribution change was not mentioned nor were acreages by crop type presented. We were informed that 63 wells were selected from 160 calibration wells and that 20 wells were used for statistical analysis. Descriptions of these wells or locations were not specified.

Questions and Request for Information

1. What is the actual water demand and source for each GSA area?
2. What are the boundary conditions for the 20 subregions or 17 GSA areas?
3. Why were SOI boundaries used as reference for cities?
4. What are the biggest groundwater gains and losses in our basin (top and bottom 20%)
5. What proportion of the groundwater wells are deeper than 500 feet and what fraction of the total pumping do these wells represent?
6. What portion is provided by individual domestic wells and/or irrigation wells (not associated with GSA entity)?
7. What are the data sources for water budget and model?
8. Provide summary well information and GSA location for the 160 calibrations wells 1995-2015, 63 selected and 20 used for statistical analysis.
9. Where in the Subbasin are the wells located that are most aligned with the model and where are the wells that deviate significantly from the model projections? What are some possible reasons if a pattern observed.
10. What are the land use assumptions for each GSA area?
11. What are the cropping patterns for each GSA area?
12. What were the categories used to get the estimated average annual groundwater budget?
13. How did the model perform when projecting conditions observed in 2016 and 2017?
14. How does the model include projected effects of climate change?
15. Can the model be used to perform a vulnerability analysis specifically relating to human and ecological communities that may be affected by management decisions, such as domestic well depths and species habitat, and groundwater-dependent ecosystem locations.

Thank you for your assistance and we are looking forward to reviewing the information requested.

Sincerely,



Mary Elizabeth M.S., R.E.H.S.
Delta-Sierra Group Conservation Chair
Sierra Club
Melizabeth.sierra@gmail.com

June 18, 2018

Mr. Brandon Nakagawa
San Joaquin County
Public Works Department
1810 East Hazelton Avenue
Stockton, CA 95205

Sent via e-mail: bnakagawa@sjgov.org

Dear Mr. Nakagawa:

The Nature Conservancy (the Conservancy) has long worked with diverse stakeholders to establish and implement the Sustainable Groundwater Management Act (SGMA). With groundwater sustainability plans (GSPs) underway, we are reaching out to you for two reasons: 1) to encourage your groundwater sustainability agency (GSA) to include an environmental representative on your GSA board or advisory committee, and 2) to share a resource, the Groundwater Resource Hub, that provides information and tools that can help you comply with SGMA requirements to identify and address groundwater dependent ecosystems (GDEs).

Groundwater dependent ecosystems are a required element of GSPs. GDEs are plant and animal communities that rely on groundwater to meet some, or all, of their water needs. GDEs include streams, wetlands, springs and terrestrial vegetation commonly found in most basins across the state. Until now, there has not been a systematic approach to address GDEs in GSPs. The Conservancy has worked with the water community to create a time and money saving resource, a website called [Groundwater Resource Hub](#), that your GSA can use to help meet SGMA requirements to address GDEs. The Groundwater Resource Hub includes a [GDE Guidance Document for GSPs](#) to help GSAs create a localized, systematic and defensible framework for including GDEs in your plan.

The Conservancy, in partnership with the Department of Water Resources, has also completed statewide mapping of indicators of groundwater dependent ecosystems (iGDEs)¹. SGMA requires GDEs to be identified (23 CCR §354.16(g)) and addressed as a beneficial use (see, DWR Sustainable Management Criteria Best Management Practices, p. 12). The Groundwater Resource Hub contains the [iGDE mapping](#), developed in partnership with DWR and DFEW, in addition to other valuable information including an online tutorial about what GDEs are and case studies and references to additional resources on GDEs.

¹ Note: DWR refers to the iGDE database as the Natural Communities Commonly Associated with Groundwater, or NC Dataset. The NC Dataset and the iGDE database are the same.

We believe that as you move forward with your basin's plan, you may find these resources quite helpful in fulfilling SGMA's mandate to avert adverse impacts to GDEs and achieve sustainable groundwater conditions.

An important source of expertise and data on GDEs may be available from local stakeholders who are familiar with the basin's natural resources. For this reason, we urge you to include environmental representation in your groundwater sustainability planning process. This model is being successfully implemented in several basins, including in [Ventura County](#).

If you would like additional information about the Groundwater Resource Hub or have any questions related to our work on GDEs, please contact us.

Very truly yours,

Sandi Matsumoto
Associate Director, California Water Program
The Nature Conservancy
555 Capitol Mall, Suite 1290
Sacramento, CA 95814
(916) 596-6671 (office)
(805) 746-6664 (Mobile)

A New Groundwater Market Emerges in California. Are More on the Way?

Tweet

✉ Share via Email

The pilot program is kicking off in Ventura County, but experts say that it may be replicated in other parts of the state as California works to comply with the Sustainable Groundwater Management Act and curb overpumping of aquifers.

WRITTEN BY
Alastair
Bland

PUBLISHED ON
 June 22,
2018

READ TIME
Approx. 5
minutes

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Farmers work in a strawberry field in Ventura County, California, where a new groundwater market could be replicated in other agricultural areas of the state. Anne Cusack/Los Angeles Times via Getty Images

A “USE-IT-OR-LOSE-IT” SYSTEM of water allocation has historically required growers in California to irrigate their land or lose their water rights, whether market forces compelled them to grow crops or not.

Now, in a significant breakthrough for the state’s water economy, a community of farmers near Ventura are about to join a new groundwater market. The buying and trading system, expected to begin by July 1, will allow farmers under the purview of the Fox Canyon Groundwater Management Agency to fallow their own land and sell groundwater to other users willing to pay more than their crop sales would generate. This small-scale water market has been in planning stages for more than a year and is being launched as a pilot project that could eventually serve as a model for the rest of California.

Organization

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Most Popular

1

California Limits Daily Personal Water Use to 55 Gallons – Kind Of

The state’s new per capita limit on indoor water use is groundbreaking, but there is no practical way to enforce it. Rather, it is intended to inspire more conservation and guide larger efforts by water utilities. [June 20, 2018](#)

2

Ancient River Could Flow Again in Tucson, Thanks to Recycled Wastewater

[June 18, 2018](#)

3

Efforts to Regulate California’s Cannabis Capital Spark Legal Fight

[June 25, 2018](#)

Matthew Fienup, executive director of the California Lutheran University's [Center for Economic Research and Forecasting](#), has worked with the Fox Canyon agency, local growers and [the Nature Conservancy](#) to help design and launch the program. He said the new system creates a powerful incentive for the region's growers, who produce strawberries, lemons, celery and avocados, among other crops, to conserve water.

“If all you're allowed to do with your water is turn it into an agricultural product, there is an incentive to use all of it, and you end up with a race to the bottom of the aquifer,” Fienup said.

The new groundwater market not only limits each farmer to a specific water allocation but may actually reward them for not using it and instead allowing another grower to buy it. The market comes at the same time that California is working to implement the [Sustainable Groundwater Management Act](#). That law, passed in 2014, requires that Groundwater Sustainability Plans be created to curb the overdrafting of aquifers.

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A groundwater well in Ventura County, California, that's part of a new groundwater market. (Matthew Fienup)

In the Fox Canyon area, where some groundwater basins are considered critically overdrafted, the regulations could eventually result in 40 percent reductions in pumping allowances, according to E.J. Remson, a Ventura-based senior program manager for the Nature Conservancy. Such cuts could mean scaled-back farm production and reduced revenue – and that’s where the market will come in. It will allow for quick and easy transactions that will offer farmers the chance to sell one asset – water – if growing another one – fruits and vegetables – doesn’t pencil out.

In fact, the Sustainable Groundwater Management Act could potentially put growers in some areas out of business by imposing “existential financial stress” upon them, Fienup said.

“They’re afraid agriculture can’t exist with those kinds of reductions.

Confronted with such serious cuts, the agricultural community decided that a water market would give them the flexibility they would need to remain in business.”

The wide range of crops grown in California makes it a prime place for successful water markets, explained Ellen Hanak, director of the Public Policy Institute of California’s Water Policy Center. That, she said, is because farmers who are growing a crop of relatively low value “would be paid handsomely” for their water as growers with more valuable crops – like, say, avocados or almonds – purchase the right to pump more water.

“Everyone is better off in the end,” the PPIC’s Hanak said. She added that in regions like the Midwest, with sprawling grain monocultures, the economic playing field is too level to drive movement of water from one grower to another. Under such conditions, water trading systems are less serviceable.



A farmer on his tractor northwest of Oxnard, in Ventura County, California. A new groundwater market has emerged in the area to allow farmers to buy and sell water resources. (Carol M. Highsmith/Buyenlarge/Getty Images)

Water trading is nothing new for California – farmers in the state have long traded surface water allocations in transactions that allow for water to be delivered over long distances, often from areas of plentiful supply to those with severely impacted supplies.

Although these trades may be very profitable for the parties involved, they are associated with a problematic scheme whereby the seller uses groundwater to replace the water he or she sells – a system of so-called groundwater transfers that ultimately increases the net volume of water being used. The Sustainable Groundwater Management Act will make these transfers more difficult to conduct, if not illegal, while encouraging groundwater trading within basins.

Water is also purchased for environmental uses. According to research by the PPIC, more than 5 million acre-feet of California water was acquired via trading from 1982 to 2014 to support environmental needs, including replenishing depleted wetlands and rivers.

As of mid-June, 86 wells were registered under the new Fox Canyon groundwater market, with each well newly fitted with electronic meters to prevent farmers from pumping more than they are allowed. The growers in the affected basins use about 62,000 acre-feet of water, with individual allocations based on historical use, according to Remson. This environmental organization has been closely involved in developing the new water market. Last week, Remson personally assisted farmers who were installing their electronic well meters. He said the Nature Conservancy has a vested interest in helping farmers stay in business, since that will ensure their land is not converted into suburban developments.

“We’ve spent a lot of money and time trying to save and restore the Santa Clara River, which runs across the Fox Canyon area,” he said. He noted that permeable agricultural land allows rainfall and runoff to seep into the earth, where it helps maintain waterways and marshes. Asphalt surfaces, on the other hand, prevent water from entering the ground and divert it elsewhere.

“So, it turns out agriculture is a great neighbor to wetlands and

streams,” Remson added. “The last thing we want is the new groundwater regulations to cause this area to become developed.”

Fienup said the tamper-proof well meters, which electronically record and aggregate pumping data, will be essential to sustaining an effective water market free of unscrupulous overpumping. In addition, at least two other elements are critical, he said – grower participation in designing the trading system and stiff regulatory oversight.

“There needs to be enough regulatory pressure that farmers take seriously the prospect that cuts [to their allocations] are coming,” he said. In other words, if farmers believe that their own use of groundwater will never, in fact, be curtailed, they will have no need to buy water from neighbors.

Such enforcement of the laws created by the Groundwater Sustainability Plans required by the Sustainable Groundwater Management Act will come directly from local authorities. State officials, Fienup said, will theoretically provide close oversight, and mandatory usage cuts, he added, will be imposed over the next 20 years.

“As that happens, trading will increase,” he said.

Hanak expects regions with severe groundwater deficits to launch their own groundwater markets in the near future. She sees the southern San Joaquin Valley, the Central Coast region and the area around Paso Robles as likely candidates for groundwater markets modeled, at least loosely, on that of the Fox Canyon area. Even areas where aquifers are robust but which have impacted surface water resources – like the Russian River basin – could benefit from water markets to even out imbalances in distribution.

While the Sustainable Groundwater Management Act will probably eventually reduce California’s total irrigated acreage, Hanak said benefits will outweigh the sacrifices.

“Groundwater markets make water flow toward the most valuable uses, which is good for everyone,” she said. ■

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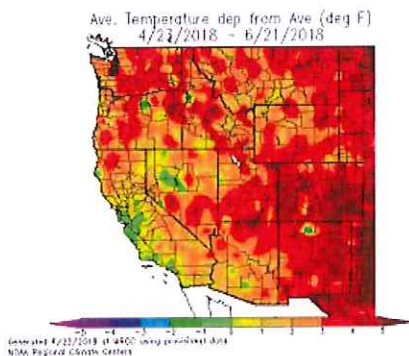
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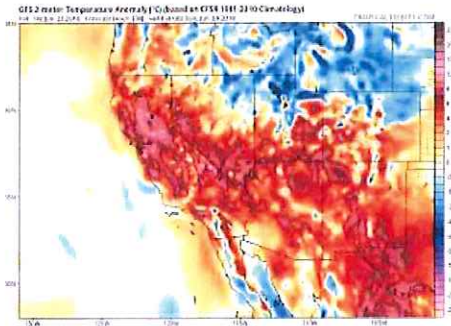
A quiet spring and start to summer across California



Coastal California has experienced comfortably near-average temperatures in recent months, but virtually everywhere else in the entire American West has been much warmer than average (including the California interior). (WRCC)

After a long stretch of tumultuous weather during much of 2017 and early 2018—ranging from record rainfall, continuing drought in the south, all-time record heat, and devastating wildfires (followed by equally devastating debris flows)—a relatively quiet spring and start to summer in California has offered a welcome reprieve. Temperatures have been pretty darn close to long-term averages in California's most densely populated coastal areas, though much of the California interior has been continuing to run well above average. Spring precipitation across northern California was near or slightly below average, though unfortunately well below average in southern California (something that has [become a bit of a trend](#) in recent decades, as I discussed [in a recent blog post](#)). California's uniquely chilly early summer coastal climate has been on full display in recent weeks: near-shore upwelling has been keeping coastal ocean temperatures in the low 50s off of the Bay Area, driving a robust marine layer. Further south across the the California Bight, SSTs are of course much warmer, but persistent "June Gloom" coastal cloudiness has been the rule. There have not yet been any searing heatwaves this season in California, though it is presently quite hot across inland desert and valley regions. All in all: conditions over the past few weeks have been pretty unremarkable—which is not at all unusual for this time of year.

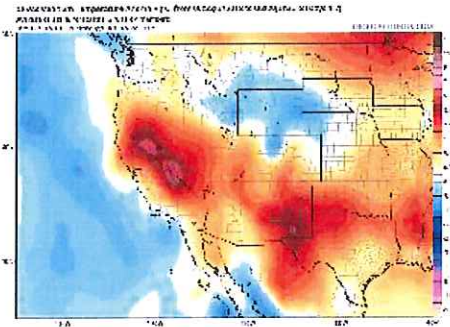
Quick weekend heatwave & fire weather concerns



Well above average temperatures are expected this weekend across much of California. (NCEP via tropicaltidbits.com)

This weekend will likely be the warmest of the season so far in many areas, especially across NorCal and most inland portions of SoCal (the coastal plain of SoCal will mostly likely escape the heat this time, with things becoming merely “comfortably warm”). Triple-digit heat will be widespread in the usual hotspots, and dry/gusty winds in the hills will lead to elevated fire weather concerns. This does not appear to be an extreme wind event by any means, but vegetation is now dry enough that winds will carry a fire quite quickly. Fortunately, it does appear that this weekend heatwave will be pretty short-lived, with temperature cooling back down to near average for much of next week (and fog may once again return to the immediate coastline).

A look ahead



Conditions are expected to warm considerably across California heading toward mid-July. (NCEP via tropicaltidbits.com)

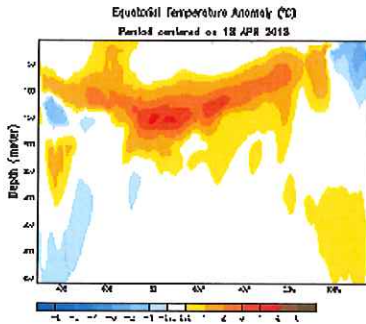
Mid June is typically when the long-range weather models start hinting at slightly more interesting California weather in the extended range, and this week is no exception. Several major East Pacific hurricanes have already occurred this season, though their remnant circulation and moisture have been deflected both to the east and west of California so far. There are currently hints that a new tropical system or two may develop west of Mexico about 7-10 days from now, and large-scale flow may be somewhat favorable for remnant moisture to take a closer approach. That's still speculative at this point, and not too unusual in the week two outlook. But it's something to keep an eye on beyond the recurring morning stratus!

Looking even further ahead using some of the newer sub-seasonal forecast models, there is pretty strong consensus that our relatively mild start to summer will not persist through the second half. While the next 2 weeks still look relatively cool (this weekend excepted), the multi-model ensemble suggests a high likelihood of well above average temperatures during July, August, and September. Part of this arises from the expectation that SSTs will rise across the entire eastern Pacific later this summer as an El Niño event develops (see below), but there are also hints that the northwestern flank of the 4-Corners high may be stronger and extend farther westward than usual beginning by mid-July.

What about El Niño?

There have been rumblings about an incipient El Niño event in the Pacific for some weeks. But now that we're emerging from the so-called "[Spring Predictability Barrier](#)," those signs are still quite prominent. In fact, virtually all coupled ocean-atmosphere seasonal models are at this point suggesting a high likelihood of El Niño conditions by autumn—and even a decent chance of a substantial event. Recent observations support this forecast—slight warming has begun at the surface of the ocean, but a much more impressive pool of

anomalous warmth exists at depth across the eastern equatorial Pacific that is expected to begin surfacing in the coming weeks. This developing event may be partly to blame for model predictions of very warm conditions in California later this summer, as a coastal Kelvin wave acts to warm near-shore ocean temperatures. It's still too early to say what implications there might be for the coming winter, although it does appear that there may be a chance of above-average East Pacific hurricane activity later this summer as the ocean warms. Stay tuned!



Very warm water is pooling at depth in the eastern Pacific. (NOAA/CPC)

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