

**Delta-Mendota Subbasin
Coordination – Technical Working Group
GDE Subgroup Meeting**

**Wednesday, September 19, 2018, 10:00 AM
842 6th Street, Los Banos, CA**

AGENDA

1. Introductions
2. Review of Meeting Goals – Completion of GDE Mapping in Delta-Mendota Subbasin
3. Review of GDE Mapping to Date
 - Northern & Central DM Region Mapping
 - Grassland Mapping
 - Managed Wetlands
 - Perched / Shallow Groundwater
4. Definition of GDEs relative to Gaining/Losing Streams
5. Discussion of TNC GDE Checklist
6. Next Steps
 - Responsible Party for Compiled Subbasin-wide GDE Map

GDE Subgroup analysis Workshop

Name

Organization

ANDREW FRANCIS

Andrew Garcia

Zachary J. Roy

Lestie Dumas

Kait Palys

Keasha Blew

John Beam

Samuel Martin

Chris Rogers

Kyle Hill

Rick Egger (phone)

Ellen Wehr (phone)

Rick Orter

CLAUDE HOWARD

Christina Guzman

USCE, Fresno Co., FWG

SLDMWA

SLDMWA

Woodard & Curran

P&P

P&P

GWD-

CCID / SNEC

CCID

CCID

P&P

Grasslands

AGSA

SLDMWA

Fresno County

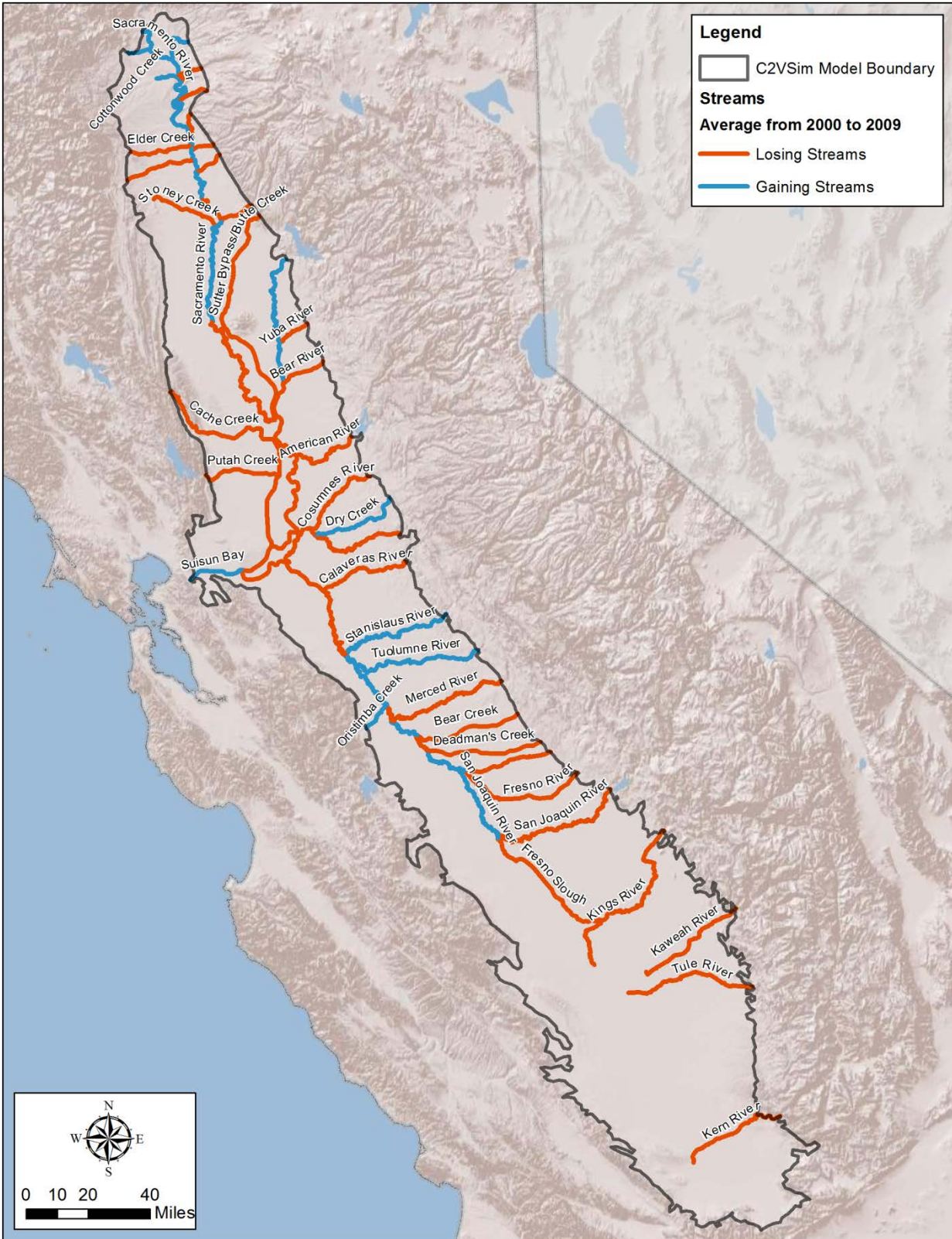


Figure 49 - Average Stream Gain Loss - 2000's



Considering Nature under SGMA | A Checklist for GSPs

This checklist is being provided as guidance to help ensure that groundwater sustainability plans (GSPs) adequately address nature as required under the Sustainable Groundwater Management Act. The Nature Conservancy (TNC) believes the following elements are foundational for the first round of GSP submittals (2020/2022).

Environmental Representation

SGMA requires that groundwater sustainability agencies (GSAs) consider the interests of all beneficial uses and users of groundwater. To meet this requirement, we recommend actively engaging environmental stakeholders by including environmental representation on the GSA board, technical advisory group, or working groups. Environmental representatives include local staff from state and federal resource agencies, nonprofit organizations and other environmental interests. By engaging these stakeholders, GSAs will benefit from access to additional data and resources, as well as a more robust and inclusive GSP.

Basin GDE and ISW Maps

SGMA requires that groundwater dependent ecosystems (GDEs) and interconnected surface waters (ISWs) be identified in the GSP. We recommend using the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) provided online (<https://gis.water.ca.gov/app/NCDatasetViewer/>) by the Department of Water Resources (DWR) as a starting point for the GDE map. The NC Dataset was developed through a collaboration between DWR, the Department of Fish and Wildlife and TNC.

Potential Effects on Environmental Beneficial Users

SGMA requires that potential effects on GDEs and environmental surface water users be described when defining undesirable results. Because effects to plants and animals are difficult and sometimes impossible to reverse, we recommend erring on the side of caution to preserve sufficient groundwater conditions to sustain GDEs and ISWs.

Biological and Hydrological Monitoring

If sufficient hydrological and biological data in and around GDEs is not available in time for the 2020/2022 plan, data gaps should be identified along with actions to reconcile the gaps in the monitoring network.

ABOUT US

The Nature Conservancy is a science-based nonprofit organization whose mission is *to conserve the lands and water on which all life depends*. To support successful SGMA implementation that meets the future groundwater needs of people, the economy, and the environment, TNC has developed tools and resources (<https://groundwaterresourcehub.org/>) intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Environmental User Checklist

The Nature Conservancy is neither dispensing legal advice nor warranting any outcome that could result from the use of this checklist. Following this checklist does not guarantee approval of a GSP or compliance with SGMA, both of which will be determined by DWR and the State Water Resources Control Board.

GSP Plan Element*		GDE Inclusion in GSPs: Identification and Consideration Elements	Check Box
Admin Info	2.1.5 Notice & Communication 23 CCR §354.10	Description of the types of environmental beneficial uses of groundwater that exist within GDEs and a description of how environmental stakeholders were engaged throughout the development of the GSP.	
	Basin Setting	Interconnected surface waters:	
Interconnected surface water maps for the basin with gaining and losing reaches defined (included as a figure in GSP & submitted as a shapefile on SGMA portal).			
Estimates of current and historical surface water depletions for interconnected surface waters quantified and described by reach, season, and water year type.			
Basin GDE map included (as figure in text & submitted as a shapefile on SGMA Portal).			
If NC Dataset was used:		Basin GDE map denotes which polygons were kept, removed, and added from NC Dataset (Worksheet 1, can be attached in GSP section 6.0).	
		The basin's GDE shapefile, which is submitted via the SGMA Portal, includes two new fields in its attribute table denoting: 1) which polygons were kept/removed/added, and 2) the change reason (e.g., why polygons were removed).	
		GDEs polygons are consolidated into larger units and named for easier identification throughout GSP.	
If NC Dataset was not used:		Description of why NC dataset was not used, and how an alternative dataset and/or mapping approach used is best available information.	
Description of GDEs included:			
Historical and current groundwater conditions described in each GDE unit.			
Ecological condition described in each GDE unit.			
Each GDE unit has been characterized as having high, moderate, or low ecological value.			
Inventory of species, habitats, and protected lands for each GDE unit with ecological importance (Worksheet 2, can be attached in GSP section 6.0).			
2.2.3 Water Budget 23 CCR §354.18	Groundwater inputs and outputs (e.g., evapotranspiration) of native vegetation and managed wetlands are included in the basin's historical and current water budget.		
	Potential impacts to groundwater conditions due to land use changes, climate change, and population growth to GDEs and aquatic ecosystems are considered in the projected water budget.		

Sustainable Management Criteria	3.1 Sustainability Goal <i>23 CCR §354.24</i>	Environmental stakeholders/representatives were consulted.			
		Sustainability goal mentions GDEs or species and habitats that are of particular concern or interest.			
		Sustainability goal mentions whether the intention is to address pre-SGMA impacts, maintain or improve conditions within GDEs or species and habitats that are of particular concern or interest.			
	3.2 Measurable Objectives <i>23 CCR §354.30</i>	Description of how GDEs were considered and whether the measurable objectives and interim milestones will help achieve the sustainability goal as it pertains to the environment.			
	3.3 Minimum Thresholds <i>23 CCR §354.28</i>	Description of how GDEs and environmental uses of surface water were considered when setting minimum thresholds for relevant sustainability indicators:			
		Will adverse impacts to GDEs and/or aquatic ecosystems dependent on interconnected surface waters (beneficial user of surface water) be avoided with the selected minimum thresholds?			
	3.4 Undesirable Results <i>23 CCR §354.26</i>	Are there any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs or aquatic ecosystems dependent on interconnected surface waters?			
		For GDEs, hydrological data are compiled and synthesized for each GDE unit:			
		If hydrological data <i>are available</i> within/nearby the GDE	Hydrological datasets are plotted and provided for each GDE unit (Worksheet 3, can be attached in GSP Section 6.0).		
			Baseline period in the hydrologic data is defined.		
			GDE unit is classified as having high, moderate, or low susceptibility to changes in groundwater.		
			Cause-and-effect relationships between groundwater changes and GDEs are explored.		
		If hydrological data <i>are not available</i> within/nearby the GDE	Data gaps/insufficiencies are described.		
			Plans to reconcile data gaps in the monitoring network are stated.		
		For GDEs, biological data are compiled and synthesized for each GDE unit:			
		Biological datasets are plotted and provided for each GDE unit.			
Data gaps/insufficiencies are described.					
Plans to reconcile data gaps in the monitoring network are stated.					
Description of potential effects on GDEs, land uses and property interests:					
Cause-and-effect relationships between GDE and groundwater conditions are described.					
Impacts to GDEs that are considered to be "significant and unreasonable" are described.					

		Known hydrological thresholds or triggers (e.g., instream flow criteria, groundwater depths, water quality parameters) for relevant species or ecological communities are reported.	
		Land uses include and consider recreational uses (e.g., fishing/hunting, hiking, boating).	
		Property interests include and consider privately and publicly protected conservation lands and opens spaces, including wildlife refuges, parks, and natural preserves.	
Sustainable Management Criteria	3.5 Monitoring Network <i>23 CCR §354.34</i>	Description of whether hydrological data are spatially and temporally sufficient to monitor groundwater conditions for each GDE unit.	
		Description of how hydrological data gaps and insufficiencies will be reconciled in the monitoring network.	
		Description of how impacts to GDEs and environmental surface water users, as detected by biological responses, will be monitored and which monitoring methods will be used in conjunction with hydrologic data to evaluate cause-and-effect relationships with groundwater conditions.	
Projects & Mgmt Actions	4.0. Projects & Mgmt Actions to Achieve Sustainability Goal <i>23 CCR §354.44</i>	Description of how GDEs will benefit from relevant project or management actions.	
		Description of how projects and management actions will be evaluated to assess whether adverse impacts to the GDE will be mitigated or prevented.	

* In reference to DWR's GSP annotated outline guidance document, available at:
https://water.ca.gov/legacy/Files/groundwater/sqm/pdfs/GD_GSP_Outline_Final_2016-12-23.pdf

**Delta-Mendota Subbasin
Technical Working Group Meeting
GDE Subgroup Meeting**

**Tuesday, September 19, 2018, 10:00 AM
842 6th Street, Los Banos, CA**

Meeting Minutes

Voluntary Technical Working Group Representatives in Attendance

Andrew Francis (LSCE)
Kait Palys (Provost & Pritchard)
Keasha Blew (Provost & Pritchard)
John Beam (Grassland WD)
Jarrett Martin (CCID/SJREC)
Chris Rogers (CCID)
Kyle Hill (CCID)
Rick Iger (Provost & Pritchard; by phone)
Ellen Wehr (Grassland WD; by phone)
Ric Ortega (Grassland WD)
Christina Guzman (Fresno County)

Authority Representatives Present

Andrew Garcia
Zachary Roy
Claire Howard

Others in Attendance

Leslie Dumas – Woodard & Curran

1. Introductions

Leslie Dumas/Woodard & Curran called the meeting to order at approximately 10:00 AM.

2. Review of Meeting Goals – Completion of GDE Mapping in Delta-Mendota Subbasin

The following meeting goals were reiterated at the beginning of the meeting:

- Finish GDE mapping
- Identify group/time to do losing/gaining reach mapping
- Review TNC draft spreadsheet

3. Review of GDE Mapping to Date

Zachary Roy/SLDMWA gave a quick update as to the status of the GDE mapping and presented the most recent Grassland GDE map. It was noted that ponds in the Grassland GSP area are maintained by CVP supply and the upland areas are rooted into the groundwater table; therefore the wetland/pond areas are not GDEs because, without CVP supply, the GDEs would not be there though the fringe areas around the managed wetlands may still be there but different plant species would be present. For the refuges and duck clubs (wetland footprint), the goal is to maintain these areas. Aerial and geospatial data of habitat mapping has been used to monitor the periphery of these areas to determine if there have been changes. Representatives from the SJREC GSP region stated that they do not want to impact these wetland areas, but they do not want to be required to maintain them. Within the SJREC GSP region, groundwater is about 2 to 15 feet below ground surface when irrigation occurs, but 65 feet below ground surface away from the river.

After additional discussion, the working group decided on the following methodology for identification of GDEs: (1) screen out areas with water levels \geq 30 feet below ground surface; (2) screen out seasonal managed wetlands and ponded areas; and (3) screen out areas where land use change has resulted in loss of habitat. In response to the question regarding how the habitats were identified, Zachary Roy/SLDMWA responded that the PlanetImagery database from 2015 was used for this screening process. Grasslands GSP group felt that they needed more time to ground-truth the GDE mapping; and the group agreed that all GDE mapping could be completed by the end of October.

Leslie Dumas/Woodard & Curran then asked if any of the GSP groups are planning to use management areas for managing GDEs and/or interconnected surface water. Grassland has not identified management areas specific to GDEs. SJREC intends to keep existing management areas and set different triggers for GDEs. Fresno County and Farmers WD have yet to determine if management areas will be identified for GDEs. The Northern & Central DM Region considering a management area along the San Joaquin River.

In discussing the definition of undesirable results for this criterion, most agreed that undesirable results demonstrate that you are not impacting the San Joaquin River and that an undesirable results from a change in groundwater use that demonstrates a new impact.

A target date for January was agreed upon for initial discussions of minimum thresholds and measurable objectives for surface water-groundwater interactions.

4. Definition of GDEs relative to Gaining/Losing Streams

It was agreed by those present that an Ad Hoc work group would be formed for discussion of gaining and losing reaches of the San Joaquin River and Fresno Slough with the following members: Rick Iger/P&P, Will Halligan/LSCE, Bobby Pierce/West Stanislaus ID, a representative from Tranquillity ID, Jarrett Martin/CCID, and Keasha Blew/P&P. Further detail regarding meeting date and time will be set at a later date.

5. Discussion of TNC GDE Checklist

The TNC GDE Checklist document was discussed by the Technical Work Group members present. A question was asked whether there were other types of environmental benefits besides sustaining GDEs through such efforts. There is no historic surface water depletion data available for interconnected surface waters within the Delta-Mendota Subbasin and these data are not needed. Currently, there is no budget or data available for ecological

condition, ecological valuation, and species/habitat/protected lands inventory. There are also no criteria for describing such ecological evaluations. A question was asked if there are any public sources available for such data.

Water budget evaluations in the projected water budget includes groundwater elevation and groundwater quality, which will aid in identifying potential future impacts to GDEs. A date of January 1, 2015 has been set as a baseline for sustainability goals to assess pre-SGMA impacts and will also be used to assess impacts to GDEs. Groundwater uses, such as agricultural, urban, and environmental, will be used to assess measurable objectives relative to GDEs. Presence of interconnected surface water will be used to set minimum thresholds and describe GDEs and environmental uses of surface water. A comment was made that undesirable results related to biological data gaps and potential effects on GDEs, land uses, and property interests are not regulated by SGMA or described under the GSP regulations. In general, all agreed that all habitat is good habitat and that significant changes to the habitat would be a minimum threshold (e.g., shrinking, degraded, struggling habitat regardless of the quality or type of that habitat), but that it could be useful to develop a basin-wide high-level list of potential special-status species that could potentially exist in the Subbasin. Keasha Blew and Kait Palys/Provost & Pritchard agreed to talk to their in-house biologist about potentially developing such a list.

6. Next Steps

- Finish ground-truthing of GDE maps by end of October
- Map depth to groundwater \geq 30 ft below ground surface
- Overlay and finalize GDE mapping by Thanksgiving
- Discuss first-cut of measurable objectives and minimum thresholds relative to surface water-groundwater interaction in January 2019
- Determine time for Ad Hoc work ground on gaining and losing streams
- Provost & Pritchard biological staff to provide a list of special status species in Delta-Mendota Subbasin