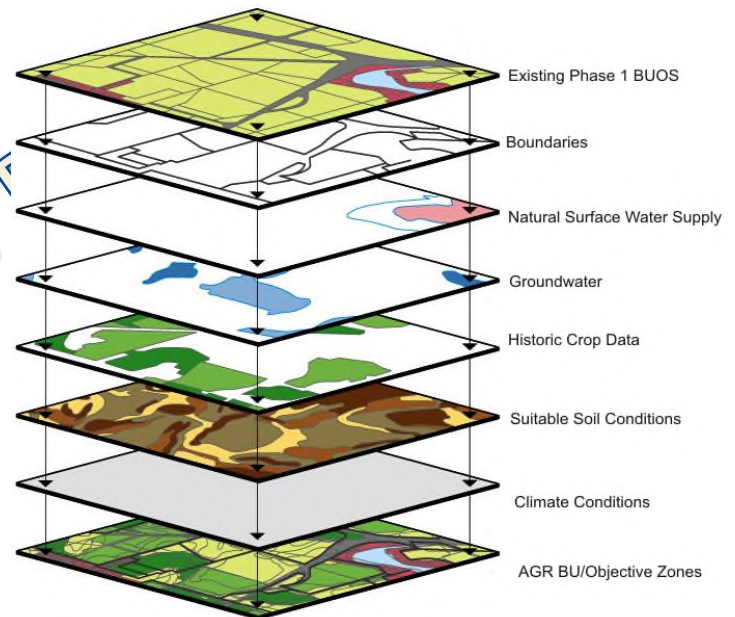


# Agricultural Water Quality Zone Mapping

## Concept

The protective level of salinity for Agriculture varies due to many factors within the Central Valley. The determination of the appropriate objective or standard to protect the Agricultural Beneficial Use (AGR) is done by the Regional Board based on many factors often with limited data related to on the ground physical conditions without a site specific objective. To reduce the generality and provide better information for the Regional Board and the Stakeholders to protect, but not over protect a system summarizing the constraints and needs for areas of the Central Valley would be highly useful to the Board and Stakeholders for both planning in CV-SALTS as well as permitting by the Regional Board.



## Purpose and Use

The primary purpose of the AGR Zone Map would be to identify primary constraints such as soils salinity and type groundwater and irrigation supply available. With this base what crops could “reasonably” be grown could be demonstrated and understood. Additionally, improved crop type information from CDFA, DWR, DPR and County Ag Commissioners could be aggregated to show the “actual significant crops grown” (based on % acreage) which could be used to lead to the levels needed to protect those crops rather than the most sensitive crop or the general assumption of 700 EC being protective of all crops in all locations. These two coverages could be further combined and utilized with CV-SALTS Executive Committee “Reasonable Crop Yield Protection” percentages to determine a reasonable water quality objective that is more appropriate. This would not prevent additional information or study providing better data and a Site Specific Objective being performed.

Additionally, because crop yield is an economic issue and crop value is also an economic issue, the committee discussed reviewing these, this platform would allow these analyses to be done. The use of these coverages and data fit well with the existing BUOS framework completed in prior efforts and also would provide information that may be used in the Conceptual Model and CV-SNMP.

## GIS Layers and Data Sources

Additional information on the data sources and layers that may be used for this analysis are shown below:

### *Existing BUOS Layers/Objectives*

Incorporate the Geodatabase layers developed and reviewed in the Phase 1 BUOS which contains many base layers and beneficial use and objectives from the existing basin plan as well as some information on problem areas.

### *Boundaries, political, watershed drainage, groundwater basins or others*

Add to those already completed in the BUOS Phase 1, any political, watershed, irrigation or water district, groundwater, IRWM group or other boundaries which are needed or appropriate for water quality zoning for AGR.

### *Natural Surface Water Supply*

What is the surface water supply available to the area? It is critical to have the water that would be available with and without the CVP and SWP or other regional water transfers. These coverages may take some development and may require some assumptions if data is not available. This is looking for high level information, not every farm served by every district.

### *Groundwater*

Groundwater quality and quantity available for agriculture in the area summarized to the basin or sub-basin level. If known, long term trends for the groundwater quality for salinity or other limits for ARG use would be helpful. Assumptions may need to be made where data is not available.

### *Historical Crop Data*

Historic and recent data on crops grown, production, and yield and crop value would be ideal for the coverages in this section. Assumptions may need to be made where data is not available.

### *Suitable Soil Conditions*

Soil type and conditions that would limit the crops that can be grown are needed, sodic soils, soil types and the agronomic soil conditions which naturally limit crop production and yield with normal irrigation and other assumptions as needed.

### *Climate Conditions*

Climate conditions are needed including temporal rainfall, temperature and etc. that would indicate the crops that would thrive and as these affect water requirements, salinity sensitivities, etc.

## Efforts Needed

Because this is a concept description if the Executive Committee believes this is a work product that may be of significant use to CV-SALTS, its stakeholders and the Regional Board detail will need to be developed by those with more detailed information on the GIS and other data sources that would be

useful or needed. This effort to more fully develop the concept and an attendant scope of work will be needed as soon as possible.

### **Duration and Cost**

It is difficult to estimate the timeline needed and costs to assign to this effort, however significant work was achieved in the 6 months and \$50,000 that was used for the BUOS Phase 1. With this as a model this could be a reasonable initial estimate for this task.

### **Committee Review**

If there is interest in the study and product, the Executive Committee should recommend the Technical Committee Review and further develop concept and scope. There is considerable overlap with other ongoing efforts such as the conceptual model and Knowledge Gained Subcommittee efforts. These need to be integrated and decisions made as to the most appropriate place to gather and integrate this work. The committee should forward a preliminary scope and information on data availability with an updated cost and schedule to the Executive Committee for approval. Because this effort involves information from CV-SALTS Partners, DWR, Reclamation, CDFA etc., coordination with them should be completed.

### **Final Scope, Selection and Contracting**

After completion of these steps and reviews the Technical Committee should prepare a final scope for use in selecting from among qualified contractors in the existing SOQ or if none, additional solicitation.