

# DRAFT Workshop Issues Feedback

April 26, 2010 Woodland, April 27, 2010 Tulare

---

## Question 1. While all water use adds salt, how do salts and nitrates impact your community or industry today? How could salts and nitrates impact you in the future?

1. Agriculture
  - a. Limits what crops can be grown W-1, W-4, T-2 **AGR**
  - b. Fertilizer an issue but Nitrate is a benefit to Ag W-2, T-4
  - c. Special concern about boron in tree crops, sodium and chloride in other W-1, W-4 **AGR**
  - d. Salt accumulation in perched water- impacts crop production. Pre-existing history Tulare Lake "A" clay. Today and in future T-3 **AGR**
  - e. Regulatory burden Permit compliance issue W-1, W-2
  - f. Growers discharging tailwater in canals and streams T-2 **impacted use not specified**
  - g. Source Water Supply an issue W-2 **MUN/AGR**
  - h. Dairy has issues with CAFO regulations that have nitrate and phosphorus standards T-4
    - i. Existing conditions exceed standards T-4
    - ii. Availability of nutrients an issue especially phosphorus T-4
    - iii. Economic impact are issue T-4
    - iv. Technical analysis is needed T-4
  - i. Evaporation Basins should be recognized as BMPs T-4
  - j. Digging deeper wells equals higher EC values and requires blending to use for ag supply T-1 **AGR**
  - k. Difference between seasonal use vs 24 hour use T-1
2. Cities and communities
  - a. Utilities rate increased to meet targets W-1, W-3
  - b. Today elevated nitrate in wells GW: Foothills and various Areas T-3, T-2 **MUN**
  - c. Nitrates limiting the use of wells, Wells out of production \$1.5-\$3.0 million per well W-1 W-2, W-4 **MUN**
  - d. Nitrate- health problem and groundwater contamination in small communities T-2, W-3 **MUN**
  - e. Search for cleaner water sources W-3 **impacted use not specified**
  - f. Community water treatment need desalination and brine line W-4
  - g. Source water treatment for industries raise costs to remove salts W-3, W-1 **IND**
  - h. Different interests are impacted very differently W-2 impacted use not specified
  - i. Conservation – higher TDS W-3
  - j. Inhibits water reclamation and recharge W-1, W-4 **MUN, AGR**
  - k. Political issues in the communities ability to pay W-2
  - l. Community concern about landfills and local salt impacts when salts are disposed of in landfills W-4
  - m. Automatic water softeners contribute to salt levels T-2 **impacted use not specified**
  - n. Public misconception concerning treatment of nitrates in their water T-2
  - o. Integration with IRWMP and Basin Management Plans T-1
3. Environment

- a. Wildlife sites at the ends of watersheds collect salts T-2 (*unsure what AH-I is supposed to mean but the comment appears to refer to wildlife sites as contributing to salt problems, not necessarily as an impacted use.*)
- b. Wetlands, nitrate starved wetlands/grasslands T-2
- 4. Wastewater treatment plants
  - a. Costly Capital improvements for small and questionable improvements in water W-1, W-2, W-4
  - b. Large financial burden to community W-1, W-4
  - c. Salt addition in water use creates issue, meeting current regulations Discharge limit problems T-3 W-4
  - d. Consideration for flexibility T-1
  - e. No one size fits all T-1
- 5. Industry
  - a. Costs of treating supply water for processes W-1 **PRO**
  - b. Costs of treating for salt and disposal of salt and wastewater W-1 if the comment is about treating prior to use, then potentially **AGR, MUN, PRO**
  - c. Discharge limits are a problem W-4
  - d. Higher cost to remove salts W-3
  - e. Industrial wastewater and lye peeling equals EC T-1
  - f. Needs robust data set for BMP's T-1
- 6. Future impacts
  - a. Ability to recycle water T-3 **MUN/AGR**
  - b. Conflict between salt management and recycle T-3 presumed MUN
  - c. If recycle then it can cause issues with STDS T-3
  - d. Beneficial uses? T-3 impacted use not specified
  - e. Impacts concerned with crop selection T-2 **AGR**
  - f. Higher treatment cost with higher concentrations T-2 **MUN, PRO, AGR**
  - g. Greater green house gases T-2
  - h. Higher costs to comply T-1
  - i. Population increases compounding salts issues and gains T-1
  - j. Individual citizen costs (new WWTPs etc.) T-1
  - k. Current surface salts (unusable land), becoming issue after water applied (future) T-1

## Question 2. Are the current regulations a problem for your community or industry? If so, how?

- 1. YES W-1
- 2. Cities and Communities
  - a. 500 above source virtually impossible to meet T-3
  - b. Salt and nitrate objectives require more treatment W-3
  - c. Drinking water exceeds the wastewater discharge standard in communities W-1 **MUN**
  - d. Conservation strategies increase issues (i.e. reduced dilution) T-3 **impacted use not specified**
  - e. Financial Challenge, cost to build and treat water exceeds communities ability to pay W-1, W-4
  - f. RO plan cost \$60M for small community population W-1
  - g. Regulations impact the Economic Environment and therefore the rest of the environment W-4, T-3
  - h. Existing regulations are not being enforced, how will new ones be enforced W-4
  - i. Current regulation limits: some aren't even measured (i.e.) surface water discharge chlorine T-3 potential **MUN**
  - j. Problem with anti-deg policy. One molecule rule. Doesn't look at big picture T-3
  - k. Different interests are impacted very differently W-2

- l. Current regulation treats all areas same, prevents effective treatment and reuse, in appropriate application of E.C. limits T-3
  - m. Using recycled waters is hard because you have to convince farmers of benefits even though it would include additional monitoring (monitoring wells) and nutrient managing T-2
  - n. Source waters already not meeting objectives downstream users being held to those objectives, bearing the monitoring cost T-2 **MUN, AGR**
  - o. Is there any way to look at standards that may be weight averaged for different time scales? Ages of water (moving average) T-1
  - p. Political issues in the communities ability to pay W-2
3. Ag and Industry
- a. Conflicts among water regulations and water and air regulations W-1
  - b. Where should Salt Go, regulations say you have to take out, but it is not allowed anywhere W-1
  - c. Ties the hands with regulatory conflicts W-1
  - d. Dairy industry has issues T-4
    - i. Lots of monitoring and resulting high costs T-4
    - ii. Management plan is needed T-4
  - e. Farmers getting a lot of pressure – Irrigated Lands program-salts etc. T-1
  - f. Sampling/regulations are costly, don't want to see that happen to every farmer T-1
  - g. Need flexibility on regulations meeting beneficial uses, for the discharge area (ie. salt sensitive crops) and also ephemeral streams. T-2 not directed at a use per se, but at how use protections are implemented
  - h. Reduced water supply will lead to higher concentrations on tailwater T-2
  - i. Ag can change salt loads it is different for communities T-1
  - j. All practices add to water quality problems, issue with anti-deg T-1
4. All Users
- a. Lack of ocean discharge – a constraint W-3
    - i. Problem for water softener industry
    - ii. Ag chem. and food processors
    - iii. POTW
    - iv. Industry departing Ca
  - b. Regulatory conflicts with requirements W-1, W-4
    - i. State W-1, W-2
    - ii. Federal W-1
    - iii. Local W-1
    - iv. Surface water sources and groundwater protection is a confusing scheme W-2
    - v. Environmental impacts and solutions are competing W-4
    - vi. Need Regulations that are Reasonable, practical and feasible W-4
    - vii. No flexibility of standards-(ie. Local issues or economics feasibility) T-3
  - c. Point sources heavily regulated but they are only a small part of the salt W-1
  - d. Managing discharge from managed wetlands when source levels are exceeding T-2
  - e. BMPs required by the Waterboards may not work W-1
  - f. Considerations for amount of water (drought) T-1
  - g. Difficult to get water data. Land owners sometimes don't agree with testing. T-1
  - h. Companies pumping brine into groundwater. Water Board not regulating properly T-1 **IND, MUN, AGR, GWR**
  - i. State of Flux, Study takes time so you have guess at direction W-1
- Question 3. How do you think salt should be managed?

## Beneficial Uses

The April workshops revealed that the public perceives that their use of water is impacted by salinity in many areas. Not surprisingly, agricultural irrigation use (**AGR**) was mentioned most frequently in both Woodland and Tulare, and drinking water (**MUN**) was mentioned almost as frequently. Industrial processing use (**PRO**) was mentioned, and there was one comment which might have been intended to express concern over wildlife use (**WILD**) although the comment could also be interpreted as a concern over the impact of salinity flushed from wildlife refuges on unspecified downstream uses. Other use designations--IND, NAV, POW, REC-1, REC-2, GWR, NAV, POW, REC-1/REC-2, COMM, AQUA, WARM, COLD, BIOL, RARE, MIGR, SPWN, and SHELL—were not mentioned.

FRSH, or “uses of water for natural or artificial maintenance of surface water quantity or quality” was not cited specifically, and this use designation is generally used less often than more precise designations such as MUN or AGR, but some comments could be inferred as also being applicable to impacts to FRSH use.

**Municipal and Domestic Supply (MUN)** - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

**Agricultural Supply (AGR)** - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing.

**Industrial Service Supply (IND)** - Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

**Industrial Process Supply (PRO)** - Uses of water for industrial activities that depend primarily on water quality.

**Ground Water Recharge (GWR)** - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

**Freshwater Replenishment (FRSH)** - Uses of water for natural or artificial maintenance of surface water quantity or quality.

**Navigation (NAV)** - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

**Hydropower Generation (POW)** - Uses of water for hydropower generation.

**Water Contact Recreation (REC-1)** - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

**Non-contact Water Recreation (REC-2)** - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing or aesthetic enjoyment in conjunction with the above activities.

**Commercial and Sport Fishing (COMM)** - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

**Aquaculture (AQUA)** - Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

**Warm Freshwater Habitat (WARM)** - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

**Cold Freshwater Habitat (COLD)** - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

**Estuarine Habitat (EST)** - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

**Wildlife Habitat (WILD)** - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

#### **Preservation of Biological Habitats of Special**

**Significance (BIOL)** - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

#### **Rare, Threatened, or Endangered Species**

**(RARE)** - Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

**Migration of Aquatic Organisms (MIGR)** – Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

#### **Spawning, Reproduction, and/or Early**

**Development (SPWN)** - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

**Shellfish Harvesting (SHELL)** - Uses of water that support habitats suitable for the collection of filterfeeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

*Definitions from the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4<sup>th</sup> ed.*

## **Workshop Feedback on Question 3 from Co-Chair Melilli**

I went through and somewhat determined what the key points in group from Tulare and Woodland for Question No. 3, How do you think salt should be managed, What factors should be considered?

### **Cities/Communities:**

Basic issue for everyone to consider, how to determine the real impacts vs. modeling to set limits, and use pre-existing geology of local areas to do so. We should use resources where they provide the greatest benefit to offset salt impacts to make it more economic.

### **Public:**

Consider the impacts for long and short effects on water supplies, to downstream users of the same water supply, does drought and other impacts cause on supplies of water in the Central Valley.

### **Industry:**

Education and outreach is important to let the public know they are addressing the issue of salt, what bmp's they are using to offset salt production, and talk about local and regional implementation.

### **Conservation:**

What to do about brine discharge and where to take it or use it, and drainage canals to transport it away to certain areas or the ocean.

### **Agriculture:**

How to sustain to crop production, build more dams to lower salinity by using drains and evaporation basins to flush out salts.

### **Management Recommendation:**

Identify the problem clearly and effectively to bring people together to address the issues, set what the water quality objectives should be first in local and regional watershed areas, work with Regional Board to help set the limits, be adaptive to change to new technology to help with salt removal and displacement, look at salt with other nutrients as trace minerals, and look at source of salt build up differently from businesses, industries, and the public.

## CV-SALTS Public Workshop, Tulare, California, April 27, 2010

### Stakeholder Contributed Notes from Group 4

#### Question 1:

- High nitrates as it impacts drinking water
  - Elevated levels above MCL w/ increasing trends
    - Isolated pockets with high levels – hard to predict where and why
- Salt accumulation in perched groundwater
  - Impact on crop production
    - Preexisting/naturally occurring in historic Tulare Lake region A- (clay) layer
- Even through meeting regulatory requirements for discharges with advance treatment technologies, it is difficult to meet downstream water quality objectives
  - All uses add salt; creates issues meeting current regulations
- Future: Impacts ability to recycle water
  - Conflict between objectives for use of recycled water (policy) and meeting water quality goal regulations.
    - E.g. water available for recycling but not permitted to use it based on regulations
    - Dilute it with other supplies then wouldn't be able to discharge because of water quality regulations

#### Question 2:

- Standards are difficult to make water recycling possible
- Water efficiency/conservation standards make it more difficult to meet concentration standards
- Any use of water makes it more difficult to meet standards because uses add salts
  - Efficiency practices make it more difficult
  - Advanced treatment is costly and would have economic impacts
- Current regulations based on beneficial uses where discharges may actually improve water quality conditions
  - Treat geographic regions the same
  - Prevents effective treatment and reuse
  - Inappropriate application of EC limit in some areas
  - Difficulty in measure for water quality criteria compliance (i.e. Cl<sup>-</sup>)
  - Standards are not flexible to take into account local issues, economics, feasibility
  - Anti-degradation statute (6816) doesn't allow/provide metric for distinguishing very small versus bigger impacts
    - Doesn't look at big picture (one molecule rule)

#### Question 3:

- Should be managed by geographic region
  - By discharge point
  - By source
- Allow for local entities to manage local impacts (i.e. drainage districts, cities)
- Look at real beneficial uses

- Refine beneficial use designations and applications
- Increase consideration of economic effects
  - Practical economics of compliance
  - Practical economics of designate beneficial uses
- Improve availability and management of data (quantity, quality, accessibility, studies)
- Better defined economic considerations to achieve beneficial uses and designations
- Identify specific areas of issues (i.e. impaired or perched water)
- Better define hydrogeologic and hydrologic conditions

Question 4:

- Yes – should be considered differently; discharge limits should take local conditions into consideration
- No – you have to address receiving waters (and mixing zones)
- Yes – management different at different sources
- Yes/No – flexibility is important

Question 5: Different

- Nitrate
  - Ability for uptake
  - Non-conservative, denitrification
  - Human health issue
- Salt
  - Conservative
  - Agriculture issue

Question 7:

Much smaller than currently being looked at based on hydrologic and hydrogeologic conditions (i.e. drainage districts)

Question 9: Yes – most definitely



**CV-SALTS - PEOC Spring 2010 Workshop Issues Feedback**  
**Industry Perspective Summary**

1. Utilities Rate Increases
2. Need for Managed Brine Disposal Sites
3. Some Industrial Users affected by source water quality: The lower the quality, the higher the cost
4. The more you conserve water, the higher TDS can be concentrated
5. Increasing Wastewater discharge regulations increase costs and discourage industrial development
6. BMP's can be a useful tool if done in a measured, reasonable and fair manner
7. Need to balance "Economic Environment" vs." Natural Environment"
8. Conflicting Regulation is problematic
9. Inflexible Standards and Enforcement is problematic
10. Point Sources are heavily regulated but are only a small part of the problem