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## Central Valley Regional Water Quality Control Board

# Evaluation of Ammonia Water Quality Objectives for the Protection of Aquatic Life in Central Valley of California

## Fact Sheet

### 1. Who are the Water Boards?

The State Water Resources Control Board and the nine Regional Water Quality Control Boards are the state agencies with primary responsibility for coordination and control of water quality. More information and a map of Water Board locations may be found at:  
[http://www.waterboards.ca.gov/waterboards\\_map.shtml](http://www.waterboards.ca.gov/waterboards_map.shtml).

We, Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board), are required to adopt water quality control plans to protect water quality and to issue permits to regulate the quality of waste discharges within the Central Valley Region of California.

The Central Valley Water Board has adopted the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins and the Water Quality Control Plan for the Tulare Lake Basin (Basin Plans) to protect water quality in the Central Valley.

### 2. What is a Basin Plan?

Basin plans contain the beneficial uses for waters within the Region that will be protected against water quality degradation, water quality objectives that provide reasonable protection of beneficial uses and an implementation program to achieve the water quality objectives.

### 3. Where is this proposed project located?

The Central Valley Water Board will be evaluating information for the entire Central Valley Region, which stretches from the Oregon border to the northern tip of Los Angeles County and includes all or part of 38 of the State's 58 counties. Three major watersheds have been delineated within this region, namely the Sacramento River Basin, the San Joaquin River Basin and the Tulare Lake Basin. The three basins cover about 40% of the total area of the State and approximately 75% of the irrigated acreage. (See Figure 1).

The Sacramento and San Joaquin River Basins are bound by the crests of the Sierra Nevada on the east and the Coast Range and Klamath mountains on the west. The Sacramento and San Joaquin River Basins extend over 400 miles, cover about one fourth of the total area of the State, and contain over 43 percent of the State's irrigable land. Surface water from these two basins meets and forms the Delta, which ultimately drains to San Francisco Bay.

#### **4. What is this proposed project?**

The Central Valley Water Board is proposing to consider existing information to determine whether its Basin Plans should be amended to include numeric water quality objectives for ammonia in consideration of the need to protect beneficial uses of Central Valley Waters (e.g., aquatic life, municipal drinking water supply). In addition to beneficial uses, the Central Valley Water Board will consider other factors, such as economic considerations, as required under state and federal policy.

#### **5. What are the potential effects of ammonia and why should it be regulated?**

Ammonia is a critical pollutant due to its potential adverse impact on aquatic life, causing lower reproduction and growth, or death to aquatic organisms at concentrations of concern. The toxicity of ammonia is dependent on pH and temperature. The un-ionized ammonia ( $\text{NH}_3$ ) is more toxic than the ionized ammonia ( $\text{NH}_4^+$ ). As pH increases, the ionized ammonia is converted to un-ionized ammonia, and the toxicity increases. Higher temperatures also favor the more toxic form.

The Central Valley Water Board has adopted numeric criteria for un-ionized ammonia for the southern part of the Central Valley (Tulare Lake Basin) that protects beneficial uses (such as aquatic habitat) but has not adopted numeric ammonia criteria into water quality standards for the rest of the Central Valley.

#### **6. What beneficial uses of Central Valley waters are most sensitive to ammonia?**

The Basin Plans designate the following beneficial uses in the Central Valley: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Industrial Process Supply (PRO), Ground Water Recharge (GWR), Freshwater Replenishment (FRSH), Navigation (NAV), Hydropower Generation (POW), Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Warm Freshwater Habitat (WARM), Cold Freshwater Habitat (COLD), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species (RARE), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), and Shellfish Harvesting (SHELL).

The beneficial uses that are most sensitive to concentrations of ammonia are for fish and wildlife uses (COLD, WARM, MIGR, SPWN, WILD, RARE). Water quality objectives that protect the most sensitive beneficial uses will also protect all the other beneficial uses.

#### **7. What are potential sources of ammonia in the Central Valley?**

Potential anthropogenic sources of ammonia to Central Valley surface waters include wastewater treatment plant effluents, and runoff from irrigated agricultural operations. Staff will also evaluate the potential impact of effluent from fish hatcheries, urban stormwater discharges and other potential sources.

#### **8. What is the general timeline of this proposed project?**

Staff recommendations for how the Central Valley Water Board might protect beneficial uses from ammonia will be presented in a Staff Report for Board consideration. A draft staff report is expected to be available for public review by early 2018. A Board workshop may be scheduled in early 2018 to discuss staff recommendations. Board action, if any, is proposed for Spring 2018.

**9. Where can I get more information about this project and how can I get involved?**

More information about this project can be found at

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/basin\\_plans/ammonia\\_wqos/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/ammonia_wqos/index.shtml).

If you wish to subscribe to the electronic mailing list related to this project, you can do so through our website by clicking on the "Subscribe" button on the right side of our webpage at:

[http://www.waterboards.ca.gov/resources/email\\_subscriptions/reg5\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml)

(NOTE: Check the box titled "Central Valley Ammonia WQOs")

If you have any question concerning this project, please contact Xuan (Shuen) Luo at (916) 464-4606 or [xuan.luo@waterboards.ca.gov](mailto:xuan.luo@waterboards.ca.gov) or Betty Yee at (916) 464-4643 or [betty.yee@waterboards.ca.gov](mailto:betty.yee@waterboards.ca.gov).

