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TO: State Water Resources Control Board  
FR: Alex Hearn, PhD. Director of Science, Turtle Island Restoration Network  
RE: **General Waste Discharge Requirements for Recycled Water Use (General Order)**

To whom it may concern:

Please accept these comments on behalf of Turtle Island Restoration Network and our partner organization Wild Equity. Turtle Island is a non-profit corporation headquartered in Marin County, California which engages citizens to study, restore and take action to protect disappearing marine and freshwater ecosystems and the endangered wildlife that inhabit them. Turtle Island has 7,200 active members in the United States and abroad, and more than 138,000 online activists and supporters who follow and take action on its campaigns.

We support and actively promote water conservation measures through programs like our 10,000 Rain Gardens Project. Nonetheless, even in times of drought, we believe the use of treated wastewater must be properly and adequately regulated and monitored to ensure protection of the environment and human health and should require consideration of the best available science. Furthermore, before the promulgation of those regulations, a full environmental review under CEQA should be required.

We ask that any new regulations ensure:

1. Protection of waterways from contaminants
2. Protection of aquatic endangered species, including coho salmon, California freshwater shrimp, steelhead trout and red-legged frogs, among others.
3. Protection of species that utilize streams as water and food sources.

We ask that new regulations address the following concerns:

**Tertiary Treated Water Contains Hazardous Chemicals**

Tertiary water treatment does not remove all chemicals including many pharmaceuticals and chemicals of emerging concern (CECs), which often include hormones and endocrine disruptors, that are known to adversely impact wildlife including endangered species (e.g. see: Ankley et al 2008, Chandler et al 2004, Holeyton et al 2011, Ramirez et al 2009, Sengupta et al 2014).

We believe water applied near waterways should be required to be free of those chemicals known to adversely impact endangered species and other wildlife. Furthermore, a monitoring system should be required to ensure this requirement.

### **Science-based Setbacks from Waterways and Riparian Habitat Should Be Required**

Setbacks from waterways and riparian habitat are essential to promote water quality and protect a number of CA endangered species, including coho salmon and steelhead trout (see for example Wenger 1999, Wenger & Fowler 2000).

- A) Regulations for the use of treated wastewater should require setback buffers for application of treated water from all waterways, with the largest setbacks reserved for waterways that are in designated critical habitat of endangered species. This “precautionary approach” can help mitigate for currently unknown chemicals that may be present in treated wastewater.
- B) Ensure all new infrastructure (pipes, filtration, etc.) to accommodate the use of treated wastewater are set back a minimum of 100 feet from riparian areas and streams.

California’s riparian habitats harbor more than 225 species of birds, mammals, reptiles, and amphibians (Riparian Habitat Joint Venture 2004). It provides important breeding and overwintering grounds, migration stopover areas, and corridors for dispersal (Cogswell 1962, Gaines 1977, Ralph 1998, Humple and Geupel 2002, Flannery et al. 2004). Despite its importance, riparian habitat has been decimated over the past 150 years, and now covers only 2% to 15% of its historic range in California (Katibah 1984, Dawdy 1989). The National Research Council (2002) concluded that riparian areas perform a disproportionate number of biological and physical functions on a unit area basis and that the restoration of riparian function along America’s water bodies should be a national goal.

Changes in the use of recycled water must reflect the importance of this habitat and the vulnerability of the species that make up its biological communities to both physical disturbance and potential toxicological effects that may ensue.

Sincerely,



Alex Hearn, PhD; Director of Science  
Turtle Island Restoration Network

Brent Plater; Executive Director  
Wild Equity Institute

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