



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



December 17, 2021

Via Electronic Mail

Thomas Harder
Project Manager
Thomas Harder & Co. (for Bear Valley Basin GSA)
1260 N. Hancock St., Suite 109
Anaheim, CA 92807
THarder@ThomasHarderCompany.com

Subject: CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE COMMENTS ON THE BEAR VALLEY BASIN DRAFT GROUNDWATER SUSTAINABILITY PLAN

Dear Mr. Harder:

The California Department of Fish and Wildlife (CDFW) appreciates the opportunity to provide comments on the Bear Valley Basin Groundwater Sustainability Agency (GSA) Bear Valley Basin (Basin) Draft Groundwater Sustainability Plan (GSP) prepared pursuant to the Sustainable Groundwater Management Act (SGMA). The Basin was initially designated as medium priority under SGMA, a priority level that must be managed under a GSP by January 31, 2022. However, the Basin was subsequently reclassified as very low priority.

CDFW is writing to support ecosystem preservation and enhancement in compliance with SGMA and its implementing regulations based on CDFW expertise and best available information and science. As trustee agency for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species (Fish & Game Code §§ 711.7 and 1802).

Development and implementation of GSPs under SGMA represents a new era of California groundwater management. CDFW has an interest in the sustainable management of groundwater, as many sensitive ecosystems, species, and public trust resources depend on groundwater and interconnected surface waters (ISWs).

SGMA and its implementing regulations afford ecosystems and species specific statutory and regulatory consideration, including the following as pertinent to GSPs:

- GSPs must **consider impacts to groundwater dependent ecosystems** (GDEs) (Water Code § 10727.4(l); see also 23 CCR § 354.16(g));
- GSPs must consider the interests of all beneficial uses and users of groundwater, including environmental users of groundwater (Water Code §

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10723.2) and GSPs must **identify and consider potential effects on all beneficial uses and users of groundwater** (23 CCR §§ 354.10(a), 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), and 354.34(f)(3));

- GSPs must **establish sustainable management criteria that avoid undesirable results** within 20 years of the applicable statutory deadline, including **depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water** (23 CCR § 354.22 *et seq.* and Water Code §§ 10721(x)(6) and 10727.2(b)) and describe monitoring networks that can identify adverse impacts to beneficial uses of interconnected surface waters (23 CCR § 354.34(c)(6)(D)); and
- GSPs must **account for groundwater extraction for all water use sectors**, including managed wetlands, managed recharge, and native vegetation (23 CCR §§ 351(a) and 354.18(b)(3)).

Furthermore, the Public Trust Doctrine imposes a related but distinct obligation to consider how groundwater management affects public trust resources, including navigable surface waters and fisheries. Groundwater hydrologically connected to surface waters is also subject to the Public Trust Doctrine to the extent that groundwater extractions or diversions affect or may affect public trust uses. (*Environmental Law Foundation v. State Water Resources Control Board* (2018), 26 Cal. App. 5th 844; *National Audubon Society v. Superior Court* (1983), 33 Cal. 3d 419.) The GSA has “an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible.” (*National Audubon Society, supra*, 33 Cal. 3d at 446.) Accordingly, groundwater plans should consider potential impacts to and appropriate protections for ISWs and their tributaries, and ISWs that support fisheries, including the level of groundwater contribution to those waters.

In the context of SGMA statutes and regulations, and Public Trust Doctrine considerations, groundwater planning should carefully consider and protect environmental beneficial uses and users of groundwater, including fish and wildlife and their habitats, GDEs, and ISWs.

CDFW has not fully reviewed the GSP; however, with respect to Project and Management Actions, we are concerned that the actions proposed are likely to have tangential negative impacts to a listed species (as noted in Attachment A). Endangered species laws, including California Endangered Species Act (CESA) and the federal Endangered Species Act (ESA), apply to groundwater allocation decisions that may impact listed species (Cantor et al. 2018). To avoid consequences under CESA and ESA, the Bear Valley Basin GSA should be aware of listed species within the Basin and address their needs when developing the GSP (Cantor et al. 2018). Accordingly, CDFW recommends that the Bear Valley Basin GSA address this deficiency before submitting the GSP to the California Department of Water Resources. CDFW is providing additional comments and recommendations as notated in Attachment A.

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If you have any questions related to CDFW's comments and recommendations on the Bear Valley Basin Draft GSP, please contact Heather Brashear, Environmental Scientist (heather.brashear@wildlife.ca.gov).

Sincerely,

DocuSigned by:
 for
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Leslie MacNair
Regional Manager

Enclosures (Attachment A: Comments and Recommendations; Attachment B: Literature Cited)

ec: California Department of Fish and Wildlife

Kim Freeburn, Senior Environmental Scientist (Supervisor)
Habitat Conservation, Inland Deserts Region
Kim.Freeburn@wildlife.ca.gov

Scott Wilson, Environmental Program Manager
Habitat Conservation, Inland Deserts Region
Scott.Wilson@wildlife.ca.gov

Joshua Grover, Branch Chief
Water Branch
Joshua.Grover@wildlife.ca.gov

Robert Holmes, Environmental Program Manager
Statewide Water Planning Program
Robert.Holmes@wildlife.ca.gov

Angela Murvine, Statewide SGMA Coordinator
Groundwater Program
Angela.Murvine@wildlife.ca.gov

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California Department of Water Resources

Craig Altare, Supervising Engineering Geologist
Sustainable Groundwater Management Program
Craig.Altare@water.ca.gov

Vic Nguyen, Region Manager
Southern Region Office
Thang.Nguyen@water.ca.gov

Brian Moniz, Regional Coordinator
Southern Region Office
Brian.Moniz@water.ca.gov

National Marine Fisheries Service

Rick Rogers, Fish Biologist
West Coast Region
Rick.Rogers@noaa.gov

State Water Resources Control Board

Natalie Stork, Chief
Groundwater Management Program
Natalie.Stork@waterboards.ca.gov

Water Systems Consulting Inc. (WSC)
Amy Stevens
astevens@wsc-inc.com

Attachment A

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE COMMENTS ON THE BEAR VALLEY BASIN DRAFT GROUNDWATER SUSTAINABILITY PLAN

COMMENTS AND RECOMMENDATIONS

CDFW's comments are as follows:

1. **Comment #1- Project and Management Actions** (GSP Section 5.2.1, Replenish Big Bear Project, pages 62–64)
 - a. *Issues:*
 - i. The GSP indicates that under the Replenish Big Bear Project, the groundwater currently used for discharge to Shay Pond will instead be stored in the Basin and that recycled water from an existing wastewater treatment plant will be used for discharge to the pond. Shay Pond is important habitat for a state and federal endangered species, the unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*). The GSP does not consider impacts to the unarmored threespine stickleback resulting from the change in water source used for discharge to Shay Pond. Many studies have linked effluent from wastewater plants to physiological and reproductive abnormalities in fish species (Jenkins et al. 2009, Fuzzen et al. 2015, McCallum et al. 2019, Hamdhani et al. 2020). Wastewater effluent often contains high levels of nutrients and reduced dissolved oxygen. Contaminants such as pharmaceuticals, personal care products, plastic by-products, and pesticides may not be adequately removed by wastewater treatment processes (McCallum et al. 2019). Estrogenic and other contaminants that occur in wastewater are known to disrupt the hormone systems of fish (Johnson and Sumpter 2001, Jenkins et al. 2009, Fuzzen et al. 2015, Hicks et al. 2017, Marjan et al. 2018, McCallum et al. 2019, Hamdhani et al. 2020). One of the most widely reported consequences is “intersex,” a condition in which both male and female characteristics exist in the same fish. This condition can result in lower reproductive success (Jenkins et al. 2009, Fuzzen et al. 2015, Hicks et al. 2017). The GSP indicates that the recycled water will be “high quality”; however, no data on the chemical and

physical characteristics of the recycled water have been provided to substantiate the quality of the recycled water.

- ii. The GSP indicates that the Replenish Big Bear Project would include “treatment facility upgrades at the existing BBARWA Wastewater Treatment Plant.” However, these upgrades are not specified in the GSP.
- iii. The GSP has no provision for monitoring unarmored threespine stickleback to assess whether there are effects from exposure to the recycled water discharged to Shay Pond.

b. Recommendations:

- i. CDFW recommends that the GSA consider impacts to the unarmored threespine stickleback resulting from the change in water source used for discharge to Shay Pond. CDFW recommends that the GSP include the following: (1) Data on the chemical characteristics of the recycled water to be used for the Replenish Big Bear Project, including contaminants likely to result in hormone disruption of fish species, as well as other contaminants such as those provided in the analysis of groundwater quality given in Table 4-1 of the GSP. (2) Data on the physical characteristics of the recycled water that are likely to impact fish species, such as water temperature, dissolved oxygen, and pH. (3) A comparison of water quality for the recycled water versus the groundwater currently being used to discharge to Shay Pond to ascertain if the change in water source would introduce contaminants that may impact the reproduction and survival of unarmored threespine stickleback. (4) A provision for ongoing monitoring of water quality of the recycled water before it is discharged to Shay Pond.
- ii. CDFW recommends that the GSP include the details of any planned upgrades to the BBARWA Wastewater Treatment Plant. Studies indicate that water treatment plant upgrades designed to improve effluent quality can reduce the incidence of hormone disruption in fish (Johnson and Sumpter 2001, Hicks et al. 2017, Marjan et al. 2018). CDFW recommends that the GSA consider implementing treatment plant upgrades that would remove chemical contaminants from the recycled water, including contaminants likely to result in hormone disruption of fish species. In addition, the GSA should consider measures to ensure that the physical characteristics of the recycled water, including

temperature, dissolved oxygen, and pH, are within ranges required for survival of unarmored threespine stickleback. **If the quality of the recycled water may pose a threat to the reproduction and survival of unarmored threespine stickleback, CDFW recommends that the GSA reconsider whether it is appropriate to use recycled water to sustain endangered species habitat at Shay Pond.**

- iii. If, after analyzing the quality of the recycled water, the GSA concludes it is appropriate to use for discharge to Shay Pond, the GSA should be prepared to monitor unarmored threespine stickleback for effects from the change in water source. A monitoring plan should be developed, in conjunction with CDFW and the US Fish and Wildlife Service, prior to commencing discharge of recycled water to Shay Pond. The plan should incorporate adaptive management and a provision for reverting to groundwater for discharge to Shay Pond should unarmored threespine stickleback be negatively impacted by exposure to the recycled water from the wastewater treatment plant.

2. **Comment #2- Project and Management Actions** (GSP Section 5.2.1.7, Permitting and Regulatory Processes, pages 68 and 69)

- a. *Issue:* The GSP does not include compliance with endangered species laws (CESA and ESA) and the California Environmental Quality Act (CEQA) among the permitting and regulatory processes identified in this section. Although the preparation and adoption of GSPs is exempt from CEQA, implementation actions taken under a GSP remain subject to CEQA (Carlton et al. 2018). The GSP does mention that CDFW approval is needed for discharge to Shay Pond; however, no specific permits requirements are mentioned.
- b. *Recommendation:* CDFW recommends that this section of the GSP include provisions for complying with CESA, ESA, CEQA, and CDFW's Lake and Streambed Alteration (LSA) Program. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may adversely impact any river, stream, or lake. CDFW recommends that this section of the GSP specify that the GSA should notify CDFW to obtain an LSA Agreement for discharge to Shay Pond. CESA prohibits the take (under Fish & G. Code, § 86, "take" means to hunt, pursue, catch, capture, or kill, or to attempt to hunt, pursue, catch,

capture, or kill) of any endangered, threatened, or candidate species that results from a proposed project, except as authorized by state law (Fish & G. Code, §§ 2080, 2085). The unarmored threespine stickleback is also a Fully Protected fish under Fish and Game Code section 5515. Fully Protected fish cannot be taken or possessed at any time except as provided by state law (Fish & G. Code, §§ 2081.4 , 2081.6 , 2081.7 , 2081.10 , 2081.11 , 2089.7 , 2835, 5515). This section of the GSP should specify how the GSA will comply with the above regulations.

CONCLUSION

In conclusion, though the Bear Valley Basin Draft GSP does emphasize sustainable management of groundwater in the Basin, it does not comply with all aspects of SGMA statutes and regulations, and CDFW does not view the GSP as sufficient in its consideration of fish and wildlife beneficial uses and users of groundwater and interconnected surface waters. CDFW recommends that the Bear Valley Basin GSA address the above comments to avoid a potential 'incomplete' or 'inadequate' GSP determination, as assessed by the Department of Water Resources, for the following reasons derived from regulatory criteria for GSP evaluation:

1. The GSP does not identify reasonable measures and schedules to eliminate data gaps. (23 CCR § 355.4(b)(2)) (See Comment #1)
2. The interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have not been considered. (23 CCR § 355.4(b)(4)) (See Comments #1, 2)
3. The projects and management actions are not feasible and/or not likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield. (23 CCR § 355.4(b)(5)) (See Comment #1)

Attachment B

LITERATURE CITED

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