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Ms. Kathy Mrowka, Chief
Inland Streams Unit
Division of Water Rights
State Water Resources Control Board
1001 I Street, 14th Floor
Sacramento, California 95814

Dear Ms. Mrowka:

December 1, 2011

Compliance Recommendation

As the waterfowl expert appointed by the State Water Resources Control Board (SWRCB) to oversee the Mono Basin Waterfowl Habitat Restoration Plan (Plan) pursuant to Board Decision 1631 and Board Order 98-05, I recommend that the SWRCB find the Los Angeles Department of Water and Power (LADWP) in full compliance with the limnology section of the Plan and relieve the LADWP of any and all related monitoring and reporting duties.

The most recent *Status of Restoration Compliance Report*, which presents a consensus view of the interested parties, states that the LADWP shall continue to monitor Mono Lake limnology until the "SWRCB approves that limnological monitoring is no longer required" (LADWP, May 2011, Compliance Monitoring, Section 1, Chapter 1, p. 14). Furthermore, Order 98-05 states that "any disputes regarding interpretation or compliance with the requirements of this order may be resolved by the Chief of the Division of Water Rights" (Order 98-05, p. 69).

Given that the long-term monitoring data discussed below convincingly show that the original intent of the Plan to foster natural, self-sustaining, ecosystem processes in the open-water "pelagic" zone has been fulfilled, and given that the monitoring program serves no other purpose under the Plan, I conclude that continuing the monitoring program would violate the "reasonableness" provision (Decision 1631, p 208) underlying Order 98-05 and recommend that the SWRCB consider a finding of full compliance.

Original Intent

Decision 1631 cites the "physical solutions doctrine" as the legal basis for a *partial* mitigation of an *unspecified* portion of the waterfowl habitat previously lost to municipal water diversions in the Mono Basin (Decision 1631, pp. 10-11). Decision 1631 found the high lake elevations associated with pre-diversion habitat conditions to be inconsistent with other important public trust values but directed LADWP to consult with other parties regarding the pursuit of other "feasible" restoration projects.

Decision 1631 states:

> *The SWRCB concludes that LADWP should be required to consult with DFG and other interested parties and analyze potential feasible waterfowl restoration projects which are consistent with the lake level criteria established in the decision, consistent with the regulations governing the Mono Basin National Scenic Area, and which could avoid or properly mitigate any disturbance of archeological resources in the Mono Basin (Decision 1631, pp. 118-119).*

Pursuant to this finding, LADWP convened a Waterfowl Habitat Technical Advisory Group (TAG) with representation from the LADWP, California Department of Fish and Game, California State Lands Commission, California Department of Parks and Recreation, United States Forest Service, National Audubon Society and the Mono Lake Committee. The TAG developed ten habitat restoration guidelines that emphasize a preference for natural processes and self-sustaining ecosystems and reject single species management strategies (Plan, Appendix 1: pp. 3-4). As far as the pelagic ecosystem is concerned, these guidelines inspired the passive, raise-the-lake, *que sera sera* approach adopted by the Plan (Plan, p. 4) and affirmed by Order 98-05.

That the original intent of Order 98-05 for habitat restoration was intentionally modest is revealed by the fact that, according to the Draft Environmental Impact Report (DEIR) produced for the SWRCB by Jones and Stokes Associates in 1993, the restoration measure given the highest priority, an average lake elevation of 6392-feet, is expected to restore only about 6% of the prime pond/lagoon habitat lost to past diversions (DEIR, Table 3C-15). In my opinion, the cumulative costs of the existing monitoring program, which already total several million dollars spread over three decades, will soon constitute an unreasonable allocation of limited restoration resources.

Furthermore, limnology monitoring is just one of several habitat monitoring programs under the overall Plan umbrella. In fact, it is a separate hydrology monitoring program (Order 98-05, p. 68) and not the limnology monitoring program that tracks the only mandated restoration measure directly related to the pelagic ecosystem, an average surface elevation of 6392-feet (Order 98-05, p. 58). Standalone vegetation, stream/bottomland, and waterfowl monitoring programs support the remaining restoration measures (Plan, pp. 27-29). As a consequence, they fall outside the present compliance recommendation which pertains solely to the limnology monitoring component of Order 98-05.

Program Findings

More than thirty years of limnology monitoring by the University of California at Santa Barbara (UCSB) has provided a deep understanding of the planktonic community of Mono Lake which is now known to comprise a simple, self-sustaining, highly-productive, nitrogen-limited ecosystem sensitive to those climatic and hydrologic conditions that

influence the internal cycling of nitrogen (LADWP, May 2011, Compliance Monitoring, Section 5, Appendix 1, p. ii). In Mono Lake, a small number of planktonic algae are prey for a single, filter-feeding invertebrate, the brine shrimp *Artemia monica,* that serves in turn as food for a variety of birds (DEIR, p. 3-E1). No significant long-term trend has been noted in seasonally-filtered *Artemia* abundance over the past three decades despite an 18-fold difference in the seasonally-filtered mean chlorophyll *a* concentration (LADWP, May 2011, Section 5, Appendix 1, pp. 35 & 95) because compensatory feed-back mechanisms mute the sensitivity of *A. monica* populations to variations in primary production and salinity (Attachment 1, pp. 15, 21). In short, the monitoring program has shown the *A. monica* population at Mono Lake, which is the direct link between the pelagic ecosystem and migrating waterfowl, to be remarkably stable.

Future Expectations

Several independent reviews have concluded that the pelagic ecosystem of Mono Lake will remain in good condition as the elevation approaches stabilization at 6392-feet. In 1987, the National Academy of Sciences reported that algae and shrimp "flourish" between elevations of 6380- and 6430-feet (Attachment 2). The following year, the Community and Organization Research Institute of the University of California at Santa Barbara concluded that *A. monica* was observed to "thrive" at the historic low-stand of 6378-feet (Attachment 3, p. 6) when "few, if any, detrimental effects on the biota were noted" (Attachment 3, p. A.1). The DEIR placed the two environmentally superior alternatives at 6385.5-feet and 6390-feet (DEIR, p. S-11). Decision 1631 cites "expert testimony" that the pelagic ecosystem at lower lake elevations was directly observed to be in a "healthy condition" and that higher elevations would be a "positive change" under monomictic conditions (Decision 1631, pp.78-80). Furthermore, even though Decision 1631 considers the possibility of some negative effects on aquatic productivity at lake elevations below 6390-feet (Decision 1631, p. 82), the DEIR concluded such impacts cannot be mitigated (DEIR, Table S-4) and that the availability of invertebrate prey for waterfowl is still "high" at an elevation of 6383.5-feet (DEIR, Table S-1). Most importantly, Decision 1631 concluded that an elevation at or near 6390-feet will maintain aquatic productivity in good condition (Decision 1631, p. 82). Finally, a doctoral dissertation on the limnology of Mono Lake conducted in the early-to-mid 1960's when lake elevations ranged between 6395- and 6400-feet reports brine shrimp data (Attachment 4) that overlap the thirty-year UCSB record (LADWP, May 2011, Section 5, Appendix 1, p. 82). In short, the invertebrate food resource that the open waters of Mono Lake provide migrating waterfowl has been *directly* observed to be in good shape at lake elevations between 6378- and 6395-feet.

Summary

Over the past three decades, UCSB has monitored the limnology of Mono Lake and the scientific record is clear; the pelagic ecosystem is a stable, productive, self-sustaining source of abundant invertebrate prey for waterfowl that will continue to thrive over the range of regulated lake elevations contemplated by Decision 1631. In my opinion, this finding fulfills the intent of Order 98-05 for the limnology portion of the waterfowl

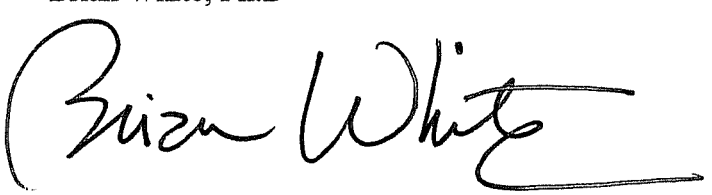
habitat monitoring program. Furthermore, the narrow range of lake elevations enforced by Decision 1631 to balance *all* of the public trust resources in the Mono Basin greatly diminishes the real-world value of ongoing monitoring data. Even if single-species management schemes did not violate Plan guidelines, operating constraints imposed by the water diversion criteria would hamstring intervention on behalf of the brine shrimp. In my view, the limnology program is unlikely to deliver any actionable intelligence to the SWRCB going forward.

Finally, Order 98-05 excluded the alkali fly from the list of natural resources in need of monitoring because of the finding of Decision 1631 that a surface elevation near 6390-feet "will maintain the aquatic productivity of Mono Lake (including alkali flies) in good condition" (Order 98-05, p. 53). As the thirty-plus year record of limnology monitoring provides no basis for drawing a different conclusion about the pelagic ecosystem, I recommend that the SWRCB declare the LADWP to be in full compliance with the limnology section of Order 98-05 and relieve it of all further monitoring and reporting duties.

Please let me know if there is anything I can do to help facilitate SWRCB action on this recommendation.

I may be reached at (213) 367-3419

Brian White, Ph.D



SWRCB Appointed Waterfowl Expert

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