

July 23, 2024

PROJECT PEER REVIEW: Tahoe Keys Lagoons Aquatic Weeds Control Methods Test Year 2 Data and Year 3 Implementation Plan

The Tahoe Keys Property Owners Association (TKPOA) began implementing the Control Methods Test project (CMT project) in May 2022 to assess invasive aquatic plant control options in the Tahoe Keys. In previous work, the Tahoe Science Advisory Council (Council) independently reviewed environmental documentation prepared in advance of the project and the data and findings from the first year of project implementation.

TKPOA and resource management agencies asked the Council to review data and findings from Year 2 of CMT project implementation in the context of proposed Year 3 actions. This memorandum summarizes the review charge and the reviewers' findings.

Review Charge

Specific documents for the review included:

1. Proposed CMT Year 3 Treatment Areas and Acreages – Two brief documents (a set of map slides and a table) outlining preliminary weed treatment activities proposed for CMT Year 3 activities.
2. Tahoe Keys Lagoons Aquatic Weed Control Methods Test: Annual Report – The annual report describes the monitoring, mitigations, and resource protection measures required by regulatory permits that allowed for the CMT treatments to occur.
3. Tahoe Keys Lagoons Macrophyte Control Efficacy Report (Annual Report – Year 2, Appendix E) - The referenced appendix describes the approach to assess the efficacy of treatments in the first and second years of the CMT. Review Questions and Charge

The Council reviewers were asked:

1. Do previous treatment activities in Year 2, collected data, and submitted reports support the 2024 implementation plans outlined in the set of slides and table of proposed treatments for Year 3?
2. Do the water quality or other data reveal any trends or indicators that suggest:
 - a. Modifications to the monitoring program should be considered in Year 3;
 - b. Modifications to mitigation measures associated with treatment activities should be considered for Year 3; and/or,
 - c. There is a need for post-Year 3 monitoring to further evaluate or substantiate CMT treatments efficacy or monitoring results.

Reviewers:

The review was conducted by:

Dr. Michael Marchetti
Fletcher Jones Professor of Ecology
St. Marys College of California

Dr. David Caron
Captain Allan Hancock Endowed Chair in Marine Sciences
University of Southern California

Review findings and recommendations:

Both reviewers provided answers and offered suggestions for additional work. Their unedited review is attached for reference. In summary:

1. The data and analysis conducted during Year 2 of CMT project implementation support Year 3 treatment plans. In addition, the reviewers note:
 - The increased water levels in year two complicate the assessment of treatment efficacy.
 - The third year offers opportunities for better evaluation of UV treatments and suction dredging.
 - Assessing non-chemical methods in areas previously treated with herbicide provides useful information for future control efforts.
 - The proposed monitoring of New Zealand Mud Snail is a valuable addition to the program.
 - The CMT provides a unique opportunity to examine the potential link between invasive plant control and harmful algal blooms. Where possible, the team should consider additional monitoring related to cyanobacteria and associated toxins.
2. Based on the water quality and other data collected for year two, there are no compelling reasons to modify the proposed year three monitoring plans.
3. Similarly, the reviewers found no reason to modify the mitigation measures associated with various treatment activities for Year 3 operations.
4. Both reviewers agree there is a clear need for ongoing monitoring following Year 3 activities to evaluate both the efficacy and the longevity of treatment effects.
 - Consider monitoring for at least two more years to track conditions following experimental treatments. Additional monitoring can shed light on the time it takes for both native and target species to rebound and assess lasting treatment effects.