

ATTACHMENT 3.5a

CONTROL OF THE INVASIVE MYSIS SHRIMP TO RECOVER LAKE CLARITY AND ECOSYSTEM HEALTH

Grant Type: Planning

Applicant: University of California, Davis

Recommended Funding: \$390,081 (Attachment 3.5b)

Location: Emerald Bay, Lake Tahoe, El Dorado County

Overview

Description of Recommended Action

Staff recommends up to \$390,081 be awarded for a planning grant to the University of California, Davis (UC Davis) for the Control of the Invasive Mysis Shrimp to Recover Lake Clarity and Ecosystem Health project (project). Increasing *Mysis* populations has shifted Lake Tahoe's food web, which may reduce water clarity. *Mysis* contribute to a decline in native zooplankton species, that otherwise feed on clarity impacting algae.

UC Davis proposes to plan, test, and optimize a strategy to reduce the abundance of *Mysis* shrimp, an aquatic invasive species (AIS), to levels where they no longer impact the natural ecosystem of Lake Tahoe. The 2015 *Lake Tahoe Aquatic Invasive Species Implementation Plan (Implementation Plan)* states that there are currently no feasible control methods available for *Mysis* and thus it is a priority for the Lake Tahoe AIS Coordination Committee (AISCC) to develop new control techniques for *Mysis*.

UC Davis staff will examine the effectiveness of using remote sensing to locate high-density *Mysis* patches. This technique will allow UC Davis to adjust the depth of trawl nets and area of operation for *Mysis* removal because *Mysis* move throughout the water column. All work will take place at Emerald Bay on the west shore of Lake Tahoe. UC Davis selected Emerald Bay as the appropriate location because it is a small enough area to remove *Mysis* in one season using the trawling nets.

UC Davis will also collect samples of zooplankton and conduct Secchi depth measurements monthly to determine whether *Mysis* removal leads to increased native zooplankton numbers and increased water clarity. An independent review team led by the Tahoe Science Advisory Committee will review the draft reports to determine if the results are scientifically sound and the strategy for the sustainable reduction of *Mysis* is feasible. If proven successful, this technique will allow for future *Mysis* control projects in Lake Tahoe.

History

In the 1960s, California and Nevada fish and game agencies introduced *Mysis* shrimp to Lake Tahoe as a food source for game fish, such as kokanee salmon and lake trout. The introduction of the species contributed to a shift in Lake Tahoe’s food web by playing a significant role in the decline of native zooplankton species.

Previous monitoring in Emerald Bay shows that when *Mysis* populations decline, native zooplankton species populations and water clarity increase. An estimated reduction of 50-70 percent of current *Mysis* populations would be sufficient to allow the native zooplankton species to recover.

The proposed project is part of a larger, comprehensive lake-wide plan to address AIS control and subsequently improve water clarity and ecosystem health for native species. This project is a high priority for the AISCC and is identified on the *Implementation Plan*.

Financing

Proposed Grant Budget

Activity	Total
UC Davis Labor	\$191,879
UC Davis Benefits	\$75,502
Supplies	\$20,000
UC Davis Travel	\$5,000
Boat Time (Monitoring) – 75 hours	\$20,850
Boat Time (Trawling) – 150 hours	\$20,850
Consultant	\$12,000
TSAC Peer Review	\$6,000
Technical Assistance and Analysis	\$38,000
TOTAL	\$390,081

The budget may be adjusted between line items, but total expenditures under the grant will not exceed \$390,081.

The project will be receiving \$60,000 in leveraged funds from Nevada Department of Environmental Protection for the purchase of equipment.

Proposed Schedule

Upon execution of the planning grant, Conservancy staff will work with UC Davis staff to develop the workplan. The workplan will specifically list the deliverables supported by the grant. The schedule below reflects anticipated completion dates for major deliverables.

Activity	Estimated Completion Date
Stakeholder Outreach	Jan. and July 2018 and 2019; Jan. and Apr. 2020
Echosounder Surveys	January 2018-Dec. 2019
Emerald Bay Surveys	Jan. 2018-Dec. 2019
Zooplankton and Fish Diet Analysis	Mar. 2018-Sep. 2019
<i>Mysis</i> Trawling	Feb.-May 2018
Draft Reports	Nov. 2018-Jan. 2020
Independent Review of Reports	Feb. 2020
Final Reports	Mar-Apr. 2020

Authority

Consistency with the Conservancy’s Enabling Legislation, Strategic Plan, and Program Guidelines

The recommended action to award grant funding for this project is consistent with the Conservancy’s enabling legislation, the Strategic Plan, and the Proposition 1 Grant Guidelines.

Consistency with External Authorities

The recommended action is consistent with the Lake Tahoe Environmental Improvement Program (EIP) because it supports implementation of EIP project #01.04.02.0048 (Control and Management of Current Invasive Species Infestations). It is also consistent with the *Implementation Plan*, which recommends further monitoring of *Mysis* densities to determine whether restoration actions in Lake Tahoe are feasible.

Compliance with the California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA) Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.), certain classes of activities are statutorily exempt from CEQA or are exempt because they have been determined by the Secretary of the California Natural Resources Agency to have no significant effect on the environment. Pursuant to Public Resources Code sections 21001(f) and 21082, the Conservancy has also adopted regulations to implement, interpret, and make specific, the provisions of CEQA. (See Cal. Code Regs., tit. 14, § 12100 et seq.) Staff has evaluated this Project, and has found it to be exempt under CEQA. This Project qualifies for a categorical exemption under CEQA Guidelines, section 15304 (Minor Alterations to Land), and the Conservancy's CEQA regulations, section 12102.4. Staff has drafted a notice of exemption (NOE) for the Project (Attachment 3.5c). If the Board approves the Project, staff will file the NOE with the State Clearinghouse pursuant to CEQA Guidelines section 15062.

List of Attachments

Attachment 3.5b – Resolution 17-09-02.5

Attachment 3.5c – Notice of Exemption, Exhibit A

Conservancy Staff Contact

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