

MINUTE ITEM

This Calendar Item No C66 was approved as Minute Item No. 66 by the California State Lands Commission by a vote of 3 to 0 at its 4-26-05 meeting.

CALENDAR ITEM  
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04/26/05  
W 30139.2  
V. Van Way

AS TRUSTEE OF THE KAPILOFF LAND BANK, AUTHORIZE EXPENDITURE OF UP TO \$15,000 FOR A DEMONSTRATION PROJECT TO REMOVE AN AREA OF A NON-NATIVE, INVASIVE AQUATIC SPECIES, EURASIAN WATERMILFOIL (*MYRIOPHYLLUM SPICATUM*), FROM SOVEREIGN LANDS IN EMERALD BAY, LAKE TAHOE, EL DORADO COUNTY.

PARTY:

California State Lands Commission  
100 Howe Avenue, Suite 100-South  
Sacramento, CA 95825-8202

BACKGROUND:

Eurasian watermilfoil (*Myriophyllum spicatum* L.) [milfoil], a non-native, invasive aquatic plant, has been present in Lake Tahoe (Lake) for over 30 years and now infests several identified areas. The expanding weed infestation increases the potential for major, long-term, adverse, environmental, recreational and aesthetic (including water clarity) impacts to the Lake. The affected resource agencies have not yet developed a comprehensive plan to control Milfoil's further spread within the Lake or to contemplate its eradication.

Milfoil now infests approximately 30 acres in Emerald Bay (Bay) alone, comprising an estimated 30 cubic yards, or 10,000 pounds of biomass, in the southwest portion of the Bay. Mechanical harvesting, the sole technique allowed to date in a large infestation at Tahoe Keys, has been costly and ineffective, and, through fragmentation of the harvested plants, has accelerated its spread to other areas of the Lake via such fragments. The staff of the California State Lands Commission (CSLC) investigated the status of milfoil in the Lake, reported to be actively expanding in several sites, and found that the potential for continued spread of this species within the Lake is increasing. Staff designed this initial removal demonstration project in cooperation and in consultation with the Tahoe Regional Planning Agency (TRPA), California Department

CALENDAR ITEM NO. C66 (CONT'D)

of Fish and Game (CDFG), Lahontan Regional Water Quality Control Board (Lahontan RWQCB), and the State Department of Parks and Recreation (Parks). CSLC staff proposes to demonstrate and evaluate the effectiveness, both in technique and cost, of diver hand-removal of plants, assisted by vacuum suction, of a portion of the milfoil from the Bay (Project Description is attached as Exhibit A). The data from this demonstration project will contribute to the body of information available to resource and water quality managers and encourage, staff believes, the development of an environmentally sound plan for Lake Tahoe to manage and potentially eliminate Eurasian watermilfoil.

The following entities support the proposed demonstration project or are signatory to the Tahoe Regional Planning Agency Memorandum of Understanding: the Tahoe Regional Planning Agency (TRPA), U.S. Army Corps of Engineers, Lahontan Regional Water Quality Control Board, California Dept. of Fish & Game, Nevada Division of State Lands, Nevada Department of Wildlife, California Department of Parks and Recreation, Tahoe Research Group, Desert Research Institute, the Tahoe Resource Conservation District, and USDA Agricultural Research Service.

**PROJECT FUNDING:**

Monies to fund the demonstration project are available in the Kapiloff Land Bank Fund from a mitigation settlement awarded to the CSLC for the improvement of water quality in Lake Tahoe. The removal of milfoil from Emerald Bay offers the potential to substantially improve water quality in the Bay and the Lake, and is, therefore, consistent with the intent of the fund reserve. The projected cost of the demonstration project, in aggregate of all required contracts (3), is under \$15,000. Staff of the Commission will oversee the entire operation and follow-up with cooperating agencies.

If successful, the CSLC staff will continue to work with the above agencies to expand the use of the removal technique to other infested areas of the Lake in which the Commission has leasing jurisdiction, and work with private landowners through education and stewardship activities to control the continuing spread of milfoil..

**STATUTORY AND OTHER REFERENCES:**

- A. Public Resources Code Section 8600 et seq.

**EXHIBITS:**

- A. Project Description.

CALENDAR ITEM NO. C66 (CONT'D)

**OTHER PERTINENT INFORMATION:**

1. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Title 14, California Code of Regulations, section 15061), the staff has determined that this activity is exempt from the requirements of the CEQA as a categorically exempt project. The project is exempt under Class 6, Information Collection; Title 14, California Code of Regulations, section 15306.  
Authority: Public Resources Code section 21084 and Title 14, California Code of Regulations, section 15300.
2. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code sections 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

**RECOMMENDED ACTION:**

IT IS RECOMMENDED THAT THE COMMISSION:

**CEQA FINDING:**

FIND THAT THE ACTIVITY IS EXEMPT FROM THE REQUIREMENTS OF THE CEQA PURSUANT TO TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15061 AS A CATEGORICALLY EXEMPT PROJECT, CLASS 6, INFORMATION COLLECTION; TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15306.

**SIGNIFICANT LANDS INVENTORY FINDING:**

FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED BY THE COMMISSION FOR THE LAND PURSUANT TO PUBLIC RESOURCES CODE SECTIONS 6370, ET SEQ.

**AUTHORIZATION:**

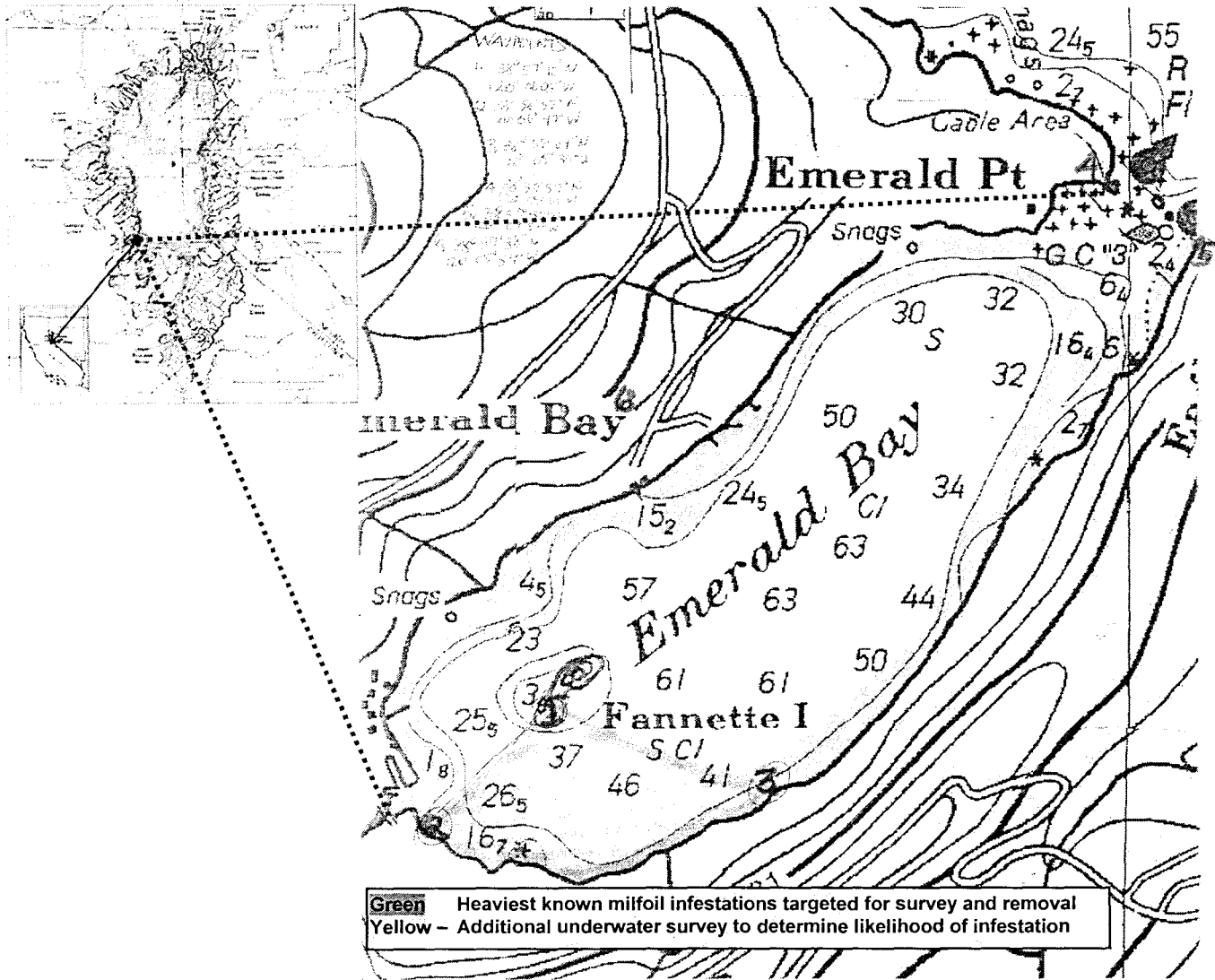
AS TRUSTEE, AUTHORIZE THE KAPILOFF LAND BANK FUNDS RECEIVED FOR THIS PURPOSE BE AVAILABLE FOR EXPENDITURES TO CONDUCT PROPOSED MILFOIL REMOVAL DEMONSTRATION PROJECT IN EMERALD BAY, LAKE TAHOE NOT TO EXCEED \$15,000.

## EXHIBIT A DEMONSTRATION PROJECT DESCRIPTION

The most active growing milfoil bed in Emerald Bay covers an approximate 30-acre area in the southern portion of the Bay, southwest of Fannette Island and southeast of the mouth of Eagle Creek along 2400 feet of shoreline (see Figure 1.).

**Figure 1. Emerald Bay, Lake Tahoe**

From USGS Emerald Bay CA-NV Quadrange, 7.5 Minute Series (TOPOGRAPHIC), 1992



This map solely represents the general area of infestation targeted for milfoil removal. It is not intended to be, or to be construed as, a waiver or a limitation of any State interest in the subject area or any other property.

## **1. Site Preparation: Survey, Water Quality Measurement, Disposal Site Selection**

- a. All contractors on this demonstration project shall ensure that their equipment is thoroughly clean before entering the Lake, and that all equipment under their responsibility is cleaned after the end of the fieldwork before moving it out of the Park or Lake area.
- b. Before removing any milfoil, A.C.E. Diving (A.C.E.) will conduct an underwater survey of Emerald Bay to:
  - Determine the areal extent, density and volume of milfoil targeted for removal, noting locations of milfoil plants that are flowering or seeding;
  - Identify the other aquatic plants present and their location;
  - Map the contours and hydrosol susceptible to milfoil invasion; and
  - Provide the CSLC, for its review and approval, a brief work plan, with maps, showing: 1) the areal extent of infestation (with approximate square footage), 2) the location and extent of the area of milfoil to be removed, with approximate densities and the biomass (approximate volume and wet weights), and 3) the areas most susceptible to infestation.

CSLC staff will review the plan and authorize A.C.E. to begin removal as indicated in the approved work plan. At the end of each day, A.C.E. and CSLC will evaluate the operation and determine if any modifications are required to the work plan prior to the start of the next day's removal activities.

- c. The CSLC, or a contractor, will establish turbidity-monitoring locations in at least four stations in the Bay, and record nephelometer readings using protocols used in Tahoe Keys in 2004.
- d. Working with California State Parks (Parks) and South Tahoe Refuse, Inc., A.C.E. will select and mark the site(s) for deposition and subsequent transport of the collected plant material. The CSLC will inform TRPA and Lahontan RWQCB staff of the landing site prior to removal work. Anticipating a volume of 30 cubic yards of collected wet plant material within four days, South Tahoe Refuse, Inc. will provide 6-yard containers as necessary). South Tahoe Refuse, Inc. will remove collected material daily or as necessary from the Basin to a permitted disposal facility.
- e. A.C.E., Parks and South Tahoe Refuse, Inc., will select and mark the transfer site well enough for all to use easily, indicating it on the survey map.

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CALENDAR PAGE

MINUTE PAGE

## **2. Hand Removal:**

- a. A.C.E. crews will remove as much milfoil biomass as possible within the designated time (four days total), by the vacuum system it designed for this application. A.C.E. will supply labor and equipment, including, but not limited to, the workboat, vacuum removal and transfer equipment.
- b. A.C.E. will remove milfoil in a manner that will minimize escape of fragments during initial collection, and dedicate time to gather the majority of the "stragglers" – the hand-pulled plant fragments that escaped the initial vacuum-assisted collection -- as reasonably practicable before the close of each day's operation. A.C.E. will inform CSLC staff daily on the approximate wet weight and/ or volume of milfoil removed, matched with the locations of the sites cleaned.
- c. A.C.E. will assist in tracking effort, including recording the estimated volume of haul-out. South Tahoe Refuse will weigh each load taken from the transfer site, and relay weights to A.C.E. Diving and the CSLC within one day after disposal.
- d. CSLC will observe the removal effort and assist in decisions or with questions on process, including documenting disposal and recording data.
- e. The CSLC/designee will record turbidity measurements pre-, during, and post removal activity, and report findings daily to the Lahontan RWQCB. If measurements exceed 3.0 NTU, the CSLC will notify the Lahontan RWQCB within one hour, and begin pulling plants more slowly to reduce sediment disturbance.

## **3. Follow-Up:**

- a. Within 10 days after completion of the demonstration project, A.C.E. will submit an evaluation of the work performed. The evaluation report shall include: 1) level of control achieved and projected level of re-infestation or grow back, 2) approximate area cleared and volume (in cubic yards) of material removed and fragments collected, 3) the disposal site used, and 4) immediate follow-up actions to the demonstration project. The evaluation report will also designate, in priority order based on the demonstration project, a schedule for areas that could subsequently be removed to restore the Bay to its previous condition and any recommended modifications to operating procedures, etc.
- b. Within 30 days after completion of the demonstration project, the CSLC will produce a comprehensive report, which will be sent to the TRPA, Lahontan RWQCB, Parks, CDFG, and other interested parties. The CSLC will schedule a meeting in July, 2005, to discuss the report with all involved parties.

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CALENDAR PAGE

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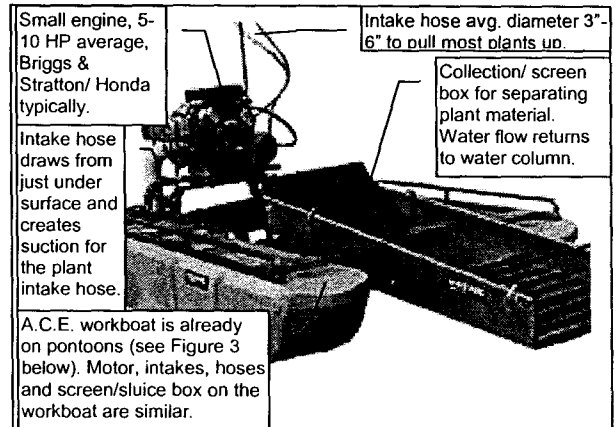
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MINUTE PAGE

## ATTACHMENT – DESCRIPTION OF METHOD

### **DIVER HAND-PULLED REMOVAL ASSISTED BY VACUUM SUCTION REMOVAL**

involves an underwater diver pulling the plant out by the roots, then “feeding” it into a 3”-6” intake suction hose that transfers the entire plant and associated water up to the water surface to a screen or collection box attached to the side of the workboat (Fig.3). The dredge engine is usually a 5 to 8 horsepower Honda or Briggs & Stratton. Sediment type, visibility, and thoroughness in removal of the entire plant, particularly the roots, affect the speed at which plants are uprooted. The screen/basket separates the pulled plant material from the associated water, which then passes back into the water column. The plant material is retained on the screen and, after a threshold amount builds up, is conveyed to an approved on-shore dry disposal area.



**Figure 2. Vacuum Suction Equipment from a Portable Assembly: Workboat, Engine, Intakes and Collection/ Screen Box are similar.**

**Effectiveness and Duration** Diver hand-pulling assisted by vacuum suction removal can be highly effective under appropriate conditions. Removal efficiency depends on sediment condition, density of aquatic plants, and underwater visibility (Cooke et al. 1993). This technique works well to control early low-level infestations of milfoil or Brazilian elodea. It can also be used as a maintenance tool following herbicide treatments.

This technique immediately clears the water column of nuisance plants and is site and species specific. A high degree of control, lasting more than one season, is possible when complete removal has been achieved. It is most useful in hard-to-reach places and in sensitive areas where disruption of sediments must be minimized. Plant parts are collected for later disposal, minimizing the spread of fragments, important in the control of milfoil. The vacuum assistance helps a diver cover a much larger area than “unassisted” hand pulling, and works well in soft sediments. Potential turbidity increases and bottom disruption depend on hydrosol structure, and are usually confined and short-term.



**Figure 3. A.C.E. Diving Workboat and Vacuum Assist Equipment at Water Surface on a Lake**

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