

2016 Boat Backup Station Report



March 27, 2017

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Prepared for



*Tahoe Keys Property Owners Association
South Lake Tahoe, California*

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In association with



Sierra Ecosystem
Associates



TAHOE KEYS INTEGRATED
MANAGEMENT PLAN

March 27, 2017

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1.0 BACKGROUND

The Tahoe Keys Property Owners Association (TKPOA) has been working with leading experts on aquatic invasive species (AIS) from around the country to create an adaptive, integrated plan to significantly reduce the biovolume of the infestation in the Tahoe Keys. The TKPOA has been using every tool in the toolbox, measuring success, and adapting to new methods and changing results. In addition, the TKPOA also encourages every property owner and visitor to be engaged in aquatic weed management.

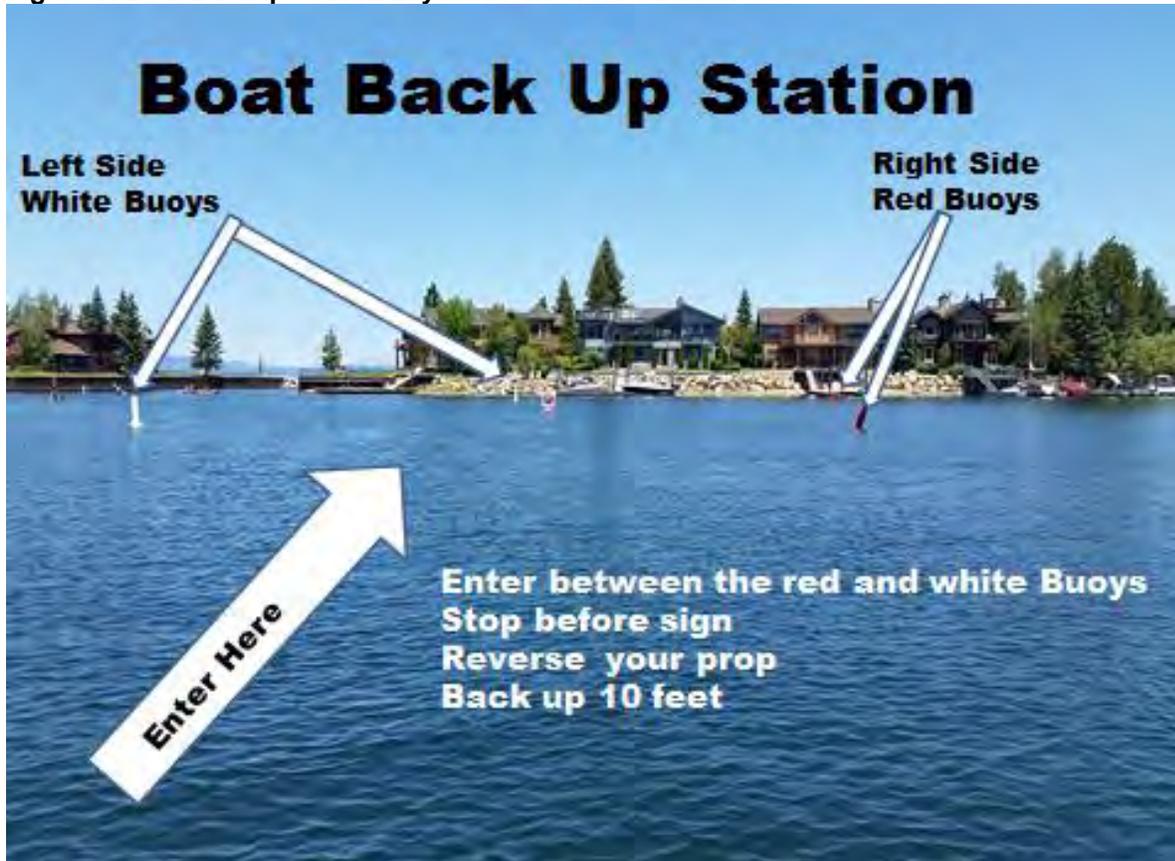
Many boaters still do not know that plant fragments, whether chopped up by propellers, pulled up by boat keels, or snagged on paddles, can take root and start new infestations elsewhere. Around Lake Tahoe efforts have been made to educate all types of boaters about the AIS problem and how easily it is to transport these fragments. The Tahoe Keepers program is specifically geared towards non-motorized vessels, such as kayaks and paddle boards, while the boat inspection program is geared more towards motorized vessels and sail boats. However, even with these programs in place, there are still an abundance of fragments that are transported out of marinas and areas like the Tahoe Keys on propellers and keels.

During the 2016 boating season the TKPOA introduced the Boat Backup Station in the West Channel to help combat the number of fragments that are transported into Lake Tahoe. The primary goals of the Boat Backup Station project are to educate homeowners and vacationers about AIS in the Tahoe Keys, including the potential impacts of transporting fragments out into the lake, and to reduce the amount of fragments that come out of the Tahoe Keys Main Lagoon.

2.0 GENERAL CONCEPT OF THE BOAT BACK-UP STATION

The general concept of the Boat Backup Station is, as watercraft moves into a designated area, they stop the vessel, reverse their propeller (this is to untangle and release any weeds caught in the propeller, keel or rudder), and then back up ten (10) feet to drop any weed fragments. Once this is complete the boater continues out to Lake Tahoe proper. The area is designated with red buoys on the right; white buoys on the left (Figure 1) and a red stop sign in the middle of the area (Figure 2).

Figure 1. Boat Backup Station Layout in the West Channel



*View from south looking north

Figure 2. Buoy Stop Sign in Middle of Area



3.0 PUBLIC EDUCATION AND OUTREACH

In order to promote the new concept of the Boat Backup Station, the TKPOA utilized the communication company Fresh Tracks to create rack cards (Appendix A) along with other outreach and education materials. Rack cards were distributed to the boat inspection stations in Meyers, CA and Spooner, NV, the local marinas, and the rental agencies that represent the Tahoe Keys. Articles about the backup station were written and posted on both the TKPOA Weeds Management Website (<http://www.keysweddsmanagement.org/>) and TKPOA Website (<https://www.tkpoa.com/>), in addition to weekly and monthly letters and emails that were sent to the homeowners.

4.0 PROPOSED CORRECTIVE MEASURES FOR 2017 SEASON

In an effort to correct the problems observed during the 2016 program, the TKPOA proposed the following actions for the 2017 season: positioning of the designated area, design of the designated area, size of the signage, and watercrafts departing from Spinnaker Cove and Light House Shores.

4.1 Positioning Designated Area

Discussion: Currently the placement is too close to the entrance to Lake Tahoe. Depending on the flow of the water, it is very easy for the wind blowing across the surface of the lagoons to take fragments dropped from the propellers into Lake Tahoe, which is counterproductive to what the Backup Station is designed for.

Recommendation: The actual backup position needs to be moved further into the channel to ensure floating fragments can be contained in a specified area and not easily float into the lake. Also see recommendation of topic below.

4.2 Design of the Designated Area

Discussion: The current design is flawed:

1. The area is too small; it can hold only one boat at a time.
2. Unless the area is known it appears to be four buoys randomly placed in the waterway.
3. There currently is not any preparatory signage stating what steps need to happen. I.e. where the boat backs up at, where the subsequent boats hold, enter and exit sites.

Recommendation: This area needs to be longer with more prominent signage and markings that runs through a majority of the West Channel. When established it needs to be so distinct that any boater will understand the steps and actions needed to comply with our standards. We also need to place signs on buoys throughout our waterways to identify what will be coming as they continue (similar to road signs used throughout towns and highways).

4.3 Size of the Signage

Discussion: The size of the current sign that we are utilizing is too small, it measures 2.5' x 2.5'. In order to read what the wording states the on the sign, the watercraft needs to get within approximately twenty (20) feet of it.

Recommendation: The sign needs to be enlarged and placed on a buoy that can support the size. We recommend that the sign be 4' x 4'. Also this sign needs to be placed in the position where we want all boat traffic to stop and complete all steps required.

4.4 Watercraft Departing from Spinnaker Cove and Light House Shores

Discussion: The current and future positioning of the Boat Backup Station is not conducive for the homeowners that live in Spinnaker and Light House Coves.

Recommendation: We need to position a sign (stated above) in the mouth of both waterways for these boaters to conduct the backup procedures within their respective coves.

4.5 Public Outreach and Education for Visitors/Renters

Discussion: We have been successful in the outreach with the homeowners of the association for this program. The biggest obstacle has been the renters and visitors that do not have knowledge of the program.

Recommendation: The information has been distributed to the majority of rental property agencies that serve and represent the Tahoe Keys. It has been discussed that Fresh Tracks request that Rental Property Agencies allow links to the TKPOA website and Weed Management website on their respective webpages, that TKPOA Staff have a meeting with the Property Managers of the all of the Rental Property Agencies to discuss different options to relay our message to renters and have a meeting with the boat renters around the basin to discuss the same topic as Property Managers.

4.6 East Channel Backup Station

Discussion: We currently do not have a Backup Station in the East Channel which has at least the same amount if not more boat traffic than the West Channel.

Recommendation: It is recommended that the staffs of TKPOA, SEA, Beach and Harbor and Marina conduct a meeting to discuss the potential placement of an East Channel Backup Station.

5.0 MONITORING DATA

5.1 General Information

Occasionally, the TKPOA staff monitored this site for compliance of boaters. It has been determined that:

1. Homeowners were more likely to stop and conduct the procedures than renters.
2. Homeowners that were not educated via our outreach were more understanding and easily complied with what was being requested.
3. Most renters did not understand the concept of what was trying to be achieved
4. For a majority of renters, it was a nuisance for them to be educated on the water by TKPOA Staff about the intent and expectations of the Boat Backup Station.

5.2 Observations

The following dates and times were when observation were conducted and data was collected:

- July 2, 2016
 - 1000-1200
 - 7 Vessels did not stop and back up
 - 20 Vessels did stop and back up
 - 92 Vessels stopped and educated
- July 23, 2016
 - 1145-1200
 - 32 Vessels did not stop and back up
 - 4 Vessels did stop and back up
- July 24, 2016
 - 1200-1300
 - 19 Vessels did not stop and back up
 - 7 Vessels did stop and back up
- August 8, 2016
 - 1300-1415
 - 27 Vessels did not stop and back up
 - 3 Vessels did stop and back up

The following dates were when observations were conducted but data was not collected.

- July 7, 2016
- July 18, 2016
- July 22, 2016
- July 27, 2016
- August 1, 2016
- August 4, 2016
- August 5, 2016
- August 15, 2016
- August 18, 2016
- August 26, 2016
- August 28, 2016

6.0 2017 IMPLEMENTATION PLAN

Along with the proposed corrective measures to the Boat Back-up Station in the Main Lagoon, the TKPOA will be testing the effectiveness of another station in the Marina Lagoon. There are several areas that have been identified as potential sites in the Marina Lagoon, although one has not been selected. Throughout the watercraft off season, the Water Quality Committee and the Water Quality Staff will identify and plan for the 2017 implementation.

Both backup Stations will be constructed and in place prior to the 2017 Memorial Day holiday weekend. The outreach and public education to the homeowners will begin in April 2017 via Keys Breeze article, 2017 Water Quality Plan will be sent to the homeowners with quarterly billing and out through email. TKPOA will also distribute information to the general public through rack cards, posters (which will be placed at rental properties, watercraft inspection sites and various organizations around Lake Tahoe) and with boater education on the water from TKPOA Staff.

7.0 SUMMARY OF FINDINGS

The Boat Backup Station was implemented in the spring of 2016 as an experimental concept to reduce the amount of plant fragments that enter Lake Tahoe through TKPOA Waterways. Variables such as boater compliance and fragment movement into Lake Tahoe were found to determine effectiveness of the Boat Backup Station. Overall, the education and outreach to boaters, observations throughout the season and feedback from boaters indicate that the concept would be successful in the future with minor improvements and time.

8.0 LIST OF PREPARERS

The following individuals prepared the text presented in this report.

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9.0 ABBREVIATIONS AND ACRONYMS

AIS	Aquatic Invasive Species
SEA	Sierra Ecosystem Associates
TKPOA	Tahoe Keys Property Owners Association

- APPENDICES -

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Appendix A: Boat Backup Station Rack Card

HEY BOATERS IN THE TAHOE KEYS GET ON BOARD!



Whether using the **NEW BOAT BACKUP STATION** in the west lagoon (look for the **buoy**) or leaving the Tahoe Keys Marina, **follow these three simple steps** whenever boat traffic and safety allow.

- STOP:** Stop your vessel, make sure you have some space from boats around you.
- BACK:** Reverse your prop, if any weeds are tangled in the propeller or caught on the keel or rudder, this will help shake them.
- DROP:** Back up 10 feet, give the propeller long enough to drop any weed fragments.

That's it! Proceed onward and enjoy your day on the water knowing you've done your part to stop the spread of aquatic invasive weeds.

DID YOU KNOW?

Even weed fragments chopped up by propellers can take root and start new plants. The Tahoe Keys Property Owners Association is working hard to get control over the weeds and to stop them from spreading.



THE PROBLEM

Aquatic invasive weeds, introduced in the 1980s, have been growing rapidly in the warm, shallow waters of the Tahoe Keys. They out-compete native species, harbor non-native fish species and mosquitos, and make boating and swimming in the Tahoe Keys difficult. There are weeds elsewhere in Lake Tahoe, but the Tahoe Keys doesn't want to contribute to their spread. Today, 90 percent of the waterways in the Tahoe Keys are infested with invasive aquatic weeds.

THE SOLUTION

The Tahoe Keys Property Owners Association has been working with leading experts on aquatic invasive weeds from around the country to create an adaptive, integrated plan to significantly reduce the weeds. We're using every tool in the toolbox, measuring success, and adapting to new methods and changing results. Every property owner and visitor is doing their part, volunteering to use **bottom barrier mats** where applicable, **improving landscaping** to reduce nutrients washed into the lagoons for the weeds, and **being responsible boaters**.

Thanks for getting on board to help fight the weeds in the Tahoe Keys!



To find out more about our efforts to stop the weeds and improve water quality, go to keysweedsmanagement.org.



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