



Date: February 7, 2024

To: TRPA Threshold Update Initiative Stakeholder Working Group

From: TRPA Staff

Subject: Questions Raised at the Advisory Planning Commission on the Proposed Revisions to Environmental Threshold Carrying Capacities (threshold standards)

Summary:

At their October 2023 meeting the Advisory Planning Commission (APC) requested that the Threshold Update Initiative Stakeholder Working Group (TUISWG) consider questions related to the proposed modification of the Aquatic Invasive Species environmental threshold carrying capacities.

The first question was raised in the discussion of the proposal to adopt standards for the aquatic invasive weeds, but not for New Zealand mud snails, Asian clams, or aquatic invasive fish. The second question arose in the context of the discussion of the timeline and target of the reduction of aquatic invasive weeds in the Tahoe Keys. Discussion and staff recommendations are provided for each topic below.

Staff Recommendation:

Staff recommends that the Threshold Update Initiative Stakeholder Working Group recommend the following to the Advisory Planning Commission and Governing Board:

1. The adoption of the proposed standard for aquatic invasive plants outside the Tahoe Keys; “No active aquatic invasive plant infestations in Lake Tahoe, adjacent wetlands, and tributaries, not including the Tahoe Keys.”
2. The adoption of a revised AIS standard for the Tahoe keys, removing the date, and specifying invasive plants. “Reduce aquatic invasive plant abundance in the Tahoe Keys by 75%”
3. The adoption of the proposed standards for stream environment zone (SEZ) restoration and Tahoe Yellow Cress (TYC) as written in the APC staff summary

Required Motions:

To recommend the adoption of the proposed threshold standards, TUISWG must make the following motion(s), based on the staff summary:

- A. A motion to recommend the adoption of the proposed environmental threshold carrying capacities as presented in Attachment A.

Background:

At the October 2023 meeting the APC, staff presented the proposed updates to the threshold standards for AIS, SEZ, and TYC. The APC raised multiple questions related to the AIS thresholds and asked that the questions be considered by the TUISWG.

The first question raised in the discussion at APC was why threshold standards were proposed for aquatic invasive plants, but not for other AIS. That question is a derivative of a question the TUISWG and the Tahoe Science Advisory Council (Science Council) have spent considerable time on in the past. The rationale for recommending and adopting standards for aquatic invasive plants, but not yet for other AIS is rooted in the Bi-State Compact definition and requirements for threshold standards, and the guidance of the Science Council for implementing best practices in the adoption of the threshold standards.

Compact Requirements and Considerations

Congress amended the Bi-State Compact (Compact) in 1980 (PL 96-551; December 19, 1980) with a directive and a Compact definition (Article II (i)) to adopt standards it termed “environmental threshold carrying capacities.” The Compact defined the standards as:

“... an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region.”

In addition to the formal definition, the Compact establishes three sets of requirements related to threshold standards, 1) related to the standards themselves, 2) related to the Regional Plan, and 3) related to projects.

Threshold standard requirements

In defining threshold standards, Article II of the compact also requires the adoption of threshold standards in five categories. While standards are required in those five areas, the definition does not limit the threshold standards to those categories.

II (i) *“Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.”*

Regional Plan requirements

Article V (c) of the Compact requires that the Regional Plan “achieves and maintains” the threshold standards.

V(c) *“Within 1 year after the adoption of the environmental threshold carrying capacities for the region, the agency shall amend the regional plan so that, at a minimum, the plan and all its elements, as implemented through agency ordinances, rules and regulations, achieves and maintains the adopted environmental threshold carrying capacities.”*

I(b) *“In order to enhance the efficiency and governmental effectiveness of the region, it is imperative that there be established a Tahoe Regional Planning Agency with the powers conferred by this compact including the power to establish environmental threshold carrying capacities and to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities.”*

Project Requirements

Article V of the Compact further requires that the agency make written findings when approving a project, that the project will not cause a threshold standard to be exceeded.

V(g) “The agency shall adopt ordinances prescribing specific written findings that the agency must make prior to approving any project in the region. These findings shall relate to environmental protection and shall insure that the project under review will not adversely affect implementation of the regional plan and will not cause the adopted environmental threshold carrying capacities of the region to be exceeded.”

While not specifically related to threshold standards, article VI of the compact on “Agency’s powers”, the compact suggests that TRPA should;

“Whenever possible without diminishing the effectiveness of the regional plan, the ordinances, rules, regulations and policies shall be confined to matters which are general and regional in application, leaving to the jurisdiction of the respective States, counties, and cities the enactment of specific and local ordinances, and rules, regulations and policies which conform to the regional plan.”

Central to the discussion of what should become a threshold standard is the Compact requirement that the adopted Regional Plan at a minimum, achieves and maintains the adopted environmental threshold carrying capacities. In that discussion with Science Council members, the Council highlighted the need to consider our ability to drive action towards the desired condition and suggested that standards not be adopted for things that were outside the control of in-basin management. This guidance is consistent with the Bi-State Compact requirements highlighted above that the Regional Plan be able to achieve and maintain the threshold standards.

One example that came up in conversation with the Council was the standards adopted by each State related to the desired water temperature of Lake Tahoe^{1,2}. The council members stressed that tracking and understanding the temperature of Lake Tahoe was critical to the management of the lake. Water temperature is a critical component in our understanding of the processes that drive algal growth or lake clarity. But while there may be water temperature or water temperature regimes that are more closely linked with our desired condition of the Lake, we should recognize that while the 39 trillion gallons of water in the lake will likely continue to be influenced by global climate change, it is unlikely that lake temperature would be responsive to regional management.

If threshold standards are only to be adopted for desired conditions that can be attained and maintained through regional management, and for which we have sufficient information to set a specific and measurable desired condition, what does that mean for goals for which we cannot yet express specific and measurable desired conditions that can be achieved through regional management? This question is central to the discussion of threshold standards for AIS because as noted in the standards

¹ https://www.waterboards.ca.gov/rwqcb6/water_issues/programs/basin_plan/docs/2022/ch5-laketahoe.pdf

² <https://www.leg.state.nv.us/NAC/NAC-445A.html#NAC445ASec1626>

recommendations memo from the Aquatic Invasive Species Coordinating Committee, some AIS have no known viable control method at this time.

Early in the engagement with the Tahoe Science Advisory Council, they identified that the current set of threshold standards contained a mix of different types and recommended that we differentiate between types.

"Threshold standards are a mixture of environmental standards, restoration goals, specific directives, broad guidance, and narrative statements. The "focus" categorization of these various types of standards should be addressed first. Then the SMART-based criteria could be applied to standards with interpretation informed by whether the standard is a specific activity, an outcome, or some intermediate result." (TSAC, 2017)

The "focus" categorization of individual standards refers to the identification of the intent of the standard, which can be used to determine its fit within the regional management system. Building on those recommendations, the Threshold Update Initiative Stakeholder Working Group requested additional assistance from the Tahoe Science Advisory Council in applying the system structure recommended by the Council to the existing threshold standards. The Council delivered a report to the TUISWG in June 2020 that made recommendations for the restructuring of the water quality threshold standards. The TUISWG discussed the Council's recommendations at its September 2020 meeting and recommended implementation of the recommendations. The recommendations are summarized below and the review is instructive for how to handle other AIS.

The review of the existing water quality standards led to the identification of three types of measures (currently adopted as threshold standards) that are better suited to other parts of the regional adaptive management system. The first are standards that track the effectiveness of projects and programs towards the attainment of other goals and are better suited as output performance measures. The second are standards that place limits on project operations that are more consistent with the regulations in the TRPA code of ordinances. The third are standards that are aspirational and better suited to explain overall goals or purposes. The third category, aspirational statements, was addressed as part of the Aquatic Invasive Species standards and performance measure update. The proposed modifications to the water quality standards are summarized below and described in detail in Attachment A.

I. Existing threshold standards that track performance

The first group of existing threshold standards identified during the review were those that were better suited to track program performance rather than establish a desired end-state. Within the water quality category, this group of standards is best represented by the standards related to load reduction. Collectively they were identified to track implementation and progress towards other goals and are thus better suited as output performance measures.

II. Existing threshold standards that establish performance requirements for activities

The second group of existing threshold standards identified during the review were those that establish limits or performance expectations to guide activity within the region. Within the water quality category, this group of standards is best represented by the surface and

groundwater discharge standards (WQ19-WQ32), which establish minimum performance requirements for operations in the region. The discharge requirements were designed to promote the attainment of the region's nearshore and pelagic water quality goals and do not establish an independent end-state goal of their own. The standards were recommended for retention within the TRPA code of ordinances. The Code provides specific direction to ensure that activities and development in the Region are compatible with the Regional Plan and support the attainment and maintenance of the Region's shared goals for restoration and environmental quality as expressed in the threshold standards.

III. Express aspirational statements of purpose

The third and final group of standards identified during the review were those that express an aspirational goal but are neither articulated in a manner that establishes a common understanding of the desired end state nor enables objective evaluation of progress. The Council recognized the value of these standards because they communicate the intent of a program or policy to a general audience.

The third category, aspirational statements of purpose, comes the closest to describing the APC's questions relative to the AIS standards, which could be paraphrased as, "Isn't our goal complete eradication of all AIS from the Lake?" Instances of complete eradication of invasive species in all areas are relatively rare, even for AIS with viable control alternatives. This means that eradication of all AIS is not likely to be feasible. The Council suggested that these expressions of intent, were valuable, even if they were not suitable for adoption as threshold standards.

Within the regional management system, these aspirational statements of purpose are found within the goals and policies of the Regional Plan. At present there is only a single mention of aquatic invasive species in the goals and policies of the conservation element of the Regional Plan.

"FI-1.9 PROHIBIT THE RELEASE OF NON-NATIVE AQUATIC INVASIVE SPECIES IN THE REGION IN COOPERATION WITH PUBLIC AND PRIVATE ENTITIES. CONTROL OR ERADICATE EXISTING POPULATIONS OF THESE SPECIES AND TAKE MEASURES TO PREVENT ACCIDENTAL OR INTENTIONAL RELEASE OF SUCH SPECIES."

If the TUISWG continues to support the placement of aspirational statements of purpose within the goals and policies of the Regional Plan, then the question is, does *FI-1.9* adequately capture the intent? Should it be revised? Or should a new goal or goals be adopted to better capture the intent?

Taking an even broader perspective beyond consideration of these water quality standards, TRPA as an agency must continually evaluate standards, goals, policies, performance standards, etc. to make sure there is alignment and coordination across all functions.

Proposed Threshold Standard for Reduction of Aquatic Invasive Weeds in the Tahoe Keys

The text of the proposed standard for the Tahoe Keys reads "Reduce aquatic invasive species abundance in the Tahoe Keys by 75% by 2045." Multiple questions arose about the proposed standard. The first related to "only" targeting a 75% reduction, why not shoot for a 90%, or 100% reduction in abundance, e.g. full eradication? The second related to proposing a target year of attainment that was over 20 years away.

The answer to the first question about the recommended target level relates to the discussion above about what a reasonably expected outcome is. The 75% target for reduction in plant abundance is rooted in the environmental documentation and plan for the Tahoe Keys Control Method Test. That work suggested that a 75% reduction could be maintained over time and established as the goal.

However, just because the proposed standard is a 75% reduction that does not mean that 75% reflects the limit of our aspiration. If a 75% reduction can be achieved and the science suggests that a greater reduction is feasible, then the standard can be revised to establish a higher target for reduction in abundance.

Establishing a standard based on a current plan and potentially revising it when the target is achieved is consistent with recent threshold standard amendments and proposed updates to standards in the area of stream environment zone restoration.

In 1982, as part of the original set of threshold standards, the region established the goal of “restoring 25 percent of the SEZ lands that have been identified as disturbed, developed, or subdivided (SC12).” At the time the SEZ standards were adopted, SEZ restoration was described as, “*restoration of SEZ is probably one of the most cost-effective mechanisms for nutrient load reduction available,*” and the proposed targets were set at the point where prior work acknowledged the trade-offs between the additional benefits and investments required. “*The cost of restoring all SEZ to their natural state would be cost prohibitive. This solution should only be applied in limited situations where benefits received would also be substantial.*” Forty years later we have achieved that goal but few if any partners feel that the work is done. The recommended revision to the SEZ restoration incorporates past work and sets a higher restoration goal for the region. A similar model could be followed for the Tahoe Keys.

The suggested target date in the proposed Tahoe Keys threshold standard, 2045, was not grounded in the existing implementation strategy for the Tahoe Keys. The controlled methods test in the Tahoe Keys is still in the implementation phase, and thus it is premature to establish an attainment date in the threshold standard.

Contact Information:

For questions regarding this agenda item, please contact Dan Segan, Chief Science and Policy Advisor, at 775-589-5233, or dsegan@trpa.gov.

To submit a written public comment, email publiccomment@trpa.gov with the appropriate agenda item in the subject line. Written comments received by 4 p.m. the day before a scheduled public meeting will be distributed and posted to the TRPA website before the meeting begins. TRPA does not guarantee that written comments received after 4 p.m. the day before a meeting will be distributed and posted in time for the meeting.

Attachments

- A. Proposed Environmental Threshold Carrying Capacities

Online resources

B. [Threshold Standards Update Staff Report - Advisory Planning Commission October 11, 2023](#)

Attachment A

Proposed Environmental Threshold Carrying Capacities

1. No active aquatic invasive plant infestations in Lake Tahoe, adjacent wetlands, and tributaries, not including the Tahoe Keys.
2. Reduce aquatic invasive plant abundance in the Tahoe Keys by 75%.
3. Enhance the quality and function of meadows and wetlands from 79% to 88% of the regional possible SEZ condition index score.
4. Maintain a minimum of *Rorippa subumbellata* occupied survey sites as established in the Table below:

Lake Level (feet of elevation)	Occupied survey sites
Low (<6,225)	35
Transition (6,225- 6,227)	26
High (>6,227)	20