



VERSION 1.3
MARCH 6, 2017

THRESHOLD ASSESSMENT METHODOLOGY

THRESHOLD UPDATE INITIATIVE

TAHOE REGIONAL PLANNING AGENCY

THRESHOLD ASSESSMENT METHODOLOGY

The threshold assessment will support the strategic initiative to review and update the threshold standards by providing a comprehensive picture of the strengths and weakness of current system. The assessment is designed catalogue the attributes of the current system, to support setting the strategic direction for the initiative, but will not be prescriptive in terms of next steps.

OVERVIEW

The Bi-State Compact directs TRPA to establish “Environmental Threshold Carrying Capacities” (threshold standards) for the Tahoe Region, which it defines 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”. The majority of the threshold standards were adopted in 1982 based on science that is now over 35 years old. There is a broad Bi-State consensus and support for reviewing and updating the threshold standards and monitoring systems that support them. In 2015 the TRPA Governing Board identified the review and updating of the threshold standards as one of seven strategic initiatives for the agency. The goal of the initiative is to ensure a representative, relevant, and scientifically rigorous set of threshold standards, supported by a cost-efficient and feasible monitoring and evaluation plan, and the development of a robust and repeatable process for review of standards in the future.

OBJECTIVE

Compare each of the existing threshold standards against best practice for the formulation of goals and standards, to highlight the aspects of the current system that are well-designed and identify where improvements may be considered.

BACKGROUND

A first draft of the assessment of threshold standards was presented in the 2015 Threshold Evaluation Report (TRPA 2016). The entire 2015 Threshold Evaluation Report was subjected to an independent peer review. As part of that review the draft assessment was reviewed by three experts in the field of monitoring and evaluation (Hall et al. 2016). In addition to the peer review process, the 2015 threshold evaluation report was open for public feedback and review between its release in late September 2016 and formal issuance in December 2016.

The executive committee of the Tahoe Science Advisory Council (TSAC) identified the provision of technical support for TRPA and partners in the review and update of the threshold standards as the primary task for the TSAC’s 2017 workplan. The Tahoe Science Advisory Council reviewed the draft assessment, the comments of the peer reviewers, and the feedback received from stakeholders. Based on their review, the TSAC provided guidance to TRPA on the revision of the threshold assessment process and endorsed the threshold assessment as a logical first step in the comprehensive review of the threshold standards (TSAC 2017).

The assessment methodology outlined here is defined by a set of questions designed to identify strengths and weaknesses in the current threshold standard system. Each standard would be subjected to each question of the assessment. The questions emerged from a synthesis of both the academic and applied monitoring and evaluation literature, and we revised in response. These sources ranged from guidance documents published by the most recognizable international environmental and development organizations such as the United Nations, Centers for Disease Control and Prevention, Global Environment Facility, and Conservation Measures Partnership, to leaders of national professional organizations such as the American Evaluation Association and major restoration programs such as those managed by U.S. Environmental Protection Agency. The proposed assessment does not include all criteria identified in any of the individual models. Rather it seeks a balance between the comprehensiveness of the assessment and redundancy in the information gained through applying the criteria in conjunction with the other criteria in the assessment.

ASSESSMENT QUESTIONS

The assessment itself is defined by a set of questions that will be used to interrogate each threshold standard. The assessment consists of two parts. The first uses a set of “categorization” questions to provide insight into how the standard fits into the larger threshold system framework, and to provide context for interpretation of the results of the second set of questions. The second part of the assessment, uses criteria drawn from the SMART framework commonly used to set goals and evaluate progress in project and employee management.

The SMART acronym was coined in 1981 to describe desirable qualities for management objectives (Doran 1981). The words associated with the SMART acronym vary between different organizations that apply the framework. S stands for specific or strategic; M for measurable; A for achievable, attributable, attainable, or agreed; R for relevant, realistic, or resourced; and T for time-bound, trackable or time-constrained. While the SMART criteria emerged from the human resources management field, they have become common in the conservation and environment field and have been adopted by the Global Environment Facility, the International Union of Concerned Nations, and the United Nations Evaluation Group.

The SMART framework is designed to enable objective and informative evaluation of the effectiveness of programs and actions. Goals that are SMART enable the development of reporting structures that:

1. Promote accountability for the achievement of objectives through the assessment of outcomes and the effectiveness of activities and policies.
2. Accelerate attainment through improved resource allocation and decision making and promotion of learning and knowledge sharing among partners.

TRPA is committed to collaborative adaptive management of regional programs through the Plan-Do-Check-Adjust cycle (PDCA). At the heart of effective implementation of the PDCA cycle is understanding how effective the implemented actions have been in facilitating the desired outcomes.

Goals and objectives that are designed using that principles of SMART are intended to provide the high-quality information that is necessary to inform adaptive management.

The evaluation of SMART objectives principles helps support more effective management by improving the quality of information reaching managers and stakeholders. How this works is best illustrated with an example. The one below is drawn from *Measures of Success* (Margoluis & Salafsky 1998):

Original goal: Reduce incidents of harvesting of undersized marine resources.

Assessing the above goal against the SMART criteria, we identify that the original goal does not meet the SMART criteria for being specific, measurable or time-bound. The goal is ambiguous (not-specific) because “undersized marine resources” is not formally defined and there is no specified target for the desired reduction in incidents of harvesting. This ambiguity could cause different evaluators or stakeholders to reach different conclusions about whether the goal has been attained. The ambiguity could also confound measurement of the goal. The goal also specifies no timeline against which to assess progress towards attainment.

Revised goal: By the end of the third year of the project, reduce incidents of harvesting snappers, groupers and conch in violation of community council defined size limits to fewer than 15 per month.

The revised goal addresses the issues identified in assessing the original goal against the SMART criteria by formally defining the previously ambiguous parts of the original goal and specifying a formal target and desired attainment date. By addressing the ambiguity in the goal, the revisions ensure that evaluation of the goal will provide decision makers with the information they need to track progress towards attainment.

The assessment framework in tables below in a common format. The first column, “assessment questions” are intended to briefly convey what is being assessed to a general audience. The “description” column provides technical details for engaged audiences to understand the rationale, usefulness, and applied or academic source of the question. The “rating or category” provides discrete groupings to help general audiences quickly discern what the assessment means. The “rating definitions” provide the technical detail that defines each rating or category. Ratings follow a one to five Likert scale with one being the least desirable and five being the most desirable. Clear definitions are provided for ratings one, three and five, but the use of “two” or “four” ratings could be valuable when the standard is in between defined ratings.

Standard categorization questions. Standard categorization questions are intended to group standards in ways that may be insightful for decision makers and the design of monitoring programs. These categorization questions are intended to be combined with SMART-based criteria to provide additional insight into standard content and help focus on attention. Standard categorizations questions differ from the SMART-based criteria in that the ratings do not always imply positive or negative quality.

STANDARD CATEGORIZATION			
Assessment Question	Description	Rating or Category	Rating Definition
1. Focus: What is	This question groups	Activity/Input	An activity standard defines a

STANDARD CATEGORIZATION			
Assessment Question	Description	Rating or Category	Rating Definition
the standard designed to measure (Activities, intermediate results, or ultimate outcomes)?	standards by type to provide additional insight about the chain of cause and effect, allowing a better understanding of the use and need for the standard. To provide strong program evaluation it is crucial to measure outcomes but it may be difficult to measure these end points due to time lag or challenges in attributing results to management activity. In these cases, it can be valuable to establish standards for intermediate results or activities completed. (DRI 2006; GEF 2010; CMP 2013; IUCN 2015)		target for an activity or strategy that is expected to positively contribute to an outcome of intermediate result. Miles of roads treated (an Environmental Improvement Program performance measure) is an activity based measure that is expected to reduce pollutant load in stormwater, which will improve water quality in the lake.
		Intermediate Results	An intermediate result standard refers to a product that occurs along a chain of cause and effect that is expected to eventually lead to the desired outcome. Stormwater pollutant load is an intermediate result which is expected to lead to improved water quality.
		Outcomes	An outcome standard measures the environmental condition or other result that is the desired end point. Secchi depth indicator of lake clarity is an outcome standard of water quality threshold category.
2. Casual-basis: Is the causal basis for standard well supported by settled science or the most recent	Is the causal linkage(s) embedded in the standard supported by settled or the most recent science? Many standards were adopted in 1982, and new	Very Well (5)	Established science or the most recent evidence strongly supports the standard and this evidence is less than 10 years old. The causal linkage that support are tight.

STANDARD CATEGORIZATION			
Assessment Question	Description	Rating or Category	Rating Definition
evidence?	evidence and scientific research has emerged since then. In some cases, there is support for the standard, in other cases the evidence suggests a modification of the objective establish in 1982. (DRI 2006)	Adequately (3)	Evidence used to support the standard has been reviewed within the last 20 years and is still considered relevant and appropriate by most stakeholders.
		Poorly (1)	New evidence from more than one source suggests that the standard is out of date or unsupported. The causal linkage that underpin the standard are weak or non-existent.
		N/A	Not applicable, because the standard is not predicated on a causal pathway.
3. Redundant: Do other standards measure similar content?	This question looks at the individual standard in the context of the whole threshold standards system to assess if multiple standards that relate to the same entity or objective. Redundancy can increase reporting costs and lead to confusion on goals and objectives. (DRI 2006)	YES	Other standards relate to the same entity.
		NO	The standard is unique its focus.

SMART criteria. Questions that assess the extent to which the threshold standards are consistent with criteria based on the SMART framework for objective setting. SMART represents important criteria that have proven useful in defining objectives, however, organizations often ascribe slightly different definitions for each component of the SMART criteria. Clear definitions are provided for ratings one, three, and five, but the use of “two” or “four” ratings could be valuable when the standard is in between defined ratings.

SMART CRITERIA

Assessment Question	Description	Rating	Rating Definition
1. Is the standard specific ?	This question identifies where a lack of clarity in a standard may lead to misunderstanding or disagreement around attainment or progress towards attainment of a standard because the desired outcome is not clear. (Doran 1981; US EPA 2004; Stufflebeam & Shinkfield 2007; CDC 2009; GEF 2010; CMP 2013; IUCN 2015)	5	The standard has a specific numeric target and benchmark/baseline values are documented where necessary.
		3	Numeric values for the target and baseline could be calculated with minimal or moderate effort and calculation is not likely to provoke controversy among stakeholders.
		1	The target is unclear target or lacks a documented baseline. Narrative standards receive this rating or standards that contain multiple sub-standards receive this.
2. Is the standard measurable ?	This question identifies standards where measuring progress towards attainment is a complicated by a lack of clarity on what should be measured, or where accurate and precise measurement of the indicator is infeasible or practically challenging. (Doran 1981; US EPA 2004; DRI 2006; Stufflebeam & Shinkfield 2007; CDC 2009; GEF 2010; CMP 2013; IUCN 2015)	5	Indicators are unambiguous, clearly linked to the standard, and there are practical ways to accurately measure them.
		3	Direct measure is not practical, but measurement of a closely related surrogate is practical.
		1	Appropriate indicators are not well specified, are impossible or impractical to monitor using existing methods, or questions surround monitoring methods.
3. Is the standard attributable ?	This question identifies standards less likely to provide information that informs local management decisions, because the desired outcomes cannot reasonably be credited to the activities anticipated. (Doran 1981; US EPA 2004; GEF 2010; CMP 2013; IUCN 2015).	5	There is a clear link between actions being undertaken, and those actions are primarily responsible for changes in the standard indicator.
		3	The is likely a link between actions being undertaken and changes in the standard indicator, but the chain of cause and effect may not be explicitly documented or the actions are only a secondary or tertiary driver of change.

		1	There is no clear link between management decisions in the Region and change in the standard indicator.
4. Is the standard relevant?	This question identifies standards that have drifted from top level priorities or not providing information that informs management decisions. (US EPA 2004; DRI 2006; Stufflebeam & Shinkfield 2007; GEF 2010; CMP 2013; IUCN 2015)	5	The standard is highly relevant to current concerns in the Region, and the information derived by assessing the standard is regularly used to direct management in the Region.
		3	The standard is relevant to current concerns, but evaluation of the standard does not regularly inform management.
		1	The standard is not relevant to current concerns in the Region, and the information provided by assessing the standard does not regularly inform management.
5. Is the standard time-bound?	Is the standard clearly linked to a specific time when achievement is expected? This question identifies standards that are well designed and those with ambiguous timing. In many cases adding a timeframe is technically simple but politically difficult. (Doran 1981; US EPA 2004; Stufflebeam & Shinkfield 2007; GEF 2010; CMP 2013; IUCN 2015)	5	The standard includes a specific year of attainment using an absolute value in official documents.
		3	The year that the standard should be achieved is well understood but may need to be officially stated in absolute value format within official documentation. Documentation process is expected to be simple and without controversy.
		1	There is no documentation of a year that achievement is expected.

WORKED EXAMPLES

Below are sample applications of the assessment as applied to two standards to demonstrate how the assessment would work in practice.

Example 1

Standard: A nondegradation standard to preserve plant communities shall apply to native deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations to be consistent with the SEZ threshold.

1. **Focus:** Outcome. The standard is the nondegradation of the communities. There is some ambiguity in the standard because the second clause is focused on enabling actions, that would support attainment of another standard.
2. **Casual-basis:** N/A. The standard is not predicated on a causal pathway.
3. **Redundant:** Yes. The standard appears verbatim in both the wildlife and vegetation categories. The standard also overlaps with individual goals established for vegetation communities in other threshold standards and soil conservation goals for SEZ.
4. **Specific:** 1. The standard establishes a goal of nondegradation, but the condition from which nondegradation is to be evaluated is not documented, so it is not possible to objectively evaluate change in community condition. It is also not clear what would constitute the provision of opportunities to enhance acreage of the communities.
5. **Measurable:** 3. It is possible to measure community condition, but the desired condition is not linked to a specific indicator.
6. **Attributable:** 5. TRPA can establish regulation to prevent local modification of vegetation communities.
7. **Relevant:** 5. Protection and restoration of SEZ is major concern for agencies and stakeholders in Basin.
8. **Time-Bound:** No. No timetable for attainment is specified in the standard.

Example 2

Standard: It shall be the policy of the TRPA Governing Board to support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.

1. **Focus:** Activity/Input. The standard states that TRPA “support,” which clearly identifies the focus of the standard as on actions.
2. **Casual-basis:** N/A. The standard doesn’t assume a causal pathway.
3. **Redundant:** No. No other standards relate to reintroduction of Lahontan cutthroat trout.
4. **Specific:** No. There is no specific number of actions specific in the standard.
5. **Measurable:** 3. Measuring actions that support reintroduction is in theory possible, but there is clear possibility for divergence of opinion as to what might qualify. For example, determination of how much would have to be done to support an action, or if the action had to actually be successful are open to interpretation.
6. **Attributable:** 5. TRPA can support actions within the Basin to support reintroduce Lahontan cutthroat trout.
7. **Relevant:** 5. Reintroduction of Lahontan cutthroat trout is a priority for stakeholders and agencies in Basin.
8. **Time-Bound:** No. No timetable for attainment is specified in the standard.

ASSESSMENT PROCESS

The assessment process consists of five phases; design, pre-assessment, consultation, release and public review, and the finalization of findings. Activities that occur during each of the five phases are detailed below.

1) Design

The proposed assessment document here is the product of extensive research and was first proposed in draft 2015 threshold evaluation report released in September of 2016. The design was motivated by work out of the public health field and models for reviewing goals and reporting of national health systems (see: MEASURE Evaluation 2007). That model started with a comprehensive stocking taking exercise of the current system used for reporting and evaluation, to identify the systems strengths and weakness and identify opportunities to improve the system.

The assessment proposed threshold evaluation was largely based on the SMART criteria. As part of the peer review process for the 2015 threshold evaluation, three independent experts in the field of Monitoring and Evaluation reviewed the draft assessment and provided comments.

The Tahoe Science Advisory Council then reviewed the proposed assessment, the comments of the peer reviewers, and the feedback from stakeholders on the proposed assessment. The Tahoe Science Advisory Council considered all of the above and provided guidance on how the draft assessment could be improved (TSAC 2017). That guidance is reflected in the methodology proposed in this draft is the product of revision.

2) Pre-assessment

During the pre-assessment phase, TRPA will apply the assessment to a subset of the threshold standards. The goal of the pre-assessment phase is to provide a platform for dialogue during the engagement process.

3) Consultation

The assessment questions were designed to minimize ambiguity, but some level of subjectivity remains in the interpretation of the questions and identifying responses as they pertain to the individual standards. Resolving or clarifying those ambiguities requires an understanding of how individual interpretations vary. That understanding can only be gleaned through engaging individuals in robust conversation about the assessment. Stakeholder consultation is an integral part of the threshold update initiative, including the assessment of the threshold standards. Prior to completed the full draft assessment, TRPA will work with the representatives of the groups identified below to discuss the assessment process and seek feedback on its application to the individual standards.

The goal of these discussions is to refine the assessment methodology by working towards a common understanding of the assessment questions and responses to those questions. The joint understanding reached through these discussions will be documented to codify and clarify that understanding and the assessment methodology revised as necessary. Where a common understanding cannot be reached, the differences in interpretation will be documented and included as part of the assessment findings.

Prior to the discussions, TRPA will complete the assessment for a subset of the standards as described in the pre-assessment. The assessment methodology and the subset of the completed assessment findings will be distributed to each representative prior to the meeting. Following the discussions, and based on the guidance received during the consultation process, TRPA will complete a draft version of the assessment for all threshold standards.

Consultation prior to completing the full assessment will include representatives from the organizations below (listed in alphabetical order):

- A representative from the California Tahoe Conservancy
- A representative from the Environmental Protection Agency
- A representative from the Friends of the West Shore/Tahoe Area Sierra Club
- A representative from the Lahontan Water Quality Control Board
- A representative from a local government
- A representative from the Nevada Division of Environmental Protection
- A representative from the League to Save Lake Tahoe
- A representative from the United States Forest Service Lake Tahoe Basin Management Unit

In parallel with the discussions described above, guidance from the Tahoe Interagency Executive Steering Committee (TIE) will be sought. The TIE meets regularly to coordinate agency activities in the Basin at the executive level. At the May meeting of the TIE, input and guidance from basin executives will be solicited to inform the assessment process. The planned discussions will focus in particular on the relevancy aspect of the assessment. The numerous frames through which relevancy could be assessed was highlighted in the comments of the TSAC and soliciting representative feedback on relevancy through multiple lenses is critical to ensuring the assessment accurately catalogues the current state of thinking (TSAC 2017). The discussion at TIE will be designed to elicit executive feedback on the alignment of threshold standards to the missions and activities of other agencies in the basin. The information and feedback from the discussion at the TIE will be then be incorporated into the threshold assessment and threshold assessment findings.

4) Release and public review

The findings from the draft assessment will be summarized and presented at the May meeting of the TRPA Advisory Planning Commission (APC). APC meetings are open to the public, and the APC venue will provide a forum for open public review and comment on the threshold assessment. At the May APC meeting, staff will provide an overview of the assessment process and will summarize the findings of the assessment. Staff will also explain that over the course of the next month members of the APC and members of the public can engage staff and suggest modifications to the assessment findings.

5) Assessment Findings

At the June APC meeting, staff will present to the APC all comments received since the public presentation one month earlier. Staff will then provide rationale for any changes made to the assessment findings in response to comments. After APC discussions, staff will request the APC move the recommendations forward to the TRPA Governing Board. The assessment and assessment findings will be brought to the TRPA Governing Board later in June for consideration.

POST – ASSESSMENT

The findings of the assessment will provide a comprehensive catalogue of the attributes of the current system to support setting the strategic direction for the initiative. The information base of the assessment will be used to chart the course to iteratively work through the review and updating of the threshold standards.

At the May APC meeting, staff will present a draft prioritization framework for further discussion.

DRAFT

GLOSSARY

Assessment – The set of questions designed catalogue the attributes of the current threshold system relative to best practice.

Assessment Findings – The answers to the assessment questions.

Regional Plan – The long term general plan for the development of the region and as more specifically described in Article V of the Bi-State Compact. Per the Bi-State Compact, the regional plan “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.”

Threshold Standard – see “Environmental Threshold Carrying Capacity”

Environmental Threshold Carrying Capacity – Article V(b) of the Bi-State Compact requires TRPA to adopt environmental threshold carrying capacities for the Tahoe region. Article II (i) of the Compact defines "environmental threshold carrying capacity" 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."

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