

Tahoe Science Advisory Council (TSAC) Meeting Notes

Thursday March 16, 2017 Meeting

Tahoe Center for Environmental Sciences, first floor Rm 119 291 Country Club Drive Incline Village, NV 89451

Participants: Alan Heyvaert (DRI), Mark Pitchford (DRI), Sudeep Chandra (UNR), Steve Tyler (UNR), Geoff Schladow (UCD), Max Moritz (UCB), Pat Manley (PSW), Ramon Naranjo (USGS), Ed Parvin (USGS), Zach Hymanson (CNRA), Jennifer Carr (NDEP), Jeanne McNamara (TRPA), Julie Regan (TRPA), and Zack Bradford (LTSLT)

1. Welcome, agenda review, introductions (Co-chairs)

All participants introduced themselves. No changes were made to the meeting agenda.

Jim Lawrence (NVDCNR) is now Chair of TRPA governing board. He will no longer attend Science Council meetings to avoid conflict or perception that TRPA governing board is driving decision-making of TSAC.

2. New Council member introductions (Ed Parvin and Max Moritz)

Ed Parvin is relatively new to area. He moved to Truckee 3 years ago from Alaska. His expertise is in surface water hydrology, water quality, and fish habitat studies. He currently manages the Truckee USGS office, which looks at areas between Quincy and Mammoth with the main focus in the Truckee River Basin.

Max Moritz is with the UC Cooperative Extension of UCB Division of Agriculture and Natural Resources. His work focuses on understanding the dynamics of fire regimes at relatively broad scales, and applying this information to ecosystem management.

3. Update on Council contracting, honorariums, and operations

(Zach) Substantial contract progress thru TRPA with various organizations and representatives of the council.

Operation support contract with UC Davis for Alison. She is the first point of contact for attending meetings, leading development of the Council's website: TahoeScienceCouncil.org We hope to have the website in place by the August Executive Committee meeting. The website will share info with public, meeting agenda, notes, MOU, product site, etc.

TRPA Dan, Melinda, working to get technical agreements in place to allow for council members to do substantive work. Three agreements are in place with UNR, USGS, and DRI. Agreements establish a broad framework about the things that can happen, and rely on work orders to describe specific efforts. Council members can utilize other staff, colleagues, and grad students within their organization. All paid work has to be run thru task orders. Drafts of agreements have been sent to UCD and PSW, but need approval. Pat and Geoff should follow up directly with Dan Segant at TRPA. Will use the eventual agreement between TRPA and UCD as a model to send over to extension for Max and then to UCSB for John Melack.

Bio sketches (still missing Geoff's and Sudeep's) 1-2 paragraph needed. Matt has promised to send something soon.

Scott asked about TSAC's public meeting requirements. Technically, TSAC is considered a working group, so it doesn't have public meeting requirements. Zach does send TSAC meeting agendas out to

interested individuals including NGO and agency representatives. We expect to post agendas and meeting notes on the Council's web site, along with other items such as the roster of Council members. Scott suggested not posting the agenda ahead of time as that could create a different expectation from how we operate.

Zach has continued to work on the potential for Council member honorariums. The original plan for honorariums to each member and a little more to the chairs does not appear possible. It appears there is no longer an established process to do this through the state of California. Resources Agency staff is checking further to confirm the situation.

Alternatively the Resources Agency is offering a per diem amount to each Council member for each meeting attended either in person or remotely. Voting members of the council need think about this and talk to superiors and see if this will change your attendance. For the per diem payment, Zach expects the TRPA will need a W9 form (tax payer ID form) from you. This per diem is only for meeting attendance, substantive work by Council members would be paid at your going rate through the technical assistance agreement.

Zach previously mentioned that Council members can receive travel reimbursements. Questions about filling out forms should be directed to the TRPA.

360 Camera video conferencing system utilizing Zoom software will be available next meeting. Zach has nearly completed Information of salary, benefits and indirect costs for each Council member. Information is needed from Sudeep. These results will be used to estimate the amount of effort available for different tasks in the Council work plan.

4. Council procedures for 'coordinating' the release of Council results and products (Zach)
When there is a product that a member or subcommittee creates for distribution as a written document, what does that member need to do to make sure their entity (for example USGS) approves the document to go public? Do not want TRPA to have a substantive role in this, to avoid the perception that it has influence over Science Council products. Most importantly, we need to make sure the Council fully supports whatever products go public in its name.

How does the council want to process products destined for public distribution?

1. The Council must have an opportunity to review and comment on a draft product. The authors are expected to address all Council-member comments prior to distribution of the final products. Ultimately, the lead author(s) need to make sure they have Council endorsement when producing products. Everyone in the council has the opportunity to indicate support, neutrality, opposition, or abstaining. This indication may be in person at a Council meeting, by email, or conference call. Waiting for a Council meeting is not necessary. This process would allow for specifying in the report who concurs with the report or not, or is a vote expected to occur? Geoff suggested that the Council not pursue a voting approach, but instead aim for consensus. Differing opinions would be discussed, and documented if necessary.

Scott asked to clarify if he would still have a voice on a products he produces under the Science Council banner. All agreed that authors' of a product still have a voice. Written operating rules are not needed at this time. However, any request for Council work must clearly state what is being requested (e.g., analysis, summary findings, recommendations, etc.). Any Council product must not

go beyond that request (e.g., providing recommendations when only a summary of findings is requested). This can be specified in the work order. Internal reviews by a member entity will be pursued on a case-by-case basis. The type of review will depend on the type of product and what work is requested.

As the work orders are created please check them to make sure that what is requested is clear and complete. Also, it will be helpful to include any internal review step in the timeline for the specific work order. Important to have something to point to like an email chain that shows every member had a chance to indicate, have opportunity to write something why they don't agree. Each member is responsible to respond

Opposing opinions and differences is part of the richness of these products. It is important that these differing opinions are noted in some way. Scott offered several mechanisms for documenting differing opinions; right in the document, as appendix, or in discussion minutes.

This method could work when the group is working well, but if the group becomes challenged these issues may be a weak link that may require more structure and need to be revisited.

After producing a product it's usually transmitted with a cover letter. Alan asked to create a formal TSAC letterhead. he thinks just having a letterhead is sufficient.

Alison will work on creating Tahoe Science Council logo develop letterhead. Please send logos (ACTION)

5. Preparing for 2017 Executive Committee meeting: agenda items and describing Council accomplishments

The annual Tahoe Summit is scheduled for Tuesday, August 22nd, so the executive committee will meet August 21. Meeting time will likely be 1-4 PM. It is not required for Council members to be there, but it gives the executive members an opportunity to get a sense of who we are. The MOU establishing the Science Council also established the Bi-state Executive Committee. What do Council members you think we should present, and how should we present that?

The information presented doesn't have to be solely TSAC work. Information about various institution work and how that relates to Tahoe also could be presented. There is opportunity to think outside the box. An update on the Council's work plan will be presented. Committee approval is needed if we make any adjustments.

Alan suggested that Council members may want to brief their executive committee members ahead of time, and encourage them to go to Tahoe Fund dinner. It's a good opportunity to advocate the role of Science in the basin.

What are the Council's anticipated accomplishments by August? The threshold assessments/standards work is really the main Council accomplishment. The threshold update first big step is supposed to go to the TRPA governing board in June, with direction given by the governing

board. The Council's work and what comes out of the governing board could be presented as an update to the executive committee.

Council brainstorming on ideas/topics for the Executive Committee meeting:

- Build stories about what are we doing individually and the aspects that are leveraged to assist council work and working together to put the council in a positive light to themes of working cooperatively (Pat)
- Few things we can collectively point to as products and represent multi-institutional engagement, Tahoe West, Nearshore Periphyton, and then probably one or two more to identify, and then point out one thing that is not being addressed adequately but could make progress on collectively. Try not to follow the money again, have institutional responsibility to make sure we are representing science correctly. (Alan)
- Consider narrowing focus to one to three projects for executive meeting, only so much time during meeting. (Geoff)
- Invasive species was a good example of cooperative work. (Pat)
- Annual evaluation of TMDL, nutrient issues, where might some of these entities interact with Science Council to show some integration of working together. Where should funding recommendations be placed for the next year? Before you can answer that question make sure various entities are not in conflict. (Jennifer)
- Is it worthwhile to have a representative from all the agencies attend a future Council meeting, and give a ten-minute presentation to inform us about what is going on? That way they know we exist as well. All in the spirit of collaboration have everyone inform the other. We hear their priorities and they can hear what we're doing. The Science Council is listening not just talking. (Geoff)
- Bringing in other working group representatives is a good idea. Do we envision all at once? Not only are we listening but we get to facilitate the discussion where all agencies get to interact. If it works we could do it once a year, but do this well before Aug meeting. (Scott)
- Things that we could hear about that we might be interested in: Upper Truckee, transportation, sustainable recreation, and executives love collaboration. (Alan and Jennifer)
- Pressing issues may change as the melting of snow or is it transportation, but lots of concern about the potential for flooding during the melt off. (Ramon)
- Hearing about some flooding, but been hearing concerns about bark beetle, and transportation issues mostly parking, people trying to access recreation areas. (Jeanne)
- Process of draining Marlette to make room. They're going to dump Lahontan twice over. (Jennifer)

- We could invite lead or chair of each work group, but they can bring as many members as they want. (Zach)
- First reach out to agency staffers ask them what are they working on that is hot topic so that we can internally prioritize so that it's not an overwhelming waste of time. Themes that come out in all the meetings, fire, forest, etc. the hot issues and then prioritize 4-5 things to not over burden the Council. (Sudeep)
- Would be difficult to get all groups to participate, TIE is trying to do this they would like an update from each working group, but people aren't ready to present. TSAC doing a less formal approach, no presentation, just an update. But cast a broad net and whittle down what issues that we think are relevant to us. (Alan)

Zach will check with Kim Caringer to find out what Environmental Improvement Program working groups currently exist, and the contacts/leads for those groups. He will then extend invitations to the work group leaders to attend the May Council meeting. ACTION.

A Sub-committee was formed to frame the executive committee meeting: Geoff, Ramon, Scott, and Zach. The specific task is to come back in May and July with more substance around the agenda for the executive committee meeting. This will include a priority emerging science topic for the Council to pursue after the Executive Committee meeting. ACTION

Zach will work to confirm date and time for the next Executive Committee meeting, including confirmation of the date with the co-chairs. He also will check with Amy Berry about the possibility for Council members' executives to attend the Tahoe Fund dinner. ACTION.

6. Council member updates on relevant science topics (All)

Alan briefed the Council on the recent activities of the Lake Tahoe federal advisory committee (LTFAC). Over the last 6 months LTFAC has been evaluating the SNPLMA (Southern Nevada Public Lands Management Act) secondary list of projects. This was formerly the funding mechanism for a lot of Lake Tahoe projects over last 10 years, including habitat, restoration, new infrastructure, and science projects. No new calls for new projects, but LTFAC is looking at list of previously proposed projects, and developing recommendations for the reallocation of returned funds. Sustainable recreation is a project floating to top. Project related to Lake Tahoe's nearshore and examining the influence of large scale landscape changes are also of interest to the group. LTFAC voted on prioritization of all different types of projects on the secondary list, and science came up near the top of the list. There was a consensus to recommend allocating some of the returned funding to support science projects. Ultimately the LTFAC recommendations will be sent on to the Tahoe regional executive committee TREX who has final decision of how secondary funds are spent, that will occur in April.

Pat briefed the group on the Lake Tahoe West project. Research institutions are working with a collaboration of agencies to provide modeling expertise to map out forest treatments from Emerald Bay to Tahoe City (i.e., much of Lake Tahoe's west shore). There is an organized stakeholder advisory group. What's happening to Tahoe West is probably going to apply all across the California Sierra

Nevada, after Tahoe West. Science efforts cover the topics of Air, Fire, forest vegetation, carbon, wildlife, and economics. There is a PI for each topic. Big group working to get an integrated/interdisciplinary modeling approach to provide information to private and state land management entities to estimate various outcomes. There is an interagency technical team that is designing all the treatments.

Scott offered that his team at UNR operates an instrument center for NSF. They fly legally and safely unmanned aircraft to do remote sensing, topography, near- infrared, and thermal imagery. Looking for places to do field trials. Recharge rate ~\$1000/day for aircraft and everything is taken care of. They are motivated to take on projects in the Tahoe basin, because it's close to their base of operations, which offers opportunity for training. Demonstration or training projects could be done gratis. They are looking for success stories. All the data is provided to the client. Near infrared has been most successful with vegetation health, density, where it's wet or dry. Pixel scale is one square foot or less. They have a hyperspectral camera, but it's not flying very well yet and it cost \$100,000, so they are reluctant to fly in mountainous terrain with the trees, but in the summer, maybe.

Sudeep briefed the Council on the activities of the Nearshore working group managers: Lahontan Water Quality Control Board and TRPA held a short workshop to address what might be causing the perceived change of nearshore periphyton growth, and what mechanism may be contributing to nearshore algal growth at the bottom of lake. This happened at the end of January, and now a short document is being prepared with conceptual models, contributions to algal growth, and 6-12 key questions to focus on. This document will be sent out to the Council.

Ed mentioned that the USGS Truckee office is still in flood recovery mode. They are working to restore in-situ sensors. The West Shore got buried in sediment, and there was substantial channel shifting along Truckee River. They are working with Truckee River Water master to forecast what could happen during the snowmelt period. How big will it be? What is the timing?

Ramon provided an update on a nearshore research project the USGS and UNR have been working to finish up. A report to the Lahontan Water Quality Control Board is due at the end of the month. Study looked at nutrient contributions of Ward Creek, and groundwater at the Ward shoreline. This is an area that has been monitored since the 80's. A journal article will come out in the next couple of months.

Geoff mentioned that Alex Forrest (UCD) is doing a lot of work with AUV. He has a glider that can go underwater for a month at a time, taking a range of measurements. Obtaining above and underwater data contemporaneously could be very useful.

Zach provided the Council with an update on Tahoe Basin Transportation planning. New federal legislation changed the rules for transportation metropolitan organizations, so that the Tahoe basin is now a legitimate player. This means the basin can apply for federal funds. Development of a regional transportation plan is a first step. A draft plan is now out for review. Funding is key, and representatives from NV, CA, and TRPA are working to develop a funding strategy. The new transportation plan is performance based, so TRPA needs to identify performance measures. They are working through the Advisory Planning Commission to identify suitable performance measures. This work has implications for the TRPA threshold update, as transportation is one of the nine subject

areas within the threshold program. The Tahoe Fund may announce a \$100,000 RFP to obtain a group that could pursue innovative transportation planning in the Tahoe basin. It's not clear if there will be a competitive process for this RFP.

7. TRPA threshold Update:

A. TRPA response to Council comments on assessment process and next steps
Review and comment on the TRPA proposed threshold assessment methodology was one of the first tasks the Council took on. We provided a comment memo the beginning of February. TRPA staff then worked to revise the assessment methodology description to address the Council's comments. Review and discussion of the revised assessment methodology is a main purpose of the discussion today.

Julie provided a brief introduction. The current focus is on the initial threshold assessment. TRPA has received the Council's comments on the assessment methods. We envision there is a path to update threshold categories in various ways, but see the need for a master process map. The Science council should prioritize what is the best category to dig into initially, i.e. water, air, wildlife etc. TRPA recognizes that having public confidence in the process is key to a successful outcome. We also know there are policy issues embedded in the science. TRPA wants to rely on TSAC to identify the state of the art science. The next task we are asking for the Council to take on is to examine evaluation systems across the county to help identify approaches and practices that could improve the threshold evaluation system used in Tahoe.

Jeanne wants the assessment to look across all measurements, and try to reduce redundancy. Transportation group is examining how those measures may conform to the threshold measurements. Ultimately a meaningful and attainable set of threshold standards is needed. In terms of responding to the Council's comments on the assessment methodology: We 1) added 'time-bound' into the criteria, 2) moved to a rating of 1 – 5, 3) expanded on the detail explaining the process, including the places and ways to engage with stakeholders. We do want a consistent process that we can use through all the measures.

Alan said the Council's current task is to provide a formal response to TRPA stating that we either support its revised assessment approach, or that we see something lacking in the current revised approach. He suggests to start moving forward and implement the assessment process, and adjust as you go. It will be important to document any adjustments.

Results of the initial assessment along with the Council's examination of existing evaluation systems will be presented to the TRPA Governing Board in June. Alan asked if the materials presented in June are final or draft versions? Julie stated that TRPA is open to final or draft, relying on expertise of the Council. It is important to show the value of the Science Council as an independent body. Ultimately TRPA needs a methodology to get through the assessment of all 178 standards. Likely the June meeting will feature assessment results from a subset of threshold standards along with review of the process.

Pat recommended the assessment process take a system approach. This approach should be accommodated in the process from the start. Indicators or Threshold standard reflects system

conditions, although past evaluations have examined how they perform individually. Defining composite sets of thresholds will probably be the strongest representation of system conditions, but these sets may be comprised of a mix of weak and strong things. Need to build in the idea of starting with knowledge of where you want to finish. Where you want to finish is a representation of system condition, how can this assessment be done so that all the information that it is generating is a composite?

Julie stated that TRPA would like to have a system-based threshold evaluation system. She is hopeful that the examination of existing evaluation systems will identify the ways various programs have organized their systems. This information will help to inform how TRPA could do this.

Alan noted that using a systems-based approach along with supporting conceptual modeling has been discussed before; however, this was not prioritized to part of the initial assessment because this is a mechanical step. This is just putting the pieces together to see how things fit together, so we can then think about this more comprehensive systems approach.

Pat stated that one way to make the assessment more useful, is to loosely bundle the threshold standards. Perhaps bundle by topics. For example, round up all threshold standards that might apply to a topic, and then evaluate as a group. Then Look at the results for the group overall. Or you could pull together all threshold standards that can apply to a specific condition and bundle that as a group for assessment.. Don't limit it. Some of the threshold standards are redundant, and some are complimentary. This information can then be applied to say, ten of these are useful, these ten could be used to address this other condition, and these four are redundant. This will yield a more holistic assessment. To do it one-by-one would be useless. (Pat)

Scott noted that water quality is a huge topic area, so don't start with that. Start the bundling method by picking out something that would only have a few metrics, test out this method on something "easy."

Pat noted that the scenic and recreation topic area have a lot of overlap. If you do recreation you don't limit the current ones, you pull out all the ones that apply and evaluate those and look at redundancies or compliments across other categories. You could use categories you have now or come up with new ones. You will want to allow for a standard to belong to multiple groups.

Alan suggested TRPA look for easy to identify bundles initially. This is worth doing, but you don't want to spend a lot of time on it.

Geoff recommends Looking at what other groups around the country are doing first. We could say we really like a hybrid of two different system approaches. What is being suggested could be done once we have an idea of the overall system we are going for.

Ramon asked if there is value in modeling the system, and then looking at the elasticity each individually thing you are trying to change. Then look at the magnitude of change in the context of an expense: the cost-benefit?

Alan stated that the first step is what the assessment approach describes now. Second step: look at systems around the country. Third step: use the results from the first two steps to focus on a particular set of standards and develop a conceptual model as a tool for further evaluation. Which standards rise to the top because of their utility instead of an old standard that isn't relevant anymore? Discussion will be needed about how we want to put together a system for Tahoe. The outputs from that discussion can be used to build a framework to support that system. (Alan)

Geoff provided an example: Is the stream environment getting better or worse? There may be variables that can answer that. Conceptual models can help to identify which variables provide what kind of information. They can be used to understand the information value of existing threshold standards as well as potentially new standards.

Pat noted that indicators and thresholds are things you can measure directly. If everything is modeled, then data is collected so that we can model that metric or condition. If you have 40 standards you may have to measure 100 different things to model that standard.

Julie thinks a main purpose of the threshold evaluation system is to find out how we are doing as environmental stewards of this place? There are lots of people who care. If we invest in project x what is it going to give us? How are we going to progress towards these goals? When are we going to achieve these very long-term goals? Part of the problem with the system we have, is that we want to check a box and we're done; however, attaining some desired conditions may take generations. Whatever system we get to has to answer the tough questions.

Alan returned to group to a discussion of the formal response to the revised assessment methodology. If it captures the Council's primary recommendations, then we submit a memo to TRPA stating that. We can provide additional narrative that explains this systems-approach. Alan asked Council members to send him any specific comments. He will draft a memo based on what we have talked about, and then have the Council members review it before send out. However, don't wait for Alan to send you something before sending any specific comments you may have after reviewing the revised assessment. He wants to a memo to TRPA by the end of next week, so any comments from the Council members are due by Wednesday.

B. Scope of Work for Council Examination of Existing Evaluation Systems:

Alan noted that a draft scope of work for the examination of existin evaluation systems was sent to all Council members. The main products are a summary document and a slide show presentation to be given to the TRPA Advisory Planning Commission (APC on 6/14) and Governing Board (GB 6/24). Alan asked Council members to review the task order and determine your willingness to contribute. He also noted time is reserved on the May 4th TIE Steering Committee meeting agenda to let them know what's going on.

Zach noted that any Council member can contribute to this effort, but there is no guarantee of payment to PSW representatives or any UC representative, because there are no contracts in place yet.

Geoff suggested each Council member could review one existing program using a predefined score-card. He thinks what is a common thread between the comparable programs will quickly emerge.

Ed suggested the review also should include a short summary of each program examined, and then identify key attributes.

The prevailing suggestion was to create a standard matrix for the evaluation, and for everyone pick one program to evaluate using this matrix. Alan noted there is groundwork first, just to the gather materials. A subcommittee was established to get the matrix organized: Pat, Geoff, and Alan. The program evaluations will be divided among the volunteers. The timeframe for this work is roughly March 17th to May 25th.

8. Agenda items for May meeting (Co-chairs)

Meeting rescheduled from May 18th to May 11th due to multiple conflicts. Alison to send out email to all Council members (ACTION).

Agenda items for May Meeting

- 1-year anniversary of co-chairs discussion and affirm what the group is doing and what that means.
- Further discussion of the Executive Committee meeting agenda.
- Obtain briefings from Environmental Improvement Program working-group leaders to help identify relevant emerging issues.
- Update on Council members' Threshold assessment work.