

## TAHOE SCIENCE ADVISORY COUNCIL

NOTES | MAY 2021 COUNCIL MEETING (<https://ucdavis.zoom.us/j/99346983573>)

Date: Thursday May 20, 2021 Time: 10:00 AM – 1:00 PM Location: Zoom

Council Participants: Sudeep Chandra (UNR), Adrian Harpold (UNR), Alan Heyvaert (DRI), Geoff Schladow (UCD), Steve Sadro (UCD), Max Moritz (UCSB/DANR), John Melack (UCSB), Pat Manley (PSW), Joshua Wilson (PSW), Ramon Naranjo (USGS), Paul Work (USGS), Paul Comba (NDEP), Elizabeth Williamson (CNRA), Jim Lawrence (DCNR)

Robert Larsen (CNRA), Alison Toy (UCD)

Agency Stakeholders: Jack Landy (EPA), Dan Segan (TRPA), Brian Judge (Lahontan Water Board), Jason Kuchnicki (Lahontan), Paul Comba (NDEP), Mary Fiore-Wagner (Lahontan), Laura Patten (KTB), Scott Kelley, Susan Pike, Ben Letton

### TIME AGENDA ITEM LEAD(S)

10:00 Welcome and Agenda Review (Bob)

10:05 Council Business

a. Algae monitoring (Dan Segan)

i. UC Davis has been monitoring for more than less than 30 years

b. Plastics workshop (Sudeep Chandra)

i. Proposal to have a workshop

ii. A few years ago did a nearshore algae workshop, had local participation with UCD and agency members.

iii. Plastic impacts tied to recreation

iv. Working on global impacts of plastics in small lakes

v. Science-based workshop at TERC this summer before August summer, a visitation of external scientists plus visiting scientists, hopefully a paper will result. Can we support the workshop through out budgets? \$5k/agency and all Council members could attend.

vi. The Council budget can probably support this, in a transition time with contracts, Bob will have better sense of budget later, Council needs to decide if this is worth Council funds.

vii. Predecated on people meeting in person?

viii. Last workshop was 50k and brought together. John says if it is totally remote it seems like it would be less.

ix. Would like to hold it in person.

x. Scope, aquatic ecosystems is broad. Is it oligatrophic? Sudeep is not sure, would need input from Geoff and Monica Arienzo.

xi. Is it feasible to do this remote hybrid zoom/inperson. Should we hold off until next year? Sudeep and Monica are pumped to do it earlier. But may hold off to next year.

- xii. Alan unclear about the fund. Talking about agencies putting in 5x5 for funds. Tahoe fund is committed if other people are interested, TRPA is committed, in talks with KTB and Lahontan.
  - xiii. Thinks other team members should weigh in as well
  - xiv. Jim and Lizzie would like clarity briefing sooner. Does more work need to be done to get the final briefing? If it's time to bringing in Brad and Wade, let us know.
  - xv. Executive briefing is June 29. Agency participants to hang out with their executives.
  - xvi.
- c. Project updates (Alan Heyvaert, John Melack)
    - i. Review clarity and get some input and how we review the science.
    - ii. Some things with clarity we would like to....
    - iii. 29<sup>th</sup> of June, expecting an executive memo briefing in a week.
    - iv.
    - v. Science to Action plan: Winter to Summer, review of Lake Clarity Model,
      - 1. 4 pieces
      - 2. Interactions among ourselves and TSAC
      - 3. Thanks to Dan, Mary, Geoff, John,
  - d. Membership (Robert Larsen)
    - i. Take a look at the document and consider within your organization where you're at and your desired role in the Council in the future.
    - ii. DRI sad to say that Adam Watts will be at USFS-PSW. Fill the seat, will give another couple weeks to update.
    - iii. Look at member description and curious to hear feedback as to where you fit in that structure.
    - iv. Where the Council is going, what is working, what's not working, etc.
    - v.
2. 10:30 State updates (Jim, Lizzy)
- a. Nevada: not a lot of updates, homestretch of legislative session, slated to end May 31<sup>st</sup>
    - i. There is a standing... very interested in science. Especially the incoming chair(). Sponsoring more science coordinated efforts.
  - b. California: Big rollout Friday, timeline highlight new assistant deputy on tribal affairs (Janina Thompson) she could provide relevant tribal input.
    - i. California budget 50 bil deficit to surplus, how is that being perceived. A lot of it is one time general funds, odd swing of events over the last year. Last couple of months realizing the possibility, recognition of there is some much we can be doing.
    - ii. Almost June, what should the Council be doing to...
      - 1. Closing budgets now, more money than was expecting, most of it going to education,

2. Telling the larger story and lining it up with the directive, tying up the uplands and everything to the larger climate picture. Package it in that way. Early engagement as well.
  3. TSAC meeting or portion dedicated to strategize a better budget ask.
  4. Early engagement side, starting conversations for next, making link to climate change goals, 30 by 30 goals. Right time to submit those proposals to look at over the summer.
  5. Next 3-4 months come up with vision document cover the next 3-4 years for projects/needs loosely budgeted, would work well with both states? Works for Nevada.
  6. How do we build off the two S2A plans?... Definitely keen to work on that with the co-chairs and will be on the agenda for next meeting.
3. 10:45 Transportation/VMT Discussion (Scott Kelly, Susan Handy, Tianwen Hui, Susie Pike)
    - a.
  4. 11:45 Break
  5. 12:00 Wildfire Impacts
    - a. Catastrophic events (Max Moritz)
    - b. Watershed runoff (Erin Hanan)
    - c. Atmospheric loading (Geoff Schladow)
    - d. Angora fire impacts (Alan Heyvaert)
    - e. Smoke impacts (Sudeep Chandra)
    - f. NSF Rapid (Steve Sadro)
  6. 1:00 Adjourn

Chat links:

Sudeep Chandra: Temp and wildfire are likely correlated for certain periods.

Rnaranjo:

[https://www.nrcs.usda.gov/Internet/WCIS/AWS\\_PLOTS/basinCharts/POR/SMS/assocHUCnv\\_8/lake\\_tahoe.html](https://www.nrcs.usda.gov/Internet/WCIS/AWS_PLOTS/basinCharts/POR/SMS/assocHUCnv_8/lake_tahoe.html)

Rnaranjo: soil moisture conditions for Lake Tahoe sites monitored by NRCS snotel

Sudeep Chandra: Wildfire is called out in the TSAC Upland Science to Action Plan and there is a framework for resilience that was identified with actions/ active, processes to follow in the framework when considering disturbance.

Robert.Larsen: <https://www.tahoesciencecouncil.org/upland-ecosystem>

Adrian Harpold: I think the framework that Pat and Max worked on (borrowed from others) in that report is a good way to categorize response (planning for extremes). It requires prioritizing different parts of the landscape and its form and function in the future.

Sudeep Chandra: We could include Wildfire as a component of our workshop this summer related to Upland processes.

Pat Manley: We have developed a "response" interpretation for the entire TCSI landscape, which includes all of the Lake Tahoe Basin, for a number of resource areas (pillars of resilience).

Pat Manley: I could share that at a later meeting if that is of interest

Sudeep Chandra: I would be interested in a brief explanation for what you are working on

Pat Manley: In press paper from Lake Tahoe.. fire and road effects on water quality..

Pat Manley: Spatial simulation of forest road effects on soil erosion after fire

Longxi Cao<sup>1</sup>, William Elliot<sup>2</sup>, and Jonathan Long<sup>3</sup>

<sup>1</sup>Chengdu University of Science and Technology

<sup>2</sup>USDA Forest Service Rocky Mountain Research Station

<sup>3</sup>USDA Forest Service Pacific Southwest Research Station

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Abstract

Post-fire managers throughout the world use predictive models to estimate potential erosion risks to aid in evaluating downstream impacts of increased runoff and erosion, and to target critical areas within a fire for applying mitigation practices. Erosion prediction can be complicated by forest road networks. Using GIS technology and a soil erosion model, this study evaluated the effect of roads on erosion and sediment yield following a wildfire, and whether the predictive models were providing reasonable results. The GeoWEPP model was used to simulate onsite erosion and off-site sediment delivery before and after fire disturbance. A 2-m resolution DEM was used as the terrain layer. Erosion rates in excess of 4 Mg ha<sup>-1</sup> yr<sup>-1</sup>

Pat Manley: were predicted mainly from the moderate and high severity burn areas. Roads influenced both flow path and sub-catchment delineations, affecting the spatial distribution of sediment detachment and transport. Through that influence, roads tended to reduce estimated erosion on slopes below the roads, but road upslopes and steep channels were areas of significant increases in erosion risks. Measured deposition amounts along roads and in sediment basins were similar to predicted amounts. The results confirm that road prisms, culverts and road ditches greatly influence sedimentation processes after wildfire, and they present opportunities to detain eroded sediments before they reach downstream water bodies

Pat Manley: University of Washington is doing smoke modeling and associated health impacts across TCSI based on wildfires and prescribed fires under various future climate and management scenarios, including all of the Lake Tahoe Basin.. those results should be available in the next month or two, and could potentially be interpreted in terms of Lake and other aquatic impacts..

Sudeep Chandra: Pat this is very helpful. Thinking about these direct and indirect impacts from fire are complex but there is some great work emerging from these disturbances. Might be good to get ahead of the issues related to fire and form a TSAC management to science working group on this subject

Alison Toy : <https://tahoe.ucdavis.edu/recorded-lectures>

Adrian Harpold : Smoke has impacts on the upland basins too that are not well understood:  
<https://www.sciencedirect.com/science/article/pii/S0168192317303040>