

DRAFT Meeting Summary

Great Basin LCC Science and Traditional Ecological Knowledge

Working Group: Workshop #2

October 15, 2014

Participants

S-TEK working group:

- Jason Barnes, Trout Unlimited (phone)
- Jeanne Chambers, USDA-Forest Service, Rocky Mountain Research Station
- Maureen McCarthy, University of Nevada, Reno
- Kyle Mcfee, Paiute Indian Tribe of Utah, Shivwits Band of Paiutes (phone)
- Jennifer Newmark, Nevada Natural Heritage Program (phone)
- Heather Ray, Upper Snake River Tribes Foundation (phone)
- Stan Johnson, National Center for Food and Agricultural Policy

S-TEK Staff:

- Todd Hopkins, Science Coordinator, Great Basin LCC
- Matt Germino, Great Basin LCC, U.S. Geological Survey (phone)
- Ryan Orth, EnviroIssues
- Bridger Wineman, EnviroIssues

Meeting documents

- Agenda
- Draft Priority Topic Category Characterization
- Map: Omernik Level III Ecoregions within the Great Basin
- North Pacific LCC S-TEK process criteria and balancing factors

Key Presentation and Discussion Points

Welcome and agenda overview

Ryan Orth, EnviroIssues, welcomed attendees and led introductions. Todd Hopkins, Great Basin LCC (GBLCC) Science Coordinator, provided an overview of the meeting agenda and expected outcomes.

Todd reviewed the Science and Traditional Ecological Knowledge (S-TEK) working group process to date. The group is currently at the point of narrowing the short list of topics for evaluation by regional experts and identifying balancing factors and criteria to further hone LCC priorities. The group will receive additional input through the Great Basin Forum in December. Per the revised schedule, the S-TEK strategy is planned for completion in February, 2015.

Todd said the BLM has committed to providing the same amount of funding for the GBLCC to disperse next year. This will allow the LCC to use the S-TEK strategy when distributing the next RFP.

Ryan said the November S-TEK webinar was canceled and will be replaced by a new webinar to be scheduled in January, 2015. The Great Basin Forum is scheduled for the week of Dec. 8. It will include an online component to generate broader participation. This will allow a wider group to validate the priorities that have been elevated by the working group and provide additional ideas for implementation of the strategic plan.

Updates and announcements

GBLCC Funding Decisions: Todd said the GBLCC proposal review committee recommended nine projects, including three TEK projects, for funding to the Executive Committee.

The President's Climate and Natural Resources Priority Agenda: Todd said the President released his climate and natural resources priority agenda which highlights LCCs. The announcement is very timely for the GBLCC as it compliments work that is already underway. The announcement said in part:

Within six months, Federal agencies working to address ecosystem management issues through LCCs and other multi-stakeholder bodies will work with partners to select flagship geographic regions for which they will identify priority areas for conservation, restoration, or other investments to build resilience in vulnerable regions, enhance carbon storage capacity, and support management needs.

New report and memo on resistance and resilience approaches for sagebrush ecosystems: Jeanne Chambers, Rocky Mountain Research Institute, said she recently worked with the Western Association of Wildlife Agencies on a general technical report in which resistance and resilience management approaches are applied for activities in the range of the Greater Sage-Grouse. There is also a new instructional memo which was created with BLM districts to inform implementation. Jeanne said these efforts represent one of the first times a large landscape perspective has been taken to help inform land management for sagebrush ecosystems.

Matt Germino, USGS, said he heard the Department of the Interior is elevating the sagebrush steppe in the Great Basin region to a higher level of concern for conservation priority, similar to Chesapeake Bay and the Everglades. Not many details are currently available.

Short list definitions and characterization

Ryan introduced the characterization and definition of the priority topics document which was distributed with the meeting materials. This document is intended as a reference for a later exercise where topic-area experts will further flesh out the LCC's strategy moving forward. The topics represent the "short list" of priority issues identified through the impact matrix exercise and the September S-TEK webinar.

The document is organized into six categories which were identified on the September S-TEK webinar. There are the short list pairings under each category along with a brief statement that

the list is draft and incomplete. The research needs are in the context of the LCC's mission and a changing climate. The group is now asked to discuss what is missing from the list and inform how it should be adjusted to better serve as a reference. The group reviewed each of the categories and noted changes which were captured on-screen and visible to in-person and online workshop participants.

Maureen McCarthy, University of Nevada, said in reflecting on the review of proposals in response to the recent funding RFP, a number did not fall cleanly into an ecosystem category. Important topics like the impacts of alternative energy development are related to climate, but cut across ecosystems. Maureen said the Lake Tahoe grant funding program used a category for integrated science which did not focus on an ecological problem but rather on integrated, cross-cutting science. This category included things like remote sensing and climate change impact modeling that were broader than any specific ecosystem.

Kyle McFee asked how cultural resources would be handled through this approach. Ryan said the group previously determined that including just the two or three cultural resources topics which scored the highest in the impact matrix exercise would be too limiting. The group could choose to include factors in the next scoring exercise which identify where there are overlaps between cultural resources and ecosystem-based activities. The working group might also consider including a section in the strategic science plan highlighting TEK-based priorities across the Great Basin. In either case, it is acknowledged that identifying priorities relative TEK is moving at a different pace compared to the ecosystem-based priorities. It will be important that opportunity to work on TEK issues are not limited by the prioritization process.

Jeanne noted energy development was not specifically included in the impact matrix exercise and asked how it can be included in the priorities the group is distilling. Ryan said the definitions document provides an opportunity to inform the additional scoring exercise by giving participants a sense of the range of issues that relate to those topics.

Todd said the comments from Kyle, Jeanne and Maureen all indicate including a seventh category for cultural resources and cross-cutting issues. It is clear that cultural resources of interest are not tied to any specific ecosystem. There are also circumstances where the LCC would coordinate with other LCCs and regional partners. The group agreed to add a seventh category for cross-cutting issues and cultural resources.

Stan said he was concerned that fire is a well-known issue of importance for the Great Basin which does not stand out in the priority topics the group has distilled. Todd noted that the supporting information for each category can be used to highlight the importance of fire to conservation efforts in the Great Basin. The group additionally decided to call out climate-related drivers and extreme events under each category.

Maureen noted that many topics on the long list of science and management needs indicate important science topics that are not related to climate. Proposed projects should explain how the research relates to climate.

Science needs categories discussion

S-TEK members reviewed each of the categories of priority topics and supporting characterization, offered edits, identified gaps and indicated further work to prepare descriptions for the next steps in the prioritization process. Throughout the discussion, members identified several universal changes to be reflected throughout the document:

- Resource-driver pairings should be collapsed to just the drivers, as the ecosystem-based resources are represented in the overarching category.
- In some cases the needs can be stated to apply to the category generally. In other cases where a specific need is especially important and relevant only to a subcategory, it may be included in the list of examples as well; pressing ecosystem-specific management needs may be called out specifically.
- Some of the example needs in the document are management actions as opposed to science and research needs; these will be rewritten as research needs.

Additional group discussion specific to the priority categories is as follows.

Rivers/streams, riparian

Jennifer Newmark, Nevada Natural Heritage Program, said calling out Lahontan Cutthroat Trout as a focal species may be too specific if other species of importance are not also identified. The group determined that threatened and endangered/at risk species should be generally listed in each ecosystem category as to be more inclusive and flexible in adapting to new threats and science. These species lists are readily available through other state and federal plans.

Group members offered a number of additional changes to the text in this section to add clarity and consistency across topics, including language about research to determine ecological conditions prior to European settlement.

Todd noted a number of examples that represent policy actions or that fall more squarely in the jurisdiction of specific agencies. For example, the LCC will not fund water rights acquisitions,. Jeanne suggested, and the group agreed, that some of these cases may restated to focus on sociological research needs which are aligned with the LCC's objectives. For example, projects that help with prioritization and understanding the underlying motivations and constraints of planning and implementing acquisition of water rights could be a valuable investment. A bullet was added for policy and socioeconomic issues related to water use and effects on conservation. Maureen noted this issue may also fit well in the new, cross-cutting category.

Additional direction included:

- The group determined to include ground water in the surface water category as they are so closely linked.
- Maureen said the driver "extreme events" should explicitly include flooding and droughts by changing the text to "extreme climatic events."

Shrublands (Sagebrush, Salt desert, Mountain brush)

Stan and Jennifer noted that the list of example science and research needs for this category is very long, but should be consolidated so it is of similar length. The narrative section under each category should be included in two or three paragraphs. The example list of needs should be consolidated and of consistent in length among the categories.

Additional direction included:

- Jeanne and Maureen said temperature and precipitation should be added to the list of drivers along with extreme climatic events.
- Matt said restoration activities have a large impact on habitats. The way in which restoration activities effect the ecology of shrublands is an important area of research. Jeanne suggested capturing this point in the examples and including climate adaptation of seed sources, species introduced and fuel breaks.
- Maureen said there should be more emphasis on socioeconomic research needs by either include environmental policy and management under this category or in the cross-cutting category.

Wetlands, groundwater, springs, playas

The group reviewed the impact matrix exercise results for the category. Maureen noted that including extreme events will give the LCC an opportunity to address future events and their cumulative effects.

Jeanne said groundwater should be included in the title of the category as it interrelates with the surface water features which are the focus of this category.

Jason said he has been involved with wetlands work using beavers to restore streams and asked how that work and similar approaches could be included among the priority topics. The group discussed how such approaches may be related to climate through adaptation and resilience. An example need in this regard is research into ecosystem resistance and reliance to changing climate. The strategy and solicitation approach should allow room for research leads to identify why their research question is important.

Alpine/subalpine

Ryan noted the category for alpine/subalpine ecosystems did not meet the threshold set in the impact matrix exercise but was included as a supplemental category.

Maureen said to include surface water and groundwater in the priority topics for this category.

Matt said snow is a critical consideration for alpine ecosystems in regard to climate. The temperature and precipitation dynamic is difficult to uncouple. Alpine areas may serve as a bellwether for climate effects and ecosystem responses. High elevation systems are also critical for water supplies. Disturbances like fire and dust on snow are critical to understand. Maureen suggested including the impact of snow dynamics in the list of science and research needs.

Maureen noted the list should capture the snow dynamics on downstream water supplies. Jeanne suggested expressing this as the interacting effects of climate, vegetation and snow which determine water supply. There are also local impacts to alpine and subalpine ecosystems.

Lakes/reservoirs

The topic of lakes and reservoirs was also elevated for inclusion in the list of priority topics. Climate drivers were added along with change in ecosystem interactions.

Maureen noted there is a question of what is meant by lakes and if it includes large lakes such as Lake Tahoe. There are also many terminal lakes in the Great Basin. While Lake Tahoe receives resources for science research already, it is also important in an ecoregional context because of downstream impacts. Changes in evapotranspiration in Lake Tahoe impact downstream ecosystems, for example.

Todd said lakes in the Sierra Nevada are included as the LCC uses the Omernik ecoregional geography. Todd said he agrees the LCC would not duplicate efforts, but is open to exploring collaboration with other funding partner.

Matt pointed out that the LCC is unlikely to fund a project related to management of lakes and reservoirs as it is squarely in the jurisdiction of other organizations. Maureen agreed the LCC is unlikely to be involved in work concerning the management and operations of water supplies. Todd said he would like to keep lakes and reservoirs in the plan in case there is an opportunity to leverage additional resources through collaboration.

Additional discussion included:

- Jeanne said to add a bullet that addresses climate change effects and upstream water use on downstream water availability and to introduce the concept of water quality in terms of climate change.
- While fishing is an important use for lakes and reservoirs, Todd said the LCC would not call out recreational uses in regard to fish and wildlife.
- Maureen said the biodiversity of aquatic resources should be included as a research need. Changes in microorganism biodiversity is important and often overlooked in research efforts.

Forests and woodlands (aspen, coniferous forest, pinyon-juniper)

The category of forests and woodlands consolidates a number of more specific ecosystems. The group noted that many of the needs related to specific ecosystems can be broadened to apply to the entire forest and woodland category. Jeanne said there should still be a bullet for response to wildfire for pinyon-juniper woodlands and fire land fuel treatments as tree infilling occurs. A generalized habitat assessment for pinyon-juniper woodlands is also needed.

Additional discussion included:

- Maureen said to include the need for a vulnerability risk assessments for climate change, insects, disease and pathogens as related to forests and woodlands.

- Todd noted socioeconomic research needs should also be included. This is an important issue for aspen related to livestock use.
- Jeanne suggested adding the need to determine public acceptance of alternative management treatments to mitigate for and adapt to climate change.

Cultural resources and issues that cut across ecosystems

The group identified several points and topics to include in the new cross-cutting category.

Stan noted that human population dynamics is an important issue impacting ecosystems as populations urbanize and that demographic change in relation to climate should be included as a need.

The group also noted there are cultural effects in regard to climate. Todd said, for example, many reservations are in areas of poor air quality. Air quality is a cross-cutting issue as suspended particulate is exacerbated by human activities.

The group discussed how best to address TEK priorities. Todd said there is a list of climate issues from a tribal perspective that could be gathered from other LCCs which may be applicable. He commented that he is not comfortable using a western system to rank cultural resources. Cultural resources are often overarching of ecosystem drivers. There can be a separate call to talk about the list of tribal issues with Great Basin tribal representatives. Kyle agreed this is a good idea and noted a known issue of interest to tribes is the transfer of water to Las Vegas which has resulted in the destruction of tribal cultural sites.

Ryan noted there is a possibility the cross-cutting issues do not make it through the next round of prioritization scoring. The group could decide to put these topics aside and reevaluate them for inclusion in the strategic plan after the ecosystem-based evaluation process. Stan suggested including cross-cutting issues in the next step of the prioritization process but making it clear that these issues are of concern in relation to climate change.

The group discussed data needs across the Great Basin. Jennifer noted high quality vegetation data is a need across many of the categories. The Great Basin requires landscape level ecosystem characterization as a starting point for additional research. This includes monitoring conditions to document changes. Ground verification is needed in tandem with remote sensing.

Ryan noted the group previously discussed the need for a GIS summit for the Great Basin. This is an idea the group is still interested in discussing further.

Ranking criteria and balancing factors

Ryan described the example from the North Pacific LCC of using criteria and balancing factors for the prioritization process. The North Pacific LCC used four primary criteria and three balancing factors. The balancing factors are meant to ensure a portfolio of science priorities which represents the diversity of the Great Basin; geographically, topically, etc.

The next step of the prioritization process is a scoring exercise using subject area experts. Each scorer would be asked to score just one or two categories.

Maureen said she is uncomfortable with winnowing the topics down further while still making sure the final priorities are applicable to the whole Great Basin science community. She noted that the Lake Tahoe science plan included some subjects for which no projects were developed in the first years, but remain important, and are of more use now. The Great Basin LCC plan should anticipate that research focus may shift through the years to subjects which do not seem at the top of the list now, but are still vitally important. These may include cross-cutting issues and socioeconomic research. The plan should be inclusive and flexible to future needs and developments.

Jeanne said despite these concerns, the list of priorities still needs to be winnowed for the science strategy. Jeanne suggested the group should retain the work that has been done so far to characterize the needs more inclusively, even if some of it is summarized in the plan and revised in a few years. There may be a way to address the need for prioritization and flexibility through the annual implementation of the strategy in funding projects. Kyle agreed with Maureen and Jeanne.

Additional ideas for the implementation of the S-TEK plan discussed by the group included the possibility of pooling funding resources across years to fund larger-scale and longer-term research projects which may have greater impact for the total investment. The LCC is in a unique position to support research that cuts across traditional jurisdictional and topical boundaries. The work completed so far provides a great foundation for addressing cross-cutting research questions.

The group discussed the possibility of leveraging resources through partnership with other funders to help address larger research needs.

Jeanne noted more discussion is required to define what is included in the cross-cutting issues the LCC will focus on to help those responding to an RFP. Further discussion is also warranted on determining to what extent priorities will be determined on an annual basis, from the foundation developed through this process, as well as the extent to which they will be defined for each of the ecoregions encompassed by the Great Basin. The goal is to provide a strategic basis for the annual funding approach while enabling partnerships which leverage resources, and remaining flexible to address needs that may become more critically important during the course of plan implementation.

Next steps

Todd and Ryan described the next steps which include:

- Staff to the working group will revise the characterization of priority topics as discussed during this workshop. Working group members will be asked to help further developed the cross-cutting issues.
- Development of the proposal schedule is also to be determined and will assist in partnering with other LCCs and funding partners. The strategy should be done by

February 2015 with an invitation to propose released early in the fiscal year, depending on when funding comes available.

- The December Steering Committee meeting is the next opportunity to talk about this committee's recommendations and get comments back.
- Work will continue on development of the cultural resources and TEK portion of the strategy through additional conversations with tribal representatives in the Great Basin.
- Another call will be scheduled for the working group in November to discuss cross cutting needs and to review the revised characterization of priority topics. Todd will arrange to discuss collaborations with neighboring LCCs and state wildlife action plan coordinators to better coordinate efforts.

Todd and Ryan thanked all participants for their involvement and helpful input.

The next meeting is a webinar to be scheduled in November.