YCR/LCCVP Meeting

January 14, 2013

Present: Andy Hansen, Dave Hallac, Ann Rodman, Roy Renkins, PJ White, Cathy Whitlock, Todd Kipfer, Tom Olliff, Nate Piekelek, Tony Chang, Regan Nelson, Erica Garroutte, John Gross, Forrest Melton

Dave Hallac:

* YCR has been restructured - Ann leading new “Physical Science/Climate Change” program
* YCR submitted 2 proposals to Cannon and YPF to get seed money to aggregate data on GYE, analyze and report on that data, forecast change, understand vulnerability, talk about scenarios/management options
* Interested in starting with questions about “what management would we do given all the information we want to collect?”

Ann Rodman:

* Interested in how YCR is monitoring CC now – how is it happening in the Park, what are the different pieces, and how will it continue into the future?
* Looking at what resources are more vulnerable to rates of change – what are we going to put energy into looking at? Also, rates of change differ across the Park – want to understand implications of this, too.
* Over next year, weather station data could be cleaned up and we could create more complete records as weather station data drives most climate data.
* Want to get head around what all is happening with CC monitoring around the Park, and wants to get a better sense of how wildlife is reacting to changes that are happening, recognizing that rates of change are different around the Park.
* Want to ID gaps in knowledge and monitoring and see how that plays out – how are things responding to changes”?

What are aspects of CC that are highly management-relevant? Important to acknowledge both “adaptation conservative” and “adaptation liberal” management perspectives.

Tom:

* Important to acknowledge that NPS is doing millions of dollars worth of projects that could be considered CC adaption – (cutthroat trout). What strategies are within “safe zone” and what is outside “safe zone”?

John Gross:

* Managers in NPS do vary in perspectives to adaptation – a lot say its not the issue that demands priority today (given invasives, fire, etc).
* Given more information on CC, how would this influence decision-making?

Dave:

* We probably aren’t going to do a lot of additional monitoring, but “smarter” monitoring. For example, we might start summer monitoring in the Lamar Valley.

PJ:

* Examples of how we are already using climate science to make decisions include:
	+ Vegetation phenology (grasslands) and how this affects ungulate migration, competition
	+ High-mountain ungulates (sheep and goats) – research says CC will increase competition
	+ WBP and grizzly bears – if we see WBP go down, what does this mean for bears. If they go for more meat, but ungulates are affected, what does that mean?
	+ Fisheries: concerned about non-native expansion. How do we keep native stocks?
	+ Drought and the affects on swans, loons and nesting success
* CC is scaring managers into suppression mode. This last fire season suppression was used b/c of drought and threat of catastrophic fire – interesting angle on the “human response” of CC

Tom: Climate science:

* Remote sensing (as opposed to boots on the ground) and future projections of climate given global change are two factors that make climate science perhaps more “suspect” to managers

Dave: What scale are we looking at for conservation targets? The scale influences what targets we look at, what strategies might be employed, what partners will be involved

PJ: Human drivers has as much affect on adaptive capacity as the natural capacity of organisms. (Andy: This is similar to what Ojima’s group is looking at.)

Andy:

* Are there ways to quantify how human social structures influence adaptive capacity? What are the dimensions that are important and how could you quantify them? If you could quantify it, where would it get you?
* Could look at Smoky Mountain and Crown of the Continent as starkly different examples. At what level do you insert this into decision-making (Park level planning or line officer?)
* (Todd): Also, can think about two-way communication (how Park discusses CC and how public responds and derives political will). Can you increase adaptive capacity with public education?

Dave: at a minimum, there are basic landuse indicators that we know will make adapation more complicated. We could quantify, but at least need to recognize all the stressors, not just ecological changes.

Andy: Integration of landuse planning and conservation planning to deal with climate change

Todd: Community-based Observation Network will be based in AK, HI, and the upper Gallatin watershed which includes the park and could be relevant in discussions about adaptation

Andy: This spring/summer we will host expert panels, convened twice over the next year. First panel will be charged with interpreting the science outputs, giving feedback on how to do science better. In 2nd meeting, objective will be ranking vulnerability and assessing management strategies based on vulnerability. Hope to have heavy representation from GYE and ROMO, along with experts from other parts of the GNLCC. Products hopefully will reflect variances within the different geographies.

Ann: Might be worthwhile to understand management feasibility before convening expert panels.

Tom: we expect some things will persist on the landscape (e.g. elk) and that there will be management that can enhance persistence.

Dave: WBP is great example of differing Park perspectives….G-T is planting but decision made at line-officer level, YNP not doing anything; Glacier doing some planting. Wolves is another example – YNP doesn’t know what an “acceptable” level of hunting outside of the park is to maintain park populations.

John G: A lot of issues could be recast into: given changes in ecosystems, its hard to define precise targets…but we can say there are “attributes” of systems, and if these attributes start to change, what are unacceptable outcomes that we want to avoid?

Andy’s list of management options:

* Monitoring – what is the rate of change
* Science – what are the ecological consequences of these changes, how to address uncertainty
* Education – help constituents understand
* Relevance to current management mandates and budgets
* Relevance to legal issues (ability to respond to lawsuits)
* Influence human impacts on system adaptive capacity (i.e. create political will to accept bison or wolves, create adjacent conservation easements, etc)
* Active adaptation management (or management response passive-active)

IDEA: Rewrite the WBP strategy from the perspective above, including a table showing which units would employ the different options (agencies differ in which of these they will act on).

Dave: What we should do is look at likely CC impacts on human populations and subsequent land use changes to determine what additional stressors parks will face in the future (e.g. agriculture changes, food scarcity, water demands, etc)

Cathy: interested in how HNV (looking over the paleoecological record) can inform decision-making, and in particular helping managers/modelers understand how this information can inform habitat distribution models and climate impact projections. Where is this information best inserted into the decision-making process? How can this data best meet management needs?

Tom: I’m taking case studies and generalizing up so we can apply information/models to Parks that don’t have the resources that YNP has. We have a table of conservation targets. Finer-scale, higher resolution science is important and needed and is more useful to managers.

Ann: how sensitive are the “shift in range distribution” maps of particular tree species?

Dave: Also, do we want to maintain the “target” or the function of the target….i.e. do we want WBP for the sake of WBP, or do we want the functions (food source, run-off control, etc) that WBP offer.

Dan Rinehardt & Kelly McClosky are NPS people on WBP subcommittee

Feedback to Regan’s project:

1. Start with interviewing jurisdictions to figure out the universe of adaptation options, and also to determine where there is agreement/divergence (Dave said YNP might “actively work against” some active mg’t actions – so its not just about “feasibility” – its about underlying philosophical approaches and fundamental management goals (he used example of planting rust resistant trees could “come back to bite us” 300 years from now).
2. Use this to put forward differing scenarios of management feasibility

NCCSC project:

* Aquatic systems – YNP fisheries ecologist and hydrologist would be the right people
* Invasives (Eurasian annuals like cheatgrass)
* Terrestrial – restoration of a native species impacted by a non-native.

From prioritization standpoint, climate is going to affect trajectories, what are priorities from budgetary/actionable perspective?

Look at how CC could affect existing native fisheries management plan. Fair amount of work done projecting impacts on salmonids – bunch of USGS collaborators.

Dave: Just about to complete an exotics management plan, but it doesn’t address impacts of CC. If we had that information (e.g. some exotic plant will outcompete everything else), that might affect our management decisions.

Andy: Another approach would be focused on “ecosystem-wide” approach to an issue (like invasives) based on cross-jurisdictional collaboration. Cross-jurisdictional decision-making focused on invasives plants (Tom Stolgren CSU; Jim Cheetim ROMO are important collaborators).

Dave: We may have 40+ species that we throw money at, but we don’t have framework to figure out where we should really focus. If you use CC as an added filter, how might that differentially affect how we make decisions today? We need the framework for decision-making (e.g. prioritization), and also the knowledge of how CC will play out.

NEXT STEPS for NASA Project

1. Team is pushing for data/modeling products by GWS meeting in mid-march – may also have some initial WBP modeling. By early summer, will have stuff much further along.
2. First expert panel - thinking about September, with second panel a year later signifying the end of the vulnerability assessment for GYE.

Action Items:

* Collaborate on design of expert panel. LCCVP Team to work to better understand what Ann is doing at Park-level.
* Andy will lay out a schedule for executing first panel, and run workplan by YCR crew.
* Conference call to discuss once an initial workplan has been circulated.
* Erica will discuss phenology project with Kelly Profit and Scott Creel and get back to P.J.