

Climate-Smart Landscape Conservation Planning & Design
DRAFT Implementation Plan, 2014-2016
Version 1.1, December 15, 2014

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Climate Change Committee
Potential members could include people with expertise in:
Climate change (e.g., Southwest Climate Science Center, South Central Climate Science Center)
Climate Change POCs from Desert LCC member organizations
Human dimensions of conservation and climate change
Others?

Communications and Engagement
Communications Working Group
Desert LCC Staff
Project Manager
Others?

Background

"*As a region that has experienced – within the relatively short time span of several decades – rapid increases in human population, significant alterations in land use and land cover, limits on the supplies of water, long-term drought, and other climatic changes, the Southwest can be considered to be one of the most 'climate-challenged' regions of North America*" (Overpeck et al. 2013).

Given this reality, the Desert Landscape Conservation Cooperative (LCC) is focusing on developing a better understanding of the effects of climate change on natural resources and potential adaptation responses. Our mission is: Through collaborative partnerships provide scientific and technical support, coordination, and communication to resource managers and the broader Desert LCC community to address climate change and other landscape-scale ecosystem stressors. Our primary goal is to support, facilitate, promote and add value to landscape scale conservation to build resource resilience in the face of climate change and other ecosystem stressors. To achieve these, we have focused on solving climate challenges starting from critical management questions (CMQs) from natural resource and wildlife managers (www.usbr.gov/dlcc/resources/docs/DLCCCMQs.pdf).

We are also developing an ecosystem stewardship approach to landscape conservation planning and design, integrating ecological sustainability as a basis for biodiversity conservation and human well-being (Chapin et al. 2009). Working with a broad spectrum of organizations representing a diversity of perspectives and interests requires a well-paced, transparent process that will allow us to build the capacity and tools that enhance the ability of our participants make flexible, "no-regrets" decisions in keeping with a long-term perspective that incorporates landscape conservation design. Our approach emphasizes trans-disciplinary processes to help us achieve our mission and goals by defining the science and products we need to get us there (McAlpine et al. 2010; National Research Council 2009), including spatially explicit decision support tools (e.g., Desert LCC Conservation Planning Atlas; http://dlcc.databasin.org) and investing in landscape conservation planning and design strategies.

In June 2014, the Desert LCC was awarded $200,000 from the U.S. Fish and Wildlife Service's Office of the Science Advisor to advance landscape conservation planning and design for the partnership. The Bureau of Land Management has decided to support this project by adding an additional $75,000 in funds. The project described in this document is focused on continuing to build the trust, relationships, processes, capacity, and tools necessary to create a foundation for planning that can lead to effective landscape conservation designs by using "integrative approaches that encourage knowledge exchange and solutions to emerge" (McAlpine 2010). Within the Desert LCC region, the Bureau of Land Management (BLM) has completed two Rapid Ecoregional Assessments (REAs; Mojave Basin and Range, Sonoran Desert), will complete an additional in 2014 (Madrean Archipelago), and a fourth (Chihuahuan Desert) in 2015 (see map, Appendix A). The REAs examine ecological values, conditions, and trends. The Desert LCC, in partnership with BLM, is introducing the REAs to a wide variety of partners and integrating that information with other existing resources, tools, and methodologies to identify shared conservation priorities and associated goals and objectives.

The Desert LCC Steering Committee has decided to focus this project on three focal ecosystem types within our geographic area (see map, Appendix A): grasslands and shrublands; streams, including aquatic and riparian; and springs, including aquatic and riparian. The Steering Committee also agreed in August 2014, to follow the

general steps to implementing this project as described in this document. This document adds specific tasks and timeline to those steps.

Overall, this project will bring together the information, tools, and methodologies available for landscape conservation design and the development of climate adaptation strategies. We will engage interested parties in determining design priorities, compiling and curating existing resources, determining what additional information, tools, or resources are needed, and developing plans for 2-3 pilot landscape conservation designs within the Desert LCC geographic area. Additional funding will be sought to develop those designs in 2017-2018.

What is this document?

This document is a Draft Implementation Plan intended to guide the first phases of the Desert LCC's landscape conservation planning and design project. This document is a draft that incorporates feedback and input from the Desert LCC Steering Committee, working groups, and teams. Specifically, this version clarifies the roles and responsibilities of the Desert LCC Steering Committee, working groups, and teams. Other comments are summarized in Appendix F. In December 2015, the Desert LCC will be announcing a request for proposals for project management and additional capacity needs to implement this project. The Project Manager hired under that request for proposals will be responsible for leading efforts to finalize this implementation plan, including full consideration and integration of the comments summarized in Appendix F. It includes the basic process that has been agreed to by the Steering Committee for implementing landscape conservation planning and design and adds a draft timeline and list of tasks. It is expected that the implementation plan will be a dynamic document that will be refined as needed as the project proceeds. After input has been incorporated, Version 1.0 of this document will be used to develop a request for proposals for filling the capacity needs for implementing this project. We anticipate that the request for proposals will be announced in early November 2014.

What is climate-smart conservation?

In the face of current rapid climatic shifts, change is likely to be the only constant. Accordingly, as natural resource managers and conservation practitioners we need to learn how to respond to and manage inevitable changes rather than assume they can forever be resisted. Increasingly, we will be faced with managing system transformations; and we may need to focus our attention on sustaining functioning ecological systems rather than the historical assemblages of plants and animals within those systems. One of the best ways to facilitate successful implementation of strategies for adapting to changing conditions is through integrating, or "mainstreaming," adaptation into our existing activities and way of life. By working together to incorporate adaptation into our existing natural resource management decision processes, we can have a collective impact on sustaining ecosystem function and services and conserving natural resources for people and wildlife across the landscape.

To guide conservation practitioners in developing strategies for adapting to climate change, the National Wildlife Federation led efforts to develop a guidebook called *Climate-Smart Conservation: Putting Adaptation Principles into Practice (*Stein et al. 2014; http://www.nwf.org/ClimateSmartGuide). This effort was funded by National Park Service, U.S. Geological Survey, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, U.S. Forest Service, Doris Duke Charitable Foundation, Wildlife Conservation Society Climate Adaptation Fund, Kresge Foundation, and Faucett Catalyst Fund. The Desert LCC hosted a course in Tucson, Arizona, in May 2014, based on this guidebook and developed by NWF, the National Conservation Training Center, and others. This course inspired Desert LCC members to consider how the

climate-smart conservation framework could be used within the context of our partnership to help us achieve our mission and goals.

The framework described in the climate-smart conservation guide was adopted by the Desert LCC Steering Committee in June 2014 as a way to organize our activities and to:

1) Help collectively identify possible solutions and prepare for changes on the landscape.
2) Clearly define our priority resources and associated conservation goals, objectives, targets, and indicators.
3) Ensure that the interests of our partners are inter-related to Desert LCC activities and goals to achieve collective impact.
4) Outline the connections between our working groups to ensure integrated effort and collective impact.
5) Create a clear framework to ensure our activities (including identification of science needs and pilot projects) fit into the Desert LCC vision, mission and goals.

The following set of key characteristics collectively defines a climate-smart approach to conservation (Stein et al. 2014):

- **Link actions to climate impacts.** Conservation strategies and actions are designed specifically to address the impact of climate change, in concert with other existing threats; actions are supported by an explicit scientific rationale.
- **Embrace forward-looking goals.** Conservation goals focus on future, rather than past, climatic and ecological conditions; strategies take a long view (decades to centuries) but account for near-term conservation challenges and needed transition strategies.
- **Consider broader landscape context.** On-the-ground actions are designed in the context of broader geographic scales to account for likely shifts in species distributions, to sustain ecological processes, and to promote collaboration.
- **Adopt strategies robust to uncertainty.** Strategies and actions ideally provide potential benefits across a range of possible future conditions to account for uncertainties in future climatic conditions and ecological and human responses to climate shifts.
- **Deploy agile and informed management.** The cycle of conservation planning and resource management should continuously incorporate new information and be dynamically adjusted to accommodate uncertainty, take advantage of new knowledge, and cope with rapid shifts in climatic, ecological, and socioeconomic conditions.
- **Minimize carbon footprint.** Strategies and projects minimize energy use and greenhouse gas emissions; and sustain the natural ability of ecosystems to cycle, sequester, and store carbon.
- **Account for climate influence on project success.** Considers how foreseeable climate impacts may compromise project success; generally avoids investing in efforts likely to be undermined by climate-related changes unless part of an intentional strategy.
- **Safeguard people and nature.** Strategies and actions enhance the capacity of ecosystems to protect human communities from climate change impacts in ways that also sustain and benefit fish, wildlife, and plants.
- **Avoid maladaptation.** Actions taken to address climate change impacts on human communities or natural systems do not exacerbate other climate-related vulnerabilities or undermine conservation goals and broader ecosystem sustainability.

The climate-smart conservation framework consists of a step-wise, iterative process (figure 1, page 7):

Step 1. Define planning purpose and scope.

This includes: articulating the planning purpose; clarifying existing conservation goals; identifying conservation targets; specifying geographic scope and time frame; engaging key participants and partners; and determining resource needs and availability.

Step 2. Assess climate impacts and vulnerabilities. Understanding climate vulnerabilities is crucial for designing effective adaptation strategies, and the specific components of vulnerability—exposure, sensitivity, and adaptive capacity—can provide a useful framework for linking actions to impacts. Identification of "key vulnerabilities" provides a means for targeting the development of strategies and actions in subsequent steps of the cycle.

Step 3. Review/revise conservation goals and objectives. Because goals serve as the basis for subsequent strategies and actions, they should be climate-informed and forward looking. Reevaluation of goals and objectives may either validate their continued relevance, or indicate a need for refinement or modification.

Step 4. Identify possible adaptation options. What are possible approaches for reducing key climate-related vulnerabilities or taking advantage of newly emerging opportunities? At this stage, a broad array of alternative strategies and actions should be identified, with particular attention to creative thinking in crafting possible management actions.

Step 5. Evaluate and select adaptation actions. The array of possible adaptation options can now be evaluated to determine which are likely to be most effective from an ecological perspective, and most feasible from social (e.g., cultural, economic, sustainability of ecosystem services), technical, and financial viewpoints.

Step 6. Implement priority adaptation actions. Successfully implementing adaptation requires individual leadership as well as institutional commitment and resources, and often depends on engaging diverse partners early on, and emphasizing benefits to multiple sectors of society.

Step 7. Track action effectiveness and ecological responses. Monitoring helps provide context for understanding climate-related impacts and vulnerabilities and for informing agile and adaptive management. Monitoring approaches should be carefully designed to ensure they are capable of guiding needed adjustments in strategies and actions.

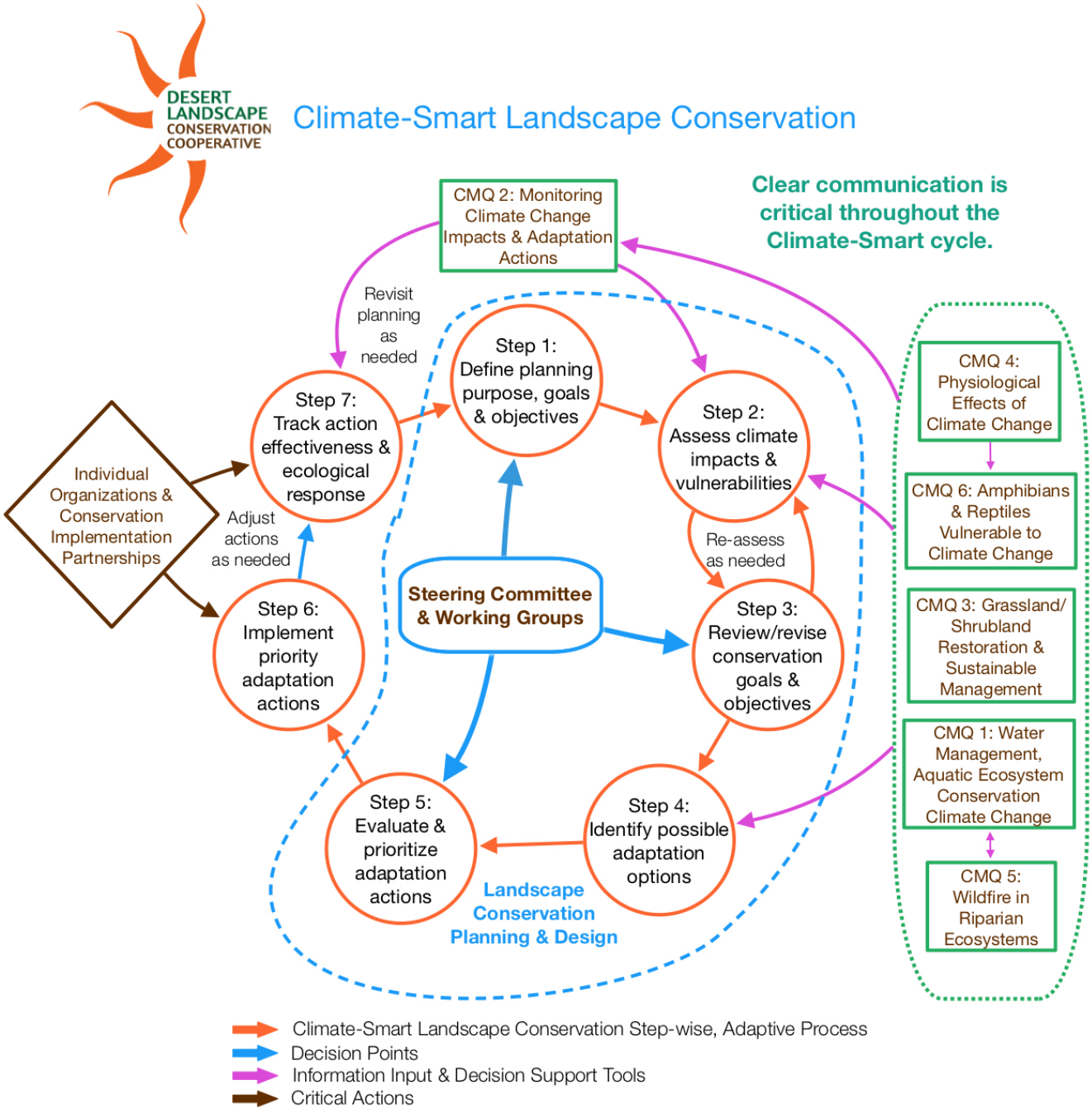


Figure 1. Climate-Smart Conservation Framework and Desert LCC Groups and Activities.

Figure 1 depicts the climate-smart framework, essentially an adaptive management cycle with inputs for climate change information, in orange. Blue and green boxes depict existing Desert LCC Steering Committee, working groups, and Critical Management Question (CMQ) teams and where they have inputs into the cycle. The dotted blue line encircles the steps that will be informed by the Desert LCC's landscape conservation planning and design process and products. The brown diamond points to the implementation and monitoring activities of individual organizations participating in the Desert LCC.

What is landscape conservation planning and design?

From *Minimum Standards for Conservation Design at Landscape-Scales (Landscape Conservation Design)* (Landscape Conservation Design Minimum Standards Working Group 2014):

"Landscape Conservation [Planning and] Design is a process - to design - and a product - a design - that achieves partners' missions, mandates, and goals while ensuring sustainability of ecosystem services for current and future generations of Americans. It is an integrated, collaborative, and holistic process that is grounded in the interdisciplinary science of landscape ecology, the mission-oriented science of conservation biology, and the art of design. The process results in a science-based, technologically-advanced, spatially-explicit product that identifies targets of interest to partners, articulates measurable objectives for those targets; assesses current and projected landscape patterns and processes; and identifies a desired future condition, conservation/development trade-offs, and implementation strategies. When delivered in a coordinated fashion, strategies derived from landscape conservation design processes can meet both societal values and needs while maintaining ecological integrity and biodiversity."

One example of landscape conservation planning and design is the South Atlantic LCC's Conservation Blueprint. The South Atlantic LCC's Coordinator and Science Coordinator gave a presentation on this during the Desert LCC's December 2013, Steering Committee and Science Working Group meetings. More information can be found on the South Atlantic LCC website: http://www.southatlanticlcc.org/page/conservation-blueprint.

Why is landscape conservation planning and design needed?

The lands and waters of the desert Southwest are changing rapidly. Climate change, urban growth, and increasing human demands on resources are reshaping the landscape. While these forces cut across political and jurisdictional boundaries, the conservation community does not have a consistent cross-boundary, cross-organization plan for how to respond. The Desert LCC's process for landscape conservation planning and design will help us coordinate data and landscape conservation activities using the Conservation Planning Atlas. This project brings together the information, tools, and methodologies available for landscape conservation design and the development of climate adaptation strategies. Desert LCC members help determine design priorities, necessary information, tools, resources, and focal areas for future work.

What is the Conservation Planning Atlas?

The Desert LCC is developing a Conservation Planning Atlas (http://dlcc.databasin.org), which is a web mapping tool, to integrate spatial data associated with shared priorities, goals, and objectives to lay the foundation for integrated landscape conservation planning and design. This tool will allow us to view and share spatial information relevant to priority resources, on-going conservation activities, and climate change to help us identify areas where critical conservation actions are needed, where there are critical gaps in information or conservation actions, and where there are opportunities to collaborate. When we get to the design phase of this project, we will produce maps of the design that can be viewed in the Conservation Planning Atlas with information about climate adaptation strategies in support of an international network of functional landscapes.

How will climate-smart landscape conservation planning and design help us?

The Desert LCC is developing the science, capacity, communications, network, and processes, to collectively engage in landscape conservation planning and design to help us achieve our mission, "through collaborative partnerships provide scientific and technical support, coordination, and communication to resource managers and the broader Desert LCC community to address climate change and other landscape-scale ecosystem stressors," and our primary goal to "support, facilitate, promote and add value to landscape scale conservation to build resource resilience in the face of climate change and other ecosystem stressors."

Through climate-smart landscape conservation planning and design we will address several key questions that will help us to achieve our mission and goals:

- What are our collective conservation priorities (ecosystem function and services, species, etc.) related to our focal ecosystems (grasslands and shrublands; streams, aquatic and riparian; springs, aquatic and riparian)?
- What are our individual and collective goals for our conservation priorities (i.e., how do we define success)?
- How can we measure success and our progress towards it (e.g., targets and their indicators)?
- Where are the focal ecosystems and related conservation priorities located?
- What is the current condition of focal ecosystems and related conservation priorities?
- What are the factors most limiting to achieving our collective goals?
- How can future pressures and stressors (e.g., climate change, urban growth, agricultural change, invasive species, and energy development) change habitats?
- How can conservation actions change improve the resiliency of focal ecosystems, priority resources and species, and sustainability of ecosystem services?
- What might focal ecosystems and priority resources look like based on future stressors and potential conservation actions?
- What conservation design will help the Desert LCC meet our goals?

Desert LCC Climate-Smart Landscape Conservation Planning & Design

In 2014-2016, our primary objectives for this project are:

Objective 1: Integrate existing information, methodologies, and tools available for landscape conservation planning and design and development of climate adaptation strategies.

Objective 2: Leveraging the Desert LCC's Conservation Planning Atlas, build an integrated landscape conservation planning, design, and delivery platform focused on Desert LCC priority resources. This will allow us to refine and better address critical management questions and uncertainties as a partnership, and to support individual participating entities to do the same.

Objective 3: Plan for 2-3 pilot landscape conservation designs related to our focal ecosystems that support the mission and goals of the Desert LCC, our participating organizations, and the LCC Network by creating a "roadmap" to guide collaborative conservation.

Objective 4: Communication to partners on landscape conservation planning processes, outcomes, and next steps.

This project will allow us to strengthen our conservation partnership and network, and advance planning and geospatial evaluation processes to enhance our individual and collective ability to:

- Identify shared priorities, goals, and objectives;
- Evaluate current and anticipate future pressures and stressors on ecosystem function and services (e.g., current and future condition classes) and species, with an emphasis understanding the impacts of climate change;
- Develop potential future management scenarios (e.g., triage, mitigation, and adaptation strategies);
- Monitor the effectiveness of management actions; and
- Enhance future ecological resilience and sustainability of ecosystem services for people and wildlife.

Our intent is to engage interested parties in a transparent process to:

- Train people how to use BLM's Rapid Ecoregional Assessments and other resources for conservation planning and design;
- Determine design priorities:
    - Conservation priorities
    - Critical pressures and stressors on ecosystems and species;
- Map focal ecosystems and priority resources, species, and related on-going conservation activities;
- Model or describe projected impacts from climate change and other pressures;
- Identify climate change adaptation strategies and critical conservation actions; and
- Identify opportunities for collaboration.

Figure 2 (page 9) depicts the basic elements and framework of this project.

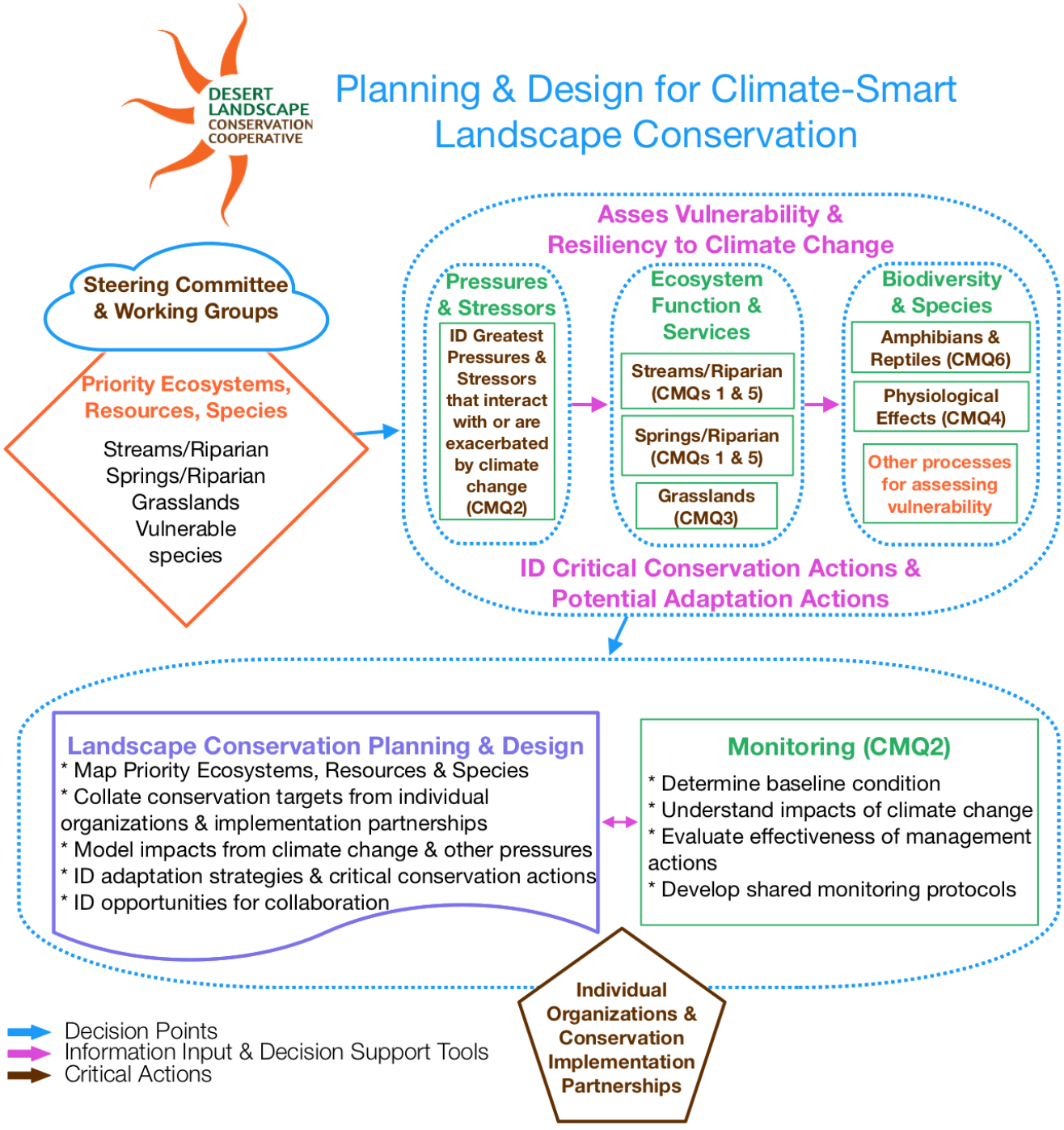


Figure 2. Desert LCC Planning and Design for Climate-Smart Landscape Conservation.

What does success look like and how will we know when we get there?

While most organizations and partnerships have goals, objectives, and indicators of success very few have measurable targets for those indicators. The following definitions are adapted from the Climate-Smart Conservation guidebook and the South Atlantic LCC's Conservation Blueprint (http://www.southatlanticlcc.org/page/conservation-blueprint).

Goals. Conservation goals, as used here, refer to the overarching vision for a conservation or management effort, and are an articulation of high-level aspirations. Generally, they describe a desired future condition and convey the underlying purpose of an effort but do not specify the means to achieve the desired outcome (Adamcik et al. 2004). Typically, desired conservation outcomes at the goal level are difficult to measure (e.g., ecological integrity of streams, springs, or grasslands).

Development of climate-smart conservation goals should include (or at least consider) the following:

- What (focal ecosystem or conservation priority)
- Why (intended outcomes or desired condition)
- Where (relevant geographic scope)
- When (relevant time frame)
- Be climate-Informed
    - Specifically consider climate change
    - Articulate acceptable future conditions
    - Forward-looking
    - Acknowledge potential trade-offs
    - Consider broader landscape context, including human communities
    - Flexible in the short term to be effective in the long term; not maladaptive

The DRAFT ecosystem level goals that were developed in August 2014, for the Desert LCC's three focal ecosystem types are below. These will be refined by a larger group of interested parties as part of this project (for more about this process see Tasks and Timeline, pages 16-22):

> **Spring Ecosystems and Stream Ecosystems (including aquatic and riparian components):**
> Work together to understand, maintain, and enhance function and resilience of spring and stream ecosystems, including aquatic and riparian components. This includes ameliorating effects of critical pressures, considering adaptation to climate change, and sustaining and enhancing current distribution, function, biodiversity, and human use and enjoyment for future generations.
>
> Note: Some objectives will apply more specifically to each ecosystem type or component (e.g., streams, springs, aquatic, riparian).
>
> **Grassland Ecosystems:**
> A desert landscape that sustains high-functioning grasslands that provide native species, ecological processes, and ecosystem services to support human cultures.

Objectives. Management objectives, in contrast to goals, refer to more specific outcomes in support of higher-level goals, and usually articulate a measurable standard, desired state, threshold value, amount of change, or trend.

Indicators. A metric that is designed to inform us easily and quickly about the conditions of a system (e.g., miles of fishable and swimmable streams). Indicators are used to measure progress toward a goal or objective.

Targets. A measurable endpoint for an indicator (e.g., reduce the number of impaired water bodies by 10%). Targets are used to measure whether an indicator has reached the desired level.

Example (from South Atlantic LCC's Conservation Blueprint)**:**

- Maximize integrity of freshwater aquatic systems (objective) - % unimpaired waterbody segments as defined in EPA 303d list (indicator) - Reduce the number of impaired waterbodies by 10% (target)

As part of this project, we will engage Desert LCC members in a process to collate objectives, indicators, and targets related to our focal ecosystems from individual organizations. We can then assess which objectives, targets, and indicators we have in common or that are compatible and where there are opportunities to collaborate on achieving them (figure 3).

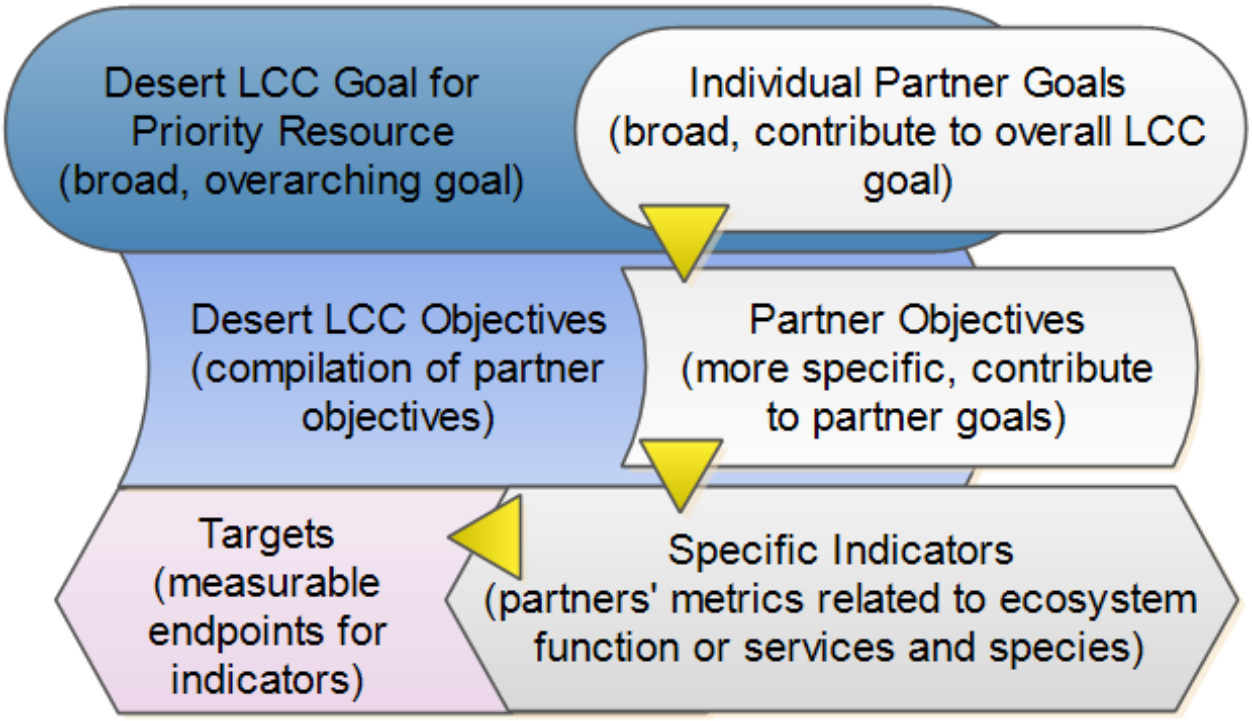


Figure 3. Identifying shared goals, objectives, indicators, and targets for achieving collective impact with conservation efforts.

Why are indicators needed?

Designing and evaluating the success of a shared design for landscape conservation actions in the Desert LCC geographic area will require some specific measures of what success would look like. Ecosystems are complex and indicators help simplify the modeling and monitoring of those systems. None of us have the capacity nor resources to measure everything all of the time. Indicators are designed to integrate many ecological functions and represent other components of the system that are either too expensive or time consuming to model and measure.

How will indicators be used?

Indicators will be used to help design landscape conservation actions that sustain natural and cultural resources. This design will include an interactive map depicting the key places and actions needed to sustain those resources in the face of future change (e.g., urban growth, land conversion, climate change, and sea level rise).

Indicators and measurable targets for those indicators will be used to help design this interactive map and evaluate the effectiveness of actions based on it.

How will this affect me?

This process will help identify shared measures of conservation success for large landscapes. In turn, this will lead to a shared vision for conservation action. Members of the Desert LCC may decide to commit their resources in pursuit of the shared vision. It is not meant to replace what we each currently do but to help facilitate the connections and identify how our actions collectively shape the future of the region. Simply put, this work builds to an implementable plan that demonstrates places and actions where each partner can apply their respective tools and authorities to accomplish something bigger than we could individually. It builds on and works within existing efforts to make connections across habitats, resources, and jurisdictional boundaries. This process is also the first step in generating new funding from non-traditional sources for implementing conservation. Broadly shared metrics of success and the design they will help create will be powerful tools for bringing new funding from private companies, individuals, foundations, and other non-traditional funding sources to the region.

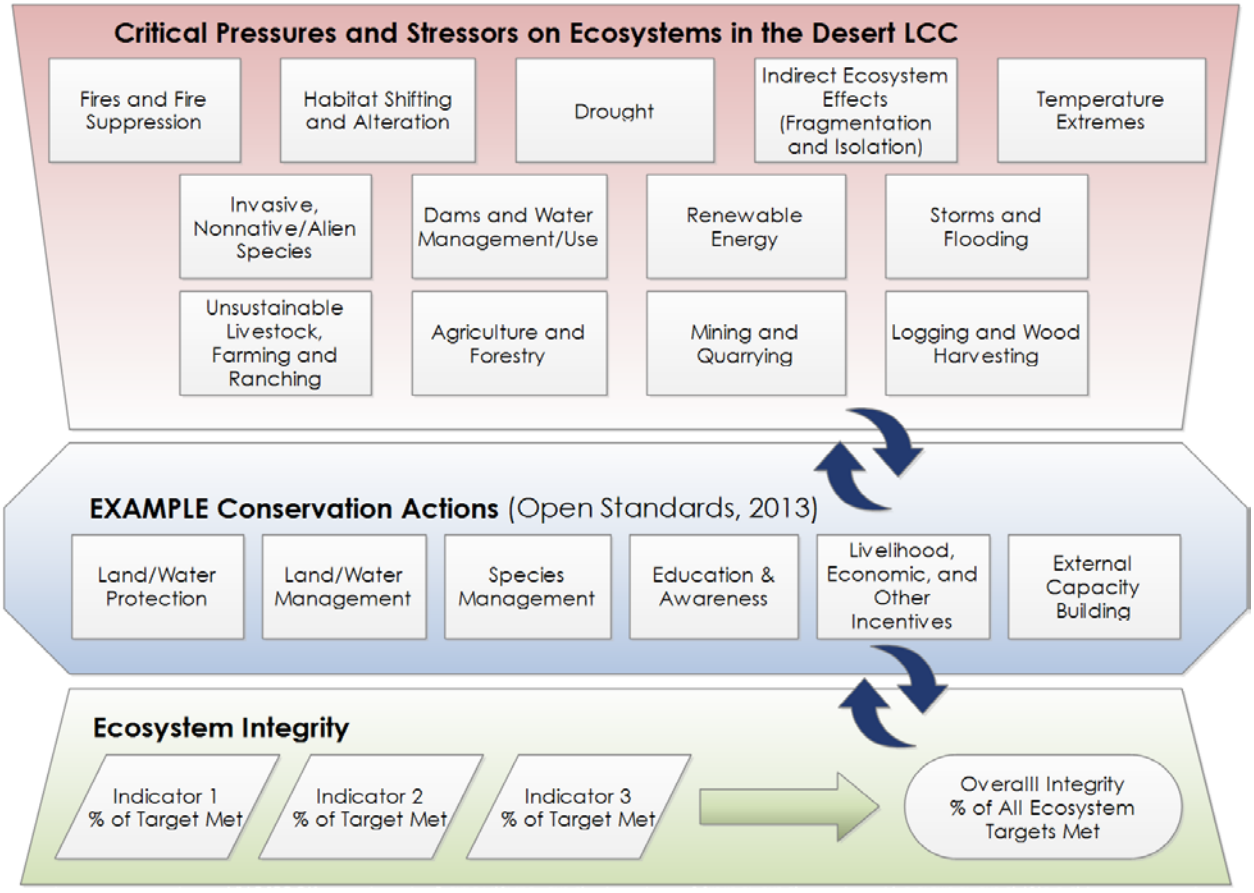


Figure 4. Using indicators to measure the success of conservation actions to address ecosystem pressures and stressors. See Appendix B for information about how the critical pressures and stressors were identified.

Outline of Landscape Conservation Planning & Design Phases

This outline of landscape conservation planning and design phases is adapted from *Minimum Standards for Conservation Design at Landscape-Scales (Landscape Conservation Design)* (Landscape Conservation Design Minimum Standards Working Group 2014) and was approved as a general approach to this project by the Desert LCC Steering Committee in August 2014.

Phase 1: Kick-Off (2014)

Goal: To facilitate partners' understanding, agreement, and support for implementation of landscape conservation design processes and products.

- Document an agreement between partners to engage in collaborative design processes leading to the development of a design product that addresses their specific needs.
    - Desert LCC started this via multi-partner collaboration on the landscape conservation planning and design proposal in April-May 2014.
    - Continued consensus-building at August 2014 annual planning meeting in Santa Fe, New Mexico, including agreement to follow the basic phases and steps in this outline.

Phase 2: Pre-Assessment (2015)

Goal: To facilitate partners' agreement on the technical aspects of the landscape conservation design's assessment of current and projected landscape conditions prior to its development.

- 2.1 Assemble a multidisciplinary technical team.
    - Desert LCC will develop a working group to guide this project
- 2.2 Identify and describe the Landscape Conservation Design's:
    - a) Geographic planning unit
        - Desert LCC geography for planning foundation
        - 2-3 sub-geographies for pilot designs
    - b) Priorities, targets (for monitoring), attributes, and measureable objectives (ecosystem processes, functions, services, species, etc.)
        - Focal ecosystems:
            - Grasslands and shrublands
            - Streams, including aquatic and riparian
            - Springs, including aquatic and riparian
        - 2015 workshops and webinars: Objectives, Targets, indicators, etc.: Collate existing from partners
        - Invite a broad spectrum of managers and researchers
        - One workshop for each of the 3 focal ecosystems (one in Mexico)
    - c) Direct pressures and limiting factors
        - Focus on pressures/stressors identified by CMQ 2 team
    - d) Assumptions
        - TBD & documented as project proceeds
    - e) Data availability/needs
        - TBD by WGs & CMQ teams and during 2015 webinars and workshops
- 2.3 Agree on the principles, methods, and criteria to be used in development of the assessment of current and projected landscape conditions.

- LCD Landscape Ecologist/Project Manager will coordinate with WGs and CMQ teams to draft recommendations

Phase 3: Assessment (2016)

Goal: To obtain an understanding of the relationship between targets and the direct pressures that cause or contribute to limiting factors.

- 3.1 Apply models to delineate, analyze, and assess the current state of the ecosystem.
  - Landscape Ecologist/Project Manager will coordinate (with help from WGs, CMQ teams, staff, funded projects, etc.):
    - Collation and synthesis of existing information
    - Identification of critical gaps and how to fill them
- 3.2 Apply projective scenarios to delineate, analyze, and assess pressures and their relationship to targets' limiting factors under various spatial and temporal scenarios, including climate change.
  - Landscape Ecologist/Project Manager with GIS Specialist
  - Assistance from Climate Science Centers and other partners?
- 3.3 Identify and document assumptions made in development and use of models.
  - Landscape Ecologist/Project Manager with GIS Specialist

Phase 4: Post-Assessment (2016)(Note: additional resources may be needed to complete this phase)

Goal: To facilitate partners' understanding and obtain agreement on the assessment's results and build support for continuation of the landscape conservation design process.

- 4.1 Create scenarios of future landscape condition.
  - Round 2 workshops/webinars
  - Invite a broad spectrum of managers and researchers
- 4.2 Evaluate effectiveness/impact of assumptions made.
- 4.3 Identify data limitations and gaps to direct research and improve development of future assessments.
  - Landscape Ecologist/Project Manager will coordinate (with help from WGs, CMQ teams, staff, funded projects, etc.)
- 4.4 Prepare plans for 2-3 pilot LCDs to be developed in 2017-2018 (i.e., implementation of phases 5-7)
  - Landscape Ecologist/Project Manager will coordinate (with help from WGs, CMQ teams, staff, funded projects, etc.)

NOTE: Phases 5-7 are not covered by funding that has been secured to date. Current funding will get us to this point and prepared for subsequent phases.

2017 Phase 5: Pre-Design

Goal: To facilitate partners' agreement on the technical aspects of the landscape conservation design product prior to its development.

- 5.1 Agree on a collaboratively-defined desired future condition.
- 5.2 Assess and articulate the conservation deficit: the difference between the current/projected condition and the desired future condition.
- 5.3 Agree on design principles, methods and evaluation criteria for identifying priority areas.

2017+ Phase 6: Design

Goal: To develop 2-3 pilot landscape conservation design products for priority areas within our 3 focal ecosystem types that addresses the conservation deficit and achieves the desired future condition.

- 6.1 Identify, evaluate, and select a portfolio of prioritized areas.
- 6.2 Identify, evaluate, and select a suite of implementation strategies.
- 6.3 Develop a preliminary implementation agreement.
- 6.4 Compile information and products generated during the design process; document the results for peer review.

2018+ Phase 7: Post-Design

Goal: To ensure the landscape conservation design product is appropriately finalized, implemented, evaluated, and revised.

- 7.1 Conduct peer review and revise as appropriate.
- 7.2 Finalize the landscape conservation design including implementation agreement.
- 7.3 Revise the landscape conservation design based on new information (including results derived from research and monitoring).
    - Establish a regular cycle of reviewing assumptions for consideration of new threats and information at various spatial and temporal scales.

Tasks & Timeline, 2014-2016

DRAFT Tasks & Timeline, 2014

WHEN	WHAT	PRIMARY INPUT	PRODUCT	STEERING COMMITTEE ROLE
August/ September 2014	Working Groups and CMQ Teams contribute to concepts for Climate-Smart Landscape Conservation Planning & Design.	Desert LCC Coordinators WGs + CMQ teams	Draft Implementation Plan for Climate-Smart Landscape Conservation Planning & Design	Steering Committee gave input, approved concepts, volunteered for LCPD WG, and contributed to implementation plan
October/ November 2014	**Review and refine LCD steps and timeline.** Desert LCC **webinar** w/ WGs and CMQ teams to flesh out LCD steps and timeline (October 9).	Desert LCC Coordinators WGs + CMQ teams Steering Committee Additional partners via Meeting Sphere Session	Implementation plan, version 1.0.	Provide input on implementation plan.
December 2014	Announce **request for proposals** for filling capacity needs: Project Manager/Landscape Ecologist; GIS specialist; workshop planning and logistics, etc. (early November).	FWS	Project Manager, GIS Specialist, logistical planning and implementation of webinars and workshops	

DRAFT Tasks & Timeline, 2015

WHEN	WHAT	WHO	PRODUCT	STEERING COMMITTEE ROLE
January – February 2015	**Data discovery** related to BLM's REAs and other potentially useful data (e.g., see Appendix D).	Project Manager Desert LCC Coordinators GIS Specialist GIS WG BLM staff	Committee of Data Stewards/Owners to be responsible for their respective organization's data in the CPA. List of data sources.	Suggest additional data and staff for data stewards/owners
	Work with BLM staff to **develop trainings related to the use of REAs** in landscape conservation planning and design for BLM staff and other Desert LCC members (trainings to be added to this timeline in the final version of the Implementation Plan).	Project Manager GIS Specialist + GIS WG BLM staff Desert LCC Coordinators	Training on use of REAs Lessons learned	
	Establish and kick-off **Landscape Conservation Planning and Design (LCPD) Working Group and Climate Science Advisory Committee**; determine roles associated with tasks and timeline. Draft **data management best practices and plan**, including compilation and curation of data (continued in January) and considering (for example): a) determine where source data will be staged, how it will be accessed and by whom b) determine which ISO metadata fields	Project Manager Desert LCC Coordinators LCPD WG Project Manager GIS Specialist GIS Coordinator + GIS WG	Design (LCPD) Working Group Climate Science Advisory Committee Draft data management recommendations Finalized LCPD timeline and implementation plan	Approve roles and develop guidance for LCPD working group and Climate Science Advisory Committee Provide input into data management recommendations Approve final implementation product.

	will be required c) compile metadata and create it if necessary d) determine spatial extent and projection for project e) project and subset data as necessary f) symbolize data and create layer packages g) Load metadata and layer packages into CPA h) U.S. & Mexico peer & impact reviews of loaded geospatial data			
	Plan 2015 webinars / workshops.	Project Manager Desert LCC Coordinators LCPD WG Workshop hosts (TBD) Communications WG Climate Advisory Committee	Questionnaire for natural resource managers to inform development of this project, including process (webinars, workshops) and products.	Provide input and suggestions
	Considering pressures and stressors of highest concern, **discuss level of analysis and process for assessing key vulnerabilities at ecosystem level** and compile recommendations to be reviewed and finalized at 2015 workshops.	CMQ 2 team CMQ 1,3,5 teams Climate Advisory Committee	Recommendations	Review and approve draft recommendations
February 2015	**Identify existing baseline information** relevant to 3 focal ecosystem types (streams+riparian, springs+riparian, grasslands/shrublands) for integration into Conservation Planning Atlas • Baseline condition assessments or inventories	Project Manager Desert LCC Coordinators GIS Specialist + GIS WG CMQ 1,3,5 teams	List of pertinent data sources	Review

	• On-going or completed conservation actions: who is doing what where? • What are existing objectives, indicators (e.g., species, ecosystem processes or services), and targets of Desert LCC member organizations?			
	To extent possible, **for each of 3 focal ecosystems**: • **ID greatest pressures and stressors** (starting with list developed by CMQ 2) and develop problem statements focused on key vulnerabilities. • **Complete climate-smart tables** within the landscape/high level context.	CMQ 1,3,5 teams	Recommendations for problem statements & updated climate-smart tables	Review; provide guidance
	Broad **outreach** to potentially interested parties	Project Manager Desert LCC Coordinators Steering Committee Communications WG		Assist with outreach
	Kick-off / introduction webinar for all potentially interested parties (review purpose, steps, timeline, etc.; gage interest from various parties, refine landscape level ecosystem goals and objectives for 3 focal ecosystems types)	Project Manager Desert LCC Coordinators LCPD WG Webinar participants: Desert LCC members and other stakeholders	Webinar	Assist with outreach to partners
	Develop DRAFT criteria for prioritizing focal areas within 3 focal ecosystem types for further planning and design	CMQ 1,3,5 teams LCPD WG Steering Committee Local Governments WG Mexico WG	Recommendations for priority area criteria	

		Tribal WG		
March 2015	**Prepare for workshop 1:** Springs + Riparian ● Integrate data into Conservation Planning Atlas ● Workshop logistics ● Ecosystem-specific webinar (Meeting Sphere webinar) ○ Refine landscape level goals and objectives ○ Review + add to climate-smart tables within the landscape/high level context ○ Refine criteria for prioritizing areas within 3 focal ecosystem types for further planning and design	Project Manager Facilitators GIS Specialist + GIS WG Desert LCC Coordinators LCPD WG CMQs 1,5 Webinar participants: Desert LCC members and other stakeholders	Webinar Recommendations for landscape level goals and objectives; climate-smart tables to date; and criteria for prioritizing areas within 3 focal ecosystem types	Review recommendations and provide guidelines; input
April 2015	**Workshop 1: Springs + Riparian** (Arizona) ● Review Information in Conservation Planning Atlas ● Review initial results of Climate-Smart tables within the landscape/high level context. Refine: ○ ID greatest pressures and stressors ○ ID key vulnerabilities ● Review and refine recommendations on level of analysis and process for assessing key vulnerabilities for focal areas ● Review and refine criteria for prioritizing areas for further planning and design ● ID information gaps	Project Manager Facilitators Desert LCC Coordinators CMQs 1,5 Workshop participants: Desert LCC members and other stakeholders	"Final" Recommendations	Approve: landscape level goals and objectives; climate-smart tables to date; criteria for prioritizing areas within springs/riparian ecosystem type Prioritize information gaps

May 2015	**Prepare for workshop 2:** Grasslands/shrublands ● Integrate data into Conservation Planning Atlas ● Workshop logistics ● Ecosystem-specific webinar (Meeting Sphere) ○ Refine landscape level goals and objectives ○ Review + add to climate-smart tables within the landscape/high level context ○ Refine criteria for prioritizing areas within 3 focal ecosystem types for further planning and design	Project Manager Facilitators GIS Specialist + GIS WG Desert LCC Coordinators LCPD WG CMQ 3 Webinar participants: Desert LCC members and other stakeholders	Webinar Recommendations for landscape level goals and objectives; climate-smart tables to date; criteria for prioritizing areas within 3 focal ecosystem types	Review recommendations and provide guidelines; input
June 2015	**Workshop 2: Grassland/Shrubland Workshop** (Aguascalientes, Mexico) ● Review Information in Conservation Planning Atlas ● Review initial results of Climate-Smart tables within the landscape/high level context. Refine: ○ ID greatest pressures and stressors ○ ID key vulnerabilities ● Review and refine recommendations on level of analysis and process for assessing key vulnerabilities for focal areas ● Review and refine criteria for prioritizing areas for further planning and design ● ID information gaps	Project Manager Facilitators Desert LCC Coordinators CMQ 3 Workshop participants: Desert LCC members and other stakeholders	"Final" recommendations	Approve: landscape level goals and objectives; climate-smart tables to date; criteria for prioritizing areas within grasslands/shrublands ecosystem type

	Compile and share materials and outcomes from workshop			
July 2015	**Prepare for workshop 3: Streams + riparian** ● Integrate data into Conservation Planning Atlas ● Workshop logistics ● Ecosystem-specific webinar (Meeting Sphere) o Refine landscape level goals and objectives o Review + add to climate-smart tables within the landscape/high level context o Refine criteria for prioritizing areas within 3 focal ecosystem types for further planning and design	Project Manager Facilitators GIS Specialist + GIS WG Desert LCC Coordinators LCPD WG CMQs 1,5 Webinar participants: Desert LCC members and other stakeholders	Webinar Recommendations for landscape level goals and objectives; climate-smart tables to date; criteria for prioritizing areas within 3 focal ecosystem types	Review recommendations and provide guidelines; input
August 2015	**Workshop 3: Streams + Riparian Workshop** (New Mexico or Texas?) ● Review Information in Conservation Planning Atlas ● Review initial results of Climate-Smart tables within the landscape/high level context. Refine: o ID greatest pressures and stressors o ID key vulnerabilities ● Review and refine recommendations on level of analysis and process for assessing key vulnerabilities for focal areas ● Review and refine criteria for prioritizing areas for further planning	Project Manager Facilitators Desert LCC Coordinators CMQs 1,5 Workshop participants: Desert LCC members and other stakeholders	"Final" recommendations	Approve: landscape level goals and objectives; climate-smart tables to date; criteria for prioritizing areas within streams/riparian ecosystem type

	and design ● ID information gaps Compile and share materials and outcomes from workshop			
September 2015	**Webinars** for each of 3 focal ecosystem types: ● Use criteria developed in workshop to determine focal areas (using a watershed approach) ● Define ecosystem integrity	Project Manager Facilitators Desert LCC Coordinators LCPD WG Participants: Desert LCC members and other stakeholders	Recommendations for focal areas	Prioritize and approve focal areas
October 2015	**Webinars** for each of 3 focal ecosystem type: ● ID key vulnerabilities for focal areas ● Develop problem statements focused on key vulnerabilities	Project Manager Facilitators Desert LCC Coordinators LCPD WG CMQ 6 Participants: Desert LCC members and other stakeholders	Recommendations for key vulnerabilities of focal areas	Approve
November – December 2015	**Integrate** information from Desert LCC partners on existing conservation objectives and targets related to focal areas and key vulnerabilities into Conservation Planning Atlas.	Project Manager GIS Specialist GIS Coordinator + GIS WG	Updated Conservation Planning Atlas	Review
December 2015	**Webinars** for each of 3 focal ecosystem types: Develop site-specific goals and objectives based on DLCC member organizations' existing priorities, goals, and	Project Manager Facilitators Desert LCC Coordinators LCPD WG	Recommendations on site-specific goals & objectives	Approval

	objectives.	Participants: Desert LCC members and other stakeholders		

DRAFT Tasks & Timeline, 2016

WHEN	WHAT	WHO	PRODUCT	STEERING COMMITTEE ROLE
January 2016	**Work with the South Central and Southwest Climate Science Centers to apply models** to delineate, analyze, and assess the current state of focal areas associated with focal ecosystem types and conservation targets.	Project Manager GIS Specialist Climate Advisory Committee	Models	Review
February 2016	**Work with the South Central and Southwest Climate Science Centers to apply climate models** to delineate, analyze, and assess pressures and their relationship to targets' limiting factors under various spatial and temporal scenarios.	Project Manager GIS Specialist Climate Advisory Committee	Models	Review
March 2016	**Springs + Riparian priority areas: Climate projection and scenario development workshop** • Review and discuss results of climate projections • Discuss how to use this information and ways to address uncertainty • Where great uncertainty exists, develop scenarios to delineate, analyze, and assess pressures and their relationship to targets' limiting factors	Project Manager Facilitators Desert LCC Coordinators Climate Advisory Committee CMQs 1, 2, 5 Participants: Desert LCC members and other stakeholders	Recommendations how to use climate information, general adaptation strategies, management options, and key climate-smart design considerations	Assist with outreach to partners and workshop attendance Review and approve recommendations

WHEN	WHAT	WHO	PRODUCT	STEERING COMMITTEE ROLE
	• What are general adaptation strategies? • What are specific management options? • What are key climate-smart design considerations? • Development of guidance on climate-informed monitoring for evaluation of management efficacy and tracking long-term trends.			
April 2016	**Streams + Riparian priority areas: Climate projection and scenario development workshop** • Review and discuss results of climate projections • Discuss how to use this information and ways to address uncertainty • Where great uncertainty exists, develop scenarios to delineate, analyze, and assess pressures and their relationship to targets' limiting factors • What are general adaptation strategies? • What are specific management options? • What are key climate-smart design considerations? • Development of guidance on climate-informed monitoring for evaluation of management efficacy and tracking long-term trends.	Project Manager Facilitators Desert LCC Coordinators CMQs 1, 2, 5 Climate Advisory Committee Participants: Desert LCC members and other stakeholders	Recommendations how to use climate information, general adaptation strategies, management options, and key climate-smart design considerations	Assist with outreach to partners and workshop attendance Review and approve recommendations

WHEN	WHAT	WHO	PRODUCT	STEERING COMMITTEE ROLE
May 2016	**Grasslands/Shrublands priority areas: Climate projection and scenario development workshop** • Review and discuss results of climate projections • Discuss how to use this information and ways to address uncertainty • Where great uncertainty exists, develop scenarios to delineate, analyze, and assess pressures and their relationship to targets' limiting factors • What are general adaptation strategies? • What are specific management options? • What are key climate-smart design considerations? • Development of guidance on climate-informed monitoring for evaluation of management efficacy and tracking long-term trends.	Project Manager Facilitators Desert LCC Coordinators CMQs 2, 3 Climate Advisory Committee Participants: Desert LCC members and other stakeholders	Recommendations how to use climate information, general adaptation strategies, management options, and key climate-smart design considerations	Assist with outreach to partners and workshop attendance Review and approve recommendations
June 2016	**Identify data limitations and gaps** to direct research and improve development of future assessments.	Project Manager GIS Specialist	Report Lessons learned	Review and prioritize gaps
July 2016	**Prepare plans for 2-3 pilot landscape conservation designs** to be developed in 2017-2018 (i.e., phases 5-7).	Project Manager Desert LCC Coordinators LCPD WG	Draft plans	Provide guidance
August	Webinars to present and **get feedback** on	Project Manager	Webinars	Approve final plans

WHEN	WHAT	WHO	PRODUCT	STEERING COMMITTEE ROLE
2016	draft plans. DLCC Steering Committee, Working Group, and team **review of plans**.	Desert LCC Coordinators LCPD WG	Final plans, including lessons learned	
September 2016	**Develop final report and recommendations** for design phase, including guidance on climate-informed monitoring for evaluation of management efficacy and tracking long-term trends.	Project Manager Desert LCC Coordinators Climate Advisory Committee	Final Report, including lessons learned	Approve

Desert LCC Group Member Primary Roles and Responsibilities

Group	Primary Roles and Responsibilities	Members by Affiliation
Desert LCC Staff	Coordinate, facilitate and administrate process. Communicate with partners. Plan workshops and webinars. Develop reports and recommendations.	Coordinator, Science Coordiantor, GIS Coordinator, and LCPD Project Manager/GIS Specialist (TBD)
Steering Committee	Provide guidance on overall process. Make decisions on inputs/outputs related to LCD project. Communicate with internal agency/organization staff. Provide resources to assist with LCD as appropriate.	Arizona Game and Fish Department Bureau of Indian Affairs Bureau of Indian Affairs – Navajo Bureau of Land Management Bureau of Reclamation California Association of Four Wheel Drive Club California Department of Fish and Wildlife Cocopah Indian Tribe Colorado River Indian Tribes Desert Managers Group Fort McDowell Nation Instituto Nacional de Ecología y Cambio Climático National Park Service Native American Land Conservancy Natural Resources Conservation Service Nevada Department of Wildlife New Mexico State Engineers Office Rio Grande Joint Venture Rocky Mountain Bird Observatory Sky Island Alliance Sonoran Joint Venture Texas Parks and Wildlife US Fish and Wildlife Service US Geological Survey USDA Forest Service
Science Working Group	Recommend LCD process. Develop draft criteria for prioritizing focal areas. Complete climate-smart tables. Participate in workshops and webinars to provide input on key	Arizona Game and Fish Department Bureau of Land Management Bureau of Reclamation Chemehuevi Tribe

Group	Primary Roles and Responsibilities	Members by Affiliation
	topics.	Chihuahuan Desert Grassland Alliance Comisión Nacional de Áreas Naturales Protegidas (CONANP) Instituto Nacional de Ecología y Cambio Climático (INECC) National Park Service National Park Service Northern Arizona University Sky Island Alliance Southern Nevada Water Authority Texas Parks and Wildlife Department US Fish and Wildlife Service US Forest Service, Rocky Mountain Research Station US Geological Survey USDA Forest Service World Wildlife Fund
Critical Management Question 1 Team	Recommend draft goals and objectives for focal resources. Identify greatest pressures and stressors related to springs and streams. Recommend analysis and process for assessing key vulnerabilities at ecosystem level. Identify existing baseline information. Complete climate-smart tables. Develop DRAFT criteria for prioritizing focal areas. Track and provide recommendations for addressing data and science gaps.	Bureau of Reclamation U.S. Forest Service Northern Arizona University U.S. Fish and Wildlife Service U.S. Geological Survey National Park Service Southern Nevada Water Authority Arizona Land and Water Trust University of Arizona World Wildlife Foundation-Chihuahuan Desert Program Ecosystem Economics LLC Comisión Nacional de Áreas Naturales Protegidas Wildlife Habitat Council NOAA Universidad Autónoma de Nuevo Leon Ingeniero en Ecologia Universidad Autónoma de Nuevo Leon URDERALES de los muncipios de Meoqui, Julimes y Rosales
Critical Management Question 2 Team	Recommend level of analysis and process for assessing key vulnerabilities at ecosystem level Identify key vulnerabilities for focal areas	Sonoran Joint Venture Arizona Game and Fish Dept. California Fish and Wildlife Dept.

Group	Primary Roles and Responsibilities	Members by Affiliation
	Develop problem statements focused on key vulnerabilities Track and provide recommendations for addressing data and science gaps. Provide guidance on development of climate informed monitoring plan for evaluation of management efficacy and tracking long-term trends.	U.S. Fish and Wildlife Service Rocky Mountain Bird Observatory U.S. Geological Survey The Nature Conservancy, Texas University of Arizona Bureau of Reclamation Texas Parks and Wildlife Department SEMARNAT-Delegación Zacatecas H. Ayuntamiento de Aguascalientes Bureau of Land Management Desert Research Institute Northern Arizona University Proteccion de la Fauna Mexivana, A.C. Comisión Nacional de Areas Naturales Protegidas Texas Parks and Wildlife Department
Critical Management Question 3 Team	Recommend draft goals and objectives for focal resources. Identify greatest pressures and stressors related to grasslands and shrublands. Recommend analysis and process for assessing key vulnerabilities at ecosystem level. Identify existing baseline information. Complete climate-smart tables. Track and provide recommendations for addressing data and science gaps.	Alianza Regional para la Conservación de Pastizales DCH Arizona Game and Fish Department Bureau of Land Management California Department of Fish and Wildlife Chihuahuan Desert Grassland Alliance Colegio de Postgraduados Comision Nacional de Areas Naturales Protegidas (CONANP) Fish and Wildlife Service IMC Vida Silvestre Museo de las Aves de Mexico National Park Service Natural Resources Conservation Service New Mexico State University Proteccion de la Fauna Mexivana, A.C. Rio Grande Joint Venture Rocky Mountain Bird Observatory Sonoran Joint Venture Texas Parks and Wildlife Department Universidad Autónoma de Aguascalientes

Group	Primary Roles and Responsibilities	Members by Affiliation
		Universidad Autonoma de Chihuahua Universidad Autónoma de Nuevo León US Forest Service, Rocky Mountain Research Station USDA Forest Service Wildlife Habitat Council
Critical Management Question 4 Team	Recommend level of analysis and process for assessing key vulnerabilities at ecosystem level ID key vulnerabilities for focal areas Develop problem statements focused on key vulnerabilities Track and provide recommendations for addressing data and science gaps.	Bureau of Reclamation Department of Defense - Luke AFB Fish and Wildlife Service Instituto Nacional de Ecología y Cambio Climático (INECC) New Mexico State University Northern Arizona University Rio Grande Joint Venture Sonoran Joint Venture Texas Tech University U.S. Geological Survey Universidad Autónoma de Nuevo Leon University of New Mexico
Critical Management Question 5 Team	Recommend draft goals and objectives for focal resources. Identify greatest pressures and stressors related to springs and streams (specifically riparian areas). Recommend analysis and process for assessing key vulnerabilities at ecosystem level. Identify existing baseline information. Complete climate-smart tables. Develop DRAFT criteria for prioritizing focal areas. Track and provide recommendations for addressing data and science gaps.	Bureau of Land Management Bureau of Reclamation Fish and Wildlife Service Instituto Nacional de Ecología y Cambio Climático (INECC) Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM) National Park Service New Mexico State University Recursos Sustentables, Biodiversidad y Cultura, A.C. Sky Island Alliance Southwest Fire Consortium – Joint Fire Science Program Tamarisk Coalition TREES U.S. Geological Survey USDA Forest Service World Wildlife Fund
Critical Management	Recommend level of analysis and process for assessing key vulnerabilities at ecosystem level	Arizona Game and Fish Department Arizona State University

Group	Primary Roles and Responsibilities	Members by Affiliation
Question 6 Team	ID key vulnerabilities for focal areas Develop problem statements focused on key vulnerabilities. Identify existing baseline information. Complete climate-smart tables. Develop DRAFT criteria for prioritizing focal areas. Track and provide recommendations for addressing data and science gaps.	Bureau of Land Management California Department of Fish and Wildlife Desert Research Institute H. Ayuntamiento de Aguascalientes New Mexico State University Texas Tech University The Nature Conservancy, Texas University of California, Santa Cruz US Fish and Wildlife Service US Geological Survey World Wildlife Fund, Mexico
Communications Working Group	Conduct outreach to potential partners. Help develop training and outreach materials.	Bureau of Reclamation California Association of Four Wheel Drive Clubs California Department of Fish and Wildlife Rio Grande Joint Venture Rocky Mountain Bird Observatory Sonoran Joint Venture US Fish and Wildlife Service
GIS Working Group	Provide input for LCD process. Assist with data discovery and data stewards for CPA. Assist with data management planning. Provide recommendations for data discovery, communication, and integration of BLM REA data. Provide recommendations for model development. Track and provide recommendations for addressing data gaps.	Arizona Game & Fish Department International Boundary and Water Commission Mojave Desert Ecosystem Program New Mexico State University Rocky Mountain Bird Observatory Sky Island Alliance Texas Natural Resource Information Service of the Texas Water Development Board/Texas Borderlands Information Center Texas Parks & Wildlife The Trust for Public Land US Air Force US Bureau of Reclamation US Fish and Wildlife Service US Geological Survey Western Regional Partnership Desert Research Institute

Group	Primary Roles and Responsibilities	Members by Affiliation
		Bureau of Reclamation Desert Research Institute Austin Community College
Local Governments Working Group	Provide input on draft goals and objectives for focal resources. Provide input to LCD process. Conduct outreach to potential local government partners. Identify existing baseline information relevant to 3 focal ecosystem types. Participate in workshops and webinars to provide input on key topics. Provide recommendations and input for addressing human dimensions/social science gaps.	Coalition of Arizona/New Mexico Counties El Paso Zoo New Mexico Department of Agriculture Pima County QuadState Local Governments Authority Rocky Mountain Bird Observatory US Bureau of Reclamation
Mexico Working Group	Provide input draft goals and objectives for focal resources. Provide input to LCD process. Conduct outreach to potential Mexican partners. Identify existing baseline information relevant to 3 focal ecosystem types. Participate in workshops and webinars to provide input on key topics. Provide recommendations and input for addressing human dimensions/social science gaps	Alianza Regional para la Conservación de Pastizales DCH Arizona Desert Museum Bureau of Land Management California Department of Fish and Wildlife Colegio de Postgraduados Comision Nacional de Areas Naturales Protegidas (CONANP) Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO) Conservación de Fauna del Noroeste ECOSISTEMICA AC H. Ayuntamiento de Aguascalientes IMC Vida Silvestre Instituto Nacional de Ecología y Cambio Climático (INECC) Museo de las Aves de Mexico National Park Service Pronatura Noreste Recursos Sustentables, Biodiversidad y Cultura, A.C. Rio Grande Joint Venture Rocky Mountain Bird Observatory Secretary of the Environment, Coahuila SEMARNAT Sky Island Alliance

Group	Primary Roles and Responsibilities	Members by Affiliation
		Sonoran Joint Venture Southern Nevada Water Authority Universidad Autónoma de Chihuahua World Wildlife Fund, Mexico
Tribal Working Group	Provide input draft goals and objectives for focal resources. Provide input to LCD process. Conduct outreach to potential Tribal partners. Identify existing baseline information relevant to 3 focal ecosystem types. Participate in workshops and webinars to provide input on key topics. Provide recommendations and input for addressing human dimensions/social science gaps.	Bureau of Indian Affairs Bureau of Land Management Bureau of Reclamation California Association of Four Wheel Drive Clubs California Department of Fish and Wildlife Colorado River Indian Tribes National Park Service Sonoran Joint Venture South Central Climate Science Center US Fish and Wildlife Service
Landscape Planning and Design Working Group	Work with facilitators and DLCC staff to plan webinars / workshops. Work with Science WG and Steering Committee to develop DRAFT criteria for prioritizing focal areas. Assist in Project Manager in preparing plans for 2-3 pilot landscape conservation designs.	***Volunteers (to date):*** Aaron Wilkerson, Bureau of Land Management Armand Gonzalez, California Fish and Wildlife Department Claire DeVaughan, U.S. Geological Survey Duane Pool, Rocky Mountain Bird Observatory Esther Rubin, Arizona Game and Fish Department Jim Weigand, Bureau of Land Management Joseph Lujan, U.S. Fish and Wildlife Service Kelly Mott Lacroix, University of Arizona, Water Resources Research Center Ken Nowak, Bureau of Reclamation Louise Misztal, Sky Island Alliance Sallie Hejl, National Park Service
Climate Change Committee	Provide technical guidance on LCD process and inputs. Give guidance on planning of 2015 webinars / workshops. Considering pressures and stressors of highest concern, give guidance on level of analysis and process for assessing key vulnerabilities at ecosystem level.	TBD *Potential members could include people with expertise in:* • Climate change (e.g., Southwest Climate Science Center, South Central Climate Science Center, CLIMAS) • Climate Change POCs from Desert LCC member organizations • Human dimensions of conservation and climate

Group	Primary Roles and Responsibilities	Members by Affiliation
	Give guidance on models to delineate, analyze, and assess the current state of priority areas. Give guidance on determining climate models to delineate, analyze, and assess pressures and their relationship to targets' limiting factors under various spatial and temporal scenarios. Help plan climate projection and scenario development workshops. Provide guidance on development of climate informed monitoring plan for evaluation of management efficacy and tracking long-term trends.	change • Others?
Additional partners and stakeholders	Participate in workshops and webinars to provide input on key topics. Provide input to address human dimensions/social science gaps.	TBD (*will likely be influenced by selection of pilot project locations and who attends workshops*)

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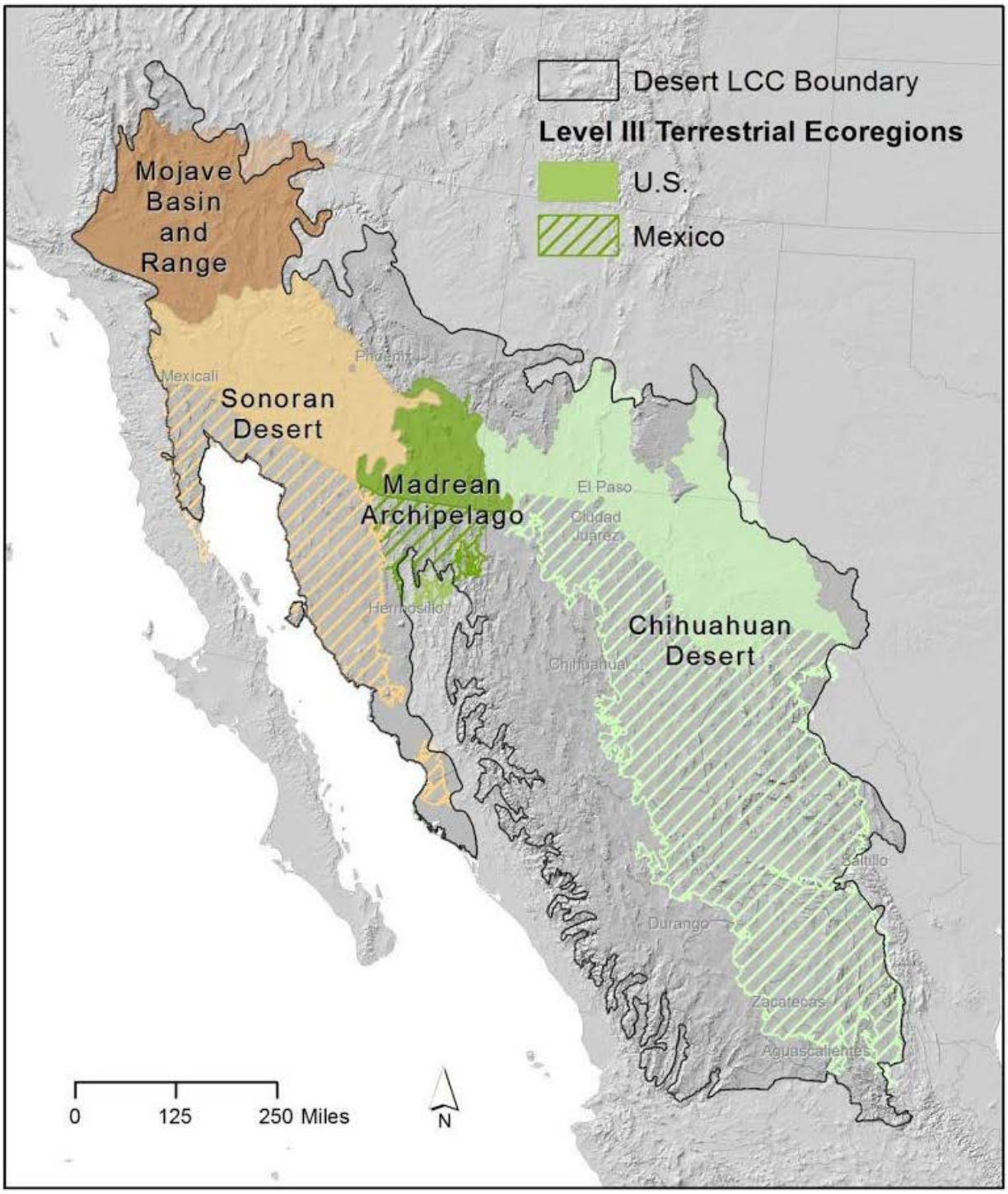
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APPENDIX A: Map of Project Area

This map depicts the Desert LCC geography and the ecoregions for which the Bureau of Land Management is developing Rapid Ecoregional Assessments in the U.S.: Mojave Basin and Range, Sonoran Desert, Madrean Archipelago, and Chihuahua Desert.



APPENDIX B: Ecosystem Pressures and Stressors of Greatest Concern to the Desert LCC

The Desert LCC's CMQ 2 team engaged the partnership in a process to determine the most critical pressures and stressors to ecosystems and species related to or exacerbated by climate change. They used Salafsky et al. 2008 for the threats (aka, pressures) classification. This classification was developed for use globally and is accepted for use by several conservation organizations and natural resources agencies.

- Fires and fire suppression
- Habitat shifting and alteration
- Drought
- Indirect ecosystem effects (fragmentation and isolation)
- Temperature extremes
- Invasive, nonnative/alien species
- Dams and water management/use
- Energy Development
- Storms and flooding
- Unsustainable livestock, farming and ranching
- Agriculture and forestry effluents/pollution
- Mining and quarrying
- Logging and wood harvesting

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APPENDIX C: Assessing Vulnerability to Climate Change for Climate-Smart Landscape Conservation Design

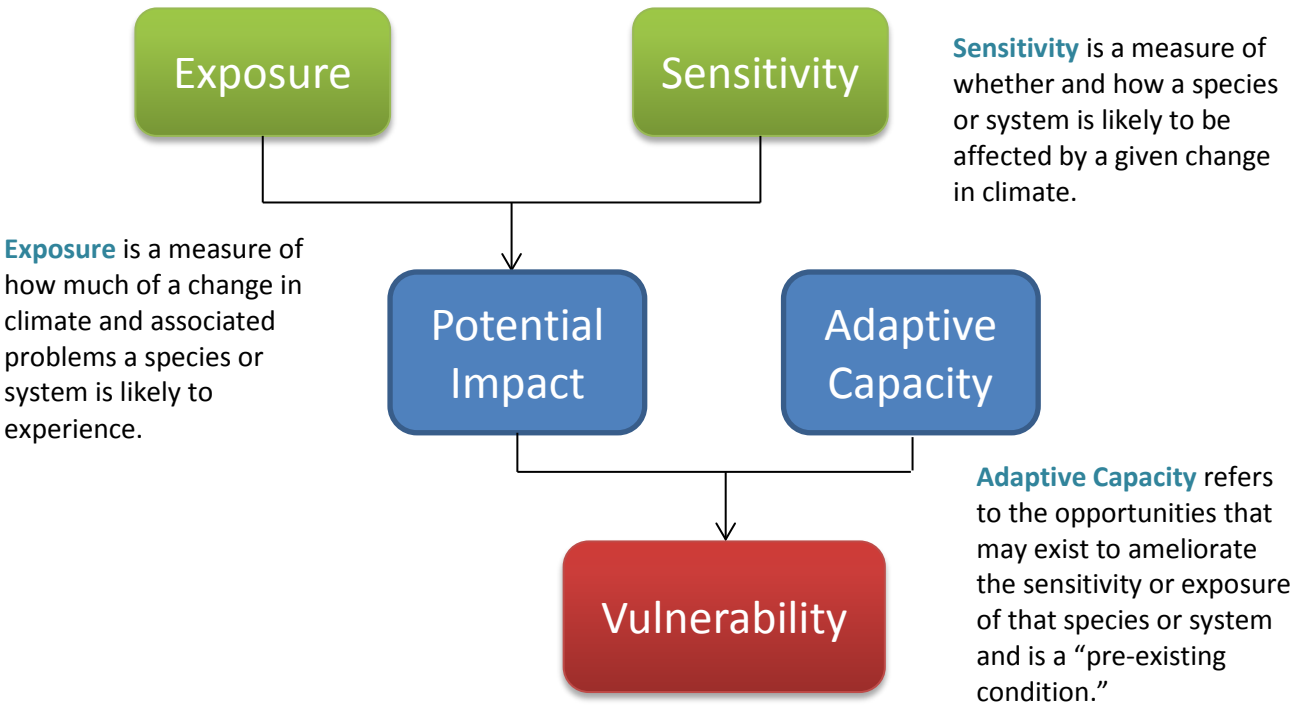
Conceptual outline to be further developed, December 2014 – January 2015, with input from Desert LCC Steering Committee, Working Groups, and Teams

***WHY** do we care about vulnerability to climate change?*

- Climate change may increase the overall threat to (pressure on) many of the ecosystems and species we already manage.
    - Should this change how we manage?
        - Are there ecological thresholds beyond which a system or habitat area cannot be sustained or maintained?
        - Will some priority resources benefit from climate change?
- Ecosystems and species we are not concerned about now may be threatened by climate change.
    - Are there adaptation actions we can take to help sustain or maintain priority resources (ecosystem function. services, and species)?

***WHAT** are the components of vulnerability?*

- *Sensitivity*
- *Exposure*
- *Adaptive Capacity*



Sensitivity is a measure of whether and how a species or system is likely to be affected by a given change in climate.

Exposure is a measure of how much of a change in climate and associated problems a species or system is likely to experience.

Adaptive Capacity refers to the opportunities that may exist to ameliorate the sensitivity or exposure of that species or system and is a "pre-existing condition."

***WHAT** do we know is vulnerable now?* There are multiple vulnerability assessments that have been completed within our geography - how can we incorporate that information into this process and then identify the gaps? What are the most vulnerable functions and services associated with each ecosystem type? We could step down from them to look at biodiversity/species within each system type or priority area.

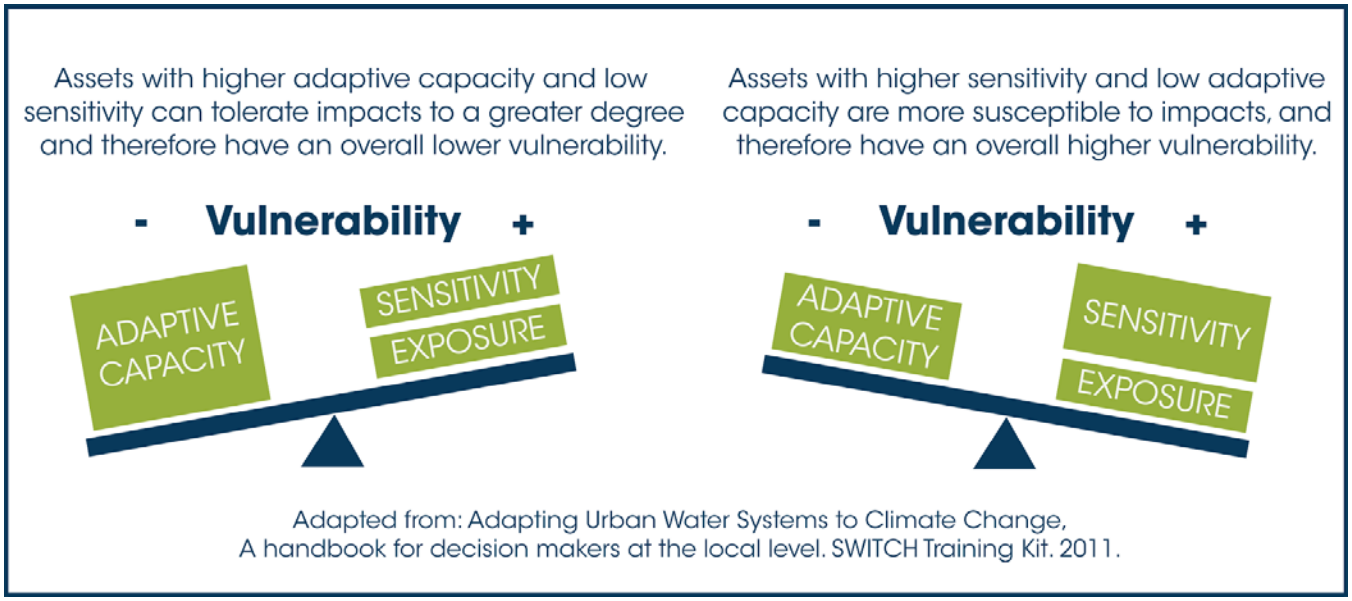
- *Streams, aquatic and riparian*
    - *Need to get specific about ecosystem function, services, and species*
- *Springs, aquatic and riparian*
    - *Need to get specific about ecosystem function, services, and species*
- *Grasslands/shrublands*
    - *Need to get specific about ecosystem function, services, and species*

***HOW do we assess WHAT** may become "critically" vulnerable due to climate change*

- *Need: Roadmap for assessing vulnerability*

***WHAT** can we do about it?*

- *Can we influence adaptive capacity?*



***HOW & WHERE** are we going to work together to mitigate vulnerability of priority resources (ecosystem function, services, and species)?*

- Climate-Smart Landscape Conservation Planning and Design:
    - Across the landscape, where are the greatest threats to priority resources?
    - Where are the greatest opportunities for collaboration and collective impact?
    - What are we going to do about it to have a collective impact on mitigating vulnerability to climate change?

APPENDIX D: Resources to Consider in the Landscape Conservation Planning

Desert LCC:

- Conservation Planning Atlas (dlcc.databasin.org)– this is the platform where spatial data related to priority resources, threats, conservation activities and opportunities related to the Desert LCC, our participating organizations, and other partners and stakeholders will be curated and compiled.
- Priority resources and Critical Management Questions: aquatic, riparian, and grassland habitats, water resources, species vulnerable to climate change (www.usbr.gov/dlcc/resources/docs/DLCCCMQs.pdf)
- NatureServe Climate Change Habitat Vulnerability Index Vulnerability Assessment (connect.natureserve.org/sites/default/files/documents/NatureServe_HCCVI_Report.pdf) (funded by FWS Refuges for Desert LCC partners)
- Lower San Pedro LCD project (funded by Desert LCC)
- Point Blue project, Detecting and addressing climate change impacts on birds and their habitats in northern Mexico and the southwestern United States (funded by Desert LCC and Sonoran Joint Venture).

Sonoran and Rio Grande Joint Ventures

- Conservation plans and conservation design matrices
- Sonoran Joint Venture's Miradi conservation plan
- Rio Grande Joint Venture grassland conservation plan

Desert Fish Habitat Partnership's conservation interests

Big Bend-Río Bravo Initiative: Conservation Assessment for the Big Bend-Río Bravo Region: A Binational Approach to Conservation (http://www3.cec.org/islandora/en/item/11495-conservation-assessment-big-bend-r-o-bravo-region-binational-collaborative-approach-en.pdf).

Fish and Wildlife Service:

- Priority resources: threatened and endangered species, surrogate species, migratory birds, planning for priority National Wildlife Refuges
- A Landscape-Scale Approach to Refuge System Planning (www.fws.gov/refuges/vision/pdfs/PlanningGuideRev10.pdf)
- Inventory and Monitoring network

Bureau of Land Management:

- BLM Rapid Ecoregional Assessments Webpage and Data portal (www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas.html)
- BLM Landscape Approach for Managing Public Lands (www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html)
- Plan for BLM-managed San Pedro Riparian National Conservation Area
- Desert Renewable Energy Conservation Plan (draft to be published in August 2014)

Bureau of Reclamation:

- Basin Studies
- Multi-Species Conservation Program
- Middle Rio Grande Collaborative Program

National Park Service:

- National Park plans

- Sonoran Desert, Chihuahuan Desert, and Southern Plains Inventory and Monitoring Networks
- Natural Resource Condition Assessments and State of the Park Assessments

U.S. Forest Service:
- Integrated Landscape Assessment Project
- Forest Plan revisions
- Watershed Condition Framework (priority watersheds for restoration)
- 5-year Strategic Landscape Restoration Framework

Natural Resource Conservation Service:
- Watershed Assessment ADEQ Water Quality Assessments

U.S. Geological Survey
- USGS National Water Information System (stream gages, water quality, groundwater gages, regional aquifer studies) as well as StreamStats
- USGS Land Remote Sensing: http://remotesensing.usgs.gov/
- USGS Earth Resources Observation and Science (satellite imagery): http://eros.usgs.gov
- USGS Ecosystems Info - invasive species, coop units, fisheries, wildlife program, status and trends program, National Phenology Network, Energy and Wildlife
- USGS National Geopsatial Program & National Cooperative Geologic Mapping Program
- USGS Energy and Minerals program

State Wildlife Action Plans for Arizona, California, Nevada, New Mexico, and Texas

Arizona:
- Arizona Forest Resource Assessment (State Forestry) fire.az.gov/userfiles/file/Arizona%20Forest%20Resource%20Assessment-2010.pdf
- Arizona Game and Fish Department's State Wildlife Action Plan and HabiMap tool
- Managing and Monitoring Arizona's Wildlife in an Era of Climate Change: Strategies and Tools for Success: Report and Workshop Summary Prepared for: U.S. Department of Interior, Bureau of Land Management, Arizona Game and Fish Department. Prepared by: The H. John Heinz III Center for Science Economics and the Environment January 13, 2011.
- ADWR's Arizona Water Atlas
- The Governor's Water Resources Development Commission, Environmental Committee- WRDC Environmental Workgroup Report, including a compilation of data on every water basin in Arizona, including what biological and hydro resources are there.

New Mexico:
- Statewide Resource Assessment (State Forestry) (www.emnrd.state.nm.us/SFD/statewideassessment.html)

Western Governors Association:
- Crucial Habitat Assessment Tool

The Nature Conservancy:
- Ecoregional plans, ecoflow reports, grassland assessment, various studies/data
- Ecoregional assessments: Desert, Apache Highlands and grassland assessments (azconservation.org); vulnerability assessment work (nmconservation.org)

Sky Island Alliance's Madrean Archipelago Biodiversity Assessment database (Madrean.org) and map of prioritized areas for conservation.

The Lower San Pedro Watershed Alliance and Cascabel Conservation Association's collaborative conservation efforts (https://sites.google.com/site/lowersanpedro/home).

University of Arizona's Water Resources Research Center

- Multiple resources (https://wrrc.arizona.edu/)

Other Information and Sources to Consider:

- Groundwater quantity and quality need to be considered
- Landslide Hazards and Emergency Management, wildfire hazards
- Office of Tribal Relations
- Assessment of Climate Change in the Southwest
- DOI Basin Studies, Climate Impact Analyses, Water Census Focus Areas
- Diverse data assembled at www.databasin.org - BLM Rapid Ecological Assessment datasets are also there
- Data layers showing protected (private or public) and other conservation lands
- LANDFIRE
- FireScape
- National Phenology network
- Third National Climate Assessment (http://nca2014.globalchange.gov/downloads)
- Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment (http://swccar.org/sites/all/themes/files/SW-NCA-color-FINALweb.pdf)

APPENDIX E: Desert LCC Adaptation Strategies for Priority Resources Table

Focal Ecosystem [Springs, Streams, or Grasslands/Shrublands] or Priority Resource

Note: Decisions about setting conservation targets, and when, where, and how to implement adaptation and critical conservation actions and monitoring are made by individual organizations and conservation implementation partnerships (e.g., Joint Ventures, Fish Habitat Conservation Partnerships, etc.) within their authorities.

Climate-Smart Conservation Step	Input(s)	Key Group(s)	Desired Output	Results	
Step 1, Step 3: Goal, Objectives & Targets (re-assess as needed based on Step 2)	Existing goals, objectives, plans, & decisions, constraints; Steering Committee (SC) interviews; DLCC Strategic Actions	SC; all WGs	Clearly defined statements that guide our work & allow us to measure success	***Conservation goal:*** ***Objectives:*** ***Targets: Determined by individual partners***	
Step 2: Key Climate-related Impacts & Vulnerability	Goals, objectives, and targets; defined spatial & temporal scale & scope	All CMQs	Assessment of critical threats to & vulnerabilities of focal ecosystems, priority resources and species; ID "key vulnerabilities" & monitoring recommendations	***Key vulnerabilities:*** ***Monitoring recommendations:***	
Step 4: General Adaptation Options & Strategies	Key vulnerabilities & associated factors; SC interviews; WG discussions; CMQ team assessments & recommendations	SC; WGs; CMQ teams	Specific actions capable of reducing key vulnerabilities or enhancing adaptive capacity; explicit rationale or logic models for how actions link to climate-related impacts; Best Management Practices	***General Strategy***	***Specific Action(s)***
				Reduce non-climate stressors	
				Protect key ecosystem features	
				Ensure connectivity	
				Restore structure and function	
				Support evolutionary potential	
				Protect refugia	

				Relocate organisms
Steps 2, 4: High Priority Knowledge Gaps/Climate-Smart Design Considerations	WG & SC discussions	CMQ teams	Strategic Science Plan; Climate Science Center direction; future funding opportunities	***Input into Funding Opportunities:*** ***Science Agenda:***
Step 5: Potential Pilot Projects & Partners	Goals; adaption options; SC interviews; National level interests	All	3-page general project proposals with list of interested partners; LCD	***Pilot project proposals:*** ***Landscape Conservation Design proposals:***
Step 6: Communicate Results & Recommendations	Research, Design Support Tools, Planning, and Design	All with support from GIS & Communications WGs		***Website, webinars, newsletter, synthesis papers, workshops, decision-support tools, etc.***
Steps 2, 4, 5, 6: Communication Needs, including Data/GIS-sharing	WG & SC discussions	All with support from GIS & Communications WGs	LCD; pilot project support	***Maps:*** ***Spatial Analysis:*** ***Conservation Planning Atlas***
Step 7: Implement Priority Conservation & Adaptation Actions	Research, Design Support Tools, Planning, and Design	Individual Organizations; Conservation Implementation Partnerships	Achieve Conservation Goals, Objectives, and Targets related to focal ecosystems, priority resources & species	***Implementation of coordinated climate-smart conservation activities across the landscape: Individual partner actions***
Step 8: Track Action Effectiveness & Ecological Response	Key vulnerabilities	CMQ 2; Individual Organizations; Conservation Implementation Partnerships	Identification of indicators for tracking action effectiveness	***Indicators:*** ***Monitoring Recommendations:***

APPENIDX F: Summary Report Desert LCC Climate-Smart Landscape Conservation Planning & Design Meeting Sphere Session

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Date: October 9, 2014
Participants: 72

Purpose: We presented concepts of Landscape Conservation Planning and Design and asked for comments on draft implementation plan.

Question 1: Landscape Conservation Planning & Design Working Group: Membership: Are you interested in helping with this or can you recommend someone? Is there any critical expertise or geographical or organizational representation that we are missing?

Comments:

- Include participants from Mexico & social science
- Include equal representation from desert areas
- Include other State or local water management agencies (Seth Shanahan, SNWA will assist)
- Pull from expertise in California Desert Renewable Energy Conservation Plan
- Include members of the Steering Committee

Question 2: Science Advisory Committee: who should we ask to participate? [NOTE: we changed the name to Climate Science Advisory Committee to help define expected roles]

Comments:

- Several areas of expertise recommended.
- Clarify role of this group compared to the Science Working Group.

Question 3: Who should we ask to help with communications and engagement? What are your ideas about the specific roles of this group?

Comments:

- Develop communications packets to help partners discuss and deliver products
- Communicate climate science, include human dimensions considerations
- Specifically develop products for communication in Mexico and include Tribes
- Consider this goal more broadly in context of the Desert LCC – are we serving this fundamental goal by having a sub workgroup advisory committee as our only action towards this Goal?
- Where in the 7 step process is communications and engagement identified? Are we adding this to the process?

Question 4: Do you have any ideas about how to engage tribes in this project?

Comments:

- Host a workshop specifically for tribes
- Visit tribal leadership

Question 6: Does your organization have specific goals and the outcomes of conservation actions related to grasslands/streams/springs? Does your organization use indicators and targets to measure success related to aquatic, riparian, grassland, or shrubland ecosystems or species?

Comments:

- TNC's Chihuahuan Desert Ecoregional Plan identifies numerous targets (terrestrial and aquatic) and sets out some broad goals
- Include CMQ 2 efforts
- Most basic indicator that is true across any scale is ground cover
- The Chihuahuan Desert Grassland Bird Plan through the RGJV and RMBO has quantified capacities
- Indicators and targets can measure success, but these are often in conflict with other agencies' point of view. Basic ideas for indicators and targets are generally accepted, but need to address different interpretations.

Question 7: What should we ask people in a questionnaire to help inform development of this project, including process and products?

Comments:

- Are you a natural resource manager; what do you manage (water, agriculture, wetlands, refuge, other) and for what uses?
- Are you a cultural resource manager or culture keeper?
- What is your greatest challenge in managing that resource in the face of extreme events (drought, fire, flood, ice, other?)
- What is their affiliation (City, County, State, Federal, Tribal? Which agency).
- Do have formalized best management practices? How were they derived and is the science to support them? Are you evaluating the efficacy of your land management practices? Are these results published or available to other land managers? Do you need assistance with evaluating efficacy or developing BMPs from existing monitoring data?
- How do you believe climate change will affect the resources that you manage? Are you managing your resources to be resilient to the potentially negative effects of climate change? If so, how? What information or tools do you need to better manage your resources? What are the obstacles that you must overcome to better manage your resources?
- What are your greatest concerns in relation to climate change or other stressors? What information, resources, or tools do you already have to address climate change in management decisions and what information, resources, or tools do you need?
- What federal, state, and local laws constrain your decisions, or decision making process?
  As a resource manager/administrator, what actions can you take to mitigate negative impacts to citizens that occur as a result of changes to laws, rules, or policies?

Questions 8 & 9: Please suggest additional sources of information for LCP&D related to grasslands/ shrublands, streams, and springs. What information in addition to the list below should be included in the baseline information for the CPA?

- USGS National Water Information System (stream gages, water quality, groundwater gages, regional aquifer studies) as well as StreamStats
- USGS Land Remote Sensing: http://remotesensing.usgs.gov/
- USGS Earth Resources Observation and Science (satellite imagery): http://eros.usgs.gov

- USGS Ecosystems Info - invasive species, coop units, fisheries, wildlife program, status and trends porgram, National Phenology Network, Energy and Wildlife
- USGS National Geopsatial Program & National Cooperative Geoligca Mapping Program
- USGS Energy and Minerals program
- Landslide Hazards and Emergency Management, wildfire hazards
- Office of Tribal Relations
- Assessment of Climate Change in the Southwest
- DOI Basin Studies, Climate Impact Analyses, Water Census Focus Areas
- Diverse data assembled at www.databasin.org - BLM Rapid Ecological Assessment datasets are also there
- Data layers showing protected (private or public) and other conservation lands

Question 10: Research on the human dimensions of wildlife conservation focuses on how people's knowledge, values, and behaviors influence and are affected by decisions about the conservation of wildlife and management of natural resources. How can we consider human dimensions of conservation (e.g., is this accomplished by incorporating ecosystem services as conservation priorities, or are there additional needs)?

Comments:

- Invite people from EPA Tribal Science Council, USDA Hub
- Understand changing demographics of land owners, agricultural stats and how they are changing (e.g., declines in ranching in some areas), participation in incentive programs, and economic considerations such as land values
- Figure out what common values landowners and rural communities have with conservationists.

Question 11: Are there other elements that should be included in the data management plan?

Comments:

- Change detection, rates of change, risk of change, monitoring area, program areas, planning footprint, threats map, protected areas (existing and proposed), level of protected status, funding sources by footprint for implementation on the ground.
- Western Regional Partnership GIS Working Group products.

Question 12: What are criteria that could be used to select priority areas of each ecosystem type?

Comments:

- Areas that have existing data
- Already have buy in and participation from partners
- One of the DLCC partners has control over the area, such as a National Park, Forest or BLM research area
- Ability to develop a good and marketable set of Case Studies from the areas.
- Landscapes that cut across the major desert systems; locales at the edge of species' ranges where climate change will have a large influence on distribution, abundance, and associated management information needs related to system vulnerability.
- Avoid areas that are highly controversial.
- It would be great to have at least one focal area partially in Mexico.

Question 13: Do you have suggestions for locations and/or hosts for the 2015 ecosystem workshops?

Comments:

- South Central CSC, Somewhere within the LCC boundaries (include major cities like Las Vegas and Albuquerque), one in Mexico
- Limit costs - same day fly-in/fly-out locations should be given some thought/priority due to work schedules

Question 14: What are your thoughts about using a watershed approach for planning and design?

Comments:

- Is a hybrid approach possible (combine watershed and ecosystem levels?)
- Seems rational if considering that a limiting factor is water
- Need to be aware of scale issues when mixing stream-aquatic systems with upland landscapes
- Case-by-case approach may work best since watershed may not work best for all systems
- Watershed approach is invaluable as it includes landscape ecology
- Find commonalities between the communities in a watershed to develop collaborative solutions

Question 15: Please add any ideas, suggestions, or concerns you have about this project that don't fit into the topics provided.

Comments:

- What are the concrete deliverables at the end of 2 years? How will that be delivered?
- May need to consider additional priority systems – might come out of work CMQ 2 is doing.
- Not totally satisfied with CMQ2 pressures and stressor listing, but I guess that will be discussed in more depth in the team.
- I don't see the land owners involved
- The timeline seems very aggressive
- Think about "open standards for the practice of conservation"...and how it would really help elucidate all of the pieces that you want in this planning process.
- How will REAs be used?
- I am concerned that there seems to be a disconnect between the Steering Committee agreed-upon parameters for this project/workgroup (August 28-29) and the scope of this document (first draft October 6). I believe that before a document like this is implemented, it would be reasonable for the Steering Committee to formally adopt the proposed implementation plan. Steering Committee members do not have reasonable time to make an informed decision.

Question 16: Do you have any questions about the landscape conservation planning and design process?

- The document is titled 'Climate-Smart Landscape Conservation Planning and Design'. From reading the document, it appears that the intention is to merge the LCD conceptual process with the Climate-Smart Conservation Framework. I have not been able to find a reasonable description about this dichotomy.
- Terms and phrases do not seem to be used consistently throughout the document
- How is one to get clarification to questions one may have regarding these issues, and any other issue in the Draft document?