

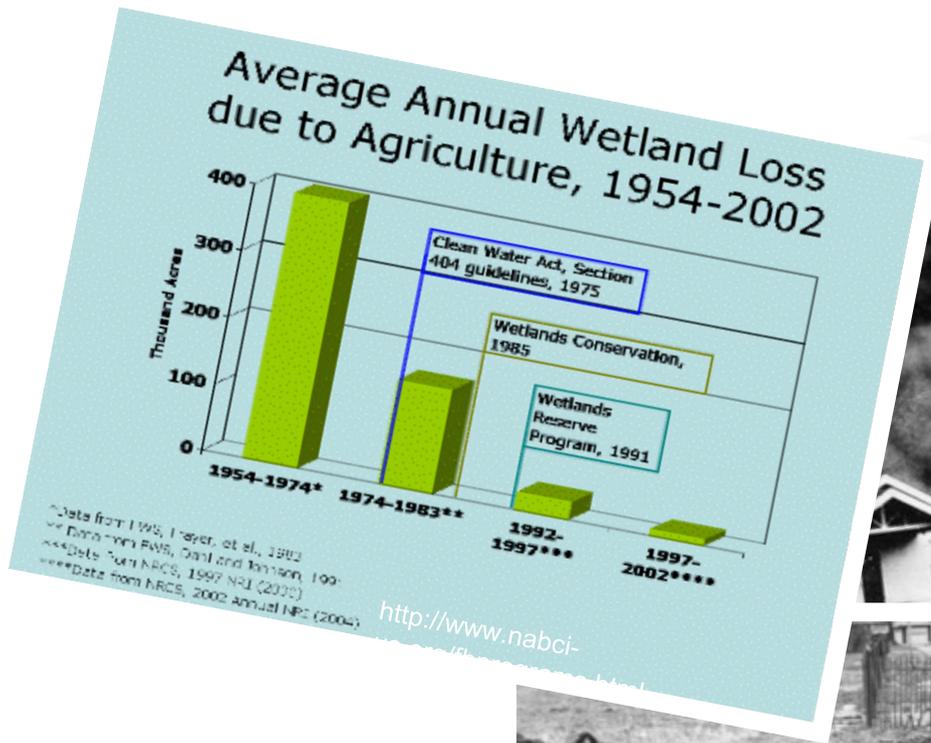


LANDSCAPE CONSERVATION DESIGN IN THE EASTERN MOJAVE DESERT

DESERT TORTOISE MANAGEMENT OVERSIGHT GROUP MEETING

DECEMBER 6, 2016

Managers have responded to major resource and land use challenges in the past



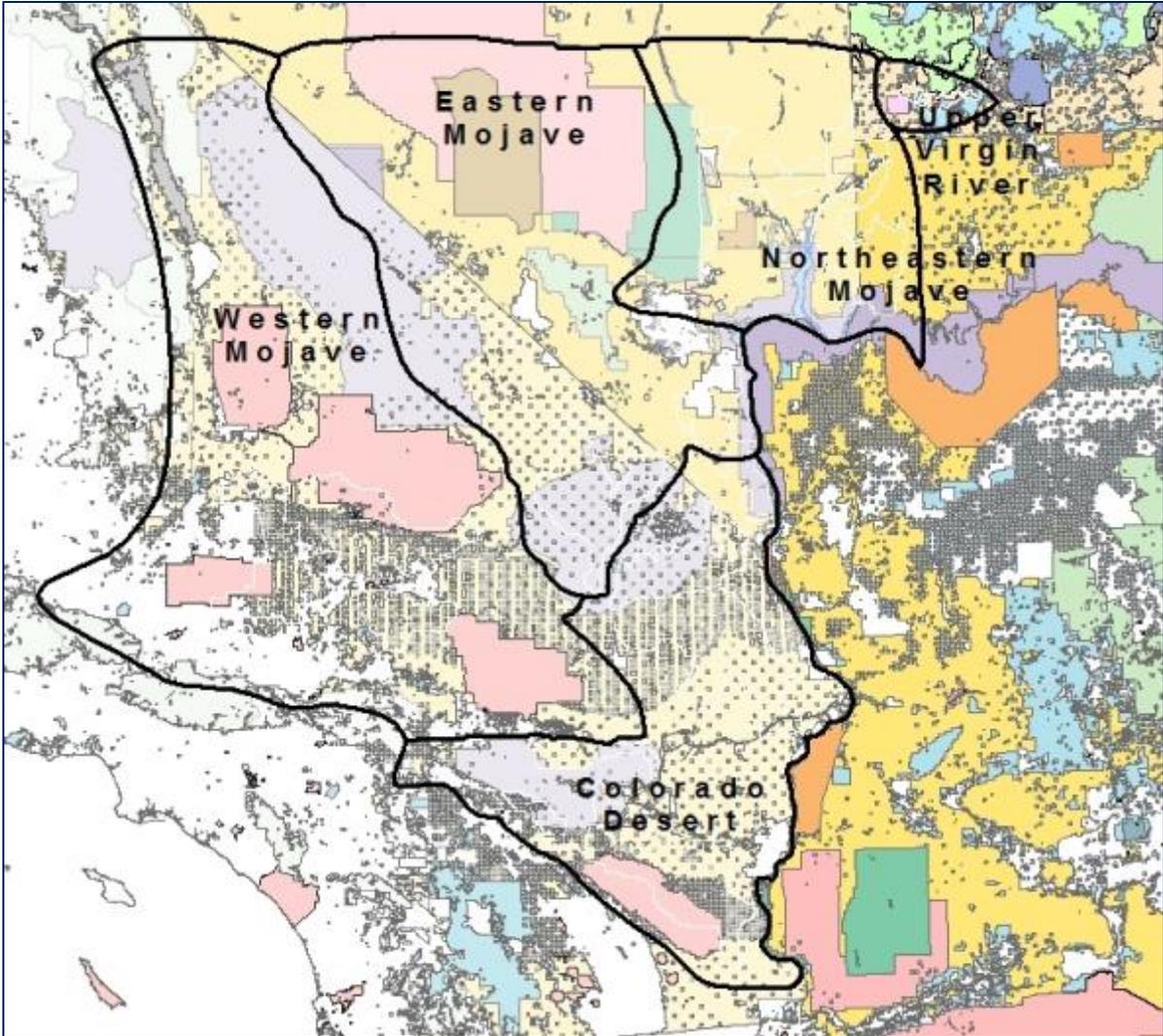


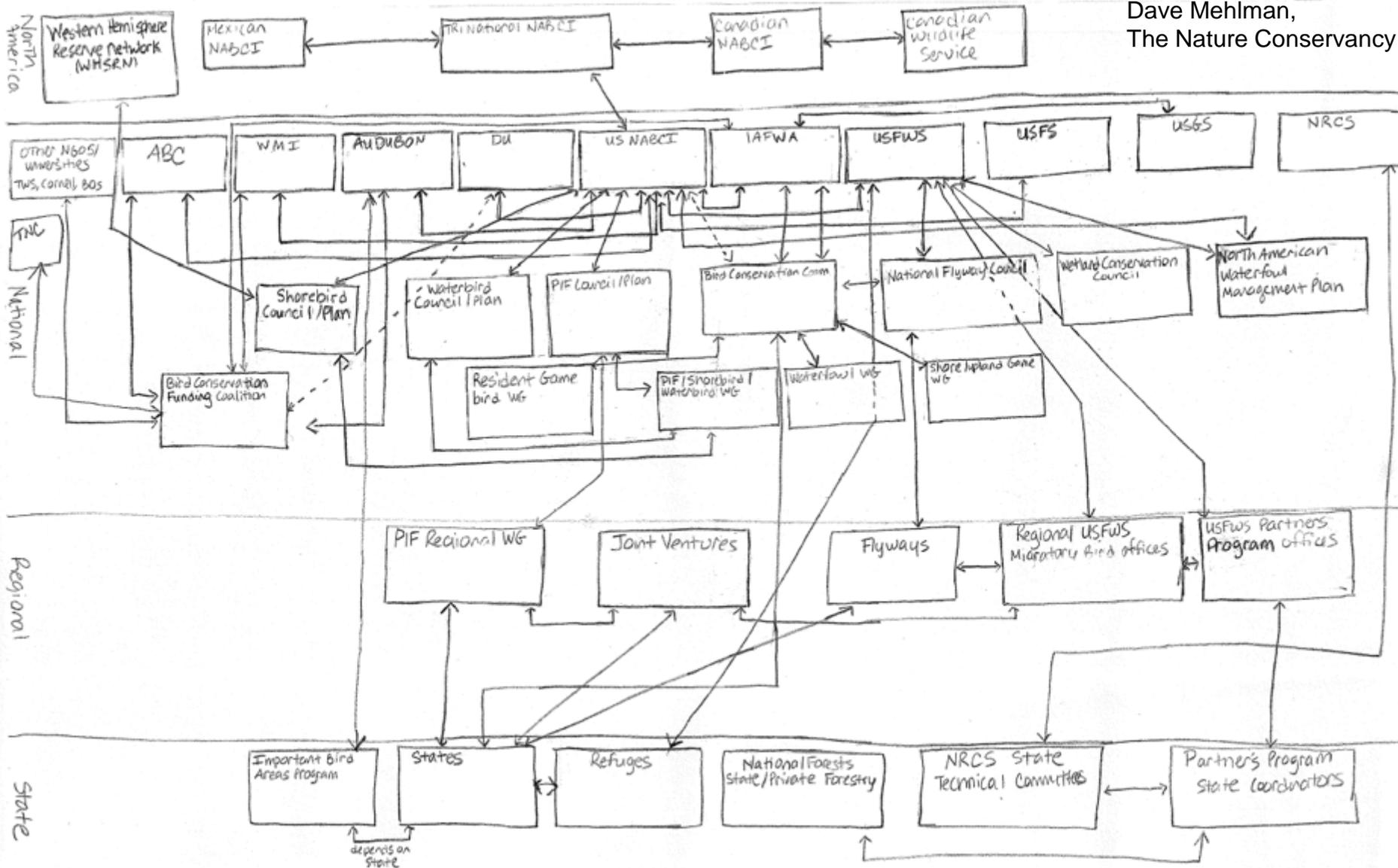
Growth of west Nile virus in the United States



But increasing complexity in interactions between resources, uses and climate....

combined with jurisdictional complexity...





and increasing expert complexity...

results in isolation by discipline, jurisdiction, and organizational boundaries

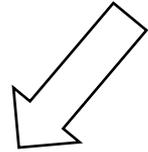


- Internal Stove Piping: budgets, status quo, "mine vs. yours"
- External Stove Piping: science (social, physical, and ecological) is **not integrated**
- Too much to do **reactive** management)
- Information **not efficiently communicated** to target needs
- **Lost opportunities** to leverage work and \$

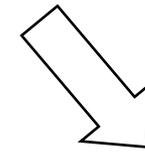
Fundamentally, this uncoordinated approach affects the environmental systems that we mean to support and maintain.

“Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources”

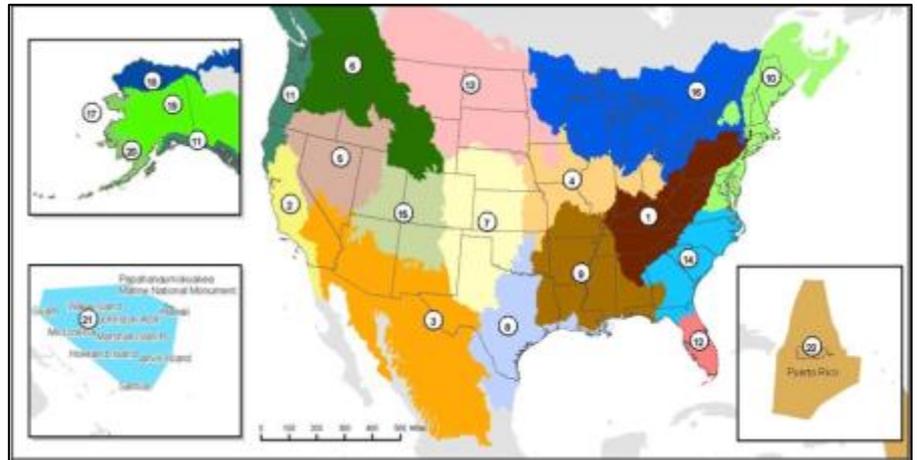
(Secretarial Order 3289, 9/14/09)



DOI Climate Science Centers



Landscape Conservation Cooperatives



Work across jurisdictional boundaries, are non-regulatory, and partner-driven



What do Landscape Conservation Cooperatives do?



LCCs support, facilitate, and add value to landscape scale conservation to build resource resilience by:

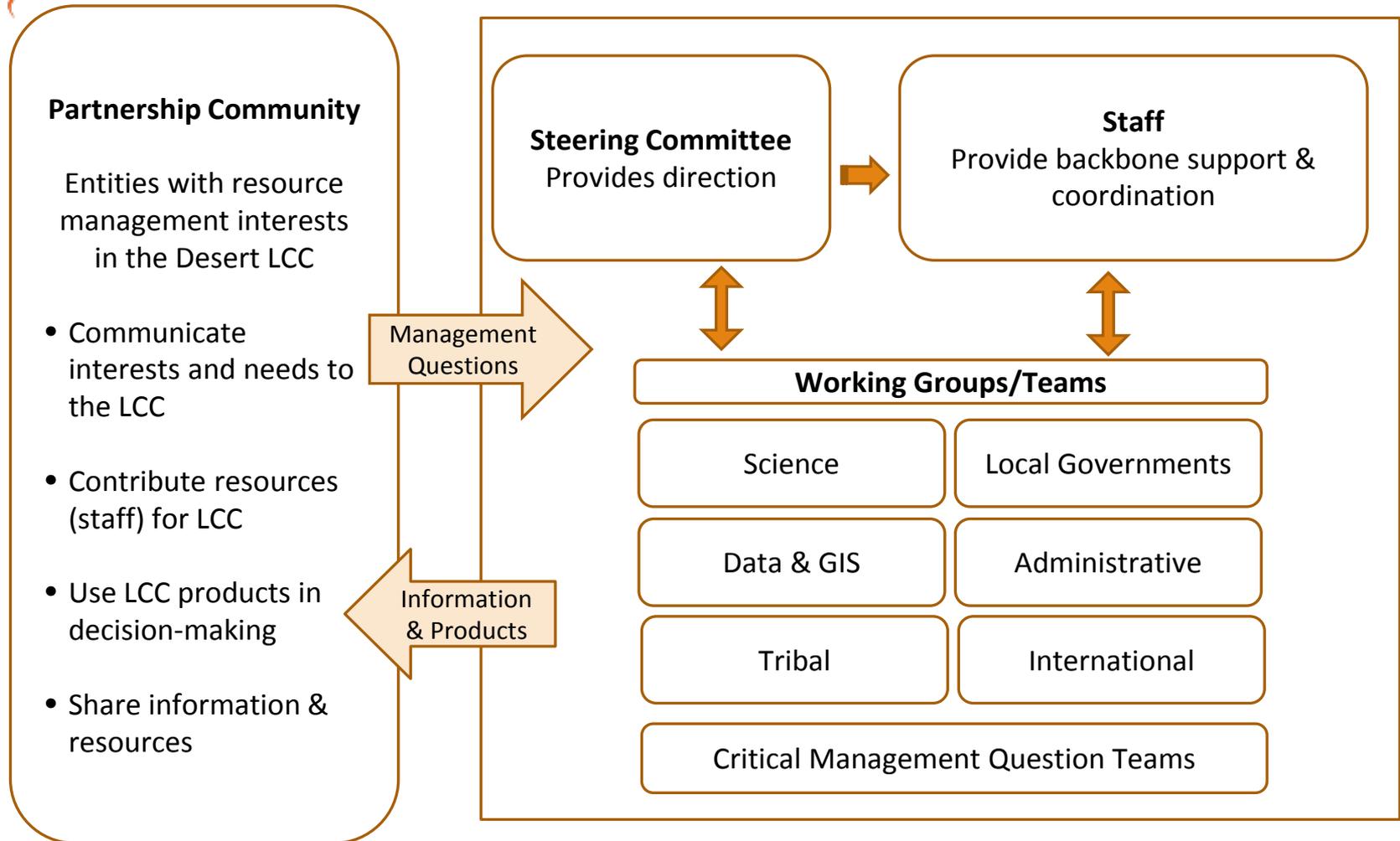
- Identifying shared conservation objectives, challenges, and opportunities
- Identifying shared science, information, and resource needs
- Developing (through partners) regional landscape conservation designs that support resiliency and adaptation
- Integrating information and partner efforts to align and focus conservation action
- Promoting collaborative production of information —integrating human dimensions and traditional knowledge
- Communicating information and tools in a way that is understandable, publicly accessible, engaging, and relates to what matters
- Sharing lessons learned



- Non-regulatory, self-directed partnership
- Crosses jurisdictional, political and management boundaries
- Includes 27 tribes, 10 Mexican states, and 5 US states
- Support priorities identified by the partnership

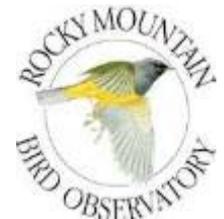
“The Desert LCC can define itself as the interest, enthusiasm, and **connection to people** that becomes vital in answering hard questions about resource management decisions.” (Desert LCC federal partner)

Structure of the LCC





Steering Committee Representation





Shared goals, priorities & mutually-reinforcing activities



A common vision: Resilient landscapes capable of responding to environmental challenges and supporting natural and cultural values for current and future generations.

- Priority resources with stated goals
- Priority science needs to answer critical management questions
- Priority activities to achieve mutually-stated goals

*"Organization of people around **a common, needed conservation idea** is the most important good out of this entire process...because it is a shift of paradigms." (Desert LCC NGO partner in Mexico)*



LCCs across the country are participating in Landscape Conservation Designs





Coordinated landscape-level conservation in an increasingly variable environment

Increased funding leverage and competitiveness for grant applications

Improved interagency and public/private cooperation

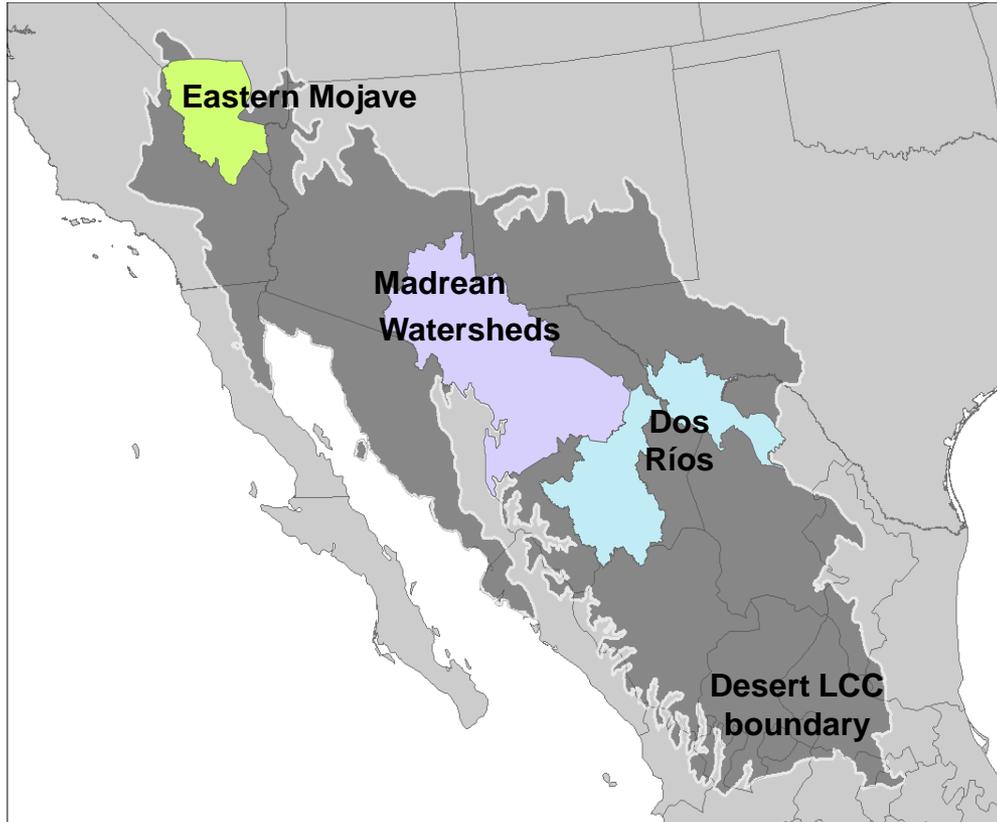
Improved ability to more effectively address larger and more complex problems that transcend jurisdictional boundaries

Develop decision support tool(s), tools and shared databases that make data and information more accessible and directly inform management decisions

Help prioritize actions within existing plans



Landscape Conservation Design Pilot Areas



Partner-driven approach

Collaborative and holistic process

Meet human and ecological needs

Communicate, provide tools,
science & strategies to meet
management goals

Incorporate climate science

<http://usbr.maps.arcgis.com/apps/MapJournal/index.html?appid=9897e5c423c542a09e3887cd8b5f207e>



LCCs across the country are participating in Landscape Conservation Designs



Convene partners to determine priorities

- Identify critical common natural resource and social values
- Identify stressors to those priorities
- Identify specific goals and measurable objectives

Assess current & future conditions for priorities

- Build on existing work in the region
- Model projected impacts from stressors

Develop future scenarios to test goals & inform decisions

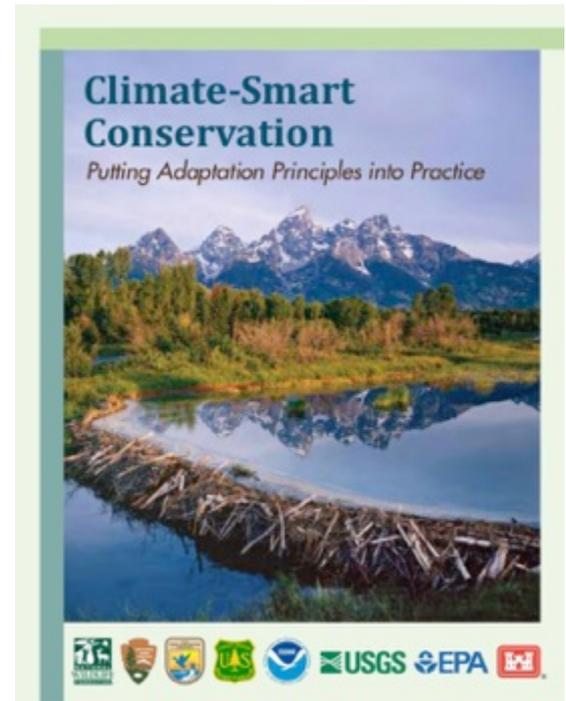
Identify suite of adaptation strategies & associated critical conservation actions

“Design” where actions could take place & who can implement to achieve goals

Monitor adaptive effectiveness via identified objectives

Identify and strengthen *opportunities for continued collaboration*

Develop critical information to support management actions





Adapt conservation goals and objectives to specifically to meet local needs



Priority Resources:

- Grasslands
- Springs + riparian
- Streams + riparian

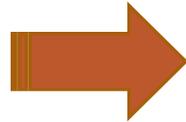
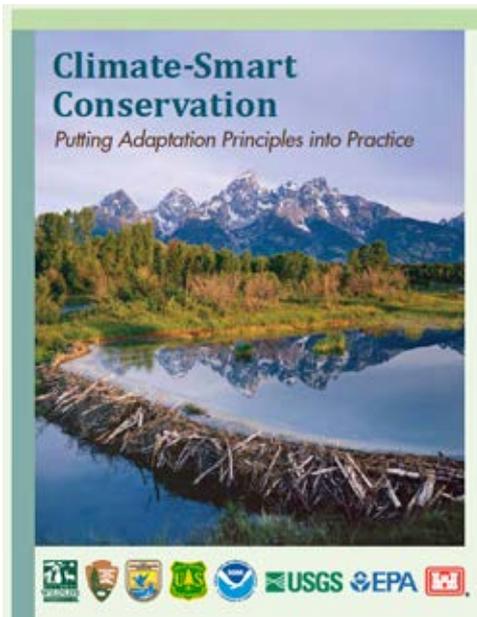
Priority conservation goals:

- Biodiversity
- Connectivity
- Socio-ecological Services

Each pilot area tailors priorities to fit the needs of partners (e.g., desert tortoise, Joshua tree, desert wetland systems, recreation, cultural assets)



Changing outcomes? Developing collaborative strategies



Sub-Goal:	Resilient and functional stream ecosystems that support native aquatic and riparian biodiversity, natural ecosystem and cultural processes and services, and sustainable use.
Strategic Action:	<p>Work in tributaries to major rivers to create in-wash recharge by slowing water:</p> <ul style="list-style-type: none"> • Place structures in channels and implement induced meandering to slow water • Increase vegetation in channels to slow water • Slow water in the uplands around tributaries
Partners:	<p>Lead: Sky Island Restoration Cooperative?</p> <p>Actively involved: USFWS Partners for Fish and Wildlife; USGS; BLM Arizona; TNC Arizona; USFWS refuges; Sky Island Alliance; Cuenca Los Ojos; Borderlands Restoration; BOR; Tucson Audubon; Watershed Management Group</p>
Next Steps:	<p>Identify strategic locations to implement</p> <p>Develop best practices for choosing locations</p> <p>Follow-up work session on impacts and methods for implementing strategy (where, how, why, how monitor)</p>

How is LCD different?

	Traditional planning	LCD Characteristics
People	Agents represent single institutions	Cross-jurisdictional, multi-sector representation
	“Internal” coordination/facilitation	Bridging entity (impartial 3 rd party) coordinates
Purpose	Achieve agent’s mission, mandates, goals	Achieve partners mission, mandates, goals
	Agent-specific learning and decision-making	Social learning and decision-making
Process	Agent-centric	Partner-centric
	Within institutional boundaries	Beyond institutional boundaries
	Regulatory	Collaborative
	Partners provide input to process/products	Partners direct process/products
	Science informs single-agent programs & strategies	Science informs multiple partner programs & strategies
	Vertical/agent specific decision-making	Strategic, collaborative decision-making
Products	Determined by agent	Determined by partners
	Text, maps, data	Same, plus decision-support tools, cooperative agreements, etc.
	Directs site-specific action	Provides landscape-scale strategic guidance



Summary so far...



Developing and applying scientific information, monitoring and evaluating through data collection and disseminating your findings and educating the public, land owners and stewards in a **transparent** way. **Collaboration and good will are the best tools that we have.**" (Desert LCC State partner)



Members of LCD Core Team



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Conservation Design Workshops (2015) Tucson, AZ and Aguascalientes, MX

- Informed partners, identified opportunities for collaboration
- Identified shared goals, strategies and adaptation actions
- Identified recommendations on nominated pilot areas
- Increased understanding of issues facing resource managers, and mutual learning among participants.

...this is one of the most exciting things I've been a part of in a long time. To have the opportunity to share information across boundaries, brainstorm at different scales and across resources, learn from other experts in the room – I'm very grateful that this has finally happened.” (Desert LCC Workshop Participant)



LCD Timeline



2015

2016

2017

2018

2019

2020



LCD Timeline



DESERT
LANDSCAPE
CONSERVATION
COOPERATIVE



Introductory LCPD workshops
Tucson (Aug 2015)
Aguascalientes (Oct 2015)



2015

2016

2017

2018

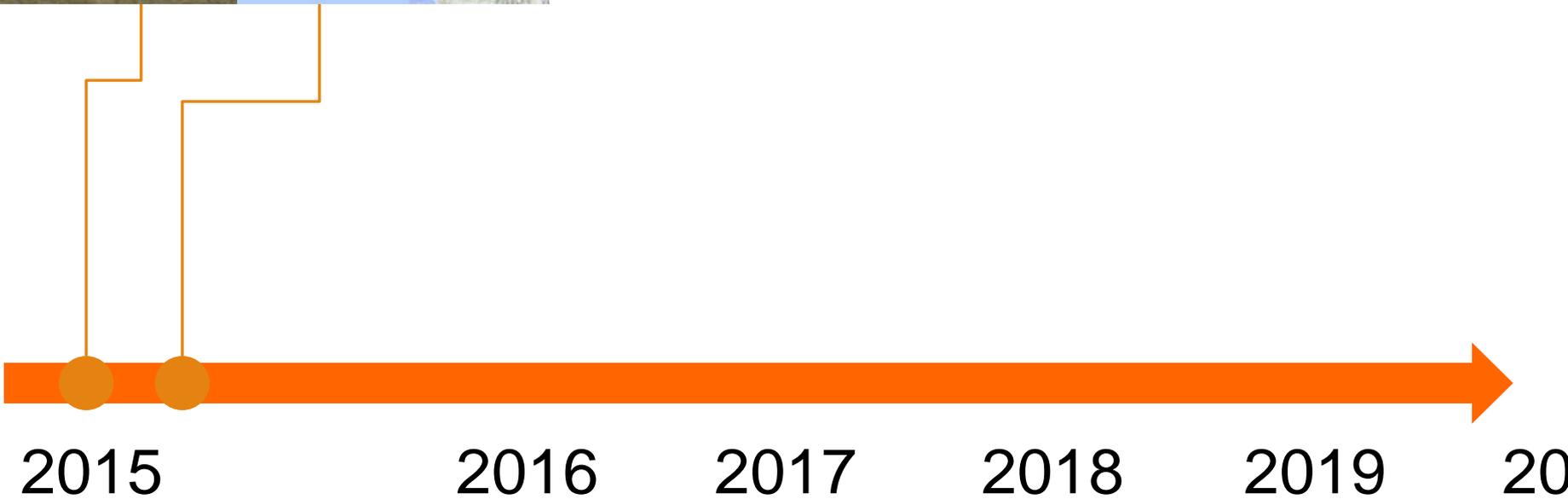
2019

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LCD Timeline

DESERT
LANDSCAPE
CONSERVATION
COOPERATIVE

Initiated stakeholder assessment



LCD Timeline

DESERT
LANDSCAPE
CONSERVATION
COOPERATIVE



Selected 3 pilot areas

- Madrean Watersheds
- Dos Rios
- Eastern Mojave

2015

2016

2017

2018

2019

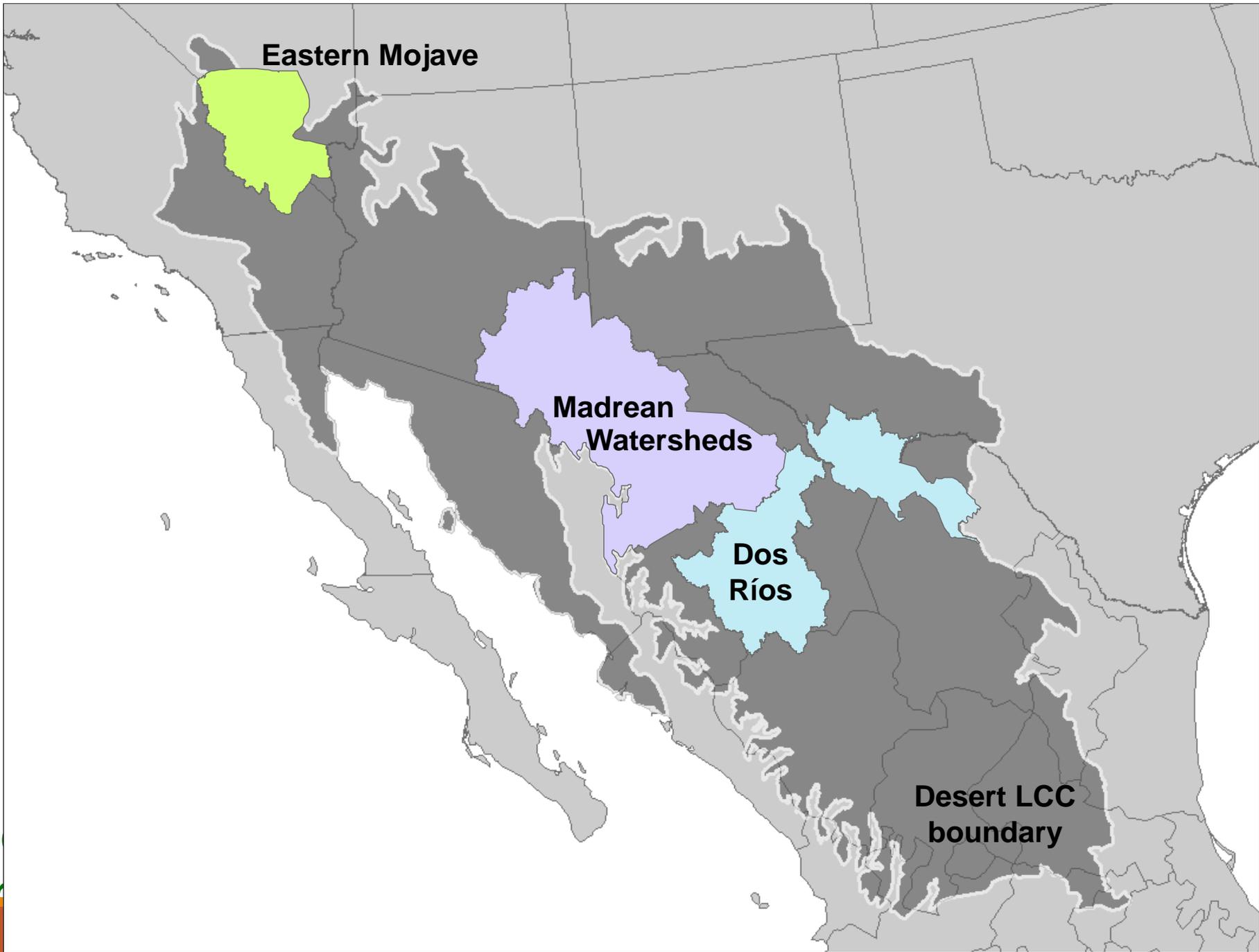
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Pilot areas allow us to connect with people at an appropriate scale

- Nexus to the DLCC Mission
- Potential to implement design
- Helps to protect biodiversity and habitat
- Lessons, methods, and conclusions from pilot work is scalable to a larger process





Eastern Mojave

Madrean Watersheds

Dos Ríos

Desert LCC boundary

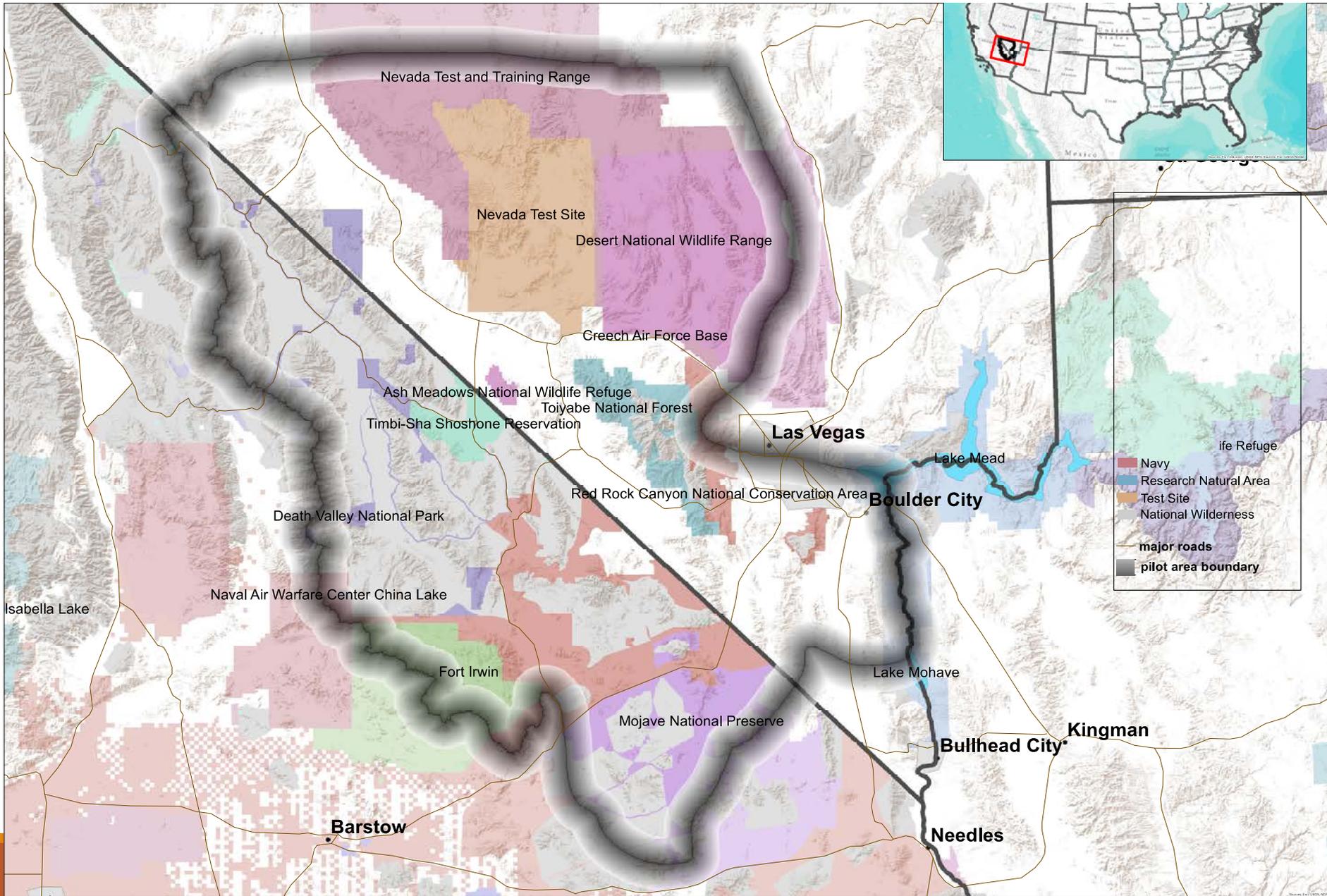
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EASTERN MOJAVE PILOT AREA

LANDSCAPE CONSERVATION PLANNING AND DESIGN





Eastern Mojave Coordinating Team - to date

- **Brian Croft** - Division Chief, West Mojave Desert Division
- **Roy Averill-Murray** - Desert Tortoise Recovery Coordinator
- **Jennifer Wilkening** - Habitat Conservation Plan Coordinator, Southern Nevada Fish and Wildlife Office
- **Flo Gardipee** - Desert Tortoise Recovery Biologist, Southern Nevada Field Office
- **Pete Sorensen** – Division Chief, East Mojave Desert Division
- **LCPD Core Team Members**



Preliminary input from Eastern Mojave partners

Key Resource Issues

- Groundwater
- Wildlife linkages
- Invasive species

Land Use Plan Implementation

- Integrate plan implementation across the state line
- Site-specific management actions to step land use plans down to a local level
- Link priorities between land use plans to identify areas of consistency and synergy
- Funding is limited





Preliminary input from Eastern Mojave partners

Collaboration

- A standing collaborative body to help integrate implementation
- Additional planning alone is not desirable
- Collaboration on prioritization and implementation of management actions under shared priorities
- Effective collaboration in this area would require: dedicated leadership, buy-in, engagement at “on-the-ground” Implementation level, broad participation





Proposed process based on input

Shared priorities: Identify critical common natural resource and social values among partners

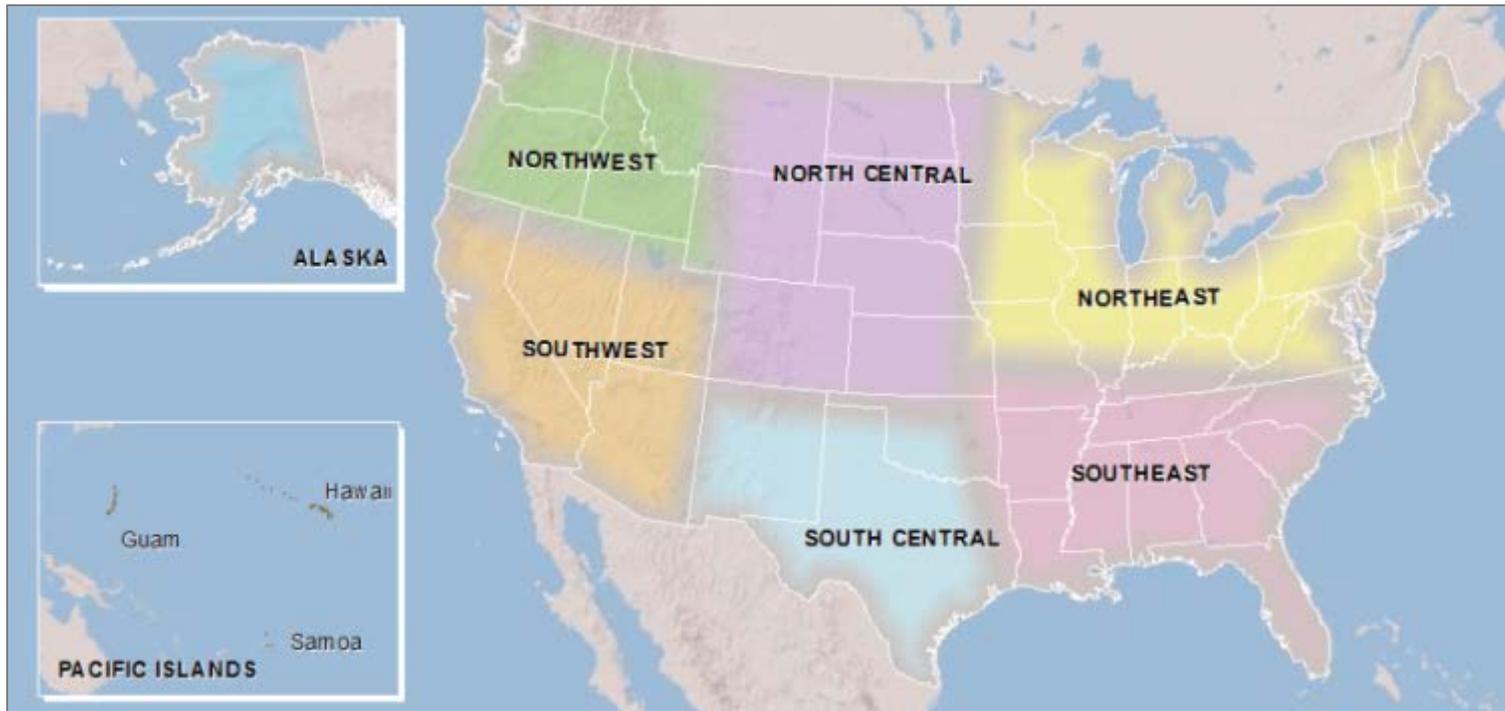
Collaborative body: Strengthen and/or develop ongoing forums and partnerships for coordination and collaboration

Plan implementation: Geospatial decision support tool(s) to help prioritize actions within existing plans

Not just planning: Action-oriented process that focuses on implementation rather than simply producing more planning documents

Limited funding: Work for shared leadership and the development of shared funding

Integration of Scenario Planning



8 regional Climate Science Centers established as part of the Department of Interior's "*Plan for a Coordinated, Science-Based Response to Climate Change Impacts*" (**Secretarial Order 3289**).

Output: Mapping resources & synthesis of existing data



Addition of existing data and assessments into ScienceBase

(with permission)

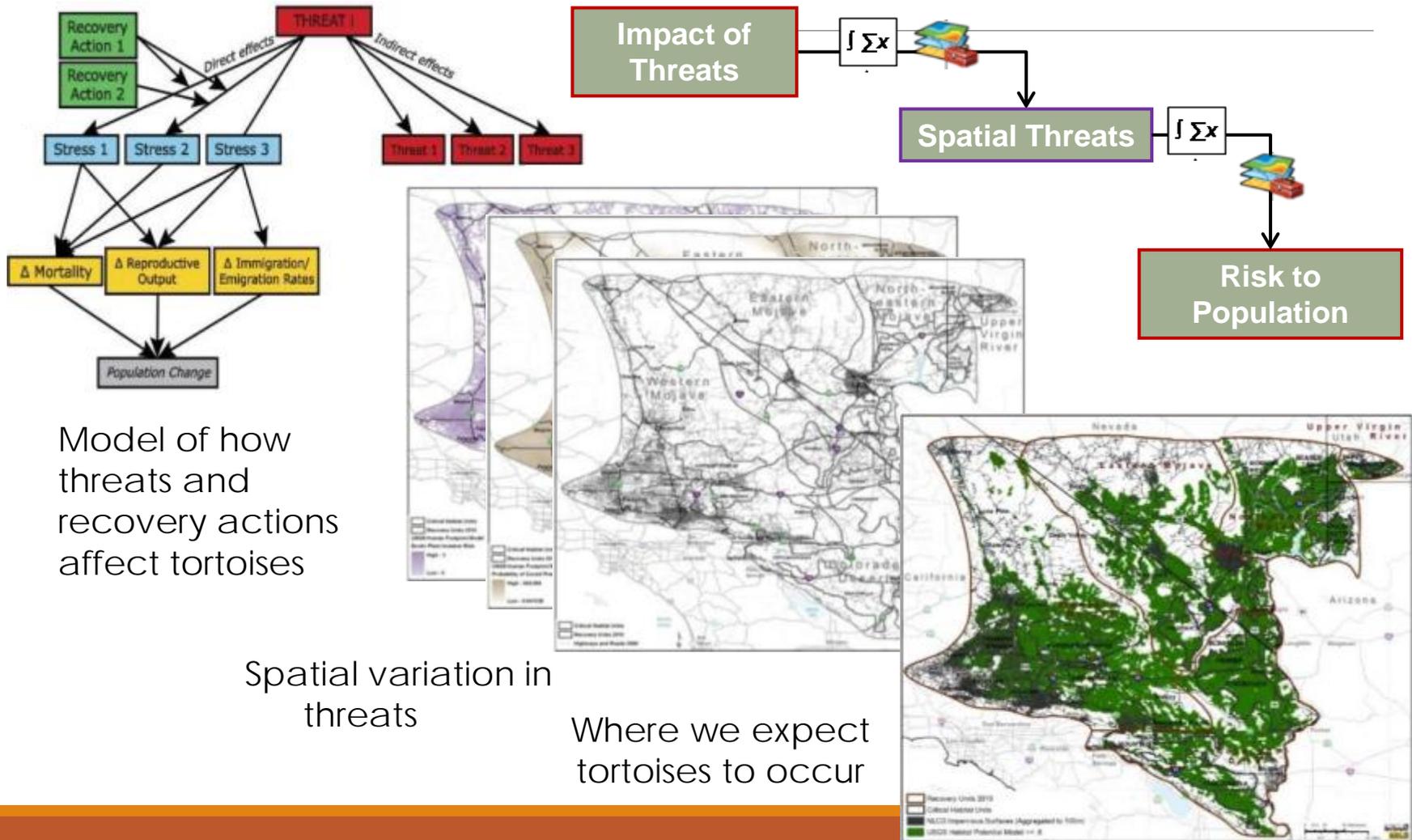


Display of relevant information in the Desert LCC Conservation Planning Atlas:

<https://dlcc.databasin.org/>

- Map baseline condition assessments or inventories
- Map on-going or completed conservation actions: who is doing what where?
- Understand where conservation actions are most needed
- Understand where are the greatest opportunities for collaboration

Example output: Spatial Decision Support System (SDSS)

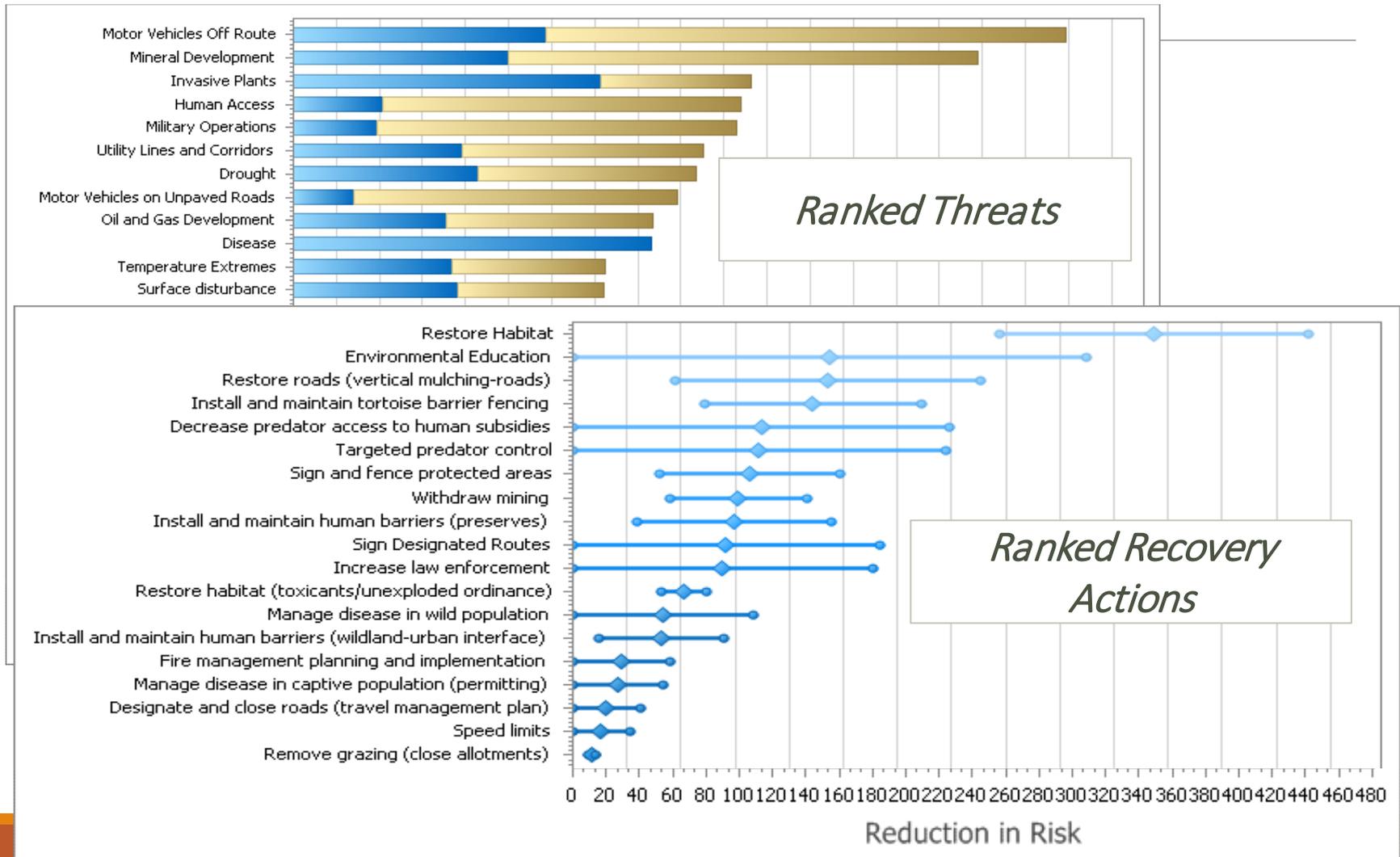


Model of how threats and recovery actions affect tortoises

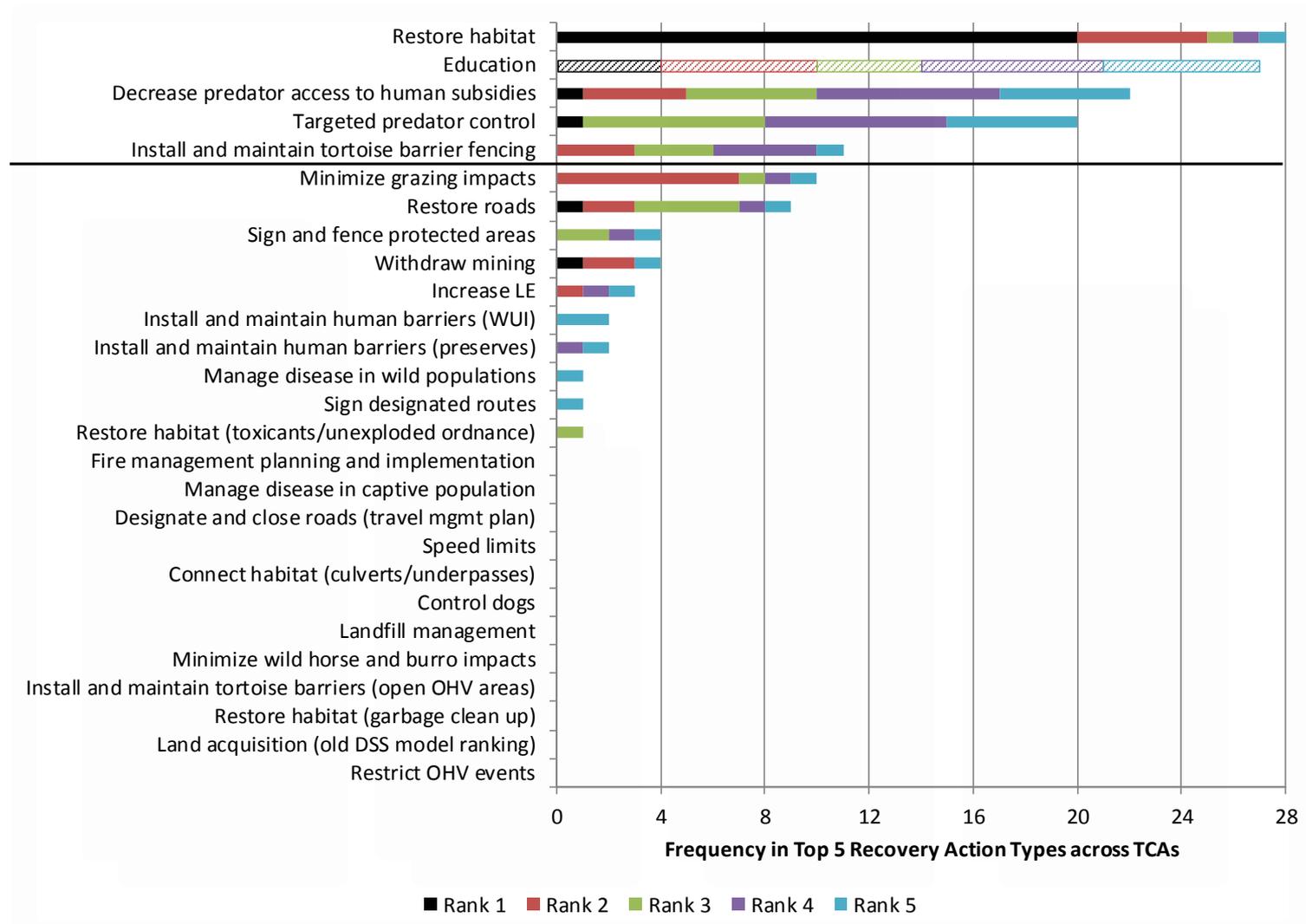
Spatial variation in threats

Where we expect tortoises to occur

SDSS output: Rankings of Threats and Recovery Actions



SDSS output: MOG priorities





Potential benefits to collaborators

- Coordinated landscape-level conservation in an increasingly variable environment
- Improved interagency and public/private cooperation
- Geospatial decision support tool(s) to inform management decisions and prioritize implementation
- Increased funding leverage
- Tools and shared databases to help make data and information more accessible to managers and the public
- Integration of scenario planning





Collaborators in the Eastern Mojave LCPD could be involved in...

- Critical resource identification
- Identification of greatest data or analysis needs
- Management participation in an ongoing collaborative body (similar to MOG or DMG)
- Staff participation in workgroups to help identify management actions
- Collaboration on funding opportunities to fill data gaps and contribute to modeling needs and on the ground project implementation





Next steps



- Continued outreach to potential partners and coordinating team members
- Assemble existing resources (spatial and plans)
- Identification of key resources and knowledge gaps

Opportunities to participate

- ✓ Workshops
- ✓ Mailing list
- ✓ Working groups
- ✓ Webinars

“You should be very proud of bringing people together. You not only bring people together from agencies and academia, you also bring people together across disciplines and across institutions in ways that would not have happened without your facilitation. When you bring people together, great things can happen ...

You are also working hard at getting information moving quickly between the researchers and the managers. This takes time to have a measurable impact, but it is happening. The pathways you are building will be very important conduits of information for managers.”

-Desert LCC University partner

Questions?

