

MEMORANDUM

January 13, 2017

To: Desert Tortoise Management Oversight Group

From: Paul Souza, Pacific Southwest Region

Subject: December 6, 2016, MOG Meeting Summary

The Desert Tortoise Management Oversight Group (MOG) met on December 6, 2016, at the Springs Preserve in Las Vegas, Nevada. The meeting focused on updates on progress on recovery implementation and reviewing priority projects for 2017, particularly related to raven management; discussion of science and research priorities for 2017; and an overview of the Eastern Mojave Conservation Collaborative (for which a focus group of partners was convened immediately following the full MOG meeting). Nadine Lamberski, San Diego Zoo Global, also provided an overview of current research on health and disease in desert tortoises.

Upcoming Meetings

Desert Tortoise Council Symposium: February 24-26, 2017, Sam's Town, Las Vegas (numerous presentations on current research and management relative to tortoise recovery)

Action Items	Owner(s)	Due Date
1. Compensatory mitigation presentation from DRECP	Jerry Perez	Next meeting
2. Convene ad-hoc MOG raven workgroup to develop long and short-term objectives for raven management for MOG consideration	Raul Morales and others listed in the text	Next meeting
3. Agencies consider ability to fund and implement high-priority projects & report back on: a) projects funded; and b) partial funding available for collaborative efforts	All	Next meeting
4. Education and Outreach: FWS to work on a scope-of-work for developing a strategic outreach plan for tortoise conservation	Glen Knowles	Next Meeting
5. R-W Monitoring subgroup meet to determine priority of range-wide monitoring and identify funding gaps and opportunities after hearing from federal partners	Raul M., Gerry H., Bill Berry, Mike Senn	Next meeting
6. Send out Dr. Lamberski's disease presentation	Roy A-M	Completed
7. Convene Science Advisory Committee to develop recommendations on management effectiveness and possible metrics	Roy A-M	Next meeting
8. Engage CalTrans, NDOT, and Federal Highways	Ken Corey/Glen Knowles	Next meeting
9. Approach DOD regional coordinating body (REC and/or Western Regional Partnership) to engage on tortoise issues	Ken/Glen	Next meeting

Future Agenda Items

1. What does “compensatory mitigation” mean? (California BLM, *cf.* DRECP)

Meeting Summary

1. Welcome and Introductions: Welcome provided by Mike Fris, Assistant Regional Director, Region 8 USFWS. Announcement of new Regional Director, Paul Souza, for FWS Pacific-Southwest Region. Paul regrets being unable to attend due to a previous conflict, and looks forward to working with MOG members in the future.
2. Purpose and Agenda Review
No changes to the agenda proposed.
3. Opening Remarks
4. Progress Toward Recovery – Annual Report
Roy Averill-Murray (USFWS-Desert Tortoise Recovery Office) provided a summary of recovery projects funded by MOG agencies over the last year. In addition, range-wide monitoring was conducted in 11 (of 17) strata in 2016, an increased effort from recent years.

Projects Funded in 2016 (~\$5.5 million; * indicates MOG top-five priority)

- *Habitat Restoration on Red Cliffs Desert Reserve (UT)
- *Habitat Restoration (non-native shrub removal) on RCDR (UT)
- *Northeast Mojave Seeds of Success
- *Burned Habitat Restoration (NV)
- *Habitat Restoration on Beaver Dam Slope (UT)
- *DT Education and Information Program (CA, 2 yrs)
- *Raven Workshop (range-wide)
- *Raven Nest Monitoring in Red Cliffs Desert Reserve (UT)
- *Monitor Nests and Remove Offending Ravens: Superior-Cronese, Ord-Rodman, Mojave NP, Chemehuevi, and Joshua Tree NP (CA)
- *High-tech Raven Lure (CA)
- *Repelling Ravens with Lasers (CA)
- *I-40 Tortoise Fencing (CA; ISEGS funded 50 miles)
- *Road Berm Modification (CA)
- Sign Closed Washes in Chuckwalla ACEC (CA)
- Lane Mountain Route Signing & Restoration (CA)
- ~60 acres SITLA land within RCDR in progress of being exchanged (UT)

5. Raven Management Status and Update
Tara Callaway and Ken Corey (USFWS-Palm Springs) provided an overview of a raven workshop held in November in Palm Springs. The workshop resulted in a list of priorities pertaining to a) factors that influence raven abundance, b) direct management of raven populations, c) measuring effectiveness of raven management, and d) education and outreach. A full workshop summary is in progress, but the agenda, speaker information, and speaker presentations are already posted on the Desert Tortoise Recovery Office website at https://www.fws.gov/nevada/desert_tortoise/dtro/dtro_meet_events.html.

Discussion among the MOG members included:

- Need to directly involve the solid waste industry in management efforts and expand the role of local communities in reducing raven subsidies. It was noted that “bear-proof” trash receptacles have been effective in reducing corvid use in some areas, and establishing grants to convert garbage trucks to accommodate such cans can be effective in obtaining industry buy-in for distribution of raven-proof cans.
- Short-term goal of establishing an inter-state ad-hoc workgroup to focus on desert tortoise issues. This workgroup should also determine how to pursue a west-wide coordination strategy, potentially involving the Western Governors Association or other relevant coordinating body. *Volunteers for the workgroup included Raul Morales, Gerry Hillier, Vicki Davis, Joshua Watabu, Ali Aghili, Becky Jones, NDOW, USFWS-PS, Pete Coates, and Kobbe Shaw.*
- Need to consult tribes.
- Need to focus on individual actions; what do we specifically want the public to do?
- Raven management needs to be kept in context of multi-species management.
- May want to consider developing a standing committee.
- Group to bring back recommendations for MOG consideration at the summer meeting.

6. Review and Discussion of Funding for RIT Priority Recovery Actions for FY 2017

The group briefly reviewed the current list of unfunded, priority Recovery Implementation Team (RIT) projects (see attached handout). The list is available for individual agencies to work with their RIT participants to fund via their particular processes. Project concepts will be posted to the RIT pages on the DTRO webpage:

https://www.fws.gov/nevada/desert_tortoise/dtro/dtro_rits.html.

Raul Morales, Glen Knowles, and Roy Averill-Murray will meet to discuss funding projects with the Nevada conservation fund.

Other discussion included:

- Agreement that CalTrans and Federal Highways need to be engaged to facilitate priority projects for tortoise exclusion fencing along highways in California.
- It was pointed out that some projects may not be eligible for certain funding sources or agency budgets due to defined constraints or limitations.
- The California RIT needs to review the newly proposed raven subsidy proposals to ensure that they are focused on the most important areas.
- The “new” projects presented at the MOG meeting should be brought back to the RITs for evaluation.

7. Other Follow-up Items from the June Meeting

- Education and Outreach
USFWS is cobbling funding to contract an outreach plan for desert tortoise issues and the MOG. The current idea is for the contractor to convene a focus group of MOG members, develop a communication plan, and circulate the plan with the MOG for review. It was also noted that the Southwest Climate Centers and western Landscape

Conservation Cooperatives identified communication as a top priority and are interested in doing a human dimensions project (POC: Larry Rabin, USFWS Region 8, Science Applications)

- Range-wide Monitoring Implementing Subcommittee
The Desert Landscape Conservation Cooperative was approached to see whether funding might be available to contribute to range-wide monitoring, but nothing is available at this time. A subgroup of MOG members still needs to meet to discuss relative priority and opportunities to fund Range-wide monitoring after hearing back from federal partners on funding for FY 2017.
8. Presentation: Overview of Current Research on Health and Disease in Desert Tortoises
Nadine Lamberski (San Diego Zoo Global) provided an overview of disease in desert tortoises, plus a summary of recent research and management implications. It was requested that a copy of the presentation be distributed.
 9. Science and Research Priorities for 2017
The primary research topic identified by the MOG was “metrics for management effectiveness.” The MOG endorsed the current Science Advisory Committee members (although it was suggested that a landscape ecologist, economist, and/or a restoration ecologist might be useful additions in the future). The DTRO will re-engage the SAC, schedule a meeting to address the MOG’s primary topic, and prepare for a briefing at a 2017 MOG meeting. In particular, the MOG asks the SAC:
 - How to measure recovery action effectiveness?
 - How to ensure managers get the bang for their buck?
 - What would an effectiveness monitoring program look like?
 - What are appropriate metrics/parameters?
 10. Eastern Mojave Conservation Collaborative
Genevieve Johnson and Colleen Whitaker, on behalf of the Desert Landscape Conservation Cooperative, gave a summary presentation on the DLCC and a pilot project for landscape conservation design in the Eastern Mojave/Amargosa watershed region. The goal of the project is to work with partners to identify and implement a shared vision to help achieve long-term conservation for the Mojave Desert that promotes local economies and conservation of important values and resources. See the attached handout; the presentation is posted to the Desert Tortoise Recovery Office website at https://www.fws.gov/nevada/desert_tortoise/dtro/dtro_meet_events.html.
 11. Review of Action Items (see above)
 12. Closing Comments/Future Agenda Items/Next Meeting Date
The next meeting will be scheduled via a Doodle poll.
 13. Meeting concluded at approximately 3:00 pm.

MOG Attendees (not including agency support staff or other stakeholders)

Agency	Name	Title/Office
Clark County	Marci Henson	Desert Conservation Program
Washington County	Cameron Rognan	Red Cliffs Desert Reserve Manager
QuadState Local Governments Authority	Gerry Hillier	Executive Director
Arizona Game and Fish Department	Cristina Jones	Turtles Project Coordinator
California Department of Fish and Wildlife	Ali Aghili	Senior Environmental Scientist, Supervisor
Nevada Department of Wildlife	Jen Newmark	Wildlife Diversity Bureau Chief
Utah Division of Wildlife Resources	Ann McLuckie	Wildlife Biologist
BLM, Arizona	Roxi Trost	State Office
BLM, California	Jerry Perez	State Director
BLM, Nevada	Sandra Brewer	T&E Program Lead
BLM, Utah	Dawna Ferris	NCA Manager
FWS, Region 8	Mike Fris	Assistant Regional Director
FWS, Region 8	Mike Senn (MOG facilitator)	Deputy Assistant RD
FWS, Region 2	Brenda Smith	Assistant Field Supervisor, Arizona Ecological Services Office
USGS	Todd Esque	Research Ecologist
Marine Corps Logistics Base	Vicki Davis	Environmental Division

RIT recovery project concepts

Upper Virgin River (n = 2 raters)

Project ID #	Title	Priority			Shovel-Ready Ranking Index				Estimated Cost
		MOG	RIT	CV	NEPA	Project Description	Feasibility/Coordination	Cost Efficiency	
UVR01	Fire Mgmt in DT habitat: Awareness handout for firefighters	H	H	0.35	5	5	5	5	\$6,000
UVR03	Implement strategic fire fuel breaks in Red Cliffs NCA	H	M	0.00	3	3	3	3	\$38,774
UVR04	DT education center at Red Hills Garden Complex	M	Z	1.41	5	3	3	1	\$1,816,130
UVR05	Land acquisition in the RCDR	Z	H	0.00	5	5	3	3	?
UVR06	Tortoise fencing – RCDR	Z	H	0.00	5	3	3	3	\$432,724
RW01	Genomic and biogeographic analysis of <i>Mycoplasma agassizii</i> and <i>M. testudineum</i>	Z	M	n/a	5	5	5	3	\$249,686
UVR07	Tortoise surveys in the UVR RU	Z	Z	n/a	5	1	3	3	\$50,000

RIT recovery project concepts

North-East Mojave RIT (n = 6 raters)

Project ID #	Title	Priority			Shovel-Ready Ranking Index				Estimated Cost
		MOG	RIT	CV	NEPA	Project Description	Feasibility/Coordination	Cost Efficiency	
NE08	Implement strategic fire fuel breaks in BDS CHU (UT)	H	H	0.00	1	5	3	5	\$25,598
NE01	Fine fuel reduction & native annual species diversity in burned tortoise habitat	H	H	0.24	1	5	3	3	\$495,600
NE02	Burned DT habitat restoration	H	H	0.27	1	5	3	3	\$820,000
NE05	ACEC & Travel Management Planning	H	M	0.28	1	5	3	3	\$518,805
NE09	Install fuel breaks in Grand Canyon-Parashant NM Tortoise habitat	H	M	0.84	1	3	3	3	\$74,200
NE10	Install fuel breaks in Beaver Dam Slope CHU (AZ)	H	M	0.84	1	3	3	3	\$74,200
NE03	Native seed banks for DT habitat restoration in Southern Nevada	H	M	0.84	1	3	1	3	\$150,000
CA13	Develop and implement a Saharan mustard management plan for the West Mojave; include a suppression and removal program in and adjacent to critical habitats	H	M	0.84	1	3	3	3	\$2,310,000
NE06	Removal of non-native shrubs & tree from BDS-CHU	H	M	1.10	1	5	3	3	\$35,000
NE04	Create DT conservation lands in southern Nye County, NV	H	M	1.15	1	1	1	3	\$630,000
NE07	Develop educational program for Southeastern Lincoln Co HCP	M	Z	0.77	5	3	3	3	\$115,000
RW01	Genomic and biogeographic analysis of <i>Mycoplasma agassizii</i> and <i>M. testudineum</i>	Z	H	0.56	5	5	5	3	\$249,686

RIT recovery project concepts

California RIT (n = 10 raters)

Project ID #	Title	Priority			Shovel-Ready Ranking Index				Estimated Cost
		MOG	RIT	CV	NEPA	Project Description	Feasibility/Coordination	Cost Efficiency	
CA05	DT Barrier Fencing: Hwy 58 within Fremont-Kramer and Adjacent to Edwards AFB	H	H	0.13	1	5	3	3	\$183,500
CA17	Closed Wash Fencing/Signing in the Chuckwalla DWMA	H	H	0.14	1	5	5	3	\$86,040
CA04	DT Barrier Fencing: I-40, the northern boundary of Ord-Rodman	H	H	0.14	1	5	3	3	\$363,500
CA24	Meta-analysis of Four Years of Raven Nest Surveys	H	H	0.25	5	3	5	1	\$33,000
CA06	DT Barrier Fencing: Hwy 395 within Fremont-Kramer, north of Kramer Junction.	H	H	0.35	1	5	3	3	\$1,803,500
CA08	Restore habitat in n Fremont-Kramer and w edge of Superior-Cronese by removing toxic mining wastes in stream channels in Fremont Valley, Red Mountain area, and e to Cuddeback Lake	H	H	0.38	3	3	3	1	\$0
CA02	Reduce berm size along Bradshaw Trail within Chuckwalla DWMA/CHU	H	H	0.38	5	5	3	3	\$72,480
CA13	Develop and implement a Saharan mustard management plan for the West Mojave; include a suppression and removal program in and adjacent to critical habitats	H	M	0.44	1	3	3	3	\$2,310,000
CA23	Creating a Raven No-fly Zone with a High Power Laser	H	M	0.45	5	3	5	5	\$127,200
CA12	Reduce Excessive Coyote Predation on DT Populations in critical habitats in California	H	M	0.45	1	5	3	3	\$480,000
CA15	Grazing Management Practices Proposal for the protection of tortoises and to improve habitat conditions	H	M	0.45	1	5	3	3	\$550,000
CA07	Create Experimental Raven-free Control Zones at Two Sites: the DTRNA and at Head-starting Release Areas, Edwards AFB	H	M	0.45	1	3	3	3	\$470,000

RIT recovery project concepts

CA03	DT Barrier Fencing: Highway 95, Chemehuevi	H	M	0.45	1	5	3	3	\$1,947,500
CA22	Development and Refinement of an Aversive Training Device for Raven Predation Reduction	H	M	0.61	5	3	5	5	\$54,000
CA25	Piosphere Restoration on Fenner/Piute Valley Critical Habitat Unit in MOJA	H	M	0.65	5	5	5	5	\$209,250
CA14	DT education and information program	M	M	0.60	5	5	5	3	\$497,798
CA09	Mojave Raven Watch - A DT Range-wide Human Education Program	M	M	0.76	5	5	3	3	\$126,500
CA11	Conduct environmental education to explain the benefits of eliminating subsidies in towns and cities in commercial and housing areas (e.g., targeting open dumpsters).	M	M	0.80	5	3	3	3	\$190,000
CA10	Provide education and outreach to desert communities and travelers to reduce human impacts of tortoises	M	M	0.80	5	5	3	3	\$419,200
CA16	Utility road berm modification as part of normal patrol road maintenance	Z	H	0.23	5	5	3	1	?
CA19	Increase law enforcement patrols for desert tortoise protection in Mojave National Preserve.	Z	M	0.80	5	3	5	3	\$259,000
CA21	Before-after-control-impact study on the effects of wind or solar energy development, operation, and maintenance	Z	Z	1.01	1	3	1	1	\$253,000
RW01	Genomic and biogeographic analysis of <i>Mycoplasma agassizii</i> and <i>M. testudineum</i>	Z	Z	1.07	5	5	5	3	\$249,686
CA20	Install DT Road Signs along roads in Death Valley National Park	Z	Z	1.19	1	5	5	3	\$7,100

New/updated project concepts

- Evaluation of raven subsidies near MOJA
- Evaluation of raven subsidies near O-R & S-C
- Raven food subsidy reduction in California City
- Techno-tortoise Phase 2: engineering an aversive version
- I-40 DT fencing

Mojave Conservation Collaborative

A Proposal and Overview



Introduction

The Mojave Desert is a unique resource containing wide-open landscapes, wilderness solitude, outstanding recreational opportunities, rich cultural and biological diversity, and iconic species. These resources are less than a 3-hour drive from over 25 million people in southern California and Nevada. Growing desert communities rely on these landscapes for their economic viability.

Two major land-management-planning efforts within the Mojave Desert have recently been completed, or are nearing completion: the Desert Renewable Energy Conservation Plan (DRECP) in California and the Bureau of Land Management's revised Resource Management Plan for their Las Vegas and Pahrump field offices in southern Nevada. However, completion of these documents does not end the management process, and many important challenges remain in managing desert resources, such as: *How will these plans facilitate maintenance of habitat connectivity for wildlife? How do we best manage for declining water availability and effects to groundwater dependent ecosystems and other socio-economic priorities in the future? How will climate change affect recharge of groundwater basins? How will wide ranging species (e.g. desert tortoise and Joshua Tree) respond to shifting climatic conditions?*

The questions and challenges above are far reaching, span numerous prior planning efforts, and cross jurisdictional boundaries across multiple states. They also reflect the fact that natural resource managers are increasingly faced with managing for change, highlighting the need to integrate adaptation into existing resource management activities (e.g., implementation of the Desert Renewable Energy Conservation Plan). In order to do this, there is a real need to work collaboratively, across boundaries and in partnership with government agencies, NGOs, and other stakeholders, to develop a commonly held vision for the future of the Mojave Desert – and, just as importantly, to implement conservation strategies to achieve that vision.

The scope of the entire Mojave desert is so large that multiple interests are considering a proposal for an initial focal area for landscape-scale, collaborative conservation planning and implementation for the Eastern Mojave Recovery Unit of the Desert Tortoise Recovery Plan, plus the overlapping Amargosa River watershed (see Figure 1). The Amargosa Basin supports 28 endemic species, including 12 endemics and 5 wider ranging species that are federally listed as threatened and endangered. Most of these species are wholly dependent on groundwater-fed aquatic and riparian systems that are isolated and comprised of unique assemblages of flora and fauna.

Goals and Objectives

The goal of this effort is to promote effective collaboration by leveraging resources to achieve lasting conservation outcomes in the Eastern Mojave Desert. The collaborative process would identify important social values, resources, stressors, and trends in the area, as well as potential actions and target locations where partners can work together, or individually, to apply their management tools for maximum collective impact.

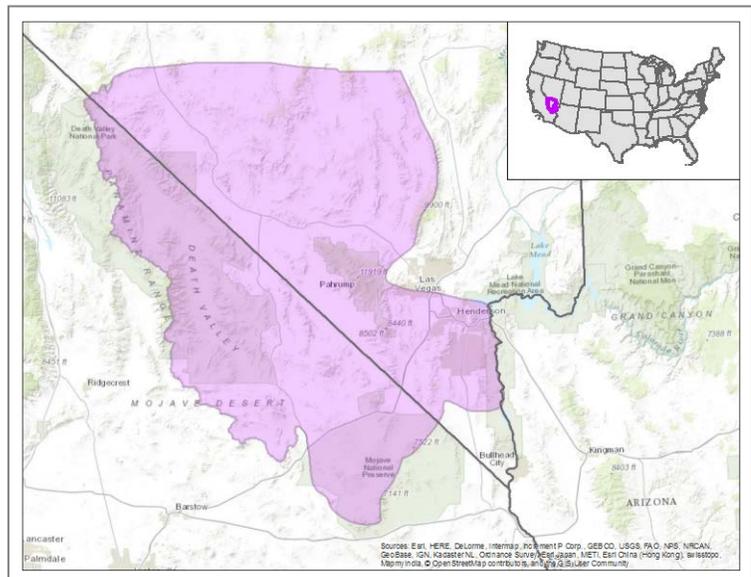
The process would help to develop new or augment existing collaborative structures to support coordinated management across multiple jurisdictions within the focal area.

In order to meet this goal, the *Mojave Conservation Collaborative* aims to:

- Identify critical common natural resource and social values among partners
What are our priority resources (e.g., desert tortoise, Joshua tree, desert wetland and riparian systems, recreation, cultural assets)?
- Identify specific conservation goals and measurable objectives for the priority resources
*Where should goals and objectives focus on managing for in-place persistence of priority resources?
Where should they focus on managing for future conditions?*
- Collaboratively develop and implement adaptation strategies to address changing environmental conditions for specific resources and stressors
How do current conditions differ from projected or desired conditions?
- Develop critical information to support management actions, and identify strategic research needs for testing management approaches
- Apply adaptive management by fostering broad-scale, coordinated effectiveness monitoring
- Communicate clearly about an action-oriented process that focuses on implementation rather than producing more planning documents
- Strengthen and/or develop ongoing forums and partnerships for coordination and collaboration
- Work for shared leadership and the development of shared funding

Anticipated benefits for partners

- Coordinated landscape-level conservation in an increasingly variable environment
- Increased funding leverage and competitiveness for grant applications, needed to augment agency base budgets
- Improved interagency and public/private cooperation, and ability to more effectively address larger and more complex problems that transcend jurisdictional boundaries
- Geospatial decision support tool(s) to inform management decisions and help prioritize actions within existing plans
- Tools and shared databases to help make data and information more accessible to managers and the public



Timeline

The anticipated timeframe for this effort is 3-4 years to achieve the full suite of desired outcomes. Over this timeframe, partner and stakeholder engagement will be on-going.

For further information

To learn more about this effort please contact: Brian Croft, Division Chief – Western Mojave Desert Division, USFWS (brian_croft@fws.gov)