

## Meeting Summary

### Desert Tortoise Management Oversight Group

April 4, 2024 | 9:00-4:00pm | Springs Preserve, Las Vegas, Nevada

Meeting Agenda: [Link](#)

#### Partner Needs and Resources:

- BLM NV State Office – Needs funding for long-term monitoring plots.
- USFWS Region 6 – Has mitigation funding for Desert Tortoise projects in Nevada. Contact Glen with project ideas.
- Clark County – Can promote restoration or cleanup events on the website.

#### Next Steps

- QR Code for Raven Nest Identification
- Meeting evaluation

#### Table of Contents

<b><i>Partner Needs and Resources:</i></b> .....	<b><i>1</i></b>
<b><i>Next Steps</i></b> .....	<b><i>1</i></b>
<b><i>1. Executive Summary</i></b> .....	<b><i>2</i></b>
<b><i>2. Welcome and Introductions</i></b> .....	<b><i>2</i></b>
<b><i>3. MOG Executives Report Out and Member Updates</i></b> .....	<b><i>3</i></b>
<b><i>4. BLM Draft Solar Programmatic EIS</i></b> .....	<b><i>10</i></b>
<b><i>5. Relevance of BLM Solar PEIS to Desert Tortoise Recovery</i></b> .....	<b><i>11</i></b>
<b><i>6. MOG Input on the BLM Draft Solar PEIS</i></b> .....	<b><i>11</i></b>
<b><i>7. Assessing the Impact of Large-Scale Solar Facilities on Desert Ecosystems</i></b> .....	<b><i>16</i></b>
<b><i>8. A Synthesis of Solar Energy Construction Methods, Desert Tortoise Biology, Ecological Function, and Restoration Ecology</i></b> .....	<b><i>16</i></b>
<b><i>9. Recovery Implementation Teams – Update and Discussion</i></b> .....	<b><i>17</i></b>
<b><i>10. Closing</i></b> .....	<b><i>17</i></b>
<b><i>Appendix A: Participant List</i></b> .....	<b><i>18</i></b>

## 1. Executive Summary

The US Fish and Wildlife Service hosted the Desert Tortoise (DT) Management Oversight Group (MOG) meeting on April 4, 2024 at the Springs Preserve in Las Vegas. The meeting themes were solar energy development—particularly in light of the public comment period for the BLM’s Draft Utility-Scale Solar Energy Development Programmatic Environmental Impact Statement (Solar PEIS)—and the newly invigorated Mojave Desert Tortoise Recovery and Implementation Teams (RITs).

MOG Executives shared updates on recovery actions and needs from partners to achieving their goals. Following updates and discussion, the BLM and USFWS provided information on the Solar PEIS and how solar energy development may impact desert tortoise recovery. Researchers also presented cutting-edge studies that may inform design features and siting criteria to mitigate harm to tortoises and their habitat. MOG members worked collectively to draft solar design standards, exclusion criteria, and other recommendations for BLM’s public comment period. Finally, MOG members heard updates about the Recovery Implementation Teams (RITs) and discussed key issues for moving recovery forward in sub-areas of the desert tortoise range.

Following this meeting, the MOG will review the recommendations they discussed on the Solar PEIS and submit the final version as part of this summary report to the BLM during the public comment period. Section 4 of this report may be considered the MOG’s feedback and recommendations on the Solar PEIS.

In addition, the USFWS will continue convening the RITs and carry forward the information gathered at this meeting through actions at the sub-area level.

The next MOG meeting will be held virtually on October 3, 2024 from 10am-2pm.

## 2. Welcome and Introductions

*Paul Souza, Regional Director, Pacific Southwest Region, USFWS*

*Glen Knowles, USFWS Southern Nevada*

Paul and Glen offered opening remarks to the MOG. Highlights included:

- MOG agencies and organizations provide a community of professionals who care about the Mojave desert tortoise, shared priorities, collaborate, and provide support for each other’s efforts.
- The areas in which we work, particularly Southern Nevada and California, are the epicenter of renewable energy. It is important to work through complexity to address climate change through the deployment of renewable energy while also recovering the Mojave desert tortoise.
- The Solar PEIS is timely and complicated to navigate endangered species issues. There is tremendous respect between USFWS and BLM and of their respective missions.
- In another example of how we “do multiple things at the same time,” there are multiple branches of Department of Defense representing at the meeting who are meeting the needs of world security while also advancing conservation efforts.
- The Sentinel Landscapes program offers a great opportunity to continue collaboration on Department of Defense and neighboring lands in the desert tortoise range.

### 3. MOG Executives Report Out and Member Updates

#### *MOG Executives*

MOG Executives shared high priority actions they have been implementing for desert tortoise recovery. They also expressed needs for accomplishing their goals. Their updates are below; agency acronyms are defined in the update titles.

#### Bureau of Land Management (BLM)

##### *BLM Arizona State Office - Tiffany Shepherd*

- Arizona Strip field office projects include installing pipe rail fence and tortoise fencing near Mesquite, Nevada, applying herbicides to establish fuel breaks within Mojave Desert tortoise habitat.
- They are hoping to restart long-term monitoring plots that were established long ago and it has been about 20 years since they've been monitored. We're hoping to get funding to reestablish those or to resurvey them.
- Outside the Arizona Strip, the Sonoran desert tortoise population is not listed, but we do have an area of known hybrids and genetically pure Mojave Desert tortoise individuals in this area near or within the Kingman Field Office and are working on trying to work with Fish and Wildlife Service to determine conservation needs for these areas.
- BLM has an unprecedented number of solar projects being proposed within mainly Southwest Arizona and Central West Arizona that could potentially impact those populations and have been working with Nevada to learn what the field offices do there to minimize impacts to the Mojave Desert tortoise and apply those to the projects in Arizona.

##### *BLM California State Office – Mark Massar*

- BLM California is focusing on cultivating native seed, and their warehouse is starting to contract out projects. They have 250 pounds of source-identified desert Indian wheat available for purchase. They also have two Seeds of Success seed collections at the California Botanic Garden for Mojave seed collection in California, and another that the Chicago Botanic Garden Group is collecting in Utah, Arizona, and Nevada. The BLM also has a Mojave Native seed increase project with Cadiz Farms to produce source-identified seed for the Seeds of Success collection.
- Target species for cultivation include shelter and forage species for desert tortoise. Partnership agreements are all developing growth to support agriculture seed increase and increase seed availability for restoration.

BLM Nevada State Office – *Alan Shepherd*

- The Las Vegas Field Office is working on the northern Ivanpah Valley Connectivity and Restoration Project. Final edits are being made to the document and it will soon be sent to cooperators for review.
- Working on surveys on transmission lines in Southern Nevada.
- Working with Lincoln County on habitat improvement opportunities as part of the County's Habitat Conservation Plan.

BLM Utah State Office – *Aaron Roe*

- Working on the revision of the Northern Corridor EIS (which was originally approved in 2012 but has been litigated).
- Lots of work happening in the NCA, including improvements on recovery actions and rehabilitating damage from fire.
- They are also propagating more than 1000 plants for future restoration projects.
- Installing exclusion fencing and treating invasive weeds at trailheads and along roads.
- In the future, funding through T&E money will support fencing and aerial treatments.

National T&E Lead – *Laura Romin*

- BLM's T&E Office is helping with the BLM Solar PEIS and finishing the Action Plan for desert tortoise. The Action Plan was discussed at the last MOG meeting and is almost finished.

US Fish and Wildlife Service

USFWS Region 6 – *George Weekley*

- Actively coordinating with the BLM on the settlement related to the Northern Corridor.
- Working with Washington County, Utah Division of Wildlife Resources, BLM, and others on an incidental take permit for BLM and other partners to implement the amended Habitat Conservation Plan, including working on land acquisition, and implementing conservation actions under the HCP.
- Also working with the wildlife resources and the county to implement rangeland management and control in Washington County.
- Finishing a migratory bird take permit for raven control.

USFWS Region 8 – *Glen Knowles*

- Region 8, in Nevada, is currently tracking 67 renewable energy projects, including solar, wind, and transmission. We are actively providing technical assistance on 13 projects that cover over 40,000 acres. A Biological Opinion for the Greenlink West transmission project is coming out soon.

- Continuing to provide information on solar energy design criteria and exclusion areas to the BLM for the Solar PEIS.
- They have a lot of mitigation funding for Desert Tortoise projects in Nevada, so if you have ideas for projects, please contact Glen. Working with BLM and Great Basin Institute on control of common raven in southern Nevada. They are moving toward having data to share on predation.

#### USFWS California – *Brian Croft*

- Working on the Desert Tortoise General Conservation Plan; getting an administrative draft developed and hoping to get a draft out for comment sometime in the late summer/early fall. This could be a source of mitigation funding.
- Continuing to work on the Desert Tortoise Recovery and Sustainment Partnership initiative with DOD and BLM, and are reviewing proposals for funding next week. Working with the Marine Corps on the Mojave Sentinel Landscape proposal. Also working on smaller-scale solar projects that affect the tortoise and developing an operational implementation site to support translocations - finding a way to transport tortoises affected by solar energy projects in a safe way. The USFWS is trying to provide technical support early in translocation processes.
- Desert Tortoise Week occurred in October 2023, and a record number of in-person events were held.

#### National Park Service (NPS)

##### BLM Lake Mead NRA – *Mark Sappington*

- Lake Mead has staffing shortages in the biology department, but they are in the process of re-filling those positions.
- Had a successful volunteer project to repair breaks in the fencing along Lakeshore Road.

##### Death Valley National Park – *Kevin Wilson*

- Designated campsites along Green Valley Road, which is prime habitat for desert tortoises.
- A wildlife biologist package is drafted and being reviewed by their HR department, so they plan to hire the position soon.
- Attended the Northeastern Mojave RIT meeting, and will share GIS layers with Kerry after ground truthing them.

##### Joshua Tree National Park – *Michael Vamstead*

- Working with Kristina Drake to establish line-distance sampling into the future.
- Echoes other parks in losing technicians over the next few months.
- Raven reduction work seems to be in a pause for the Park, but they have supported it in the past and will see where it goes into the future.

## Mojave National Preserve – *Neal Darby*

- Cima Road construction should be finished within the next few months, including tortoise fencing.
- They have road projects planned for the next few years and will start in 2026-2027. 30 miles of tortoise fencing and 92 tortoise crossings are planned across two roads. They are also slowly decommissioning Star Mine Road, which has been a problem for tortoise mortality; they are allowing it to degrade into a natural surface.
- Dropping speed limits on roads in an effort to mitigate roadkill – 45MPH on paved roads and 35MPH on dirt roads.
- The York Fire burned 90,000 acres last year, but fortunately it wasn't in the best tortoise habitat - although it is in climate refugia. Volunteers are doing surveys to see what the effects were.
- Lots of interpretation events planned for this year. Once fencing is installed, the tortoise headstart facility will start putting about 300 juvenile tortoises on the landscape within the next 2-3 years. The ultimate goal is to headstart behind the fences and rejuvenate the dead zones along corridors.

## United States Geological Survey (USGS)

### USGS – *Todd Esque*

- Damian Higgins has started as the new District Manager at the Ecological Research Center.
- Todd has recently compiled results from a number of studies on solar facilities, and is presenting more information about those today.

## Department of Defense (DOD)

### China Lake – *Julie Hendrix*

- Many Navy projects are finishing up, and Julie and others have been working to disseminate the results.
- Presented a poster on demographic plots at the National Military Fish and Wildlife Association, with support from Todd Esque.
- DOD personnel do not usually directly study or handle tortoises, but their authorized biologists can now do visual health assessments (using body condition and weight).
- Waiting on comments on flight and depredation permitting.
- Planning for line-distance sampling in suitable habitat in the South Range.
- It is important for military branch personnel to understand the process of using drones.
- Doing education and outreach such as raising awareness at the local library and Earth Day activities.

Marine Air Ground Combat Center (MGACC) Twentynine Palms - *Brian Henen*

- Recently released tortoises, and results are looking good. Body size seems to be an important indicator of success.
- Translocations have been a huge project, and the fundamental measure established is annual survival rates, which have been very high. Last year, they released small tortoise and had a terrible response, mostly because of coyote kills.
- Also worked on the Sentinel Landscapes proposal, which has been a rewarding experience with partners. Thank you to all the partners who worked on this proposal.

Fort Irwin – *Dave Housman*

- Working with the RASP, an initiative between DOI and DOD to facilitate species recovery and offset training restrictions, on funding new projects including habitat restoration and closing unauthorized routes. They are currently reviewing project proposals.
- Working on a translocation plan and developing an Environmental Assessment for their western training area. Part of this involves moving tortoises to the south of the installation in hopes of augmenting the population densities and reproduction rates.
- Working on a Record of Decision for an EIS on continued withdrawal of the lands on which translocations will occur.
- Also working on the Mojave Ground Squirrel listing.

State Wildlife Agencies

California Department of Fish and Wildlife – *Alisa Ellsworth*

- Continue to work on environmental permitting for numerous renewable energy projects in our region, we've had several big projects that have resulted in protection of habitat management lands for almost 20,000 acres in the region. This has been a positive offset for some projects that CDFW is working on.
- Also collaborating with the US Fish and Wildlife Service on the desert tortoise general conservation plans, and their partnership has been much appreciated.
- Regarding the listing petition by the Fish and Game Commission, CDFW received a petition to uplist Mojave desert tortoise to endangered back in October 2020. CDFW then embarked on a multi-year status review using all of the best available scientific information that was compiled to make a recommendation to the Fish and Game Commission on whether the petitioned action was warranted or not. Ultimately, all the best available scientific information we have indicates that desert tortoise is really in serious danger of becoming extinct. The recommendation to the Fish and Game Commission is that the petitioned action to change the status from Threatened to Endangered is warranted.
- The Fish & Game Commission has scheduled a final consideration on the petition to list desert tortoise on April 17 or 18th. They will hear the recommendation from the Department at that

meeting. And then, at some point, either at that meeting or a letter later meeting, they will make a decision.

### State Transportation Agencies

#### Nevada Department of Wildlife – *Matt Flores*

- Involved in a lot of solar projects and issues.
- Working to restore more burned areas in mountains. Some are had mixed results due to drought - hopefully the next round of planting will be more successful.
- Also working on fences on highways.

#### Utah Division of Wildlife Resources – *Ann McLuckie*

- Continuing to monitor restoration projects such as the 789 acres of State lands in December 2022 that we just planted a year later. This spring, they will also complete follow up monitoring for 250-acre polygons they pre-seeded in 2023. American Conservation Experience crews are helping with the work on that project.
- Planning to assist land management agencies on restoration projects, raven control, and translocations.
- The Division has a fairly robust Urban Wildlife Program, and they receive hundreds of phone calls regarding desert tortoises that are either displaced or injured, or general questions. They will continue prioritizing this program.
- Working with BLM and USFWS at Snow Canyon State Park in Washington County to upgrade and replace up to 12 miles of fencing in the Conservation Area and Snow Canyon State Park. They are developing a funding proposal to work on the fencing as well as purchasing materials for responding quickly to urgent fencing needs. They will find out whether they will receive those funds starting in July.
- Also organizing educational events, with the DWR MediaSpace specialists as main partners.

#### Nevada Department of Transportation – *Kristi Holcomb*

- Continuing work on plans to install and replace tortoise fencing across the valley. They have funding for installation of tortoise fencing and over 30 crossings on US 95, and an agreement to tie fences together with NPS. This will occur in 2026.
- They are also replacing the desert tortoise fence along I-11; this project is on hold, but may occur in 2025. They are also working north of searchlight in 2025.
- On SR-169, they installed 6 miles of fence and tortoise crossings.
- Also installing crossings on 215N.
- Added a liaison for agriculture to the Department who will ensure that construction projects do not result in the spread of noxious weeds.
- Applied for two Federal Highways Administration grants.
- Working with the NDOT Wildlife Crossings program manager to make sure tortoise crossings are considered in AV-112 funding.



- Working with BLM as a cooperating agency on the Ivanpah Connectivity project.

## County Governments

### *Clark County – Kimberly Jenkins*

- The County kicked off their line-distance sampling monitoring efforts for the 2024 field season and continue to provide funding for that within our county.
- Also kicked off their Road Warriors effort for the return for field season. They will have volunteers on the ground who will do fencing inspections or mortality monitoring.
- Just started their large restoration project, and hired a contractor to do the planning component. They expect to be on the ground doing implementation sometime in 2025.
- Kicked off a predator management effort for Boulder City conservation easement; they will be working on predator management control efforts.
- In the past year, the County launched their Volunteer to the Max program, their effort to engage volunteers and develop apps about conservation work across our county. More information can be found on the website ([link here](#)). They are open partnering with agencies to help promote their restoration or cleanup events on the website; they are beginning to build a volunteer network.
- Within the next few months, Clark County will be kicking off their implementation plan and budget for the next biennium. This plan is where they will decide how to spend their money for the next two years. They will be approaching Fish and Wildlife Service about funding recommendations.
- Kim was excited to see the number of desert tortoise specialty license plates in the parking lot today. The state of Nevada has approved the desert tortoise plate as a specialty license plate, and the funding from those plates comes to Clark County's Desert Conservation Program. They use that money to implement conservation activities for the desert. So right now, a lot of that money is going toward their Road Warriors effort and for some public outreach and education related to predator management.

### *Washington County – Cameron Rognan*

- The County is working on a Fire and Fuels Management Plan. As a part of this plan, they will be applying herbicide treatments to a portion of the reserve every year to try and reach strategic goals for fuel rates.
- Continuing to monitor culverts on roadways in the reserve, they are finding high usage by tortoises.
- Fish and Wildlife Service recently granted a permit for raven control in the County's recovery unit, and they have been the implementing arm of that permit. So far, they have treated approximately five to 10 nests, and about 40 to 50 eggs. They will treat more in the upcoming weeks.
- Participating in the Supplemental EIS on the County's incidental take permit and the BLM's issuance of the Right of Way permit for the Northern Corridor to UDOT. This is the biggest issue

the County faces. If at the end of the year, the BLM rescinds that permit from UDOT, it will greatly affect their Habitat Conservation Plan; County reserves would shrink by about 7,000 acres (about half of which is to be developed under the new permits). But it would also affect about 50% of the County's funding in the next year. The County is struggling to figure out how to proceed going forward.

QuadState Local Governments Authority – *Darrel Lacy*

- QuadState represents all local governments in the Mojave Desert region except for Clark County and Washington County.
- It is nice to see desert tortoise programs working, and QuadState will continue to engage on locally relevant issues.

#### 4. BLM Draft Solar Programmatic EIS

*Jeremy Bluma, Bureau of Land Management National Energy Coordination Office Senior Advisor*

Jeremy presented information on the Draft Programmatic Environmental Impact Statement for the BLM's Western Solar Energy Plan. Highlights included the Alternatives under consideration, development scenarios, and requests for additional information and input during the public comment period.

See the presentation slides [HERE](#).

#### Questions and Answers

**Q:** Will this BLM Solar PEIS require any existing project applications to start over?

A: This is something the BLM is thinking about. We haven't decided how we are going to approach this overall. In the 2012 plan and 2015 Desert Renewable Energy Conservation Plan (DRECP), there was allowance to continue existing projects without starting over. There will be some need to consider those applications that are underway, but we aren't sure what the cutoff will be. We welcome input on this.

**Q:** It seems like an extension on the public comment period is needed. Is an extension possible?

A: Jeremy has elevated the request to extend the comment period to BLM leadership. Previously, they decided not to for the purpose of continuing to make progress on the plan.

**Q:** Would Alternative #2 exclude all designated habitat for Threatened and Endangered species? If so, would that mean that all desert tortoise habitat would be excluded?

A: We have received a lot of reaction to this exclusion criteria and welcome everyone's input on whether this is a good approach. We want a robust plan and one that provides predictability.

**Q:** Is there guidance in the Draft Solar PEIS on disposing of the solar energy facilities?

A: Yes, there is a section on project decommissioning in the plan. The BLM welcomes recommendations and ideas on how to best break down solar facilities.

**Q:** How is the BLM going to utilize input and recommendations from the MOG?

A: The BLM is working with several Cooperating Agencies in the MOG, and will continue close coordination with them during the public comment period and throughout the planning process. The BLM is looking forward to receiving information and recommendations from the MOG.

## 5. Relevance of BLM Solar PEIS to Desert Tortoise Recovery

*Kristina Drake, US Fish and Wildlife Service Desert Tortoise Recovery Coordinator*

Kristina presented information about the relevance and potential implications of the BLM's Western Solar Energy Plan on the Mojave desert tortoise population. She showed maps of the tortoise's range and where solar energy projects could be located under the different Alternatives, explained the impacts of solar projects to known tortoise corridors and suitable habitat, exclusion criteria supported by the USFWS, and potential ways to increase compatibility between solar and tortoise.

See presentation slides [HERE](#).

## 6. MOG Input on the BLM Draft Solar PEIS

Following the presentations by the BLMS and USFWS, meeting participants discussed key Solar PEIS issues in small groups. The MOG decided to send their collective input to the BLM prior to the public comment deadline of April 18.

Below is a summary of recommendations from the MOG on four key issues: Exclusion Areas, Design Features, Monitoring and Adaptive Management, and Agency Communication and Coordination:

### Exclusion Areas and Criteria

#### Additional areas to exclude from solar energy project development

- Mitigation lands
- Conservation banks
- Existing and proposed Areas of Critical Environmental Concern
- BLM disposal lands
- Desert tortoise connectivity corridors (see Averill-Murray et al. 2021 [Connectivity of Mojave Desert tortoise populations—Management implications for maintaining a viable recovery network \(usgs.gov\)](#))
  - For example, Amargosa Valley, Indian Springs Valley, and Mercury Valley, which are in a crucial tortoise connectivity corridor, have multiple solar proposals that total nearly 170,000 acres.

- Recommendation to suspend all project applications in progress in prioritized or highly suitable desert tortoise habitat.
- All Priority 1 and Priority 2 desert tortoise connectivity habitat as defined in [BLM's 2012 Western Solar Plan Variance Protocol for Desert Tortoise](#).
- All habitats occupied by desert tortoise.
- Areas with sensitive groundwater-dependent ecosystems or significantly depleted aquifers.
- All habitats identified for, or previously used as recipient or control populations for, translocated tortoises. Additionally, habitats currently used as reference populations to understand the long-term outcomes and efficacy of translocation actions.
- Allow BLM Field Offices to identify additional exclusion areas at the local level.
  - Problems occur when project developers attempt to apply in sensitive areas (e.g., agencies repeatedly need to educate project proponents about not developing in dune beetle habitat).
- Areas identified as climate refugia (e.g., northern part of the tortoise's range, or per [Barrows et al. 2016](#)), such as areas that allow access to higher elevations.
- Areas or roads with established fencing and tortoise crossings; adding solar could reduce use of the area and reduce connectivity.
- Design buffers around Areas of Critical Environmental Concern, Critical Habitat Units, National Park units, National Wildlife Refuges, Department of Defense lands, Sentinel Landscapes, and other protected areas. Allow local land managers to define buffers based on the sensitive resources being protected in the conservation areas.

## **Design Features for the Desert Ecoregion/Mojave Desert Tortoise Habitat**

### Solar Panels, Roads, and Infrastructure

- Require (rather than recommend) panels to be elevated to permit vegetation growth.
- Reduce roads and lay-down areas to only those absolutely necessary to limit vegetation removal.
- Space panels to prevent complete shade cover or too much sun.
- Increase the height of the bottoms of fences to allow passage by tortoise and other small animals if habitat and environmental conditions are appropriate for reintroduction to the site.
- Coordinate dust abatement regimens with government agencies.
- Strategically design the placement of panels and vegetation to utilize water flowing off of panels.
- Avoid duplicative fencing.
- Conduct site restoration continually (through project construction and production, rather than only once).
- Develop a vision for the future use of the facility after it is decommissioned, and design the facility to work toward that future condition.
- Include security features to avoid illegal incursions by recreational off-highway vehicles.

- Reduce human resource subsidies, such as open trash cans, dumps, and other human created food sources) to avoid additional predator management concerns. Reduce roosting and nesting subsidies (e.g., fence posts, shade structures, power lines) for predators.

#### Topography, geomorphology, and hydrology

- Limit grading of the site to 20% of the developable area.
- Maintain natural surface water flows and topography, including aeolian processes.

#### Vegetation

- Avoid vegetation removal to the maximum extent possible.
- Mowing should be mandatory not optional. Require elevated and vegetated solar installations.
- Mitigate the risk of starting wildfires by managing vegetation fuels, especially nonnative vegetation.
- Reduce risk of herbicide use and impacts.
- Design and build to maintain 60-80% cover of perennial vegetation uniformly across the project site. The vegetation species should be representative of the original plant community.
- Collect seeds of native plants prior to site construction for use in revegetation.
- For restoration efforts, exclusively use seeds of species native to the site.
- Salvage plants from the areas that will be graded and use them for restoration.

#### Features Specific to Desert Tortoise

- Design features recommended for desert tortoise should be applied throughout the Mojave and Sonoran desert tortoise range. The Sonoran desert tortoise population is declining as well as the Mojave tortoise population, and their requirements are similar.
- Add perch deterrents, monopoles, and other measures to deter tortoise predators.
- Avoid impacts to tortoise burrows and thermal shade shrubs during construction, or replace these resources if lost during construction.
- Design projects to provide a net increase of 10% of tortoise burrows on site.

#### Mitigation

- Establish consistent mitigation requirements for any adverse effects in tortoise habitat (fees, land acquisition, or other compensatory mitigation). Do not rely on potentially inconsistent or ad hoc mitigation promises.
- Encourage the purchase and retiring of grazing allotments as one form of mitigation of desert tortoise impacts from solar energy development.
- Consider using solar project sites for release of head started tortoises, or develop head starting facilities at solar sites for this purpose.

#### **Monitoring and Adaptive Management**

#### Guidance Needed from the Solar PEIS

- Define whether adaptive management is occurring at the individual project level, or across projects to support future decision-making across a region/state.
- Establish provisions in the Solar PEIS to adapt management and design features and mitigation measures as technology improves and information is learned.
- Identify who is going to update plans and decisions based on the data.
- Provide information on the questions and information BLM is going to gather using the AIM framework.

#### Project Monitoring

- Recommendation that the project proponent and land manager collaborate to create a monitoring plan. Potential items to monitor on project sites include:
  - Vegetation cover (including cover and/or production of native vegetation and invasive species) - In cooperation with the land manager, set goals for the amount of perennial plant cover based on pre-construction surveys.
  - Surface water flows and flow paths
  - Soil erosion and/or quality and biological soil crusts
  - Depth to groundwater
  - Tortoise cover (e.g., selected perennial plants)
  - Tortoise burrows
  - Use of the site by tortoise
  - Survival rates of translocated tortoises
  - Predation of tortoises at the project site
  - Post-construction mortality of birds and bats
  - Use of the site by tortoise predators (particularly to determine whether predator activity increases due to perching on the panels and other structures, and whether mortality of other bird species attracts tortoise predators)
  - Energy production at the site (and the consequences of the management alternatives on energy production)
- If a project is within a grazing allotment, monitor the impacts of grazing on the site and make decisions accordingly, potentially including termination of the grazing lease.
- Monitor areas outside the project site that may experience impacts on hydrologic function (surface water and/or groundwater). Consider charging fees for projects that incur negative impacts outside the project area.
- Establish success criteria for mitigation areas and monitor the criteria to determine whether mitigation is successful. Mitigation criteria should include monitoring and reporting whether the mitigation activities are implemented.
- Establish reference sites (areas ecologically similar to the project site) to compare what happened to the items monitored at the facility versus in a similar area that was not developed.
- Capture a pre-construction record of the site (and reference sites) for all variables monitored.
- Compliance monitoring should be conducted by an independent entity not hired by the project proponent.

- Consider using efficient, cost-effective technology such as drones and existing satellite imagery to monitor the sites.

## **Coordination and Communication**

### Recommendations for the Solar PEIS

- Provide clear language on how and when local decisions on siting and management, and changes in management strategies that result from new technology and research findings, will be incorporated in national policies.
- Answer phone calls and emails from Cooperating Agencies and other partners.
- Ensure the BLM has sufficient staff to properly respond to and plan for renewable projects. This is not currently the case in the field offices in the desert tortoise range.

### Coordination needed between BLM and Partners after Plan Publication

- Work closely with local Habitat Conservation Partnerships.
- Compile and provide BLM offices and partners with annual updates from local managers for adaptive management.
- Designate a partner to act as coordinator for tracking solar projects.
- Coordinate with partners on the following topics:
  - Establishing consistent permitting requirements and design features to achieve avoidance, minimization, and mitigation of impacts.
  - Ensuring top-down coordination within the BLM from the national to local level, and consistent decision-making at the local level.
  - Evaluating and publishing the impacts of solar projects on tortoises.
  - Collectively ensure compliance on mitigation measure commitments.
  - Maintaining a working knowledge across the region of project proposals, status, and effects.
    - One idea to increase awareness is posting billboards at project sites to notify partners and the public of the project.

### Available Information to Incorporate in the Solar PEIS

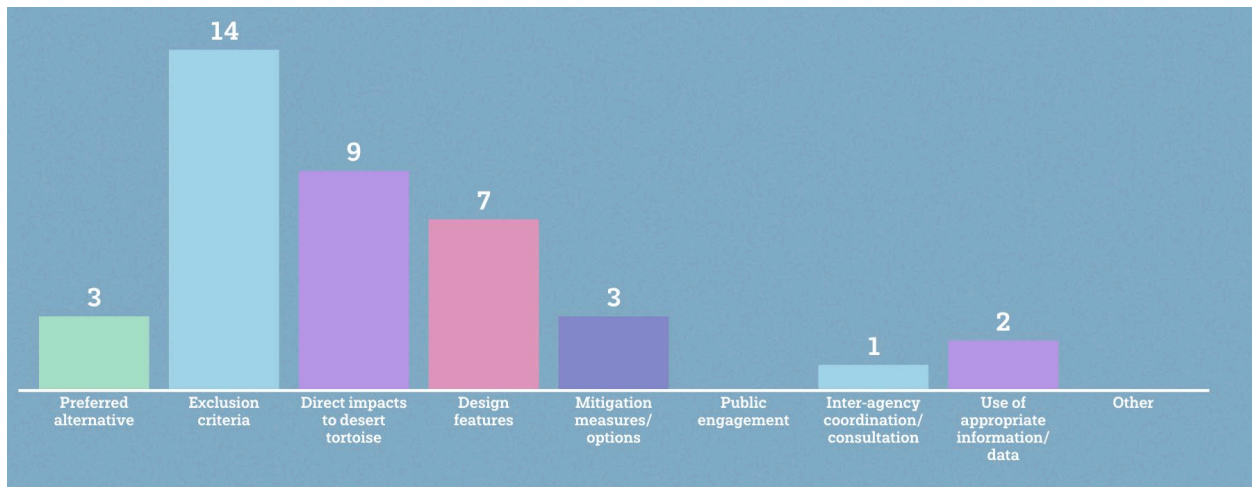
- Use Fast 41 dashboard as an example of a project tracking approach.
- BLM Southern Nevada District Office has an internal memo on how to communicate with Clark County and other partners on managing across jurisdictions for a sensitive species. This could be used as an example for agency coordination.
- The Stagecoach Wind project was indefinitely suspended in Greater Sage Grouse habitat. This is an example of stopping a project in the NEPA stage that would have harmed a non-listed species.
- Desert tortoise recipient areas for translocated tortoises and their associated reference sites have been identified and mapped. These should be added to the BLM's Solar Mapper. Other areas identified as reference or mitigation areas could be added from USFWS or other agencies.

- Similar policies should be applied to other TES species.
- Develop a mapping utility that identifies exclusion areas.
- Utilize climate studies (e.g., to identify climate refugia exclusion areas).

### Priority Issues to Address in the Final BLM Solar PEIS

Meeting participants were asked, “What are your top issues of concern for the BLM Solar PEIS?” Twenty participants responded, with Exclusion Criteria being the most common issue cited, followed by direct impacts to desert tortoise and design features. Below are the results of the virtual poll:

*What are your top issues of concern for the BLM Solar PEIS?*



## 7. Assessing the Impact of Large-Scale Solar Facilities on Desert Ecosystems

*Dale Devitt, University of Nevada Las Vegas*

Dale presented the results of research projects in Nevada and Texas in which he is studying the impacts of solar facilities on the plants and soils that tortoise depend on. Aspects of solar projects studied included the cooling mechanisms, the height and spacing of panels, and temperatures above and below the panels. Overall recommendations included locating facilities in previously disturbed areas, leaving native vegetation and watercourses intact, building panels at a sufficient height to allow vegetation growth, and strategically locating panels for water harvesting and shading.

## 8. A Synthesis of Solar Energy Construction Methods, Desert Tortoise Biology, Ecological Function, and Restoration Ecology

*Todd Esque, United States Geological Survey*

Todd summarized information he has found through many studies and conversations about whether tortoise can thrive within or around solar energy facilities. He has found that fully



repatriating solar energy facilities is too resource-intensive to be realistic, and that certain actions to mitigate initial disturbance are critical for tortoise population health. Some recommendations included monitoring the soils, water flow patterns, and vegetation at facilities and nearby reference areas; protecting tortoise burrows; developing plans for traffic and transportation, invasive plant management, predator control, and human recreation management; and monitoring project activities for compliance with the plans.

See presentation slides [HERE](#).

## 9. Recovery Implementation Teams – Update and Discussion

*Kerry Holcomb, USFWS Desert Tortoise Recovery Office*

Kerry presented the purpose of the Mojave Desert Tortoise Recovery Implementation Teams (RITs) and their relationship to the MOG, summarized the priorities partners shared at the spring 2024 RIT meetings regarding desert tortoise recovery actions and challenges to address, and discussed and shared next steps.

Kerry also solicited information from participants, including:

- Authorities or priorities related to the Endangered Species Act Section 7(a)(1) and how these could be fine-tuned to maximize recovery
- Policy, funding, and capacity barriers to recovery implementation and solutions
- Location of dumpsters and other predatory subsidies
- Plant materials needed over the next 5 years for the desert tortoise range

See presentation slides [HERE](#).

## 10. Closing

*Glen Knowles and Julia Guglielmo*

Glen and Julia closed the meeting by sharing next steps including developing recommendations for BLM, thanking presenters, and thanking MOG members for all the recovery actions they are working on and shared during their updates. The next MOG meeting will be held virtually on October 3, 2024 from 10-2pm.

## Appendix A: Participant List

Last Name	First Name	Title/Office	Organization/Agency
Aardahl	Jeff		Defenders of Wildlife
Abdalla	Dell		Federal Highways Administration
Ainsworth	Alison	Death Valley National Park, Ecologist	National Park Service (NPS)
Anderson	Ileene	Staff Biologist	Center for Biological Diversity
Balmer	Daltrey	Nevada Tonopah Field Office - Acting Assistant Field Manager	Bureau of Land Management (BLM)
Becker	Ben		NPS
Berger	Ron		Desert Tortoise Preserve Committee
Bluma	Jeremy	National Renewable Energy Program, Washington Office	BLM
Boyce	Cameron	Biologist, Caliente Field Office	BLM
Brannon	Heidi	Chief of Staff	Preservation Ranch
Burchett	Michael	Biological Science Technician - Mojave National Preserve	NPS
Cambrin	Scott	Desert Conservation Program	Clark County
Campbell	Vicki	BLM-CA listed species program lead	BLM
Coleman	Theresa	District Manager, Southern Nevada District Office	BLM
Croft	Brian	Acting Assistant Field Supervisor Palm Springs Fish and Wildlife Office	US Fish & Wildlife Service (USFWS)
Cunningham	Laura		Basin and Range Watch
Dale	Roger	President	Desert Tortoise Preservation Council

Darby	Neal	Mojave National Preserve, Wildlife Biologist	NPS
Decruyenaere	Joseph	Planning	Los Angeles County
Donnelly	Patrick	Nevada Wildlife Advocate	Center for Biological Diversity
Drake	Kristina	Desert Tortoise Recovery Coordinator	USFWS
Ellsworth	Alisa	Environmental Program Manager for Region 6 (Inland Deserts Region)	California Department of Fish and Wildlife
Emmerich	Kevin		Basin and Range Watch
English	Randy	Conservation Program Manager	DOD, USMC Air Station Yuma
Esque	Todd	Western Ecological Research Center - Henderson	US Geological Survey (USGS)
Field	Kim	Desert Tortoise Recovery Biologist, Desert Tortoise Recovery Office	USFWS
Finch	Mary Ellen	Government and External Affairs	
Flores	Matt	Wildlife Staff Specialist, Wildlife Diversity Division	Nevada Department of Wildlife
Folt	Brian	Biologist	Conservation Science Partners
Guglielmo	Julia	Facilitator	Southwest Decision Resources
Hammond	Talisin		San Diego Zoo Wildlife Alliance
Hendrix	Julie	Natural Resources Specialist, China Lake	Department of Defense (DOD)
Henen	Brian	Ecologist, MCAGCC	DOD
Higgins	Damian	Research Manager	USGS
Holcomb	Kerry	Desert Tortoise Recovery Office	USFWS

Holcomb	Kristi	Environmental Scientist III	Nevada Department of Transportation
Housman	Dave	National Training Center, Fort Irwin	DOD
Ihnken	Matt		NextEra
Jenkins	Kimberley	Principal Environmental Specialist	Clark County
Jones	Tom	Amphibians and Reptiles Program Manager	Arizona Game and Fish Department
Jordan	Eric	Director of Tribal Programs	Twenty-Nine Palms Band of Mission Indians
Knowles	Glen	Field Supervisor, Southern Nevada Fish and Wildlife Office	USFWS
Kowalski	Kent	Palm Springs Fish and Wildlife Office	USFWS
Lacy	Darrell	Executive Director	QuadState Local Governments Authority
Lacy	Starla		NV Energy
Lalumiere	Kristen	Palm Springs Fish and Wildlife Office	USFWS
Lamb	Bill	Acting Executive Director	QuadState Local Governments Authority
LaRue	Ed	Board of Directors	Desert Tortoise Council
Massar	Mark	California - Palm Springs Field Office	BLM
Mauney	Harry	Arizona - Colorado River District Office	BLM
McLuckie	Ann	St. George Field Office	Utah Division of Wildlife Resources
Merrick	Melissa	Associate Director, Recovery Ecology	San Diego Zoo Wildlife Alliance
Mitchell	Corey	Desert Tortoise Monitoring Coordinator	USFWS

Mortimer	Sarah	Executive Director	Tortoise Group
Murveit	Anna	Facilitator	Southwest Decision Resources
Myer-Sheilds	Elizabeth	Deputy State Director for Resources for BLM-California	BLM
Nguyen	My-linh	Chief, Environmental Division	Nevada Department of Transportation
Ono	Mark	State Director, Nevada	APHIS
Pay	Nicholas	Nevada - Pahrump Field Manager	BLM
Pringle	Janyne	Nevada - Las Vegas Field Office	BLM
Ransel	Beth	Southern Nevada District	BLM
Rodriguez	Magdalena		California Department of Fish and Wildlife
Roe	Aaron	Utah	BLM
Rognan	Cameron	Washington Co. HCP Administrator	Washington County
Romin	Laura	National Threatened and Endangered Species Program Lead (Acting)	BLM
Saiz	Justin	California - Needles Field Office	BLM
Sanzenbacher	Peter	Palm Springs Office	Fish and Wildlife Service
Sappington	Mark	LMNRA Natural Resources Program Manager	NPS
Senn	Mike	Assistant Regional Director, Region 8	USFWS
Shepherd	Tiffany	Arizona Wildlife Program Lead and T&E Lead (non-aquatic)	BLM
Shepherd	Alan	Nevada Deputy State Director (Acting)	BLM
Souza	Paul	Regional Director, Region 8	USFWS

Spotts	Richard		
Todd	Brian		U.C. Davis
Utz	Chad	Government and External Affairs, National Training Center - Fort Irwin	DOD
Vamstad	Michael	Joshua Tree National Park	NPS
Vance	Julie		California Department of Fish & Wildlife
Weekley	George	Field Supervisor	Utah Ecological Services Office
Williams	Susan	NAWCWD, China Lake	DOD
Wilson	Kevin	Aquatic Ecologist, Death Valley National Park	NPS
Windsor	Becky	Southern Nevada Fish & Wildlife Office	USFWS
Woulfe	Mary Beth		USFWS
Young	Jeff	Arizona - Grand Canyon Parashant National Monument	BLM
Young	Chris	Acting Chief, Environmental Services	Nevada Department of Transportation