

# Solar Regional Mitigation Strategy for the Afton Solar Energy Zone

Public Workshop  
New Mexico Farm and Ranch Heritage Museum  
September 7, 2017





## Objectives:

- Review SRMS progress to date.
- Present candidate site locations and actions for consideration.
- Provide an open forum for discussion.

# Review of Solar Regional Mitigation Strategy Progress to Date

Presented by:

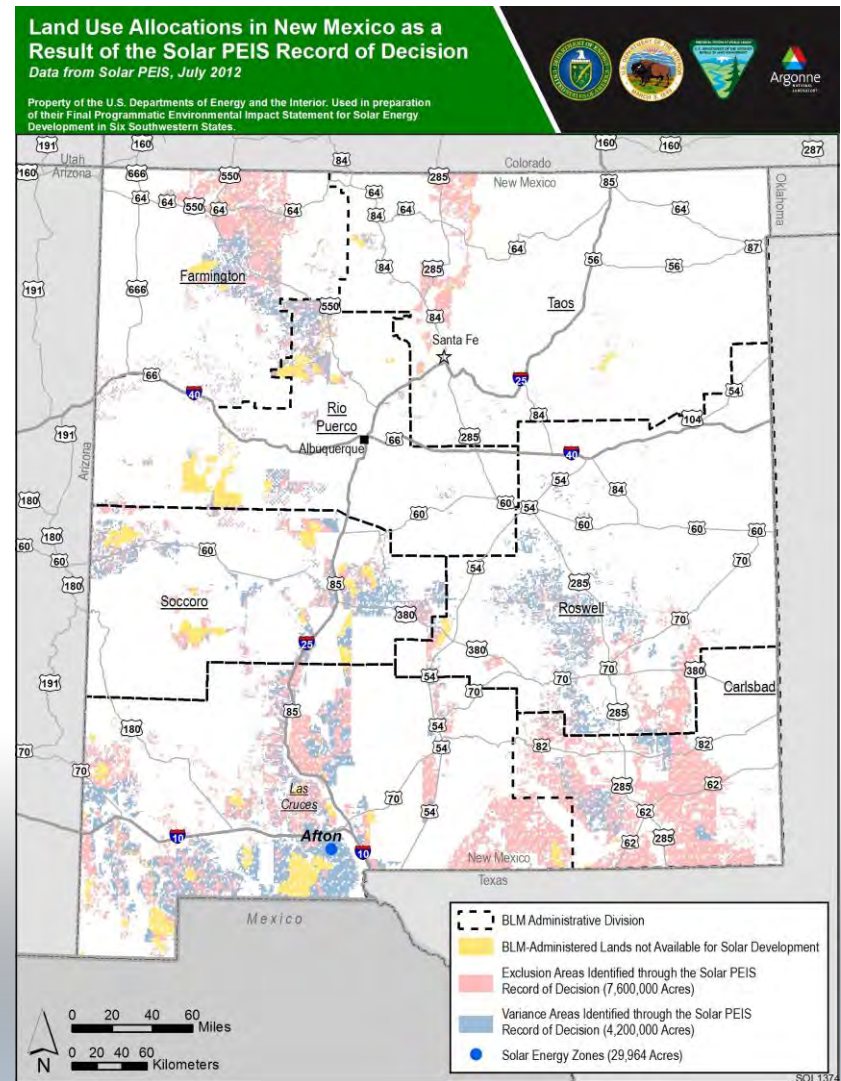
Lee Walston, Argonne National Laboratory  
Afton Solar Regional Mitigation Strategy Workshop  
Las Cruces, NM  
September 7, 2017



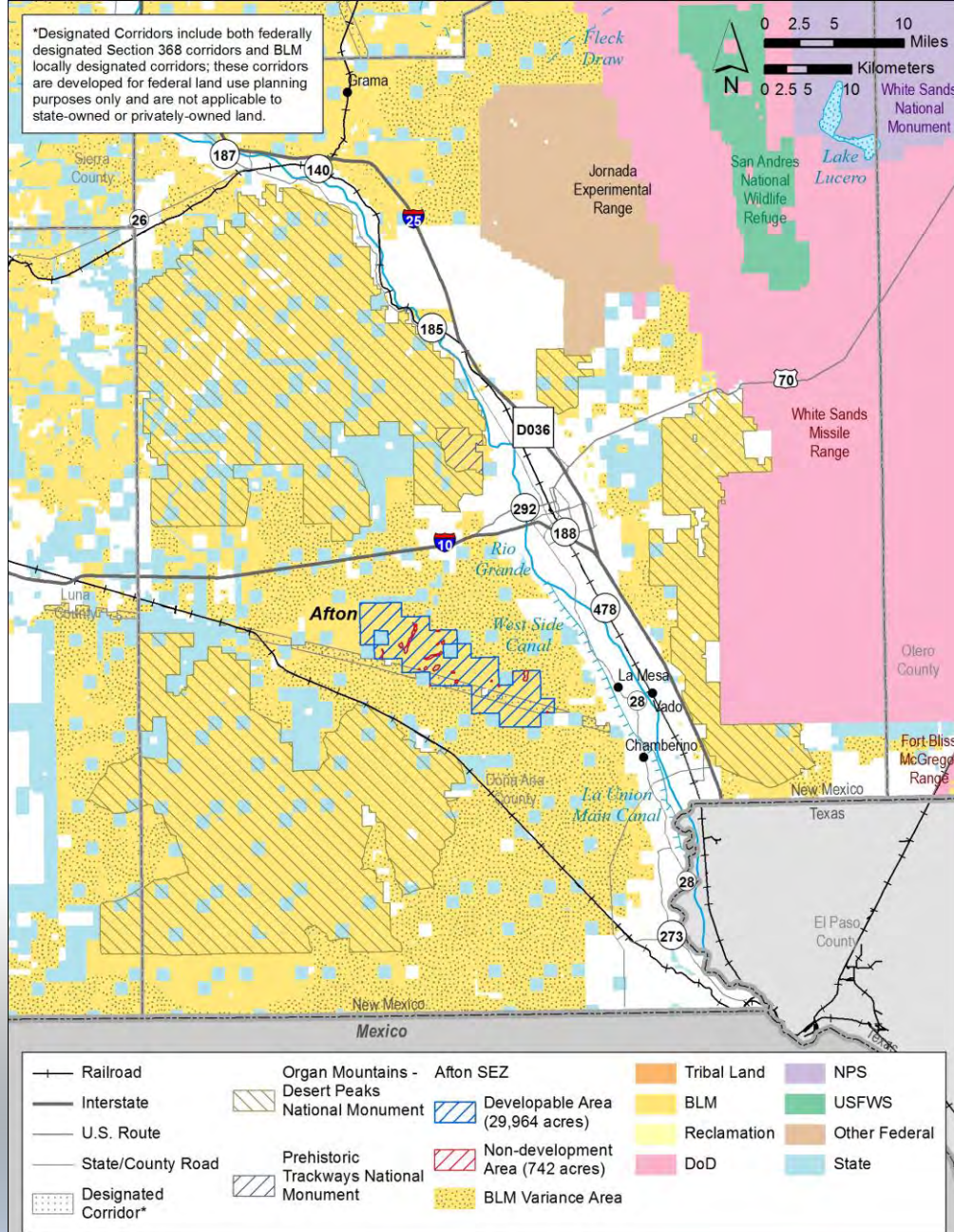
# Background: BLM's Solar Energy Program

For BLM NM Public Lands the Solar PEIS and ROD (2012) established:

- **4.2 M acres of solar variance lands**
  - ✓ **1.6 M** acres of variance lands within the Las Cruces District Office
- **One SEZ totaling 29,964 acres developable (Afton SEZ)**
- **Programmatic required design features (aka onsite mitigation)**



\*Designated Corridors include both federally designated Section 368 corridors and BLM locally designated corridors; these corridors are developed for federal land use planning purposes only and are not applicable to state-owned or privately-owned land.



## Afton SEZ and Surrounding Areas



# Examples of Solar Project Types and Scale

## Desert Sunlight Solar Farm (PV)

- 550 MWs Project on 4,165 acres of Public Land
- 6.5 Square Miles of Single Land Use



# Examples of Solar Project Types and Scale



# Purpose of the Afton SRMS

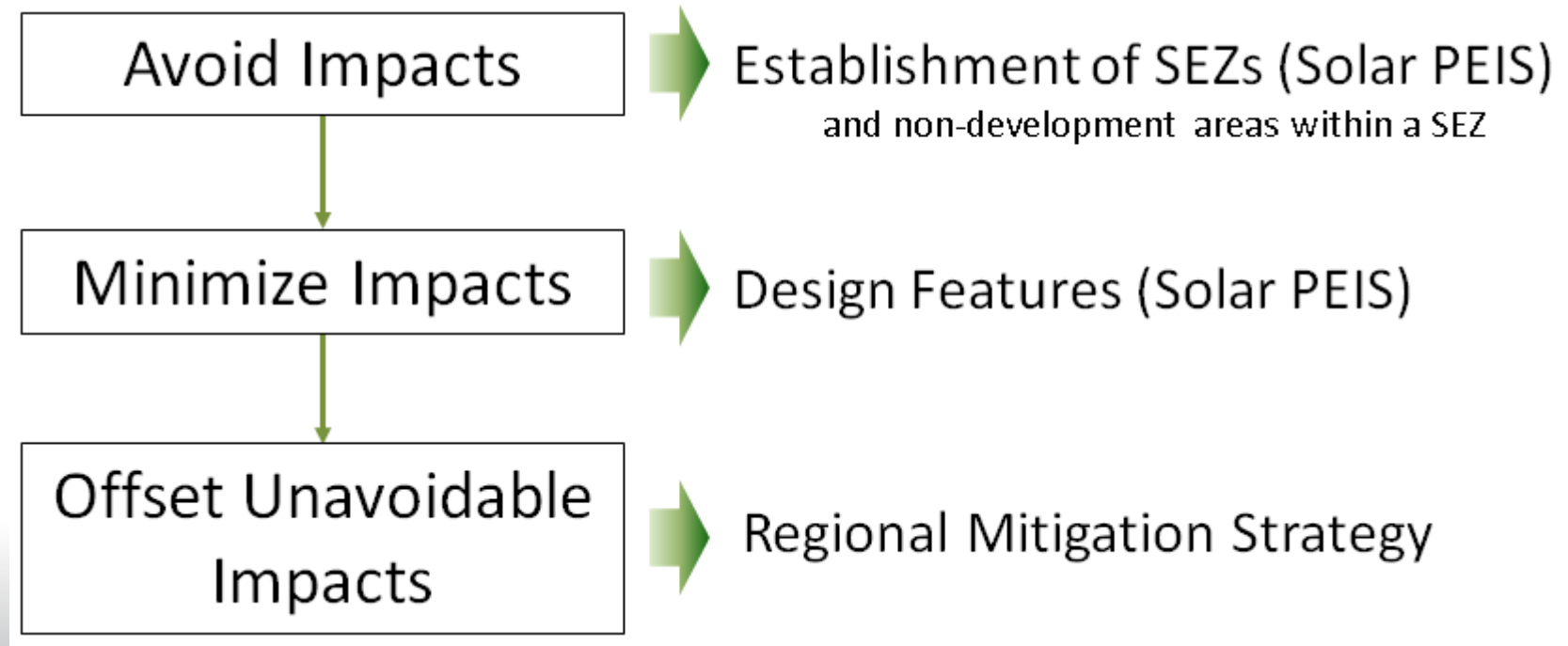
- **Identify** residual impacts of solar development in the SEZs.
- **Identify** which residual impacts warrant compensatory mitigation.
  - Based on evaluation of regional resource status and trends.
- **Identify** regional goals/objectives and mitigation desired outcomes.
- **Recommend** mitigation sites, actions, and outcomes that would work to achieve mitigation desired outcomes.
- **Recommend** a compensatory mitigation fee structure and basis for the fee (e.g., acquisition, preservation, and/or restoration); recommended adjustments, administration, monitoring, and other fee components.
- **Recommend** monitoring and adaptive management approaches to ensure actions achieve desired results.



# Purpose of the Afton SRMS (Continued)

- Regional mitigation strategy is NOT a binding decision document.
- It is a RECOMMENDATION that will inform future project-specific NEPA analysis.
- To the extent possible, impacts will be AVOIDED or MINIMIZED ONSITE.

# Mitigation Hierarchy in BLM's Solar Program





# Afton SRMS Process – Schedule



# Stakeholder Comments

- Comments received in 2016:
  - Ranching community
  - New Mexico Department of Agriculture
  - The Wilderness Society
- Summary of major comments:
  - Impacts to livestock grazing, environmental justice, socioeconomics
  - LWC inventory
  - Data sharing



# SRMS Activity Since the September 2016 Workshop

- Edits to summary tables to clarify impacts and BLM's rationale for determining whether impacts warrant mitigation.
- Focus group discussions with the ranching community
- Visual resources: SEZ and Visually Sensitive Area (VSA) Analyses
- **Regional compensatory mitigation may be warranted for the following resources: Vegetation, Special Designations, and Visual Resources**

# SRMS Activity Since the September Workshop, cont'd

- Initiated IDT discussions on types of mitigation actions and fee calculation methodology
- Developed screening tables to evaluate candidate mitigation sites/actions
- Prepared draft introductory text for the SRMS report
- Prepared a public GIS data package, posted to website, and stakeholders notified

**Afton SRMS Project Website:**

<http://blmsolar.anl.gov/sez/nm/regional-mitigation/>

Documents for stakeholder review are available below:

-  [Impacts Summary Table \(Draft\)](#) (585 KB)
-  [Impacts that May Warrant Mitigation \(Draft\)](#) (260 KB)
-  [Goals and Objectives Crosswalk \(Draft\)](#) (172 KB)
-  [Powerpoint Slides from the Webinar](#) (1.3 MB)
-  [Questions to Consider When Commenting](#) (64 KB)
-  [Geospatial Data Considered for the Afton SRMS](#) (66.5 MB)



# SRMS Activity Since the September Workshop, cont'd

## Summary Tables

### 1. Summary Impact Table

Uses the Solar PEIS and additional information to determine whether residual adverse impacts are likely to occur to each resource (assumes on-site avoidance and minimization measures).

### 2. Impacts That May Warrant Regional Compensatory Mitigation

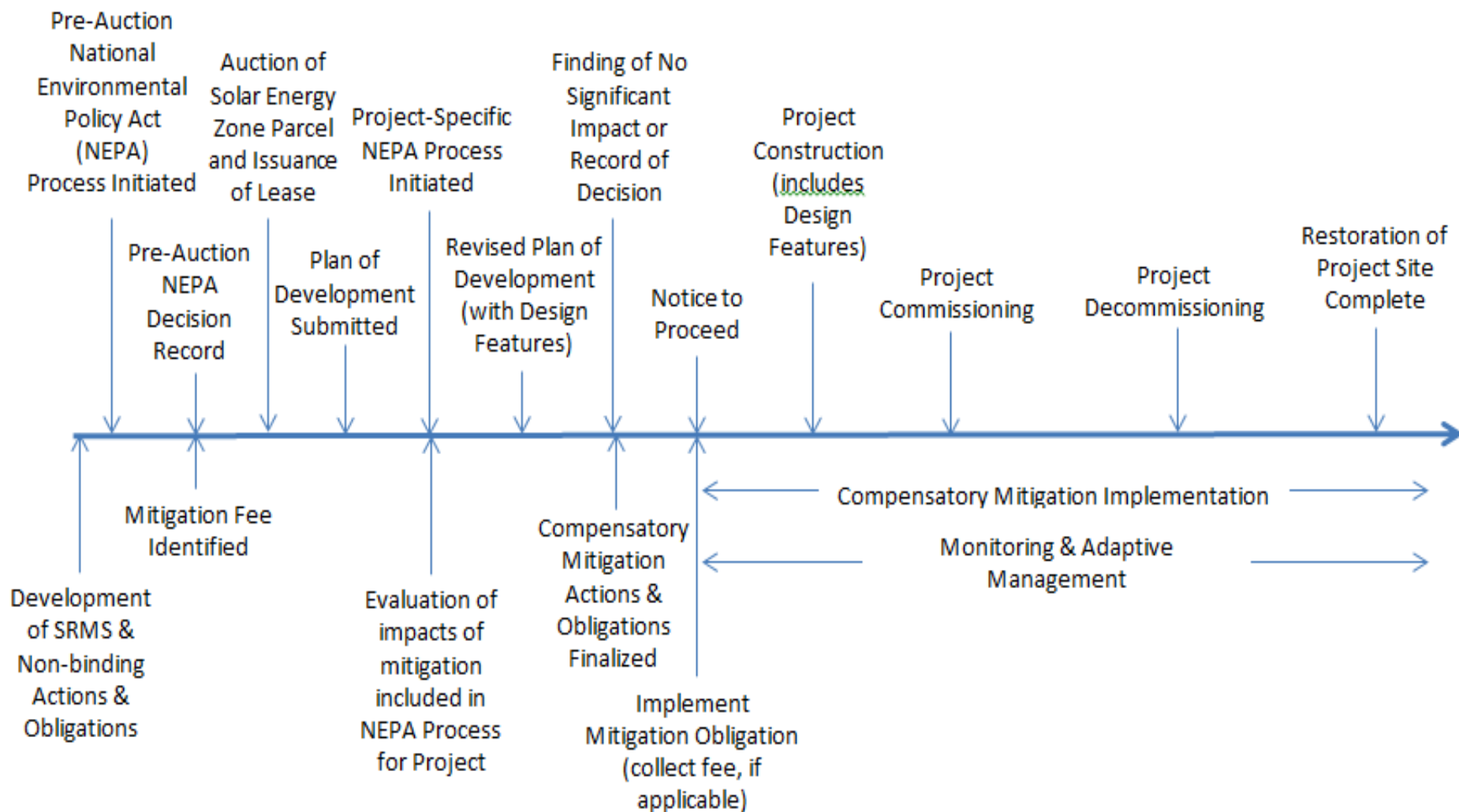
For those resources that may have residual adverse impacts, determine whether regional compensatory mitigation is warranted.

### 3. Crosswalk between Regional Goals/Objectives and Desired Mitigation Outcomes

For those resources that may warrant compensatory mitigation, determine mitigation desired outcomes that are consistent with regional goals (e.g., RMP).

# Project Implementation Timeline

(Above Blue Line)



## Compensatory Mitigation Implementation Timeline

(Below Blue Line)

# Questions?



# Introduction to Candidate Site Criteria

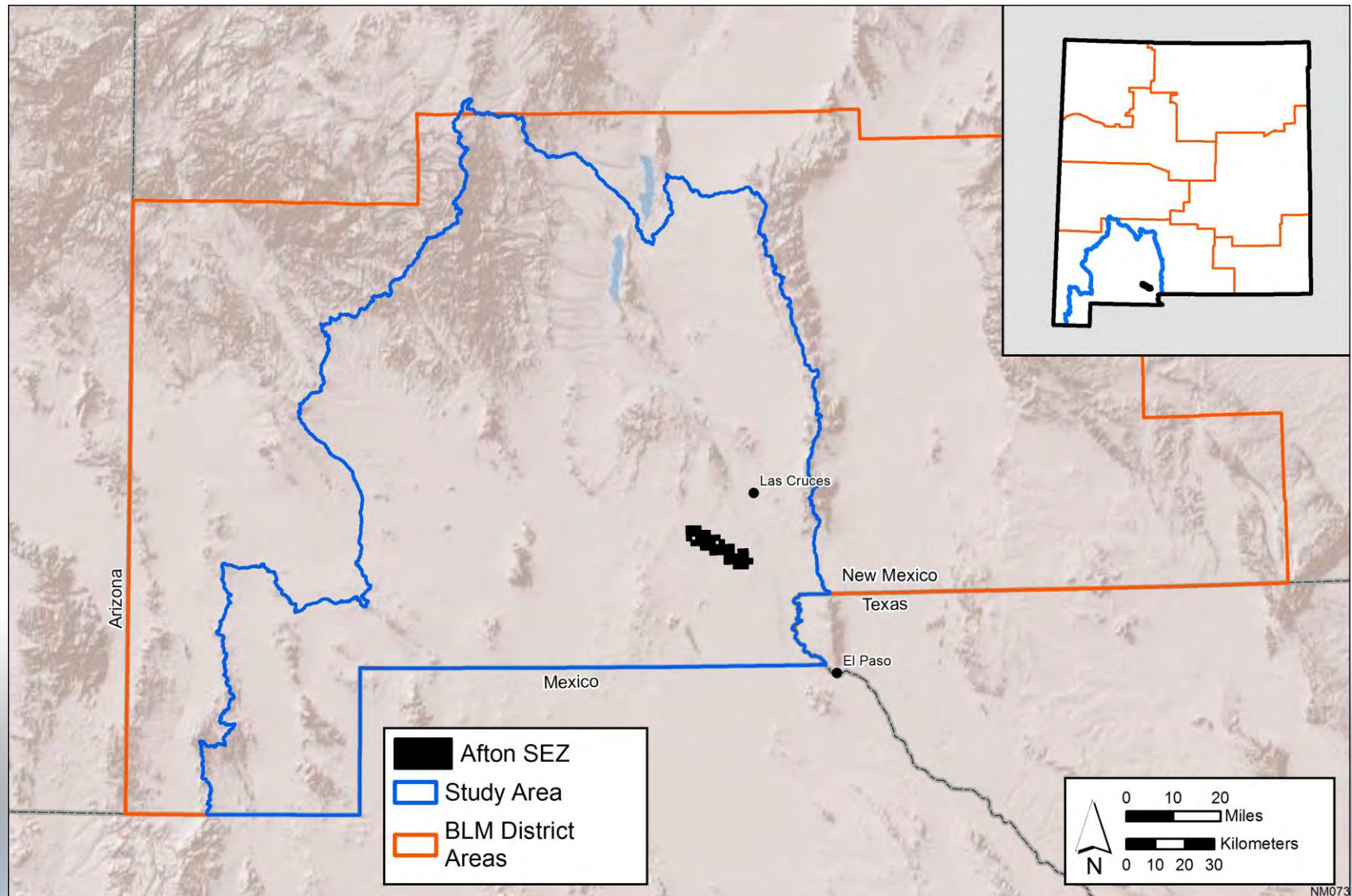
Presented by:

Heidi Hartmann, Argonne National Laboratory  
Afton Solar Regional Mitigation Strategy Workshop  
Las Cruces, NM  
September 7, 2017

# Evaluating Candidate Sites for Implementing Mitigation Actions

- Candidate Site Requirements:
  - Appropriately located (within watershed of SEZ).
  - Meet criteria to support attainment of regional mitigation goals and objectives.
- Screen and evaluate candidate sites using the *screening table template*.
- Supports systematic and objective comparison of mitigation sites/actions, stakeholder communication, and informing future BLM decisions.

# SRMS REGION: Rio Grande-Mimbres HUC4 Watershed in NM



# How Stakeholders Will Help Identify Candidate Regional Mitigation Locations and Actions

- Stakeholders were asked to provide candidate mitigation locations and actions (including GIS data and rationale).
- BLM IDT is also proposing locations and actions.
- Screening of mitigation locations and actions is informed by regional goals and objectives.
- Locations and actions should mitigate for residual impacts warranting mitigation and address regional goals and objectives.
- Evaluating mitigation locations and actions will be an iterative process.



# Candidate Site Screening Table:

- Supports systematic comparison of proposals;
- Can support identification of several locations and/or actions and corresponding objectives.

# Evaluating Candidate Mitigation Sites

- Site Characteristics
- Importance
- Feasibility
- Effectiveness
- Timeliness
- Risk
- Durability
- Additionality
- Additional Considerations

# Screening Table Templates:

	Stakeholder Candidate Mitigation Site/Action #1	Stakeholder Candidate Mitigation Site/Action #2	Stakeholder Candidate Mitigation Site/Action #3
<b>SITE CHARACTERISTICS AND GENERAL RESOURCE INFORMATION</b>			
Contiguous area of candidate mitigation site (acres, also include township range and section if available); please provide GIS files if possible			
Acres on BLM-administered land			
Private acres			
Other Public Management (State, County, Tribal, other federal)			
Does the area currently have a special designation? If so, please provide the name of the designation (i.e., ACEC, WSA, etc.), and what the protection is for (e.g., cultural, biological, scenic resources). If WSA, briefly describe the wilderness characteristics.			
Sources of data for the candidate mitigation site/action(s)			
Description of Mitigation Site/Action			
What are the proposed component activities associated with this mitigation site/action? (e.g., restoration/ enhancement, acquisition, preservation, etc.)			

	Stakeholder Candidate Mitigation Site/Action #1	Stakeholder Candidate Mitigation Site/Action #2	Stakeholder Candidate Mitigation Site/Action #3
For Mitigation Criteria Areas 1 through 8 below, the BLM will use information provided by stakeholders as well as BLM resource specialist knowledge of the mitigation sites and/or actions to provide subtotal and overall scores.			
<b>1. IMPORTANCE:</b>			
<b>1a. Degree of support from tribal governments, other tribal entities, local communities, federal, state, and local governments, subject matter experts, and the public at large.</b> <i>Rate as high, moderate, or low and provide supporting information if possible.</i>			
<b>1b. If site is located on BLM-administered land, is proposed mitigation consistent with the Resource Management Plan? Please explain.</b> <i>Yes if one or more Plan goals are addressed; maybe if no Plan goals are addressed; No if use is inconsistent with Plan goals.  Enter N/A if not applicable (i.e., not on BLM land).</i>			
<b>1c. Site and its proposed actions meet local, State, and/or other Federal regional conservation planning goals and objectives?</b> <i>Yes if 1 or more Plans goal are addressed; maybe if no Plan goals are addressed; No if use is inconsistent with Plan goals.  Enter N/A if not applicable (i.e., not on BLM land).</i>			
<b>Subtotal Importance Score (range 0 to 5):</b> <i>Based on input to criteria 1a. to 1c., score of 0 to 5 will be assigned, where 5 indicates that the nominated site/action is highly important and 0 indicates very low importance based on the degree of support from tribal governments; other tribal entities; local communities; Federal, State, and local governments; subject matter experts; and the public at large.</i>			



	Stakeholder Candidate Mitigation Site/Action #1	Stakeholder Candidate Mitigation Site/Action #2	Stakeholder Candidate Mitigation Site/Action #3
<b>2. FEASIBILITY</b>			
<b>2a. What level of documentation is available to demonstrate feasibility of mitigation action? (i.e., Is there documentation to show that this type of action has been used previously?)</b> <i>Rate as little to no documentation, some documentation, or well-documented - list documents and provide with submission if possible.</i>			
<b>2b. Based on action required (e.g., restoration, BLM land management action, land acquisition, Congressional action), how difficult will implementation be?</b> <i>Rate as highly difficult, moderately difficult, or relatively easy, and provide rationale.</i>			
<b>2c. Cost estimate. (2017 \$)</b>			
<b>Subtotal Feasibility Score (range 0 to 5):</b> <i>Based on input to criteria 2a. to 2c. assessing technical, administrative, and political feasibility, score of 0 to 5 will be assigned, where 5 indicates that the nominated site/action is highly feasible technically, administratively, and politically. 2-4 points for moderate technical, administrative, and/or political feasibility. 0-1 indicates very low feasibility.</i>			
<b>3. EFFECTIVENESS</b>			
<b>3a. How effective will the mitigation be in the context of achieving regional compensatory mitigation goals/objectives for conserving/restoring resource impacts?</b> <i>Rate as high, moderate, or low effectiveness, and provide rationale.</i>			
<b>3b. To what degree does this action mitigate for all or most identified residual impacts to special designations that warrant compensatory mitigation?</b>			
<b>3c. Is the candidate site in the same geographic region as the SEZ?</b> <i>Yes or No. Also, what is the approximate distance from the SEZ?</i>			
<b>Subtotal Effectiveness Score (range 0 to 5):</b> <i>Based on input to criteria 3a. to 3c., score of 0 to 5 will be assigned, 5 points for actions/locations that fully mitigate all of those unavoidable impacts that warrant mitigation; 2-4 points for actions/locations that fully or partially mitigate some of the unavoidable impacts that warrant mitigation; and 0-1 point for partially mitigating one of the unavoidable impacts that warrants mitigation.</i>			

	Stakeholder Candidate Mitigation Site/Action #1	Stakeholder Candidate Mitigation Site/Action #2	Stakeholder Candidate Mitigation Site/Action #3
<b>4. TIMELINESS</b>			
<b>4a. Timeframe needed to establish site as mitigation location. (estimated years)</b>			
<b>4b. Timeframe for achieving mitigation goals and objectives from start of mitigation implementation. (estimated years)</b>			
<b>Subtotal Timeliness Score (range 0 to 3):</b> <i>Based on input to criteria 4a. and 4b., score of 0 to 3 will be assigned, 3 points for projects that are expected to deliver full benefits immediately; 2 points for projects that are expected to deliver benefits that are not immediate but within a reasonable amount of time after implementation; and 0-1 point for projects that will deliver benefits with a significant delay after implementation.</i>			
<b>5. RISK</b>			
<b>5a. List the constraints or threats present at the site or in surrounding areas that could jeopardize long-term success of the mitigation action(s) (e.g., presence of prior land use designations such as corridors, mining rights, oil and gas leases, grazing, OHV trails, etc.)</b>			
<b>5b. To what extent will surrounding land uses impact mitigation success (e.g., proximity to expanding urban areas, pressures on region for recreational land use, excessive groundwater withdrawal and drawdown intactness that could affect resources on the mitigation site)?</b> <i>Note if surrounding land uses are similar to or compatible with mitigation actions, surrounding land uses are incompatible with mitigation actions or present significant pressure for use of the site for incompatible uses, or if surrounding land uses effects on mitigation actions are unknown.</i>			
<b>5c. Are there documented results of similar mitigation actions that have been successful? List documents and provide with submission if possible.</b>			
<b>Subtotal Risk Score (range 0 to 5):</b> <i>Based on input to criteria 5a. to 5c., score of 0 to 5 will be assigned. 5 points for a high degree of certainty based on documented results of success in similar situations. 3-4 points for moderate degree of certainty based on documented results of success in similar situation. 1-2 point for moderate degree of certainty based on expert opinion. 0 points for high risk proposal.</i>			

	Stakeholder Candidate Mitigation Site/Action #1	Stakeholder Candidate Mitigation Site/Action #2	Stakeholder Candidate Mitigation Site/Action #3
<b>6. DURABILITY</b>			
<b>6a. How durable would the mitigation be from a timeframe and management perspective?</b> <i>Rate as high, moderate, or low durability and provide rationale. Durability considerations include time (mitigation should be effective throughout the duration of project impacts), administration (restricting incompatible uses), and financial (funds available to maintain, monitor, and adaptively manage the mitigation measures).</i>			
<b>6b. Would the mitigation require maintenance to remain effective?</b> <i>(e.g., would color treating need retreatment in 10-20 years?)</i>			
<b>Subtotal Durability Score (range 0 to 5):</b> <i>Based on input to criteria 6a. and 6b., score of 0 to 5 will be assigned. 5 points for actions/locations that are a one-time investment and have a high level of certainty that they will last longer than the impacts. 2-4 points for action/locations that have moderate level of certainty that they will last longer than the impacts and/or require additional funding. 0-1 points for actions/locations that are at risk of failing to last longer than the impacts.</i>			

<b>7. ADDITIONALITY</b>			
<b>7a. For mitigation on BLM-administered lands, does mitigation consist of actions not eligible for Bureau or other sources of funding?</b> <i>Yes or no. Please explain.</i>			
<b>7b. Have previous mitigation/restoration actions been taken to mitigate impacts in this area?</b> <i>Yes or no. Please explain.</i>			
<b>Subtotal Additionality Score (range 0 to 3):</b> <i>Based on input to criteria 7a. and 7b., score of 0 to 3 will be assigned, where 5 indicates that 100% of the nominated site/action is in addition to currently funded BLM or other activities and 0 indicates that 100% of the nominated site/action is not additional.</i>			

	Stakeholder Candidate Mitigation Site/Action #1	Stakeholder Candidate Mitigation Site/Action #2	Stakeholder Candidate Mitigation Site/Action #3
<b>8. ADDITIONAL CONSIDERATIONS</b>			
8a. Indirect benefits to other resources identified to warrant compensatory mitigation (Vegetation).			
8b. Indirect benefits to other resources identified to warrant compensatory mitigation (Visual Resources).			
8c. Degree of benefit to other resources not identified to warrant compensatory mitigation.			
<b>Subtotal Additional Considerations Score (range 0 to 3):</b> <i>Based on input to criteria 8a. to 8c., score of 0 to 3 will be assigned, where 3 indicates that the nominated site/action addresses several additional considerations and 0 indicates no additional considerations.</i>			
<b>Total Site/Action Score (range 0 to 34):</b> <i>Subtotal scores will be added to get total score for each mitigation site/action, as a basis for comparison</i>			



# Questions?

# Candidate Site Recommendation Special Designations

Presented by:

Jennifer Montoya, BLM Las Cruces District Office  
Afton Solar Regional Mitigation Strategy Workshop

Las Cruces, NM  
September 7, 2017

# BLM Recommendation – Special Designations

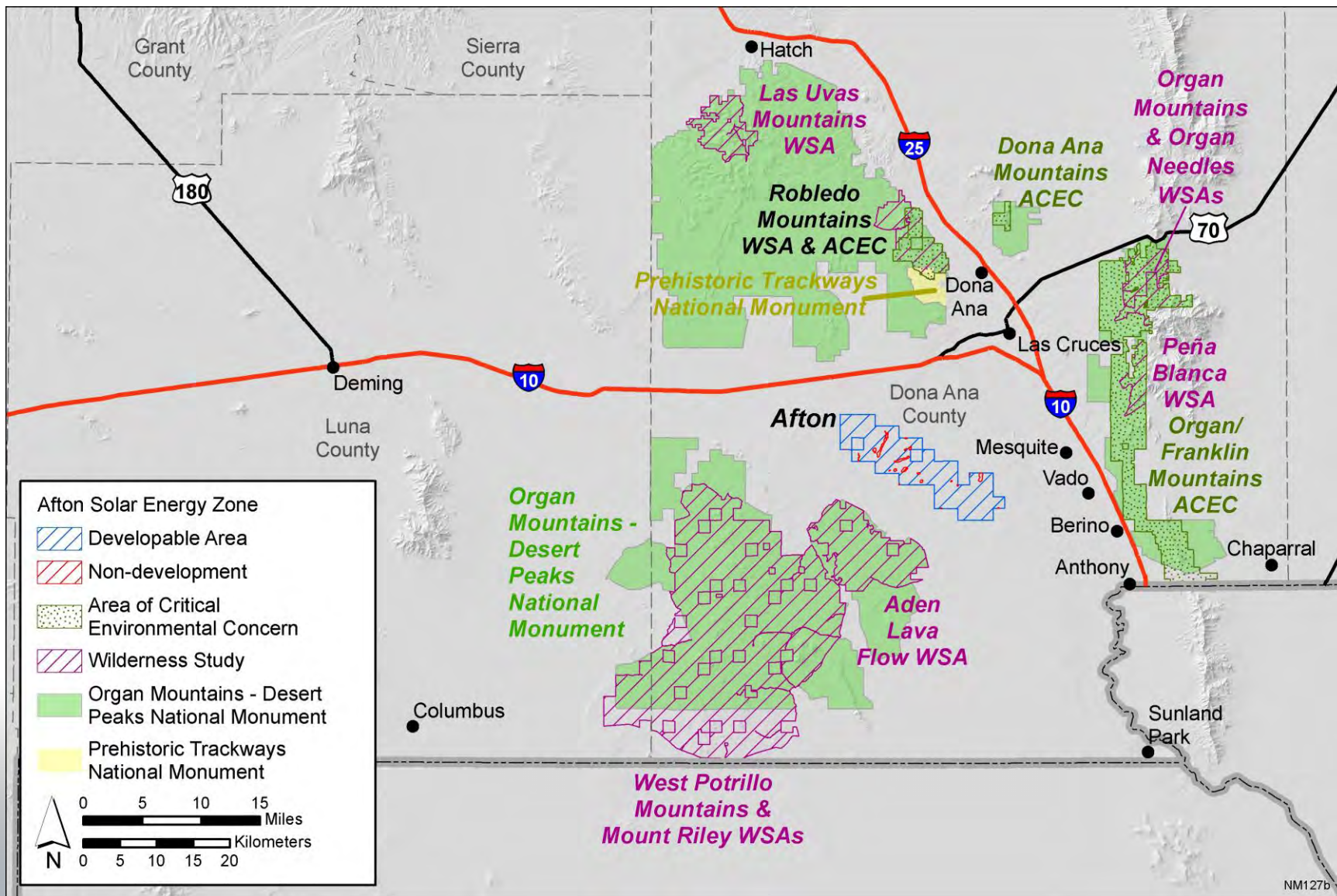
## Acquisition of Private Inholdings within the boundary of the Organ Mountains – Desert Peaks National Monument

- Approximately 10,000 acres within the National Monument.
  - These acquired lands would become part of the National Monument and have the same protection status.
  - These lands would be managed as the other monument lands around them.
  - BLM would purchase or trade only from willing sellers.

# Special Designations Goals & Objectives and Mitigation Desired Outcomes

- Goals & Objectives
  - Preserve the values for which the areas were designated such as cultural and natural resources, scenic, ecological, recreational, and historic values.
- Mitigation Desired Outcomes
  - No net loss of scenic values and wilderness characteristics in Special Designations within and including the Organ Mountains-Desert Peaks National Monument.





# Importance

- High importance
  - Consistent with the Presidential Proclamation to preserve the biological and cultural values of the region.

# Feasibility

- Moderately difficult
  - Additional NEPA would be required to acquire the lands.
  - Land transfers are extremely time consuming and staff intensive.

# Effectiveness

- Moderately Effective
  - Preserves additional biological and cultural values of the region. Increases the acreage of the monument by 2%.
  - Prioritize inholdings that enhance the objects and values.

# Timeliness

- Up to 3 years.

# Risk

- Low risk of mitigation failure upon completion of acquisition. These private inholdings to potentially be acquired are surrounded by lands already protected by the National Monument designation. Therefore, there is relatively no risk of surrounding land uses to impact mitigation success.

# Durability

- Long term. Acquired lands will be protected as part of the National Monument.

# Additionality

- Acquisition of lands within Special Designations is identified as a BLM objective in its RMPs.

## Additional Considerations

- Acquisition, restoration, and preservation of monument inholdings have the potential to address goals and objectives for visual resources, vegetation, and other ecological resources.

# Candidate Site Recommendation Vegetation

Presented by:

Patrick Alexander, BLM Las Cruces District Office  
Afton Solar Regional Mitigation Strategy Workshop

Las Cruces, NM  
September 7, 2017



# BLM Recommendation – Vegetation

## Restoration of Chihuahuan Desert Grasslands in the Region

- Potential restoration areas will be evaluated within the SEZ region.
- Restoration activities may vary from aerial herbicide treatment of mesquite or creosote, control of invasive species, to seeding and planting of native plant species.





# BLM Recommendation – Vegetation (cont'd)

Current typical vegetation on public land with restoration potential





# BLM Recommendation – Vegetation (cont'd)

**Current typical vegetation on public land with restoration potential**



# BLM Recommendation – Vegetation (cont'd)

**Possible route towards restoration of mesquite shrublands:**

- **dropseeds (especially mesa dropseed, *Sporobolus flexuosus*) can establish well, especially within shrubs, in wet years under current conditions;**
- **usually lost in dry years to grazing, competition with mesquite, drought;**
- **killing mesquite with herbicides + supplemental seeding + long-term rest from grazing may allow them to persist and spread into interspaces.**



# BLM Recommendation – Vegetation (cont'd)

**Mesa dropseed, doing well within shrubs in a wet year:**





# BLM Recommendation – Vegetation (cont'd)

**Healthy mesa dropseed grassland, sparingly grazed at Jornada:**





# BLM Recommendation – Vegetation (cont'd)

**Vegetation in OMDPNM varies; creosote shrubland could be targeted.**





# BLM Recommendation – Vegetation (cont'd)

**Lehmann's lovegrass is also a possible target, if we figure out how to kill it.**



# Importance

- Moderate importance. Similar activities have been undertaken as part of the Restore New Mexico Initiative. Grasslands on sandy soils are threatened and declining throughout southern NM.
- Restoration activities would advance vegetation RMP goals and objectives to maintain desired vegetation communities.

# Feasibility

- May range from relatively easy to moderately difficult, depending on the location and type of action (aerial treatment, seeding, or planting native plants).

# Feasibility - Cost

Mitigation Measure	Cost	Agency-Proponent	Source	Project(s)
Aerial herbicide application in New Mexico	Approximately \$25/acre	BLM	BLM LCDO	Restore New Mexico
Seeding (including purchasing, collecting, and application)	\$1,400/acre	BLM	BLM Nevada SRMS	None currently
Seeding (Average of range for aerial seeding [\$14/ac] to more comprehensive seeding [\$1,400/ac])	\$707/acre	BLM	BLM Colorado SRMS	None currently
Planting	\$9/plant	BLM	BLM Nevada SRMS	None currently
Weed Control in San Luis Valley, Colorado (Average of range of \$112 to \$600/acre)	\$356/acre	BLM, U.S. Forest Service (FS)	BLM Colorado SRMS	Various weed control projects (2014)



# Effectiveness

- Moderately Effective. This activity would aim to preserve ecological function and may also achieve mitigation objectives for visual resources if vegetation restoration is performed in areas that would improve scenic quality.
- Restoration of desert grasslands has the potential to mitigate for all residual impacts to vegetation. The identified locations should have similar ecological site characteristics and historic vegetation communities as the SEZ.

# Timeliness

- Some restoration actions may be completed to achieve mitigation goals and objectives within two to three years.

# Risk

- Current land uses such as recreation and livestock grazing may affect restoration success. Restoration locations will be chosen that have minimal risk from other land uses.

# Durability

- Moderate. Restoration actions may be durable if incompatible land uses can be controlled within and near the restoration sites.

# Additionality

- Restoration sites with no previous actions to mitigate impacts will be prioritized.

## Additional Considerations

- Restoration actions selected within the Organ Mountains – Desert Peaks National Monument have the potential to address goals and objectives for special designations.
- Vegetation restoration has the potential to improve scenic quality and work to address goals and objectives for visual resources.
- Vegetation restoration has the potential to improve habitat quality for special status species present on the SEZ and, possibly, other special status species that may not be present on the SEZ.

# Candidate Site Recommendation Visual Resources

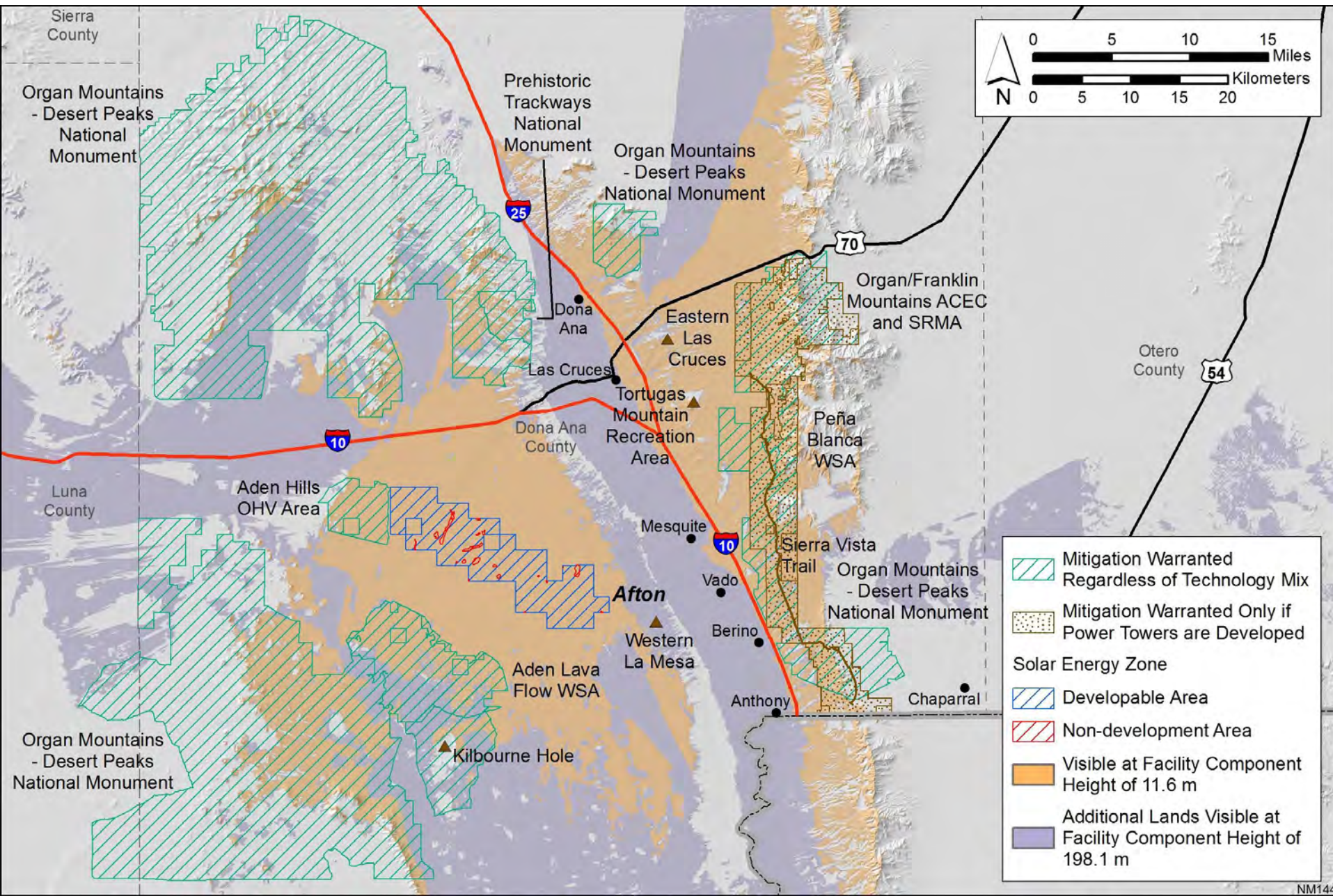
Presented by:

Bob Sullivan, Argonne National Laboratory  
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# Visually Sensitive Areas Potentially Warranting Mitigation





# Visual Goals & Objectives and Mitigation Desired Outcomes

- Goals & Objectives
  - Identify, preserve, protect, and enhance scenic values within the region to ensure that they are available for present and future generations.
  - Manage to protect scenic values. Identify areas on public land that contain important scenic quality, and manage those areas to maintain that scenic quality.
- Mitigation Desired Outcomes
  - No net loss of inventoried scenic values and scenic experience (day and night), as seen from visually sensitive areas.

# Two Types of Potential Mitigation Projects

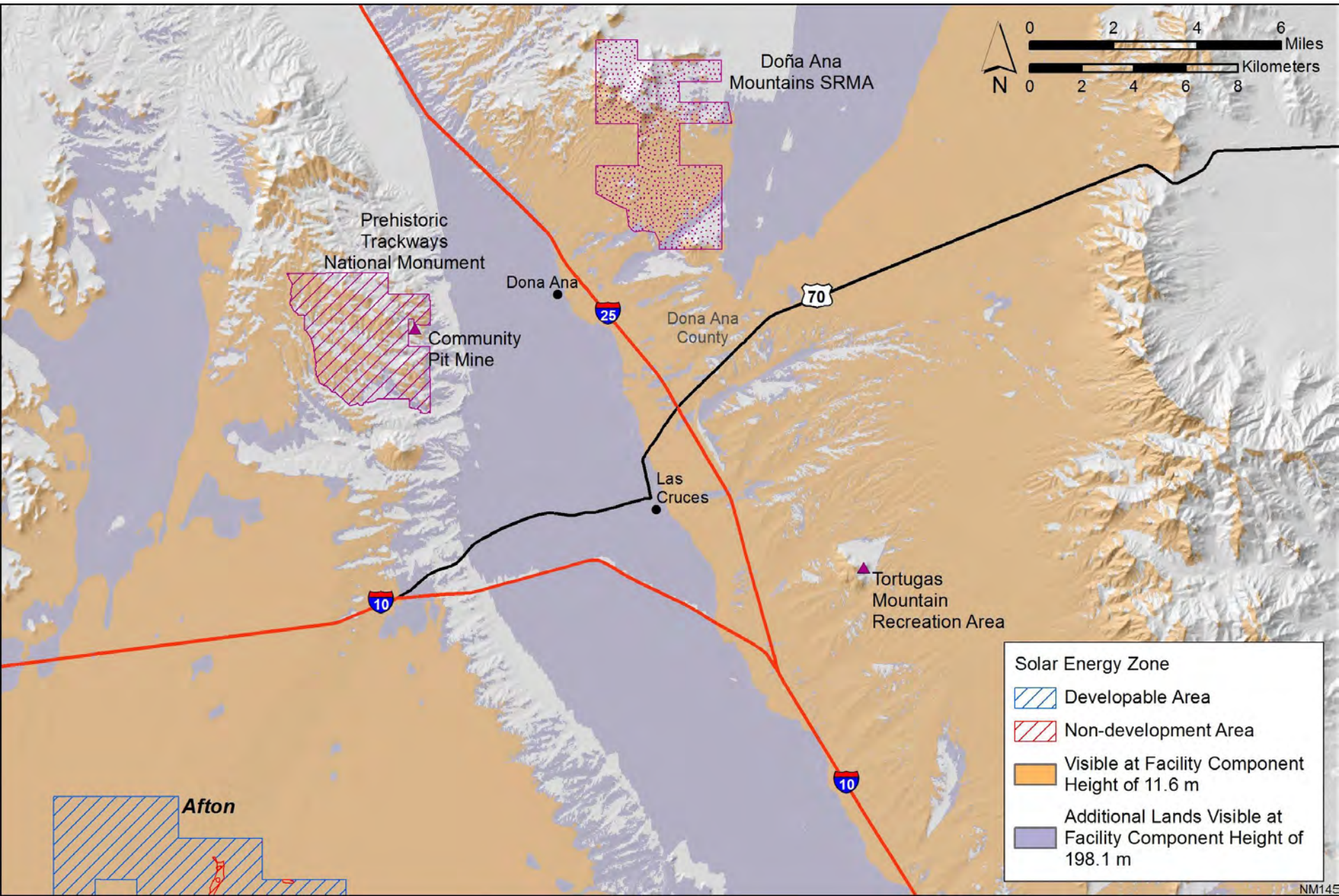
The following potential visual impact mitigation projects have been identified by BLM for the following **specific areas**:

- Restoration of unauthorized Trails in Prehistoric Trackways NM
- Restoration of unauthorized Trails in Doña Ana Mountains SRMA
- Restoration of Tortugas Mountain Recreation Area
- Community Pit Mine Reclamation

The following mitigation projects (“generic projects”) could be applied **anywhere in various WSAs and ACECs** to reduce visual impacts as long as the impact discussed in the project description is present.

- Route/Trail Closure and Rehabilitation
- Structure/Facility Removal
- Abandoned Mine Reclamation
- Dump Site Cleanup
- Structure Color Treatment

# Afton SEZ and Candidate Mitigation Project Areas



# Mitigation Screening Table for Visual Resources

	Trails in Prehistoric Trackways Resource Management Area	Doña Ana Mountains	Tortugas Mountain Recreation Area	Community Pit Mine
<b>Action</b>	Restoration, closing trails.	Restoration, closing trails.	Restoration, closing trails, structure removal, color treatment.	Reclamation, landforming, revegetation
<b>Importance</b>	Moderate	Moderate	High	High
<b>Feasibility</b>	\$20K - \$40k per mile	\$20K - \$40k per mile	Cost ?	>\$14M
<b>Effectiveness</b>	High	High	High	High
<b>Timeliness</b>	<1 year	<1 year	<1 year	Several years
<b>Risk</b>	Some potential for OHV use.	Some potential for OHV use.	Some potential for loss of restored area from heavy recreation use.	Uncontrolled casual use, noxious weeds, erosion, drought, protection of fossil resources.
<b>Durability</b>	High	High	High	High
<b>Additionality</b>	There is no BLM program or funding for this type of project.	There is no BLM program or funding for this type of project.	There is no BLM program or funding for this type of project.	In the past BLM has investigated the potential for mine reclamation.



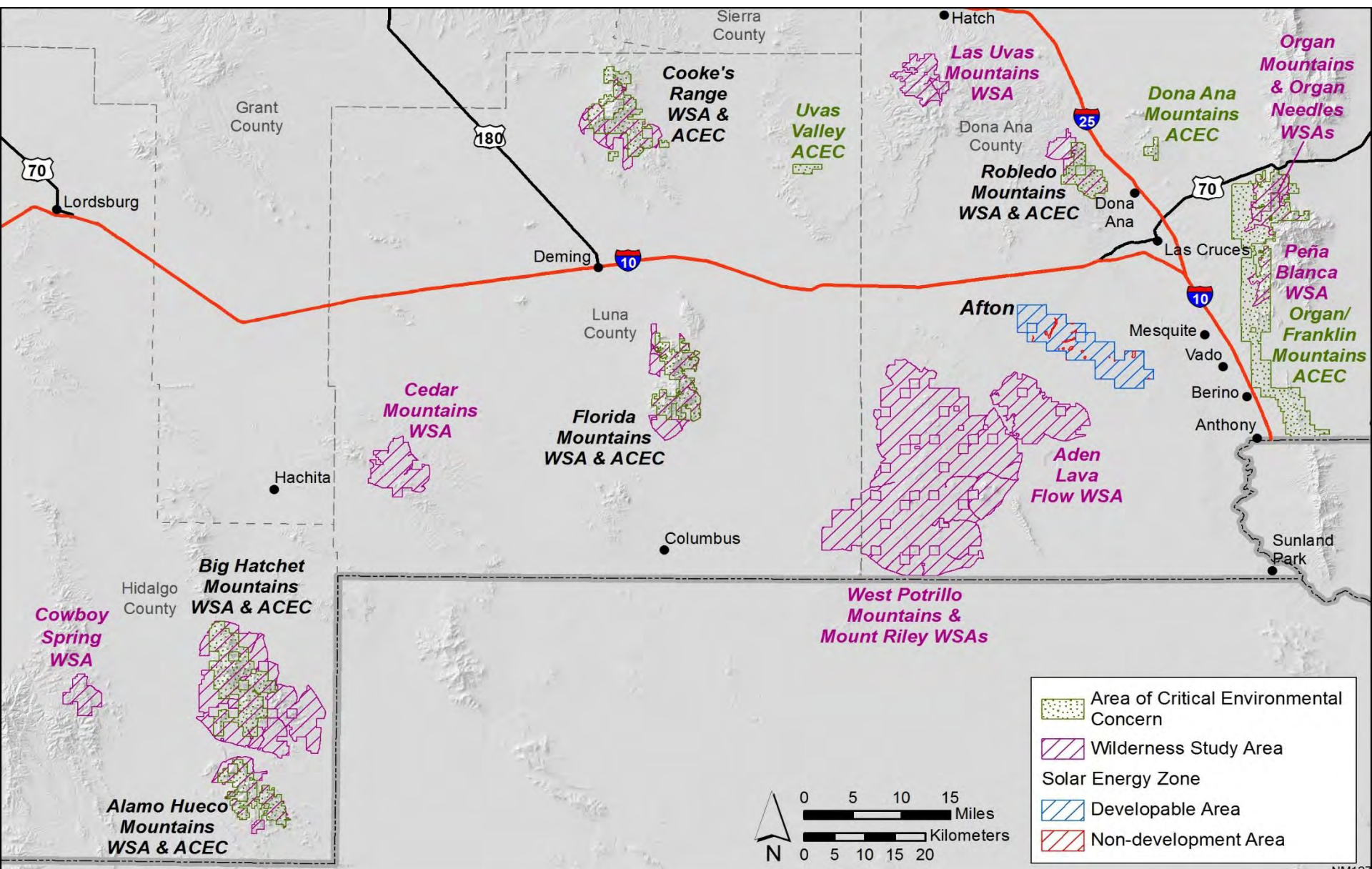
# Potential “Generic” Mitigation Action Project Descriptions

The following mitigation projects could be applied anywhere in the WSAs and ACECs to reduce visual impacts as long as the impact discussed in the project description is present.

- **Route/Trail Closure and Rehabilitation:** Close and rehabilitate unnecessary or unauthorized travel routes.
- **Structure/Facility Removal:** Remove unnecessary man-made structures - facilities that are unrelated to the preservation or enhancement of wilderness characteristics or not necessary for the management of uses allowed under the land use plan.
- **Abandoned Mine Reclamation:** Reclaim abandoned mines to as close to the natural landscape condition that existed prior to mine construction as practicable.
- **Dump Site Cleanup:** Clean existing illegal trash dump sites and enforce trash dumping compliance.
- **Structure Color Treatment:** Reduce color contrasts by painting or coating current high-contrast structures.



# Afton SEZ and Candidate Generic Mitigation Project Areas





# Community Pit Mine



# Questions?



# Stakeholder-Proposed Candidate Site Recommendations





# Proposed Mitigation Sites—New Mexico Solar Regional Mitigation Strategy

September 7, 2017

Alex Daue, The Wilderness Society

Ben Gabriel, Friends of Organ Mountains-Desert Peaks

(Proposed mitigation sites are also supported by the New Mexico Wildlife Federation  
and New Mexico Wilderness Alliance)





# What opportunities do the BLM Renewable Energy Program and Solar Regional Mitigation Strategy provide?

- Facilitate environmentally responsible renewable energy development
- Achieve better, more strategic conservation outcomes



Photo by U.S. Department of Energy



Photo by Mason Cummings/TWS

- Success requires full mitigation hierarchy: avoid (and protect), minimize, off-set through compensatory mitigation
- Dry Lake Pilot: demonstrates promise of the approach

# Site 1: Organ Mountains-Desert Peaks National Monument—Illegal Route Closure, Remediation and Reclamation in Wilderness Study Areas

- Offsets impacts to special designations, visual resources and vegetation; benefits wildlife habitat
- Consistent with RMP and BLM-identified potential mitigation actions
- Highly effective, can be implemented in a timely manner
- Strong durability and additionality



Photo by David Soules



## Site 2: Robledo Mountains Area of Critical Environmental Concern—Habitat Protection and Restoration

- Offsets impacts to vegetation; additional benefits to visual resources, special designations, terrestrial wildlife and habitat
- Consistent with RMP and BLM-identified potential mitigation actions
- Highly effective, can be implemented in a timely manner; strong durability and additionality



Photo by David Soules



## Site 3: Prehistoric Trackways National Monument— Reclamation of Quarry and Establishment of Public Access

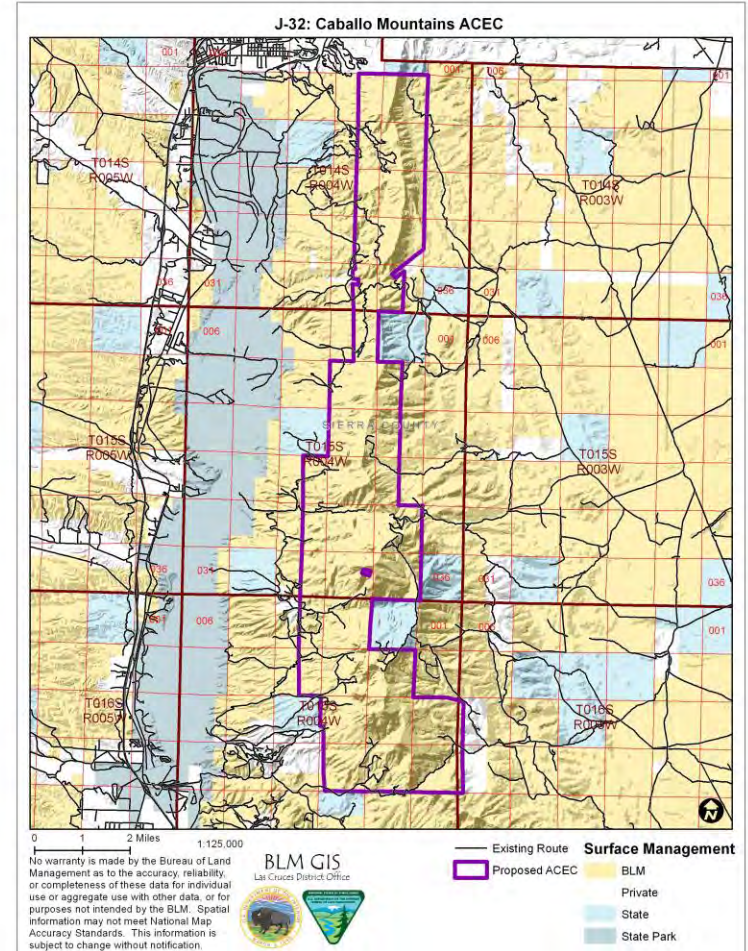
- Offsets impacts to special designations and visual resources; provides benefits to public access
- Consistent with RMP and BLM-identified potential mitigation actions
- Highly effective, can be implemented in a timely manner; strong durability and additionality



Photo by Bob Wick, BLM

# Site 4: Caballo Mountains Potential Area of Critical Environmental Concern—Designation of ACEC and investment of mitigation funds

- Offsets impacts to visual resources and special designations; additional benefits to vegetation and primitive recreation opportunities
- Consistent with RMP and BLM-identified potential mitigation actions
- Highly effective, can be implemented in a timely manner; strong durability and additionality
- Recommend management prescriptions in Alternative B of Draft RMP



Questions?



# Candidate Mitigation Sites: Recommendations for the Afton Solar Energy Zone

Beth Bardwell, Director of Conservation

Audubon New Mexico

September 7, 2017



**Audubon** NEW MEXICO



# Sky Island Grassland Assessment (2012)

[http://nmconservation.org/dl/Sky\\_Island\\_Grassland\\_Assessment\\_TNC.pdf](http://nmconservation.org/dl/Sky_Island_Grassland_Assessment_TNC.pdf)

- Grasslands associated with Sky Island Mountains geography and ecological gradients
- Grasslands comprised of large blocks of Great Plains and Chihuahuan Desert grasslands
  - Contain important floral and faunal diversity including declining natural communities and species of concern
  - Provide watershed services such as flood control and aquifer recharge
- Objective of assessment is to identify a network of priority grassland landscapes where investment will yield the greatest returns in restoring grassland health and recovery target wildlife species

# Sky Island Assessment Boundary and SRMS Study Area (Rio Grande-Mimbres HUC 4 Watershed)

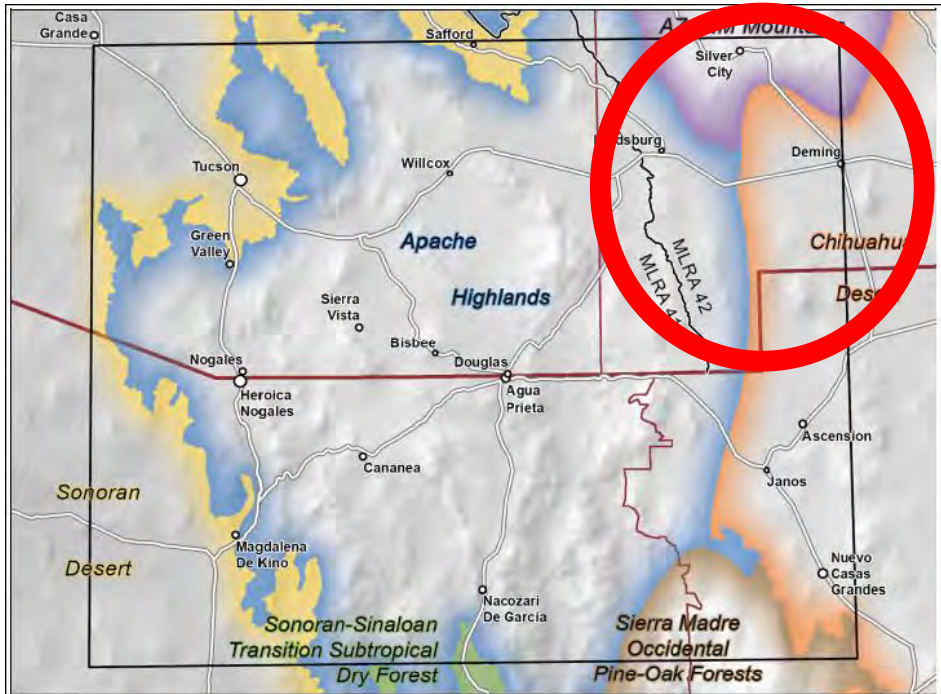


Figure 1. Locator map showing the Sky Island focal area, its component ecoregions and Major Land Resource Areas 41 and 42 in the US.

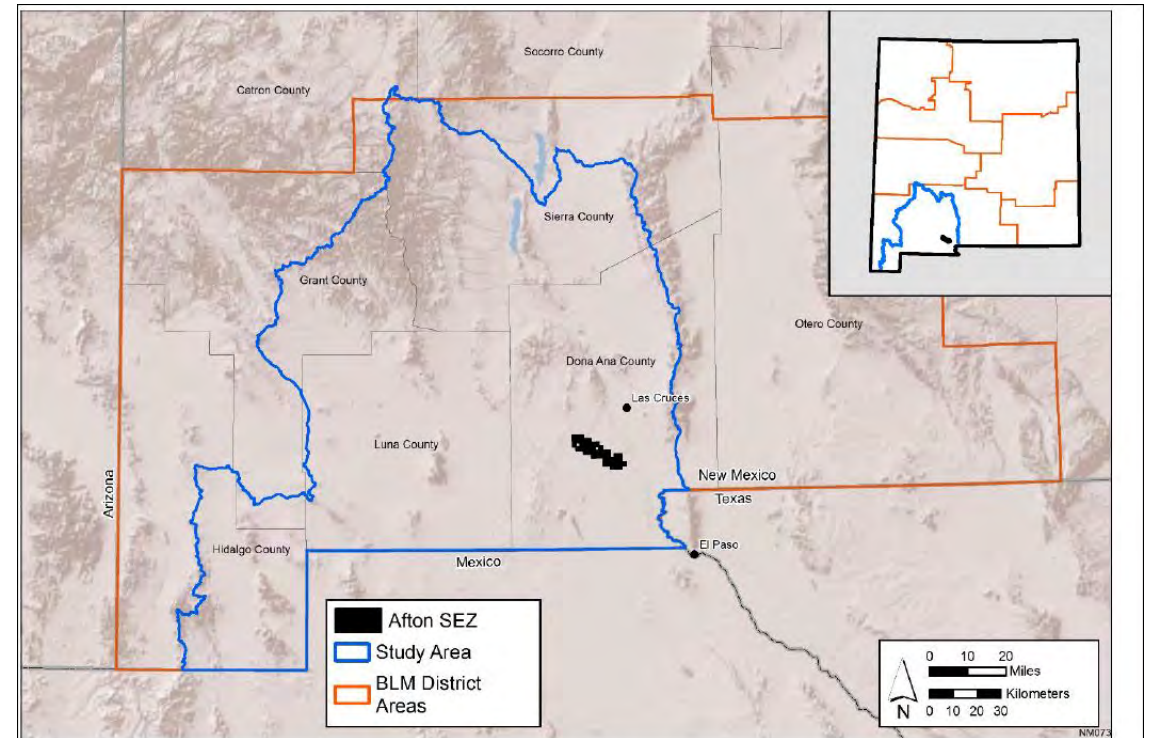


Figure 2. SRMS study area (Rio Grande-Mimbres HUC 4 Watershed, shown in blue).



# Historical vs. Current grasslands & savannas

Figures 2 and 3, *Sky Island Assessment*

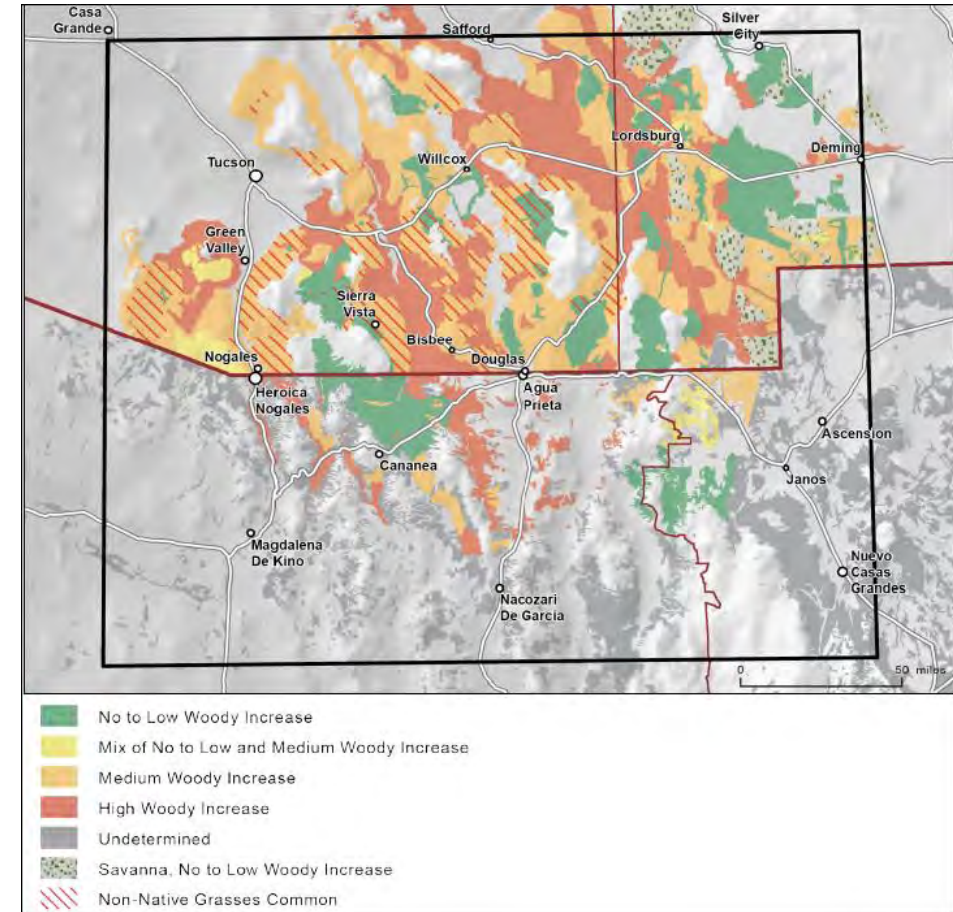
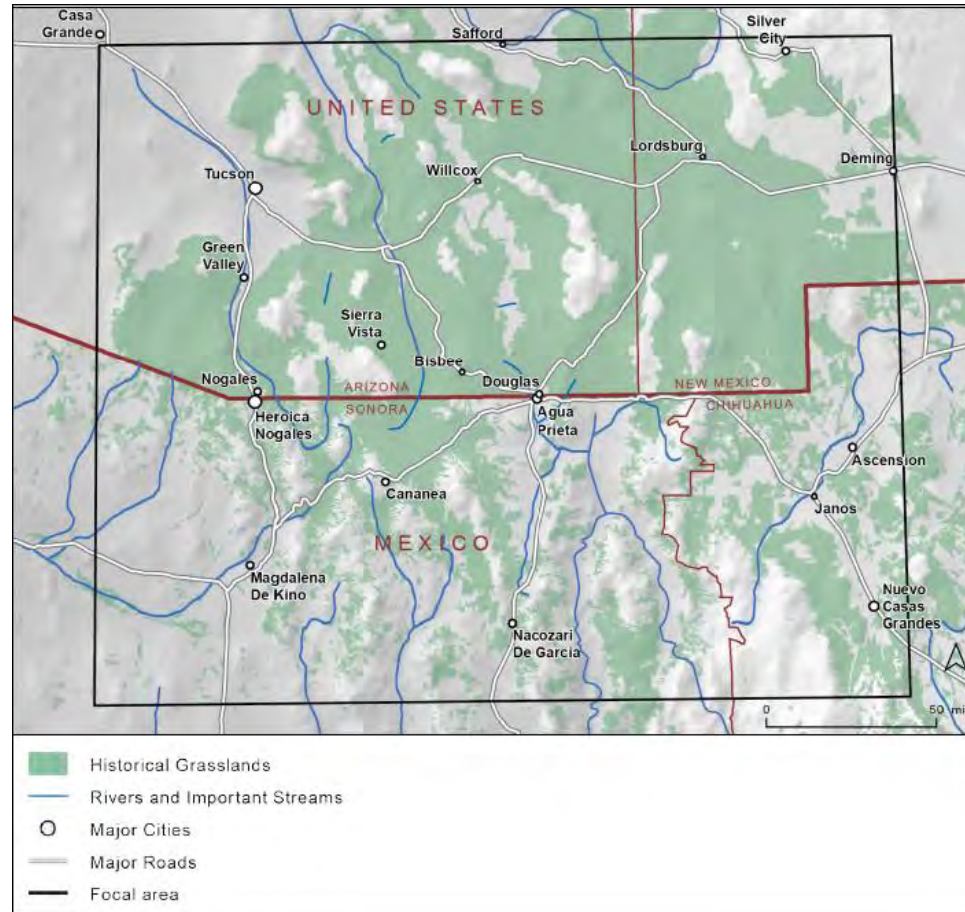
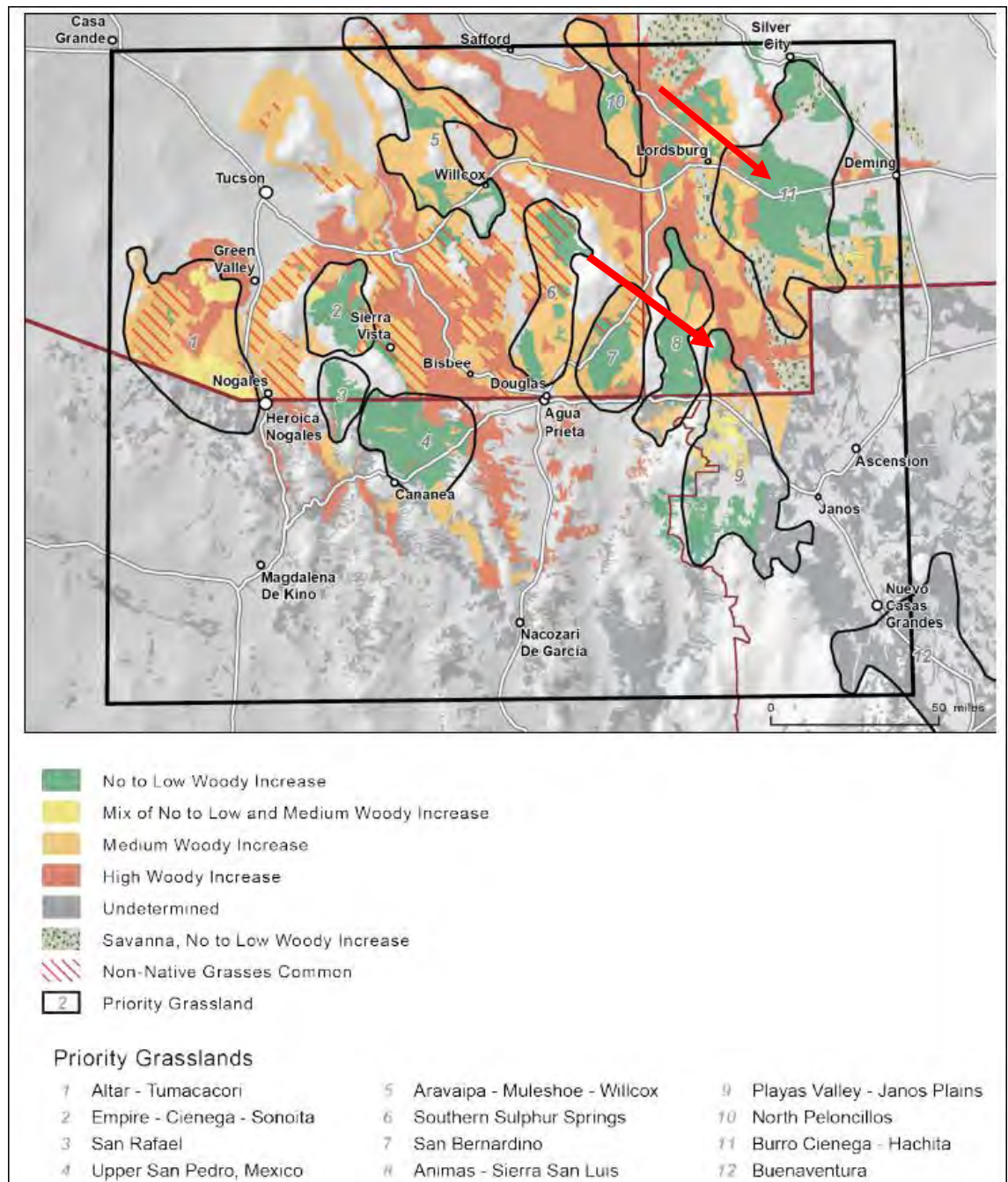


Figure 5, *Sky Island Assessment*

- All contain substantial blocks of “high-quality grassland” with no to low woody increase surrounded by restorable grasslands
- Four landscapes characterized as particularly noteworthy with over 150,000 acres of open intact grassland each
- Bringing forth two for consideration today
  - Burro Cienega-Hachita, #11
  - Playas Valley-Janos Plain, #9

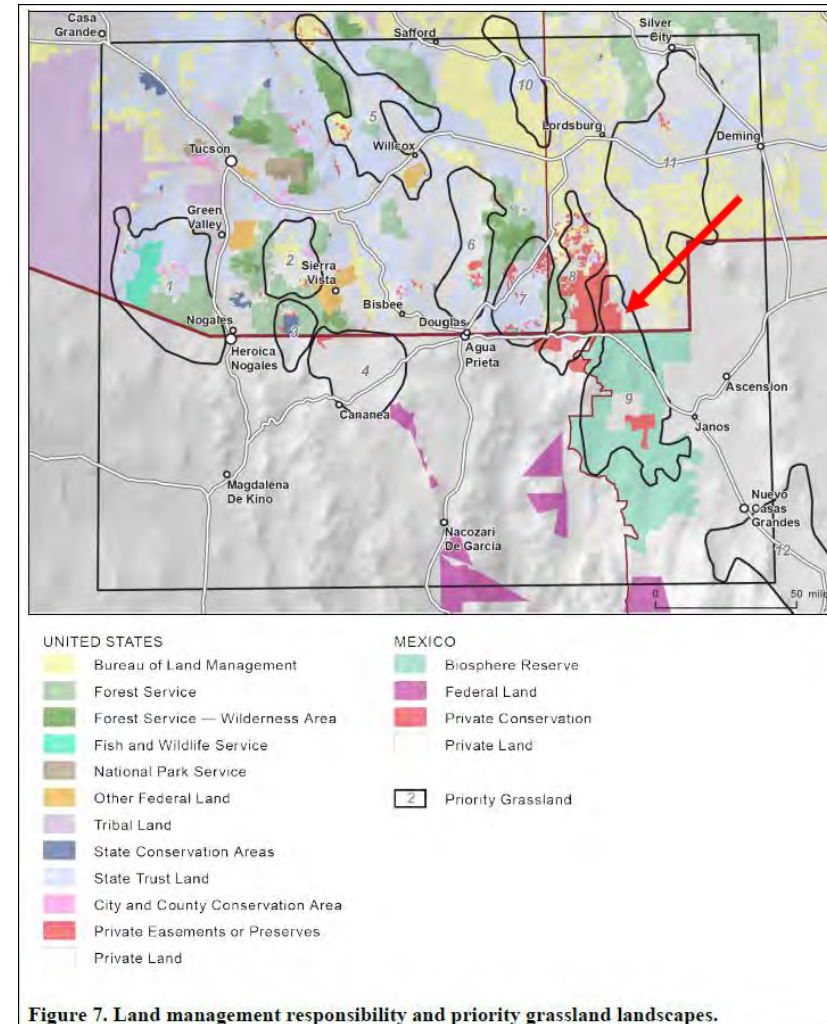


**Figure 5. Priority grassland landscapes and current condition of grasslands and savannas.**



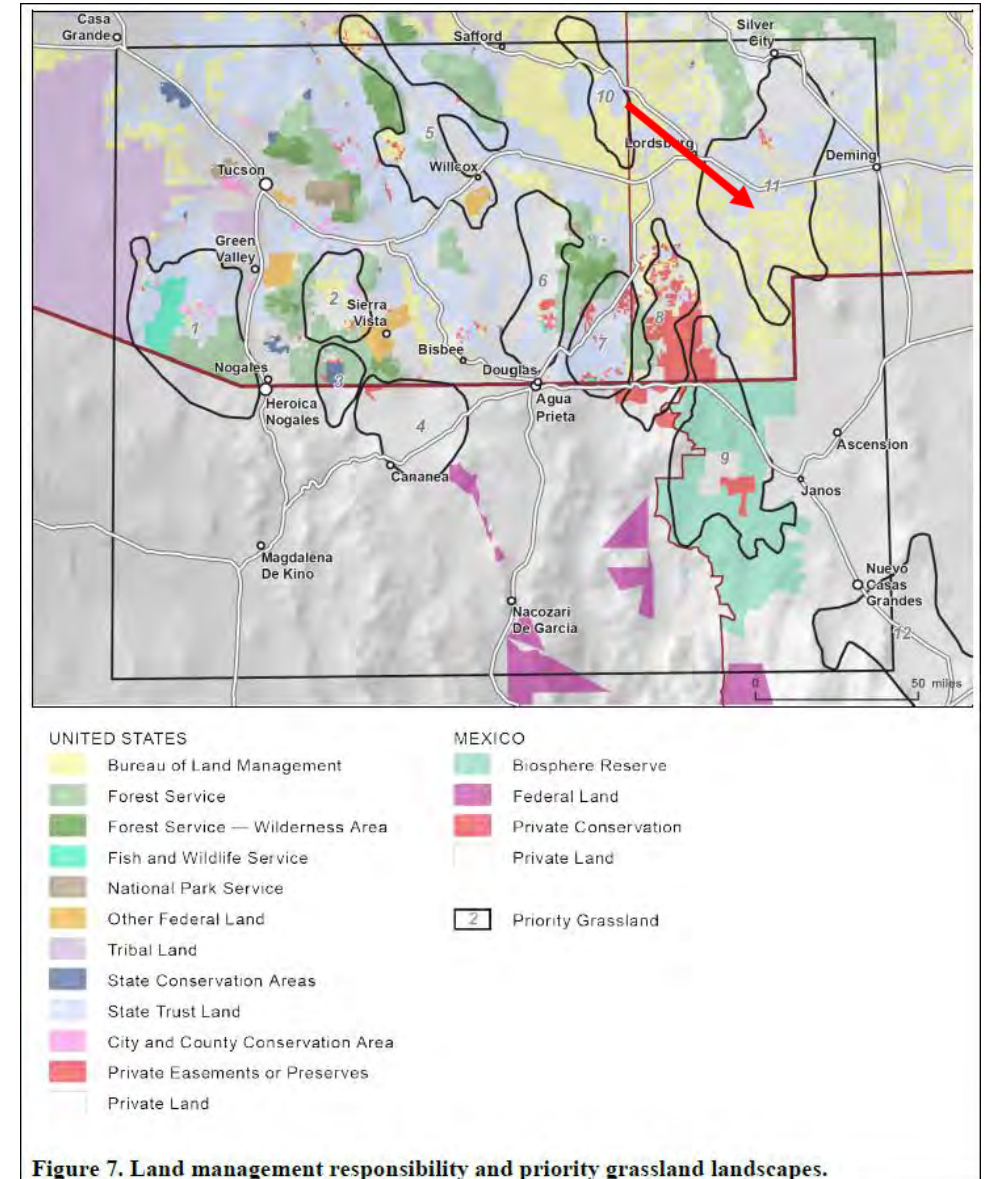
# Playas Valley-Janos Plain

- Close to 1M acre landscape, majority in MX
- United States:
  - btw Animas Mountains and Big Hatchet and Alamo Hueco Mountains
  - most is privately owned
  - BLM owns and manages 10,500 acres (18%)
  - State Lands owns and manages slightly over 13,000 acres (13%)
- Important biological features: Pronghorn, free-ranging bison herd, suite declining breeding and wintering grassland birds
- Threats: conversion to agriculture, shrub encroachment



# Burro Cienega-Hachita

- Over 1.2M acre landscape
- Foothills of Big Burro, Little Burro and Pinos Altos mountains to international border on north –south
- Pyramid, Little Hatchet and Big Hatchet mountains to Cedar Mountains on west-east
- Private ownership 36%
- BLM owns and manages 38% and has conducted brush control treatments under Restore NM
- State Lands owns and manages 25%
- Scattered playa lakes are important wetland features important for migratory water birds, water fowl and shorebirds
- Important biological features: Pronghorn, suite declining breeding and wintering grassland birds,
- Threats: conversion to agriculture, transmission line corridor & associated energy development, shrub encroachment



# Key Conservation Actions Include

<http://www.nfwf.org/skyisland/Pages/home.aspx>

- Implementing prescribed fire, mechanical clearing and other management practices that reduce shrub encroachment and restore grasslands;
- Protecting threatened land and water resources by helping support easement and acquisition efforts in the United States;
- Restoring populations of target species through investments that address species-specific threats or conservation needs of important populations; and
- Expanding the incentives for private ranchers in the United States to get involved in grassland restoration and recovery efforts for target species such as suite of declining grassland birds, e.g., Audubon Conservation Ranching



# Questions?

For more information:

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575-418-0288



# Exercise on Scoring Candidate Sites

# Next Steps

# Afton SRMS – Next Steps

- Complete the evaluation of candidate mitigation sites / actions
  - e.g., complete the screening tables
- Estimate costs for mitigation actions
- Calculate the recommended per-acre compensatory fee and management structure
- Draft SRMS – Fall / Winter 2017



# Afton SRMS Process – Schedule



# Questions?

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