

# NEVADA CONSERVATION CREDIT SYSTEM

## ADAPTIVE MANAGEMENT ANNUAL REPORT – 2020

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The purpose of this Adaptive Management Response Team (AMRT) annual report is to provide a summary of the results of the adaptive management process as outlined by the Nevada Greater Sage Grouse Conservation Plan. The adaptive management process identifies habitat and population triggers reached within the State of Nevada across seven Conservation Planning Areas. Following identification of triggers, the local AMRT within each conservation planning area will identify causal factors and develop management recommendations to address habitat and population triggers.

Through the summer of 2019 the Sagebrush Ecosystem Technical Team worked with members of a Statewide Technical Team to collect data necessary to assign triggers to Population Management Units (PMU) which had habitat warnings consistent with the Nevada Greater Sage Grouse Conservation Plan adaptive management process. The Statewide Technical Team is comprised of representatives from Bureau of Land Management (BLM), U.S. Forest Service, U.S. Fish and Wildlife Service, Nevada Department of Wildlife (NDOW), Nevada Association of Counties, University of Nevada – Reno, U.S. Geological Survey, Nevada Division of Forestry. This team assigned triggers on August 8th, 2019. The local AMRT regional meetings occurred throughout the winter of 2019-2020. These teams consisted of willing participants from all stakeholder groups in a defined area such as local conservation groups, grazing permittees, other affected land users, and federal/State agencies. This process is intended to determine the potential reasons for population and habitat declines. In the case of habitat triggers where the trigger is self-evident (fire or anthropogenic impact), determining any appropriate management response will be the main effort. These triggers may be used in the prioritizing of funding for restoration efforts and management actions. This document outlines the results of the triggers reached by the Statewide Technical Team, and the results of the causal factor analysis and management recommendations developed by the AMRTs.

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## I. ADAPTIVE MANAGEMENT STRATEGY OVERVIEW

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This adaptive management strategy includes warnings, soft and hard triggers and responses. Triggers are not specific to any particular agency effort but identify GRSG population and habitat thresholds outside of natural fluctuations or variations (with the exception of wildfires). Triggers are based on the two key metrics that are being monitored; population status and habitat loss. Adaptive management, responding to specific triggers, can provide added confidence that management actions are robust and able to respond to a variety of conditions and circumstances to enable conservation of GRSG habitat and populations. Reaching a trigger will initiate a local-state-federal interagency dialogue in collaboration with affected authorized land users (e.g., grazing permittee) to evaluate causal factor(s) and recommend adjustments to implementation-level activities to reverse the trend. The State of Nevada will use a collaborative and consensus-based process with stakeholders, appropriate state and local agencies, and affected authorized land users when developing and implementing management responses when a trigger has been identified.

The scales used to analyze population triggers and apply management responses are at the individual lek, lek cluster, and BSU (Figure 1). Adaptive management responses will only apply to habitat management areas (HMAs), which includes PHMA, GHMA, OHMA, within these scales. Habitat adaptive management warnings and triggers will be analyzed only at the lek cluster scale. The boundaries of the BSU and lek clusters may be adjusted over time, based on the understanding of local GRSG population interactions, genetic sampling and climate variation. Population and habitat analyses used to identify warnings and triggers may be updated based on new science and advances in technology (e.g., integrated population models).

The hierarchy of GRSG population and habitat scales is as follows:

- Lek—Individual breeding display site where male and female GRSG congregate, with males performing courtship displays to gain mating opportunities with females.
- PMU (Lek cluster)—A group of leks in the same vicinity, among which GRSG may interchange over time and representing a group of closely related individuals.
- Biologically Significant Units (BSUs) —Represents nested lek clusters with similar climate and vegetation conditions.

Figure 1 below corresponds to lek clusters and BSUs that were defined by the USGS modeling analysis. They are different boundaries than the PMUs and BSUs that are defined by the State of Nevada, by NDOW. While USGS identifies population triggers according to their lek cluster and BSU spatial boundaries, for the purposes of this adaptive management strategy the SETT will be using the NDOW PMU and BSU boundaries to identify causal factors and management responses. USGS population triggers reached, such as individual lek or lek cluster triggers, will be applied to and identified with the NDOW PMU and BSUs. Habitat triggers as identified by the Statewide Technical Team will be based on the PMU or BSU spatial scale (i.e., Tuscarora PMU reached a habitat trigger due to fire within a large portion of that PMU).

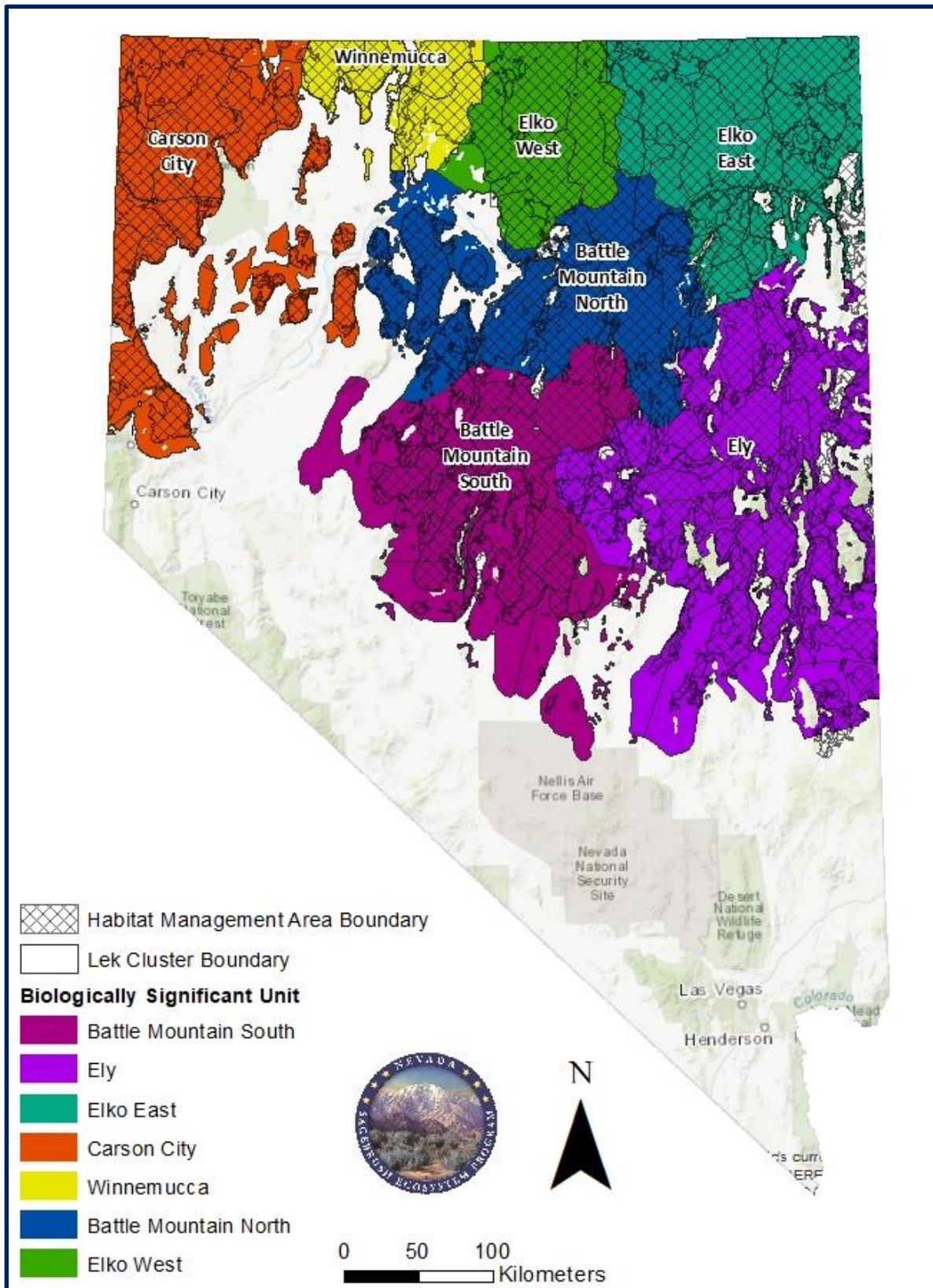


Figure 1. Adaptive management trigger analysis areas: USGS defined Biologically Significant Units and lek clusters (PMUs) for GRSG in Nevada.

## II. POPULATION TRIGGERS – STATEWIDE OVERVIEW

The USGS analyzed population triggers at multiple spatial scales using a state-space, hierarchical modeling process (Coates et al. 2017). The analysis identifies soft and hard warnings and triggers based on population rates of change at the lek, lek cluster (PMU), and BSU levels. The rate at which a population trend declines and decouples from the trend at the associated higher-order scale will dictate whether or not a soft or hard trigger is reached. Thresholds for stability and decoupling for soft and hard triggers were determined from simulation analyses that used 17 years of lek data (2000-2016). In this analysis, USGS identified 12 soft lek triggers, five hard lek triggers, and seven soft lek cluster (PMU) triggers (Figure 2). More detail on population triggers provided in Section IV.

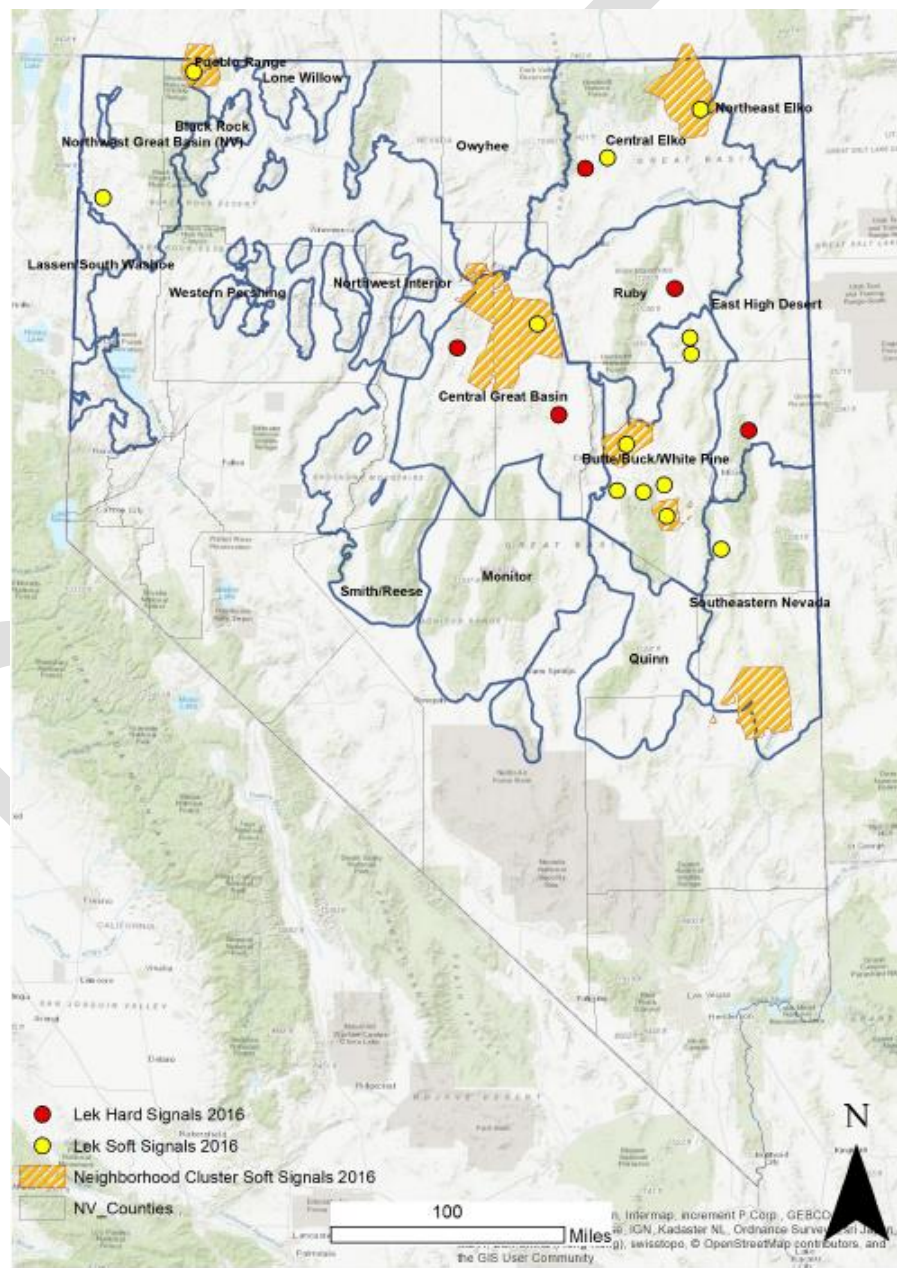


Figure 2. USGS lek and lek cluster (PMU) triggers reached in 2017.

### III. HABITAT TRIGGERS – STATEWIDE OVERVIEW

The Statewide Technical Team created a list of habitat warnings (wildfires, new anthropogenic disturbance, other events causing sagebrush habitat loss) over a three-year period. A process was developed to prioritize and rank warnings based on several data layers to inform importance of habitat that was impacted, which included proportion of leks affected, genetic connectivity, fire risk, resistance and resilience scores, and others. Professional opinion and judgement was used to help refine the initial rankings. Habitat triggers are only analyzed at the PMU and BSU scales, and seven PMUs were identified as having reached a habitat trigger.

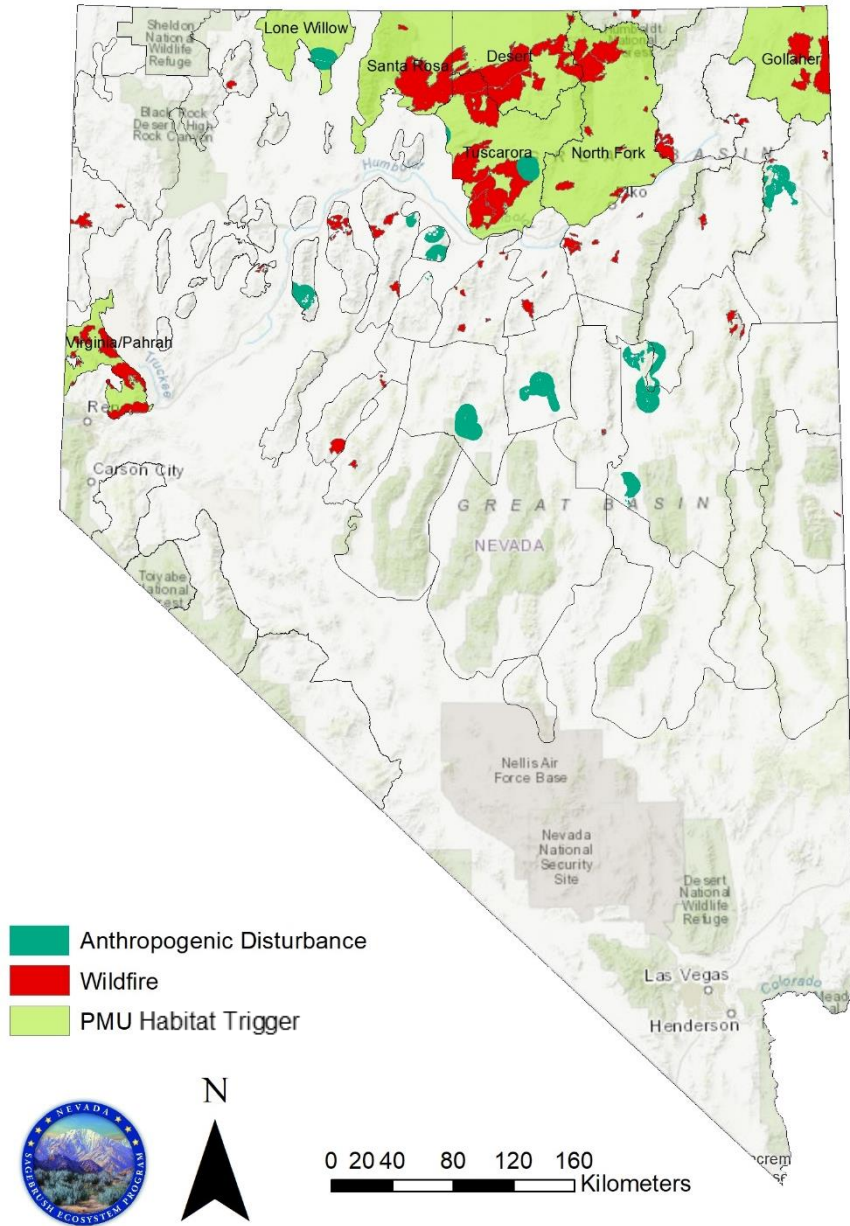


Figure 3. The seven PMUs that reached a habitat trigger. Habitat warnings that were identified and analyzed, including wildfire and new anthropogenic disturbance, are also mapped.

#### IV. POPULATION AND HABITAT TRIGGERS - DETAIL

In total, the Statewide Technical Team identified seven PMU habitat triggers, seven soft lek cluster PMU triggers, five hard lek triggers, and 12 soft lek triggers (Figure 4). Population triggers affected 18 PMUs, and Habitat triggers affected seven PMUs, of which three contained both population and habitat triggers, resulting in a total of 22 PMUs having reached a trigger.

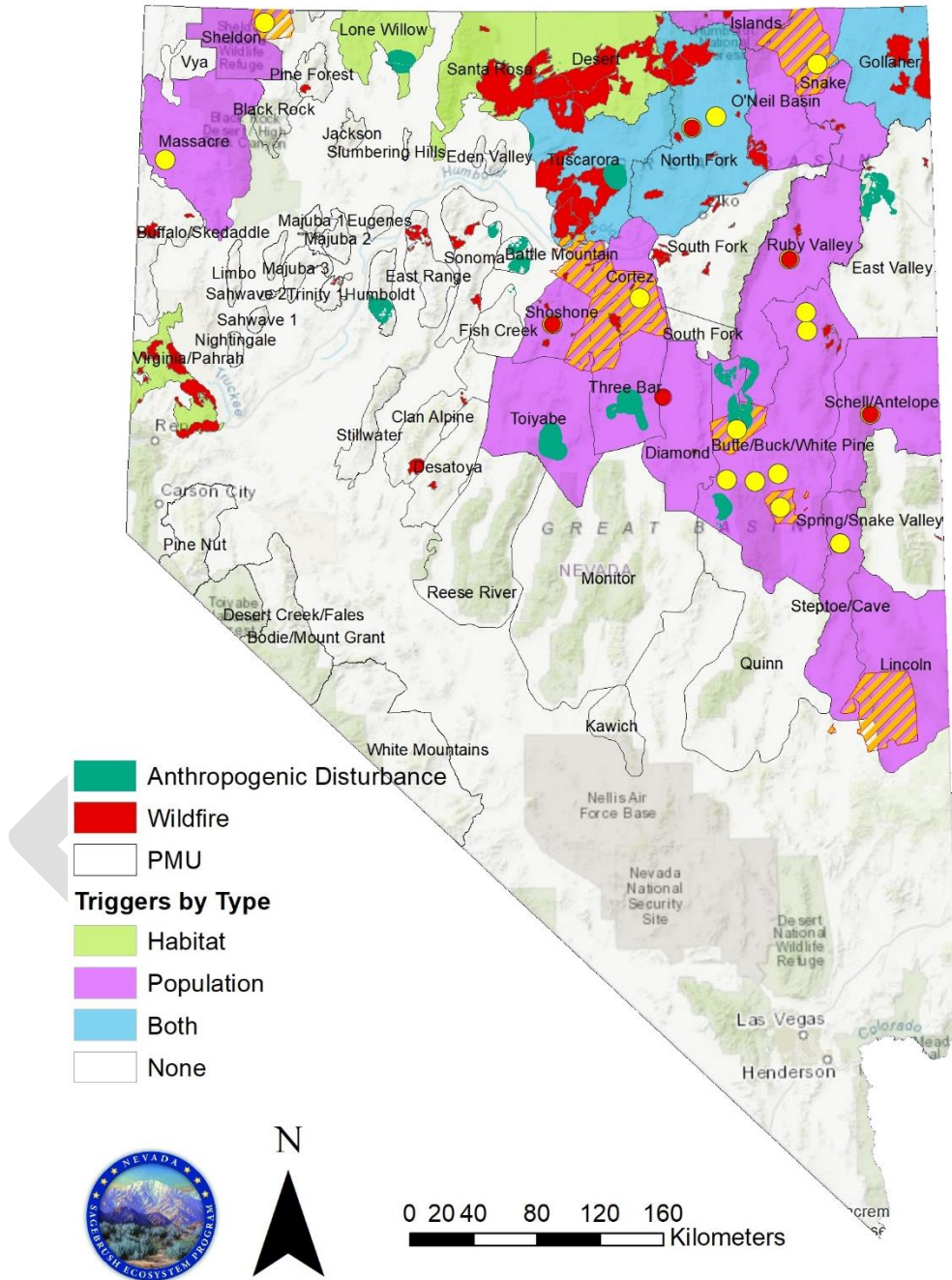


Figure 4. Final population and habitat triggers analyzed by the Statewide Technical Team.

The Local AMRTs were tasked to further define and prioritize habitat and population triggers identified by the Statewide Technical Team (Figure 4). The AMRTs, based on local knowledge and resources, can recommend to remove or add triggers. The triggers below are the final habitat and population triggers recommended by the AMRTs. If a trigger was suggested to be removed or added, justification is provided. Definitions for the column headings in the tables below for each Conservation Planning Area include:

**Conservation Planning Area:** One of the seven identified Conservation Planning Areas.

**Trigger Type – Statewide:** The ‘Habitat’ or ‘Population’ trigger as identified by the Statewide Technical Team and USGS.

**Spatial Scale:** Scale of the population or habitat trigger, can be ‘lek’, ‘PMU’, or ‘BSU’.

**Trigger Name:** The name of the lek, fire, PMU, event, or other identifying description for the trigger.

Table 1.

Conservation Planning Area	Trigger Type - Statewide	Trigger Name or Description (if applicable)	PMUs Affected
Elko Stewardship	Population – Hard Lek	High Beach 2	Ruby Valley
Elko Stewardship	Population – Hard Lek	Saval 05 (Mahala Creek)	North Fork
Elko Stewardship	Population – Soft Lek	Double Mtn Well 3 NW	North Fork
Elko Stewardship	Population – Soft Lek <i>AMRT recommends removing due to GRSG travel between leks in close proximity.</i>	East Antelope Spring	Snake
Elko Stewardship	Population – Soft Lek	Elko County 3; Twin Springs	Butte/Buck/White Pine
Elko Stewardship	Population – Soft Cluster (2) <i>AMRT recommends the lek cluster trigger be removed for Islands and Gollaher due to a very small area affected in those PMUs</i>		Tuscarora, O’Neil Basin, Islands, Snake, Gollaher
Elko Stewardship	Habitat (4 PMUs)	Wildfire	Gollaher, Tuscarora, Desert, North Fork
Lincoln	Population – Soft Cluster		Lincoln, Steptoe/Cave
North Central	Habitat	Wildfire and anthropogenic disturbance	Lone Willow
North Central	Habitat	Wildfire	Santa Rosa
South Central	Population – Hard Lek	Cooks Creek 2	Shoshone



<b>South Central</b>	Population – Hard Lek	Pony Express 2	Diamond
<b>South Central</b>	Population – Soft Lek	Modarelli Mine 2	Cortez
<b>South Central</b>	Population – Soft Cluster (2)		Shoshone, Cortez, Tuscarora, Three Bar, Toiyabe
<b>South Central</b>	Habitat <i>AMRT recommends adding due to new information.</i>	Anthropogenic Disturbance	Toiyabe
<b>Washoe/Modoc/Lassen</b>	Population – Soft Lek		Massacre
<b>Washoe/Modoc/Lassen</b>	Population – Soft Lek	Big Springs Table	Sheldon
<b>Washoe/Modoc/Lassen</b>	Population – Soft Cluster		Sheldon
<b>White Pine</b>	Population – Soft Lek	South Newark Valley 2, Illipah Reservoir, Central Jakes Valley SE, Deadman Wash,	Butte/Buck/White Pine
<b>White Pine</b>	Population – Soft Lek	Cattle Camp Wash N, Beck Pass 3	Steptoe/Cave
<b>White Pine</b>	Population – Hard Lek <i>AMRT (NDOW – Kody Menghini) recommends removing due to database error</i>	North Creek	Schell/Antelope
<b>White Pine</b>	Population – Soft Cluster (2)		Butte/Buck/White Pine, Ruby Valley, Diamond

## V. CAUSAL FACTOR ANALYSIS AND MANAGEMENT RECOMMENDATIONS

The Local AMRTs are tasked with completing a causal factor analysis and provide management recommendations associated with each population or habitat trigger. The results from this process are provided below in a *Causal Factor* table for each Conservation Planning Area.

### 5.1 ELKO CONSERVATION PLANNING AREA (POINT OF CONTACT – GERRY MILLER)

Lek/PMU	Trigger Type & Causal Factor*	Management Recommendations
<p>Please list the lek or PMU name for which the management recommendations should be applied</p>	<p>List the Trigger type associated with the listed PMU and <b>If possible</b>, for each trigger type please list a hypothesis for the root cause of the trigger (habitat triggers may involve simply listing the acreages of wildfire, population triggers may be complex to explain)</p>	<p>Please list appropriate, realistic, and targeted responses for each causal factor. <b>Please limit/prioritize to a maximum of 5 actions per/PMU.</b> Actions need not be restricted to federal agencies (i.e., BLM/Forest Service), they may involve other governmental organizations (e.g., NDOW, County, State, etc.). Please identify which agencies the recommendations are meant for.</p> <p style="text-align: center;"><b>Request USGS to Provide additional years data from 2017 – 2019</b></p>
<p><b>Tuscarora</b></p>	<p><b>Habitat Trigger:</b></p> <p>Multiple wildfires since 2006 have contributed to habitat declines (~1.2 million acres) Possible causal factor(s)</p> <p>There is a need to accurately portray all anthropogenic disturbances, not just recent disturbances with NEPA. There are large mining operations,</p> <p><b>Population Trigger:</b> 1 lek soft cluster</p>	<p>Possible actions and management recommendations:</p> <p>Increase funding for large scale fuel breaks that consist of non-native vegetation (i.e. forage kochia and desirable fire-resistant bunchgrasses such as Siberian wheatgrass. (note (USFS Kochia is not allowed on USFS lands) <b><u>NDF, NDOW, BLM, Private landowners</u></b></p> <p>Increase funding to make fighting invasive winter annual grasses a top priority, Medusahead and Vetanata are found in isolated pockets throughout the PMU. Fires and other disturbances will only continue to spread these highly competitive winter annual if left unchecked. <b><u>NDF, NDOW, BLM, USFS, USFWS, Private landowners</u></b></p> <p>Road departments, mines, exploration companies, livestock operators, recreationists and developers need to be made aware of the risks and how to combat the spread of these winter annuals. (need to Flush out Who but usually the Elko Weed Extravaganza is a good forum</p>

<p>Double Mtn well 3 NW</p> <p>We'll take a closer look</p> <p>1 hard lek trigger Saval 05 (Mahala Creek)</p> <p>Possible causal factor(s):</p> <p>Investigate the area, to determine the causal factors</p>	<p>Continue to promote the health and viability of remnant and seeded perennial grass/shrub communities through proper land use management. . <b><u>NDF, NDOW, BLM, USFS, CD</u></b></p> <p>Use of non-native seed mixes for fire rehab and habitat restoration should be used in areas with a high risk of winter annual invasion. <b><u>NDF, NDOW, BLM, USFS, Private landowners</u></b></p> <p>Though there has been considerable efforts made in restoring areas in this PMU, it still needs to be state again that even more intensive restoration work is needed. Perhaps developing small 10 -20 acre habitat islands that are strategically placed across the landscape and are more intensively managed as functional sagebrush/perennial grass/forb communities. This coupled with chemical/fallow/reseeding treatments within the plant communities exhibiting winter annuals would make a difference. <b><u>NDF, BLM, NDOW, USFS, Private landowners</u></b></p> <p>Prepositioning firefighting resources when the weather and fuel moisture merits such actions. <b><u>NDF, BLM, USFS, County</u></b></p> <p>Connecting the agencies and landowners together so we have a good picture of what we are all doing in the area to improve the habitat: <b><u>BLM, USFS, NDOW, Private land owners</u></b></p> <p>Use targeted grazing on invasive annuals on post fire rehab and fuels reduction: <b><u>BLM, USFS, Private land owners</u></b></p> <p>Where possible use the overhead teams as close to the fire as possible. <b><u>NDF, BLM, USFS, County</u></b></p> <p>Utilize Great Basin expertise and tactics developed for our area (<b><u>NDF, BLM USFS County</u></b>)</p>
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Have Morning Fire Coordination Meetings earlier in the than 7:00 a.m.

Road access for Fire engines and equipment to provide effective responses. **County**

ESDs/STM/DGRs in developing and implementing rehab/restoration – gets to what is ecologically attainable. Helps triage where can be successful. Map of connectivity – connect what is already going on and fill the gaps **BLM, USFS, NDOW, NDF, CD's**

Do more preemptive – proactive work before fire and addressing the unsuitable sagebrush communities Focus on R2 around lek clusters. **BLM, USFS, NDOW, NDF, CD's**

Possible actions and management recommendations:

Focus on protecting last intact islands of sagebrush on top of the Sheep Creek Range north of Workhorse Butte and south of Rock Creek as well as the remaining sagebrush island near the confluence of Antelope Creek and Rock Creek. **BLM, USFS, NDOW, Private land owners**

Aggressively fortify the base of the Sheep Creek Range with forage kochia to prevent the reoccurring fire cycle that has taken place since the 2000's. Also an updated allotment management plan/rangeland health evaluation for the 25 Allotment would be good to account for the new vegetative community that makes up much of this allotment. **BLM, NDOW, Private land owners**

Continue to foster the USGS raven egg oiling experiment associated with the Tuscarora Geothermal Facility to determine short and long term effects on sage-grouse nest success in the area. If successful, perhaps further efforts to locate and oil eggs in raven nests within the Tuscarora PMU would be warranted.

<p><b>North Fork</b></p> <p><i>Habitat Trigger:</i></p> <p>Multiple wildfires since 2006 have contributed to habitat declines (~1.2 million acres) Possible causal factor(s)</p> <p>There is a need to accurately portray all anthropogenic disturbances, not just recent disturbances with NEPA. There are large mining operations,</p> <p><i>Population Trigger:</i></p> <p>1 lek soft cluster Double Mtn well 3 NW</p> <p>We'll take a closer look</p> <p>1 hard lek trigger Saval 05 (Mahala Creek)</p> <p>Possible causal factor(s): Investigate the area, to determine the causal factors</p>	<p>Possible actions and management recommendations:</p> <p>Increase funding for large scale fuel breaks that consist of non-native vegetation (i.e. forage kochia and desirable fire-resistant bunchgrasses such as siberian wheatgrass. (Kochia not allowed on USFS lands) <b><u>BLM, USFS, NDOW, Private land owners</u></b></p> <p>Increase funding to make fighting invasive winter annual grasses a top priority, Medusahead and ventenata are found in isolated pockets throughout the PMU. Fires and other disturbances will only continue to spread these highly competitive winter annual if left unchecked. <b><u>BLM, USFS, NDOW, Private land owners</u></b></p> <p>Road departments, mines, exploration companies, livestock operators, recreationists and developers need to be made aware of the risks and how to combat the spread of these winter annuals. (Note to flush out who ) but usually the Elko Weed Extravaganza is a good forum</p> <p>Continue to promote the health and viability of remnant and seeded perennial grass/shrub communities through proper land use management. <b><u>BLM, USFS, Private land owners</u></b></p> <p>Use of non-native seed mixes for fire rehab and habitat restoration should be used in areas with a high risk of winter annual invasion. <b><u>BLM, USFS, NDOW, Private land owners</u></b></p> <p>Provide supporting comments for USFS on their ongoing NEPA for use of aerial application of herbicide.</p> <p>Where possible use the overhead teams as close to the fire as possible. <b><u>NDF, BLM, USFS, County</u></b></p> <p>Utilize Great Basin expertise and tactics developed for our area <b><u>NDF, BLM USFS County</u></b></p>
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	<p>Have Morning Fire Coordination Meetings earlier than 7:00 a.m.</p> <p>Road access for Fire engines and equipment to provide effective responses. <b><u>County</u></b></p> <p>The following is recommended:</p> <p>Consider Look at additional rehab needs of the 2005 Omega Fire (2,473 acres) very near the Double Mtn Well 3 NW lek. This lek is not a trend lek and is not a very big lek; peak male attendance of 5 males in 2015. <b><u>BLM</u></b></p> <p>Look at noise influence from Jerritt Canyon Mine on adjacent public land. Mine noise can be heard throughout the entire Saval Bench.</p> <p>Look at alternatives to reduce mine noise seasonally (March –April) to limit impacts to adjacent leks <b><u>NDOW, USFS</u></b></p> <p>Footprint of Jerritt Canyon needs to be examined <b><u>BLM, USFS, NDOW</u></b></p>
<p><b>Ruby</b></p> <p><i>Population Trigger:</i> 1 hard lek Trigger High Beach 2</p> <p>Black Sagebrush ARNO Complex</p> <p>Possible causal factor(s):</p>	<p>Possible actions and management recommendations:</p> <p>Wild horses should be reduced to AML <b><u>(BLM)</u></b></p> <p>Working towards reaching AML – (with recent horse gathers)</p> <p>Continued implementation of sagebrush enhancement projects in Ruby Valley (ie Ruby #6 project – <b><u>BLM</u></b>)</p> <p>Continue treatment of encroaching pinyon/juniper woodlands <b><u>BLM, USFS, NDF, CD</u></b></p>

<p>Aroga moth has taken the sagebrush canopy – need proactive sagebrush treatments.</p>	<p>Potentially install exclusionary fences around the limited springs in the more arid portions of the PMU - <b><u>BLM, CD</u></b></p> <p>Continue the aggressive noxious weed treatments in the valley: <b><u>BLM, CD</u></b></p> <p>Do NEPA to do proactive treatments and get an ID team together to determine an area, <b><u>BLM, USFS, Private landowners</u></b></p> <p>Where possible use the overhead teams as close to the fire as possible. <b><u>NDF, BLM, USFS, County</u></b></p> <p>Utilize Great Basin expertise and tactics developed for our area <b><u>NDF, BLM, USFS, County</u></b></p> <p>Doing various raven deterrent activities Oiling of eggs, subsidies, ect <b><u>USF&amp;WS</u></b></p> <p>Marking fences – there are plenty of flight diverters available. Find funding for CCC fences.</p> <p>Have Morning Fire Coordination Meetings earlier in than 7:00 a.m. IC</p> <p>Road access for Fire engines and equipment to provide effective responses. <b><u>County</u></b></p>
<p><b>Desert</b></p> <p><i>Habitat Trigger:</i></p> <p><b><i>Multiple Wildfires</i></b></p>	<p>Possible actions and management recommendations:</p> <p>Fire suppression – full suppression <b><u>BLM, USFS, NDF, County</u></b></p> <p>Proactive Vegetation manipulation methods. <b><u>BLM, USFS, NDOW, NDF, CD</u></b></p>

<p>Horses</p>	<p>Establish site specific objectives. <b><u>BLM, USFS, NDOW, NDF, CD</u></b></p> <p>Reseed Natives in the areas where the annual grasses haven't established, <b><u>BLM, USFS, NDOW, CD, Private land owners</u></b></p> <p>Where possible use the overhead teams as close to the fire as possible. <b><u>NDF, BLM, USFS, County</u></b></p> <p>Utilize Great Basin expertise and tactics developed for our area. <b><u>NDF, BLM, USFS, County</u></b></p> <p>Have Morning Fire Coordination Meetings earlier than 7:00 a.m. IC</p> <p>Road access for Fire engines and equipment to provide effective responses. <b><u>County</u></b></p>
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## 5.2 LINCOLN CONSERVATION PLANNING AREA

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List any attachments

## 5.3 NORTH CENTRAL CONSERVATION PLANNING AREA (POINT OF CONTACT - MELANY ATEN)

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List any attachments



**5.4 SANE CONSERVATION PLANNING AREA (POINT OF CONTACT – SANE, C/O ROBIN BOIES)**

PMU Name	Trigger Type & Causal Factor*	Management Recommendations
<p><i>Please list the PMU name for which the management recommendations should be applied</i></p>	<p><i>List the Trigger type associated with the listed PMU and If possible, for each trigger type please list a hypothesis for the root cause of the trigger (habitat triggers may involve simply listing the acreages of wildfire, population triggers may be complex to explain)</i></p>	<p><i>Please list appropriate, realistic, and targeted responses for each causal factor. Please limit/prioritize to a maximum of 5 actions per/PMU. Actions need not be restricted to federal agencies (i.e., BLM/Forest Service), they may involve other governmental organizations (e.g., NDOW, County, State, etc.). Please identify which agencies the recommendations are meant for.</i></p>
<p><b>General Suggestions which apply to all affected PMUs and trigger types in the SANE area</b></p>		<p>The SANE group recommends the completion of the O’neil Basin PPA EA be given the highest priority within BLM planning. There are many actions within that EA which will address threats to sage grouse in the whole region. The SANE group recommends the approval and use of a programmatic EA for targeted grazing, asks that flexibility be included in permit renewals, and recommends the use of great basin fire tactics in wildland firefighting. SANE recommends the continued support of the SANE volunteer fire team with equipment, prepositioning, training, and funding to increase initial attack on small fires. SANE asks for increased support from the BLM and Forest Service to use grazing as a tool to reduce fine fuel loads in high moisture years. <b>(BLM, USFS)</b></p>
<p><b>Gollaher</b></p>	<p><b>Habitat Trigger</b></p> <p>Multiple wildfires in 2018 (1), 2017 (2), 2016 (1) have contributed to habitat declines (200,000 acres)</p> <p>Fires - Goose Cr (63,924 NV ac), Dry Gulch (55,328 ac), Delano (15,264 ac), Piney (1,596 ac)</p>	<p>The following actions are recommended:</p> <ol style="list-style-type: none"> <li>1. Complete the Oneil PPA EA so that the 353 miles of fuel breaks identified can be implemented to help fight large fires. <b>(BLM)</b></li> <li>2. Complete the Oneil PPA EA so that the 12 restoration polygons totaling 102,000 acres can be addressed <b>(BLM)</b></li> <li>3. Complete the Oneil PPA EA so that the 15 conifer removal polygons totaling 347,000 acres can be accomplished. <b>(BLM)</b></li> </ol>
<p><b>Gollaher</b></p>	<p><b>Population Trigger</b></p> <p>Lek Cluster Soft Trigger; Extreme western corner of PMU.</p>	<p>The following is recommended:</p> <ol style="list-style-type: none"> <li>1. None of the leks identified in the PMU contributed to the cluster hitting a soft trigger.</li> </ol>

<b>Islands</b>	<p style="text-align: center;"><b>Population Trigger</b></p> <p>Lek Cluster Soft Trigger: S.E. border of PMU.</p>	<p>The following is recommended:</p> <ol style="list-style-type: none"> <li>1. None of the leks identified in the PMU contributed to the cluster hitting a soft trigger.</li> </ol>
<b>O'Neil Basin</b>	<p style="text-align: center;"><b>Population Trigger</b></p> <p>Lek Cluster Soft Trigger: Northern portion of PMU</p>	<p>The following is recommended:</p> <ol style="list-style-type: none"> <li>1. Support Winecup-Gamble pilot projects and research (<b><u>UNR, USGS, Legislative Natural Resource Committee</u></b>)</li> <li>2. Increase Raven predator control (<b><u>USFS Wildlife services</u></b>)</li> <li>3. Create an weed inventory (<b><u>SETT, NDA</u></b>)</li> <li>4. Increase Staff in Elko NRCS office for conservation planning (<b><u>NRCS, NVACD</u></b>)</li> <li>5. Complete NEPA and Implement EA for HV-11 (<b><u>BLM, WELLS-FO</u></b>)</li> <li>6. Implement prescribed burns in stringer meadows (<b><u>NDF</u></b>)</li> </ol> <p>The following projects are recommended in order of highest priority to lowest:</p> <ol style="list-style-type: none"> <li>7. Complete NEPA and Implement CA-5* (<b><u>BLM, WELLS-FO</u></b>)</li> <li>8. Complete NEPA and Implement CA-2* (<b><u>BLM, WELLS-FO</u></b>)</li> <li>9. Complete NEPA and Implement CW2* (<b><u>BLM, WELLS-FO</u></b>)</li> <li>10. Complete NEPA and Implement Y3-13, Y3-10, Y3-9* (<b><u>BLM, WELLS-FO</u></b>)</li> <li>11. Finish Mary's River Complex EA (<b><u>BLM, WELLS-FO</u></b>)</li> </ol>
<b>Snake</b>	<p style="text-align: center;"><b>Population Trigger</b></p> <p>Lek Cluster Soft Trigger N.W. corner of PMU. Lek Soft Trigger – East Antelope Peak Lek</p>	<p>The following is recommended:</p> <ol style="list-style-type: none"> <li>1. East Antelope Peak lek is less than one mile from East Hubbard Lek. Some years and/or individual lek counts may be up or down, but the total number of birds added together has remained consistent. The soft trigger on East Antelope Lek is not valid.</li> <li>2. Support Winecup-Gamble pilot projects and research (<b><u>UNR, USGS, Legislative Natural Resource committee</u></b>)</li> <li>3. Increase Raven predator control (<b><u>USFS Wildlife</u></b>)</li> <li>4. Complete NEPA and Implement HV-7* (<b><u>BLM, WELLS-FO</u></b>)</li> </ol>

\*Please see the SANE Conservation plan for specific project details available at <http://www.saneconservation.org/documents.html>

**5.5 SOUTH CENTRAL CONSERVATION PLANNING AREA (POINT OF CONTACT – JAKE TIBBETS)**

<b>Lek/PMU</b>	<b>Trigger Type &amp; Causal Factor*</b>	<b>Management Recommendations</b>
<p><i>Please list the lek or PMU name for which the management recommendations should be applied</i></p>	<p><i>List the Trigger type associated with the listed PMU and <b>If possible</b>, for each trigger type please list a hypothesis for the root cause of the trigger (habitat triggers may involve simply listing the acreages of wildfire, population triggers may be complex to explain)</i></p>	<p><i>Please list appropriate, realistic, and targeted responses for each causal factor. <b>Please limit/prioritize to a maximum of 5 actions per/PMU.</b> Actions need not be restricted to federal agencies (i.e., BLM/Forest Service), they may involve other governmental organizations (e.g., NDOW, County, State, etc.). Please identify which agencies the recommendations are meant for.</i></p>
<p><b>Tuscarora</b></p>	<p><b>Habitat Trigger:</b> Wildfire Causal factor: Wildfire</p> <p><b>Population Trigger:</b> 1 (partial) soft cluster/PMU Possible causal factor(s):  Wildfire impacts as well as cumulative effects of other disturbance.</p>	<p>Management Recommendations:</p> <p>Good work is taking place in this area on BLM and private land and State land. Need to ensure continued funding and capacity to keep moving these current efforts forward to success – examples of work currently underway includes fuel breaks (primarily chemical treatments on cheatgrass), BLM sagebrush plantings, and other reseeding efforts.</p> <p>Need proactive work in this area to minimize fire sizes and protect intact habitat and unburned islands within fire perimeters.</p> <p>Specifically target fuel breaks to protect investments (e.g., ESR) and rehab that have occurred. Have history of where fires consistently start. Maintain existing fuel breaks. Expand potential for targeted grazing.</p> <p>Get a list of projects already underway from the various agencies and entities so that efforts can be synergized.</p> <p>Develop map of connectivity between habitat and projects– connect what is already going on to then fill the gaps.</p> <p>Strive for 100% fire suppression. Pre-position of suppression resources/equipment. Initial attack is key. Get the Rancher Liaison Program up and running. Prioritize retain unburned islands of sagebrush whenever possible – bias against “back burns” unless absolutely necessary.</p>

		<p>Even in burn areas, prioritize resources protect high value areas such as riparian zones, springs, and pockets of sagebrush.</p> <p>Ensure use of Ecological Site Descriptions and their associated State and Transition Models/Disturbance Response Groups in developing and implementing rehab/restoration – focus on what is ecologically attainable, be realistic.</p>
<p><b>Three Bar</b></p>	<p><b><i>Population Trigger:</i></b> 1 soft cluster/PMU Possible causal factor(s):</p> <p>For 3-Bar portion, travel on county road impacts to leks near or on roads- including Rye Patch Canyon and Fye Canyon. Traffic impacts may be related to increased traffic going to Cortez PMU area.</p> <p>Portions of lower elevations in Trail Canyon Fire are cheatgrass and other invasives.</p> <p>Feral Horse populations from Rocky Hills HMA in and out of HMA.</p> <p>PJ encroachment in upper elevations.</p> <p>Recognize a habitat warning from Gold Bar Mine. The possible causal factor is committed and required sage grouse mitigation has not been implemented. Also, mine traffic may be impairing leks near and even on roads – Roberts Creek, Henderson, and 3-Bars.</p>	<p>Management Recommendations:</p> <p><u>Lek cluster:</u></p> <p>To try to get birds back on leks that have been inactive for 19 years, focus on habitat work. 3-Bars EIS and Barrick (now Nevada Gold Mines) Bank Enabling Agreement (BEA) EA allows many options here.</p> <p>Get and maintain Rocky Hills at AML and horses in the HMA. This is understanding there are other higher gather priorities.</p> <p><u>Habitat Warning – 3-Bars Mine:</u></p> <p>Mow out from the road adjacent to leks to give birds “room” to move off the roads for breeding. Use Fuel Break NEPA or CX. Try to put in before 2020 breeding season.</p> <p>BLM needs to hold Gold Bar Mine to their legal requirement for mitigation – proponent driven or CCS. Ask proponent to use CCS. Use existing CX authority if available. This may be another mitigation project tied to the 3-Bars EIS, potentially, that has not had a ROD signed yet. Connect mine with nearby landowners for potential CCS project (such as 3-Bars Ranch or Roberts Creek Ranch).</p> <p>3- Bars Project ROD needs to be signed to allow for some mitigation measures to take place. But 3-Bars was not specific to sage grouse and there could be better mitigation if it were solely sage grouse focused.</p>

		<p>BLM must ensure Gold Bar Mine and all their employees, contractors, deliveries use the roads and times mandated in the ROD. Not just letters from mine to contractors, etc. Education component to these folks on why this is important should be implemented.</p> <p>Significant progress needs to be made by Gold Bar Mine on implementing mitigation. The Team had much discussion and debate on moving this to a trigger based on available information and recent lek counts but chose to stay at a warning instead to give the Mine an opportunity to meet their commitments.</p> <p>PJ encroachment and expansion into sage grouse habitat must be addressed. There are many avenues to help address this including the 3-Bars Project EIS, BEA EA and Great Basin Programmatic EIS for rangeland restoration.</p>
<p><b>Shoshone</b></p>	<p><b>Population Trigger:</b>  1 soft cluster/PMU  1 hard lek (Cooks Creek 2)  Possible causal factor(s):</p> <p>Nothing really acute determined as a causal factor. Likely a combination of cumulative impacts including:</p> <ul style="list-style-type: none"> <li>• General anthropogenic disturbance</li> <li>• Predation, mostly by ravens</li> <li>• Fire and fire rehab not fully implemented to success</li> <li>• Horses causing wet meadow degradation</li> <li>• PJ encroachment</li> <li>• Excess BLM managed horses</li> <li>• Fires starts from vehicles on Interstate have caused many fires along freeway</li> </ul>	<p>Survey of leks – many crews with multiple mines doing lek counts during same timeframes. Need to better coordinate counts to cut down on potential impacts to leks. Data sharing, coordination, data collection protocol (3 separate times counting is sufficient in a season?).</p> <p>Portion covered by BEA – the actions under the BEA EA are designed to directly address many of the causal factors, all habitat related, fire rehab, annual grass, PJ, wet meadow. Support implementation of the BEA ASAP.</p> <p>Get and maintain wild horses at AML in the HMA. This is understanding there are other higher gather priorities.</p> <p>ESR efforts; follow up for success on these plans.</p> <p>Develop and direct strategic focus of raven control around leks and critical habitats through a holistic view by pairing with habitat work (through BEA), fire rehab, or other entity efforts. Synergize corvid control with habitat enhancement.</p> <p>Meadows at The Park – work on restoration and grazing plan of this area.</p>

	<p>Cooks Creek 2 and surrounding likely due to Elephant Fire (2006). Minimal rehab efforts were implemented.</p> <p>Argenta specific – smaller mines, many fires in this area. Not high-quality habitat. Fire Creek itself.</p> <p>Some of Shoshone is in BEA – east edge. Here, these factors can be better determined through drilling down with NGM on what has been done through their modeling and mitigation development through BEA.</p> <p>10-year permit renewal for Argenta Allotment may address some of these issues as well – some Range Improvement Projects proposed to address some issues. Rotational grazing included to allow for more rest.</p> <p>Duplication of effort on counting leks may have detrimental effects on leks. Many contractors, multiple interests, much overlap. The birds are being potentially flushed from leks due to so much “data” being collected by various entities.</p>	<p>Support efforts on Fire Creek for meadow protection and enhancement.</p> <p>Support 10-year grazing permit from BLM State Permit Renewal Team for Argenta to implement livestock management and range improvements.</p> <p>Support and expand weed treatments on Indian Creek, Ferris Creek (whitetop). Baker Hughes mine at Argenta point and Slaven Haul Road – work with Baker Hughes to address thistle. Work through LCCD and Humboldt CWMA.</p> <p>Fire in Crum Canyon on private land – install green strip along county road and seeding on private lands.</p> <p>Fire rehab follow through – revisit Elephant Head ESR to ensure success. Potentially develop new NEPA. Herbicides approved for use are not yet on BLM Pesticide Use Proposal (PUP) (e.g. Milestone and OpenRange G) need to be available for use on public land.</p> <p>Stay on top of and expand efforts to limit raven subsidies at Battle Mountain dump.</p> <p>Implement fuel breaks along I-80 and the railway to protect against repeated fire starts – co-efforts between NDOT, Union Pacific, BLM, private landowners.</p>
<p><b>Cortez</b></p>	<p><b><i>Population Trigger:</i></b>  1 soft cluster/PMU  1 soft lek (Modarelli Mine 2)  Possible causal factor(s):</p>	<p>Management recommendations:</p> <p>Survey of leks – many crews with multiple mines doing lek counts during same timeframes. Need to better coordinate counts to cut down on potential impacts to leks. Data sharing, coordination, data collection protocol (3 separate times counting is sufficient in a season?).</p>

<p>Likely a combination of cumulative impacts including:</p> <ul style="list-style-type: none"> <li>• General anthropogenic disturbance</li> <li>• Predation, mostly by ravens</li> <li>• Fire and fire rehab not fully implemented to success</li> <li>• Horses causing wet meadow degradation. Horses are domestic stray and under state stray laws, not federally protected.</li> <li>• PJ encroachment</li> <li>• Noxious weeds.</li> </ul> <p>These factors can be better determined through drilling down with NGM on getting to these issues through their modeling and mitigation development through BEA.</p> <p>Duplication of effort on counting leks may have detrimental effects on leks. Many contractors, multiple interests, much overlap. The birds are being potentially flushed from leks due to so much “data” being collected by various entities.</p> <p>NGM exploration pad on lek at Horse Creek 2 lek.</p> <p>Horse Creek 1 lek – NGM laydown yard, noise and traffic &lt;1 mile.</p> <p>Modarelli Mine 1 lek – uncertainties of lek. 2-track road and fence there. Nothing that obvious. Near the Boo Hoo fire if not within this fire perimeter.</p>	<p>BEA – the actions under the BEA EA are designed to directly address many of the causal factors, all habitat related, fire rehab, annual grass, PJ, wet meadow. Support implementation of the BEA ASAP.</p> <p>Gather and remove stray horses – ask family that owns them to partner.</p> <p>ESR efforts; follow up for success on these plans.</p> <p>Reclaim exploration pad conducive to sage grouse needs and road into pad.</p> <p>Nothing specific on laydown yard at this point. BEA is intended to offset these impacts.</p> <p>Gather more data on what is happening with GSG at Modarelli lek– lek counts, collaring, etc.</p> <p>Flight diverters on fence at Modarelli lek.</p> <p>Direct strategic focus of raven control around leks and critical habitats through NDOW Project 21. Develop other strategic corvid projects through a holistic view by pairing with habitat work (through BEA), fire rehab, or other entity efforts. Synergize corvid control with habitat enhancement.</p>
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	<p>Modarelli Mine 2 lek – satellite lek to Modarelli 1, not active. Should be just Moderelli 1. Birds move to this area after they have been pushed.</p>	
<p><b>Diamond</b></p>	<p><b>Population Trigger:</b> 1 hard lek (Pony Express 2) Possible causal factor(s):</p> <p>Lek is 100 to 150 yds from road. Birds flush to Mulligan Gap and Tyrone Gap – lots of PJ encroachment coming down slope from this area. Birds strutting has shifted down towards road due to PJ.</p> <p>General road traffic.</p> <p>Predation</p>	<p>Management recommendations:</p> <p>PJ treatment must be a priority. PJ has forced birds down to road that has now caused detrimental impacts. Determine if Sulphur Springs Hazardous Fuels EA would cover removing some of these trees. The 3-Bars Project could provide PJ opportunities in this area when approved. 3- Bars Project ROD needs to be signed.</p> <p>Collect data on where birds are moving and raising broods – towards Mt. Hope, nearby wet meadow that has been impacted? Springs in Tyrone Gap?</p> <p>Look at perching structures, such as power lines, in area to determine if mitigation measures (e.g. anti-perching devices) need to be installed.</p>
<p><b>Toiyabe</b></p>	<p><b>Habitat Warning:</b> around McGuinness Hills Geothermal. Data known shows this has now hit a population trigger.</p> <p>Possible Causal Factor: Mostly attributed to geothermal plants activities including increased vehicle travel, noise, and habitat loss. Another factor includes raven predation.</p>	<p>Move to a trigger now to be proactive in addressing decline ASAP.</p> <p>Support continuation on path NDOW is working on with Ormat now to assist entire PMU.</p> <p>Look at mitigation required and make sure BLM ensures it is followed. This would be specific to requirements when specific triggers have been hit.</p> <p>Onsite education with plant employees similar to Gold Bar Mine recommendation on why sage grouse impacts matter.</p>



**5.6 WASHOE/LASSEN CONSERVATION PLANNING AREA (POINT OF CONTACT – MELANY ATEN)**

PMU Name	Trigger Type & Causal Factor*	Management Recommendations
<p><i>Please list the PMU name for which the management recommendations should be applied</i></p>	<p><i>List the Trigger type associated with the listed PMU and <b>If possible</b>, for each trigger type please list a hypothesis for the root cause of the trigger (habitat triggers may involve simply listing the acreages of wildfire, population triggers may be complex to explain)</i></p>	<p><i>Please list appropriate, realistic, and targeted responses for each causal factor. <b>Please limit/prioritize to a maximum of 5 actions per/PMU.</b> Actions need not be restricted to federal agencies (i.e., BLM/Forest Service), they may involve other governmental organizations (e.g., NDOW, County, State, etc.). Please identify which agencies the recommendations are meant for.</i></p>
<p><b>Virginia/Pahrah</b></p>	<p>Habitat Trigger</p> <p>Multiple wildfires in 2018 (1), 2017 (1), and 2016 (6) have contributed to habitat declines (~200,000 acres total fire disturbance)</p>	<p>The following actions are recommended:</p> <ol style="list-style-type: none"> <li>4. Past, current and anticipated disturbance makes restoration efforts in the Pah-Rah portion of the PMU not recommended.</li> <li>5. Recommend splitting the Virginia/Pah-Rah PMU (<b>NDOW</b>)</li> <li>6. Request status and possible implementation of non-implemented fire rehabilitation efforts in Virginia portion of the PMU (<b>BLM- Carson FO</b>)</li> <li>7. Coordinate with partners and implement currently feasible fire restoration actions for Virginia mountain complex fire (~62,020 acres) and long valley (2016, ~84,000 acres) fires, prioritized in PHMA (<b>Carson-FO</b>)</li> <li>8. Implement future fire rehabilitation plans within recommended timeframes (<b>Carson-FO, NDOW</b>)</li> <li>9. Aerial weed treatment in PHMA north and west of Spanish Flat, continued medusahead treatment at sheep springs flat lek (<b>BLM-Carson FO</b>)</li> <li>10. Wild Horse removal in the Flanagan Allotment (<b>BLM- Carson FO</b>)</li> <li>11. Fence maintenance and gathering along horse free areas (<b>BLM-Carson FO, Pyramid Lake Tribe</b>)</li> <li>12. ½ mile wide fuel break along 395, and Fish Springs Road county road, Winnemucca Ranch Road (<b>Carson- FO, Eagle Lake- FO, NDOT, Caltrans, CDFW, Washoe County, Lassen County</b>)</li> <li>13. Coordinate with pyramid lake tribe on fire rehabilitation in, Terrace hills, lower elevation in Virginia mtns on tribal lands (<b>BIA-Pyramid Lake, BLM-Carson FO, NDOW, NDF</b>)</li> <li>14. Implement NDOW identified spring enhancements in the Virginia mtns. (BLM-Carson)</li> <li>15. Future inclusion of Buffalo-Skedaddle group/PMU in adaptive management due to bird movement from Virginia mtns to the BS unit. (<b>SETT</b>)</li> </ol>
<p><b>Sheldon</b></p>	<p>Population Trigger Soft Lek + Soft Cluster</p> <p>Extreme drought conditions have contributed to population-level stress. Combined with drought conditions, animal use of late brood-rearing areas have led to wet meadow habitat declines which is a limiting factor for sage grouse recruitment.</p>	<p>The following is recommended:</p> <ol style="list-style-type: none"> <li>2. Acquire population data from ODFW to ascertain relevance of trigger</li> <li>3. Evaluate large fire rehabilitation on the Sheldon NWR (<b>USFWS</b>)</li> <li>4. Make Sheldon NWR annual work plan available to local partners and engage NWR staff (<b>USFWS</b>)</li> </ol>

Data contributed by ODFW can contribute to knowledge		
Massacre	Population Soft Lek  Possible lack of water causing birds to move to adjacent lek (original Cherry Creek North 1). Possibly an erroneous trigger.	<ol style="list-style-type: none"> <li>1. Fire break and Riparian Actions in Massacre PMU are occurring in coordination with the Applegate BLM office and NDOW.</li> <li>2. Develop a list of priority areas</li> <li>3. Lost fire rehabilitation success evaluation (<b>BLM-Applegate and Black Rock FO</b>)</li> <li>4. Aerial weed management in the following areas: -Aerial Cheatgrass treatment North of wall canyon reservoir + reseeded efforts (<b>BLM-Applegate FO</b>) -Spraying all noxious weeds along 34A and 8A (<b>NDOT, Washoe County, BLM-Applegate FO</b>)</li> <li>5. Eagle lake BLM Field office needs to coordinate weed treatment with Applegate and Winnemucca FO (<b>BLM EL, APL, &amp; Winnemucca FO</b>)</li> </ol>

**5.7 WHITE PINE CONSERVATION PLANNING AREA (POINT OF CONTACT – LAURIE CARSON)**

PMU Name	Trigger Type & Causal Factor*	Management Recommendations
<i>Please list the PMU name for which the management recommendations should be applied</i>	<i>List the Trigger type associated with the listed PMU and <b>If possible</b>, for each trigger type please list a hypothesis for the root cause of the trigger (habitat triggers may involve simply listing the acreages of wildfire, population triggers may be complex to explain)</i>	<i>Please list appropriate, realistic, and targeted responses for each causal factor. <b>Please limit/prioritize to a maximum of 5 actions per/PMU.</b> Actions need not be restricted to federal agencies (i.e., BLM/Forest Service), they may involve other governmental organizations (e.g., NDOW, County, State, etc.). Please identify which agencies the recommendations are meant for.</i>
<b>Butte/Buck/White Pine</b>	<p><b>South Newark Valley 2- Soft Lek Trigger: Population Trigger</b></p> <p>1/29/2020</p> <p>Possible Causal Factors:</p> <ul style="list-style-type: none"> <li>• Horses – congregate at Monte Cristo (Valley) water and winterfat in the spring.</li> <li>• Predators – Ravens, Coyotes</li> </ul>	<ol style="list-style-type: none"> <li>1. Manage horses at AML</li> <li>2. Raven predator control</li> <li>3. Coyote predator control?? – not agreed upon by group</li> <li>4. Noise Monitoring - <b>PAN &amp; Gold Rock and Oil and Gas interest in area.</b></li> </ol>

	<ul style="list-style-type: none"> <li>• PAN Mine – noise (Exploration started 2008 and mining in 2013)</li> <li>• Drought – accentuates impacts for all wildlife, horse impacts</li> <li>• Predator perches – Monte Cristo Butte</li> <li>• Oil and Gas exploration in area, but no production</li> </ul> <p>Notes: Summer habitat includes Spring Creek Ranch</p> <p>Other leks in the valley not declining at the same rate (all experiencing drought, ravens, historic livestock grazing, horses)</p> <p>David Little losing more ewes than normal to coyotes (winter timeframe).</p> <ul style="list-style-type: none"> <li>• Historic sheep grazing 20-30K</li> <li>• Sheep grazing - no major changes in operation (constant)</li> </ul> <p>Easy Junior Mine – 10 Miles away</p> <p>History of coyote populations (APHIS)?</p> <ul style="list-style-type: none"> <li>• Copper flat has had a recent increase loss of lambs (last two years), but this is after the 2016.</li> </ul> <p>Rabbit numbers low this year and how could it affect predation on sage grouse.</p> <p>Gold Rock Mine is about 6 miles.</p>	
<p><b>Butte/Buck/White Pine</b></p>	<p><b>Illiapah Reservoir- Soft Lek Trigger: Population Trigger</b></p> <p>1/29/2020</p> <p>Possible Causal Factors:</p> <ul style="list-style-type: none"> <li>• Drought – loss of water sources for summer/brood-rearing habitat.</li> <li>• Horses in White Pine Range; do not seem to be a problem in the valley</li> </ul>	<p>1. Collect data on GRSG movements and seasonal use.</p>

	<ul style="list-style-type: none"> <li>• Round spring dries up and is hit hard by horses. Decline in quality of summer habitat.</li> <li>• Could be movement between some leks in area.</li> <li>• Several newly discovered leks Mokomoke Mountains; however, do not know if these are new or recently discovered.</li> </ul> <p>Notes:</p> <p>Summer in White Pine and in Valley.</p> <p>Horses – 5 head for 6-7 years.</p> <p>Permittee passes through with livestock for a two-week period.</p> <p>2019 tree cutting on Forest Service lands</p> <p>USGS is updating and making an improvement to the model. Revised analysis this fall.</p>	<ol style="list-style-type: none"> <li>2. Protect existing riparian areas (design features for grazing, or fencing). Recommended springs:</li> <li>3. Additional PJ thinning south of California Spring Rd. and around springs.</li> </ol>
<p><b>Butte/Buck/White Pine</b></p>	<p><b>Central Jakes Valley SE-Soft Lek Trigger: Population Trigger</b> 1/29/2020</p> <p>Possible Causal Factors:</p> <ul style="list-style-type: none"> <li>• Horses</li> <li>• Ravens</li> <li>• SWIP and the transfer substation</li> <li>• Summer range issues with riparian habitat</li> <li>• Drought affecting summer habitat</li> </ul> <p>Notes:</p>	<ol style="list-style-type: none"> <li>1. Gather horses.</li> <li>2. Predator (raven) control</li> <li>3. Promote summer habitat restoration in White Pine Range (riparian improvements and PJ encroachment on upland)</li> </ol>

	<p>Permittee discovered birds in fields strutting but not consistently. NDOW explained that birds that are flushed by a predator, wherever they land they may strut in new location but move back to original lek.</p>	
<p><b>Butte/Buck/White Pine</b></p>	<p><b>Deadman Wash-Cluster Soft Trigger: Population Trigger</b> 1/29/2020</p> <p>Possible Causal Factors:</p> <ul style="list-style-type: none"> <li>• Horses (run along the fenceline where the lek is located).</li> <li>• SWIP</li> <li>• Drought affecting summer habitat</li> </ul> <p>Notes:</p> <p>Rosevear's cattle congregate in the winterfat in the spring.</p> <p>More horses seem to congregate in this area due to water sources.</p> <p>Maria (BLM)</p> <ul style="list-style-type: none"> <li>- Provide lek numbers to us so maybe numbers may trigger an event.</li> </ul> <p>Alex (BLM)</p> <ul style="list-style-type: none"> <li>- Should also be reviewing vegetation data</li> </ul> <p>Lek data 2001 thru 2016 was included in USGS analysis.</p>	<ol style="list-style-type: none"> <li>1. Gather horses</li> <li>2. Predator (raven) control (including on private property to south)</li> <li>3. Promote summer habitat restoration in White Pine Range (riparian and PJ encroachment on upland)</li> <li>4. Add sage grouse reflectors to fence-line if not marked already. Black and white markers and top two strands.</li> </ol>
<p><b>Butte/Buck/White Pine</b></p>	<p><b>Beck Pass 3—Soft Cluster Trigger: Population Trigger</b> 2/6/2020</p> <p>Possible Causal Factors:</p> <ul style="list-style-type: none"> <li>• Ravens</li> <li>• Horses</li> </ul>	<ol style="list-style-type: none"> <li>1. Predator control (ravens, coyotes?)</li> <li>2. Gather horses to AML</li> </ol>

	<ul style="list-style-type: none"> <li>• Kinross (Bald Mountain Mine) – exploration (not full scale mining at this time)</li> <li>• Coyotes</li> <li>• Drought</li> </ul> <p>Notes: Kinross has been proactive in their noise monitoring. Limit traffic during lekking hours. However, could still be a mine influence</p> <p>Sheep grazing but not at concentrated at Beck Pass area.</p> <p>Comparison of coyotes harvested in the 60's compared to today. Permittee states coyotes are an issue.</p> <p>Predominate nest predator is ravens. 1/3 to 2/3 of predation on nests. Coyotes have been documented as a predator but not at the extent to avian predators.</p> <p>2015 – dry</p> <p>2011, 2012-2014 – dry winter, wet summers. Helped create an increase in numbers; then winter of 2014, 2015 were dry, 15-16 good winter.</p> <p>Newark birds collared in 2013. Obtain data on nest, adult, brood survival, and habitat selection. Most nest predations were from ravens. Adult mortality are difficult to determine due to scavenging.</p> <p>Ravens attracted to landfills, deadpills, roadkill and increase perches on powerlines and trees.</p> <p>Golden eagle and other raptor predation is not at an unnatural rate.</p>	<ol style="list-style-type: none"> <li>3. Research different ways to prevent perching on irrigation systems.</li> <li>4. Mark fenceline near the leks. Black and white markers and top two strands.</li> <li>5. P/J treatments in sagebrush sites</li> <li>6. Riparian fences on Buck Mountain.</li> </ol> <p>*does APHIS have data on coyote harvest? Population data on coyotes?</p>
<p>Step toe/Cave</p>	<p><b>Cattle Camp Wash Well N—Soft Cluster Trigger: Population Trigger</b></p> <p>2/6/2020</p>	<ol style="list-style-type: none"> <li>1. Predator control (ravens)</li> </ol>

	<p>Possible Causal Factors:</p> <ul style="list-style-type: none"> <li>• Loss of habitat due to seedings and a harsh winter in 2015. Lack of food in harsh conditions for survival.</li> <li>• Ravens</li> </ul> <p>Notes:</p> <p>Sprouse is the permittee, and not at meeting.</p> <p>White Rock allotment has 4 permittees, but only one in the seeding.</p> <p>No horses in the area.</p> <p>Lots of recent habitat work completed by BLM. 27,000 acres already treated.</p> <p>South Steptoe has a lot of crested wheatgrass seedings. Leks are in the seedings. Winter habitat is limiting. Winter of 2015-2016 was a hard winter. Less of than 50% of sagebrush was showing due to snow cover. A necropsied GRSG had 0 percent fat.</p> <p>Fence north to lek, has reflectors. Fence to west, and northwest. Lots of fences in the area. Windmill nearby for perching (windmill is going to be converted to solar but not sure if the windmill will be removed from site.</p> <p>Utah State researcher is looking at how the birds are using treatments. Using them mostly in the summer-time.</p>	<ol style="list-style-type: none"> <li>2. Riparian improvements</li> <li>3. Continue with P/J treatments to increase habitat.</li> <li>4. Consider additional GRSG markers on fences. Add markers to second top strand. Use black and white markers.</li> </ol>
<p>Schell/Antelope</p>	<p>North Creek—Hard Lek Trigger: Population Trigger</p> <p><b>North Creek lek and North Creek East lek were count by different surveyors, and confusion in counts. NDOW has combined into one lek and it has not reached a trigger!!! Database error.</b></p> <p>Possible Causal Factors:</p>	

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