Triggers and Adaptive Management

Sagebrush Ecosystem Council Meeting

May 18th, 2018

Overview

1. Overview of Appendix D – Adaptive Management Plan within the Draft RMPA/EIS
   - Population triggers
   - Habitat triggers
   - Causal factor analysis and management response
   - Longevity of trigger response

2. SETT recommendations
   - Incorporation of BLM adaptive management plan into the State Plan with recommended modifications and additions.

Adaptive Management Scales

Scales which apply triggers and adaptive management responses:

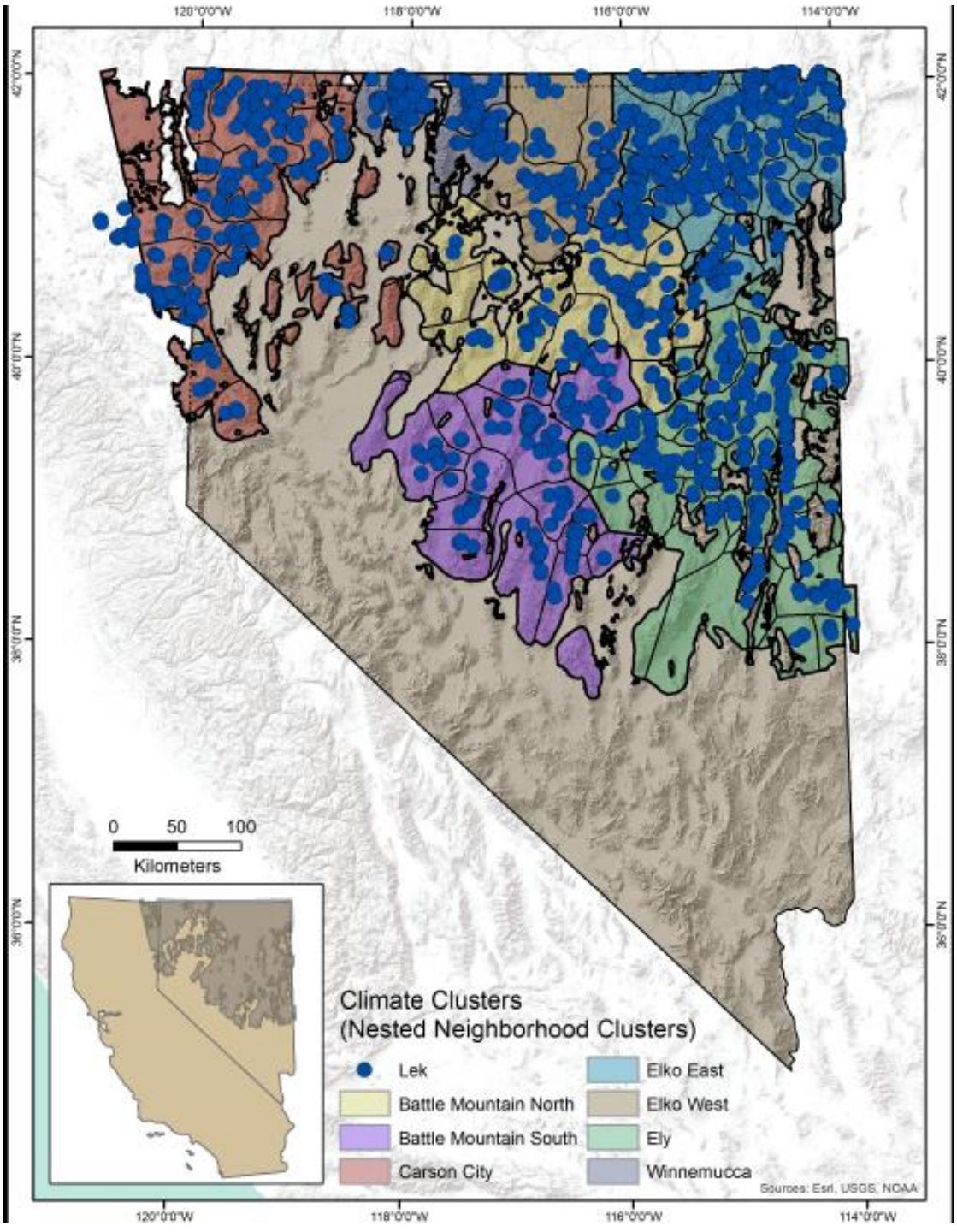
1. Lek – individual breeding sites
2. Lek Cluster – group of leks with high amount of interchange and connectivity
3. Biologically Significant Unit (BSU) – nested lek clusters with similar vegetation and environmental characteristics

Adaptive Management

Population Triggers

- Population triggers analysis developed by USGS state-space model (Coates et al. 2017) in Section D.4

- Identifies hierarchically nested spatial scales (lek, lek cluster, BSU) and identifies population thresholds for population stability and decoupling from higher-order scales.


120°0'0"W
118°0'0"W
116°0'0"W
114°0'0"W
42°0'0"N
40°0'0"N
38°0'0"N
36°0'0"N
0
50
100
Kilometers
Climate Clusters
(Nested Neighborhood Clusters)
Lek
Battle Mountain North
Battle Mountain South
Carson City
Elko East
Elko West
Ely
Winnemucca
Sources: Esri, USGS, NOAA

Adaptive Management

Habitat Triggers

- Habitat trend based on percent landscape sagebrush cover at lek cluster and BSU scales (Section D.5).

- The SETT will be assembling a Science Work Group to help further define and develop habitat triggers due to the lack of justification to support the habitat thresholds currently identified in the DEIS.

Soft Triggers

- Intermediate Threshold indicating management changes are needed at the project or implementation level.

Hard Triggers

- Threshold indicating immediate action necessary to stop a severe decline, degradation, or deviation from GRSG populations, habitat, or conservation goals and objectives.

Evaluation Process Review – Population Triggers

1. Estimate thresholds
   a. Destabilizing – significant rates of population decline
   b. Decoupling – rate of population decline deviates from average trend of a higher spatial scale (lek vs lek cluster)
2. Warnings
   a. Slow or fast warning activates if both destabilizing and decoupling thresholds are crossed
3. Triggers
   a. Crossing of a temporal threshold (multiple annual *Warnings*)

Population Triggers

- Soft Trigger: Activates if *Slow Warnings* occur over 2 consecutive years

- Hard Trigger: Activates if *Slow Warnings* occur 3 of 4 consecutive years OR *Fast Warnings* occur 2 of 3 consecutive years

Population and Habitat Triggers

- If soft triggers are hit for both populations and habitat within a BSU in a given year, this would result in a hard trigger for that BSU.

Trigger Responses and Causal Factor Analysis

Step 1: Assessment of GRSG population and habitat baseline conditions

- Data compilation completed by fall of each year.
  - Population data from State wildlife agencies
  - Habitat/imagery data updated by BLM and National Operations Center
- Analyze data to determine if soft or hard triggers are hit for populations or habitat at the lek (population only), lek cluster, and BSU.
- Currently, the individual lek scale is not included in the Draft EIS due to lack of a defined spatial extent. The SETT will be working with a Science Work Group to determine an appropriate spatial scale for individual lek.

Trigger Responses and Causal Factor Analysis

Step 2: Determine the causal factor

- When a soft or hard trigger has been hit, state, federal and other local partners (including grazing permittee(s) and other county or city natural resource advisors) will be convened to identify causal factors resulting in a trigger at the lek (population only), lek cluster, or BSU scale.

- Findings from the causal factor analysis, as well as recommendations for additional analyses or data collection if necessary, will be documented in a report to aid in deciding appropriate management responses corresponding to Step 3.

Trigger Responses and Causal Factor Analysis

Step 3: Identify appropriate trigger responses

- Using the same group convened and report developed in Step 2, the BLM will identify appropriate responses that will be applied to the lek (population only), lek cluster, or BSU that has reached a trigger.

Trigger Responses and Causal Factor Analysis

Types of actions may include:

- Increased fire prevention
- Treatment of invasive grasses and weeds
- Delaying issuance of new permits and authorizations
- Installing anti-perch deterrents on tall structures
- Limiting noise or light pollution

The SETT anticipates developing additional management responses and would welcome SEC input for additional actions that would enable meaningful and SMART management responses for GRSG populations and habitat

Trigger Responses and Causal Factor Analysis

Step 4: Implement trigger responses

- District or field offices will collaborate with federal, state, or other local partners to implement project specific management responses at the scale in which the trigger was reached.

Trigger Responses and Causal Factor Analysis

Step 5: Monitor responses

- District or field offices will collaborate with federal, state, and local partners to monitor the lek (population only), lek cluster, or BSU in which the trigger was reached.

Longevity of Trigger Response

- Reversing a trigger will be based on thresholds and upward trends

- Population thresholds will be developed in coordination with USGS within the state-space modelling framework
  - The minimum time period in which a trigger response can be removed should be equivalent to the length of time it took to result in a slow or hard trigger at the identified scale (e.g. soft trigger of two years of slow warnings must demonstrate two years of the population above the slow destabilizing and decoupling threshold).
  - The team developing longevity of triggers will determine reversals on a case by case basis to account for events including wildfire. Habitat restoration and management actions that are successful or trending towards desired habitat conditions will be considered when identifying trigger reversals.

- Imagery and the HAF will be used by an interagency team to develop a process to evaluate whether a lek cluster or BSU has recovered adequately to reverse a trigger.

SETT Recommendations

1. Adopt the USGS hierarchical population modeling framework to identify population triggers that uses three nested spatial scales (lek, lek cluster, BSU) to identify population thresholds, decoupling from higher order spatial scales, and triggers.

2. Approve the continued development of defining the spatial extent of the individual lek for inclusion within the causal factor analysis and management response.
   - The SETT will convene SWG to identify spatial extent of an individual lek

3. Approve the continued development of habitat triggers, which may include revising the landscape cover metrics, data type analyzed, and baseline values.
   - The SETT will convene the SWG to refine habitat trigger thresholds.

SETT Recommendations

4. Adopt the causal factor analysis and management response process with the following changes/additions:
   - Specify that the other local partners also include: grazing permittee(s) and other county or city natural resource advisors as cooperators in the causal factor analysis and management response process in Steps 2 and 3.
   - Specify that the report developed in Step 2 may include recommendations for additional analyses or data collection.
   - Specify that district or field offices will collaborate with federal, state, or other local partners to implement project specific management responses in Step 4.
   - Specify that BLM will work with federal, state, and local partners to continue to monitor the lek (population only), lek cluster, or BSU in which the trigger was reached in Step 5.
   - Define a minimum time period in which a trigger response can be removed. The SETT recommends this should be equivalent to the length of time it took to result in a slow or hard trigger at the identified scale (e.g. slow trigger of two years of slow warnings must demonstrate two years of the population above the slow destabilizing and decoupling threshold).