Adaptive Management Recommendation for State Plan

Sagebrush Ecosystem Council Meeting

July 17th, 2018

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Steps Taken Since May SEC Meeting

- The SETT convened a Science Work Group to discuss population and habitat triggers on June 5th and 11th
- Consensus and agreement to use the USGS state-space framework for population triggers
- Habitat warnings and triggers more challenging due to limited knowledge and science behind identifying specific thresholds based on quantitative data
- The Science Work Group discussed and recommended a process to identify habitat warnings and triggers
- The SETT received and incorporated several rounds of feedback from members of the Science Work Group

Why is Adaptive Management Important to the State?

- Will allow the State to leverage support for taking management action when population and/or habitat thresholds need to be addressed.
- It is a process that is intuitive, scientific, and most importantly, collaborative.
- It is a process that will help promote flexible resource management decisions.
- Can result in iterative management changes that are targeted, focused, and effective through time.
- Provides additional certainty and accountability that management responses are robust and able to respond to a variety of conditions and circumstances quickly and effectively.
- The process is collaborative and includes participation from local, state, and Federal level.

How this Proposed State Strategy Differs from the BLM and FS 2015 Strategy

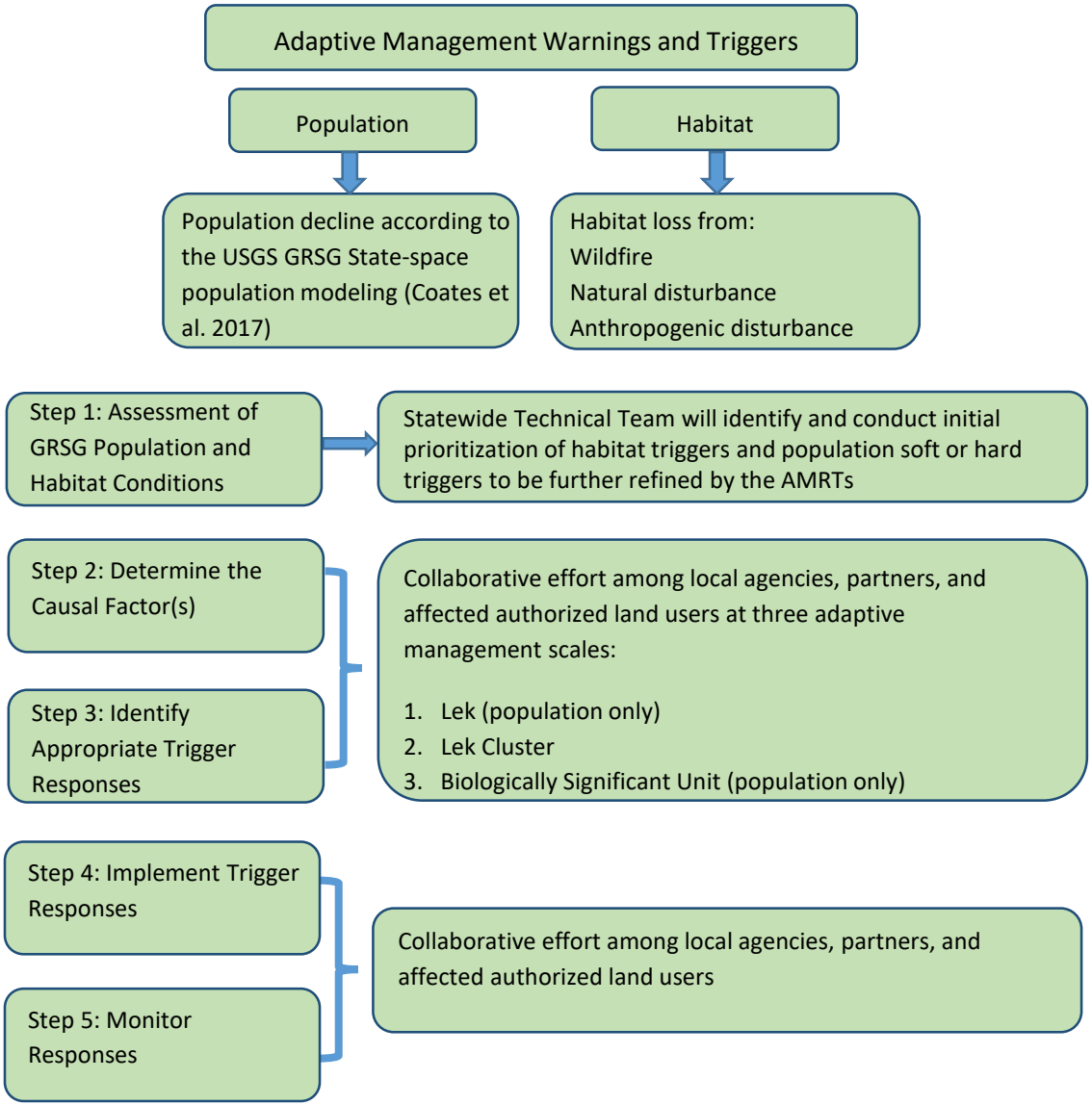
- Does not include immediate hard trigger responses, but instead, incorporates a process to prioritize areas that warrant a management response, as well as a process to identify the causal factors contributing to a specific population or habitat decline.

- More collaborative process that includes agency and partners from all levels – local, state, and federal.

- Applies the best available science.

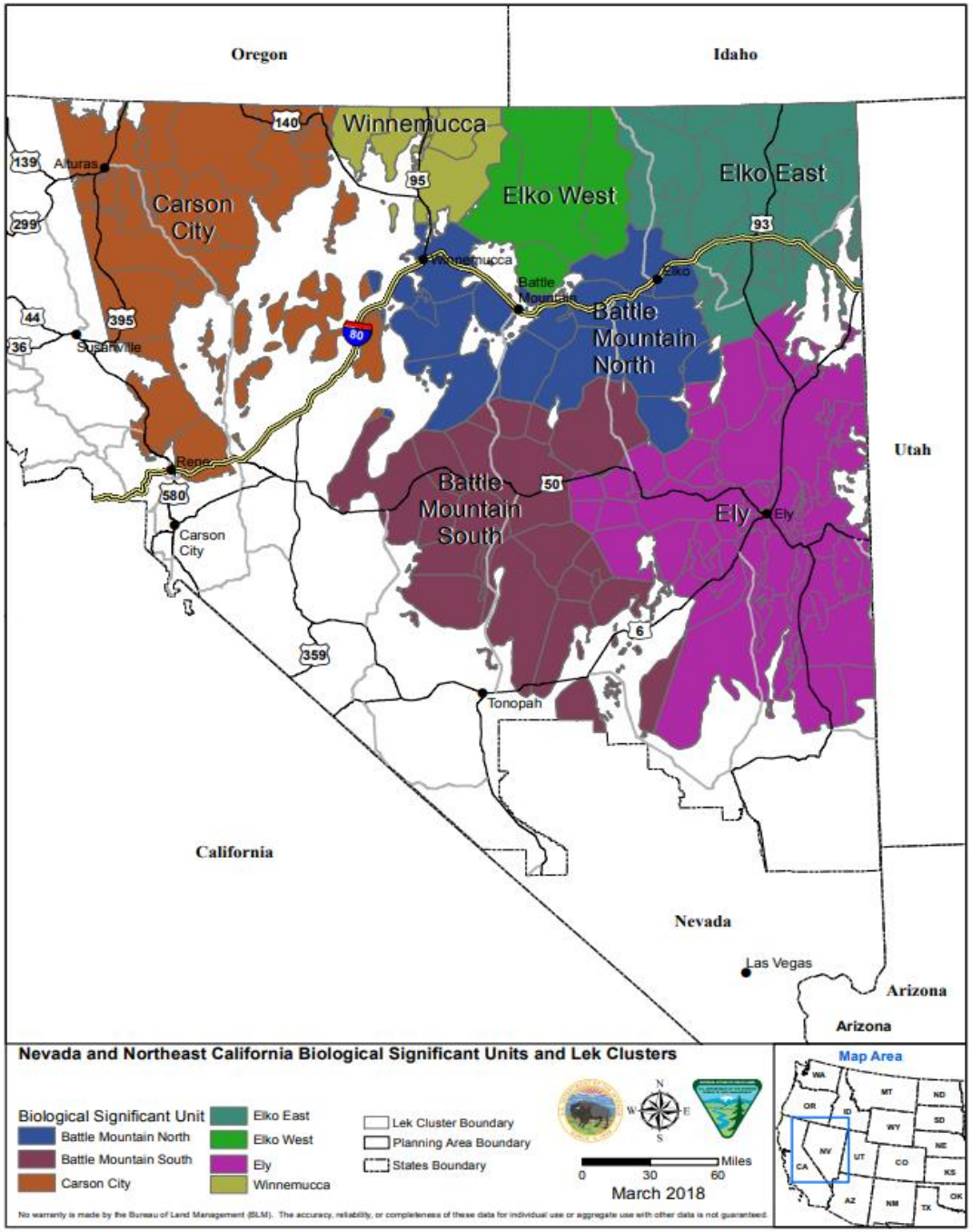
- Removes numeric habitat triggers in place of criteria that is more in line with actual GRSG threats in the State of Nevada.

Summary of Process



Adaptive Management Scales

- Lek (population only): Individual breeding site where male and female GRSG congregate
- Lek Cluster: group of leks in the same vicinity where there is minimal movement between clusters
- Biologically Significant Unit (BSU) (population only): group of lek clusters defined by similar environmental and climate conditions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Alturas
Susanville
Reno
Carson City
Battle Mountain
Elko
Ely
Tonopah
Las Vegas
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Nevada and Northeast California Biological Significant Units and Lek Clusters
Biological Significant Unit
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Carson City
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Population Warnings and Triggers

- Warnings – Identified within the USGS GRSG state-space model that could lead to a population trigger
- Triggers – Identified in USGS model at the lek, lek cluster, and BSU
  - Soft trigger: threshold where management actions should be considered to address population decline
  - Hard trigger threshold that indicates immediate action should be considered to address population decline

Habitat Warnings and Triggers

- Warnings
  - Wildfire
  - Natural disturbance (e.g. sagebrush die-off)
  - New anthropogenic disturbance (defined using HQT)
- Triggers
  - Warnings evaluated by a team of specialists that are determined to warrant significant GRSG focused management response

Adaptive Management Population Analysis

- USGS model estimates rate of population change (lambda) at the three spatial scales
- Triggers identified by estimating thresholds
  - Destabilizing (significant rate of decline)
  - Decoupling (rate of decline deviates from higher order trend)
- Differentiates whether a decline is due to localized disturbances (more manageable) or connected to larger scale, regional environmental/climatic conditions (less manageable)
- Framework accounts for natural variations in populations to target adaptive management response

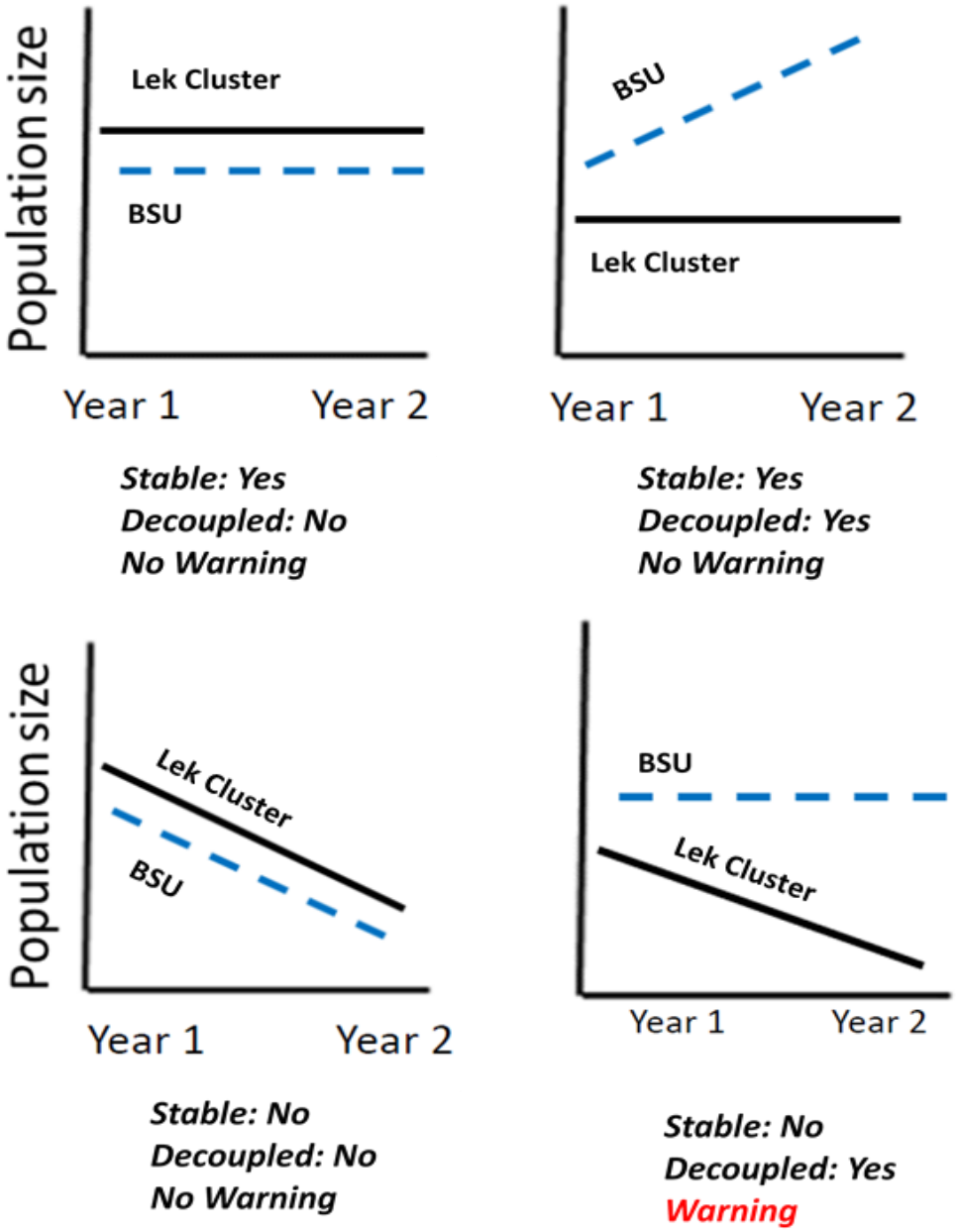

Figure 3. Scenarios depicting population stability (trend) and decoupling from the higher-order spatial scales (Coates et al. 2017). A population that is destabilized and decoupled is considered a warning at that spatial scale. Multiple annual warnings are required to reach a soft or hard population trigger.

Adaptive Management Habitat Analysis

- Habitat warnings will be evaluated annually by a ***statewide technical team*** of specialists (similar to a science work group) from the BLM, Forest Service, NDOW, SETT, USGS, FWS, UNR, and other appropriate state or federal partners to determine the ecological impact and magnitude of the habitat warnings.
- The statewide technical team will determine which habitat warnings warrant a significant GRSG management response or not
- Within a lek cluster, habitat warnings that warrant a management response can be considered habitat triggers and prioritized based on available science, site-specific conditions, etc.
- Areas where habitat triggers were applied but did not have adequate resources to address them will remain on the habitat trigger list and could be re-prioritized in the next annual evaluation by the statewide technical team
- If a population soft trigger is reached within a lek cluster that has a habitat trigger present, this may result in a population hard management response for that lek cluster, as determined by the statewide technical team.

Causal Factor Analysis

Step 1 – Assessment of GRSG Population and Habitat Conditions

- The statewide technical team will evaluate population and habitat data from agency partners to identify population and habitat warnings and triggers
- Population triggers will be identified using the USGS state-space model
- Habitat warnings will be evaluated by the statewide team; habitat warnings that warrant significant GRSG management response will be elevated to a habitat trigger
- Habitat triggers will be initially prioritized by the statewide team using established and criteria to consistently rank habitat triggers
- Meet annually during late summer or fall
- When population and habitat information has been analyzed, the SETT will provide results to the SEC on at least an annual basis

Causal Factor Analysis

Step 2 – Determine the Causal Factor(s)

- Following completion of Step 1, the SETT will initiate an interdisciplinary team to include the appropriate land management agency; the statewide technical team; federal, state and local agencies and partners (local area conservation groups, grazing permittees, other affected authorized land users) to participate in the causal factor analysis

- Team will be the Adaptive Management Response Team (AMRT)

- Findings from the team will be documented in a report that may also include recommendations for additional analyses or data collection

- If the causal factor can't be determined, the AMRT should address threats identified during this process and opportunities for conservation where impacts have occurred

Causal Factor Analysis

Step 3 – Identify Appropriate Management Responses

- The AMRT will identify and recommend appropriate management response to be applied to the lek, lek cluster, or BSU that reach a trigger
- Management responses will only be applied to HMAs (PHMA, GHMA, OHMA)
- The AMRT could also identify an emergency/contingency plan that would outline immediate management actions if the trigger was exacerbated

Causal Factor Analysis

Step 4 – Implement Management Responses

- The appropriate land management agency in coordination with the AMRT will implement management actions at the scale (or targeted area) where the trigger was reached

Step 5 – Monitor Responses

- The appropriate land management agency in coordination with the AMRT will continue to monitor the lek, lek cluster, or BSU or targeted area in which a management response is being applied to determine if responses are adequately addressing the reason for the population or habitat decline

Causal Factor Analysis

- The appropriate land management agency will work with the statewide technical team to develop criteria that will be used to evaluate whether a lek (populations only), lek cluster, and/or BSU (populations only) that reached a trigger has recovered sufficiently or is trending in a positive direction

- If implementation activities are successful or are improving population or habitat conditions, these actions should be continued or re-prioritized the AMRT using information from annual evaluation and monitoring

- The federal land management agency will work with the AMRT to determine when a population or habitat trigger has been adequately addressed to remove the management response.