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STATE OF NEVADA
Sagebrush Ecosystem Program

SAGEBRUSH ECOSYSTEM COUNCIL
STAFF REPORT
MEETING DATE: May 18th, 2018

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TO: Sagebrush Ecosystem Council Members

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SUBJECT: Adaptive Management and Triggers

Adaptive Management and Triggers

Adaptive Management and Triggers are outlined in Appendix D – Adaptive Management Plan of the BLM RMPA/DEIS. The SETT reviewed the outlined adaptive management plan and developed additional recommended changes to better align the BLM Plan with the direction of the Nevada State Plan. Appendix D describes the use of population and habitat thresholds to identify soft or hard triggers; a causal factor analysis to determine reason for decline, and management responses.

Population Triggers

Population triggers are based on USGS hierarchical population monitoring to estimate rate of change in Greater Sage-grouse (GRSG) populations at three nested spatial scales: individual lek, lek cluster, and Biologically Significant Unit (BSU) (Coates et al. 2017). The state-space model analyzes a 17 year dataset of lek count data (2000 – 2016) and represents the most recent and scientifically robust methodology to analyze GRSG population trends based on lek count data. The framework compares local to regional effects and identifies population spatial scales that are in need of management action. Based on annual analysis of lek data, a soft trigger activates if slow warnings occur over two consecutive years, and a hard trigger activates if slow warnings occur three out of four consecutive years or if fast warnings occur two out of three consecutive years.

Habitat Triggers

Habitat triggers are based on the percentage of landscape sagebrush cover at the lek cluster and BSU scale that would be derived and analyzed using satellite imagery compared to baseline data. There is a lack of science and justification to support the thresholds currently identified in the RMPA/EIS; therefore, the SETT will be assembling a Science Work Group to help further define and develop habitat triggers based on the best available science.

Causal Factor Analysis and Management Response

When a population or habitat trigger is reached, a causal factor analysis will be completed by an interdisciplinary team to determine the cause of the decline as well as the management response. The SETT recommends inclusion of the individual lek scale for population triggers throughout the causal factor analysis and management response process. Currently, the individual lek is omitted from the RMPA/DEIS due to lack of a definition for the spatial extent of a lek. The SETT will be working with a Science Work Group (SWG) to define the extent of an individual lek for inclusion in the causal factor analysis and management response process. The BLM outlines a six step process:

Step 1: **Assessment of Greater Sage-grouse Population and Habitat Baseline Conditions.**

In coordination with appropriate federal, state, and local partners (including local area conservation groups), the BLM will evaluate whether population or habitat triggers have been reached. Population data from State wildlife agencies, habitat and imagery data, and the Habitat Assessment Framework will be used to analyze if a soft or hard trigger has been hit using the process defined above for population and habitat triggers.

Step 2: **Determine the Causal Factor.**

Within four weeks following completion of Step 1 and a soft or hard trigger is identified, the BLM will organize a group of federal, state, and local partners (including local area conservation groups, grazing permittee(s), and county or city natural resource advisors) to conduct the causal factor analysis to identify why a soft or hard trigger was reached at the lek, lek cluster, or BSU scale. A report will be developed to describe the findings, needs for additional analysis or data collection, etc.

Step 3: **Identify Appropriate Trigger Responses.**

Using the same interdisciplinary group and report produced in Step 2, the BLM will identify appropriate management responses that will be applied to the lek (population only), lek cluster, or BSU that reached a trigger. Some management responses may include but are not limited to: increased fire prevention measures, treatment of invasive grasses and weeds, delaying issuance of new permits and authorizations, installing anti-perch deterrents on tall structures, or limiting noise or light pollution.

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 and as contained in the report developed in Steps 2 and 3.

Step 5: **Monitor Response.**

District or field offices will collaborate with the same group convened in Steps 2 and 3 to continue to monitor the lek (population only), lek cluster, or BSU in which the trigger was reached to determine if responses are adequately addressing the reason for the population or habitat decline.

Longevity of Trigger Responses

Reversing a trigger will be based on thresholds and upwards trends for the population scales that crossed a threshold. Thresholds and upward trends will be developed in coordination with USGS, and state and federal agencies, within the state-space modeling framework for population triggers. Using satellite imagery and the Habitat Assessment Framework, the BLM will work with state and

federal agency partners to develop a process to evaluate whether a lek cluster or BSU has recovered adequately to reverse a habitat trigger.

The SETT recommends a minimum period of time for removing the trigger response; this will incorporate the same process that was used to identify the trigger to monitor recovery and identify when populations have adequately recovered. For example, if a lek cluster reached a hard trigger (e.g. three years of slow warnings), then the minimum longevity of the management response should result in three years of population thresholds above the slow destabilizing and decoupling thresholds.

SETT Recommendation

The SETT recommends adopting the adaptive management plan within the BLM RMPA/DEIS with several changes to be incorporated into the Nevada State Plan. These have been identified above in the body of this Staff Report; however, an overview of SETT recommendations for an Adaptive Management Strategy to include within the State Plan are as follows:

- 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.

- Approve the continued development of habitat triggers in the RMPA/DEIS, 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.

- Adopt the causal factor analysis and management response process with the following changes:
    - 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.
    - In Step 5, specify that district or field offices will collaborate with the same group convened in Steps 2 and 3 to continue to monitor the lek (population only), lek cluster, or BSU in which the trigger was reached.
    - 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).

- 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