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STATE OF NEVADA
Sagebrush Ecosystem Program

SAGEBRUSH ECOSYSTEM COUNCIL
STAFF REPORT
MEETING DATE: November 18, 2013

DATE: November 12, 2013

TO: Sagebrush Ecosystem Council Members

FROM: Sagebrush Ecosystem Technical Team
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SUBJECT: Summary of Science Work Group Discussion on Cumulative Impacts and SETT Recommendations for Maximum Allowable Disturbance policy.

SUMMARY

This item presents the summary of discussion and SETT recommendations to the questions on cumulative impacts that the Council directed the SETT, during their October 10, 2013 meeting, to bring to the Science Work Group (SWG).

PREVIOUS ACTION

October 10, 2013. As part of the on-going revisions to Section 3.0 of the State plan, the Council discussed the concept of Maximum Allowable Disturbance. The Council indicated that they needed more understanding and so directed the SETT to take the following questions to the SWG for discussion and to return with recommendations:

1. What is the range or threshold of anthropogenic disturbances that result in a long-term negative impact to sage-grouse populations?
2. What is the scale at which cumulative impacts should be assessed?
3. How should natural disturbances, such as fire, be quantified in an analysis of cumulative impacts?
4. Definitions of “disturbance” and “habitat”.

BACKGROUND

1. What is the threshold (numerator) of anthropogenic disturbances that result in a long-term negative impact to sage-grouse populations?

SWG discussion: The SWG discussed this topic extensively. The list of literature that the SETT gathered was relatively complete. The conclusion reached by the group is that the current body of literature on this topic is still emerging, and as with many other topics in the Great Basin, the threshold will likely vary by location, landscape context, and limiting habitat.

The conservation value of setting a threshold that triggers more conservation management was discussed and general consensus agreed that it is valuable. It was discussed that one must know what the change in management would be in order to establish a relevant threshold. The Council has not clearly stated what the change in management would be. Hard numbers, or triggers, are valuable because they are enforceable. Potentially the SEC can set hard numbers within a "flexible space" that would allow for the variability described in the first paragraph.

This could be established through a variety of means discussed by the SWG:

1. Decision tree - this is how we say yes or no. This can be difficult to develop and there can be some variation in how it is implemented by different individuals and agencies (i.e. may result in ground hog day).
2. Quantitative questions that provide a range of thresholds – this would require quantitative models (that predict level of impact to sage-grouse) that would have differing levels of confidence based on current understanding. Science Work Group can help develop these questions.
3. Set a range of thresholds based on the limiting habitat in the PMU (most conservative) to most available habitat (least conservative).

To be able to provide "regulatory assurance", measures need to afford conservation and need to be enforceable and enforced.

In addition, as we are early in our understanding, the thresholds that are set should be evaluated to see if they are meeting the objective. Set a 5-10% disturbance threshold and then evaluate populations every decade to see if that is sufficient. A decade was recommended as yearly population counts are variable and it generally seems that effects to populations can be determined at the decadal scale.

SETT recommendation:
The SETT recommends the Council adopt a threshold of 5% disturbance. The SETT researched thresholds for cumulative impacts as set in other sage-grouse management plans (see Attachment 1). These thresholds were set at either 3% or 5%.

The SETT also recommends that as the science for this specific threshold is still emerging, sage-grouse populations should be monitored to determine their trend over time under this management scenario. The SWG recommends a rolling 10-year average. If populations continue to decline, a more conservative threshold should be set. As well, if a clear threshold is established by science that would be applicable in Nevada, this threshold should replace the suggested 5%.

2. What is the scale (denominator) at which cumulative impacts should be assessed?

SWG discussion: The Science Work Group determined that the scale at which cumulative impacts should be assessed is at the scale of the sub-population or Population Management Unit (PMU). The scale of the sub-population is ideal as this would generally look at the entire landscape that birds of a subpopulation use. The area that birds require needs to be protected; otherwise there is risk of losing a population. However, as there is still incomplete understanding on population dynamics across the state, when this information is not available, the PMU scale should be used.

The SWG recommended that in addition to using the scale of the PMU, the amount of, and juxtaposition of, the different seasonal habitats in an area should be evaluated, as discussed under Question 1. For example, sage-grouse may be more sensitive to disturbance in seasonal habitats that are limited, and as data are available, the scale of seasonal habitat within a PMU should be considered.

SETT recommendation:
Per results of the SWG discussion, the SETT recommends that the Council move forward with the scale of PMU to evaluate cumulative impacts. As mapping for seasonal habitat becomes available, it is recommended that the scale of seasonal habitat per PMU be used to evaluate cumulative impacts.

The Council should be aware that the SGMAs do not follow the PMU boundaries. If the Council chooses to approve this recommendation, the Council will need to provide direction on how to move forward with this discrepancy.

3. How should natural disturbances, such as fire, be quantified in an analysis of cumulative impacts?

SWG discussion: From a spatial perspective, the footprint or perimeter of the fire could be used to delineate the disturbance. However, at what point would a fire no longer be considered a disturbance?

The following is what the Wyoming Plan has to this end. The Science Work Group indicated that this approach is appropriate for Nevada as well; the track changes indicate what would be changed to meet the needs of Nevada.

> Any fire is assumed to be a disturbance until the following trend data can be demonstrated:
>
> > "If sagebrush canopy cover is + 5%, as measured by the method described in the Habitat Assessment Framework (HAF), it is considered suitable. ~~Executive Order 2011-5 requires t~~The below standards plus sagebrush *are required* for all reclamation (where appropriate as described). When sagebrush canopy cover is <5%, but within 60 meters of >10% sagebrush canopy cover measure to determine compliance with the following conditions:
> >
> > Measure for 2 (or more) desirable native grasses at least one of which is a bunchgrass. The species present in the reclaimed area should be reflected in an appropriate reference site, described in the ecological site description (ESD) for the reclaimed site(s), or be representative of pre-disturbance species data. A reference site will be agreed upon and determined by the land management agency or owner, ~~WGFD~~ *SETT* and the proponent. It is recognized that reference sites could be numerous for linear features.
> >
> > The frequency of occurrence of grass is expected to meet or exceed 70% of the frequency of grass as measured on the reference site, or as described in the ESD for the reclaimed sites(s), or as represented in the pre-disturbance species data. Grass canopy cover measurement is expected to meet or exceed 70% of the grass canopy cover as measured on the reference site, or as described in the ESD for the reclaimed sites(s), or as represented in the pre-disturbance species data.
> >
> > Likewise, measure for 2 desirable native forbs. The frequency of occurrence of forbs is expected to meet or exceed 70% of the frequency of forbs as measured on the reference site, or as described in the ESD for the reclaimed sites(s), or as represented in the pre-disturbance species data. Forbs canopy cover is expected to meet or exceed 70% of the forb canopy cover as measured on the reference site, or as described in the ESD for the reclaimed sites(s), or as represented in the pre-disturbance species data."
> > (Wyoming 2012)

SETT recommendation:
The SETT recommends that the Council adopt the above language to indicate the trend needed for monitoring data following fire (or any disturbance) to show that a site has been restored sufficiently (either through active or passive management) so the area is no longer considered a disturbance.

4. Definitions of "disturbance".

SWG discussion:
Disturbance - any action that can cause negative, observable or potential impacts to demographics of sage-grouse.

Habitat - any piece of ground that meets the needs for sage-grouse including for cover and food.

Restorable habitat - any piece of ground that is not currently habitat, but, per the Ecological Site Description, has the potential to be habitat. *(These lands could be used to create credits.)*

SETT recommendation:
The SETT recommends that the Council adopt these definitions for inclusion in Section 2.0 Definitions. The definition of habitat as outlined by the SWG is a broad definition of habitat. The Council may wish to plan to adopt a definition of "suitable habitat" based on the USGS modeling effort and with the assistance of Dr. Pete Coates. The definition of "restorable habitat" may be useful in the development of the Conservation Credit System.

The following table is adapted from Wyoming which is the comprehensive list of disturbances that are quantified in their analysis of cumulative impacts with the Density/ Disturbance Calculation Tool (DDCT). The SETT recommends a defined list of potential disturbances, as Wyoming has, for transparency and documentation purposes. Wildfire would be considered a natural disturbance; all others would be considered anthropogenic disturbances. Note that this list can be modified by the Council as they see necessary, while keeping in mind the definition of "disturbance" provided by the SWG. Also note that this is *not* the list of disturbances/projects that will require coordination with the SETT. That list would be a subset of this list and are further defined in the Section 2.0 and 3.0 revisions that are scheduled to be presented during the November 18th Council meeting Agenda Item 9A.

ID	Description	ID	Description
0	**Unknown**	**4**	**Oil and Gas**
0	Unknown Type of Disturbance	40	General Oil/Gas Disturbance (type unknown or varied)
1	**Road / Transportation**	41	Abandoned Well Pad (oil/gas)
10	General Road (Unknown Type)	42	Drill Hole
11	Highway/Street (paved)	43	Pipeline
12	Dirt Road (BLM, County)	44	Test Well (oil/gas)

13	Other Improved Road	45	Blowout Mud Pit (oil/gas)
14	Residential Driveway	46	Oil/Natural Gas Pipeline Building
15	Oil/Gas Access Road	47	Evaporation Pit
16	Mining Access Road	48	Well Pad (general)
17	Landing Strip	**5**	**Mining**
18	Buffered BLM, County, State, Federal	50	General Mining Disturbance (type unknown or varied)
19	Interstate with buffer	51	Exploratory Scours
2	**Structure / Development**	52	Blowout Mud Pit (mining)
20	General Structure (type unknown or varied)	53	Drill Hole
21	Private House/Structure	54	Test Well
22	Oil/Gas structure (type unknown or varied)	55	Abandoned Pad
23	Mining structure (type unknown or varied)	56	Mining Pit
24	Snow fence	57	Mining Reclamation (Large Scale)
25	General fence (type unknown)	58	Gravel Pit/Gravel Storage
26	Private Residential Development (general)	**6**	**Utilities**
27	Agricultural Development	60	General Electrical Disturbance (type unknown)
28	Residential Area / City Boundaries	61	Power supply center
29	Man-made wetland	62	Power line/pole
3	**Range Land / Railroad / Road cut**	63	Windmill
30	General Range Disturbance (type unknown or varied)	64	Landfill
31	Water Source General (type unknown)	**7**	**General Linear Disturbance**
32	Cattle Waterhole	70	General Linear Disturbance (type unknown)
33	Water Trough/Tank	**8**	**Fire and Vegetation Treatments**
34	Dam/Reservoir	80	Wildfire
35	Cattle salt-lick	81	Prescribed Burn

36	Vegetation Treatment-some qualify	82	Mechanical Treatment
37	Exclosure Fence	83	Chemical Treatment
38	Railroad		
39	Highway Excavation Cut		

(Adapted from Wyoming 2012)

Literature Cited

Wyoming. 2012. DDCT Frequently Asked Questions. Available at: https://ddct.wygisc.org/Data/Sites/24/files/FAQs.pdf. Accessed October 2013.

FISCAL IMPACT

There is no fiscal impact at this time.

RECOMMENDATION

The recommendations outlined above have been incorporated in the November 18 Section 3.0 revisions.

POSSIBLE MOTION

Should the Board agree with the staff recommendations, a possible motion would be, "Motion to approve revisions to Section 3.1.2 Maximum Allowable Disturbance"

Attachments:

1: Summary of thresholds from other state plans and sub-regional EISs.

ln:TR

Attachment 1: Summary of thresholds from other state plans and subregional EISs

Thresholds from Other Sage Grouse Management Plans

Plan Name	A - No Action Alternative	B -NTT Alternative	C-Citzen's Alternative	D- BLM/FS Alternative	E- State Alternative	F -Citzen's Alternative
Colorado Subregional EIS	No disturbance cap would be applied	A 3-percent disturbance cap would be applied in "PPH"	A 3-percent disturbance cap would be applied in "All Designated Habitat"	A 5-percent anthropogenic disturbance cap and 30-percent total disturbance cap would be applied in ecological sites supporting sagebrush	-	-
Idaho/Montana Subregional EIS	No disturbance cap would be applied	A 3- percent surface disturbance cap on anthropogenic disturbances (not including fire) in Preliminary Priority Management Areas.	Same as Alternative B.	No net unmitigated loss of Preliminary Priority Management Areas.	A 3-percent per 640 acres surface disturbance cap on fluid mineral development in CHZ in Idaho and a five percent per 640 acres disturbance cap in IHZ. No disturbance cap would be applied in the Montana or Utah portions of the sub-region.	A 3-percent disturbance cap on surface disturbances (including fire) in PPMA.
Nevada/California Subregional EIS	No disturbance cap would be applied	Manage GRSG PPMAs so that discrete anthropogenic disturbances cover less than 3% of the total GRSG habitat regardless of ownership. Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. ● In PPMA where the 3% disturbance threshold is already exceeded from any source, no further anthropogenic disturbances will be permitted by BLM or Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). ● In this instance, an additional objective will be designated for the priority area to prioritize and reclaim/restore anthropogenic disturbances so that 3% or less of the total PPMA is disturbed within 10 years.	For Leased Federal Fluid Mineral Estate- limit permitted disturbances to 1 per section with no more than 3% surface disturbance in that section.	No net unmitigated loss of Preliminary Priority Management Areas	???	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3% per section for that area.
State of Wyoming Plan	-	-	-	-	Limit to 1 disruption per 640 acres AND limit to <%5 disturbance within Examination Area (which is a 4 mile radius on project boundary plus an addition 4 mile radius around any leks captured in the initial 4 mile radius)	-
State of Idaho Plan	-	-	-	-	A 3-percent per 640 acres surface disturbance cap on fluid mineral development in CHZ in Idaho and a five percent per 640 acres disturbance cap in IHZ.	-
State of Utah Plan	-	-	-	-	Cumulative new permanent disturbance should not exceed 5% of the surface area of nesting habitat, 5% of winter habitat, or 5% of other habitat within an SGMA.	-