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# Kaibab National Forest Plan Revision Collaborwriting Meeting

## Grasslands

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Meeting Report

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	<p><b>In your view, what is the single most important change (addition/deletion/modification) we should make to the following statements to ensure that it properly addresses this desired condition? <b>Insert statements.</b></b></p> <p><b>Desired Conditions:</b></p> <ul style="list-style-type: none"> <li>• <i>The structure and function of vegetation are within the range of historic variability.</i></li> <li>• <i>Historical disturbances play a primary role in the function of the ecosystem.</i></li> <li>• <i>Grass height and canopy cover are sufficient to support the historic fire return interval.</i></li> <li>• <i>Grass/forb/shrub canopy cover is typically between 25 and 80%, with less than one quarter of any grassland above or below this range.</i></li> <li>• <i>Native species occur in natural patterns of abundance and distribution.</i></li> <li>• <i>Non-natives invasives species are either absent or occur in low levels so that they do not disrupt structure and function</i></li> </ul>
#	Comment
1	Grass height should be vegetation height.
2	Addition: should include grazing in 3rd bullet.
3	Grazing is a disturbance and should be included.
4	The word 'historic' has very specific meaning related to the period of written history. That starts about 1500 in the SW. I think you are referring to something else, that is, natural conditions, without human interference.
5	Grass height and canopy cover certainly relate to function; however, there is no mention of plant diversity/biodiversity within these bullets.
6	Acknowledge changing climate's influence on desired conditions, not just HRV.
7	Third bullet. Change grass to Plant. Plant height and canopy cover are sufficient...
8	Add: Risk of loss of key ecosystem components (e.g. native species and soil) to uncharacteristic disturbances is low.
9	Perhaps add a "such as" statement when describing historical disturbances, otherwise it is very broad.
10	In the first bullet, I would replace 'function' with 'composition'. Function is hard to measure. Composition is a measurable quality.
11	Grazing should be included as a disturbance.

12	Spatial arrangement of grasslands should be addressed to account for historic connectivity.
13	Grasslands should be resilient.
14	Add composition to 1st bullet.
15	Some vegetation and/or species may need protection or other considerations from historical or current disturbances.
16	Livestock grazing may be permitted only where it maintains or improves the health, native biological diversity, and long-term sustainable productivity of the grassland ecosystem.
17	There is probably another factor that supports historic FRI, e.g. litter.
18	Resilient systems must retain native species in natural patterns of abundance and distribution, as well as abiotic natural process such as fire.
19	Historical disturbance contributes to proper nutrient cycling and abiotic processes (carbon/nitrogen cycling).
20	The results of fire and other management activities emulate natural processes.
21	Soil conditions need to be explicitly defined.
22	Soil condition and soil productivity.
23	The third bullet may almost be redundant of the first bullet
24	Grass height, canopy cover, etc. should support historic fire return interval, but also result in an appropriate response from other resource values such as watershed condition, wildlife, etc.
25	The results of fire and other management activities contribute to the maintenance and restoration of all native species in natural patterns of abundance and distribution.
26	At some point, the suitability of uses (e.g., grazing) needs to be addressed.
27	Grassland conditions need to be explicit.

	<p><b>In your view, what is the single most important change (addition/deletion/modification) we should make to the following statements to ensure that it properly addresses this desired condition? <b>Insert statements.</b></b></p> <p><b>Desired Conditions:</b></p> <ul style="list-style-type: none"> <li>• <i>The structure and function of vegetation are within the range of historic variability.</i></li> <li>• <i>Historical disturbances play a primary role in the function of the ecosystem.</i></li> <li>• <i>Grass height and canopy cover are sufficient to support the historic fire return interval.</i></li> <li>• <i>Grass/forb/shrub canopy cover is typically between 25 and 80%, with less than one quarter of any grassland above or below this range.</i></li> <li>• <i>Native species occur in natural patterns of abundance and distribution.</i></li> <li>• <i>Non-natives invasives species are either absent or occur in low levels so that they do not disrupt structure and function</i></li> </ul>
#	Comment
1	Range of canopy cover should be commensurate with soil type.
2	Where does the 1/4 come from?
3	The minimum makes sense but the maximum does not.
4	Why the 4th bullet? Do you have data to support it?
5	Again, mention of biodiversity or composition needs to be incorporated.
6	6th bullet, add “of the ecosystem” at the end of the sentence.
7	Non-native species are present at levels that do not disrupt...and composition or plant species of particular concern.
8	Native species occur in natural patterns of abundance and distribution such that they maintain viable populations.
9	The appropriate cover for some vulnerable species is likely to be species-specific.
10	There should be a desired condition that relates to structure and function surrounding waters at fine scale.
11	Conditions may be different in areas immediately adjacent to water.
12	The minimum makes sense but the maximum does not.

	<b>MONTANE/SUBALPINE: In your view, what is the single most important desired condition specific to this ecosystem? (Please specify the scale to which this condition applies.)</b>
<b>#</b>	<b>Comment</b>
1	Plant composition/diversity is important at all scales.
2	We need to get at the other species that may be desirable and what they provide.
3	Keeping trees to less than 9%.
4	Montane meadows grow fast; so may be looking at a large reduction.
5	Forest encroachment.
6	Eliminate or at least significantly reduce road impacts.
7	Connectivity similar to historic and based on soil types.
8	Ground cover sufficient to protect soils.
9	Rare, sensitive, and/or vulnerable species receive appropriate consideration, management, and protection.
10	Floristic diversity. These ecosystems may have the greatest floristic diversity of any on the Kaibab at all scales. It should be a management goal to maintain this diversity.
11	What thoughts, ideas, questions or comments do you have regarding this matter?

	<b>MONTANE/SUBALPINE: What work needs to be done to achieve this desired condition?</b>
<b>#</b>	<b>Comment</b>
12	Floristic inventory.
13	Reduce or eliminate non-native grazing animals.
14	Inventory current conditions where lacking or questionable.
15	Reduce or eliminate cattle grazing.
16	Integrate this process with the TMP effort.
17	Removal of trees from grassland/meadow systems.
18	Restore natural fire regime.

19	Institute a monitoring program.
20	Allow fire to burn grasslands. Remove trees. Treat weeds.
21	Focus on treatments in mollisol soils since Fig. 50 shows this where biggest difference is between historic and current condition.
22	Occasional thinning where necessary to safely reintroduce natural fire.
23	Do not restrict treatment in identified meadows/grasslands by tree diameter.
24	Determine what vegetation/species are there; determine what diversity could be there or restored; put achieving desired vegetation/species goals above pre-conceived projects/actions.
25	Where thinning is thought to be needed, review suggestions made by stakeholder groups working on forest restoration.
26	Restore connectivity of smaller meadows to larger areas.
27	Use TES to help frame what diversity was there to begin with.
28	Tree removal, opening of canopy and restore natural fire regimes to encourage grasses, mediate for spread of undesirable species (herbicides) and seeding if necessary.
29	Emphasize precautionary approach incorporating the best science in the context of urgency imposed by current biodiversity crisis, including climate disruption.

	<b>MONTANE/SUBALPINE: Are there any design constraints or other issues that need to be considered when implementing these work items?</b>
<b>#</b>	<b>Comment</b>
30	Floristic inventory needs to be supported with voucher specimens deposited in regional herbaria.
31	Maintain and enhance snag component.
32	Stakeholder groups working on landscape scale restoration may have input and various constraints on these areas.
33	Access needs to be considered - fencing and temp roads perhaps in sensitive areas.
34	Expect weigh-in from various stakeholders on removal of large trees.
35	Maintain and restore native species such as pronghorn and Gunnison's prairie dogs. Connectivity is an issue with pronghorn.

36	Minimize soil impacts from slash by lopping and scattering or keeping piles small.
37	Consider connecting meadows on Kaibab to adjoining lands in other ownership.

	<b>CO. PLATEAU/GREAT BASIN: In your view, what is the single most important desired condition specific to this ecosystem? (Please specify the scale to which this condition applies.)</b>
<b>#</b>	<b>Comment</b>
1	Same.
2	Focus on species such as sagebrush for which the Kaibab has a major regional contribution.
3	Reintroduce low intensity fire.
4	Maintaining understory vegetation.

	<b>CO. PLATEAU/GREAT BASIN: What work needs to be done to achieve this desired condition?</b>
<b>#</b>	<b>Comment</b>
5	Same as above.
6	Weed inventory and treatment where necessary.
7	Managing recreation impacts.
8	Potential invasion of non-native species from adjacent non-Kaibab NF lands.
9	Balance managed livestock grazing and wildlife use relative to fire restoration, nutrient cycling and other vegetation needs.
10	Reduce or eliminate grazing where necessary to maintain or improve the health and long-term sustainability of the ecosystem.
11	Manage timing of management activities and managed grazing to allow for winter use of browse and seeds.
12	Reintroduce natural fire regime.
13	Soil crust?

	<b>CO. PLATEAU/GREAT BASIN: Are there any design constraints or other issues that need to be considered when implementing these work items?</b>
#	<b>Comment</b>
14	Flexibility when considering management tools.
15	Winter range.
16	Warming and drying due to climate may reduce our ability to manage for status quo or HRV.
17	Effective restoration will require coordination with Balm. You'll need to lean on them hard.

	<b>SEMI-DESERT: In your view, what is the single most important desired condition specific to this ecosystem? (Please specify the scale to which this condition applies.)</b>
#	<b>Comment</b>
1	Eliminate bison.
2	Soil crust.
3	Emphasize all native species in House Rock WILDLIFE Area.
4	Non-native ungulate use causes canopy cover to be reduced at small scales to 0%.
5	Maintain and enhance native plant diversity.
6	Maintain soil carbon and litter.
7	Improve age class diversity of grassland components.

	<b>SEMI-DESERT: What work needs to be done to achieve this desired condition?</b>
#	<b>Comment</b>
8	Weed treatments.
9	Minimize soil compaction when carrying out work.
10	Evaluation of existing management and whether it appropriate in meeting DCs.
11	Recognize that some areas are beyond restoration - prioritize work and exclude areas that are beyond threshold shrub encroachment (25%?)

12	Do no harm.
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<b>SEMI-DESERT: Are there any design constraints or other issues that need to be considered when implementing these work items?</b>	
<b>#</b>	<b>Comment</b>
13	Flexibility with tools for management.
14	Collaboration with adjacent non-Kaibab NF management.
15	Experimental approaches to effect means of restoration.
16	K-rat needs good shrub cover and sparse grass cover.
17	Ditto on climate change.