

Colorado Habitat Exchange and Wyoming Credit Exchange  
Discussion Questions for the Science Team

The following are initial discussion questions identified for the meeting between the CHE and WCE Science Teams and the Species Lead Team. A full day in-person meeting is being planned for early July. The meeting date has not yet been set, but the location will likely be in Fort Collins.

The discussion questions were developed by the Mitigation Review Team. As the Species Lead Team reviews the Exchanges, we anticipate they will have additional questions beyond those listed below.

- 1) Updates to the CHE Manual and HQT will go through a process (allowing stakeholder input) guided by the Exchange Administrator. Any changes must ultimately be approved by the OC. Have adaptive management triggers been considered?
- 2) What causes of unintentional loss are covered by the 4% portion of the Reserve Account?
- 3) How will you evaluate over time if 7% is sufficient to cover the potential for oil and gas development due to split estate?
- 4) Why did you decide to treat any and all fires as force majeure events?
- 5) Would adding consideration of limiting habitat factors in a Service Area improve the evaluation of habitat functionality?
- 6) Why did you decide to design the Exchange in a way that would allow replacement of functional acres, regardless of seasonal habitat functionality lost or gained (functional acres of winter habitat can be used to compensate for loss of summer functional acres)?
- 7) Did you consider having different baseline functional values by Service Area? Why did you set the baseline functional value at 20% throughout Colorado?
- 8) Why did you choose the winter habitat scoring curves for sagebrush height specific to slopes as <5% and >5%? Is the HQT scoring curve for sagebrush canopy cover appropriate for wintering and breeding habitat? Specifically, if other vegetation factors are favorable, could 5% sagebrush canopy cover result in 50% functionality of wintering and breeding habitat?"
- 9) Why did you choose the modifier values for percent invasive grass cover? The HQT uses a modifier to account for the detrimental effects of invasive grasses at the site (4th

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order) scale (HQT p.24). The functionality of habitat (as determined by other vegetation features) is multiplied by a score based on the amount of the site that is covered by invasive grasses. Colorado data were used to develop the multiplier scores. If the site is more than 15% invasive grass cover, the modifier forces the functionality of that site to zero.

- 10) Why did you choose the modifier values for conifer cover? The HQT uses a modifier to account for the detrimental effects of conifer cover at the site (4th order) scale (HQT p.26). The functionality of habitat (as determined by other vegetation features) is multiplied by a score based on the amount of conifer cover within 1km radius of each map unit. If the area within the map unit and 1km buffer is more than 10% conifer cover, the modifier forces the functionality of that map unit to zero.
- 11) How did you decide on the decay curves used for indirect effects? To capture the indirect effects of infrastructure, the HQT uses distance-decay curves that specify the weight and distance of the effects resulting from different types of disturbance (HQT p.27, Appendix B).
- 12) How did you settle on the modifier values for distance to a lek? The HQT uses a modifier to account for the importance of lek proximity for breeding habitat at the local scale. The functionality of habitat (as determined by other vegetation features) is multiplied by a score based on the distance of the map unit from a known lek. If the map unit is more than 10km from a known lek, the modifier decreases the functionality of that map unit to 10% of the measured value.
- 13) The HQT uses a modifier to account for the need for sagebrush cover in close proximity to summer habitat. The functionality of habitat (as determined by other vegetation features) is unchanged if there is 5% sagebrush canopy cover within 300m of the sample point. If there is less than 5% sagebrush canopy cover within 300m of the sample point, the functionality of that habitat is reduced to zero. Is the 5% sagebrush canopy cover within 300m modifier adequate to account for the importance of cover in summer habitat?
- 14) How did you decide on the values and distances used for the LDI? Are there plans to update or reassess these values on a regular basis? The density of anthropogenic disturbance is factored into the HQT (HQT p.31, Appendix D) through the Landscape Disturbance Index (LDI). The LDI discounts the number of functional acres calculated for an area within a 12.4 square mile area radius buffer with the lower threshold (i.e. no disturbance) equivalent to 1 well pad and associated road or less and an upper threshold (i.e. full disturbance) of 6.5 well pads and associated roads or more.
- 15) How will the biological monitoring protocol feed into the adaptive management recommendations of the Science Team?

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16) What provides you confidence that a net conservation benefit will be achieved through the CHE?