Suzanne Steab <suzannesteab@utah.gov>

Fwd: Coal Hollow Stocking Density for Shrubs

Lisa Reinhart <lreinhart@utah.gov> Thu, Sep 29, 2016 at 8:35 AM
To: Suzanne Steab <suzannesteab@utah.gov>

Please post this to CTS as UDWR Consultation for minimum stocking density for shrubs at Coal Hollow. Task number 5261.

Lisa Reinhart
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——— Forwarded message ———
From: **Rhett Boswell** <rhettboswell@utah.gov>
Date: Wed, Sep 21, 2016 at 2:04 PM
Subject: Re: Coal Hollow Stocking Density for Shrubs
To: Lisa Reinhart <lreinhart@utah.gov>

Lisa,

The DWR appreciates the consultation regarding reclamation work on the Coal Hollow mine. I was pleased to see the success of the vegetation establishment in the reclaimed areas. As we discussed, returning the reclaimed area to reference site conditions in just 3 years is not reasonable and virtually impossible. The area is in an early successional stage and we expect shrubs to increase in time. That said, the flush of grass and forbs may provide some additional brood rearing habitat for Grater Sage-grouse. The reclaimed area is in between a sagebrush/PJ dominated site and a very crucial wet meadow. The reclaimed area may provide and attract food sources for the local sage-grouse population. In addition, the reclaimed area is very suitable for the intended use of the land owner which is livestock pasture. Big game may also benefit from the increase grass and forb component in the area.

The DWR is in accord with allowing the proposed 10% stocking rate at this time. We would like to see Alton Coal Development take steps in the future to foster an increased shrub component in the reclaimed site. We would also recommend that efforts be taken to remove invasive annual grass from the reclaimed area. The areas with cheatgrass and other weedy species may be good areas to target for shrub planting. As we discussed on site a targeted grazing effort may help accomplish both of those recommendations.

Thanks you for the continued cooperation and coordination.

Rhett

On Tue, Aug 23, 2016 at 1:08 PM, Lisa Reinhart <lreinhart@utah.gov> wrote:

> Hi Rhett,
>
> Just following up with you in regards to our field visit to the Coal Hollow Mine on 8/18/16.

As we discussed, DOGM is required by regulation (R645-301-356.230) to consult with and obtain approval from Utah Division of Wildlife Resources (DWR) for woody plant density standards for bond release on reclaimed sites when wildlife habitat is a component of the Post Mining Land Use.

The Coal Hollow Mine is a little unique in that the property is private land and therefore the land owners have authority in deciding what the Post Mining Land Use is. In this case, the landowners have expressed their wishes to revegetate lands with a focus on forage for domestic livestock and also provide wildlife habitat. As noted in the Mining and Reclamation Plan (MRP) the important habitat in the area for wildlife is healthy sagebrush ecosystems and the key wildlife species is the Greater Sage-grouse. Therefore, reclamation includes seeding similar plant species with comparable plant composition, structure and function as those of the original plant community. Additionally, seed mixtures have been formulated to include forb and shrub species critical for survival of hens and their chicks.

Pursuant to our regulations, there is a 10 year liability period (minimum) that occurs after seeding has taken place in which the operator is responsible to ensure revegetation efforts are successful. During this 10 year period, the operator will conduct occasional quantitative and qualitative monitoring to evaluate revegetation progress. If at any time, vegetation is not progressing as desired, the operator can supplement seeding with other Division approved practices. (However, there are stipulations on timing and in some cases, supplemental seeding will add more years to the liability period.) At the end of the 10 years, the quantitative data has to meet specific standards in order for bond to be released. Since the Post Mining Land Use is grazing and wildlife habitat, those standards are specified by R645-301-356.210 and R645-301-356.230. Data that will be measured are ground cover, production, and tree or shrub stocking density. The operator will take measurements from revegetated areas and compare them to reference areas that are nearby and represent pre-disturbance conditions. Bond will not be released until the 'success standards' have been met.

As we observed on 8/18/16, most of the adjacent area vegetation is the late seral stage sagebrush steppe. These areas consist of dense stands of Wyoming sagebrush and Pinyon Juniper and in many areas lack the herbaceous understory vegetation important for livestock and wildlife. Therefore, the act of revegetation/reclamation essentially restores the sagebrush steppe to an early seral state dominated by grasses and forbs (reference State and Transition Modeling). Science tells us that over time and accelerated by grazing pressure, sagebrush and Pinyon- juniper will continue to increase in densities and eventually dominate the area.

Therefore, restoring the sagebrush steppe to a vegetation community dominated by grasses and forbs, and with a smaller component of shrubs, is an acceptable (and preferable) standard to measure reclamation success. The increase in herbaceous understory will meet the goal of providing livestock forage and wildlife habitat (specifically brood-rearing for sage-grouse) in the area. Because the native adjacent reference areas lack this herbaceous understory, it should not be difficult to meet this goal.

Although the data is preliminary and a formal report is not available, Mt. Nebo Scientific recently conducted monitoring to calculate shrub densities for the reclaimed sites. The data showed that current (2016) shrub density of the reclaimed site we visited compared to the reference site is approximately 10% (roughly 800 shrubs/acre reclaimed vs. 8000 shrubs/acre reference). We agreed that if the vegetation composition were to remain on this trajectory, shrub densities at the end of the liability period should be over 10%. If extenuating circumstances were to occur (severe drought, fire, flood, etc.) the R645-301-357 rules provide "husbandry practices" that can be implemented to restore the site as needed.

Therefore, considering that the private landowners have expressed that livestock grazing is the primary land use and restoring the sagebrush steppe to an earlier successional stage provides quality habitat for wildlife in the area, it is my recommendation that a lower shrub stocking density be set for bond release criteria. We observed what 10% shrub density of the reference site looked like and agreed that 10% would be acceptable from a wildlife perspective. It is my recommendation that the shrub stocking density standard for all areas of the Coal Hollow Mine (including the North Private Lease) be set at 10% of the reference site. In other words, if the stocking density of trees and/or shrubs (including pinyon juniper and various types of sagebrush) of the reference site is 8000/acre, 800 shrubs (or half-shrubs like winterfat and saltbush) is the required density for reclaimed sites. I also recognize that specific planting arrangements for trees and shrubs are not appropriate for these regional conditions.

Finally, pursuant to R645-301-356.230, the Division requests DWR provide concurrence with our recommendation or to provide an alternative recommendation.

Thank you for your continue cooperation and assistance,

Lisa Reinhart
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