From: Heidi_Newsome@fws.gov
To: Hannan, Richard
Cc: Flores, Bob; Stenvall, Charlie; DElia, Jesse; Gregg, Mike; Walsh, Noreen; West, Robin; Rabot, Theresa
Subject: Re: Fw: Sage restoration
Date: Thursday, November 15, 2012 10:06:44 AM

Some final thoughts on this. We started doing this type of work after a big fire in the year 2000 - I would say the areas that we worked in then are still not functional sage habitat for Greater Sage Grouse and that these type of projects need to be carefully planed for each site and even with the work we have done we still have had setbacks due to continued disturbances from additional fires in the same areas. Controlling and managing the non-natives is the hardest part and we have seen impacts from wide scale herbicide use to native species of plants.
So although I think we have made some progress the picture is not quite as clear as we would like it to be. Again I think our reports will show that there are areas where we have had some successes and others where we have had failures and it is variable across the landscape depending on site conditions.

I can't speak so much to Great Basin or High Desert as the conditions are very different.

Heidi Newsome

Heidi Newsome/ARID/R1/FWS/DOI

11/15/2012 08:50 AM

To Richard Hannan/R1/FWS/DOI, Charlie Stenvall/R1/FWS/DOI
cc "Flores, Bob" <bob_flores@fws.gov>, "DElia, Jesse" <jesse_delia@fws.gov>, "Gregg, Mike" <mike_gregg@fws.gov>, "Walsh, Noreen" <noreen_walsh@fws.gov>, "West, Robin" <robin_west@fws.gov>, "Rabot, Theresa" <theresa_rabot@fws.gov>
Subject Fw: Sage restoration

Put some thoughts in Red below to answer your questions! Hope it is helpful!

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----- Forwarded by Heidi Newsome/ARID/R1/FWS/DOI on 11/15/2012 08:31 AM -----

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Charlie Stenvall/R1/FWS/DOI wrote on 11/15/2012 07:29:00 AM:

> Rich,
>
> Heidi Newsome can add to this discussion as she has been involved in
> the sage steppe restoration efforts on the Monument and elsewhere in
> the complex.  There is quite a bit of practical on the ground
> experience and a few publications based on that work which will help

> answer your questions.
>

> Charlie
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> "Hannan, Richard" <richard_hannan@fws.gov>

> 11/15/2012 06:39 AM
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> To
>

> "Gregg, Mike" <mike_gregg@fws.gov>
>

> cc
>
> "Stenvall, Charlie" <charlie_stenvall@fws.gov>, "West, Robin"
> <robin_west@fws.gov>, "Flores, Bob" <bob_flores@fws.gov>, "Rabot,
> Theresa" <theresa_rabot@fws.gov>, "Walsh, Noreen" <noreen_walsh@fws.

> gov>, "DElia, Jesse" <jesse_delia@fws.gov>
>

> Subject
>

> Sage restoration
>
> Mike, as you know this past summer we lost a couple million acres of
> sage habitat to wildfire. We know fire and invasive species are two
> of the biggest threats to sage communities and thus to Greater SageGrouse.
>
> What can you tell me about succession in sage communities after
> fire? My understanding (correct me if I am wrong) is that short
> sage communities take 20 - 30 years to re-establish and in tall sage
> (WY) it takes between 30 - 50 years. What happens when no

> restoration occurs? **I would suggest that most research in the current literature shows that without restoration the site will degrade, be less diverse overall, and sage cover will take multiple decades if not centuries to recolonize, perhaps will never recolonize if the area is infested with cheat grass or medusa head.**

Do we have effective techniques for restoring

> sage habitat? **I would say that yes there are several techniques that are used that can be very successful. The process is not a "one shot deal" however, it takes several management steps and several years (probably up to 5 years of treatments and up to 10 years to see significant results, depending on site conditions. However, there are several locations here in Eastern Washington, which is VERY harsh climatically, that have had successful restoration conducted in shrub-steppe.**

Does restoration intervention significantly shorten
> the successional processes to get back to productive sage

> communities? **Yes, within 10 years we could have significant restoration, whereas, as above the other option of doing nothing would have several decades or might never be shrub-steppe again.**

Can it be done on a scale that could make a difference? **We have experience conducting large scale projects that are at the level of 20,000 or more acres in size. I would think that these large scale projects could translate into "making a difference" for wildlife at that scale.**

> Do we have information that would allow us to prioritize areas for
> restoration based on the threat of cheatgrass invasion or is
> cheatgrass so ubiqutous that all sage habitats in the West are at

> risk once burned? **We have prioritized based on burn severity and proximity to existing cheat grass, and potential of native perennial grass to recover post fire, and predicted erosion potential.**

For restoration purposes (and to prevent
> cheatgrass domination) is there a critical period when intervention

> is especially effective? **Yes, our data show that the first fall after the fire is the best time to conduct intervention. Otherwise, steps to control cheatgrass must be included in the restoration treatments. This does increase the cost but can also be successful. Just saying there is a window where fire helps control the cheatgrass but it only lasts for one season.**

Finally, if we do nothing and cheatgrass
> becomes dominant is it "game over" or can we later go back and

> successfully restore these habitats back to sage communities? **I would say it is not "game over" but that the inputs required to control cheat, and improve soil conditions would be greater. But cheatgrass areas can be restored. It helps if the terrain is such that equipment like Rangeland seed drills can be used.**
>

> In case you are wondering, I am trying to get a sense of how
> urgently do we need to act and do we know how to restore sage
> habitat in an accelerated manner so that these habitats might once
> again provide habitat for GSG. **I would say the sooner the better for putting some treatments on the ground, and yes we do know how to do restoration. One of the best and easiest techniques might be to go into an area where the perennial understory is recovering from fire and has less potential for invasion by cheatgrass and add back seedlings of sagebrush plants. A seed source sort of local to the area would be required but we have done this and planted over 1 million plants in one season and had fairly good survival without going back to do any other treatments to the seedlings. We have generally sewn the seedlings in the spring and had them delivered in the fall and been able to use reforestation crews to hand plant them back into areas that still had good understory. This has been done over a wide area with success.**
>
> Thanks for any insight you can provide. Please don't spend a lot of
> time giving me great detail in answering these questions,
> generalized Peter-rabbit answers are sufficient. Rich
>
>
> Sorry to pepper you with so many questions **Let me know if you have further questions and as Charlie mentioned we have several reports and publications from the Hanford Reach National Monument area that shed light on this!**
>
> Richard Hannan
>
> Sent from my iPad