

APPENDIX LAYER ID	DATA LAYER NAME
1	GRSG Management Zones
2	GRSG Current Occupied Range
3	NREL_WindPotential_MZ
5	RangeMZ_dis_FAA_FCC_CommTower_Direct_Footprint
6	FAA_FCC_MergePts_56_4m_of_OccRange
7	RangeMZ_dis_WHB_HMA_Footprint

- 8 Geothermal_PowerPlants_MZ

- 9 Geothermal_LeasesApproved_BLM_MZ

- 10 RangeMZ_dis_PL_HighLowV_Existing_Direct_Footprint

- 11 RangeMZ_dis_PL_HighLowV_Proposed_Direct_Footprint

- 12 RangeMZ_dis_RR_Direct_Footprint

- 13 RangeMZ_dis_NLUD2010_Urban_Master_Diret_Footprint
- 14 GrSG_BLM_SMA_20150505_with_states_OccRange_UnitNames_MZ
_intersect
- 15 RangeMZ_dis_Deliberative_Process_Privileged_ADPP_Wind_Open_
me
- 16 Wind_Turbines_MZ
- 17 OilGas_Pt_Raster_3Acre

- 18 RangeMZ_dis_NonCoal_Mining_Direct_Footprint
- 19 RangeMZ_dis_Coal_Mining_Direct_Footprint
- 20 NonEnergy_Min_Prospect_Permit_Apps
- 21 Locatable_Mining_Claims_12272012
- 22 Coal_Leases_Underground_MT_Update_01022013
- 23 Coal_Leases_Surface_MT_Update_01022013
- 24 Secondary_St_Direct_Footprint_Current_Range

25 RangeMZ_dis_Federal_State_Hwy_Direct_Footprint

26 RangeMZ_dis_Interstate_Hwy_Direct_Footprint

27 RangeWideKernel_10%Bins.img

- * **Data Layer** = Numbered list for data layers. This number will be used for Map data cited
- * **Data Layer Name** = Name/label used in the map legend
- * **Description** = Short description that explains what the data represents and where it came f
- * **Source** = Source/s or publisher of the data
- * **ScienceBase Link** = Link to where data is stored in the "Sage Grouse Conservation Status 201

LAYER DESCRIPTION

This data set identifies Management Zones to be used in work for the USFWS 2015 Status Review for the greater sage-grouse. Management Zone boundaries in this data set were slightly adjusted from the 2006 WAFWA Management Zone data set.

This data set represents Greater Sage-Grouse Current Range to be used in work for the USFWS 2015 Status Review for the Greater Sage-Grouse. Current Range is defined as areas believed to be currently occupied. Therefore this data set represents occupied habitat for Greater Sage-Grouse.

NREL wind resource potential. Areas of Wind Power Class (WPC) of 3 or more were extracted from the NREL data and clipped to the GRSG 2015 US FWS Status Review Management Zones by the US FWS. The data was also broken by GRSG Mgmt Zone and attributed with Mgmt Zone information. This NREL_WindPotential_MZ data set is meant for use by FWS in work and analysis for the GRSG 2015 Status Review. Original NREL Metadata information is below.

Annual average wind resource potential for western states, United States at a 50 meter height

This file represents the Communication Towers and Other Vertical structures direct impact footprint data based on the 2/2/15 FAA data release and FCC (fcc_geo_06142012) data ("am", "asr", "cellular", "fm", "lm_bcast", "lm_comm", "lm_private", "mds_itfs", "microwave", "paging", "TV_DIGITAL", and "TV_NTSC") were combined, reprojected to the GRSG Range Wide projection, buffered to 1 ha circles (56.4m radius) in accordance with the BER Open-File OFR 2013-1098, Table A-1. pg. 158. These data are the product of the Model Builder overlay analysis for the Range.

This file represents the Communication Towers and Other Vertical structures point data based on the 2/2/15 FAA data release and FCC (fcc_geo_06142012) data ("am", "asr", "cellular", "fm", "lm_bcast", "lm_comm", "lm_private", "mds_itfs", "microwave", "paging", "TV_DIGITAL", and "TV_NTSC") were combined, reprojected to the GRSG Range Wide projection, points data selected to a distance within 56.4m radius of the Occupied Range less the Bi-State and Canada. For mapping use only.

Wild Horse and Burro Herd Management Areas (HMA's) as provided by BLM and USFS in year 2015. These data have been combined and simplified as HMA polygons for use in the USFWS 2015 Status Review for the Greater Sage-Grouse. BLM and USFS may represent the same areas as managed due to agency agreements and because of this, simply eliminating which agency designates management of an area allows us to have on-the-ground footprint representation of actual areas that are managed regardless of agency. Our interest is in the direct disturbance of these HMA polygons in relation to Sage-Grouse habitats and other related data. These data are the product of the Model Builder overlay analysis for the Range.

Geothermal Power Plants created by compiling data from National Geothermal Data System (NGDS – www.geothermaldata.org) and Renewable Northwest (RNP – www.rnp.org). Data was extracted to identify operating Geothermal Power Plants or Geothermal systems currently producing electrical power.

Geothermal lease and approved project data from BLM states responding to the WO 300 data call during the time period of November 2011 through May 2012. It is intended solely for use in the GRSG cumulative effects analysis. Source data, their acquisition methods and errors/omission rate vary. All original datasets used to create this dataset are stored in the BLM's NOC E-GIS file structure. The paths to the original data are stored in this file's attribute table. For mapping clip or mask these data to the Occupied Range less Bi-State and Canada.

This file represents the High Voltage Existing Powerlines direct disturbance footprint in accordance with the BER Open-File OFR 2013-1098, Table A-1. pg. 158. Data was clipped to a horizontal distance of 10km from the management zone boundaries. Based on Platt's (© 2015 Platts, McGraw Hill Financial. All rights reserved) data representing the North American Transmission Line layer used to provide geospatial and related attribute information for global energy markets. Platt's layer are geographic line features representing the electric transmission line grid of North America. Key attributes include voltage (kV), operational status, operator name, project names, line names and more. These data are the product of the Model Builder overlay analysis for the Range.

This file represents the High Voltage Proposed Powerlines direct disturbance footprint in accordance with the BER Open-File OFR 2013-1098, Table A-1. pg. 158. Data was clipped to a horizontal distance of 10km from the management zone boundaries. Based on Platt's (© 2015 Platts, McGraw Hill Financial. All rights reserved) data representing the North American Transmission Line layer used to provide geospatial and related attribute information for global energy markets. Platt's layer are geographic line features representing the electric transmission line grid of North America. Key attributes include voltage (kV), operational status, operator name, project names, line names and more. These data are the product of the Model Builder overlay analysis for the Range.

Railroad 9.4m (4.7m from centerline) direct disturbance footprint in accordance with the BER Open-File OFR 2013-1098, Table A-1. pg. 158; clipped to a horizontal distance of 10km from the management zone boundaries. Based on BLM's centerline data creation effort through a merge operation between the subset rail lines and subset Amtrak datasets. Each of the two source data sets were subset to remove abandoned links by selecting records where the RROWNER1 field <> XXXX. The results were then merged. This data was clipped to the sage-grouse area of interest (AOI) boundary. These data are the product of the Model Builder overlay analysis for the Range.

Urbanized footprints (Direct effects) from the CSP, Inc. National Land Use Data 2010 (NLUD2010_20140326.zip) limited to an extent of 10km of the Management Zones of the Greater Sage Grouse (USFWS 2014). Processed in an ESRI ArcMap 10.2.2. CSP, Inc. National Land Use Data 2010 (NLUD2010_20140326.zip) - Theobald DM (2014); Development and Applications of a Comprehensive Land Use Classification and Map for the US. PLoS ONE 9(4): e94628.doi:10.1371/journal.pone.0094628; David Theobald, Conservation Science Partners, Inc. Fort Collins, CO.

BLM Surface Management Agency, Surface Ownership data that has been modified for use in the GRSG 2015 Status Review. This file was created to address specific landownership questions as part of the GrSG review. The original data source was downloaded on 1/16/2015 from Geocommunicator. The original data was modified to fill voids, add state attributes, subset to GrGS states, and add acres. When mapping with these data to show "Private Lands", use the following Definition Query = "ADMIN_UN_1" <> 'Water' AND "Owner" = 'Private'. This will eliminate waters that are considered private.

BLM ADDP Open for Wind Development Right-of-way. Rich extracted just wind from the overall output. Link is to overall data.

Wind Turbines point locations selected within across the GRSG 2015 Status Review Management Zones. Turbine data was taken from the USGS onshore industrial Wind Turbine location for the US through July 2013. USGS data downloaded from <http://pubs.usgs.gov/ds/817/>. Only Turbines within the GRSG 2015 Status Review Mgmt Zones were extracted and used for this data set. The USGS data was also supplemented with FAA Wind Turbine data taken from the FWS FAA extraction. The Determined with Built Date (generally represent completed construction) layer from http://www.fws.gov/southwest/es/Energy_Wind_FAA.html was downloaded and used. Turbines within the GRSG 2015 Status Review Mgmt Zones were extracted from the FAA data. These FAA Turbines were checked against USGS data, and all FAA Turbines accounted for in the USGS data were removed. Of the remaining FAA Turbines, only Turbines that could be determined as on the ground through checking against aerial imagery (ESRI/Google/Bing) were included. This resulted in 4 FAA Wind Turbines being added to the USGS Wind Turbine data.

These data represent the Oil and Gas with associated infrastructure created from the HIS points related to Compressor Stations, Petro Refineries, Plants Storage, Pumping Stations, and Producing Oil and Gas wells merged into one within the GRSG 2015 Status Review Management Zones. Depicted by a 3 Acre Raster cells at approx. 110mx110m to use for map efforts only! Do Not Use These Data for Analysis!!

Non-Coal Mining Direct Footprints (based on the BLM source data; InfoMine_Non_Coal_Producers_AOI_cli_footprint_dis, If_evt_v12_quarry_stripmine_gravelpit_binary.img, ilmocgrsg.ILMOCDBO.Min_Mat_Dis_Sites_12282012). USFWS combined the three (3) BLM source data into one dataset using ESRI Union function in ESRI ArcMap 10.2.2. These data were attributed to represent footprints, dissolved to create one polygon class for further processing and analysis. BLM source data provided for the GRSG 2015 Review, combine, and dissolved as one class of polygon for direct impact area.

Coal_Mining_Direct_Footprint - - These data represent the coal mining footprints (based on the BLM source data; Coal_Footprints_mer_no_plants_in_populations_dis, <https://www.sciencebase.gov/catalog/item/546a7754e4b04d4b7dbde962?community=Sage+Grouse+Conservation+Status+2015>). Active coal mines that were digitized in ArcMap using ESRI Basemap World Imagery supplemented by Google Earth imagery and in some instances, digitized in Google Earth when this imagery was more recent and there were noticeable differences between the ESRI imagery and Google Earth imagery. The ESRI imagery dates range from April 2010 to August 2011.

This dataset (ilmocgrsg.ILMOCDBO.NonEnergy_Min_Prospect_Permit_Apps) represents the consolidated submissions for non-energy minerals and prospecting permit application data from BLM states responding to the WO 300 data call during the time period of November 2011 through May 2012.

This dataset (ilmocgrsg.ILMOCDBO.Locatable_Mining_Claims_12272012) represents the consolidated submissions for locatable mining claim data from BLM states responding to the WO 300 data call during the time period of November 2011 through May 2012.

This dataset (ilmocgrsg.ILMOCDBO.Coal_Leases_Underground_MT_Update_01022013) represents the consolidated submissions for surface coal lease data from BLM states responding to the WO 300 data

This dataset (ilmocgrsg.ILMOCDBO.Coal_Leases_Surface_MT_Update_01022013) represents the consolidated submissions for surface coal lease data from BLM states responding to the WO 300 data call during the time period of November 2011 through May 2012 and updated with new data submitted for MT, ND, and SD on January 2nd 2013.

BLM provided subset of the licensed, proprietary ESRI Street Maps Premium for ArcGIS dataset, limited to Surface Streets, buffered by a radius of 6.2 meters. USFWS broke the BLM provided data into 7 Management Zone tiles, dissolved overlap within data, clipped data to the Occupied Range (less Bi-State and Canada), and combined it back as one set for mapping use. Any GIS analysis should use 7-tile dataset as they are smaller in file size. All located at the link.

BLM provided subset of the licensed, proprietary ESRI Street Maps Premium for ArcGIS dataset, limited to Major Roads, buffered by a radius of 12.8 meters. USFWS dissolved any overlap within data and processed through the Range overlay model builder tool.

BLM provided subset of the licensed, proprietary ESRI Street Maps Premium for ArcGIS dataset, limited to Highways, buffered by a radius of 36.6 meters. USFWS dissolved any overlap within data and processed through the Range overlay model builder tool.

These data represent areas Sage-Grouse Density within the occupied range (less Bi-State and Canada) , where there is no breeding population within 18km to the top 10% of the population.

rom.

5" coummunity in ScienceBase

SOURCE

US FWS / WAFWA

US FWS / WAFWA

NREL / USFWS Processing

FAA / FCC / USFWS Processing

FAA / FCC / USFWS Processing

BLM / USFS / USFWS Processing

Geothermal Power Plants (NGDS) /
Renewable Northwest (RNP) / USFWS
Processing
BLM / USFWS Processing

Platt's (© 2015 Platts, McGraw Hill
Financial. All rights reserved) / USFWS
Processing

Platt's (© 2015 Platts, McGraw Hill
Financial. All rights reserved) / USFWS
Processing

BLM / FRA (Federal Railroad
Administration) / USFWS Processing

CSP, Inc (Conservation Science Partners,
Inc.) / USFWS Processing

BLM-SMA / US Census Bureau
State boundaries
BLM / USFWS Processing

BLM/USGS/FAA

I H S / USFWS Processing

BLM / USFWS Processing

BLM / USFWS Processing

BLM

BLM

BLM

BLM

BLM / USFWS Processing

BLM / USFWS Processing

BLM / USFWS Processing

USFWS

SCIENCEBASE LINK

<https://www.sciencebase.gov/catalog/item/54c7e7eee4b043905e02a650>

<https://www.sciencebase.gov/catalog/item/55146a50e4b032384276cabe>

<https://www.sciencebase.gov/catalog/item/5553cf7fe4b0a92fa7e94e59>

<https://www.sciencebase.gov/catalog/item/55528413e4b0a92fa7e94bac?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/555282c0e4b0a92fa7e94ba8?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/55562ecae4b0a92fa7e9524b?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/5555103ae4b0a92fa7e95035?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/55551114e4b0a92fa7e9503e?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/55524d9ae4b0a92fa7e93cfb?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/55524d9ae4b0a92fa7e93cfb?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/55526513e4b0a92fa7e94b21?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/5553abdee4b0a92fa7e94da2>

<https://www.sciencebase.gov/catalog/item/5543d79ae4b0a658d79456c1>

<https://www.sciencebase.gov/catalog/item/5543db6fe4b0a658d79456ec>

<https://www.sciencebase.gov/catalog/item/5553cd90e4b0a92fa7e94e4b>

<https://www.sciencebase.gov/catalog/item/5581e722e4b023124e8f3bf9?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/5581fe95e4b023124e8f3e2a>

<https://www.sciencebase.gov/catalog/item/5581fe95e4b023124e8f3e2a>

<https://www.sciencebase.gov/catalog/item/53e9472be4b0ccfda671492b>

<https://www.sciencebase.gov/catalog/item/53e9387ee4b02d190f05ee3a>

<https://www.sciencebase.gov/catalog/item/53e936bee4b02d190f05ee2e?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/53e936bee4b02d190f05ee2e?community=Sage+Grouse+Conservation+Status+2015>

<https://www.sciencebase.gov/catalog/item/5568f3e8e4b0d9246a9f63ab>

<https://www.sciencebase.gov/catalog/item/55526e46e4b0a92fa7e94b4c>

<https://www.sciencebase.gov/catalog/item/55526e46e4b0a92fa7e94b4c>

<https://www.sciencebase.gov/catalog/item/552408fde4b027f0aee3d33b>

SP. REPORT
FIGURE NO.

X.X

SP. REPORT FIGURE TITLE

(copy and paste from SP. Report)

GRSG_FWS_SR_MapFigure_FullPage_Portrait_CommTowers

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Wildhorse_Burro

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Geothermal

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Powerlines

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Railroads

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Urban_wo_PvtLands

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Urban_w_PvtLands

GRSG_FWS_SR_MapFigure_FullPage_Portrait_WindPotential

GRSG_FWS_SR_MapFigure_FullPage_Portrait_OilGas

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Minging

GRSG_FWS_SR_MapFigure_FullPage_Portrait_Roads

GRSG_FWS_SR_MapFigure_HalfPage_Landscape_Rangewide_Modeling_Kernel_Density

FIGURE DESCRIPTION

Brief description

Communication Towers and Other Vertical structures direct disturbance within Range

Wild Horse and Burro Herd Management Areas (HMA's) direct disturbance within Range

Geothermal Power Plants and BLM Approved Leases * Use Mask to not display data beyond Range

High Voltage Existing/Proposed Powerlines direct disturbance within Range

Railroad direct disturbance within Range

Urban Areas direct disturbance within Range

Urban Areas direct disturbance and Private Lands within Range

Wind Development and Potential Development areas within Range * Use Mask to not display data beyond Range

Oil and Gas with associated infrastructure displayed using a 3 acre Raster * Use Mask to not display data beyond Range

Coal and Non-Coal Mining disturbance within the range * Use Mask to not display data beyond Range

Road disturbance within the range * Can Use Mask to not display data beyond Range if needed

Sage-Grouse Density no breeding population within 18km to the top 10% of the population within range * Use Mask to not display data beyond Range

DATA LAYERS USED

x, y, z...

5,6

7

8,9 (* see Mask Note)

10,11

12

13

13, 14

3,15,16

17

18,19,20,21,22,23

24,25,26

27

FIGURE (FILE) NAME as LOADED to SHAREPOINT

GRSG_Map_(PageSize)_(Layout)_(MapTitle)_(Scale).jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_CommTowers.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Wildhorse_Burro.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Geothermal.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Powerlines.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Railroads_20150528.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Urban_wo_PvtLands_20150528.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Urban_w_PvtLands_20150528.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_WindPotential.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_OilGas.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Minging.jpg
GRSG_FWS_SR_MapFigure_FullPage_Portrait_Roads.jpg
GRSG_FWS_SR_MapFigure_HalfPage_Landscape_Rangewide_Modeling_Kernel_Density.jpg

SCIENCEBASE LINK
