

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Twin Falls District
Shoshone Field Office
400 West F Street
Shoshone, Idaho 83352**

**CATEGORICAL EXCLUSION REVIEW SHEET
NEPA No. DOI-BLM-ID-T030-2014-0034-CX**

A. Background

The Bureau of Land Management has a long standing relationship with Boise State University (BSU) to perform both behavioral and habitat field studies on a naturally occurring population of pygmy rabbits (*Brachylagus idahoensis*) located west of Wedge Butte in the Shoshone Field Office (see Map 1). This study proposal involves investigating the possible role that chronic and acute browsing by above-ground vertebrates affect above-ground and below-ground plant tissue chemistry and litter decomposition in a northern shrub-steppe big sagebrush community type. Increasing our understanding of the mechanisms that drive soil carbon accumulation would improve predictions of future carbon storage in this xeric ecosystem. Soil carbon dynamics, and the processes that influence it, impact atmospheric carbon dioxide concentrations and global warming.

Boise State University investigators are proposing to investigate the role herbivore browsing influences changes in plant chemistry which may affect the rate of soil carbon and nitrogen cycling. The study will examine the role above-ground herbivory by mammals and insects exerts in plant chemistry both above and below ground in a big sagebrush plant community. The study would be performed by analyzing changes in the chemical composition of leaf and root tissue under differing above-ground browsing regimes. The study area encompasses 127 acres of public land containing 157 pygmy rabbit burrow mounds (refer to Map 2). A portion of the proposed study area containing 38 mapped pygmy rabbit burrow mounds occurs on adjacent lands managed by the Idaho Department of Lands. Leaf and root samples of individual plants occurring within a band beginning 2 meters and extending to 6 meters from the centroid of 15 active and 15 inactive pygmy rabbit burrow mounds would be collected and chemically analyzed following the application of differing herbivory treatments. Sampling around active mounds would involve 15 high browsed and 15 low browsed plants. These same plants would also have a 2-inch diameter by 6-inch deep soil sample collected mid-way under the shrub canopy to attain root samples for analysis. A litter trap would be employed under the shrubs that were sampled.

A separate part of the study would involve 6 individual plants occurring within a band beginning 2 meters and extending to 6 meters from 15 inactive pygmy rabbit burrow mounds. Small enclosures up to 1 square yard in size would be constructed around each of the 6 sample plants near each of the 15 inactive mounds in the late Summer or Fall of 2014. The sample plants would also be covered with insect netting to exclude insect herbivory. Four of the set of 6 shrubs protected near each inactive mound would receive clipping treatments simulating pygmy rabbit and sage-grouse browsing in the Spring of 2015. Browsing exclusion structures would be reapplied and litter traps would be placed under all 6 shrubs in each sample set. During the Fall of 2015 litter traps would be collected from under the sample shrubs. Vegetation samples would

be collected from all 6 shrubs in each study set. A soil sample 2 inches in diameter would be collected to a depth of 6 inches from the soil surface under the canopy of the 3 separate treatments in each set of 6 shrubs. The browsing exclusion structures would be removed at this time.

To determine whether changes in decomposition are due to changes in root or litter chemistry or due to burrowing, a third experiment involving the collection and combination of litter traps under each browsing treatment has been included in the study proposal. During the Spring of 2015 the litter from each browsing treatment would be combined and 30 samples of the two browsing treatments would be placed in 2- inch square packets built from fine-weave window screen. Single litter packets from the two treatment types would be placed in a small surface depression under an individual shrub in each of the 15 active and 15 inactive burrow mound sets.

The proposed study activities are examined here to determine whether they may be categorically excluded from further National Environmental Policy Act review.

Consideration of Extraordinary Circumstances:

This Categorical Exclusion Review (CER) Sheet documents the review of the proposed action to determine if any of the extraordinary circumstances described in 516 DM 2, Appendix 1 apply. If any of the extraordinary circumstances apply to the proposed action, then an EA or EIS must be prepared. Any evidence or concerns that one or more of the exceptions may apply must be brought to the attention of the manager who is authorized to approve the proposed action.

1. The proposed action would not have significant impacts on public health or safety.

The study to assess the effects of chronic and acute browsing by above-ground vertebrates on aerial and below-ground plant tissue chemistry and litter decomposition would begin late Summer and Fall of 2014. The proposed study would occur on both public lands containing an estimated 127 acres and lands managed by IDL involving 28 acres. The project proposes the establishment of 30 plots of 1,232 square feet with a maximum total acreage of 0.85 acres. The study proposes 15 plots centered near active pygmy rabbit burrow mounds and 15 plots around inactive burrow mounds. The plots near the active burrows would have no identifying structures associated with them. The 15 plots centered on inactive burrows mounds would have browsing protection structures around 6 individual plants at each plot. The browsing exclusion structures would be covered with insect netting to deter insect herbivory and an exclusion structure utilizing hardware cloth netting to protect against browsing by pygmy rabbit and sage-grouse. The exclusion area of each one of these plant protection structures is expected to be a maximum of 1 square yard. A total of 15 plot sets involving 6 clustered exclusion areas in each plot would result in 90 exclusion areas involving a maximum of 810 square feet or about 0.02 acres affected.

The siting of the 15 clusters of 6 small browsing exclosures would be placed at locations where they would attract the least amount of human attention. They would be placed within the study site as far removed from areas of public use and travel as possible. Use of the general project area, while very limited, is usually greater during the Spring and Summer season and less in the Winter season.

The project area does not appear to contain any unique or unusual characteristics or resource values that would result in increased levels of human interest or visitation. The area receives a low, dispersed level of use by humans.

Execution of the project is not expected to result in any significant change to public health or safety. The BLM authorized officer has the ability to suspend or terminate in whole or in part the proposed project if unforeseen impacts occur which result in conditions being inadequate to protect the public health and safety or to protect the environment.

2. The proposed action would not have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.

There are no known ecologically significant or critical areas within the proposed project site that would be affected by the planned action. The proposed vegetation clipping treatments would not have significant impacts on the migratory bird species known or expected to utilize habitat in or near the project area. The enclosure of 15 clusters of 6 big sagebrush plants would remove the availability of the sagebrush for nesting by sagebrush obligate migratory birds for one nesting season. The loss of potential nesting sites in the enclosed big sagebrush plants would not result in discernible impacts to the suite of migratory birds that use the general project area for courtship, nesting, feeding and/or fledging activities.

The siting of the 15 clusters of 6 shrubs by the small individual enclosure structures may provide bird perches that could be used by raptors, ravens (Corvus corax) and other birds that prey on some species of migratory birds that utilize the general project area for breeding, nesting, brood rearing or fledging activities. The height and arrangement of the shrub protection structures are not anticipated to measurably increase perch sites over the current conditions provided by the existing adjacent plant community. The gently undulating topography that is present over the general project area assists in reducing or eliminating the potential temporary threat the exclusion structures pose to migratory birds.

Implementation of the proposed project would result in no discernible increase in human caused impacts to the local population of the Birds of Conservation Concern over current levels.

3. The proposed action would not have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].

The proposed clipping of vegetation from a portion of 90 big sagebrush plants and collection of 75 soil cores are not expected to result in highly controversial environmental effects. Placing an individual enclosure structure over 90 big sagebrush plants occurring in 15 sets of 6 enclosed shrubs is not expected to be highly controversial or cause conflicts amongst resource uses. Permitted livestock do not consume big sagebrush to meet their dietary needs. The planned action would not directly or indirectly result in conflicts amongst resource values and uses in the general project area.

4. The proposed action would not have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.

The proposed action would not have highly uncertain and potentially significant environmental effects or involve unknown environmental risks. The BLM commonly constructs and places small vegetation exclosures on public land to aid in livestock use supervision and for other monitoring purposes. No unique impacts or consequences have resulted from this practice. The small size of the proposed study sites and the limited scope of the planned vegetation treatments are not expected to result in any unique or unknown risks to the affected native plant community or any of the other resource values.

The potential burrow mound sites on public land begin 0.5 miles from and about 40 vertical feet below an occupied sage-grouse lek located on an adjacent section of land managed by Idaho Department of Lands. The possibility that one or more of the 15 clusters of enclosed big sagebrush plants might occur within 1 kilometer (0.6 miles) of the lek is less than 1 in 3. The protective structures enclosing and protecting the sets of plants from herbivory are not expected to extend more than a few inches above the average level of the big sagebrush currently growing on the study site. The burrow mounds are also located down gradient from the occupied sage-grouse lek causing any shrub protection structures to likely occur below the direct line-of-sight when viewed from the lek. The gently undulating topography that occurs between the lek and the burrow mounds would also help obscure any plant protection structures. The combination of physical and environmental factors associated with location of the occupied sage-grouse lek in relation to the burrow mounds would negate the likelihood any of the plant protection structures would cause a measureable environmental impact.

5. The proposed action would not establish a precedent for future actions or represent a decision in principle about future actions with potentially significant environmental effects.

The proposed action involves a suite of small-scale controlled vegetation studies. The projects are purely experimental in nature with no direct linkage to potential future actions that may result in significant environmental effects. Information gained from conducting the above-ground and below-ground plant tissue chemistry and decomposition studies are not expected to establish a model for future actions. The proposed project would not establish a precedent for future actions or represent a decision in principle about future actions with potentially significant environmental effects. This is because there are no future actions or proposals to change or apply prescribed herbivory of big sagebrush plant communities on public land. Any proposed future projects must be evaluated on their own merits including an assessment of the likely environmental impacts.

Collecting and chemically analyzing leaf litter fall and root tissue samples following differing herbivory treatments would expand our understanding of the role herbivory rates of big sagebrush influence soil carbon and nitrogen cycling and by association carbon storage in a xeric ecosystem. Future use of the information collected at the study site, in and of itself, would not lead directly to a resource action with potentially significant environmental impact.

6. The proposed action would not have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.

There are no other projects proposed in the vicinity of the project areas that would have a direct relationship to and/or lead, in the aggregate, to significant cumulative effects. The collection of plant tissue both above-ground and below-ground in response to different levels of simulated browsing and the resultant change in soil carbon and nitrogen cycling, if any, is not expected to directly result in management actions that contribute to significant environmental impacts. The proposed actions do not have a direct relationship to other actions or planned management prescriptions in the area.

7. The proposed action would not have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by the bureau.

The proposed project involves chemically analyzing the effects different levels of herbivory have on above-ground and below-ground plant tissue. The project also involves measuring soil carbon and nitrogen cycling rates occurring in the soil below big sagebrush that has been subjected to simulated browsing at different levels. A separate structure to protect each of 6 individual plants clustered near 15 randomly selected burrow mounds would be constructed to conform to the average height of the vegetation in the general area. The browse protection structures would be in place for one year. The sum of actions proposed by this project are not expected to cause any cultural impacts. This action is not expected to result in any effect to cultural resources.

If there are any future or inadvertent historic, cultural or paleontological property discoveries made during project implementation, there will be an immediate ceasing of the project activities and the Shoshone Field Manager and Archeologist will be contacted for further investigation (see also 36 CFR 800.11 and SPA). In the event that American Indian human remains, unassociated funerary objects, or grave goods are encountered, work in the immediate vicinity of the discovery will cease, and BLM shall comply with NAGPRA as outlined in 43 CFR 10 by consulting with the SHPO and implementing appropriate mitigation.

8. The proposed action would not have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species.

The proposed action would not adversely affect listed plant species because there are no known occurrences of threatened or endangered plants in the project area. The surrounding area provides habitat for one Idaho BLM Sensitive plant species. The BLM Sensitive plant species is mourning milkvetch (Astragalus atratus inseptus), a BLM Type 4 (recently removed from the Type 3 listing). Scattered populations of mourning milkvetch are known to occur in the pilot project area. The size of the study area combined with the dispersed nature of the treatment sites is not expected to result in a significant impact to the ecological conditions that support the BLM Sensitive plant species that occur in the general proposed project area.

The existing plant community provides suitable to marginal habitat characteristics for the BLM Sensitive wildlife species considered likely to occur in the project area. There are no known threatened or endangered animals in the project area; however, the experimental sagebrush clipping and plant tissue analysis treatment sites are in areas identified as supporting suitable habitat for greater sage-grouse (Centrocercus urophasianus), a Candidate species. The

proposed project areas are mapped as Preliminary Priority Habitat (PPH) for sage-grouse. The areas mapped as PPH were derived by considering sage-grouse lek density, attendance and connectivity factors with the intent of delineating habitat of highest value for conservation and maintenance of sage-grouse populations. Records at the Shoshone Field Office reveal that the initial project area contains one occupied sage-grouse lek within one mile or less of the planned action area. Sage-grouse have been observed utilizing habitat on public land in the general vicinity of the projects during the breeding, nesting and winter use periods. The project proposes: conducting different rates of herbivory on 120 big sagebrush plants; above-ground and below-ground plant tissue collection on 75 individual sagebrush plants; construction of browse protection structures around 90 individual sagebrush clustered near 15 burrow mounds; and analysis of litter decomposition rates under different browsing regimes. The browse protection structures would not exceed existing plant height in the general study area. The protection structures would be in place for one year with planned removal in the Fall of 2015. The plant enclosures would exclude use of the 90 big sagebrush plants as a forage source for sage-grouse in the winter and as a potential nesting site. The proposed study project would not result in a measureable change in the suitability of the habitat in the area to support greater sage-grouse use over current conditions.

The removal of foliar portions of 30 big sagebrush plants near 15 active pygmy rabbit burrow mounds and 60 big sagebrush plants near 15 inactive burrow mounds would occur. All 90 big sagebrush plants selected near the 15 inactive burrow mounds would be protected by individual enclosures from browsing by pygmy rabbit for one year. The dispersed nature of the treatment areas combined with the temporary and limited level of resource exclusion to sagebrush by pygmy rabbits would result in no detectable impact to the local population of pygmy rabbits from the planned study. The planned action is not going to result in a detectable change in habitat quality or use by the local population of Townsend's big-eared bat (Corynorhinus townsendii) or fringed motis (Myotis thysanodes).

The study area provides suitable habitat for 9 migratory Birds of Conservation Concern. The 9 bird species are: golden eagle (Aquila chrysaetos); Swainson's hawk (Buteo swainsoni); short-eared owl (Asio flammeus); western burrowing owl (Athene cunicularia); prairie falcon (Falco mexicanus); loggerhead shrike (Lanius ludovicianus); sage thrasher (Oreoscoptes montanus); Brewer's sparrow (Spizella breweri); sage sparrow (Amphispiza belli). The 90 big sagebrush protection structures are expected to reduce direct use of the shrubs for nesting, brood-rearing or foraging by sage thrasher, Brewer's sparrow and sage sparrow for one year. The protection structures would likely cause a slight decrease in foraging efficiency in the general study area by golden eagle, Swainson's hawk, prairie falcon, short-eared owl, western burrowing owl and, loggerhead shrike. The proposed study is not expected to measurably alter the level of use of the habitat in the project area by migratory birds and would result in no discernible increase in human caused impacts to the local population of the Birds of Conservation Concern over current levels.

This extraordinary circumstance is not affected because the small number of randomly located shrub herbivory plots, plant tissue collection sites, and clusters of 6 short term plant protection structures would pose minimal, short term disturbance or change in habitat conditions for the suite of BLM Sensitive wildlife species known or expected to occur in the proposed project area.

9. The proposed action would not violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.

The extraordinary circumstance does not apply because the proposed actions would not violate any laws or requirements imposed for the protection of the environment.

10. The proposed action would not have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).

The proposed actions would cause no discernible effect on low income or minority populations. The shrub herbivory treatment, the collection of plant tissue samples and subsequent chemical analysis, and construction of small, temporary plant protection structures near a small number of burrow mound locations would be performed by BSU students and faculty thus no additional job opportunities would be created by these projects. No low income and/or minority populations would be affected by the planned actions.

11. The proposed action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).

The proposed actions would not affect access to public lands. The anticipated physiological response by the individually treated big sagebrush plants is not expected to be discernible across the landscape. The clusters of temporary shrub protection structures are not expected to project more than a few inches at most above the native big sagebrush. The proposal is not expected to have any influence on access or ceremonial use of Indian sacred sites nor is it expected to result in a physical change in the composition or physical/topographic appearance of any sacred sites in the general project area.

12. The proposed action would not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).

Almost without exception, native plant communities occurring on the Snake River Plain contain one or more noxious weeds or invasive non-native plant species. The proposed project area is no exception. The presence of a relatively intact native big sagebrush plant community with its associated native herbaceous understory in the proposed project area has acted to suppress and contain the occurrence and rate of spread of annual non-native plant species. The proposed shrub herbivory treatment, the collection of plant tissue samples, and construction of small, temporary plant protection structures is not expected to significantly impact annual growth of both the treated big sagebrush and the herbaceous plants growing within 1-meter or so of its base. The presence of a noxious weed or non-native invasive plant species or its propagule in or immediately adjacent to the treatment area is a possibility. The total annual treatment area for the proposed project may range from slightly less than 0.03 acres to about 0.05 acres. The general project site contains a two-track native surface road running north-to-south effectively bisecting the area and another two-track road running east-to-west near the southern boundary of the project area. The project is also located in the BLM managed Square Lake livestock grazing allotment. The Square Lake allotment is managed with a 4-pasture rest-rotation system

which is normally grazed beginning May 1 and extending into August. Watering troughs are commonly put along the north-to-south road resulting in cattle congregating near it causing the associated amount of soil surface disturbance. The proposed project with its small size and dispersed nature is not expected to result in a perceptible increase in growth or expansion of the range of noxious or non-native invasive plant species in the area.

Participating Staff

Name of Participant	Position Title or Resource Expertise	Initial	Date
Gary Wright	Wildlife Biologist	GJW	8/20/2014
Clare Josaitis	Botanist	CEJ	8/20/2014
Lisa Cresswell	Cultural Resources, Shoshone Field Office NEPA Coordinator	LTC	8/20/14
Joanna Tjaden	Rangeland Management Specialist	JPT	08/20/14