

# **Appendix R**

Comments from Agencies  
and Organizations

**Comments offered by the East Cascades Audubon Society  
regarding a New Deschutes County Landfill  
Jan 24,2023**



There is a current proposal by Deschutes County to site a new landfill which might last 100 years. We are concerned about the impacts of this landfill on the Greater Sage-grouse (GRSG) which is an iconic bird species of the sagebrush steppe ecosystem and one that has been the subject of intensive conservation measures throughout Oregon and the entire GRSG range.

Most of the proposed landfill sites are east of Bend in sage-steppe habitat and the use of any of those sites would very likely have negative impacts on the local and perhaps the regional populations of sage-grouse. These impacts could include habitat fragmentation, general disturbance, and direct predation by ravens and other predators attracted to the landfill.

Our comments are focused on the two proposed landfill sites (201500-300,191-600) just west of the 290,000 acre Brothers Priority Area for Conservation (PAC) and the four sites (211-900, 212-000, 222200-200, 22220-400) east of the PAC. These are sites which are most closely associated with the Brothers PAC as established by the State of Oregon to protect the GRSG. On a percentage basis the Brothers PAC has the highest amount of good quality habitat of any of the State's twenty PACs. Landfills are excluded from any PAC because of their well-known negative effects on GRSG populations.

Predation is a major cause of GRSG mortality. Coyotes, fox, rats, feral pets, and ravens are all GRSG predators and are attracted to open landfills. Of these predators, ravens are a special concern. Increased predation by ravens is a major threat imposed by the candidate landfill sites near the PAC. Ravens are common sage-grouse egg and chick predators. Nest predation has been recently confirmed as a major threat to the local sage-grouse population using GPS-tagged sage-grouse. A landfill near the PAC will certainly increase this risk of raven predation by providing refuse for ravens to eat, by attracting other scavengers for ravens to prey upon, and by increasing roadkill for ravens to scavenge due to increased vehicular traffic. Ravens have been documented as traveling over 40 miles one way to visit landfills.

The Brothers PAC is a hallmark example of the efforts by a coalition of ranchers, agencies, and to ensure that the GRSG will not disappear in Oregon. It would be a betrayal of those efforts and a threat to GSG survival to site the landfill near a PAC. A siting nearby the Brothers PAC would increase the need for listing the GRSG under the Endangered Species Act.

There are alternatives to a new landfill that Deschutes County should consider. Other countries have done away with landfills in favor of more environmentally sound methods of waste and refuse management. Waste-to-energy has become the preferred method of rubbish disposal in the EU, and there are now 420 plants in Europe equipped to burn trash and thereby provide heat and electricity to more than 20 million people. Germany recycles 70% of all waste produced based on its policies that hold companies to recyclable packaging. Only 1% of Sweden's trash is sent to landfills. Rather than sending trash to landfills, waste-to-energy plants generate for homes and businesses. Finland also transforms waste into energy through incineration, as well as into new materials: discarded household plastic, for example, is processed at its plant into clean pellets that can be remade into any kind of plastic.

Any new landfill should be sanitary. In the US, sanitary landfills are covered daily with clean fill to halt or minimize odors and visitation by unwanted scavengers, predators, and disease vectors. This practice has significantly reduced the environmental impacts of landfills. We note that sanitary landfill practices, while helpful, will not fully mitigate the threat to GRSG of a landfill near the PAC. The GRSG is sensitive to human disturbances of many kinds, including noise, dust, lights, and direct encounters with people and pets. As noted above, the landfill will fragment the GRSG habitat and habitat fragmentation is well-known as a major impediment to GRSG conservation.

Deschutes County should also consider the environmentally beneficial uses of closing the Knott Landfill. For example, in addition to harvesting methane from closed landfills, the closed sites have become good sites for solar farms. There has been a nearly 80% increase in landfill solar projects built in the US on landfills over the past five years.

Given these facts, ECAS respectfully requests that landfill planning in Deschutes County eliminate the six candidate sites noted above and confer with state and federal wildlife agencies to decide if any other candidate sites should also be eliminated due to their potential negative impacts on the

GRSG or other wildlife. Furthermore, ECAS requests that any new landfill be operated as a sanitary landfill to minimize odors and the attraction of scavengers, predators, and disease vectors. We also suggest that the County thoroughly consider alternatives to landfills as ways to manage refuse. Finally, we ask that the County seriously consider future uses of the closed landfill that most benefit the environment and our economy.





JANUARY 30, 2023

Re: Letter of Opposition regarding the Proposed Landfill Sites near Millican, Oregon

Dear Advisory Committee,

I am writing this letter in my capacity as Head of the Physics Department at the University of Oregon to express our strongest opposition to locating a new landfill site in the vicinity of Pine Mountain Observatory (PMO). The operation of the observatory would be severely compromised if the new landfill were to be located at any of the six proposed sites in the Millican valley. The site located at the base of Pine Mountain would be the most devastating, followed by the two sites to the east which will have a direct line of site to the observatory.

PMO has been a valued part of central Oregon culture since the first telescope was installed in 1968. Located on the northwest corner of what astronomers call “the Great Dark Patch”, it lies under the darkest and most pristine skies in Oregon and the entire continental US. These skies are invaluable not just to astronomers but to the entire Oregon community. For over 50 years the observatory has been accessible to this community through its “Public Nights” program which hosts public visitors on weekend nights during the summer months. In recent years, PMO has also become a unique educational resource for all of Oregon, including research programs for high-school and undergraduate students at schools throughout the state. With the advent of “remote observing”, the observatory is now a state-wide resource that can be accessed remotely.

The most crucial concern focusses on the light pollution that will be caused by the landfill facility. In particular, preservation of the dark skies near PMO will become impossible if there is development of the areas near the base of the mountain. Additional detrimental effects include traffic, which would inevitably inject debris into the atmosphere, and the potential burning off and outgassing from the facility which would add to local turbulence in the atmosphere. Given Deschutes County’s pride in its unspoiled natural environment, our department asks the commission to preserve PMO’s ability to make the night skies available to everyone in such a unique fashion.

Yours sincerely,

Professor Richard Taylor  
Head, Department of Physics  
University of Oregon  
[rpt@uoregon.edu](mailto:rpt@uoregon.edu)

**DEPARTMENT OF PHYSICS**

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## Letter of Opposition for Proposed Landfill Sites near Millican, Oregon

February 7, 2023

This is Dr. Scott Fisher writing; I am a faculty member in the University of Oregon Department of Physics where I hold the position of Director of Undergraduate Studies. Additionally, I am the Director of Pine Mountain Observatory (PMO), an active research and educational observatory which is located near the summit of Pine Mountain in Millican, OR.

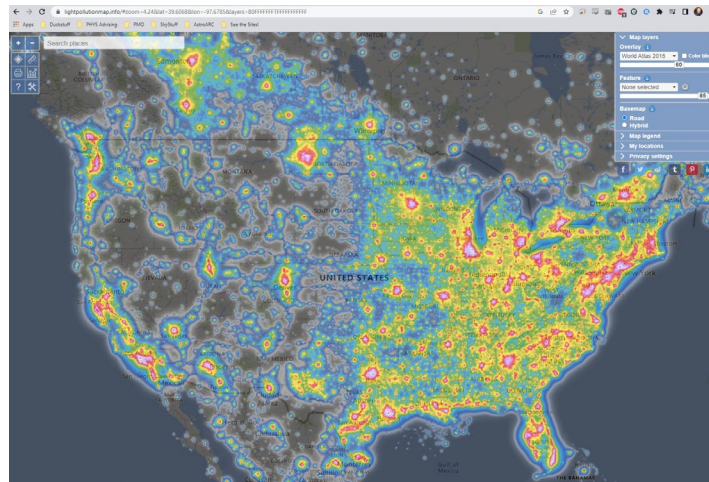
I am writing this letter to state our strong opposition to locating a new landfill site in the vicinity of Pine Mountain. The site located at the base of Pine Mountain would be absolutely devastating to the observatory, and the two sites to the east are especially worrisome as any development in those areas will have a direct line of site to the observatory. However, the observatory would be irreparably harmed if the new landfill were located at *any* of the six proposed sites in the Millican valley for reasons I detail below.

PMO has been a part of central Oregon since 1968 when the first telescope was installed. For over 50 years the observatory has been accessible to the community through our long running “Public Nights” program where we have the facility open to public visitors on Friday and Saturday nights in the summer months. Over the last several years PMO averaged 1500 – 2000 public visitors each summer to the facility. On top of those visitors, PMO hosts private tours for educational groups from around the state and country. Each summer we have scout troops, school classes, environmental groups, and folks who advocate for the preservation of dark skies as visitors to the observatory.

PMO also hosts several active and robust research programs for high-school and undergraduate students at schools throughout the state. These programs range from scientific research like looking for planets around other stars to technical programming that teaches students how to work on complex scientific equipment and how to take care of a scientific facility. In 2022 roughly 50 students took part in meaningful research/support projects at PMO. In recent years PMO has become an educational resource for all of Oregon. With the advent of “remote observing” we now routinely observe with the PMO telescopes from remote locations in Eugene and Portland. Indeed, the observatory is now a state-wide resource that can be accessed remotely.

However – it is the special location of the observatory that truly enables these unique educational programs. PMO is located under some of the darkest and most pristine skies in Oregon and the entire continental US. In fact, PMO is located on the northwest corner of what astronomers call “the Great Dark Patch”. The graphic below shows the current state of light pollution in the USA. If you look

closely you can see the ‘light domes’ of Bend, Redmond, and Prineville in central Oregon, the “great dark patch” is the dark area that spans southeastern Oregon and northern Nevada. PMO is located to the east of the Bend light dome.



This map is relevant to this letter, as the biggest concern we have with respect to the proposed landfill sites is the light pollution that will be caused by the facility. There is simply no way to preserve the dark skies near PMO if there is development of the areas near the base of the mountain. And once the light pollution is in place, it is impossible to mitigate or rectify. The observatory and its educational and research programs will be severely harmed – and potentially made inoperable – if the new facility is located at the sites near Pine Mountain or Millican.

Other issues related to locating the landfill near PMO would be the detrimental effect of much more traffic near the mountain which would inevitably inject more dust and small particles into the atmosphere and the potential burning off and outgassing from the facility which would add to local turbulence in the atmosphere.

Given the reputation of Deschutes County as a place that prides itself on its natural beauty and unspoiled environment, I ask the commission (and all Oregonians) to consider the dark and pristine skies of central Oregon as part of that environment. Since we have an established and popular observatory already in place in our community, I am asking us to preserve the dark skies that make PMO a unique community asset by not locating the new facility at any of the sites near Millican. With this sort of preservation, PMO will remain an active, popular, and well-loved part of the community for many years to come.

Sincerely,

Robert Scott Fisher, Ph.D.  
Director of Pine Mountain Observatory



A 501 (C) (3) Corporation

March 2, 2023

Dear Solid Waste Advisory Committee, Deschutes County,

This letter concerns both proposed landfill sites in the Millican Valley. This is one of the largest outdoor recreation sites in Deschutes County. A partial list of the activities that occur in the Millican Valley are as follows: OHV trails, mountain biking, camping, hiking, hunting, and for the last 40 years, hang gliding and paragliding from Pine Mountain.

Over the years, hang glider and paraglider flights from Pine Mountain have exceeded 200 miles into Idaho and Northern California over the vast Eastern Oregon desert. There are over 40 pilots in our flying clubs who regularly fly Pine Mountain year-round.

Also, the Deschutes County owned Millican Valley Public Airport is used by many back country airplane pilots for practice and as an emergency airport serving Eastern and Central Oregon pilots. The placement of a landfill next to the Millican Valley Airport is problematic because of the likelihood for increased "land fill" caused bird strike hazards during the approach and departure to and from the airport.

Additionally, the methane fires that are present at landfills will create very dangerous and violent thermal activity. Hang Glider and Paraglider pilots can't simply just remain clear of these violent destructive thermals because they can't be seen, and because they snake upward in very unpredictable ways. If a pilot accidentally flies into this fast-rising violet thermal, it can cause possible structural failure and death for the pilot. The Millican Valley Airport is our primary landing zone from Pine Mountain on days when we are not flying cross country. To access the Millican Valley Airport, glider pilots would have to fly directly over the landfill at a low altitude, which is the worst place to be from a safety perspective. At that low altitude, a pilot would not have time to deploy their reserve parachute after structural failure.

We are advising the Deschutes County Solid Waste Advisory Committee to look at other sites for a landfill, as utilizing this site will unnecessarily create extreme hazards to the Central Oregon Flying communities and visiting pilots.

If you have any questions, please feel free to contact me.  
[executivedirector@ushpa.org](mailto:executivedirector@ushpa.org)

Sincerely,

Martin Palmaz  
Executive Director

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# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Prineville District Office  
3050 NE 3<sup>rd</sup> Street  
Prineville, Oregon 97754



In Reply Refer To:  
1795 (ORP060)

Commissioner Phil Chang  
Deschutes County Board of Commissioners  
1300 NW Wall St.  
Bend, OR 97701

Re: Deschutes County Landfill Locations

Dear Commissioner Chang:

In reviewing the final two locations and the alternative for the proposed Deschutes County landfill, the Bureau of Land Management (BLM), Prineville District, Deschutes Field Office has several concerns about two of the sites.

The Moon Pit site is located adjacent to the eastern edge of the Oregon Badlands Wilderness, a unit of the National Landscape Conservation System managed by the BLM. Decades of community support culminated in the designation of the Oregon Badlands Wilderness in 2009 under the Omnibus Public Land Management Act. Under this and the 1964 Wilderness Act, as amended, the BLM is required to preserve and enhance wilderness values under a principle of non-degradation, while offering opportunities for solitude and primitive recreation.

The Oregon Badlands Wilderness was identified as having outstanding opportunities for solitude – both visually and from noise – as part of the character that qualified it for wilderness. The potential for debris, methane and noise intrusions into the wilderness from the location is extremely high and could impair wilderness values for which the BLM is directed to preserve, including solitude. While topography screens out noise from Highway 20, the noise from landfill activities (large vehicles, dumping, crushing, blasting, etc.) would be expected to intrude into the wilderness and impair visitor experiences.

The proposed Moon Pit site is surrounded by lands managed by the BLM, which will require the county to obtain a right-of-way for access. The existing access road (BLM road 6521) is narrow and not built for the type of vehicles that would be accessing a landfill. The road would need to be rebuilt and significantly widened. The current location is within 75 feet of the wilderness boundary and is the access for the main Oregon Badlands Wilderness parking lot. If the road stays in this location, landfill traffic would mix with recreation traffic including horse trailers. Relocating the access road to the east could impact the current Oregon Department of Transportation material storage area, lands occupied by an existing lease holder (the Bend Aero Modelers), crucial winter range for mule deer, and potentially Greater Sage-grouse habitat.

The BLM also manages the Dry River Canyon area to the east of the Oregon Badlands Wilderness and implements an annual seasonal wildlife closure to protect nesting raptors.

Nesting raptors are protected under the Bald and Golden Eagle Protection Act, as amended and the Migratory Bird Treaty Act, as amended. The Dry River Canyon has supported both golden eagles and prairie falcons and the area has restrictions against disturbance. The Upper Deschutes Resource Management Plan (UDRMP) restricts new road development within ¼ mile of the nest – UDRMP, Obj. W-1, Allowable Uses: locate new roads and trails away from important habitats (e.g, ¼ mile). There is also a seasonal closure, which includes motorized use, runs from February 1 for golden eagles and March 1 for prairie falcons through August 31 each year. In addition, by moving the entrance route to the landfill and pending any route restrictions, there could be another potential conflict with UDRMP, Obj. R-2, Guideline 5 (BADLANDS WSA, p113): “...providing designated parking areas and trailhead improvements at major entry points is a high priority...including... at the base of Dry River Canyon.”

These complexities and potentially significant impacts would require the completion of an environmental impact statement to consider authorizing a right-of-way to the county. This process could take two or more years to reach a decision and does not guarantee access.

The alternative site to Moon Pit and Roth East is the parcel on public lands near Horse Ridge, on the south side of Hwy 20. Approximately 80% of the area being considered has been evaluated and found to have Lands with Wilderness Characteristics. BLM Manual MS-6320 directs the BLM to consider the wilderness characteristics of public lands when undertaking land use planning. After evaluation, the BLM can determine if the lands will be managed to protect wilderness characteristics, to minimize impacts, or to allow for other uses while not protecting wilderness. The BLM would have to initiate a planning process that would consider the input of cooperating agencies, including states and counties, tribes, and other interested parties.

Additional challenges with this site include the prevalence of old-growth Western juniper (the oldest juniper is less than 2 miles away), the potential overlap with a portion of an Oregon Department of Transportation lease area, straddling BLM road 6516 (Stokey Flat Road), known and mapped undesignated mountain biking trails that are heavily used. The field office has initiated an analysis of these trails with the intent of creating a designated and developed riding area. Finally, as noted in the Deschutes County story map, the county would have to acquire these lands from the BLM. Currently, the lands south of Highway 20 that have been identified for this option are designated as Zone 1, retention, and disposal could require a land use plan amendment and an environmental assessment (depending on method of conveyance).

The BLM Prineville District will continue to try to engage with the county on this issue; by reaching out to us in advance we can hopefully provide information on potential barriers in advance of decisions. The information provided in this letter is approximate, and the office could provide more precise information if we had access to actual siting geographic information systems data. Please let me know if you have any questions or need additional information.

Sincerely,

**Lisa Clark**

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Lisa Clark  
Date: 2023.09.08  
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Lisa M. Clark  
Field Manager  
Deschutes Field Office



## Oregon Natural Desert Association

### Analysis of Impacts of from Potential Future Solid Waste Facility on Wildlife and Wilderness in Deschutes County, Oregon

March 13, 2024

#### Summary

The Deschutes County Department of Solid Waste’s public process for identifying sites for a future solid waste facility in the county has settled on two potential locations east of the city of Bend: Moon Pit and Roth East.

Development and operation of either site would have deleterious impacts on greater sage-grouse (*Centrocercus urophasianus*).

Landfill development and operation at Moon Pit or Roth East would also affect a host of other native wildlife species, including pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), Rocky Mountain elk (*Cervus canadensis roosevelti*), golden eagle (*Aquila chrysaetos*) and prairie falcon (*Falco mexicanus*).

Developing the Moon Pit site would also impact wilderness values and recreation in the Oregon Badlands Wilderness and the Horse Ridge Recreation Area.

While the range and intensity of impacts to wildlife, wilderness and recreation would differ between the two locations, development at Moon Pit may be less harmful to these values and resources than at Roth East, assuming implementation of a full suite of compensatory conservation measures.

Regardless of which site may be chosen, planning and management cannot fully mitigate impacts on wildlife, wilderness or recreation from siting a landfill at either Moon Pit or Roth East.

#### Compensatory Conservation Measures

Development and operation of a solid waste facility at the Moon Pit or Roth East site must include a comprehensive wildlife mitigation plan and secure, continuous, independent funding that:

- Preserves greater sage-grouse (“sage-grouse”) habitat through acquisition of private properties and conservation easements at an ecologically meaningful scale within the Brothers Priority Area for Conservation.
- Enhances and restores sage-grouse habitat quality within the Brothers Priority Area for Conservation through active and passive restoration techniques, including voluntary grazing permit retirement on federal public lands; collaboration with local landowners and organizations to seed native forb and grass species; fence removal, retrofitting and/or marking; elimination of unnecessary anthropogenic features and structures on private and public lands; and eradication of invasive plant species.

- Provides and maintains essential habitat for pronghorn, and winter habitat for mule deer and Rocky Mountain elk, including through closure and reclamation of two-track vehicle routes, fence removal and wildlife-friendly fence construction and retrofitting.
- Marks wildlife crossings over highways and roads to be used by trucks and other vehicles accessing the landfill.
- Incorporates design features for buildings and other infrastructure that deter raven roosting and prevent electrocution of raptors, including golden eagle.
- Retrofits transmission poles at an ecologically meaningful scale to prevent electrocution of raptors in the region.
- Surveys, monitors, and controls invasive plant species at the landfill facility.
- Avoids or minimizes the impacts of noise, light and fencing at the landfill facility on wildlife.

In addition to the above measures, mitigation for developing and operating a solid waste facility at the Moon Pit site must:

- Incorporate design features at the facility and supporting infrastructure to reduce visual, audial and olfactory impacts of the landfill on wilderness values and visitation to the Oregon Badlands Wilderness and Horse Ridge Recreation Area.
- Support organizations and programs to maintain and improve wilderness values and recreational experiences in the Oregon Badlands Wilderness and Horse Ridge Recreation Area.

## **Analysis**

Deschutes County’s process for selecting a future site for a solid waste facility has reduced the list of potential sites to two locations: Moon Pit and Roth East. Both sites are privately owned, but surrounded by federal public lands and state lands, including specially designated areas. *See* Map 1 (“Landfill Options, Land Ownership, and Designated Areas”). The Moon Pit site is located directly adjacent to the Oregon Badlands Wilderness. *See* Map 2 (“Proposed Moon Pit Landfill Site and Oregon Badlands Wilderness”).

### ***Greater Sage-Grouse***

Both potential landfill sites are within or in close proximity to designated sage-grouse habitats. In its newly revised maps, the Oregon Department of Fish and Wildlife (“ODFW”) expanded the local Brothers Priority Area for Conservation (e.g., “core” habitat) for sage-grouse, including westward toward the two potential landfill sites, in recognition of the importance of this region to recovery of the species. *See* Map 3 (“Landfill Options, Sage-Grouse Leks, and Core, Low Density Habitats”). The Bureau of Land Management has similarly designated priority and general habitats near and overlapping (Roth East) the two sites. *See* Map 4 (“Landfill Options,



Sage-Grouse Leks, and Priority, General Habitats”). These habitat designations are the foundation of the federal government’s unprecedented, rangewide conservation strategy for sage-grouse. Finally, as part of a comprehensive reinventory of sagebrush habitats in the West, the U.S. Geological Survey (“USGS”) identified core habitats and habitat growth opportunity areas on and around both potential landfill sites (Doherty *et al.* 2022). *See* Map 5 (“Landfill Options and Sagebrush Core Habitat, Growth Opportunity Areas”). The new USGS maps were specifically created to support a “spatially explicit conservation design” to inform ongoing federal planning and conservation of sage-grouse.

The Roth East site is within sage-grouse summer habitat. *See* Map 6 (“Landfill Options, Sage-Grouse Leks, and Summer Habitat”). High quality, late brooding-rearing (summer) habitats—used from July through September—are key to maintaining viable sage-grouse populations. The forbs and associated insect diversity at these sites are essential for the development and survival of juvenile sage-grouse (Gregg and Crawford 2009; Drut *et al.* 1994). Late brood-rearing habitats are often considered a population-limiting habitat type due to their strong influence on chick survival, and by extension, population growth (Taylor *et al.* 2012; Dahlgren *et al.* 2016; Street 2020). Within the Great Basin, research estimates that late brood-rearing habitats comprise less than 2 percent of sage-grouse habitats (Atamian *et al.* 2010).

The Roth East site is also within sage-grouse winter habitat. *See* Map 7 (“Landfill Options, Sage-Grouse Leks, and Winter Habitat”). High quality, accessible winter habitat is also essential to the sage-grouse’s life cycle. Sage-grouse winter habitat must provide tall, healthy sagebrush for food and cover to support the birds throughout the season (Braun *et al.* 2005; Connelly *et al.* 2011a, *citing others*). Big sagebrush communities typically used for winter habitat are also becoming increasingly rare in the West (Welch 2005). Given the importance of winter habitat, the loss or fragmentation of these areas can have a disproportionate impact on sage-grouse population size locally and regionally (Caudill *et al.* 2013; Oregon 2013 DEIS: 8-39).

The state of Oregon ranks sage-grouse winter habitat as “Category 1” essential wildlife habitat (Hagen 2011: 83), noting that “[w]inter habitat is critical to the persistence of the species, and currently there are no studies or methods for restoring or creating winter habitat if it is lost” (Hagen 2011: 83, internal citations omitted). The state defines Category 1 habitat as “...irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or site-specific basis, depending on the individual species, population or unique assemblage” (OAR 635-415-0025(1)). State regulation seeks to prevent the loss of quantity or quality of Category 1 habitat (OAR 635-415-0025(1)(a)) by recommending or requiring:

- (A) Avoidance of impacts through alternatives to the proposed development action; or
- (B) No authorization of the proposed development action if impacts cannot be avoided.

Development of either Roth East or Moon Pit would negatively affect sage-grouse, although putting a landfill at Roth East would have far greater impacts on the species given its proximity to sage-grouse leks and designated habitat areas. Sage-grouse are highly sensitive to habitat loss, degradation and fragmentation, including from development of facilities and infrastructure (Knick and Connelly 2011; SGNTT 2011). Further, sage-grouse have low tolerance to

disturbance from anthropogenic activity, such as light, noise, human presence, and motorized vehicle travel. Impacts from development such as a landfill can extend for tens of miles, affecting sage-grouse breeding, nesting, brood-rearing, and movement at regional scales.

Sage-grouse are identified as “sensitive” by the Bureau of Land Management (BLM 2021) and a “Species of Greatest Conservation Need” (“SGCN”) by the state of Oregon (ODFW 2016). The species requires large, intact, interconnected areas of sagebrush steppe (Connelly *et al.* 2011b). Developing and implementing conservation strategies at regional or landscape scales will have the greatest benefit for sage-grouse and their habitat (*see* Doherty *et al.* 2011). Haphazard conservation of small and disconnected habitat patches will not benefit the species.

Importantly, anthropogenic changes in land use, such as development of roads, transmission lines, and landfills, have benefitted ravens by providing additional food sources and roosting locations particularly in winter, allowing for their increased distribution and abundance (Coates *et al.* 2020; Peebles and Conover 2017). Although sage-grouse are preyed on by a variety of species, ravens (*Corvus corax*) are responsible for the most nest depredation, contributing significantly to the decline of sage-grouse populations in the last century (Conover and Roberts 2017; Peebles and Conover 2017). Coates *et al.* (2020) found that proximity to developed areas exhibits the strongest influence on raven density in landscapes throughout the Great Basin and Peebles *et al.* (2017) determined ravens exert the most damage to landscapes within a 40-km radius of landfills where they wintered. Further, Coates *et al.* (2020) estimated that increased raven populations and distribution throughout the Great Basin are already affecting “at least 64% of the most important breeding concentration areas for sage-grouse” and mapped the central Oregon area among some of the highest levels of currently predicted raven density (emphasis added). There are dozens of leks within 40-km of both potential landfill sites, significantly increasing the vulnerability of sage-grouse nests to depredation by ravens with corollary declines in local sage-grouse populations. *See* Map 8 (“Landfill Options, Sage-Grouse Leks, and Raven Damage Zones”).

The Roth East site also poses an additional and unique threat to sage-grouse. The Nature Conservancy, using circuitscape connectivity analysis, mapped least-cost/most conducive pathways for sage-grouse to move between leks in Oregon (Jones *et al.* 2015). Roth East is located directly in the circuitscape pathway mapped between leks east and west of that site. *See* Map 9 (“Landfill Options, Sage-Grouse Leks, and Circuitscape Connectivity”). Development of that location would almost certainly affect the species’ movement through that area and could lead to abandonment of the three active leks west of the site.

Given the impacts described above, Deschutes County would be required to commit to and implement extensive habitat mitigation measures to meet the state of Oregon’s regulated standard for compensatory mitigation for conserving sage-grouse, especially for Roth East:

The standard for compensatory mitigation of direct and indirect habitat impacts in sage-grouse habitat (core, low density, and general areas) is to *achieve net conservation benefit for sage-grouse by replacing the lost functionality of the impacted habitat to a level capable of supporting greater sage-grouse numbers than that of the habitat which was*

*impacted*. Where mitigation actions occur in existing sage-grouse habitat, the increased functionality must be in addition to any existing functionality of the habitat to support sage-grouse (OAR 635-140-0025 (3), emphasis added).

Regulations implementing Oregon land use Goal 5 specifically define a solid waste facility as a “large-scale development” (OAR 660-023-0115(3)(i)(D)), which are *per se* a “conflicting use” (OAR 660-023-0115(3)(a)) with conserving “significant sage-grouse habitat,” which includes state-mapped sage-grouse core and low-density habitats (OAR 660-023-0115(6)) (Map 3). The state has prescribed a robust program for counties to administer to avoid, minimize and mitigate otherwise incompatible development to support sage-grouse conservation objectives (OAR 660-023-0115).<sup>1</sup>

### ***Mule Deer, Rocky Mountain Elk, Pronghorn***

Both potential landfill locations are also within or near mule deer and Rocky Mountain elk winter range, as well as “essential” habitat for pronghorn, which includes habitat that, “if diminished in quality or quantity, would result in depletion of the species” (ODFW 2021). *See* Map 10 (“Landfill Options and Mule Deer Winter Range”); Map 11 (“Landfill Options and Elk Winter Range”); Map 12 (“Landfill Options and Pronghorn Essential Habitat”). Winter range is vital to mule deer survival, providing both refuge and high-quality forage over the winter months that is necessary for successful reproduction and survival, particularly when deer are nutritionally stressed. ODFW “consider[s winter range] seasonally critical...[d]ue to its limited nature on the landscape” (ODFW 2024). Anthropogenic barriers, such as fencing and roadways, and human activity can fragment habitats and disrupt, block, or alter ungulate movement across the landscape, limiting wildlife connectivity (Pew 2022). Notably, the mule deer population in the Paulina unit has remained far below the management objective (“MO”) in the past five years, which was censused at 24% of the MO.<sup>2</sup>

Importantly, the state of Oregon ranks both pronghorn “essential” habitat and mule deer and elk winter range as “Category 2” wildlife habitat (ODFW 2021, ODFW 2013). The state defines Category 2 habitat as “essential habitat for a fish or wildlife species, population, or unique assemblage of species and is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage” (OAR 635-415-0025(2)).

The state’s mitigation goal for Category 2 habitat, in case impacts are unavoidable, is “no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or

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<sup>1</sup> With the exception of this mention of state land use Goal 5 and associated regulations, this analysis does not attempt to delve deeper into the likely application of state land use law to siting a potential landfill at Moon Pit or Roth East.

<sup>2</sup> *See* ODFW, Mule Deer population estimates, herd composition, and over-winter fawn survival in Oregon 2019 - 2023,

[https://www.dfw.state.or.us/resources/hunting/big\\_game/controlled\\_hunts/docs/hunt\\_statistics/23/Mule%20Deer%20Population%20Estimates,%20Composition,%20and%20Over-Winter%20Fawn%20Survival%202019%20-%202023.pdf](https://www.dfw.state.or.us/resources/hunting/big_game/controlled_hunts/docs/hunt_statistics/23/Mule%20Deer%20Population%20Estimates,%20Composition,%20and%20Over-Winter%20Fawn%20Survival%202019%20-%202023.pdf) (last accessed Jan. 5, 2024).

quality” (OAR 635-415-0025(2)(a)). State regulation seeks to prevent the loss of quantity or quality of Category 2 habitat (OAR 635-415-0025(2)(b)) by recommending or requiring:

- (A) Avoidance of impacts through alternatives to the proposed development action; or
- (B) Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss of either pre-development habitat quantity or quality. In addition, a net benefit of habitat quantity or quality must be provided. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

If neither habitat Category 2 mitigation measure (A) or (B) can be achieved, ODFW is directed in regulation to recommend against or not authorize the proposed development action (OAR 635-415-0025(2)(c)).

### ***Habitat Connectivity***

ODFW has recently mapped a network of Priority Wildlife Connectivity Areas (“PWCAs”) statewide. This legislatively directed, statewide collaborative effort examined the “habitat associations and requirements, movement capabilities and limitations, and responses to different types of stressors” of 54 surrogate wildlife species throughout the state to identify “good quality habitat in intact, relatively undisturbed parts of the landscape, as well as the best remaining marginal habitat to help wildlife navigate through developed or degraded areas” (ODFW 2023). Connected landscapes provide access to forage, water sources, and shelter throughout different life stages and seasonal movements that is crucial for species survival and reproduction while also aiding in adaptation to changes in land use from development, wildfire, nonnative species invasion, and climate change and drought conditions.

These newly identified PWCAs support ODFW’s goal to “[p]rovide connectivity of habitat for the broad array of wildlife species throughout Oregon,” addressing one of the “Key Conservation Issues” outlined in the federally reviewed and approved *Oregon Conservation Strategy*, which guides ODFW’s efforts in conserving and recovering Species of Greatest Conservation Need throughout the state (ODFW 2016). Additionally, PWCAs serve as a useful guide in land management decisions to prevent further landscape fragmentation in Oregon where increasing threats from management and development “have compromised the integrity and connectivity of wildlife populations and their habitats.” *Id.*

PWCAs are comprised of Regions (highest value habitat in large, contiguous areas), Connectors (corridors between Regions along optimal pathways), and Steppingstones (small areas of intact habitat that help facilitate movement in urban areas). Both potential landfill sites would overlap Connectors linking Regions, while development of the Roth East site would also affect a Region itself. *See* Map 13 (“Landfill Options and Wildlife Habitat Connectivity”). The concurrence of these sites with habitat areas that support special status species or specially designated habitats—such as prioritized sage-grouse habitats, crucial mule deer winter range, and pronghorn essential habitat—underscores where management, including a precautionary approach to habitat

disturbance, would be most beneficial to wildlife and support shared conservation goals (ODFW 2023).

### ***Golden Eagle, Other Raptors***

Golden eagle and other raptors occur near both potential landfill sites. There are 6 golden eagle nests located within a 5km<sup>2</sup> proximity (the mean core breeding area of golden eagles in latitudes between 40-50°) of the Moon Pit location. *See* Map 14 (“Proposed Moon Pit Landfill Site, Golden Eagle Nests, and Mean Core Breeding Habitat”). Mean core breeding areas are the most heavily utilized areas within an eagle’s home range that contain the most dependable food sources and alternative nesting locations (Hansen *et al.* 2017). Of the currently mapped nests, the closest is approximately 1.4 miles from the Moon Pit site. Additionally, the Roth East site falls within a mean core breeding area for one golden eagle nest. *See* Map 15 (“Landfill Options, Golden Eagle Nests, and Mean Core Breeding Areas”). Golden eagles are sensitive to anthropogenic noise and changes in land use—both from “infrequent or short-term disturbance” and “chronic or long-term disturbance” (Hansen *et al.* 2017). These effects may impact nesting success. *Id.* Furthermore, additional transmission lines erected throughout the area may increase the rate of take from electrocution, which currently accounts for approximately 500 golden eagle deaths each year (USFWS 2016). The golden eagle is protected under the Bald and Golden Eagle Protection Act, 16 U.S.C. §§ 668-668c, and the Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712, from human activities that disturb or adversely impact the birds’ ability to “forage, nest, roost, breed, or raise young” (USFWS 2007).

Notably, the Bureau of Land Management also specially manages Dry River Canyon, where golden eagles nest and forage, for conservation of prairie falcon. This species is also protected under the Migratory Bird Treaty Act. Development and operation of a landfill at Moon Pit should study and seek to avoid potential impacts prairie falcon.

### ***Other Wildlife***

Development of either site should also consider potential impacts to bat populations within the project vicinity, which are sensitive to habitat alteration, specifically the impacts of noise and light that can affect foraging, navigation, roost emergence, and juvenile growth (Cory-Toussaint and Taylor 2022). There are seven bat species identified as SGCN in the Northern Basin and Range ecoregion in Oregon, the distribution of which are not fully known (ODFW 2016). Bats are especially vulnerable to anthropogenic influences—such as loss of habitat, exposure to light, and prolonged noise—and particularly at roosting sites (Gervais 2016, Gruver and Keinath 2006, Keinath 2004). The county should consult ODFW to determine the presence, habitat needs, and what design features should be incorporated in landfill construction to mitigate impacts to bats.

### ***Wilderness Values, Recreation***

Established by Congress in 2009, Oregon Badlands Wilderness is 29,000 acres and a cherished landscape for Deschutes County residents seeking quiet recreation and moments of solitude. The Moon Pit site is adjacent to the wilderness area and across Highway 20 from the Horse Ridge

Recreation Area. The Bureau of Land Management is currently planning more trails, facilities and parking to accommodate burgeoning public use of the recreation area.<sup>3</sup> Siting a landfill at Moon Pit would affect public enjoyment of both the wilderness and recreation area.

## Maps

- Map 1. Landfill Options, Land Ownership, and Designated Areas
- Map 2. Proposed Moon Pit Landfill Site and Oregon Badlands Wilderness
- Map 3. Landfill Options, Sage-Grouse Leks, and Core, Low Density Habitats
- Map 4. Landfill Options, Sage-Grouse Leks, and Priority, General Habitats
- Map 5. Landfill Options and Sagebrush Core Habitat, Growth Opportunity Areas
- Map 6. Landfill Options, Sage-Grouse Leks, and Summer Habitat
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- Map 8. Landfill Options, Sage-Grouse Leks, and Raven Damage Zones
- Map 9. Landfill Options, Sage-Grouse Leks, and Circuitscape Connectivity
- Map 10. Landfill Options and Mule Deer Winter Range
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- Map 13. Landfill Options and Wildlife Habitat Connectivity
- Map 14. Proposed Moon Pit Landfill Site, Golden Eagle Nests, and Mean Core Breeding Habitat
- Map 15. Landfill Options, Golden Eagle Nests, and Mean Core Breeding Areas

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<sup>3</sup> See Horse Ridge Recreation Management Area Project, <https://eplanning.blm.gov/eplanning-ui/project/2030546/510>.

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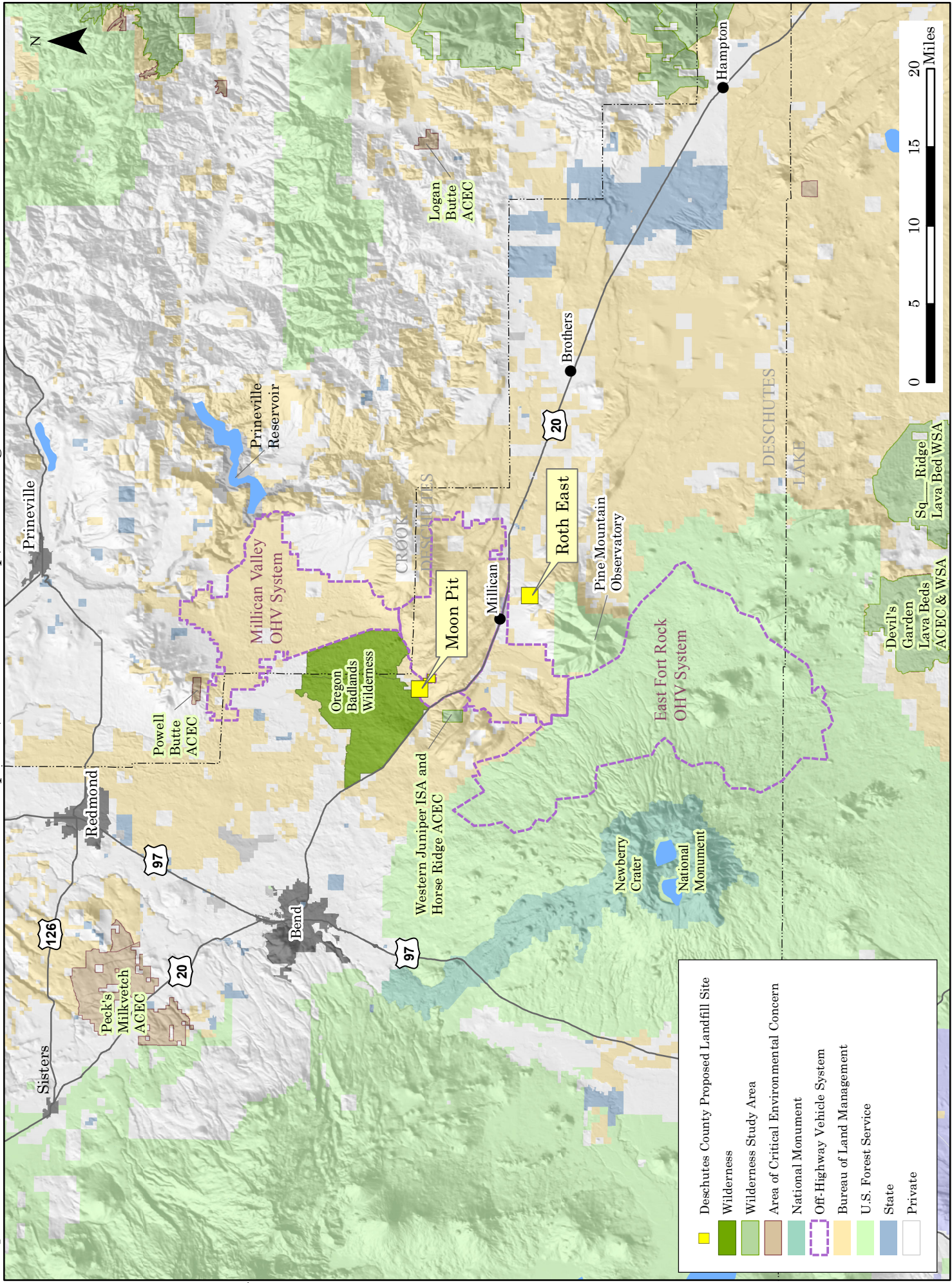


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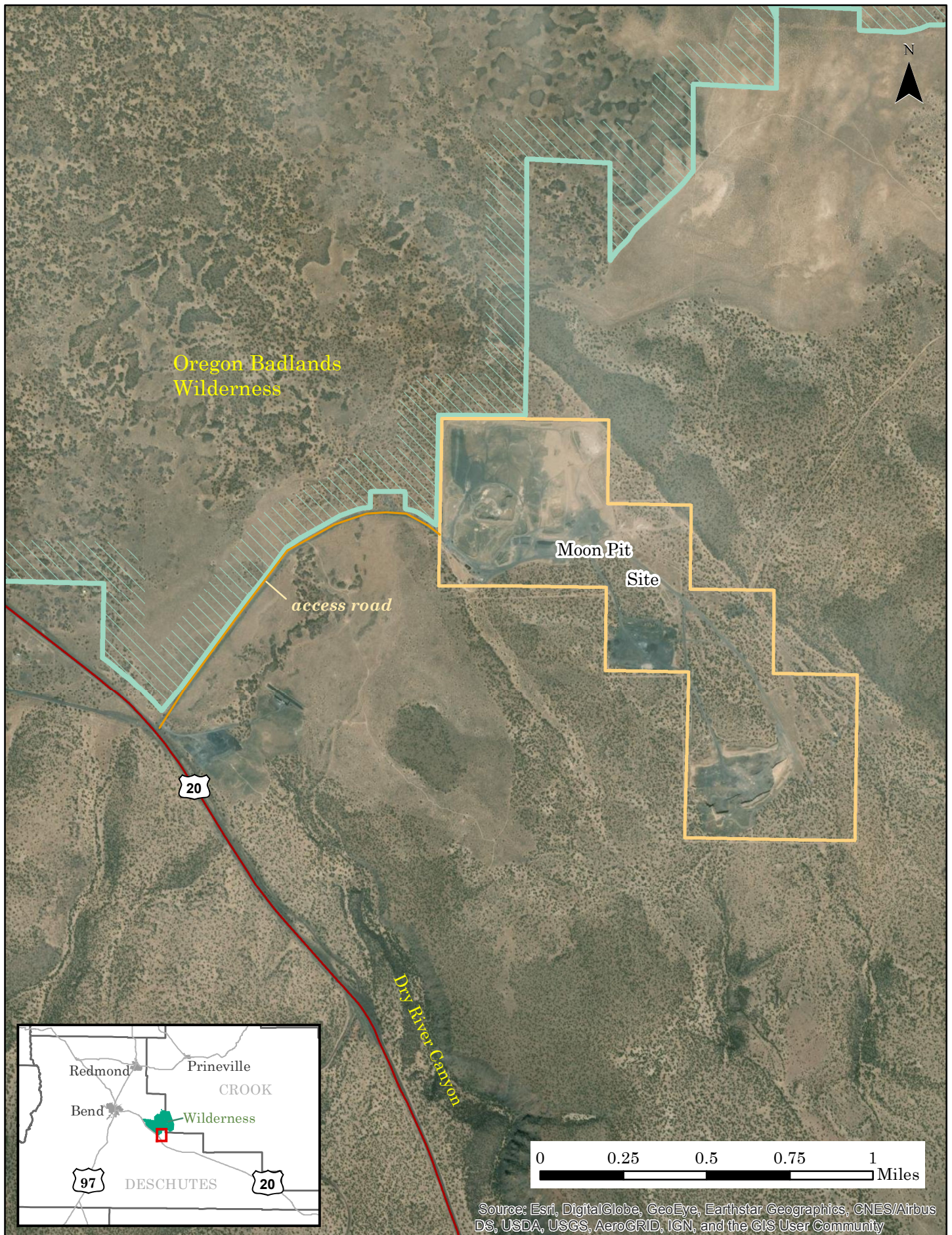
# Landfill Options, Land Ownership, and Designated Areas

Map 1.





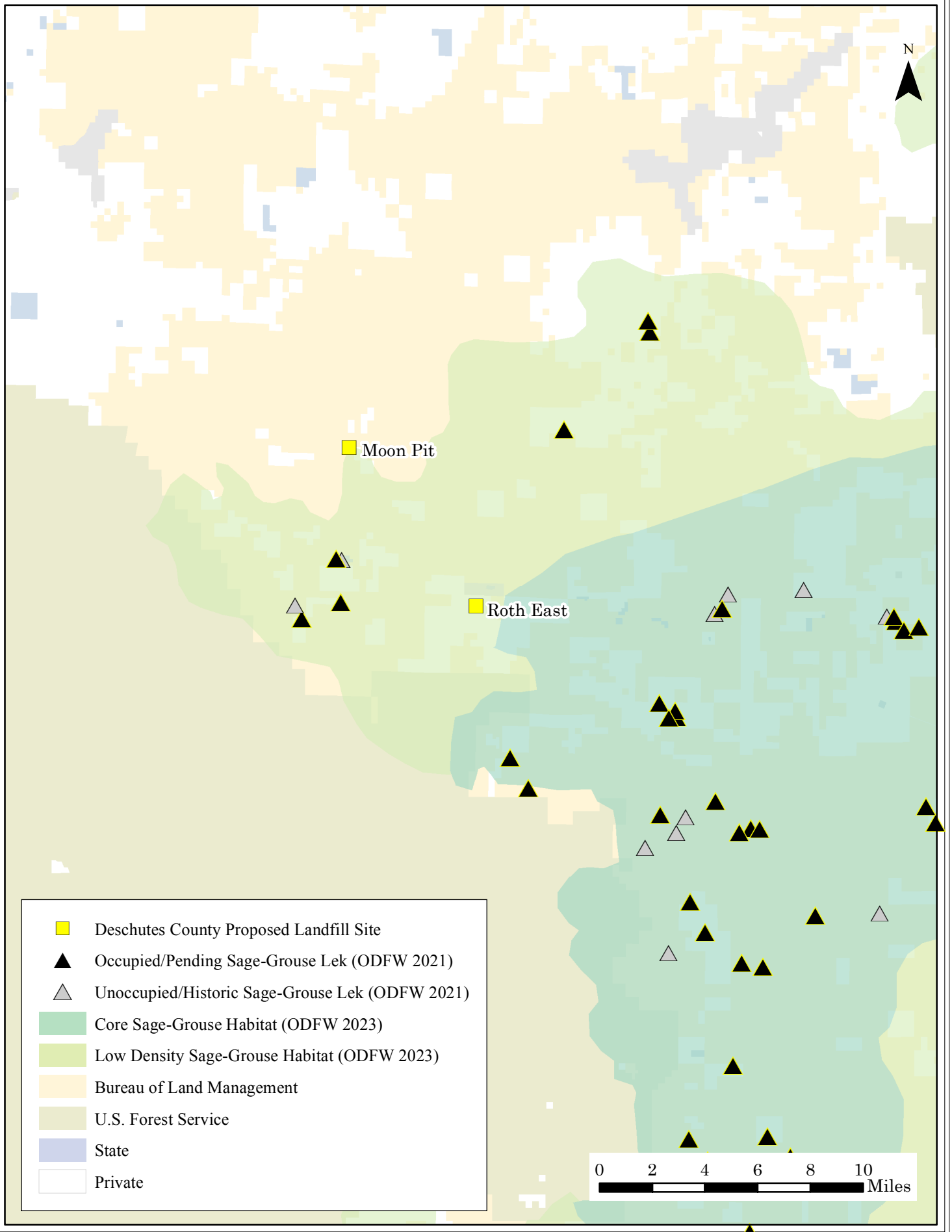
Map 2. Proposed Moon Pit Landfill Site and Oregon Badlands Wilderness



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

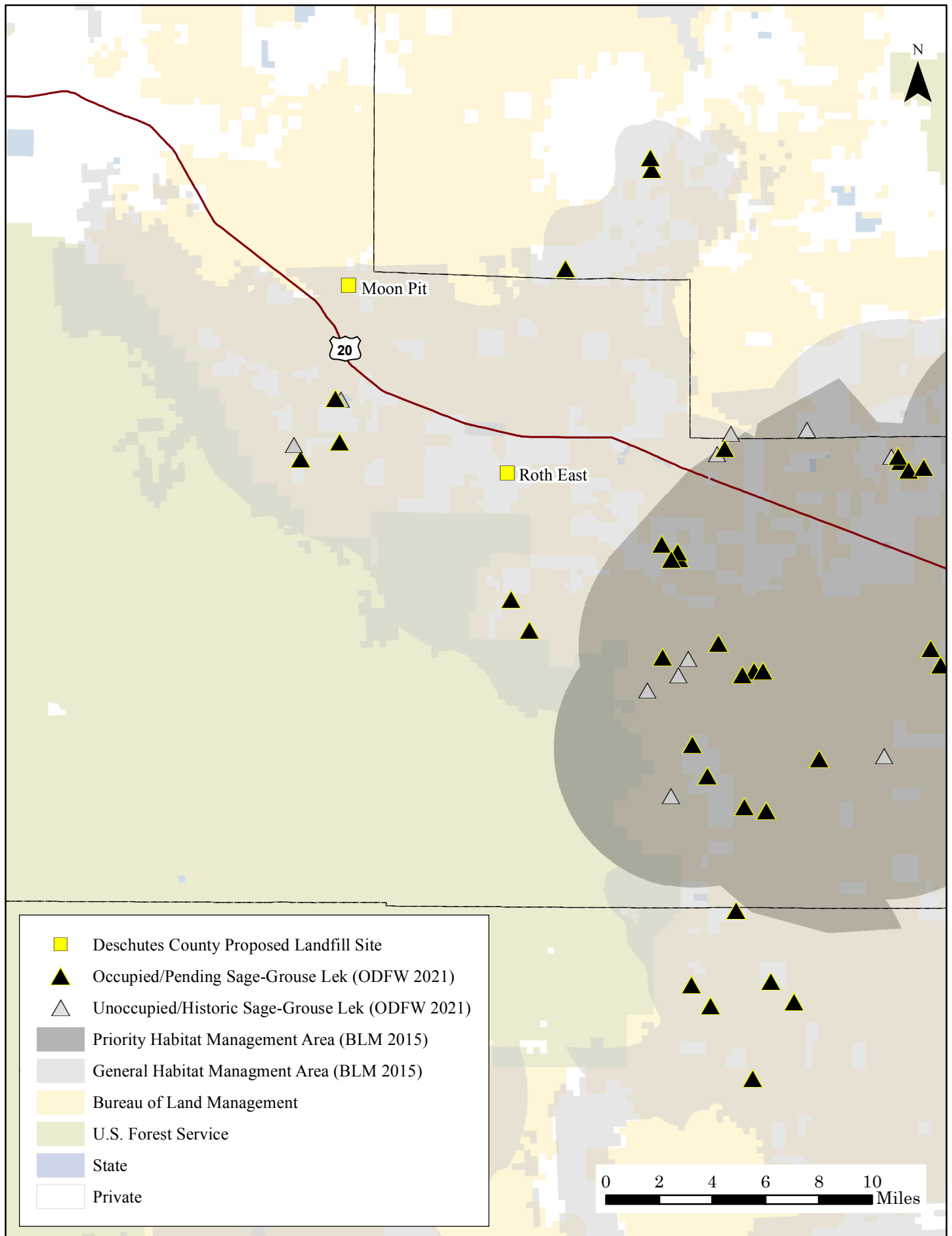


Map 3. Landfill Options, Sage-Grouse Leks, and Core, Low Density Habitats

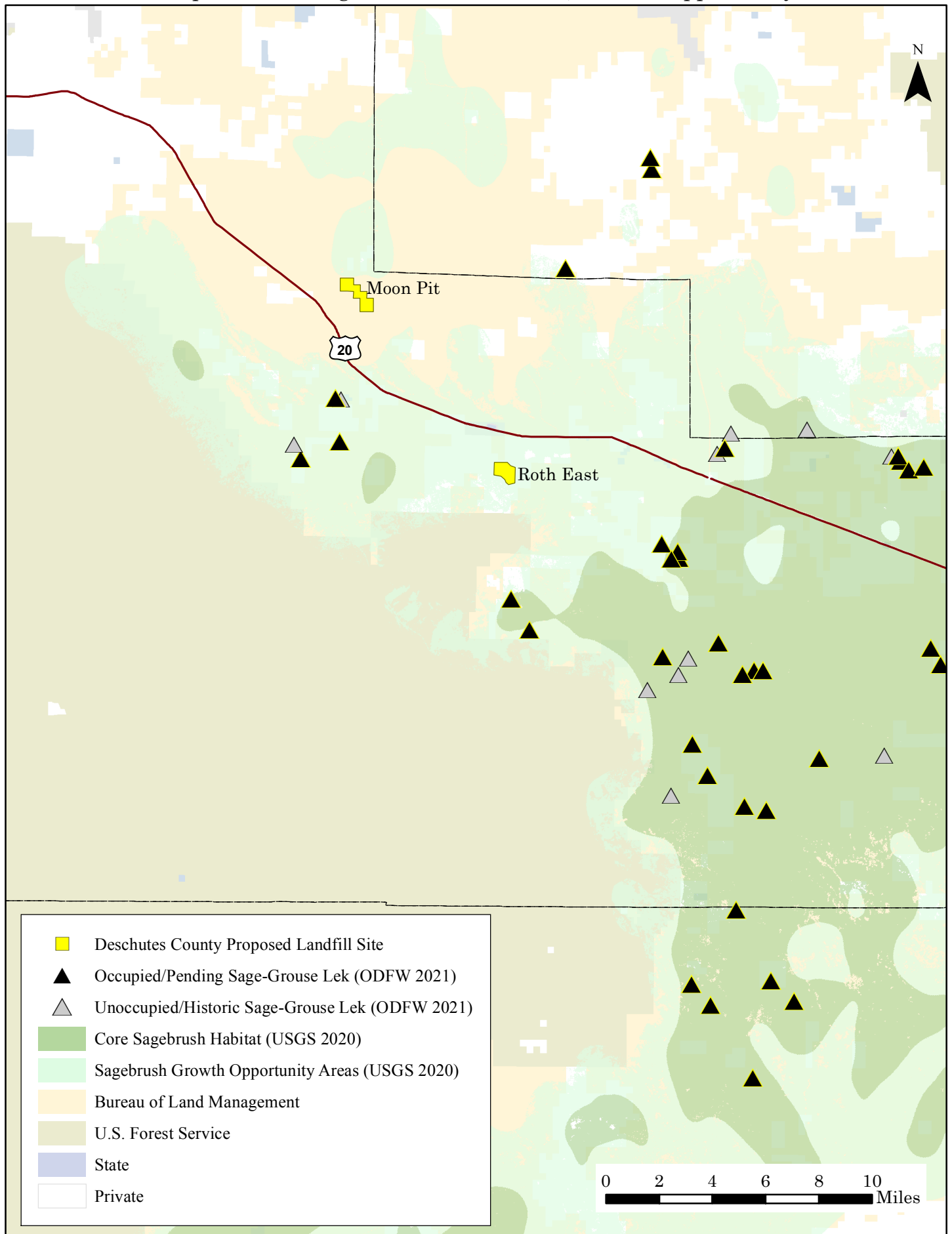


Map 4.

# Landfill Options, Sage-Grouse Leks, and Priority, General Habitats

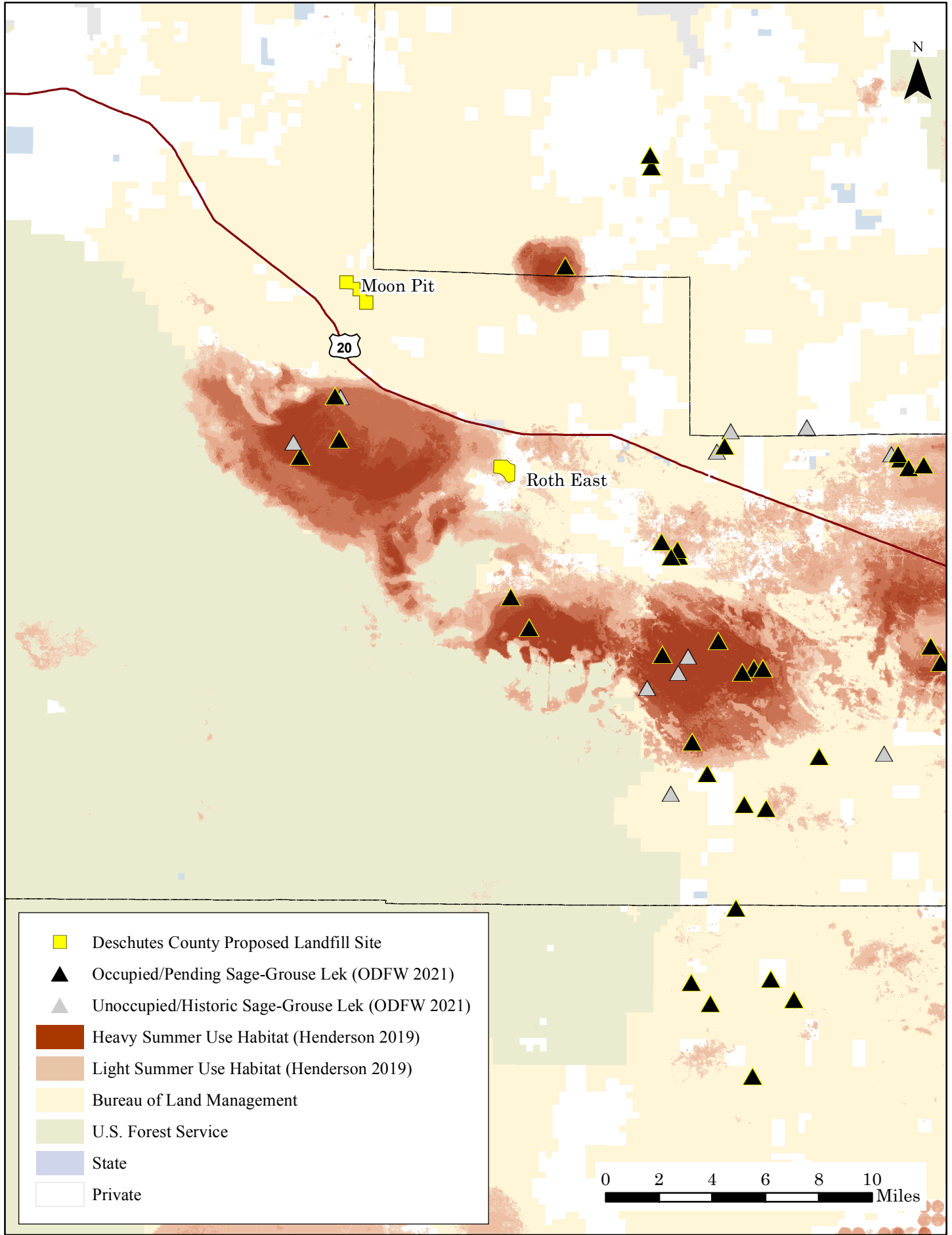


Map 5. Landfill Options and Sagebrush Core Habitat, Growth Opportunity Areas



Map 6.

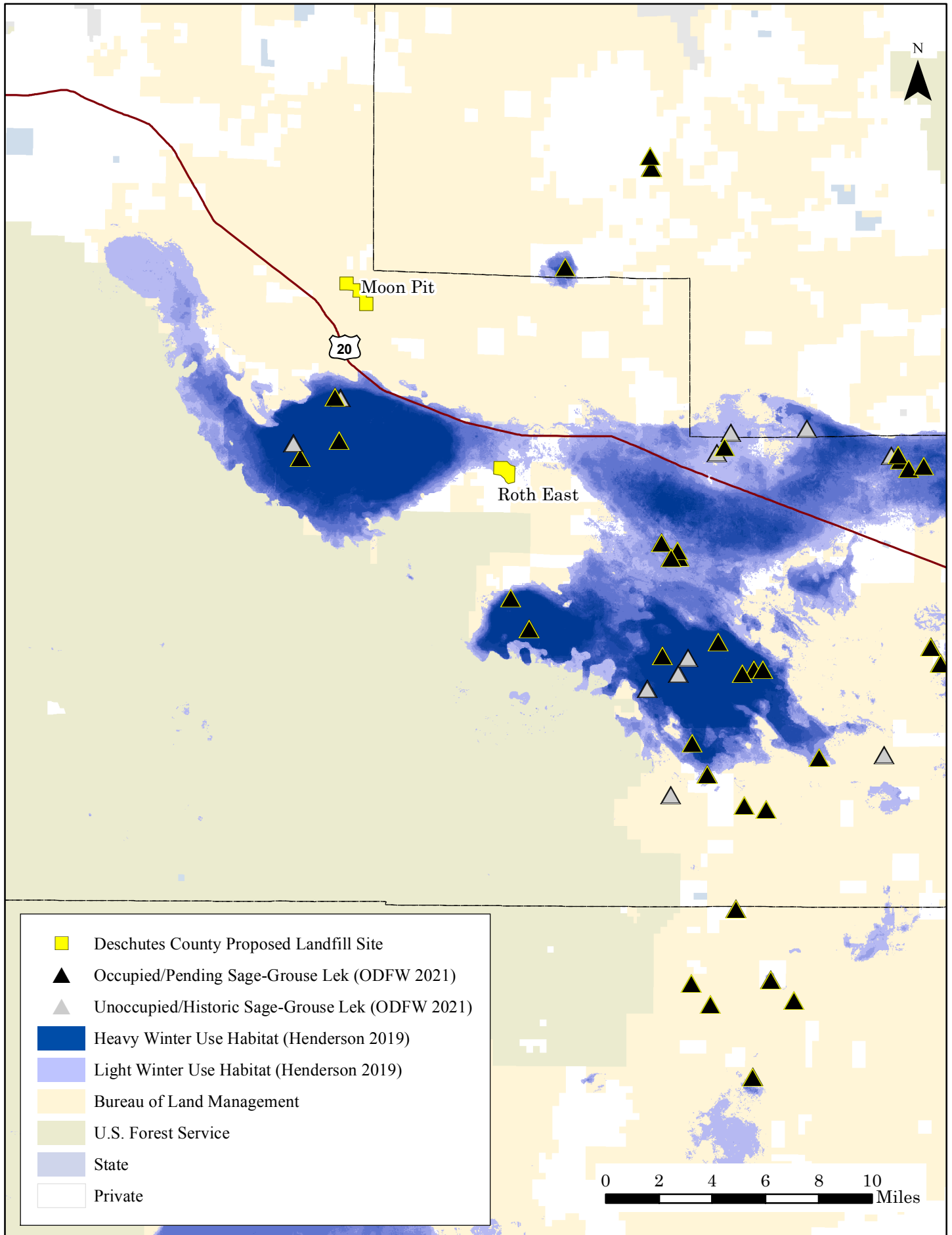
# Landfill Options, Sage-Grouse Leks, and Summer Habitat





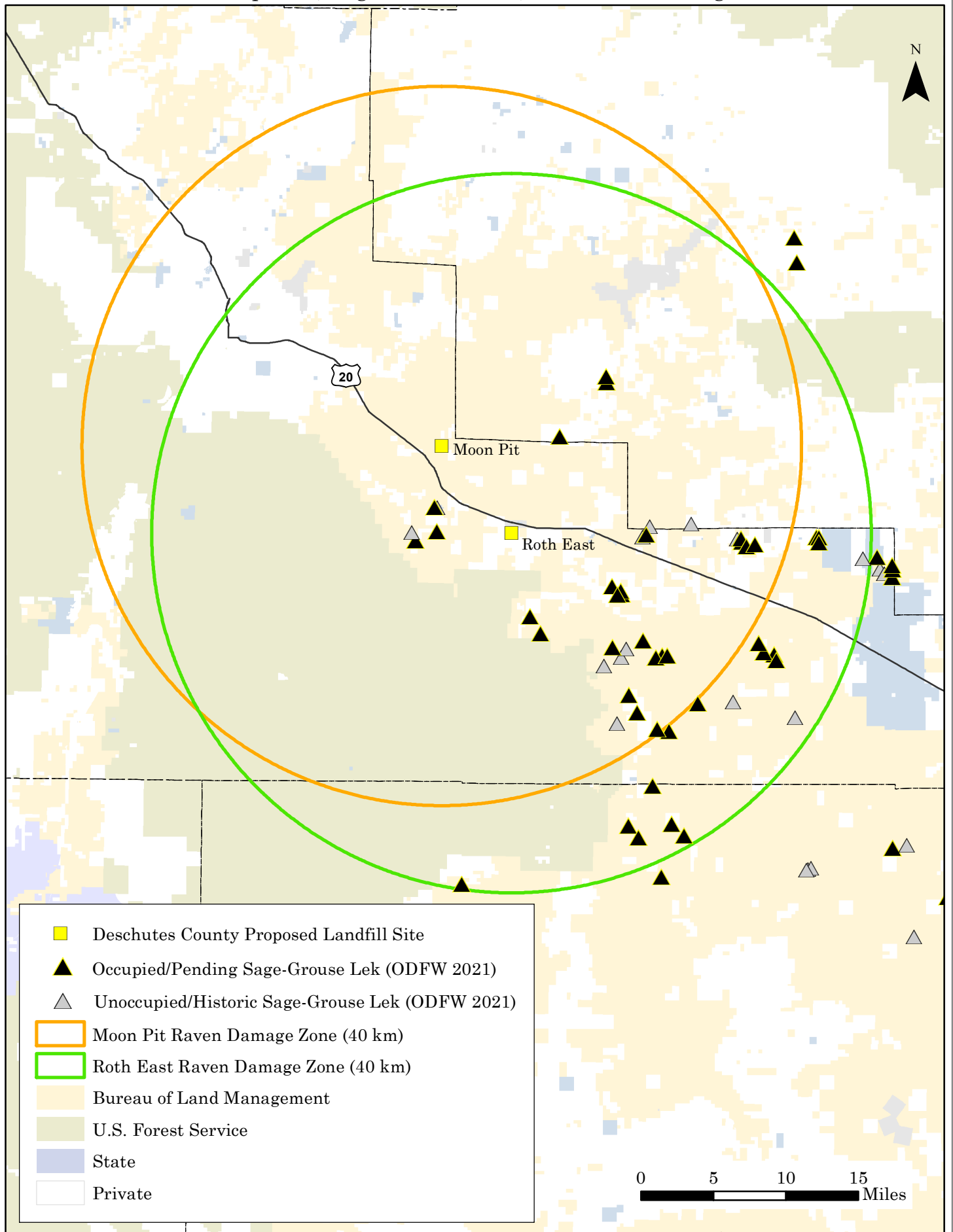
Map 7.

# Landfill Options, Sage-Grouse Leks, and Winter Habitat

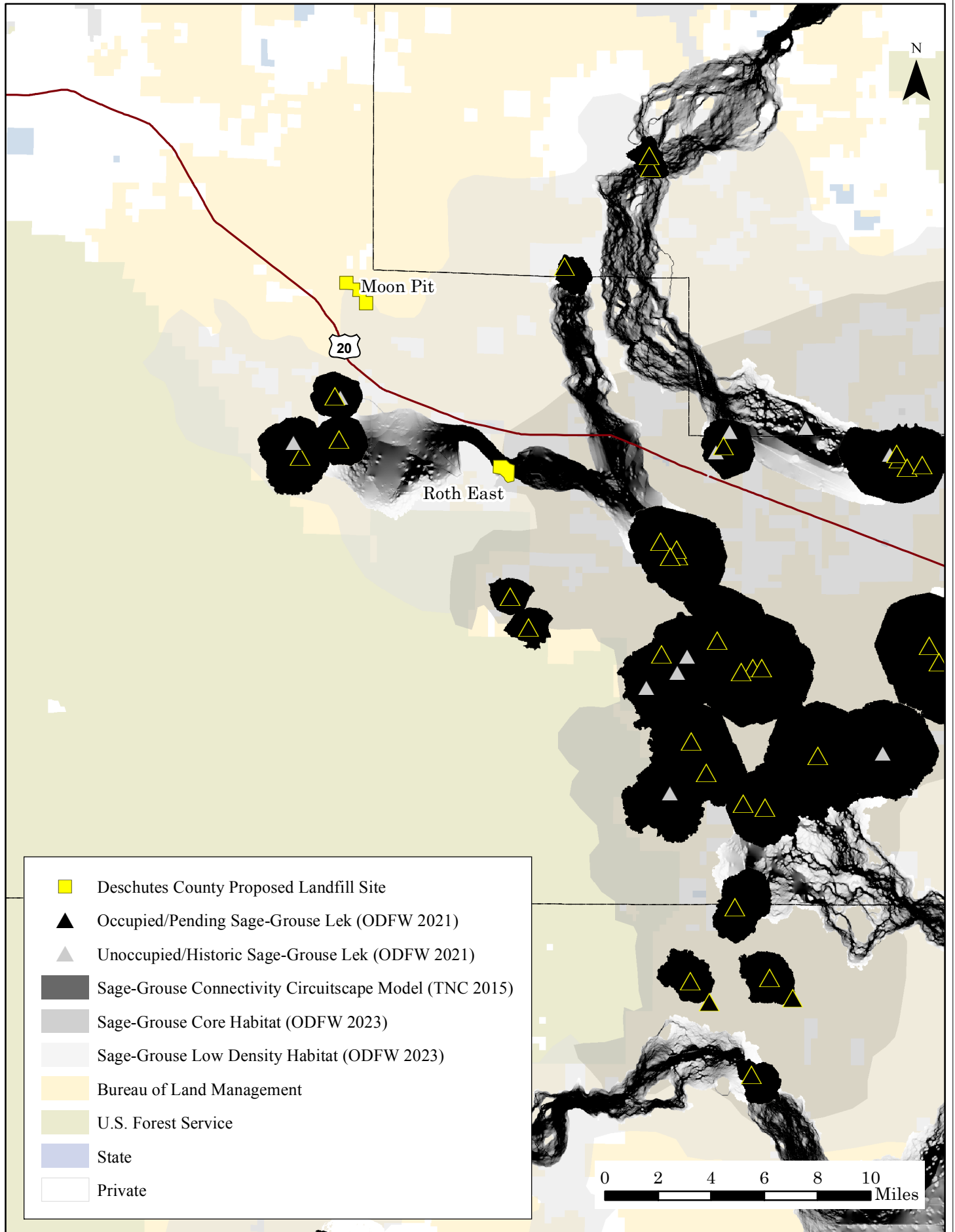


Map 8.

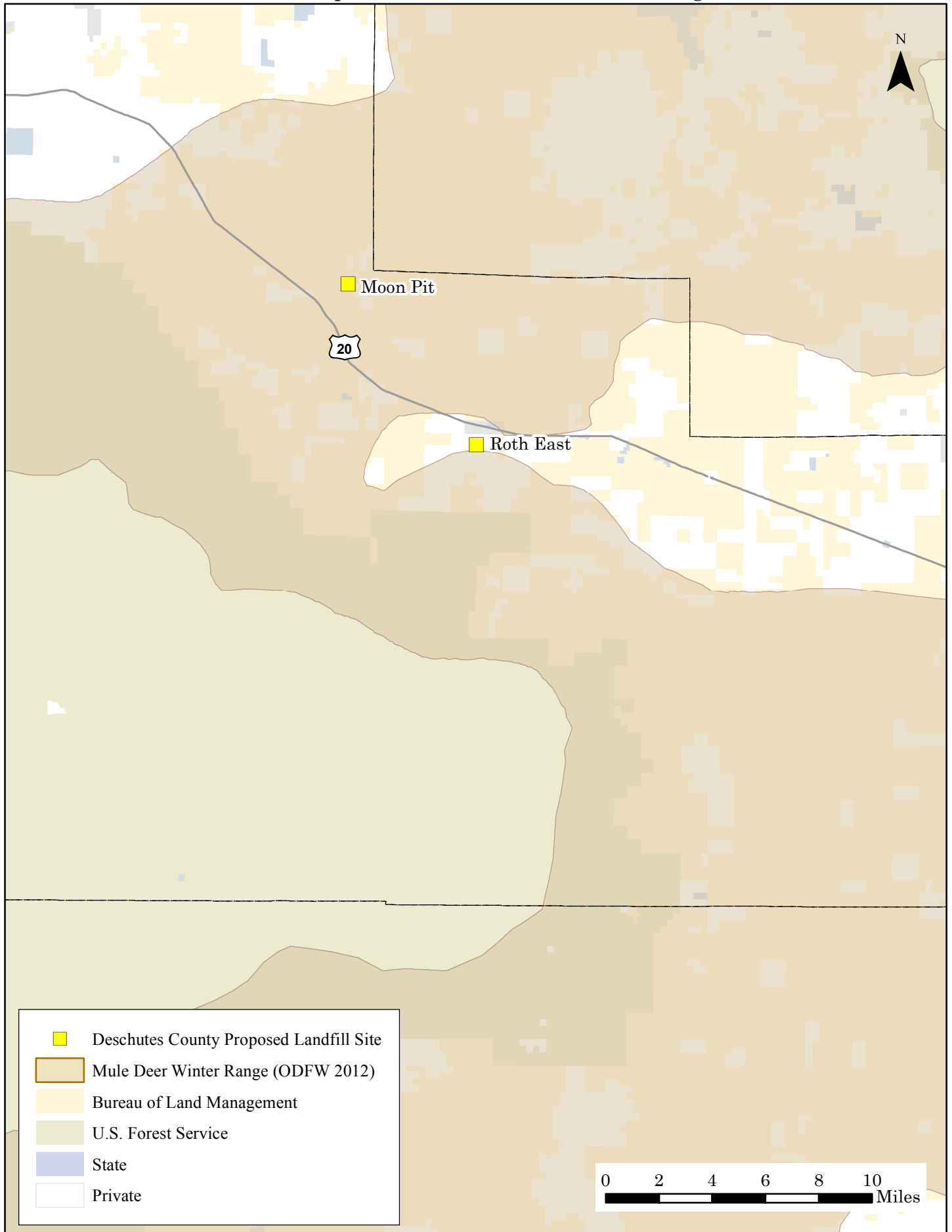
# Landfill Options, Sage-Grouse Leks, and Raven Damage Zones



Map 9. Landfill Options, Sage-Grouse Leks, and Circuitscape Connectivity



# Landfill Options and Mule Deer Winter Range



N

Moon Pit

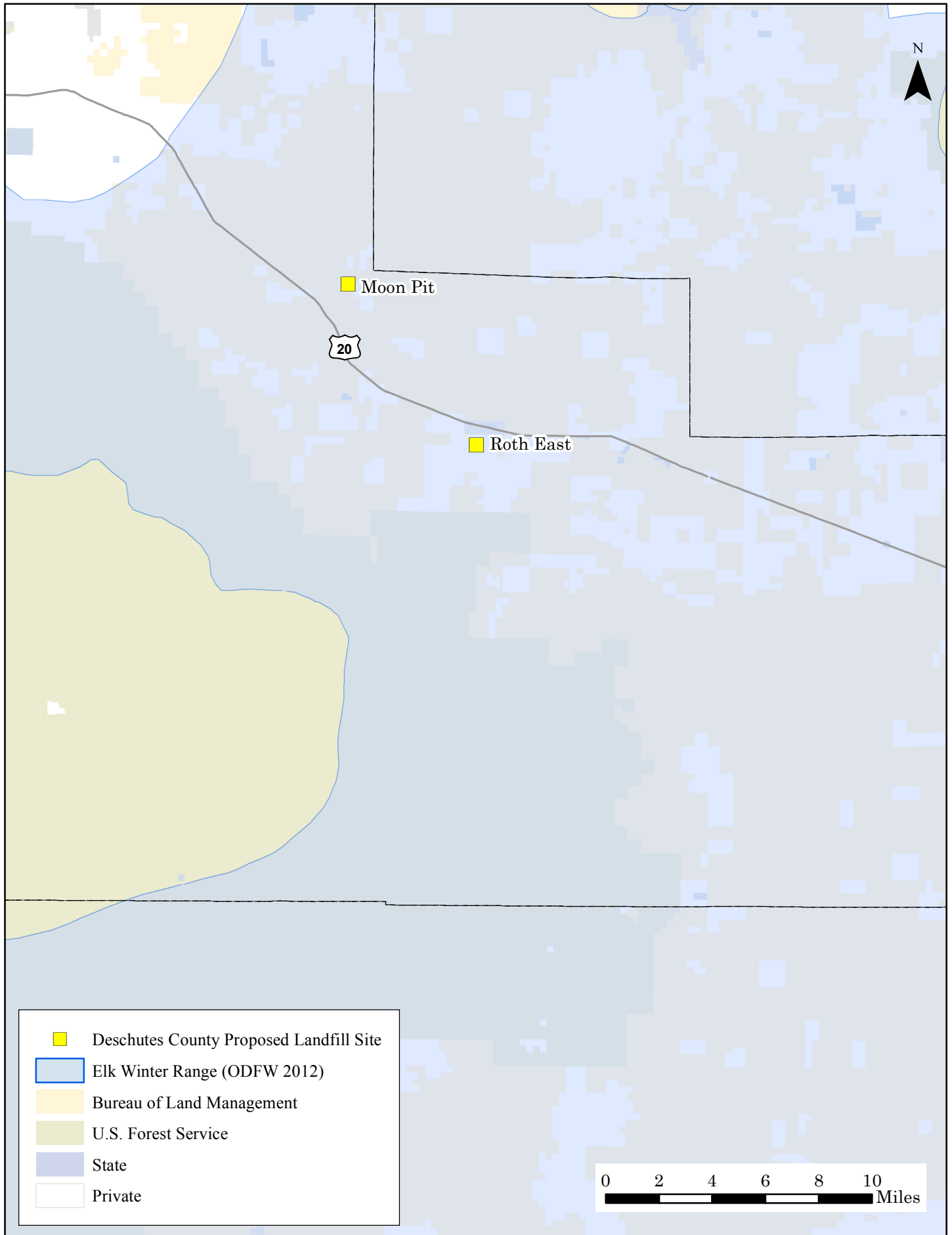
20

Roth East

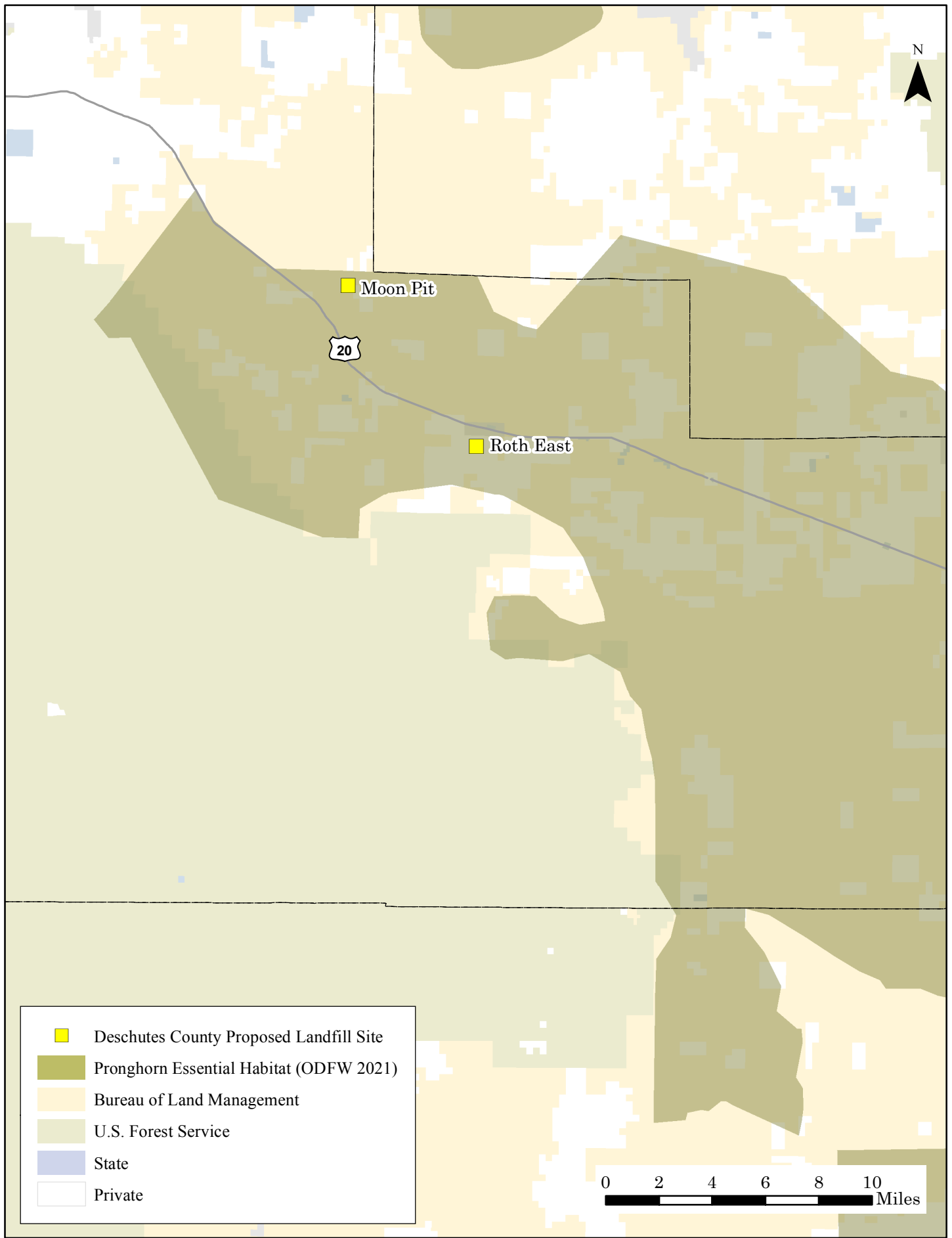
- Deschutes County Proposed Landfill Site
- Mule Deer Winter Range (ODFW 2012)
- Bureau of Land Management
- U.S. Forest Service
- State
- Private

0 2 4 6 8 10 Miles

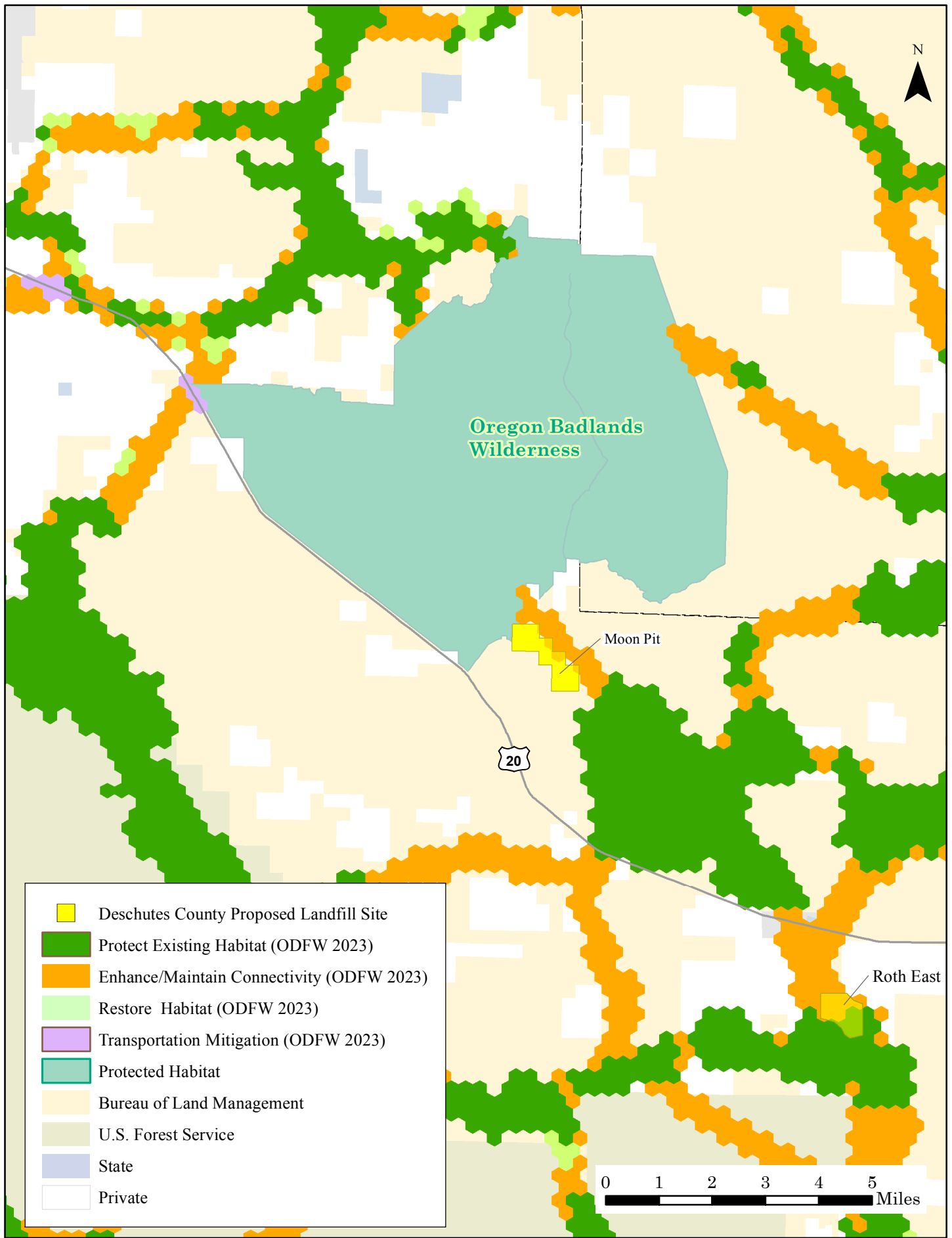
# Landfill Options and Elk Winter Range



# Landfill Options and Pronghorn Essential Habitat

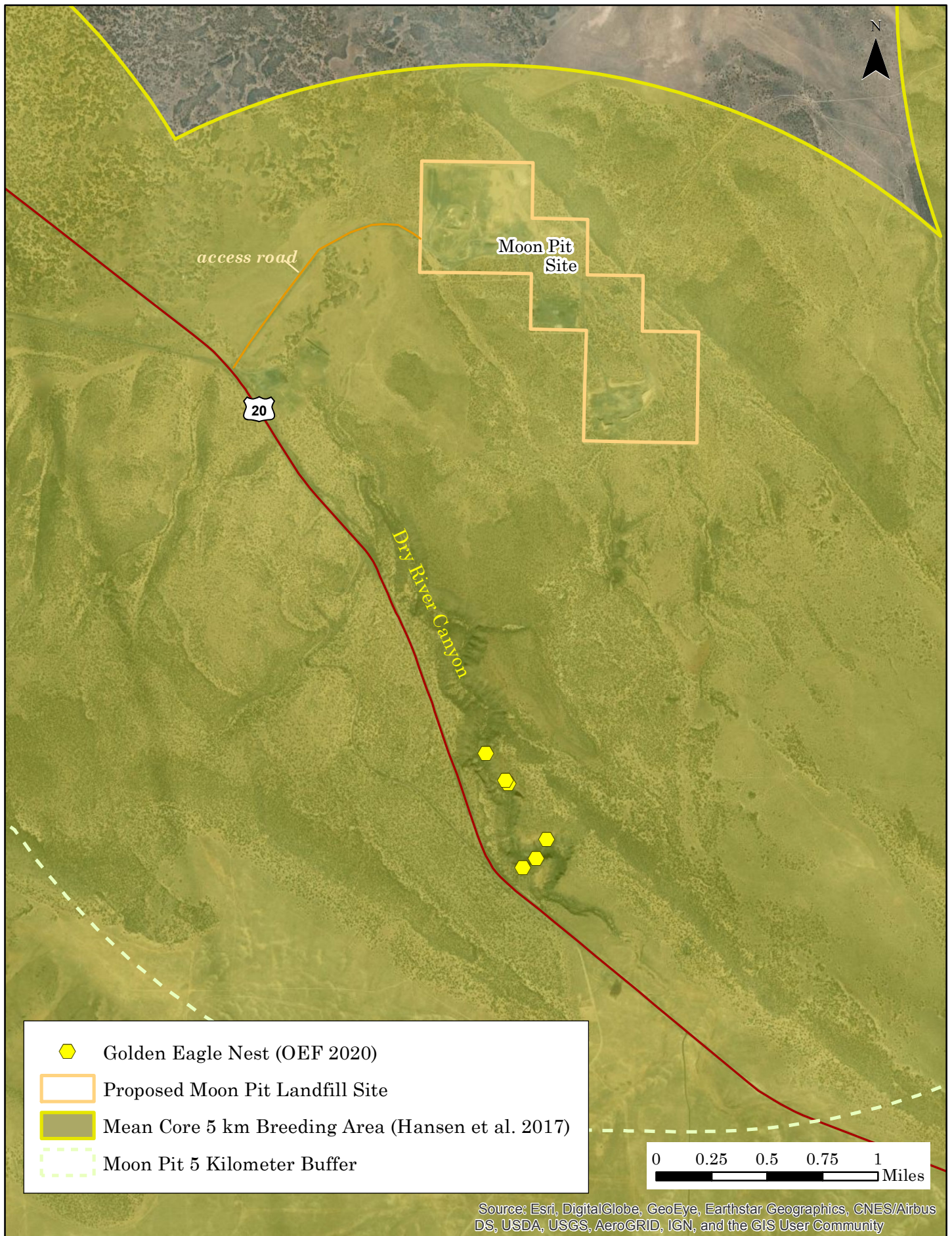


# Landfill Options and Wildlife Habitat Connectivity



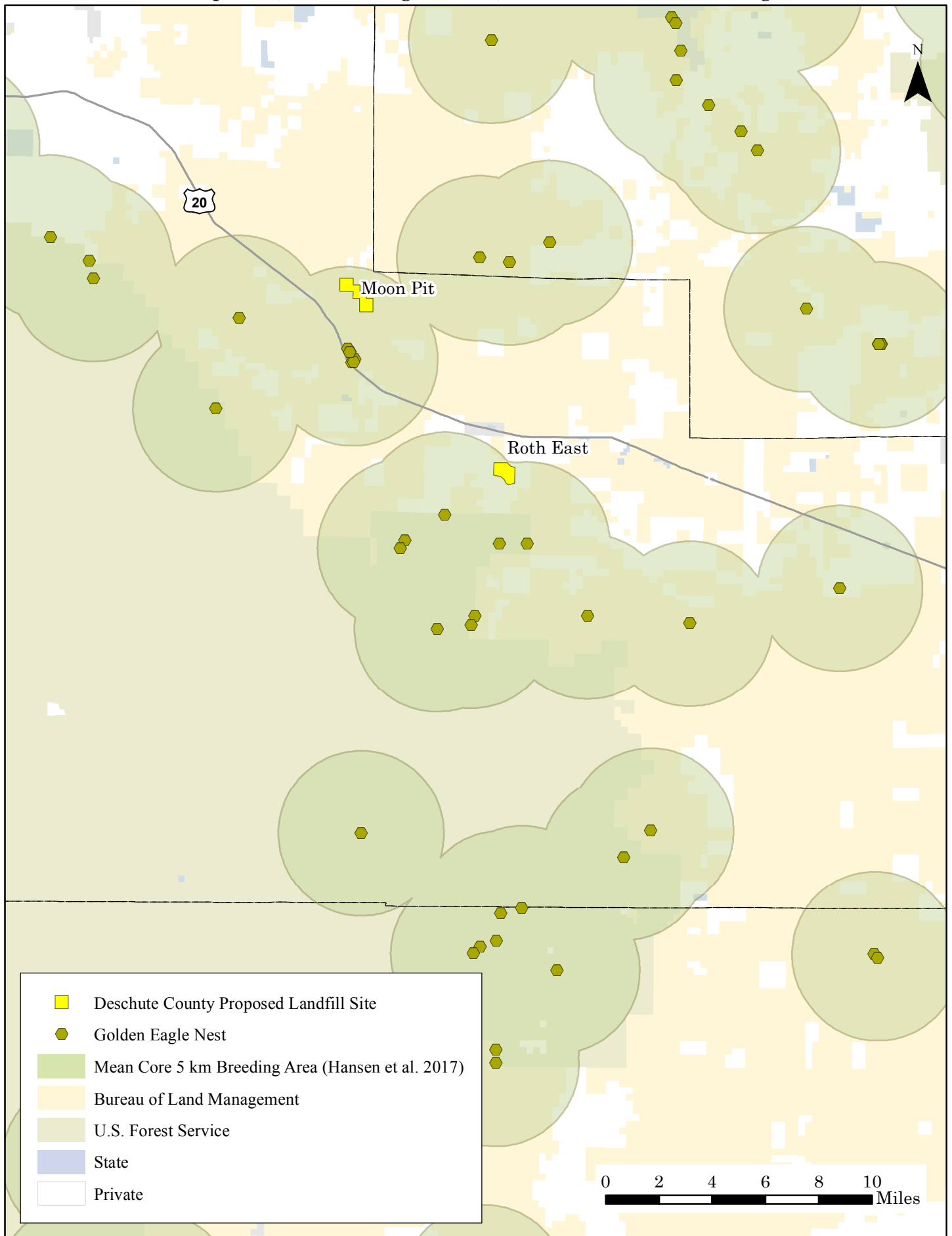


Map 14. Proposed Moon Pit Landfill Site, Golden Eagle Nests, and Mean Core Breeding Habitat





Map 15. Landfill Options, Golden Eagle Nests, and Mean Core Breeding Areas





April 15, 2024

Solid Waste Advisory Committee  
Deschutes County Road Department  
61150 SE 27th Street  
Bend, Oregon 97702

Re: Deschutes County Landfill Siting

Dear Solid Waste Advisory Committee:

As you consider your recommendation for siting a future landfill in Deschutes County, we urge you to also advocate for the strongest possible mitigation for developing at either the Moon Pit or Roth East locations.

Siting at Moon Pit or Roth East will affect wildlife resources and the public's enjoyment of public lands for generations. While each location may be capable of supporting a landfill, neither is *suitable* for this purpose for an array environmental, social, economic, and other reasons.

Providing for comprehensive mitigation for impacts from development—beyond what is required by minimal state and county policies—can help ameliorate these effects. In some cases, mitigation actions could even benefit wildlife and public use around these sites.

Deschutes County's adoption of a robust mitigation program for what will be the first landfill developed in Oregon in 30 years would also serve as an important model for other jurisdictions across the state for decades to come. Moreover, even extraordinary mitigation for developing a new landfill would cost only a fraction of the immense budget associated with this project.

While the range and intensity of impacts to wildlife and recreation would differ between the two locations, development at Moon Pit may be less harmful to these values and resources than at Roth East.

For Moon Pit, mitigation should include:

- Implementation of a comprehensive wildlife conservation and mitigation program with secure, continuous, independent funding to reduce and eliminate direct and indirect impacts on a host of federally protected, state-recognized and game species.

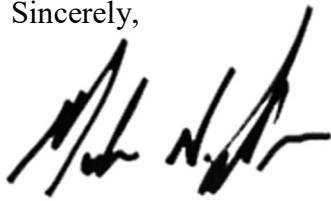
- Design features at the facility and supporting infrastructure to reduce visual, auidial and olfactory impacts of the landfill on wilderness values and visitation to the Oregon Badlands Wilderness and Horse Ridge Recreation Area.
- Support for organizations and programs to maintain and improve wilderness values and recreational experiences in the Oregon Badlands Wilderness and Horse Ridge Recreation Area.

For Roth East, mitigation should include:

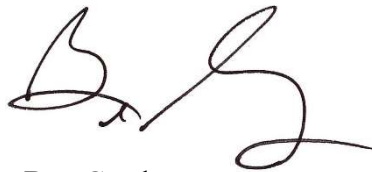
- Implementation of a comprehensive wildlife conservation and mitigation program with secure, continuous, independent funding to reduce and eliminate direct and indirect impacts on a host of federally protected, state-recognized and game species.
- Strategies to secure, enhance and/or restore greater sage-grouse habitats throughout the Brothers Priority Area for Conservation as identified by the Oregon Department of Fish and Wildlife.

Siting a landfill at either Moon Pit or Roth East will have unavoidable impacts on wildlife, wilderness and recreation. Mitigating for these effects can help to balance our need for a future landfill with other values and resources that make Deschutes County special.

Sincerely,



Mark N. Salvo  
Conservation Director  
Oregon Natural Desert Association



Ben Gordon  
Executive Director  
Central Oregon Landwatch



Lindsey Scholten  
Executive Director  
Oregon League of Conservation Voters



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Bend Field Office  
63095 Deschutes Market Road  
Bend, Oregon 97701

In Reply Refer To: #24-231

Deschutes County Solid Waste  
Solid Waste Advisory Committee  
61050 SE 27th Street  
Bend, Oregon 97702

Subject: Landfill Siting Comment for Deschutes County Solid Waste Advisory Committee

Dear Committee Members:

Thank you for providing U.S. Fish and Wildlife Service (Service) an opportunity to comment on the Deschutes County Solid Waste Advisory Committee's (SWAC) landfill siting process. The Service has concerns about both sites selected for final consideration, Moon Pit and Roth East. While each site comes with a suite of impacts to wildlife and their habitats, the scope and scale of these impacts may be less acute at the proposed Moon Pit location. The Service understands the complexities involved with siting a new landfill, and we hope the following information will help inform the committee in their deliberative process prior to making a final recommendation to the Deschutes Board of County Commissioners.

## **Habitat**

Habitat loss is a significant threat to biodiversity and has resounding negative impacts on wildlife populations and ecosystem function. The loss of habitat and/or species contributes to ecosystem collapse and subsequent collapse of ecosystem services whereas diverse and stable ecosystems are more resilient against catastrophes and other extrinsic pressures. Habitat loss is the primary threat to most species, including those listed as threatened or endangered under the Endangered Species Act (ESA). Habitat loss is also a primary factor inhibiting species recovery, thus, promoting species persistence and recovery are often expressed in terms of habitat conservation and restoration. As increased development fragments or bisects habitat, wildlife loses the ability to move, migrate, and disperse across landscapes. Climate change is expected to compound effects of habitat loss. Consequently, wildlife's best chance of adaptation in the face of climate change are robust populations and space (i.e., ample high-quality habitat).

Both sites are within an extensive network of Priority Wildlife Connectivity Areas (PWCAs)<sup>1</sup>. The PWCAs represent multiple species and include areas of good quality habitat in relatively undisturbed parts of the landscape as well as the best remaining marginal habitat that helps wildlife navigate through degraded areas. The intent of the PWCAs is to help inform planning processes to protect, restore, mitigate for transportation issues, and enhance/maintain wildlife

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<sup>1</sup> <https://www.oregonconservationstrategy.org/success-story/priority-wildlife-connectivity-areas-pwcas/>

INTERIOR REGION 9  
COLUMBIA-PACIFIC NORTHWEST

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IDAHO, MONTANA\*, OREGON\*, WASHINGTON

\*PARTIAL

habitat. Although the proposed sites are small footprints relative to the scale of wildlife habitat in Central Oregon, across North America, and globally, each subsequent development that removes habitat contributes to cumulative habitat loss and exerts additional pressure on wildlife. The proposed landfill sites, specifically Roth East, will reduce the amount of available habitat, break up patch size of intact habitat, and decrease the average size of existing patches of habitat.

## **Wildlife**

Beyond habitat loss, landfills can produce paradoxical effects on individuals and populations using them. In some cases, landfills provide abundant and permanent food resources. These resources can benefit select species of native wildlife but also provide resources for invasives species and subsequently favor the invasion process, influence wildlife movement, and increase the risk of plastic/foreign body ingestion. Food subsidies for wildlife aggregate different species when they would typically not interact, increasing the risk of pathogen and toxicant exposure. Indirectly, landfills can produce negative impacts on species that do not take advantage of these sites by providing a subsidy for predators and potentially increasing their distribution and abundance. The following discussion represents a few select species in and around the proposed landfill locations. It is not an exhaustive list exhaustive, nor does it indicate a lack of concern for those species not mentioned.

### ***Greater Sage-Grouse***

Greater sage-grouse (*Centrocercus urophasianus*, hereinafter, sage-grouse) declines have been documented since regular monitoring of the species began in the 1950s. Primary causes of habitat loss and fragmentation include the altered wildfire cycle due to the establishment non-native invasive plants; human activities, like energy development, transmission lines, and exurban development. Noise, and human presence associated with human activities within sagebrush, is also thought to result in indirect, but negative impacts to greater sage-grouse, including limiting habitat use, lek attendance and reducing species productivity in affected areas.

From 1999 to 2005, the Service received 8 petitions to list the sage-grouse throughout its range or within specific populations. Although sage-grouse remained widely distributed across the landscape, in 2010 the Service found the bird was warranted but precluded for listing under the ESA due to continued loss and fragmentation of habitat that was exacerbated by a lack of adequate regulatory mechanisms to address these losses. However, after a series of unprecedented collaboration and conservation efforts to address threats to sage-grouse across 11 western states, the Service determined in 2015 that sage-grouse were not warranted for listing under the ESA.

Although the sage-grouse is not listed, ongoing habitat loss is still a significant concern for the Service. Sage-grouse in Central Oregon exist at the westernmost periphery of their range. Siting a landfill at either proposed location will negatively impact sage-grouse with the Roth East site having a disproportionately larger impact on those populations east of Bend. Impacts related specifically to the Roth East site include permanent habitat loss, a significant increase in baseline disturbance (e.g., noise, visual, presence), reduction in habitat connectivity between leks, potentially impeding movement between leks, and an increased baseline of predator presence (e.g., corvids, eagles, other raptors). These impacts are not limited to the footprint of the landfill

and will likely have wide-ranging effects. While neither location will preclude predators from potentially establishing in areas where they might have previously not, the existing disturbance at the Moon Pit location offers advantages and is not as proximate to sage-grouse populations.

### ***Pygmy Rabbit***

The Service received a petition<sup>2</sup> to list the pygmy rabbit (*Brachylagus idahoensis*) in early 2023. On January 25, 2024, we published a 90-day finding stating the petition presented substantial scientific or commercial information indicating that the petitioned actions may be warranted. We are currently conducting a species status review of the pygmy rabbit and will issue a 12-month petition finding, which addresses whether the petitioned actions are warranted in accordance with the ESA.

One of the largest concerns for pygmy rabbits is loss of habitat and subsequent habitat fragmentation. Development can dramatically reduce structural connectivity of habitat at various scales and can impede dispersal and survival, and consequences of siting a landfill in or near pygmy rabbit habitat includes increased predator presence (e.g., coyotes, ravens, raptors/eagles). Of the two potential sites, both are within year-round pygmy rabbit habitat, but the Moon Pit location already has an established baseline of disturbance and is further from known pygmy rabbit burrow locations. Moreover, soils with high amounts of gravel are not conducive to pygmy rabbit habitat. The Moon Pit is an old gravel quarry and, when compared to Roth East soils that have deeper soils and less gravel substrate, a more fitting choice that may lessen impact to pygmy rabbits and their habitat. Considering the timeline for siting and establishing landfill infrastructure, the Service believes the SWAC should consider this information in its decision-making process.

### ***Bald and Golden Eagles***

Central Oregon is important habitat for bald and golden eagles (*Haliaeetus leucocephalus* and *Aquila chrysaetos*, respectively). There are approximately 116 bald eagle and 108 golden eagle nest locations in Deschutes County. Although this value doesn't represent the number of bald and golden eagles in the County<sup>3</sup> and is only the number of known nests, it indicates that Central Oregon provides important habitat for these birds. Golden eagles, in general, are declining throughout their range and the Service is increasingly concerned that habitat alteration, land-use changes, increases in baseline human presence, and nest disturbance are exacerbating those declines. While bald and golden eagles are not currently listed as threatened or endangered under the ESA, they are sensitive species protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d).

Almost all threats to golden eagles are attributable, directly or indirectly, to human activities. Human-related threats include habitat modification, recreation, persecution (e.g., shooting), lead poisoning, rodenticide poisoning, and collisions with man-made objects such as vehicles, wind turbines, and utility poles. However, the most widespread and unintentional threat to golden

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<sup>2</sup> <https://westernwatersheds.org/wp-content/uploads/2023/03/FINAL-030623-Pygmy-Rabbit-ESA-listing-petition-WWP-v2.pdf>

<sup>3</sup> Eagles often have more than one nest associated with their territory.

eagles by humans is land use change that results in habitat modification or fragmentation. Encroaching development has made areas historically used by eagles unsuitable both in terms of habitat and prey availability and increase baseline levels of disturbance. In addition to habitat conversion, high levels of nesting failures have been attributed directly to disturbance such as increased tourism/recreation, surface mining, wind and solar development, and human intrusion into a nesting area. When disturbed by humans at the nest, adult golden eagles will leave their nest for extended periods of time. The adult's absence from the nest can expose eggs or young to predation and the elements, and increase times between feedings, which puts young at a disadvantage. These additive stressors increase the probability that young golden eagles do not survive to reproduce. The Moon Pit site is within 2 miles of the Dry River Canyon golden eagle territory, and the Roth site is within 2 miles of the Pine Glider and Pine Mountain Towers golden eagle territories. The Service recommends, irrespective of final site selection, to coordinate on potential impacts to golden eagles.

### ***Ungulates***

Though elk, mule deer, and pronghorn are State-managed species, the Service funds and supports habitat conservation related to these species. Secretarial Order 3362<sup>4</sup>, *Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors*, focuses on conserving, enhancing, restoring, and improving the condition of priority big game winter range and migration corridor habitat. Both proposed sites are within winter range for both elk and mule deer, essential pronghorn habitat, and near mule deer migratory corridors (Crescent herd range and Ochoco-Maury-North Harney herd range). Like golden eagles, mule deer are in decline throughout their range. Causes of mule deer declines are a complex interaction of many factors, but development (rural, exurban, and urban) that continues to accelerate habitat loss plays a disproportionate role. Important foraging areas and migratory corridors are shrinking across elk, mule deer, and pronghorn range as sprawl on the fringes of cities, particularly in rural areas, continues to further fragment their habitat.

Additionally, a substantial portion of the areas surrounding the two proposed locations include lands managed by the Bureau of Land Management (BLM). Where possible, the BLM endeavors to improve the quality and quantity of summer, winter, and migratory corridor habitats. However, habitat improvements and connectivity don't end at the public-private land interface and have limited effectiveness in the absence of land-use planning and conservation strategies across both public and private land.

### **Conclusion**

The Service's primary concerns related to the proposed locations, more specifically the Roth East location, include habitat loss and increased fragmentation and disturbance, increased noise and visual impacts, and creating an anthropogenic subsidy in an area where none currently exist. These impacts will have cascading effects for other species across the landscape in Central Oregon. The SWAC's presentation on February 20, 2024, noted that "No ESA listed species are likely to occur on Roth East or Moon Pit sites." We do not disagree with this statement but encourage the committee to consider the importance of species not currently listed under the


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<sup>4</sup> [https://www.doi.gov/sites/doi.gov/files/uploads/so\\_3362\\_migration.pdf](https://www.doi.gov/sites/doi.gov/files/uploads/so_3362_migration.pdf)

ESA. The Oregon Conservation Strategy identifies numerous species that are of “greatest conservation need.” The State of Oregon defines these species as having small or declining populations, are at-risk, and/or are of management concern (Table 1). Typically, species are evaluated for protection under the ESA when their numbers decline and/or their habitats are impacted to such an extent that they cannot feed, breed, and/or provide shelter. As noted above, habitat loss is the primary threat to, and cause of species declines globally. When a species is listed, there are far more requirements for species and habitat protections than when they are not listed. We urge the SWAC to carefully consider each site and their respective near- and long-term impacts to wildlife and their habitats.

Thank you again for providing the Service an opportunity to comment on this process and for your continued support in the conservation of wildlife in Central Oregon. If you have any questions regarding this comment, please contact me or my staff, Emily Weidner at [emily\\_weidner@fws.gov](mailto:emily_weidner@fws.gov).

Sincerely,  
**BRIDGET  
MORAN**



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**Bridget Moran**  
Field Supervisor, Bend Field Office

cc:

Brian Wilk, U.S. Fish and Wildlife Service  
Andrew Walch, Oregon Department of Fish and Wildlife  
Kalysta Adkins, Oregon Department of Fish and Wildlife  
Jamie Bowles, Oregon Department of Fish and Wildlife  
Jessica Clark, Oregon Department of Fish and Wildlife



**Table 1.** List of select species under review, candidate, or listed under the Endangered Species Act and/or are Oregon Conservation Strategy Species. See ODFW’s [Methods for Determining Strategy Species](#)<sup>5</sup> for an overview of criteria used to determine the species of greatest conservation need in Oregon.

Species	Federal Status	Oregon Conservation Strategy Species?
<b>Birds</b>		
Brewer's Sparrow		Yes
Ferruginous Hawk		Yes
Greater Sage-Grouse		Yes
Loggerhead Shrike		Yes
Oregon Vesper Sparrow		Yes
Peregrine Falcon		Yes
Pinyon Jay	Under Review	<b>No</b>
Sagebrush Sparrow		Yes
Western Bluebird		Yes
Western Meadowlark		Yes
<b>Insects</b>		
Monarch Butterfly	Candidate	Yes
Western Bumble Bee	Under Review	Yes
<b>Mammals</b>		
Gray Wolf	Endangered	Yes
Little Brown Bat	Under Review	<b>No</b>
Pallid Bat		Yes
Pygmy Rabbit	Under Review	Yes
Spotted Bat		Yes
Townsend’s Big-Eared Bat		Yes
White-Tailed Jackrabbit		Yes
<b>Reptiles</b>		
Northern Sagebrush Lizard		Yes
Western Rattlesnake		Yes

<sup>5</sup> <https://www.oregonconservationstrategy.org/ocs-strategy-species/methods/>