

VII. Standards to Avoid or Minimize Impacts to Sage-grouse (All Energy Developments)

It is important to note here that some recommendations differ for non-migratory and migratory populations of sage-grouse. For the purposes of this document, non-migratory populations of sage-grouse are those where the majority of individuals do not make long distance movements between or among seasonal ranges (individuals travel <10 km one way between seasonal ranges). Migratory populations are those in which a preponderance of individual grouse move ≥ 10 km one way between seasonal ranges (derived from Connelly et al. 2000).

A. Site Selection

1. The NGSCT considers Category 1 habitats (leks and nesting habitat) irreplaceable and Category 2 habitats (quality winter and brood rearing habitats) critical to the long term persistence of sage-grouse populations. Energy or transmission development should be avoided within Category 1 and 2 sage-grouse habitats.
2. Energy development is strongly discouraged from occurring in Category 3 habitats; however, if unavoidable, projects in these habitats should be situated to minimize impact through placement in the least suitable portion of habitat.
3. Renewable energy developers are encouraged to pursue project development activities within Category 4 and 5 habitats within the range of sage-grouse in Nevada.
4. Project proponents should focus on previously disturbed sites in high potential wind resource areas. These areas could be described as those with prior disturbances including, but not limited to, previously burned areas, dense pinyon and juniper woodlands, areas converted to agriculture and areas within existing linear rights of way (transmission corridors).
5. If habitat categories have not been identified for a certain area, energy facilities and transmission lines should not be sited within 3 miles of the nearest active lek location for non-migratory populations³.
 - a. To the greatest extent possible, energy developers should work closely with NDOW and pertinent federal agency biologists to determine important nesting, brood rearing and winter habitats and avoid those areas.
6. Where populations of sage-grouse are considered migratory, energy facilities and transmission lines should not be sited within 3 miles of the nearest active lek location and should not be sited within the associated nesting habitat for that particular population.
 - a. Consideration should also be given to movement corridors between breeding, nesting, brood-rearing or winter habitat. These movement corridors may not be well defined unless significant radio marking investigations have been conducted for a particular population. It is recommended that these investigations take place where project proponents are proposing developments in likely movement corridors for sage-grouse.
7. No development should occur within a 0.6 mile (1 km) radius around seeps, springs and wet meadows within identified brood rearing habitats.

³ Holloran (2005) found that natural gas development within 3 – 5 km (approximately 2 - 3 miles) of active sage-grouse leks led to dramatic declines in breeding populations. Walker et al. (2007) also found that coal-bed natural gas development within 0.8 km and 3.2 km had strong negative effects on sage-grouse and detected effects as far as 6.4 km. Johnson et al. (In Press) found that few leks were located within 5 km (≈ 3 miles) of developed land and trends in male attendance were lower for those leks with more developed land within 5 km or 18 km.

B. Pre-Development Planning and Survey Requirements (All Energy Related Developments)

Each proposed energy facility requires some level of detailed individual evaluation. Unique habitat conditions can and do exist due to local variations in wildlife populations and movement patterns, habitats, area topography, facility design, and weather (Alberta Fish and Wildlife Division 2005). The level of pre-project planning and the need for certain surveys or monitoring depends on the seasonal habitat that the project is located in and the importance of the particular habitat. It is the intent of the NGSCT to complete mapping of habitat categorizations in 2010. The following are standards recommended by the NGSCT for pre-project planning and surveys:

1. Identify the cover type of habitat and habitat category of proposed development by using R-value classifications, current seasonal habitat delineations and previous telemetry information. These habitat types and categories should be determined on a site specific basis through consultation with NDOW.
2. A remote assessment (utilizing GIS applications) of present habitat condition should be conducted. This assessment should include vegetative classification, seasonal habitat layers, aerial photos, fire polygons and other man-made structures on the landscape including transmission lines, roads or other anthropogenic features.
3. If the project happens to occur in Category 1 or 2 habitats, a comprehensive monitoring plan should be developed and approved by NDOW that addresses demographics and seasonal movement patterns. The Western Agencies Sage and Columbian Sharp-tailed Grouse Technical Committee provides sound recommendations in their Interim Guidelines for Evaluating the Impacts of Energy Development (Appendix A).
4. In Category 3 or 4 habitats, field investigations should be conducted by the applicant to determine the actual condition of the habitat and the approximate extent of use by sage-grouse through consultation with NDOW. The potential for habitat improvement should be identified and a restoration or habitat enhancement plan should be developed.
5. If a project is located in Category 5 habitats, surveys (radio-marking of individuals in adjacent sage-grouse populations or stratified random pellet counts) should be considered to determine if sage-grouse move through the area between seasonal habitat patches. If movement across the area is detected, then recommendations should be made to preserve movement patterns by grouse.

C. Project Development (All Energy Related Developments)

Through this guidance document, we hope to eliminate more direct impacts to sage-grouse populations through avoidance of Category 1 through 3 habitats. However, unless Greater Sage-grouse habitats are afforded increased protection from federal land management agencies such as the BLM, it is likely that some form of renewable energy development will occur within these types of habitats. The NSGCT recognizes that there are projects in the advanced stages of permitting or development which have obtained final or near-final siting approvals from federal, state and/or private entities, and that the siting and/or mitigation commitments for such projects may not be consistent with some of this document's recommendations. Where this is the case, and where the project has worked with federal and state agencies on matters relevant to wildlife prior to the release of this document, the NSGCT respects agreements that have

Governor's Sage-grouse Conservation Team

already been made with regard to siting and mitigation measures. We hope that project proponents in these situations can use the recommended guidance contained in this document to minimize the effects of development where possible. However, if sage-grouse are listed as a threatened or endangered species by the U.S. Fish and Wildlife Service in the future, then projects on federal lands would be subject to section 7 consultation. Prior agreements may be subject to further review.

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1. Where sage-grouse populations are non-migratory energy facilities should not be constructed within 3 miles of the nearest active lek site (see Chapter 1, Section C).
2. Where populations of sage-grouse are considered migratory, energy facilities should not be constructed within 3 miles of the nearest active lek location and should not be sited within the associated nesting habitat for that particular population.
3. If construction within 3 miles of an active sage-grouse lek is absolutely unavoidable, conduct construction activities from 15 July to 30 November to avoid disturbing sage-grouse during the breeding, nesting, early brood rearing and winter periods.
 - a. If pumping stations are placed within 3 miles of an active lek, consideration should be given, and attempts made to place these features in an area where noise would least impact the actual lek using topography to help mask noise.
4. Avoid practices that remove sagebrush cover in these habitat categories as they may be the most important areas to sage-grouse using these habitats.
5. No development or infrastructure features should be placed within 0.6 miles (1 km) of identified late brood rearing habitats, especially meadow complexes and springs. These features can provide a competitive advantage for avian predators; therefore increasing sage-grouse mortality during a period when birds may be susceptible.
6. A comprehensive monitoring plan approved by the Nevada Department of Wildlife will be required to monitor sage-grouse demographics, vital rates and movement patterns before, during and after the construction phase within Category 1 – 3 habitats. The Western Agencies Sage and Columbian Sharp-tailed Grouse Technical Committee provide sound recommendations in their Interim Guidelines for Evaluating the Impacts of Energy Development (Appendix D).
7. Within Category 1-3 sage-grouse habitats, a company representative should be on site to oversee compliance during construction and provide environmental training to on-site personnel. This individual is responsible for overseeing compliance with all protective measures and coordination in accordance with the permitting authority and resource agencies should have the authority to issue a “stop work order” if deemed necessary.
8. Human Activity (Daily Operations/Maintenance)
 - a. Vehicle trips should be limited to those times that would least impact nesting or wintering grouse:

- i. Vehicle trips should not occur on a regular basis within 3 miles of an active lek or in identified nesting habitats from 01 March through 15 May.
 - 1) If vehicle trips are required during the lekking period, vehicles should only be operated from 10:00 a.m. to 5:00 p.m. daily.
- ii. Public access to construction areas should be limited if construction activities are occurring from 01 March through 15 May.

D. Associated Infrastructure (Transmission Lines, Road, Substations, Fences, etc.)

The infrastructure associated with utility scale energy developments can potentially be as detrimental as the facility itself. Roads, transmission lines, substations, fences and vehicle traffic can all eliminate or create disturbance within sage-grouse habitats. Even though a wind generation facility or geothermal power plant may not be constructed in optimal sage-grouse habitats, it is likely that roads and/or transmission lines associated with the facility will be. The following guidelines apply to associated infrastructure:

1. Transmission lines should not be sited within 3 miles of the nearest active lek location or in nesting habitat that occurs outside lek buffers.
 - a. In instances where transmission line placement is within 3 miles of the nearest active lek location and cannot be avoided, apply standards 5-9 in this section.
 - i. Attempt to place the line in the least suitable habitat within a 3 mile radius of the nearest active lek.
 - ii. Consider placing the transmission line to the west of the nearest active lek so that avian predators are at a disadvantage (i.e., looking into the sun) in the early morning hours.
2. Roads and below ground infrastructure (i.e. buried power lines, pipelines) should not be sited within 0.6 miles (1 km) of the nearest lek site. These features are a concern because their construction directly removes potential nesting habitat and act as vectors for invasive plant species establishment (e.g., cheatgrass).
3. To the greatest extent practical, transmission lines should be placed near existing highway corridors at “minimum safe distances” designated by the BLM or project proponent to reduce direct and indirect effects to sage-grouse.
4. In all instances where structures are to be placed in sage-grouse habitat, especially nesting habitat, preliminary surveys should be conducted to identify sage-grouse nesting areas and all attempts should be made to avoid these areas.
5. Structures should be constructed with the least amount of perching or nesting substrate possible by avoiding such things as external ladders and platforms.
6. Use tubular tower designs with pointed tops rather than lattice designs.
 - a. This should be applied as a standard design within the range of sage-grouse in Nevada regardless of habitat categorization.
7. In addition to tubular towers, conventional perch and nesting deterrents should be utilized in adherence to the Migratory Bird Treaty Act. Perching and nest deterrents include:
 - a. devices installed on support towers;
 - b. actual physical maintenance through hazing; and/or
 - c. physical removal of nest structures.
8. Avoid removing sagebrush cover whenever feasible, especially in identified winter habitats.
9. Avoid use of guy wires whenever possible.

- a. In some circumstances, use of guy wires may facilitate tower design features which minimize perching and nest building (e.g. guyed V tubular tower). The overall benefit to sage-grouse of these designs is likely to compensate for any direct affect to sage-grouse from guy wire strikes; however, guy wires should be marked with devices (e.g. spiral vibration damper, FireFly™ bird flight diverter) to increase the visibility of the wires to avian species, thus minimizing strikes.
10. To reduce the impact of new fences on sage-grouse, new fence proposals (including those for emergency stabilization and rehabilitation) should be carefully evaluated for sage-grouse collision risk (BLM IM 2010-022).
 - a. In the process of prioritizing areas for flagging or marking fences, state wildlife agency personnel shall be consulted (BLM IM 2010-022).

E. Post Project Development

1. Monitoring
 - a. Within Category 1 through 3 sage-grouse habitats, a comprehensive monitoring plan will be required that addresses demographics, vital rates and seasonal movement patterns. The Western Agencies Sage and Columbian Sharp-tailed Grouse Technical Committee provide sound recommendations in their Interim Guidelines for Evaluating the Impacts of Energy Development (Appendix D).
 - b. Information gained from monitoring can be used to help develop future mitigation measures.
2. Noxious Weed Prevention
 - a. Roads and the footprint of wind turbine pads, geothermal energy plants, and transmission lines should be monitored at least annually for any noxious weeds and, if found, treated with appropriate techniques.
3. Noise Reduction
 - a. Noise levels from geothermal facilities, oil and gas pumping stations or gas pipeline compressor stations should not exceed 55 decibels (dBa) at leks. Several noise muffling techniques and equipment are available.
 - i. Noise mufflers should be installed at gas compressor stations;
 - ii. Noise barriers should be installed around oil and gas pumping stations;
 - iii. Temporary noise shields should be constructed around portions of the drilling rigs and used on standard construction equipment.
4. Decommissioning
 - a. Any roads that were built, primarily for construction only, should be decommissioned post construction to deter dispersed vehicle use within sagebrush habitats and the creation of new roads.
 - i. Decommissioned roadways should be restored, to the greatest extent practicable, to the pre-existing vegetative condition.
 - b. Developers should restore pathways of buried transmission lines or pathways to a desired vegetative condition.