20 June 2008

**Supplemental NMDGF Recommendations for Oil and Gas Development**

The following five general recommendations were submitted to the Energy, Mineral and Natural Resources Department (EMNRD) in partial fulfillment of Governor Richardson's Executive Order 2008-004 *Imposing a Six Month Moratorium on New Oil and Gas Drilling in Santa Fe County*. Several of these recommendations are being resubmitted to EMNRD in response to a request by EMNRD to provide additional background information and support for these recommendations. Special emphasis is placed on **Recommendation #5**.

1. **The Western Governors' Association recently formed a stakeholder working group to develop mitigation recommendations for adoption by western states to protect wildlife crucial habitats and corridors from oil and gas development (available on the web at http://www.westgov.org/wga/publicat/OilGas07.pdf). New Mexico should consider implementing some or all of the recommendations provided therein.**

   **Discussion:**
   The Western Governors' Association's Wildlife Corridors Initiative Oil and Gas Working Group Report (November 2007) identifies the State of Colorado's legislative and policy efforts to protect ***crucial wildlife habitats and corridors*** from rapidly expanding oil and gas development. See further discussion of Colorado's efforts in **Recommendations 3 and 5** below.

2. **Department staff recently developed a series of guidelines for oil and gas producers to adopt voluntarily which could mitigate adverse effects of oil and gas development on wildlife and habitats. This document is entitled *Oil and Gas Development Guidelines: Protecting New Mexico's Wildlife Habitat and Wildlife*, and is available on the web at http://wildlife.state.nm.us/documents/oilandgasguidelines.pdf). Text boxes throughout the document provide specific, reasonable recommendations to oil and gas producers to offset negative environmental impacts. The State should consider**

**implementing some or all of these recommendations, depending on development activities planned and site specific conditions.**

**Discussion:**
Regulation 70-2-12(B)(10) authorizes the Oil Conservation Division (OCD) to set limits on the spacing of wells. A primary set of recommended guidelines in the Department's *Oil and Gas Development Guidelines* are intended to reduce habitat loss and fragmentation, the primary adverse effect of oil and gas development on wildlife and wildlife habitats. Some of the more important recommendations, stated or implied in our guidelines to reduce these impacts, that may be included under OCD's authority to set the spacing of wells include:

- Implement unitization of development in any given field or watershed by coordinating planning among companies operating in the same oil and gas field.
- Prepare a development plan for each leasehold or watershed, or master drilling plan for multiple facilities.
- Limit the total area of disturbed ground, number of wellpads, and the linear distance of roads per square mile.
- Directionally drill boreholes to oil-bearing formations from less ecologically- sensitive surface locations where technically and economically feasible. Co-locate drill holes from a single pad to multiple formations where feasible.

Many other reasonable recommendations are contained within the Department's *Oil and Gas Development Guidelines* which would greatly assist in reducing the adverse effects of oil and gas development on wildlife and wildlife habitats. The Department looks forward to working with OCD to implement some or all of these recommendations as opportunities occur.

3. **The state should consider enacting more restrictive setbacks for wells from important aquatic and riparian habitats such as springs, wetlands and drainages such as the Galisteo River. The Bureau of Land Management generally uses 0.25 mile, but further distances such as 0.5 mile would be more protective of wildlife from noise and visual disturbance and more protective of surface water sources from contamination.**

**Discussion:**
The following discussion emphasizes the need to protect riparian areas and aquatic habitats such as wetlands, springs and playas from adverse effects of oil and gas development by expanding the setback requirements for pits to include drill rig and

well pads and other ancillary oil and gas development facilities.

Regulation 70-2-12(B)(21) (NMSA) authorizes the Oil Conservation Division (OCD) to regulate the disposition of nondomestic wastes resulting from the exploration, development, production or storage of crude oil and natural gas to protect public health and the environment.

Relative to 70-2-12(B)(21) and implementation of the new "Pit Rule", the 9 May 2008 findings of the Oil Conservation Commission held that "protection of the environment is not limited to protection of fresh water and prevention of human exposure to toxic agents, but also includes protection of soil stability and productivity, agriculture, **wildlife, biodiversity** [*emphasis ours*] and, in appropriate circumstances, the aesthetic quality of the physical environment."

Pits, associated with oil and gas development, kill wildlife unnecessarily (Esmoil and Anderson 1985; Flickinger 1981, et al). The recently passed Pit Rule in New Mexico requires that pits be set back 300 feet from a continuously flowing watercourse, 200 feet from other significant watercourses, lakebed, sinkhole, or playa lakes measured from the ordinary high water mark, and 500 feet from a wetland or a spring. Setback requirements for pits from these important wildlife habitat features will help to reduce the potential for wildlife entrapment and poisoning by increasing the distance from these features used as wildlife corridors and habitats with higher densities of wildlife. One caveat to this situation is that current OCD regulations do not require wildlife-proof fencing to protect wildlife from becoming trapped, mired or poisoned in these pits.

In addition to pits, other oil and gas development facilities create adverse effects to wildlife and habitats, including noise and visual disturbance to wildlife from drill rigs, wells, compressors, road construction, maintenance and associated traffic. The Wyoming Game and Fish Department (2004) states:

> Adverse effects of oil and gas development can be divided into 6 general categories: 1) direct loss of habitat; 2) physiological stress to wildlife; 3) disturbance and displacement of wildlife [from noise and visual disturbances]; 4) habitat fragmentation and isolation; 5) introduction of competitive and predatory organisms; and 6) secondary effects created by work force assimilation and growth of service industries.
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> Collectively, the amount of disturbance may encompass just 5% of the land. However, avoidance and stress responses by wildlife extend the influence of each well pad, road, and facility to surrounding habitats. Zones of negative response can reach a quarter mile radius for mule deer (Freddy et al. 1986) to more than half a mile for elk on open winter ranges (Brekke 1998; Hayden-Wing Associates 1990; Hiatt and Baker 1981; Johnson

and Lockman 1981) and up to several hundred meters for some raptors during egg laying and early incubation (Fyfe and Olendorff 1976; White and Thurow 1985). Berger (pers. comm.) indicated preliminary results from an ongoing study also suggest migrating pronghorn avoid the more densely developed areas of Jonah Field south of Pinedale.

As densities of wells, roads, and facilities increase, the effectiveness of adjacent habitats can decrease until most animals no longer use the habitat. Although vegetation and other natural features may remain unaltered within areas near oil and gas features, wildlife make proportionately less use of these areas than their availability. Animals attempting to forage inside the affected zones are also subjected to increased physiological stress. The avoidance/stress effect impairs function by reducing the capability of wildlife to use the habitat effectively. In addition, physical or psychological (i.e., disturbance-related) barriers lead to fragmentation of habitats and further reduce the availability of effective habitat.

Perennial and intermittent or ephemeral drainages with riparian vegetation, and aquatic habitats such as wetlands, springs, playas and sinkholes are critical for maintaining viable populations of wildlife in New Mexico. These permanent and temporary water sources are necessary for maintaining aquatic species, some of which are rare and/or endemic to New Mexico, and are critical as water sources for terrestrial species in arid environments. Riparian and aquatic habitats also serve as important dispersal, migration and foraging corridors for aquatic and terrestrial invertebrates, fishes, reptiles and amphibians, birds, bats, and other mammals such as black bears and mule deer. Of the 867 species of vertebrates known to occur in New Mexico, approximately 479 (55%) rely wholly or in part on aquatic wetland or riparian habitat for their survival (NMDGF 2002). A majority of imperiled species state-listed under the Wildlife Conservation Act (17-2-37 NMSA) are associated with these habitats. Almost half of the native fishes of New Mexico are extinct or endangered.

Surface water comprises only 0.2% (141,440 acres) of the surface area of New Mexico (U.S. Geological Survey 1970). Wetlands and riparian areas comprise another 0.6% (481,900 acres) (Dahl 1990). It is estimated that fully one-third of the wetlands that once existed in New Mexico have been lost (Dahl 1990). The quality of these remaining habitats has also been diminished. For example, of the 6,000 miles of streams in New Mexico, approximately 3,226 miles (54%) are impaired to some degree by water pollution (New Mexico Water Quality Control Commission 1992).

Allowing additional oil and gas development within the Galisteo Basin and other important wildlife areas without instituting a broader setback restriction for oil and gas facilities near riparian and aquatic features will further reduce the ecological functioning and effectiveness of these critical habitats.

The Western Governors' Association's 2007 Policy Resolution 07-01 (*Protecting Wildlife Migration Corridors and Crucial Wildlife Habitats in the West*) directs western state wildlife agencies to identify ***crucial wildlife habitats and corridors*** for a suite of game and non-game wildlife, with the intent of protecting the ecological sustainability and functionality of these species and habitats from energy development, climate change, and other human development scenarios. Accordingly, the Department and other western state wildlife agencies have identified ***crucial wildlife habitats and corridors***, necessary components of which are riparian, aquatic, wetland, spring and playa habitats.

The *Comprehensive Wildlife Conservation Strategy for New Mexico* (NMDGF 2006) identifies key habitat types in need of conservation throughout New Mexico. Riparian and aquatic habitats across the state have been identified as key habitats, including perennial and ephemeral 1st through 5th order streams and rivers, perennial and ephemeral marsh/cienega/seeps/springs, perennial tanks, and ephemeral manmade and natural catchments.

Oil and gas development can adversely affect water quality and quantity in aquatic and riparian habitats by means other than leakage of toxic substances to the ground surface and groundwater, such as by creating excessive loss of vegetation from widespread surface disturbance to accommodate field development. As stated in Wyoming Game and Fish Department (2004):

> Oil and gas developments can also affect aquatic ecosystems. The overall health of aquatic habitats is a direct result of the condition of the entire watershed including the uplands, riparian corridor and the stream channel. Impacts to the upland plant community and environment can have very direct and immediate impacts to the health of aquatic habitats. The condition and health of vegetation throughout a watershed is the major factor determining the quantity and quality of the associated flow regime. In essence the runoff is naturally regulated by healthy, diverse vegetation. Vegetation in good condition provides greater ground cover, which reduces runoff and increases filtration rates. Collectively, these factors produce more stable base flows, essential for good fish and riparian habitats. Reduced sedimentation is another benefit to aquatic organisms. Healthy vegetation naturally produces a healthy water cycle.

No specific setbacks are provided in the OCD regulations for drill rigs and well pads and other ancillary oil and gas development facilities other than pits, and some pits are not required to be designed to exclude wildlife by using wildlife-proof fencing. The Department believes that current OCD regulations are not adequate to protect wildlife and the functionality of riparian and aquatic features as ***crucial wildlife habitats and corridors***. Therefore, we believe expansion of the setback requirements currently in place for pits to include drill rigs and well pads and other ancillary

facilities will protect vegetation buffers in the uplands, thereby reducing or eliminating sedimentation to these aquatic habitats and thereby maintaining water quality and reducing associated disturbance from development activities. As stated above, protection of soil stability and productivity was determined by the recent findings of the Oil Conservation Commission to be within the authority of OCD.

In the face of rapidly expanding oil and gas development in productive wildlife habitats, at least two states have developed recommendations for setbacks or buffers between oil and gas facilities and riparian, wetland and aquatic habitats to protect their functionality as ***crucial wildlife habitats and corridors***. These setbacks are intended to ameliorate noise and visual disturbances associated with oil and gas exploration and production activities, including road networks and associated traffic and pollution effects.

For example, the Colorado Division of Wildlife, through coordination with the Colorado Oil and Gas Conservation and Wildlife Commissions has developed draft Best Management Practices and Standard Operating Procedures that recommend that no drilling activity or disturbance occur within 300 feet of a riparian area, wetland, stream channel, or other water body extending from the outermost limit of the riparian habitat (Best Management Practices Draft 12/31/07. *Practices developed to reduce wildlife impacts associated with oil and gas development*).

The Wyoming Game and Fish Department has recommended that no drilling activity or disturbance be permitted within 500 feet of a riparian area, wetland or stream channel, by applying a No Surface Occupancy stipulation within a 500-foot corridor extending from the outermost limit of the riparian habitat (Recommendations for development of oil and gas resources within crucial and important wildlife habitats. 06 December 2004).

In summary, to protect New Mexico's wildlife and ***wildlife crucial habitats and corridors***, the Department recommends that OCD expand setback regulations for pits to include drill rigs and well pads and other ancillary oil and gas development facilities to protect 1) riparian vegetation associated with perennial, intermittent and ephemeral drainages; and 2) aquatic habitats such as wetlands, springs, seeps, playas and sinkholes. Applying the existing setbacks for pits to these habitat features will greatly enhance protection of wildlife and these important habitats.

## Literature Cited

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4. **For conservation planning purposes, the Department should assist Santa Fe County in the identification of distributions of Species of Greatest Conservation Need and Key Habitats (as identified in the CWCS) and wildlife crucial habitats and corridors (as identified in the ongoing Western Governor's Association's Wildlife Corridors Initiative), using geographical information system tools.**

   No further discussion provided.

5. **Recently, Colorado enacted new legislation (House Bill 07-1298; the Colorado Habitat Stewardship Act of 2007), which requires the establishment of a timely and efficient procedure for consultation with Colorado Wildlife Commission and Division of Wildlife on oil and gas development decision-making that impacts wildlife resources. Development of a similar consultation protocol for review of oil and gas leases, permits and stipulations between the New Mexico Oil**

**Conservation Division and the Department may be necessary to avoid, reduce and mitigate adverse effect to wildlife and habitats.**

**Discussion:**
Section 34-60-128-3d of the Colorado Habitat Stewardship Act directs the Colorado Oil and Gas Conservation Commission and the Colorado Wildlife Commission "...to establish standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations and to ensure the proper reclamation of wildlife habitat during and following such operations." The Colorado Oil and Gas Conservation and Wildlife Commissions have been working together to develop Best Management Practices and Standard Operating Procedures to meet the intent of this new law (Regan and Prukop 2008 *in press*).

Similar efforts undertaken in New Mexico State Legislature and the Oil Conservation and State Game and Fish Commissions could greatly enhance the ability of both state agencies to better protect ***wildlife crucial habitats and corridors*** as identified through the Western Governors' Association's Wildlife Corridor Initiative and key habitats and species of greatest conservation need as identified in the Comprehensive Wildlife Conservation Strategy for New Mexico (2006). Legislative action would likely be required to achieve this goal.

Literature Cited

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