Dave Neslin
Director
Colorado Oil and Gas Conservation Commission
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Director Neslin:

After the commissioners' discussion at the September 2010 Colorado Oil and Gas Conservation Commission (COGCC) meeting about the development of a Geographic Area Plan (GAP) for development of the Gothic and other shale formations, you and I spoke, and I offered to assist in identifying the areas of concern for inclusion in a GAP. To follow in this document is the San Juan Citizens Alliance's (SJCA) recommendations on what should be in a GAP, and how having one prior to the development of a specific basin would be beneficial to operators, residents and COGCC staff as the COGCC works to fulfill its obligations to protect public health, safety, and welfare, including the environment and wildlife resources. Thank you for taking this into consideration as you proceed in this effort. It is an effort SJCA would like to continue to be involved in, and if you have questions about what is being proposed, please do not hesitate to ask.

Josh Joswick
Energy Issues Organizer
San Juan Citizens Alliance
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Geographic Area Plan Template

I. Background and Purpose:

At their September 2010 meeting, the Colorado Oil and Gas Conservation Commission (COGCC) commissioners considered a request for a Geographic Area Plan (GAP) for natural gas development and production in the Gothic Shale in southwestern Colorado; in general, the commissioners were in favor of doing a GAP. There were several issues in that discussion, however that should be addressed, as they pertain to the reason for and detail of this document.

Several questions were raised as to why the COGCC should do a GAP for the Gothic shale and why do it now, when there is very little activity at this time in that formation. First, the Gothic shale, a formation which is at the very beginning of being developed, is a perfect example of why the commissioners saw the need to adopt Rule 513. Instead of playing catch-up once development starts in earnest, the COGCC would be proactively addressing potential problems in an effort to avoid detrimental impacts that development can bring. Second, this current low level of activity presents a window of opportunity to gather and analyze data, establish baselines, and create guidelines for development without COGCC staff being under the pressure to do the same gathering, establishing and

creating while having to issue APDs at a time of high activity. These guidelines would set up a system by which the development scenario would occur.

It was also noted that Rule 513, while authorizing the COGCC to initiate a GAP, is arguably a bit thin on detail, and the relevant question was asked about what exactly is in a GAP. San Juan Citizens Alliance is submitting the following as our recomendations of what needs to be considered by the COGCC as a template for a GAP. Some of these recommendations are specific to the Gothic Shale, while most are generic and could be modified for use in other formations and plays. All the recommendations fall within the scope of the COGCC authority as specified in **Rule 201 EFFECTIVE SCOPE OF RULES AND REGULATIONS:**
"All rules and regulations of a general nature herein promulgated to prevent waste and to conserve oil and gas in the State of Colorado while protecting public health, safety, and welfare, including the environment and wildlife resources..."
and aim at promulgating measures to minimize adverse impacts to public health, safety, welfare, and the environment, including wildlife resources, as development of the resource occurs.

The relevant rule is **Rule 513,** which reads:
GEOGRAPHIC AREA PLANS
a. **Purpose.** Geographic Area Plans are intended to enable the Commission to adopt basin-specific rules that promote the purposes of the Act.
b. **Scope.** Geographic Area Plans shall cover an entire oil and gas field or geologic basin, likely encompassing the activities of multiple operators, in multiple sub-basins or drainages, over a period of ten (10) years or more.
c. **Procedure.**
(1) The Commission's adoption of a Geographic Area Plan shall follow Rule 529.
(2) The Commission may initiate a Geographic Area Plan for a basin by publishing notice of its intent to do so, and it may adopt a Geographic Area Plan after a public hearing, which shall include submittal of information from the public and public testimony. In addition to any other publication requirements in these rules, notice shall be published in a newspaper of local circulation in the area covered by the Geographic Area Plan and provided to the local governmental designee(s).
(3) In adopting a Geographic Area Plan, the Commission shall consult with the Colorado Department of Public Health and Environment, Colorado Division of Wildlife, and local governmental designee(s). The Commission shall also consider any local government comprehensive plans or other local government long-range planning tools.
(4) The Geographic Area Plan may include alternative development scenarios, designate units, adopt spacing orders, implement sampling or monitoring plans, or require consolidation of facilities within the area covered by the Plan subject to the Act.

A GAP would be an analysis to proactively account for the comprehensive impacts of full field development that include a human health risk assessment. The following are recommended areas which are intended to assist the COGCC in fulfilling its responsibility to address and minimize adverse impacts while developing the resource:

- **Air**
- **Water**
- **Naturally occurring radioactive materials (NORMs)**
- **Wildlife**
- **Local government comprehensive plans**

Air Quality and Ozone

As much of the western United States encroaches on ozone non-attainment, more oversight is needed to evaluate emissions from natural gas facilities. A GAP should have an assessment of the contributions that the development of the proposed shale development and production at approved spacing build-out will have on regional ozone levels with known Nitrogen oxide and Volatile Organic Compound emissions expected from shale gas production. Given the demonstrated significant public health impacts from ozone impact (see New England Journal of Medicine, "Long-Term Ozone Exposure and Mortality," by Jerrett, et al, which demonstrates a significant increase in the risk of death from respiratory causes in association with an increase in ozone concentration), this data needs to be compiled.

The State, through the Colorado Department of Public Health and Environment (CDPHE), should conduct/require thorough and complete ozone modeling as part of the GAP. If possible this could be done in partnership with other affected agencies such as the Bureau of Land Management (BLM) and Environmental Protection Agency (EPA) to ensure that regional, cumulative impacts of widespread gas and oil exploration receive the analysis they deserve. The BLM has indicated that it now has preference to an interagency approach to analysis, and this should be pursued. EPA and CDHPE have regulatory primacy for Clean Air Act compliance pertinent to Gothic Shale gas development and production.

To gather the most comprehensive set of data in order to consider the relevant air quality impacts, SJCA recommends the agency work with partner entities to analyze research on a broad spectrum of air toxics associated with gas and oil production. With similar pressure on resource-rich formations on public and private lands across the country – including the Marcellus Shale in Pennsylvania and the Barnett Shale in Texas, data is available on what to expect and what to mitigate; the COGCC should incorporate analysis of a full range of production-related toxics including: Benzene, hydrogen sulfide, and Naturally Occurring Radioactive Minerals (NORMs). Resources on each of these substances are appended to this letter.

Air Quality Mitigation and Monitoring

The Four Corners Air Quality Task Force was created in 2003 to develop stakeholder recommendations associated with BLM approval of 10,000 new natural gas wells and 10,000 new natural gas compressors in northwestern New Mexico. The Four Corners Air

Quality Task Force completed its work in 2007, limited to identifying voluntary mitigation recommendations as part of its final document. Those recommendations were considered by the stakeholders as appropriate guidelines for its management decisions in conjunction with identifying over 35,000 natural gas wells in the Four Corners region, with associated production equipment (including compressors, dehydrator/separators) that are emission sources. The Task Force's recommendations represent a collaborative set of mitigations that have the potential to be extremely effective in mitigating the significant pressures this region's air quality faces today. With continued growth in the natural gas industry – including the activity proposed for the Gothic Shale – those recommendations become all the more important in ensuring the area's air does not diminish human and environmental health when balancing demands for resource development. CDPHE and EPA should be proactive in insuring that measures are taken to keep the Four Corners region in ozone attainment status.

The authority to regulate air quality, air emissions or visibility standards rests with the State of Colorado, specifically the CDPHBE, as delegated by the EPA. CDPHE in conjunction with the COGCC should consider adopting the mitigation measures indentified by the Four Corners Air Quality Task Force that mitigate impacts to levels that do not violate the CAA standards (PRMP/FEIS, Appendix U, p. U-16) (p. 210). SJCA recommends the agency use state-of-the-art modeling and monitoring techniques that account for the full range of pollutants pressuring the region, including criteria pollutants and models that account for photochemical reactions. Because ozone is emerging as a significant pollutant of concern in the region, photochemical modeling analysis with a fine grid should be used.

Water and Flowbacks fluids

In his presentation to the Research Partnership to Secure Energy for America entitled **Gas Shale Produced Water**, Dr. Tom Hayes of the Gas Technology Institute, recommended the following as necessary considerations when producing shale gas:

- Efficient water management must be cost effective for a specific play; it must account for transportation and mobility issues;
- It must address all environmental and regulatory concerns; it must reduce the environmental impact of shale gas development;
- It must be accepted by local, state and regional stakeholders; and,
- It must provide technical, economic and practical solutions to water use and disposal.

San Juan Citizens Alliance offers these guidelines as parameters for the analysis of water used and flow back fluids generated in the natural gas shale extraction process. It is our understanding that there are three methods for dealing with flowback/return fluid associated with the extraction process: 1) treatment/recycling (closed loop drilling with off-site disposal of radioactive waste in a licensed facility if warranted); 2) injection, and, 3) evaporation.

Each of these has benefits as well as problems associated with it, and determining which is the best method of handling flowbacks will depend in large part on the information supplied by Bill Barrett Corp., the project's current proponent. This information should include, but not be limited to: 1) data on the quantity and quality of flowback, including chemical composition of fracking fluids and level of naturally occurring radioactive material in the residuals (see comments on the isotopic analysis); 2) the receptive capacity of the receiving formation(s) if injection is utilized; 3) analysis of the composition and quantity of the volatiles associated with evaporation; 4) how and where will disposal of the superconcentrates be handled; and, 5) what are the impacts of that disposal. This data is essential to determining the best methodology for flowback disposal.

Radioactive Materials Assessment and Procedures

Before natural gas activity in the Gothic Shale (a natural gas-bearing formation) proceeds from the exploratory to the full field development phase, an assessment must be made of the level of naturally occurring radioactive material that is in place. Given that western Colorado is considered to be a rich site for radioactive material, just how "hot" the field is needs to be determined in order to establish how development will occur. For information about this issue in another shale formation, the Marcellus Shale, please see **'Fracking' Mobilizes Uranium in Marcellus Shale, UB Research Finds (http://www.buffalo.edu/news/11885)** in which it states "...University at Buffalo researchers have now found that that process -- called hydraulic fracturing or "fracking"-- also causes uranium that is naturally trapped inside Marcellus shale to be released, raising additional environmental concerns."

This isotopic analysis should be specific to the elements radium, thorium, and uranium, as well as alpha and gamma radiation levels in both the target and overlying formations. Since in the case of the Gothic Shale, drilling will entail going through the Morrison formation to get to the Gothic Shale, the drill cuttings will contain Morrison waste, and particularly Salt Wash Member materials. As these are formations in which uranium mining occurs, a cumulative-formations cuttings - not just target formation cuttings - analysis should be done. The findings of such an analysis will be necessary in order to determine how disposal of radioactive drilling and fracking waste is handled. This again presents another opportunity for interagency cooperation, in that the BLM has experience with shale fields in other parts of the country that are similar to the Gothic, and analytic method and findings analysis in those fields would be helpful in conducting these studies here.

Cooperating agencies should also conduct an analysis of how the radioactivity will affect the gas that is produced. Specific questions include at what level it will contaminate the production stream, and what levels of contamination are considered threshold levels beyond which contaminated gas is considered not useable. The agencies must also consider what sorts of baseline measurements and ongoing monitoring will be used where it is known that uranium and other radionuclides will be encountered.

Wildlife

The area that will be impacted by development of the Gothic shale has unique wildlife resources that warrant protection and special regulation by COGCC. In 2000, the Colorado Division of Wildlife (CDOW) ranked the Dolores Rim as its number one priority area for protecting wildlife habitat across the state. The Dolores Rim (the area immediately adjacent to the Dolores River) supports a higher density of wintering deer and elk than any other area in the region, as well as a population of desert bighorn sheep. To underline the importance of this, it should be noted that there are only three distinct populations of desert bighorn sheep in all of Colorado. This area also supports one of only three Columbian sharp-tailed grouse populations remaining in Colorado. Both the desert bighorns and Columbian sharp-tailed grouse are already being impacted by exploratory Gothic shale development.

In order to protect these unique resources and fulfill COGCC's mandate, there should be a compilation of wildlife information and consultation with the CDOW to develop a plan to avoid, minimize, and mitigate impacts to wildlife resources. Previous work on wildlife mitigation plans in the San Juan and Piceance Basins could serve as a template for how this information might be compiled. Recent analysis of high density natural gas development in Wyoming shows dramatically reduced mule deer populations and presents a sobering reality that natural gas development has a significant impact on wildlife that may not be easily rectified by a reliance on well-by-well mitigation measures and Condition of Approval. A comprehensive analysis to deal with cumulative impacts is needed in order to address the unique wildlife resources in this area.

Local government comprehensive plans

Overlay maps showing the proposed oil and gas locations, including all proposed access roads and gathering systems, drainages and stream crossings, and existing and proposed buildings, roads, utility lines, pipelines, known mines, oil or gas wells, water wells known to the operator(s) and those registered with the State Engineer's Office, and riparian areas; identify all production equipment that will be needed for Gothic Shale development and production. Extrapolate cumulative development and production impacts from full-scale Gothic Shale development and production in conjunction with existing emissions sources.

II. Geographic Area Plan detail:

Water

- The operator shall identify the source and quantity of water needed for the shale formation development.
- The COGCC shall determine the method of disposing of flow back fluids which are the result of shale gas production. This determination shall be based on data provided by the operator which shall include but not be limited to: 1) data on the quantity and quality of flowback, including chemical composition of fracking

fluids and level of naturally occurring radioactive material in the residuals (see comments on the isotopic analysis); 2) the receptive capacity of the receiving formation(s) if injection is utilized; 3) analysis of the composition and quantity of the volatiles associated with evaporation; 4) how and where will disposal of the superconcentrates be handled; and, 5) what are the impacts of that disposal. This data is essential to determining the best methodology for flowback disposal.

Air

- The operator shall provide an analysis of the contributions that full field development of the proposed shale play at approved spacing build-out will have on regional ozone levels.
- The operator shall provide an analysis of a full range of production-related toxics including: Benzene, hydrogen sulfide, and Naturally Occurring Radioactive Minerals (NORMs).
- The operator shall provide a set of measures which it will use to mitigate the emissions from its operations.
- CDPHE shall use state-of-the-art modeling and monitoring techniques that account for the full range of pollutants pressuring the region, including criteria pollutants and models that account for photochemical reactions.

Radioactive material

Isotopic analysis shall be performed in both the target and overlying formations. This analysis will include the elements radium, thorium, and uranium, as well as alpha and gamma radiation levels. This analysis will apply to:

- Method of disposal of radioactive drilling and fracking waste
- Assessing the levels of contamination present in the produced gas in order to determine if this gas falls within established thresholds for usability.

Wildlife

There shall be a compilation of wildlife information that is determined necessary after consultation with CDOW. Similar to the Wildlife Mitigation Plan that CDOW has been working on with BP in the San Juan Basin, there should be an effort to prioritize wildlife habitats on a landscape scale in order to develop a mitigation plan that addresses the cumulative impacts to wildlife and wildlife habitat within the Gothic shale development area. The GAP should include measures to avoid and minimize impacts, such as wildlife best management practices (BMPs) and surface facility density limitations (where appropriate). In addition, the GAP should include measures that address unavoidable adverse impacts, such as habitat offsets through habitat banking or other forms of compensatory mitigation designed to maintain ecologically valuable wildlife habitats at strategic locations throughout the development area.

Coordinating with local governments

The department shall consult with local government designees on the data needs of affected local governments as that pertains to full field development. At a minimum, operators shall provide overlay maps showing the proposed oil and gas locations, including all proposed access roads and gathering systems, drainages and stream

crossings, and existing and proposed buildings, roads, utility lines, pipelines, known mines, oil or gas wells, water wells known to the operator(s) and those registered with the State Engineer's Office, and riparian areas.

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October 27, 2010

David Neslin, Director
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

Re: ***Geographic Area Plan for Horizontal Niobrara Play***

Dear Mr. Neslin:

Following the industry meeting with you on October 19, we at Anadarko took a look at Rule 513 as well as the discussion of Geographic Area Plans (GAP) in the COGCC's Statement of Basis, Authority and Purpose that was published when the new rules came out. Based on that review, we think it is premature (for either the Commission or industry) to consider a GAP at this stage of development of the horizontal Niobrara "play" in northeastern Colorado. Although the industry may be positioning itself to evaluate the potential of this resource, we are not even close to having a grasp of things such as well spacing, density or development patterns. Neither do we know what areas may ever be productive or economic. Looking at the rule language itself, Rule 513 b. says a GAP "shall cover an entire oil and gas field" but no one knows yet what the "field" is.

Rule 513 c. (4) says the GAP "may include alternative development scenarios, designate units, adopt spacing orders . . . or require consolidation of facilities." Again, we are a long way from defining the field or adopting any field-wide spacing orders and it is not practical to be talking about "alternative development scenarios" when you do not yet know what your primary development scenario is going to be.

The Statement of Basis and Purpose on this topic refers to the benefits of addressing the cumulative impacts of potential activities by multiple operators. We think, implicit in that goal, is some degree of predictability regarding the scale and scope of future operations together with an element of cooperative development on the part of the principal operators in the given area. We do not believe those objectives are attainable in this very early and highly competitive stage of the process where a great deal of leasing activity is ongoing. No one yet knows who the significant stakeholders will be or the pace of any exploration plans they may envision. The Statement of Basis and Purpose goes on to describe the benefit of a GAP because it will identify activities to occur in a defined geographic area. Because neither the geographic area nor the development activities are known yet, those benefits cannot be realized through a GAP.

Anadarko will continue to evaluate, along with other operators, the relative merits of a GAP for the horizontal Niobrara in the northeastern part of the state, but we strongly believe it to be inappropriate at the present time and would fail to achieve the principal objectives set forth in Rule 513.

Sincerely,

David P. Howell, PE
General Manager, Rocky Mt.
Anadarko Petroleum Corporation

The Nature Conservancy
Protecting nature. Preserving life.

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December 17, 2010

David Neslin
Director, Colorado Oil and Gas Conservation Commission
1120 Lincoln St., Room 801
Denver, CO 80203

Re: **Ideas for Geographic Area Plans**

Dear Director Neslin:

We understand that the Colorado Oil & Gas Conservation Commission (COGCC) is exploring the possibility of developing one or more Geographic Area Plans (GAPs) in accordance with Rule 503 of the Colorado Oil and Gas Rules. The Nature Conservancy (the Conservancy) would like to offer its support of this potential initiative, and provide some ideas for COGCC to consider as it works towards clarifying the purpose and contents of GAPs. Furthermore, we would like to suggest that the creation of GAPs for the Niobrara or Paradox basins would be important at this time – or encourage the COGCC to support other pre-development planning efforts of that magnitude should GAPs not be developed. Given our experience with planning efforts of multiple spatial scales, from thousands to millions of acres, and dealing with energy and other issues, we would value the opportunity to contribute our expertise to work with the State and others on these efforts.

Our comments are drawn largely from those we submitted during the oil and gas rulemaking process. They are also based on our recent experience in working with CDOW and other partners to apply our "Energy by Design" methodology to multi-well planning efforts. In Colorado, we have completed two such projects: one for BP's proposed development in part of the San Juan Basin in southwestern Colorado, which is informing a Wildlife Mitigation Plan (WMP); the other for Questar's proposed development in the Hiawatha Field in northwestern Colorado and southwestern Wyoming, which is informing the Bureau of Land Management's Environmental Impact Statement and may later be used in the creation of a Wildlife Mitigation Plan. Through these projects, we have come to appreciate the strengths and limitations of working with individual operators on plans on the scale of WMPs/CDPs.

Please note that our comments focus on the use of GAPs in planning for wildlife and habitat values. However, TNC realizes that GAPs are intended to address other issues as well, such as public health and air quality.

Feel free to contact Megan Kram (mkram@tnc.org, 720-974-7004) or me with any questions.

Best regards,

/s/ Tim Sullivan

Tim Sullivan

Support for GAPs or other planning efforts of that magnitude

It is our experience and belief that landscape-scale planning, combined with proper safeguards such as Best Management Practices, can effectively balance development of energy resources with protection of the important wildlife values of the state, which contribute to our economic well-being and quality of life. The rules reflect this sentiment as they authorize the creation of multi-well planning efforts including Comprehensive Drilling Plans (CDPs), Wildlife Mitigation Plans (WMPs), and GAPs.

Now two years into the implementation of the rules, the state and operators have being working together to create WMPs and CDPs. These plans appear to be improving the avoidance, minimization, and mitigation of impacts to wildlife over single-well planning. That being said, assuming that they are mostly or entirely being developed by and for individual operators, such efforts still leave the larger landscape or region vulnerable to "death by a thousand cuts," particularly in cases where multiple operators have interspersed holdings and non-coordinated planning efforts with each other. Certain provisions of the rules, primarily consultation requirements for sensitive wildlife and restricted surface occupancy areas, can alleviate some of these challenges, but consultation also involves operator-by-operator negotiations with CDOW and may or may not ultimately result in true "big picture" conservation of wildlife habitat across the state. It can be very challenging to assess cumulative impacts to wildlife habitat on an individual operator basis, even when multi-well planning efforts on the scale of CDPs or WMPs are applied. These concerns are further magnified in areas of the state where consultation with CDOW is limited or non-existent due to lack of covered species.

It is perhaps for these reasons that the rules authorized the creation of GAPs. Designed to cover "an entire oil and gas field or geologic basin, likely encompassing the activities of multiple operators, in multiple sub-basins or drainages, over a period of ten (10) years or more," GAPs have the potential to resolve the challenges of ensuring the long-term persistence of wildlife values based on operator-by-operator planning and consultation efforts alone.

Contents of GAPs

What would a GAP look like – what would the contents include? The rules provide limited guidance. In addition to the aforementioned statement, the rules state only that a GAP enables the Commission "to adopt basin-specific rules that promote the purposes of the Act," and "may include alternative development scenarios, designate units, adopt spacing orders, implement sampling or monitoring plans, or require consolidation of facilities within the area covered by the Plan subject to the Act." Based on the rules and H.B. 07-1298 which authorized their creation, GAPs should help ensure the avoidance, minimization, and/or mitigation of impacts to wildlife values. To achieve this goal, we recommend the following:

a. Develop objectives for maintaining or enhancing wildlife values within each GAP. How can you effectively balance energy development with wildlife conservation without clear goals? Objectives for GAPs can be developed in consultation with the Colorado Division of Wildlife, the Colorado Natural Heritage Program, and/or other science-based organizations or agencies, and reference existing plans such as the state Wildlife Action Plan. In setting these objectives, it is important to have information regarding the relative contribution of habitats in that area to achieving broader statewide or regional conservation goals. This type of information can help determine appropriate levels of development within the area.

b. Identify measures to avoid, minimize, and/or mitigate impacts to wildlife habitat in accordance with the objectives above. Below are recommendations specific to applying each component of the mitigation hierarchy:

- Avoiding impacts – We recommend that GAPs clearly delineate areas with important wildlife values and show the relationship of these values to proposed surface uses. In some cases, avoiding impacts in specific places will be the only way to achieve one or more habitat objectives.

- Minimizing impacts – One way to minimize impacts is to apply Best Management Practices (BMPs). A GAP could specify a series of BMPs that would pertain to all or part of the GAP area. Sample sources of BMPs include those that CDOW currently uses in consultations, the BLM Gold Book or those proposed in the *Wildlife Management Guidelines for Oil and Gas Development* developed by a large coalition of Colorado wildlife and environmental organizations. Existing BMPs may need to be tailored to the site-specific conditions of the GAP area.

  Also as part of minimizing impacts, we recommend that GAPs identify clear reclamation standards that are specific to different major habitats types. The quantification is important so that progress toward standards can be easily assessed, and so that reclamation progress can be clearly and reasonably counted against cumulative impacts. Specificity to different habitat types is important because a standard for one habitat type may not be applicable to another (e.g., sagebrush shrublands vs. pinyon juniper).

- Mitigating impacts – Mitigating impacts, also known as compensating for impacts can involve restoration of habitat and/or conservation of lands that might otherwise be lost or altered by other types of development (e.g., through a conservation easement or management agreement) outside of the immediate project area. A GAP could require or incentivize operators to mitigate unavoidable impacts to priority species and vegetation. It could also delineate priority areas for offset projects. To ensure that "credit" is appropriately awarded or calculated for compensatory mitigation projects, a GAP could authorize, require, or even include an accounting framework. This framework would help provide operators and the state with certainty of mitigation effectiveness.

  Mitigation can be a controversial topic, particularly when it is not used in a rigorous manner, or not in conjunction with the "avoid and minimize" components of the mitigation hierarchy. However, it can be a very effective tool for addressing cumulative impacts and for ensuring persistence of the most valuable habitats for species. Use of mitigation in the permitting process for oil and gas development can allow for the efficient development of energy resources while balancing habitat conservation needs. With consideration of compensatory mitigation, permitting agencies can allow for more intense development in areas that have higher energy resource values and lower wildlife habitat values in exchange for conservation or restoration of the most valuable wildlife resources in other locales.

*c. **Ensure coordination with a variety of agencies and organizations.*** The rules require consultation with the CDOW, the Colorado Department of Public Health and Environment, and local governmental designee(s) in developing GAPs. They also require the Commission to consider any local government comprehensive plans or other local government long-range planning tools. However, the rules do not encourage or require the involvement of any other parties, but nor do they prohibit for that matter. Therefore, we would strongly encourage the COGCC to solicit the involvement of other organizations with science expertise, and particularly planning expertise, to participate in the creation of GAPs.

Locations for GAPs

We understand that the COGCC is considering several possible locations for the creation of GAPs: the Piceance Basin, the Paradox Basin, and the Niobrara formation. Any of these sites could benefit from the creation of a GAP. We feel that the two most important locations at present would be in the Niobrara Formation and the Paradox Basin.

Niobrara Formation – Wildlife habitat in this area is vulnerable to impacts from energy development and the existing Oil and Gas Rules are limited in their scope to address wildlife species east of I-25. Northeastern Colorado includes seven of the eight "key wildlife habitats" of the state as indentified in Colorado's Wildlife Action Plan. Five of these have significant overlap with the area that is considered as potential or likely development of the Niobrara formation. Some of the habitat types and the species dependent on them, particularly the shortgrass prairie which dominates the landscape, are sensitive to fragmentation. We are concerned that the mixed ownership pattern of minerals in the area could lead to more fragmentation from developed wells than might be necessary to access the resource. In addition, this area has been the focus of past conservation efforts by local and statewide land trusts, including The Nature Conservancy, Colorado Cattlemen's Agricultural Land Trust , and Legacy Land Trust, as well as county open space programs. A GAP focused on the Niobrara development area could help ensure protections to the handful of species that the rules address in this area, while also capturing a larger suite of species through habitat protections. The focus could be on minimizing fragmentation of developed permits and protecting the substantial investment in grassland conservation made by public and private agencies, while protecting the agricultural uses and values of the area. If the COGCC elects not to proceed with formal rule-making for a GAP, we would encourage the commission so support other large-scale planning efforts – separate from the GAP process but with the same general goal -- in the Niobrara or other parts of Eastern Colorado. We would also encourage the Commission to work with industry to develop voluntary standards for minimizing fragmentation and other wildlife habitat impacts in the area.

Paradox Basin – This basin, though largely undeveloped at this time, is poised for significant development of the Gothic Shale, specifically in Montezuma and Dolores Counties. Given the certainty of significant impacts once this development begins in earnest, this basin can be considered a good candidate for a GAP at this time. Initiating a GAP now, while there is time to develop a solid plan for the Paradox when COGCC staff is not under the pressure of processing APDs, presents the ideal scenario for creating a thorough and workable document.