

Commonwealth of Pennsylvania
Department of Conservation and Natural Resources
Bureau of Forestry
DRAFT Oil and Gas Philosophy
February 8, 2010

Purpose

With a staff of more than 300 full-time professionals ranging from foresters to geologists to ecologists, the Bureau of Forestry manages Pennsylvania's State Forest for an array of resources and values including plant and animal habitats, recreation, timber, and oil and gas production. Decisions, both policy and on-the-ground, are guided by many sources of information, including laws and regulations; public input; the State Forest Resource Management Plan; leases and contracts; and guidelines and procedures. However, considering the variety of complicating factors involved in oil and gas development, it is unrealistic to address every situation and decision in a document or procedure. BOF staff must rely on professional judgment and discretion to efficiently and effectively make decisions when (1) the situation is not addressed in a guideline or procedure; (2) the situation warrants deviation from a guideline or procedure; or (3) when multiple interpretations of a guideline, procedure, or document exist. The purpose of this document is to establish a set of "philosophies," or guiding principles that articulate fundamental understandings and reasons for making decisions. These guiding principles form the foundation for interpreting and applying written documents and should be consulted when gaps exist and decisions need to be made using professional judgment. In addition to providing guidance to BOF staff, this document is also intended to communicate these fundamental understandings to external stakeholders including the oil and gas industry.

Managing toward the Mission

The mission of the Bureau of Forestry is to ensure the long-term health, viability, and productivity of the Commonwealth's forests and to conserve native wild plants.

The Bureau of Forestry will accomplish this mission by:

- Managing state forests under sound ecosystem management, to retain their wild character and maintain biological diversity while providing pure water, opportunities for low-density recreation, habitats for forest plants and animals, sustained yields of quality timber, and *environmentally sound utilization of mineral resources.*

- Protecting forestlands, public and private, from damage and/or destruction by fires, insects, diseases and other agents.
- Promoting forestry and the knowledge of forestry by advising and assisting other government agencies, communities, landowners, forest industry, and the general public in the wise stewardship and utilization of forest resources.
- Protecting and managing native wild flora resources by determining status, classifying, and conserving native wild plants.

The bureau's mission is broad, and depending on the particular situation, requires managers to evaluate the impacts of one activity on another use or value. For example, oil and gas development is not always compatible with recreation and in other instances it will negatively impact plant and animal habitats. There is an inherent source of anxiety when managing forests for multiple uses and values and needing to decide which is most important in any given situation. Decisions are also made at varying geographic scales, including both site-specific landscape-levels. A number of systems are in place to ensure that competing goals and objectives can be met, or at least balanced, while achieving the overall mission through ecosystem management.

One system, is the bureau's Community Classification and Zoning System, which specifies what kinds of management activities can occur where on the forest; i.e., Multiple Resource, Wild and Natural Areas, Buffer Zones, etc. This zoning system provides opportunities for a wide range of activities, such as primitive recreation and energy development, to occur across the forest. In some cases it makes sense to deviate from zoning guidelines, for example, placing a well pad within the aesthetic buffer of a public use road to minimize fragmentation impacts. In other cases, the zoning guidelines need to be strictly followed, for example keeping well pads out of Natural Areas or areas zoned Limited due to wet soil conditions. These decisions are made on a case by case basis, but in some way relate back to the Mission and a general set of principles, or "philosophies." Another system is reviewing for threatened and endangered species or resources impacts (PNDI). In some cases, T&E conflicts result in very prescriptive avoidance measures, while other times PNDI reviews help to facilitate habitat enhancement projects. In any case, management decisions must be based on the Mission and work toward ensuring the long-term health, viability, and productivity of the Commonwealth's forests and to conserve native wild plants.

Additional Oil and Gas Leasing

The Mission statement clearly states the *environmentally sound utilization of mineral resources*, which includes oil and gas, as a key component of state forest management. DCNR has been leasing State Forest land for oil and gas development using a reasonable and methodical approach since 1947. More than 1,600 wells have been drilled, resulting in over \$300 million in revenues. Prior to 2008, approximately \$150 million were invested back into conservation through the Oil and Gas Lease Fund, providing significant returns to both DCNR and the conservation community at large. Over the course of

this 63 year history, the oil and gas industry experienced several “boom and bust” periods. The boom in the early to mid-1980s was historically the biggest, resulting in approximately 700 wells drilled on State Forest land. The recent scramble to access the Marcellus Shale appears to be the next boom, with a projected 6,500 wells to be drilled in the next 20 years, generating hundreds of millions of dollars in revenue.

As of January 19, 2010, approximately 700,000 acres of State Forest lands are encumbered by oil and gas leases. This includes areas where the Commonwealth does not own the oil and gas rights. All of this acreage is located in the current Marcellus Shale fairway. To date, oil and gas development has been managed in concert with ecosystem management principles; affording the prestigious designation of a “well-managed forest” by the Forest Stewardship Council. Considering the potential negative ecological and social impacts from increased oil and gas development, the Bureau of Forestry is currently focused on managing the activities occurring on the 700,000 acres under lease. Staff and resources are fully occupied. While it’s a component of the bureau’s Mission, and it has provided significant benefits in the form of revenues and domestic energy, the Bureau of Forestry has reservations about additional leasing at this point in time. The bureau needs time to evaluate large-scale impacts of oil and gas activities over broad landscapes—something that cannot be accomplished in the near-term. Oil and gas extraction is a part of the bureau’s history and will continue to be a part of its future in helping to provide both clean energy and economic returns, but must be done in a manner that conserves and protects the forest for future generations.

Guiding Principles

Along with “managing toward the Mission,” the following set of guiding principles provides additional, more detailed guidance. The principles are organized into three categories: (1) Evaluating and Minimizing Impacts; (2) Working with Oil and Gas Companies; and (3) Outreach.

Overarching Principle: The Bureau of Forestry will promote forest sustainability by managing the social and ecological impacts of oil and gas development according to lease agreements and rights afforded to private owners of subsurface oil and gas.

Evaluating and Minimizing Impacts

1. The State Forest System represents lands protected from development and provide critical habitat for plants and animals. Oil and gas development activities need to address ecological resources.
2. Public safety should not be compromised when making management decisions.
3. Impacts to aesthetics and recreation should be minimized to the extent possible.
4. Forest Stewardship Council principles and indicators should be followed.

5. Opening size and overall conversion from forest to non-forest should be minimized and disturbed areas should be restored to natural communities to the extent possible. Over the next 10 to 20 years as Marcellus drilling approaches full development, more than 30,000 acres of State Forest lands will be (or will have been) converted from “forest lands” to “non-forest uses.” This acreage includes both historic oil and gas development (5,200 acres) and Marcellus development (25,000 acres). The cumulative effects of this contiguous fragmentation will dramatically change the character and threaten the ecological integrity of the State Forest. The edges created by these openings cause significant stress to the surrounding forest by creating avenues for invasive species and individual tree mortality from root compaction, insects and diseases, and shock from additional sun exposure. Fragmentation affects wildlife by limiting natural migration patterns and increasing vulnerability to predation for some species. Changes to surface and groundwater hydrology also affect aquatic ecosystems as well as soil chemistry and structure, eventually causing additional stress to trees and plants. Combined with tree mortality caused by gypsy moth and other insects and diseases, which totaled 32,000 acres in 2009, the cumulative effects of forest conversion could be devastating to the forest ecosystem as whole. Particularly, the State Forest contains some of the largest blocks of contiguous, unfragmented forest in the Commonwealth, providing and protecting habitat components for plants and animals that are limited on private lands. The State Forest is globally important for some species, including many neotropical migratory birds. Continued development and conversion threatens this core value of the State Forest system.
6. Any future leasing will attempt to minimize overall impact while generating necessary revenues.
7. Water withdrawals from State Forest lands will be done in a judicious, prudent manner that does not harm the natural water system, including both ground and surface waters. The goal is to maintain a thorough understanding of water usage so that a severe imbalance in the hydrologic system, one that threatens aquatic environments, is prevented.
8. Roads, pipelines, impoundments, well pads and associated oil and gas infrastructure should follow existing disturbances such as road networks or right-of-way corridors in order to minimize fragmentation on State Forest lands.
9. Oil and gas activities will be managed in a manner that attempts to minimize invasive species introduction and long-term impacts.
10. Monitoring the impacts of oil and gas development is a critical component of DCNR’s overall management strategy. Monitoring will allow the department to establish a set of baseline conditions, detect changes that occur over time, and then implement appropriate corrective actions. Critical components include soil, water, fragmentation, plants, wildlife, invasive species, air quality, and social and recreational considerations. Some internal capacity exists, but a successful monitoring system will require additional resources as well as cooperation among external stakeholders including the oil and gas industry. It is important to note that implementing a robust monitoring program is necessary to assess impacts and detect changes,

but should not be viewed as a preventative measure or justification for increased leasing and development.

11. The Bureau of Forestry will evaluate current and proposed gas activities as presented, and investigate alternative routes, construction methods, and processes to limit earth disturbance, environmental impacts, or land conversion on State Forest lands. Gas development, including Marcellus shale, is occurring in several Mid-Atlantic States. Technologies and state and federal regulations do not remain stagnant—this is an evolving scientific field that requires the bureau to evolve as changes unfold.

Working with Oil and Gas Companies

12. Bureau of Forestry guidelines apply to the entire State Forest. In cases where the Commonwealth does not own the oil and gas rights, the Bureau will strive to apply the same guidelines and principles as it does on fee simple lands. The Bureau will work to establish a close working relationship with private owners and operators. A key component of this relationship is communicating the Bureau's mission and underlying principle of ecosystem management. Where possible, the Bureau will execute Surface Use Agreements with private parties to better define the management relationship.
13. This document is intended to provide guidance to Bureau of Forestry staff in Lease administration. However, inflexible application of the terms of any agreement without common sense thought is not encouraged. Where it becomes necessary to deviate from these guidelines it is expected that all decisions will be based on the training, experience, and professional judgment of the staff and fully documented.
14. The Bureau of Forestry will foster open communications among Bureau staff, Department of Environmental Protection's Bureau of Oil and Gas Management and other state agencies, and oil and gas Lessees to ensure the provisions of State Law and the Lease are correctly applied and the administration process is transparent to all parties involved.
15. The Lease is a binding contract and the Bureau of Forestry is obligated to enforce the Lease provisions on behalf of the Commonwealth.
16. The *Guidelines for Administering Oil and Gas Activities on State Forest Lands* were developed from the Lease as modified in September 2008 for the first Marcellus Shale play lease sale. Application of these guidelines to historic lease agreements (issued from 1947 to 2002) can generally be made as the lease and its core components have changed little throughout the history of the program; but interpretation of specific issues addressed in the historic leases will be on a case-by-case basis and reference the specific language of that particular vintage agreement. While the form and language of the 2008 lease agreement cannot be retroactively applied to all historic lease agreements, staff are encouraged to work with oil and companies to

implement provisions of the 2008 Lease as is represents the most comprehensive set of oil and gas BMPs.

17. These guidelines were developed for primary oil & gas extraction activity on State Forest lands and, in general, do not apply to current and future gas storage agreements in effect on State Forest lands.
18. Lessees will be required and private operators will be asked to submit Development Plans for review prior to beginning drilling activity. These plans to enable the Bureau to work with gas companies in planning the development activities in a manner that minimizes impacts to State Forest uses and values.
19. The *Guidelines for Administering Oil and Gas Activities on State Forest Lands* should be considered minimum standards and more restrictive requirements may be necessary on a case-by-case basis. Operators are required to comply with all state and federal laws and regulations.

Outreach

20. Oil and gas management on State Forest Land is unsurpassed in Pennsylvania and will serve as a model for managing surface activities on private ownerships.
21. With major land holdings in the Marcellus Shale fairway, the Bureau of Forestry is in a position of significant leadership and influence. The bureau will work to coordinate activities regionally to conserve landscapes and minimize impacts, particularly in regards to pipelines, transportation, and water resource management.
22. The Bureau of Forestry will establish and utilize an Advisory Committee to foster improved communications among stakeholders with an ultimate goal of establishing best management practices for oil and gas development and long-term management.
23. Bureau of Forestry staff is encouraged to facilitate partnerships among oil and gas companies, local communities, and other stakeholders to identify opportunities for collaboration.
24. Communications and outreach efforts should reflect these “key messages:”
 - a. The Bureau of Forestry has a broad mission to ensure forest sustainably. State forests are working forests managed for multiple uses and values.
 - b. A component of our mission is the “environmentally sound utilization of mineral resources.” We have been drilling for natural gas on state forest for 60 years.
 - c. Our natural gas drilling policy changed in 2008 to promote deep gas drilling that uses centralized pad sites to decrease surface impacts. We also strengthened our land use and environmental protection guidelines

- d. Recent increases in natural gas leasing on state forest are to help balance the state budget.
- e. Natural gas is the cleanest fossil fuel source and is used to provide certain benefits to the environment.
- f. There are real environmental impacts to natural gas development on state forest lands that cannot be eliminated. We can minimize, mitigate or monitor these impacts, but we cannot avoid them all together.
- g. Increases in natural gas drilling will impact recreational users both positively and negatively.
- h. We encourage citizens to express their views on natural gas development on state forest land.
- i. If you own private forestland, there are practices you can employ to protect and restore your property.