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## Information Note, Northern Research Station (NRS), US Forest Service

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**Topic:** The Fernow Experimental Forest and Development of Privately Owned Natural Gas Rights

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**B**ackground: The Fernow Experimental Forest near Parsons, West Virginia was established from existing lands of the Monongahela National Forest in 1934 by order of the Secretary of Agriculture. The purpose was to make the area permanently available for forest research and demonstration. The 4,700-acre Fernow is administered by the Northern Research Station. The research focus is on the integration of scientific disciplines to sustain the diversity and productivity of Appalachian forests.

Historically, scientific studies on the Fernow followed two overlapping lines of research. Silvicultural research has addressed a wide range of techniques for regeneration, intermediate treatments, and harvesting of Appalachian hardwoods. The results have become a central core of regional silvicultural guidelines. Watershed research has addressed more basic questions about forest hydrology, and road design and forest management effects on water and soil resources. The results have formed the basis of best management practices in West Virginia and elsewhere. Since the 1980s, the Fernow also has played a vital role researching acidic deposition and nitrogen saturation of forested ecosystems. Wildlife research on forest management effects on T&E species is also being conducted.

Maintaining the integrity of long-term research from the Fernow is essential to the Unit's mission. In many cases, these data and infrastructure extend over a half-century. Studying long-term ecological responses to planned manipulations and new stressors such as invasive species and climate change is a unique asset of the Fernow. Frequent visits by professional, educational, and environmental groups highlight its value.

### Separation of Surface and Subsurface Rights on Federal Lands

In the East when lands were purchased to create National Forests via the Weeks Act of 1911, often only the surface rights were purchased, severed of the subsurface ownership. An estimated 38% of the Monongahela National Forest has privately owned mineral rights. These rights may be developed on the National Forest, but activities must be consistent with the mineral deed terms, state and federal law. Federally owned minerals, primarily natural gas, also can be leased for development on the Monongahela but are subject to additional restrictions. All of the Fernow is underlain by privately owned mineral rights. In addition, after nearly a century of federal surface ownership (since 1915), the first request to drill for natural gas on the Fernow was initiated in 2005 by Berry Energy.

The initial site requested by Berry Energy to drill for natural gas (referred to as B-782) was located in an undisturbed reference watershed (Watershed IV). After the Forest Supervisor and NRS-01 Project Leader both recommended denying the permit to the West Virginia Department of Environmental Protection, Berry Energy agreed to move their drill site to outside the boundary of Watershed IV. The site was approved by all parties and subsequently cleared of standing timber, but Berry Energy has not used the site to date.

Instead, in 2007 Berry Energy filed a second permit to drill on the Fernow in a location referred to as B-800. After consideration of the potential impacts in a Biological Evaluation (BE) prepared by the Monongahela National Forest, the Forest Supervisor issued a Decision Memo approving the new location on November 2, 2007, categorically excluding the project from further environmental assessment. B-800 has been cleared of all timber and Berry Energy has initiated road and site construction. Drilling operations could begin any time.

Within the BE, potential threats to endangered species were considered. In particular, the analysis concluded that drilling operations “may affect, not likely to adversely affect” the endangered Indiana bat. An Indiana bat cave hibernaculum is located about 3000 feet from B-800 and is located on the same Karst geology as the drill site. NRS-01 staff has suggested a possible mitigation to disturbing the bats during their critical winter hibernation period would be to delay drilling until the bats begin foraging about mid-April, enter, and leave the cave routinely. It is unknown if Berry Energy would be willing to accept this recommendation. The BE does not conclude this mitigation is necessary.

**O**utlook: Based on informal conversations with Berry Energy after the decision memo was signed, 8 to 10 drilling sites on the Fernow have been identified for development within the next 3 to 10 years, though not officially presented to the Monongahela National Forest. A fully developed gas field of this magnitude on the Fernow with associated access roads, well sites, pipelines, and other infrastructure would obviously threaten the continued viability of the Fernow Experimental Forest.

If B-800 proves to be a productive well and Berry Energy submits additional requests for drilling, it will be important to have a full understanding of overall plans and potential sites if any mitigation is to be considered. In addition, all related and foreseeable actions will be needed to fully assess environmental impacts. The Fernow is habitat for numerous T&E species that have been considered in two previous Environmental Impact Statements prepared by the lab. The Forest Service has not yet requested a meeting with Berry Energy to fully assess overall plans of gas field development.

## **K**ey Points:

1. Forest Service decision space is limited; however some space exists as is evident by the successful negotiations with Berry Energy to move B-782 and to use directional drilling.
2. Disclosure of Berry Energy's plans is important to consider possible mitigations and understand environmental impacts.
3. Exploration and development of private mineral rights are not exempt from the Endangered Species Act. The Forest Service should request consultation from the Office of General Counsel and the U.S. Fish and Wildlife Service to understand each parties' obligations and opportunities to mitigate environmental impacts.
4. More options may be possible than have been explored to date - though difficult, it may be possible to swap private mineral rights underlying the Fernow with federally owned gas reserves in less sensitive areas.
5. After knowing the result of the B-800 drilling and full disclosure of plans, the Chief of the Forest Service may want to exercise the power of imminent domain to protect the integrity of the Fernow Experimental Forest if gas field development will severely compromise the surface activities.
6. The Fernow Experimental Forest represents well over a half-century of investment by the federal government and the citizens of the United States. Solutions to avoid severely compromising the integrity of this investment merits attention by the highest-level executives of the Forest Service and the Departments of Agriculture and Interior with assistance from congressional representatives.
7. Private oil and gas development on federal land is emerging as a serious threat to public land management elsewhere. In blunt terms, this may just be "...the next big thing". The Forest Service should consider initiating an effort to identify locations of high risk for future energy development that are wholly inconsistent with current surface use. In the east this might include wilderness areas, roadless areas, experimental forests, and research natural areas with severed surface and subsurface ownership and suspected energy reserves.