



In the National Park Service, an “issue” often describes concerns or

obstacles to achieving a park goal. Issues are possible barriers to achieving NEPA’s goal of minimizing effects of proposals on the human environment.



Potential Issues

An issue describes the relationship between actions and environmental resources. Issues are usually problems that either the no action alternative has caused, or that any of the alternatives might cause. Issues simply alert the reader as to what the environmental problems might be if action is taken. Numerous possible issues

have been identified in relationship to this plan. The topics under which these issues fall are listed below.

Geological Resources

Geological Hazards

Air Quality

Soundscapes

Water Quality/Quantity

Floodplains or Wetlands

Rare or Unusual Vegetation

Species of Special Concern or their Habitat

Unique or Important Wildlife or Wildlife Habitat

Unique or Important Fish or Fish Habitat

Introduce or Promote Non-Native Species

Recreation Resources, Visitor Experience, Esthetic Resources

Archeological Resources, Prehistoric/Historic Resources

Cultural Landscapes

Ethnographic Resources

Socioeconomics

Neighboring Land Uses

Long-Term Management of Resources or Land/Resource Productivity

Please visit <http://parkplanning.nps.gov/BISO> for a description of the issues associated with these topics.

Oil and Gas Management Plan/Environmental Impact Statement



Potential Issues

Geological Resources

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- Oil and gas activities (including off-road vehicle use; shothole drilling and detonation; and construction, maintenance, and use of roads, wellpads, production facilities, flowlines, and pipelines) could increase surface runoff; increase soil erosion, rutting, and compaction; and affect the permeability of soils (and other soil characteristics). Poorly maintained wellpads, roads, and other oil and gas operations are currently causing erosion, sedimentation, compaction, and loss of soil productivity.
- The release of hydrocarbons or other contaminating substances from vehicles, equipment, exploration and production operations, flowlines, pipelines, and/or accidental spills during transport could alter the soil’s chemical and physical properties. Changes in soil properties could result from direct contact with contaminants or indirectly via runoff from contaminated areas. Poorly maintained wellpads, roads, and other oil and gas operations are currently causing soil contamination in localized areas.
- Use of truck-mounted drill rigs and water trucks could cause compaction and rutting of soils. Incorrect packing and detonation of shotholes can result in blowouts.



Potential Issues

Geological Hazards

Soundscapes

Introduce or Promote Non-Native Species

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- Improperly sited, or poorly maintained or constructed, access roads or pads could result in slope instability or failure.
- Introduced noise from well drilling, compressor stations, well servicing, construction and earth-moving activities, and truck traffic can adversely affect natural soundscapes.
- Disturbances and removal of native vegetation associated with oil and gas operations, vehicle use, and surface reclamation could lead to the unintentional spread and establishment of non-native species.





Potential Issues

Air Quality

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- Construction of oil and gas facilities (roads, wellpads, production facilities, flowlines, and pipelines), vehicle use on and off paved roads, and exhaust from gasoline or diesel-powered vehicles and equipment will increase emissions of particulates, which can affect air quality, including visibility in the general vicinity of the park.
- Drilling, production, transport, and storage of hydrocarbons; the use of gasoline and diesel-powered engines; and maintenance activities such as herbicide use, emit various air pollutants including nitrogen oxides (NO_x), volatile organic compounds (VOC), carbon monoxide (CO), sulfur dioxide (SO₂), particulates, and odors. Oil and gas wells can also emit hydrogen sulfide (H₂S). These emissions could contribute to air quality degradation within the park

and the region. Nitrogen oxides and VOCs are primary precursors to ozone formation, which can have damaging effects on vegetation and health of wildlife and humans.





Potential Issues

Recreation Resources, Visitor Experience, Esthetic Resources

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- Oil and gas operations could pose a threat to human health and safety from a number of sources, including the use of roads by commercial vehicles (particularly vehicles with less maneuverability and visibility); hazardous equipment at wells and production facilities; flowline or pipeline failure, and release of gases from wells (hydrogen sulfide). The spill or release of hydrocarbons or other contaminants could be inhaled, absorbed, or ingested by human beings.
- Oil and gas operations could adversely affect air quality; alter scenic resources; increase background sound levels; and adversely affect water quality. These effects could limit or preclude visitor uses and experiences in certain areas of the parks and create conflicts between recreational users and operators.



- Safety issues arise with oil well pump jacks that are accessible to the public and are started/stopped by an automatic timer.



Potential Issues

Archeological Resources, Prehistoric / Historic Resources

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- Seismic lines, roads, flowlines, collection lines, and pipeline rights-of-way could increase access to unknown and undiscovered archeological or prehistoric/historic resources, and result in illegal activities such as vandalism, artifact collection, and excavation.
- Detonation of seismic explosives; the construction, rehabilitation, and/or use of roads, wellpads, production facilities, tank batteries, and flowlines and pipelines; and containment or cleanup of leaks and spills could alter the distribution of, disturb, or destroy surface or buried archeological materials, and alter the condition of archeological or prehistoric/historic resources.
- Leaks and spills of hydrocarbons or other hazardous and contaminating substances from vehicles and equipment along access roads or from wellsites, production sites, or flowlines and pipelines could damage or destroy archeological or prehistoric/historic resources.



Potential Issues

Cultural Landscapes

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- Nine cultural landscapes, including the Ranse Boyatt cultural landscape that has an open well on it, may be adversely impacted by oil and gas operations.
- Odors, sounds, and visual intrusions from oil and gas operations may adversely affect cultural landscapes.





Potential Issues

Ethnographic Resources

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One site, Gun Rock, located at the south end of Big South Fork National River and Recreation Area, is a local landmark important to the residents of the area. This rock, which has been carved with depictions of various guns over the years, is located near two gas wells. The presence of the gas wells provides access to Gun Rock, which could result in illegal activities such as vandalism.





Potential Issues

Neighboring Land Uses

Socioeconomics

In the National Park Service, an “issue” often describes concerns or obstacles to achieving a park goal. Issues are possible barriers to achieving NEPA’s goal of minimizing effects of proposals on the human environment.

- Operators may decide to explore for and develop non-federal oil and gas from locations outside the parks, which could result in adverse impacts to adjacent communities, landowners, and resources.
- The enforcement of federal and state regulatory requirements and other operating stipulations may increase the costs of oil and gas exploration or development in the parks. The increased costs could reduce income to local mineral owners and operators and associated businesses.
- In the event of a serious or extensive spill, tourism could be affected and revenues to the local economy could be reduced, at least temporarily.
- An operator’s uncertainty regarding applicable legal and policy requirements and mitigation measures could cause delays and increase planning time and costs.



Potential Issues

Water Quality/ Quantity

In the National Park Service, an “issue” often describes concerns or obstacles to achieving a park goal. Issues are possible barriers to achieving NEPA’s goal of minimizing effects of proposals on the human environment.

- The release of hydrocarbons, produced waters, and/or chemicals from vehicles and equipment, exploration and production operations, flowlines, and/or pipelines, could adversely affect water quality.
- Off-road vehicle use, removal or modification of vegetation, construction, and earth moving activities could increase soil erosion and sedimentation in surface waters. These activities could also alter surface or subsurface drainage patterns in the vicinity of operations, which could change stream flow characteristics.
- Oil and gas operations may create a demand for surface or groundwater or cause contamination of drinking water sources, which may be in conflict with the demand for available drinking water by nearby towns.



Potential Issues

Floodplains or Wetlands

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- The siting, maintenance, and use of roads, wellpads, production facilities, and flowlines and pipelines in floodplains, or the release of hydrocarbons or other contaminants from these operations, could adversely affect floodplain and wetland functions, values and uses, including water quality; groundwater recharge or discharge; fish and wildlife habitat; maintenance of biodiversity; recreational opportunities; and natural beauty. For example, spills and leaks from the Howard White Unit #1 have caused impacts (e.g., soil and water contamination, harm to vegetation) to floodplains and/or wetlands at Obed Wild and Scenic River.
- In some cases there may be no practicable alternative to locating roads, wellpads, production facilities, and flowlines and pipelines in or across floodplains or wetlands. These activities could potentially harm life, property, and floodplain functions, values, and uses, as well as wetland functions and values (natural moderation of floods; sediment control; maintenance of water quality; groundwater recharge or discharge; habitat for fish and wildlife; maintenance of biodiversity; recreational opportunities; and natural beauty). For example, open drill holes and abandoned shut-in wells occur in floodplains at Big South Fork National River and Recreation Area, and some access road crossings occur in the gorge and across upland wetlands. These actions may cause some adverse effects to floodplains or wetlands.
- Reclamation of oil and gas sites (including re-establishing natural contours, surface and subsurface water flow, and natural vegetation communities, as well as controlling non-native vegetation) could restore floodplain and wetland functions and values.



Potential Issues

Long-Term Management of Resources or Land/Resource Productivity

Rare or Unusual Vegetation

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- Soil compaction and erosion could impact the long-term management of resources and/or land/resource productivity.
- Loss of productivity in forest habitats may result from the presence of roads, wellpads, and from leaks and spills associated with oil and gas operations.
- Operational impacts from oil and gas activities could adversely affect riparian areas and sandstone glades that support rare vegetation and some state listed species.
- The states of Tennessee and Kentucky have designated rare plant communities that could be adversely affected by oil and gas activities.



Potential Issues

Species of Special Concern or their Habitat

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- Ongoing oil and gas operations, as well as future oil and gas operations, could adversely affect species of special concern or their habitat, including species federally listed under the Endangered Species Act. Where there is the potential for adverse effects on a species or its habitat, mitigation would be required by the NPS, in consultation with the U.S. Fish and Wildlife Service and the appropriate state wildlife agencies. Even with these protective measures in place, there is the potential for an incidental take of a listed species of special concern.
- Changes in hydrologic regime and sedimentation from oil and gas operations could adversely affect the habitat for aquatic species of special concern.
- Produced waters (brine) or hydrocarbon contamination, occurring either on-site or during transportation, has the potential to adversely affect species of special concern or their habitat.
- Reclamation of oil and gas sites could re-establish native vegetation communities and/or drainage patterns that support listed species of special concern.



Potential Issues

Unique or Important Wildlife or Wildlife Habitat

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During the internal scoping meeting, it was determined that the issues related to species of special concern also apply to unique or important wildlife or wildlife habitat. In addition to these issues, the following issue statements were developed for this resource area:

- Oil and gas activities (including off-road vehicle use; shothole drilling and detonation; and construction, maintenance, and use of roads, wellpads, production facilities, flowlines, and pipelines) could adversely affect wildlife or wildlife habitat. These activities could increase predation in open areas; increase edge effects and habitat fragmentation; directly harm or kill wildlife; disrupt feeding, denning, or nesting; and increase public access and the associated potential for wildlife poaching.
- Releases of produced waters (brine) generated by oil and gas operations can create salt licks, which may affect the behavior of large mammals, such as black bear and elk.
- Noise from oil and gas operations could adversely affect important wildlife, such as migratory birds.



Potential Issues

Unique or Important Fish or Fish Habitat

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During the internal scoping meeting, staff from Big South Fork National River and Recreation Area noted that two fish studies, one completed in 1977 and one completed recently, are available and may provide additional information regarding issues related to unique, essential, or important fish or fish habitat.

It was also determined during the internal scoping meeting that the issues related to species of special concern also apply to unique, essential, or important fish or fish habitat. In addition to those issue statements noted previously, the following issue statement was developed for this resource topic:

- Oil spills into the rivers of the Big South Fork National River and Recreation Area and Obed Wild and Scenic River could adversely impact unique, essential, or important fish or fish habitat, including habitat for host fish that are important in the life cycle of special status mussels found in both NPS units.