

Title:

Environmental and Water Resources Impacts from Oil Shale Development

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Oil shale deposits in Colorado, Utah, and Wyoming are a tremendous potential resource. While the ability to extract oil from shale economically has not been demonstrated, new in situ retorting techniques currently under development hold promise, and the quest to determine the technical and economic feasibility of development is charging ahead.

The decision to proceed with commercial-scale oil shale development will have severe impacts on the West's water resources and, potentially, the climate. Although impacts have been identified, the degree and cost of the following impacts have not been quantified.

- Regardless of which technologies are used, developing oil shale would consume large quantities of water.
- A lack of available water and infrastructure could either limit oil shale production or reduce productivity in other sectors, particularly agriculture.
- The consumption of water for oil shale development would reduce flow, increase salinity, and degrade habitat.
- Development could produce significant and perpetual degradation of surface and ground water quality.
- Projected increases in temperature and changes in precipitation may exacerbate these effects.

This talk will identify the causes and potential scale of impacts. Results indicate that although characterization is currently insufficient to truly assess impacts, there is a good possibility that impacts could be large and may add significantly to the internal and external cost of each barrel of oil produced from shale. Further research is necessary to determine whether oil shale development can proceed with minimal effects on the environment, water resources, and climate, and thus meet sustainability objectives.

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