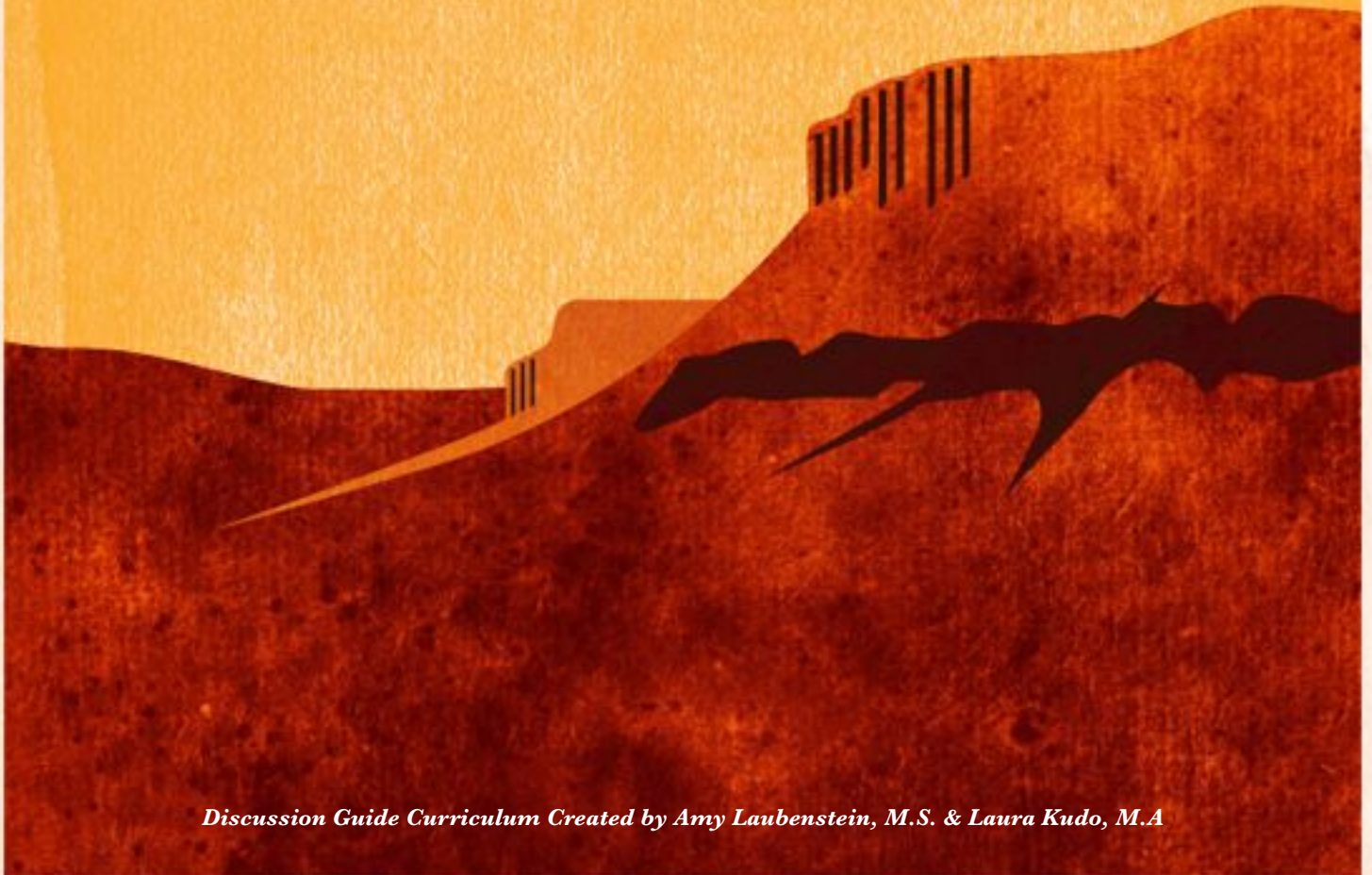


URANIUM DRIVE-IN

DISCUSSION GUIDE



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ABOUT THE FILM

Conversations surrounding the costs and benefits of utilizing nuclear energy as an alternative to carbon-based fuel are taking place around the country, from community round tables to high level political offices. While the international quest for greener sources of energy makes the nuclear industry attractive on many levels, the mining and processing of uranium has serious environmental implications that must be considered throughout these discussions.

The stories documented in Uranium Drive-In parallel those of many rural communities in the United States and around the world dealing with resource extraction, potential impacts, and possible economic benefits. The film illustrates the struggle individuals face when determining how to best preserve one's community for future generations. Does the financial viability of establishing this industry in their backyard take precedence over the potential health risks and environmental impacts that could occur within their community, in addition to communities both upwind and downstream?

The promise of jobs from a proposed uranium mill has an economically devastated mining community in western Colorado hopeful for the first time in decades. When environmentalists step in to stop the

mill, pro-mill advocates become frustrated. Against a backdrop of the boom and bust economic cycle of mining, a debate ensues, pitting those hungry for jobs and community preservation against those advocating for human health and the environment.

Extractive industries by their very nature have a finite life cycle, which raises the question of financial viability and stability for the area. The film demonstrates the perceived trade-offs and divisions that can occur when communities wrestle with ways to foster economic growth in the effort to remain in the place they call home.

ABOUT THIS DISCUSSION GUIDE

This discussion guide approaches the film from many different perspectives, exploring issues surrounding environmental impact, rural development, corporate ethics and responsibilities, nuclear energy and public policy. Case studies and other reference materials to broaden the discussion even further are included within each section. The intention of this discussion guide is to create dynamic discussion and thoughtful conversation between people, communities and policy-makers.

ENVIRONMENTAL STUDIES

As shown in Uranium Drive-In, there is a complex relationship between the quality of life in rural communities and how residents view and interact with their surrounding natural environment.

DISCUSSION QUESTIONS

1. Throughout the film many of the residents of Naturita state that mining is much safer now than in the past.

- In what ways are new and existing regulations adequately protecting the safety of workers, area residents and the environment?
- How have regulations changed/improved over the years for extractive industries?
- How does the Mining Law of 1872 relate to this discussion?

2. The Cotter Uranium Mill in Cañon City, CO was blamed for contaminating wells that served the local population, a contamination issue that continued for more than 8 years with no oversight from industry, the health department or the EPA.

- Have regulations been upheld or improved for areas surrounding mines and mills, including oversight of watersheds, air quality and general health of ecosystems?
- Beyond regulation, there is the issue of enforcement. Who is responsible for the enforcement of regulations related to the protection of citizens and environment?

3. Matt, a modern-day uranium miner featured in the film, developed health issues from what he believes was exposure to radon and contaminants while working in the mines. Upon first report of injury, he was let go and asked to give up his right to make a claim in exchange for two week's severance pay.

- What is the reporting responsibility for mine operations to government agencies?
- What is the corporate responsibility in a case such as this one?
- When an individual decides to take a job with potential health and safety risks, where does the ultimate responsibility lie should they become ill or injured?
- Discuss the difficulty in linking cause and effect in the case such as Matt's.

4. Nuclear energy is often considered a "green energy" because of the lack of carbon emissions at the reactor. However, little public and political attention is given to the entirety of the nuclear fuel lifecycle.

- After viewing the film, do you feel that nuclear energy is predominantly "green?"
- Is the risk of environmental contamination related to uranium industry worth the benefits of reducing carbon emissions into the atmosphere?
- Is it possible to calculate the cost benefit analysis of nuclear energy?
- Are corporations truly being held accountable for environmental disturbance?
- What are the reclamation responsibilities of mining companies once operations cease?
- What type of environmental management practices would you suggest?

5. Ethically, how do you feel about using uranium instead of fossil fuels for U.S. consumption? What impact do you foresee as the U.S. exports coal and oil to other countries, with less stringent environmental regulations for extracting fossil fuels?

- Do the same regulatory practices apply in both in the U.S. and in countries abroad?
- How do you compare uranium production and use to other energy sources touted as carbon neutral such as solar or wind energy?

KEY CONCEPTS

Environmentally sustainable business practices; corporate responsibility; environmental ethics; environmental activism; environmental management; environmental pragmatism; Superfund site; public policy

CASE STUDIES/ SCHOLARLY ARTICLES

A SHORT HISTORY OF NUCLEAR REGULATION, 1946-2009

This thorough but condensed publication provides an introduction to the most notable events in the history of U.S. Nuclear Regulatory Commission from 1946-2009.

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0175/>

NUCLEAR FUEL'S DIRTY BEGINNINGS: ENVIRONMENT DAMAGE AND PUBLIC HEALTH RISKS FROM URANIUM MINING IN THE AMERICAN WEST

This report explores current regulations and extraction methods of uranium in the West and the impacts on fresh water and rural communities.

<http://www.nrdc.org/nuclear/files/uranium-mining-report.pdf>

MINING, CORPORATE SOCIAL RESPONSIBILITY AND THE "COMMUNITY"

This academic journal discusses the case of Rio Tinto, Richards Bay Minerals and the Mbonambi.

<http://link.springer.com/article/10.1023/A:1016570929359#page-1>

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COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT: URAVAN URANIUM PROJECT

This page provides resources on information specific to the Uravan Uranium Project along with a site map.

<http://www.colorado.gov/cs/Satellite/CDPHE-HM/CBON/1251615995470>

FEDERAL MINE SAFETY AND HEALTH ACT OF 1977 AND MINER ACT OF 2006:

Passed by Congress in 1977 this bill created the Mine Safety and Health Administration which expanded protection of miner rights. The 2006 Mine Improvement and New Emergency Response (MINER) Act improved mine-specific emergency response plans and mechanisms.

<http://www.msha.gov/REGS/ACT/ACT1.HTM#5>

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ECONOMICS

Individuals and families in the film struggle to put food on their table while waiting for the return of an industry that could bring back some of their former prosperity. Fluctuating market value for uranium, as well as resistance from the environmental group, Sheep Mountain Alliance, has put construction of the mill on hold. How do families remain in the place they have called “home” for generations when there is no promise of economic revitalization?

DISCUSSION QUESTIONS

1. Ayngel comments that she fears an accident or explosion could hurt or even kill her husband if he were to work in uranium mine. She immediately follows up her concern with the comment, “But we’ve got to eat.”

- What risks would you be willing to take for a job that provides a paycheck to put food on your family’s table?
- Does it seem that extractive industries tend to locate in poorer communities with fewer economic options?
- Are more people in impoverished communities being asked to risk their lives for work than in privileged communities?

2. Uranium Drive-In shows boarded up windows, weeds pushing their way through sidewalks and “For Sale” signs. In contrast, you also see beautiful landscapes and sweeping valleys that surround the region.

- What other businesses or industries do you think could be developed in this region that might be more sustainable?
- Do you think that the temporary economic booms associated with extractive industries are helpful or harmful to small communities that rely on extraction so heavily and singularly?

3. Extractive industries generally have a finite life span as far as being able to provide employment. The people of Naturita state that if they can’t get the mines and mill open, they need someone to come along and offer alternatives jobs.

- Who is responsible for providing these employment alternatives?
- Do you think the short-term jobs provided by the industry are worth the long-term environmental and health impacts that could result?

4. Even though Ayngel and her husband are waiting on the mill for future employment, they begin taking other steps towards financially supporting their family.

- How can communities diversify their financial and employment opportunities?
- If you were facing similar challenges in your community, what other industries could be developed based on your surrounding environment, location, and/or natural resources?

5. Rancher Heidi Redd states that we all face the issues surrounding extraction in the form of consumption, and that if we are not willing to give up our reliance on fossil fuels, that we are all to blame.

- Do you agree? Would you be willing to give up aspects of your lifestyle to reduce your reliance on fossil fuels?
- What are the national and personal economic implications of a lifestyle less reliant on fossil fuels?
- In the European Union, the average person consumes less than half the energy of the average American, and yet they have a relatively similar lifestyle. How realistic do you think it would be for Americans to cut energy consumption to be similar to half of current levels? What kinds of steps would this take?

KEY CONCEPTS

Boom and bust cycle; sustainable industries; consumption of natural resources; extractive industry; rural development alternatives

CASE STUDIES/ SCHOLARLY ARTICLES

HOME ON THE RANGE NO MORE

This article chronicles the rise and demise of Jefferson City, WY, a once bustling uranium mining town.

<http://www.sublettewyo.com/ArchiveCenter/ViewFile/Item/87>

THE ECONOMICS OF URANIUM SUPPLY AND DEMAND

This article chronicles the market place value for uranium.

<http://www.iaea.org/Publications/Magazines/Bulletin/Bull232/23204890307.pdf>

MINING JOURNAL: URANIUM SUPPLEMENT

A profile on the uranium market and proposed projects in light of the Fukushima disaster.

http://www.miningjournal.com/_data/assets/supplement_file_attachment/0004/263245/Uranium_scr.pdf

BOOMTOWN BLUES: COLORADO OIL SHALE

By Andrew Gulliford

This book details the 100-year history of oil shale development on the Western Slope of Colorado. It details the social, environmental and economic effects of boom bust cycles of this industry.

HEALTH

An irony explored throughout the film is the desire for jobs regardless of the potentially dangerous health risks involved. While the older generation is still suffering from illnesses and health impacts purportedly developed from their work in the mines, the promise of money and prosperity coupled with revised regulations appear to outweigh the possible health risks in the minds of many.

DISCUSSION QUESTIONS

- Despite the myriad health issues experienced by the generation who worked in the mines, many look back proudly on this period such as Howard, a Cold War Patriot. His wife Betty states, “When it is your time to go, it is your time,” in reference to losing her brother and father to uranium mining at age 42.
 - How do you feel about Betty’s comment?
 - Would you sacrifice your health for financial stability, or for a cause?
- Former Cañon City mill worker states, “To me, it’s not worth the gamble. Everything comes down to the dollar. Putting a human life in front of a dollar, they won’t do it, but they sure will put a dollar in front of a human life.”
 - Do you think corporations knowingly put the lives of humans at risk for profit?
 - In a capitalistic society, corporations are beholden to stockholders. How can corporations achieve a balance of profit and safety? Who is ethically responsible for these decisions?
 - We are currently in a growth model of economic development. Is this model of endless growth sustainable or even desirable? Can this model be changed?
- Regulations have been put into place to ensure the health and safety of workers in the mining industry.
 - Do you feel regulations are currently strict enough to protect the welfare of people employed in the mining industry?
 - Would you consider working in a mine knowing that there are associated risks that could compromise your well-being?
 - What is the threshold of risk – one human life or many?
- Uranium exposure through the mining and milling can result in air and groundwater contamination. Being upwind or downstream of the mining and milling process can potentially produce life-threatening illnesses to those working in the mine, but also those living in proximity.
 - At the risk of being exposed to the harmful effects of uranium mining, would you knowingly choose to live in a place with these potential hazards?
 - Would you choose to leave your home if these hazards became a risk?

KEY CONCEPTS

Cold War Patriots; corporate ethics and responsibility; transparency risk; exposure; mining health regulations; contamination

CASE STUDIES/ SCHOLARLY ARTICLES

THE HOUSE THAT URANIUM BUILT

Details from a larger study examining the health impacts on miners from the Navajo Nation.

<http://www.ic.ucsc.edu/~rlipsch/pol179/Hiesinger.pdf>

THE YELLOWED ARCHIVES OF YELLOW CAKE LINK

A compilation of historical reports from the uranium mill in Monticello, Utah, wherein many workers cited health concerns related to radon exposure.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1381715/>

WORKER HEALTH STUDY SUMMARIES, RESEARCH ON LONG TERM EXPOSURE, URANIUM MINERS

A report detailing mortality rates in uranium miners from the Centers for Disease Control.

<http://www.cdc.gov/niosh/pgms/worknotify/uranium.html>

ECOCIDE OF NATIVE AMERICA: ENVIRONMENTAL DESTRUCTION OF INDIAN LANDS AND PEOPLE

By Donald A. Grinde, Bruce E. Johansen, & Howard Zinn

This book details the ecological consequences and disruptions of Native American lands by European colonization. This book makes a case for adopting a more environmentally ethical way of living, much in the philosophy of the Native Americans.

HISTORY AND REGIONAL STUDIES

In Uranium Drive-In, the history of mining forms the distinct social relationships and economic backbone of the Naturita community. Many of the residents' perspective are formed by a generations of family working in the mining industry. The questions below tie together relationships with history, landscape and rural development.

DISCUSSION QUESTIONS

1. Many of the residents of Naturita state that mining is part of their culture and history, and that this is a source of pride for the residents.

- How does the importance of regional history in any community reflect on its present day approaches to community development?
- Is the influence of regional history positive or negative in relation to Naturita?
- How does the idea of nostalgia play into history and how does it affect the future?

2. In regional studies, “landscape” is a material expression of the relationship between man and the environment, of work and its specific location.

- How would you describe the “landscape” of Naturita?
- What is the relationship of a resident of Naturita with their environment?
- How do these specific landscapes determine the work or industry that is conducted in the environment?
- What are some alternative industries for these rural landscapes?

3. Typically, Native Americans have a different relationship with their “landscape.” At one of the community debates, a Navajo woman in the film likens uranium to a sleeping serpent that should be left alone.

- In general how does Native American culture view extraction of resources? Does this view vary among different native cultures?
- Historically how have native cultures been impacted by mining?

4. In the film, Ayngel comments, “It’s as if our town has fallen off the map.” Tami, the mayor of Naturita, tearfully states, “Mothers can’t put food on the table. Children are going to bed with tattered blankets and no sheets.”

- Is this true for much of rural America?
- Is the same true in pockets of urban America?
- Should we, as a nation, be obligated to help these communities?

KEY CONCEPTS

Nostalgia/pride in one’s past; rural development; the ‘New West’; amenities vs. extractive economies; relationships with one’s landscape

CASE STUDIES/ SCHOLARLY ARTICLES

URANIUM MINING COMMUNITIES IN THE AMERICAN WEST

A great list of resources on environmental impacts from uranium mining in the Navajo Nation.

http://serc.carleton.edu/research_education/nativelands/navajo/environmental.html

PLACING THE RURAL IN REGIONAL DEVELOPMENT

A review of different rural development strategies and resources.

http://www.tandfonline.com/doi/full/10.1080/00343400903234696#.U1lgR_2jsf1

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SOCIOLOGY

The people of Naturita live in a economically depressed town that once reaped the social and financial benefits of a booming uranium mill. The community is anxious to bring this industry back to create jobs, despite the associated health and environmental risks. The wealthy tourist-based economy 60 miles away is opposed to this industry citing environmental and health concerns associated with uranium mining.

DISCUSSION QUESTIONS

1. In the film, Ayngel speaks about the quality of life in Naturita and how they are on food stamps and Medicaid; that they are now poor, but they have “dreams.” The concept of the “American Dream” often arises when speaking about societies and communities around the world, and particularly in rural America.

- Is there such a thing as The American Dream, or is it a myth?
- Does every individual deserve the The American Dream? Why or why not?
- Why does this idea pervade our culture?

2. Environmental sociology focuses on the social factors that cause environmental issues, the impacts of these issues, and efforts to solve these issues.

- Are there social motivations in Naturita, Cañon City or Uravan that caused environmental issues?
- What impacts were created from these issues?
- Can community leaders solve any of the social issues by shifting focus away from the industry?

3. Sheep Mountain Alliance activist, Jennifer, states in the film that the divisive issue of a uranium mill has “ripped into the social fabric” of the region. Mayor Tami talks about the “haves” and the “have-nots”.

- Income inequality has become a national topic of discussion. How could it be addressed on a community level such as Naturita’s?
- Is this a type of social disruption?

4. The town of Uravan was condemned in 1984, with a Superfund site price tag of over \$120 million dollars and over 20 years of clean-up. Part of the study of the sociology of natural resources is the social impact assessment of natural resource development projects.

- Discuss the impact of the mining industry on the town of Uravan.
- Is this significant now? Can this be a lesson for future energy decisions?
- How is the town of Uravan significant for Naturita?
- Do you know a community that has been impacted from a mining operation? Discuss the lasting effects.

KEY CONCEPTS

Environmental sociology; “The American Dream”; social disruption; sociology of natural resources, rural migration; the sociology of natural resources

CASE STUDIES/ SCHOLARLY ARTICLES

SOCIOLOGICAL IMPLICATIONS OF NUCLEAR POWER, NATIONAL AGRICULTURAL & RURAL DEVELOPMENT

This article discusses the burdens of nuclear power borne by rural communities.

http://www.nardep.info/uploads/Brief16_SocioEconomicNuclearPower.pdf

THE CONTRIBUTIONS OF RURAL SOCIOLOGY AND RURAL SOCIOLOGISTS

This article discusses the intersection of rural and environmental sociology.

<http://core.ecu.edu/soci/juskaa/buttel.htm>

THE ENDURING MYTH OF THE AMERICAN DREAM: MOBILITY, MARGINIZATION AND HOPE

This academic paper explores how the American Dream perpetuates as a myth and is in turn challenged by rates of social and economic mobility.

http://www.academia.edu/1400721/The_enduring_myth_of_the_American_Dream_Mobility_marginalization_and_hope