

Uranium: Silent Killer

New Mexico Supercomputing Challenge

Final Report

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Team # 100

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Executive Summary

Uranium mining on the Navajo Nation is a threat to human health. In the Navajo culture, uranium mines were a part of everyday life. Men and women worked in or near the mines daily. Children played close to the mines and sometimes at the mouths of the caves.

Unfortunately, the U.S. government did not reveal any of the health risks. Miners who worked in and around the uranium developed several types of cancer which led to early deaths. While working, the miners accidentally spread uranium deposits throughout their land. Two examples occurred as the workers whose shoes carried deposits walked from work to their home, and again when uranium spilled or splashed out of trucks as it was being transported. Uranium could also be found in various water sources. Needless to say, many people were affected by this harmful substance.

Introductions

Hypothesis:

If the miners in the model wear protective masks and hospital booties then the amount of deposit that came off them would not be as high as it was before.

Model:

In selecting a project, we decided to focus on something close to us that we could relate to. Uranium mining is a problem on the Navajo Reservation. We look at the ongoing battle over uranium mining in the Navajo Nation. Mining has occurred on Navajo territory for over fifty years and the impact is still being felt. The land has been dotted with contaminated tailings and hundreds of abandoned mines that have not been cleaned up. There have been few studies on the health effects in reservation communities, but Navajos have suffered from high cancer rates and respiratory problems. One study has found that cancer rates

among Navajo teenagers living near mine tailings are 17 times the national average.

There is currently no mining on the Navajo reservation but Hydro Resources Inc. has been working with the Federal Nuclear Regulatory Commission for years to try to get approval for mining near the Navajo communities of Crown Point and Church Rock, New Mexico. The company estimates nearly one-hundred million pounds of uranium exists on those sites making it worth millions of dollars.

Project Description

Hypothesis:

If the miners in the model wear protective masks and hospital booties then the amount of deposit that came off them would not be as high as it was before.

Model:

We chose to use starlogo because we thought it would be helpful to have the sliders and the visual aid, we also like how we can create our own environment. Creating and controlling our environment was important so that we could add factors and watch how they would result.

We would like to create a program with starlogo to show the uranium deposit being carried to another patch. We could use the shoe method or the truck method to do that. By that we mean we could show one turtle who walked home with uranium on its shoe and the other showing the deposit falling off a turtle.

Results

The results we hope to get is that the model the will give us the results that we hoped to get. We have designed the model to measure how much comes off when they use the protective masks and booties.

This is that the miners will not deposit too much when they are leaving the mine.

Conclusion

In conclusion, we would like to inform the public about the dangers of Uranium Mining on the Navajo reservation. The results we have seen is that wearing protective masks and booties are greatly effective. We hope if the Navajo Nation does decide to re-open the mines, that they will be more cautious and smart about how they mine Uranium on the reservation.

References

Internet:

- www.wise-uranium.org
- www.inmotionmagazine.com
- www.yosemite.epa.com
- www.yahoo.com

Books:

- Dine college Uranium Education Center Teacher Program
Outline Course

Acknowledgement

We would like to thank Mrs. Noble for helping us with our projects and other people for their support.

Appendix A

Here are a few pictures of miners at work



Mining uranium in the Navajo Nation.
Photo by Milton Snow. Used courtesy of the Navajo
Nation Museum.



*Rio Algom Mining Corporation's Smith
Ranch ISL Project.*
Photo: Claire Maden - Uranium Institute