

**Team ID/Name:** MMS184

**School Name:** Mesa Middle School

**Project Title:** Effect of Human Interaction With Wildlife

**Problem Definition:** No one knows about how badly us humans are affecting the wildlife around us; we want to change that. Even our normal lifestyle now - what we do everyday - harms the flora and fauna around us. When we expand our cities, farm resources, or build production units, we are hurting the environment.

**Problem Solution:** We, Gabriel Agnew and Jade Collins, plan to raise awareness of habitat loss and how humans are the cause of it. We want to show data of when there is no human intervention, and how animals and their habitat can thrive. The Chernobyl accident is a perfect example of how, when humans left, animals could triumph in their environment. In fact, the Chernobyl accident was a good thing for the animals in some ways. While the radiation affects them, human interaction is much worse. The humans destroy their habitat and shoot them. The radiation is a chance at birth defects, humans are a guaranteed death.

**Progress to Date:** So far, in our project, we have made the animals, humans, and the radiation plant. We have also added a decoy animal and a parameter to help code it easier. Our model shows, the radiation plant leaking and all of the humans that come in contact with the plant, die. Then we have some of the animals die when *they* come in contact with the plant. We set up a parameter so that when the humans touch the the edge, they dissapear to symbolize the humans running away; although we haven't successfully finished coding that part yet. We setup the parameter, but we haven't gotten to the humans disappearing part.

**Expected Results:** We will finish our model, which will show how much animals thrive when humans disappear, even in an unfavorable environment. It will model the steady repopulation of the animals in the Chernobyl area after all of the humans either, evacuated, or died.

**Review of Literature:**

1. [www.greenfacts.org](http://www.greenfacts.org) From this website, we learned how many people died at the time of the Chernobyl disaster, and how many people died after the accident. We also learned that the flora and fauna were directly impacted within 30km of the nuclear leak.
2. [www.nei.org](http://www.nei.org) We learned exactly what happened at the Chernobyl disaster from this article. According to this article, "The four Chernobyl reactors were...designed to produce both plutonium and electric power,...employing a unique combination of a graphite moderator and water coolant. The reactors also were highly unstable at low power, primarily owing to control rod design and "positive void coefficient," factors that accelerated nuclear chain reaction and power output if the reactors lost cooling water. These factors all contributed to an uncontrollable power surge that led to Chernobyl 4's destruction. The power surge caused a sudden increase in heat, which ruptured some of the pressure tubes containing fuel. The hot fuel particles reacted with water and caused a steam explosion, which lifted the 1,000-metric-ton cover off the top of the reactor, rupturing the rest of the 1,660 pressure tubes, causing a second explosion and exposing the reactor core to the environment. The fire burned for 10 days, releasing a large amount of radiation into the atmosphere."
3. [www.telegraph.co.uk](http://www.telegraph.co.uk) From this article we learned that, the Chernobyl site is one of the "most important habitats for scientists studying native wildlife in Europe.". We also

learned that the town of Chernobyl was 800 years old, and housed “a top-secret Soviet military base.”. The Chernobyl “zone” has become an unplanned sanctuary for many endangered species in Chernobyl. These fauna include the Lynx, the European Bison, the Przewalski Horse, and the Brown Bear (this animal is not endangered but hasn't been seen in this area for over a 100 years).

4. [www.livescience.com](http://www.livescience.com) From this article, we learned that the population numbers of the animals in the Chernobyl “exclusive zone” are similar to the population numbers in nearby nature reserves. In fact, the wolf population in Chernobyl is seven times greater than the population in the nearby nature reserves. We also learned that there was a similar nuclear leak - just not as bad - at the Fukushima Daiichi Nuclear Power Plant in Japan, in March 2011.
5. <https://news.nationalgeographic.com> From this article, we learned that scientists are still in a debate about whether the radiation is good or bad for the wildlife living in the Chernobyl exclusive zone. We also learned that, Chernobyl houses tons of birds, and a growing beaver population. The Beavers are returning the Chernobyl landscape to what it looked like a hundred years ago, a bog.

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