# Wars & Conflicts Have Increasingly Affected the Environment

## Case Study: Vietnam War (1954-1976) and Environmental Impact

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## Abstract

This research examines how wars and conflicts have reshaped ecosystems in many regions of the world, increasingly affected their balance, human health, and advancement for all living organisms on the planet. Through the use of different kinds of weapons, wars and conflicts cause air pollution, soil erosion, water contamination, contribute to global climate change, put species at risk, damage forests, agricultural lands, and all habitats. One of the most significant wars that have caused tremendous environmental damage is the Vietnam War (1954-1976). My case study examines the ecological impacts on Vietnam and the region during and after the war. It concentrates on the long term environmental consequences which required enormous effort and resources to return to the pre-war conditions. Military activities during the war caused extinction of many plants, animal species and birds, deforestation, rivers contamination and destroyed human lives. Many conferences and summits took place in order for action to be taken to protect and improve the environment of the region. Wars today are more environmentally destructive with the use of radiation, oil-exhaustive activities, and modern weapon technologies. Their huge effect on climate change can further complicate all life on the planet. All conflicts must be diplomatically resolved in order for the environment to be preserved for future generations.

Air planes during wars

Heavy military vehicles damaging dunes

## Consequences & Environmental Impacts

From the beginning of human history on Earth, the environment has always been affected accidentally and consciously by wars and conflicts. Wars and conflicts have caused air pollution, soil erosion, and water contamination through the use of chemicals, oil, bombs, mines and nuclear weapons. Chemicals such as sulfuric acid, ammonia, herbicides and waste products have often been dumped in soil and water during conflicts which caused diseases in humans and wildlife. The soil was also impacted during conflicts by military vehicles. North African deserts and dunes, that have taken thousands of years to form and cover with a thin layer of erosion protective crust, were being physically destroyed by trucks during World War II.

## Species are Put at Risk of Extinction

Automatic weapons are used for pouching in war conditions. In two months, during 1996 almost all hippopotamuses in Virunga National Park were killed, which is one of the worst war-related long term ecological disasters. At least nine mountain gorillas were killed in the same region during the Congo conflict in 2007 alone; elephants, buffalos and all species in African National Virunga Park are declared endangered by the United Nations World Heritage, because of armed conflicts.

Pouching Mountain Gorillas, Rwanda conflict

Rubber Plantations destroyed, Vietnam War

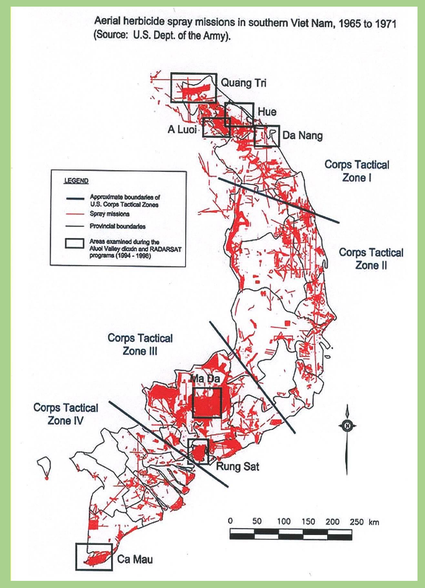
Burning Oil, Kuwait War (1990-1991)

Oil spill after sabotage, Gulf War (1990-1991)

## Wars Contribute to Global Climate Change

The most recent reports on global climate change conclude that there is a massive role of militarism as it is the most oil-exhaustive activity in the world, because of its use of fuel-guzzling planes, tanks and naval vessels in air and ground wars. Wars between 2003 and 2007, generated 141 million tons of carbon dioxide. The use of fossil fuels during this conflict has measured consequences in increasing the local temperatures by 5˚Celsius.

## Vietnam War: Case Study




The toxic chemicals, used by the U.S. army systematically for many years, reversed the natural ecological conditions and turned forests with a high biodiversity into wastelands. Many favorable habitats of different plants and animals were lost.

The Vietnam War (1954-1976), became well known with its massive rural area bombing, chemical and mechanical forest and crop destruction, intentional disruption of both the natural and human ecologies in Vietnam and its region. The scale and intensity of destruction caused by this war on ecosystems, plants and animals was never seen before. There were a variety of chemical mixtures used, but the most widespread and disruptive of them was Agent Orange. It is a chemical that contains quantities of dioxin and it is teratogenic that causes genetic and carcinogenic disorders with damaging effects on all living organisms.

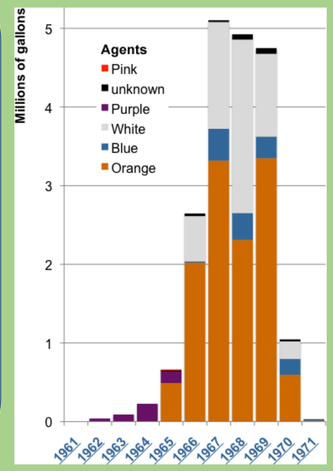
Mangrove forest toxic spray (left) and forest after (right)

## Results

The U.S. army sprayed huge amounts of toxic chemicals in more than 6500 missions during the War. There were 43 million litres of Agent Orange sprayed. The greatest ecological impact was done during the last stage of the war between 1961 and 1971 on the dense tropical forest of Vietnam. This affected many fields, tropical and mangrove forests, and rivers of Vietnam, Cambodia, and Laos. 1.8 million litres of Agent Blue were sprayed in Laos and the Ho Chi Minh trail near the border with Vietnam. Undocumented spraying may also have occurred.

More than 70 percent of the coconut groves, 60 percent of the rubber plantations, 110,000 hectares of forest, 150,000 hectares of mangroves, 43 percent of orchards plantations along with enough crops to feed 2 million people were destroyed. Almost all species of plants and trees such as *Hopea odorata*, *Sindora siamensis*, bamboo, forest canopies, and indigenous species of woody trees, lost their leaves or died, due to genetic alteration. Countless animals, including mammals and birds such as the Asian Elephant, Javan Rhinoceros, Tiger, Gibbon, Giant Ibis Duck and Edward's Pheasant, Crested Argus, Crocodile and Python were killed directly or indirectly by the herbicides. The most recent report shows that there is still a lack of fish in the herbicide affected areas.

Agents spraying amounts in Vietnam by years




## Impacts on Human Health

The dioxin as a compound of Agent Orange heavily contaminated the environments of Vietnam and some regions of Laos and Cambodia. It moved into the human food chain, affecting the life, reproduction, and development of all regions that were sprayed. More than four decades after the spraying ended, a quarter of the toxic pesticide remains were still found in the environment, soil, and rivers causing birth defects, type 2 diabetes, disorders of nervous and immune systems, and several forms of cancer in humans.

## Conclusion

After the Vietnam War, efforts by scientists, politicians, and the public were made to rehabilitate and replant several indigenous species of trees that were destroyed during the massive chemical dumping. The Vietnamese government conducted a successful program based on the World Conservation Strategy and within 10 years reforestation of 1.5 million hectares was completed. There were new thoughts about the use of toxic chemicals, new legislation, and tremendous effort to rebuild the environment after its destruction. Despite this effort, some of the forests could not recover.
All military activities around the world continue to damage entire ecosystems, have an enormous effect on global climate change, and will further complicate all life on the planet.

Images Source: www.google.ca/images