

Pesticides, historic use

Human Health Risk

Ecological Risk

M - H

Socioeconomic Risk

Pesticides include any compounds employed to destroy, prevent, or control pests. By their very nature, these chemicals present some risk of environmental harm. The widespread use of chlorinated pesticides such as DDT and chlordane began with the use of DDT during World War II as a highly effective, long lasting, and inexpensive insecticide. It was the most widely used agricultural insecticide from 1946 to 1972. Chlordane, also introduced in the 1940s, was used extensively throughout the 1960s and 1970s to control lawn and garden pests. Recognition of the ecological and human health hazards of chlorinated pesticides led to a United States ban on DDT in 1972, and chlordane in 1988. Because these compounds remain stable for long periods of time, residues continue to be detected in New Jersey soils, sediments, surface, and ground water.

What's at risk?

Since DDT, chlordane, and other chlorinated pesticides were used extensively, they continue to be detected throughout the state. Because these chemicals accumulate in animal tissue, species at the top of the food chain, especially fish eaters, are at greatest risk. Examples include osprey, bald eagle, and river otters.

What are the ecological impacts in New Jersey?

DDT and its metabolites (DDD, DDE) are found in soil samples throughout the state. Bald eagle and peregrine falcon eggs have been found to contain up to 30 parts per million of DDE in their eggs. High pesticide concentrations reduce eggshell thickness, making them vulnerable to breakage, thus impacting reproductive success for the population. Chlordane has been linked to large-scale bird poisonings in certain areas of New Jersey. During a 3-week period in 1997, chlordane-contaminated beetles, consumed by insectivorous songbirds, and ultimately birds of prey, resulted in a significant poisoning event that killed over 400 birds. Whether similar conditions exist throughout New Jersey is unknown, but sampling indicates the hazard may be restricted to suburban areas where chlordane was used on lawns in the 1960s and 1970s.

What are the socioeconomic impacts in New Jersey?

The socioeconomic TWG estimated impacts from pesticide exposures from all sources. Using national estimates, at least \$8 million in medical costs may be expected as a result of increased childhood cancers and accidental poisonings related to pesticide exposures. Studies have shown that most people worry about pesticide residues in food. Potential loss of biodiversity may also contribute to an aesthetic impact. Overall, socioeconomic risks from pesticides are considered high, but there are significant uncertainties.

What's being done?

Bans on the use of chlorinated pesticides have decreased their presence over time, but as much as 50% of these persistent compounds may remain in the environment. Federal and state regulations control the levels of chlorinated pesticides permitted in drinking water and food. Contaminated sites requiring cleanup must meet federal and state requirements for chlorinated pesticide concentrations.