

Pesticides, present use

Human Health Risk

Ecological Risk

M - L

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. Approximately 600 substances are registered as pesticides—this analysis focuses on the risks associated with a subset commonly used in New Jersey. Aquatic herbicides such as copper sulfate are applied directly to surface waters to control weeds and nuisance insects. Oxamyl is an insecticide used on a variety of crops, typically apples, potatoes, and tomatoes. Diazinon is a versatile insecticide used widely on both croplands and turfgrass. Resmethrin is another broad-spectrum insecticide commonly used in mosquito control.

What's at risk?

Aquatic ecosystems throughout the state are at risk from unintended effects of weed and nuisance insect control pesticides. Atlantic, Burlington, Cumberland, Gloucester and Salem counties typically record the heaviest agricultural pesticide use in the state. Foraging birds, mammals, fish, and beneficial insects, such as honey bees, are at risk.

What are the ecological impacts in New Jersey?

Even when used in an appropriate and legal manner, commonly used pesticides create adverse impacts on non-target species. Oxamyl is typically applied to a variety of crops during critical periods of bird and mammal reproduction, increasing the risk of reproductive effects. Bird kills associated with diazinon application are well documented, as are its toxic effects on honey bees, fish, and aquatic invertebrates. Incidents of wildlife mortality associated with diazinon have been steadily increasing, with the majority occurring on turf sites, such as lawns. The use of resmethrin has increased in response to health concerns associated with mosquito-borne illness (West Nile virus) along with a corresponding increase in the risks to non-target populations.

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?

There are controls on where oxamyl, diazinon, and resmethrin may be applied and by whom. The DEP Pesticide Control Program licenses professional pesticide applicators and conducts monitoring for ecological impacts in New Jersey. Outreach programs help to educate the public on the safe and responsible use of pesticides. Acute and chronic impacts to non-target organisms are occurring under legal uses; further exploration is needed to determine whether allowable uses are protective of ecological integrity.