



DEPARTMENT OF THE INTERIOR

INFORMATION SERVICE

FISH AND WILDLIFE SERVICE

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A warning that care must be taken in applying DDT to field and forest areas if wildlife is not to be endangered is contained in a report published today by the Fish and Wildlife Service, United States Department of the Interior.

Damage to various kinds of animal life - especially to commercially valuable resources such as fish and crabs - is likely to be widespread and severe unless the spraying of the insecticide is restricted to the lowest concentrations useful in insect control, according to Clarence Cottam and Elmer Higgins, authors of the report.

The publication summarizes results of preliminary field investigations carried on chiefly in Maryland and Pennsylvania, and on a smaller scale in 10 other states and Canada, by scientists of the Fish and Wildlife Service in cooperation with other state, federal, and private agencies. The report was prepared as a guide to entomologists, control operators, and the general public now using DDT for insect control. It will be followed by a more detailed publication when additional studies, now under way, are completed.

Pronounced mortality among wildlife resulted from the use of high concentrations of DDT - more than two pounds per acre - but mortality was slight in most instances where lower concentrations were used, the experiments showed.

Fishes, crabs, and frogs in general appear to be more seriously affected by DDT than are birds and mammals. However, the observations now reported are based in most instances on a single application of the spray. The effect on wildlife of repeated applications, required for the control of mosquitoes and some field and orchard insects, is not yet known.

Fish in general are highly susceptible to DDT, but some species appear to be harmed more easily than others. In a section of the Patuxent River in Maryland that was experimentally sprayed, dead fish drifted into a net stretched across the stream at the lower end of the sprayed section for four days after the spraying, although the heaviest mortality took place during the first 48 hours.

In a pond treated with DDT at the rate of 1 pound per acre, 80 percent of the bluegill sunfish were killed, 93 percent of the red-bellied sunfish, and 78 percent of the yellow perch. In one pond, an application of only one-tenth pound per acre resulted in the loss of 43 percent of the fishes present.

Direct application of DDT to streams, lakes, and coastal bays should be avoided as far as possible, according to the Fish and Wildlife Service. Not only are fish endangered by the insecticide, but heavy losses among crabs and other aquatic animals are likely to result.

In one spraying of the shores and shallow water along the southern end of Island Beach, N. J., 150 dead or dying crabs were found in a 200-yard stretch of the sprayed area ten days after the application of DDT, although the concentration used was only one-half pound per acre.

The effect of DDT on birds appeared to be related to the concentration of the spray. In Lackawanna County, Pa., a census of breeding birds was taken on two tracts of forest land before and after the areas were treated with a DDT oil spray. Within 48 hours after spraying at a concentration of five pounds to the acre, the bird population was much reduced. In the area sprayed with a concentration of one pound to the acre, little effect on the bird population was apparent.

The greatest damage to wildlife as a result of use of DDT is likely to occur in agricultural areas, according to the Fish and Wildlife Service report. "About 80 percent of our game birds, as well as a very high percentage of our nongame and

insectivorous birds, and mammals are largely dependent upon an agricultural environment. In such places application of DDT will probably be heavy and widespread. A well coordinated study of the application of DDT to agricultural crops will minimize such damage."

In order to reduce damage to wildlife to a minimum, the Fish and Wildlife Service stresses the following recommendations:

"Use DDT for the control of an insect pest only after weighing the value of such control against the harm that will be done to beneficial forms of life. Wherever more than a small area is involved, consult county agricultural agents, State or Federal entomologists, wildlife and fishery biologists, and United States Public Health Service officials.

"Use one-fifth pound or less of DDT per acre in an oil solution to avoid damage to fishes, crabs, or crayfishes; use less than 2 pounds per acre to avoid damage to birds, amphibians, and mammals in forest areas. Because of its greater effectiveness, use smaller quantities of DDT in emulsions.

"In the control of early appearing insect pests, apply DDT, if possible, just before the emergence of leaves and the main spring migration of birds; for late appearing pests, delay applications whenever practicable, past the nesting period of birds. Adjust crop applications and mosquito-control applications so far as possible to avoid the nesting period.

"Wherever DDT is used, make careful before-and-after observations of mammals, birds, fishes, and other wildlife."

A copy of the new publication, Circular No. 11, "DDT: Its Effects on Fish and Wildlife," can be obtained at 5 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. The circular is not for sale by the Fish and Wildlife Service.

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