

life management include antimycin for the control of rough fish, an avicide to control starlings at livestock feedlots, and a rodenticide for the control of pocket gophers. Now being tested in the field are a chemosterilant which may be used against coyotes, and a distress-producer which shows promise for cutting down on blackbird damage to corn and other cereals. This compound is mixed with grain. Those birds which eat the treated grain—say, 10 percent of a flock—lose muscular coordination and sound their distress cries, which may frighten away the unharmed 90 percent.

Ungulate populations in national parks and monuments, wildlife refuges, and other areas often suffer (1) from ranges that extend beyond the park boundaries and that have been drastically modified by man and (2) from the almost complete lack of predator populations due to past predator extermination programs. This results in exploding populations combined with inadequate food supplies, thence severe winter starvation periods. Considerable research is required to determine range condition, migration patterns, etc., and to determine the most effective and biologically feasible methods for managing and controlling these populations. In national park areas, this program is carried out with the aim of maintaining as natural an ecological condition as possible.

PESTICIDE USE AND CONTROL

The sale of pesticidal chemicals in the United States is reported to be increasing at the rate of 10 to 12% each year, and is expected to total \$2 billion by 1985. An almost unbelievable amount of chemicals is applied to land and water areas of the country. Many pesticides are highly toxic to fish and wildlife, and their large-scale use constitutes a grave threat to these resources.

The Department's Bureau of Sports Fisheries and Wildlife and other Federal agencies are engaged in a united effort to bring about safer methods for pest control. These methods include the development of biological as well as chemical control agents. Promising materials are tested on several species of fish and wildlife, and data from these and other studies are used to determine the relative hazards of different pesticidal formulations to major species of fishes, birds, and mammals. Appropriate caution statements are included on the label of each pesticide registered by the Department of Agriculture.

Encouraging progress is being made in the development of improved control methods. Low-volume concentrations of malathion are effective against a number of economically important insects at dosage rates not found harmful to most species of fish and wildlife. Another new insecticide, Abate, controls mosquitoes with little apparent danger to fish and wildlife. Rather than broadcast two pounds per acre of highly toxic heptachlor for fire ant control in southeastern States, entomologists are now able to curb this pest with less than an ounce of Mirex per acre in a formulation which poses no significant hazard to wildlife. Similarly, there is a growing list of herbicides that can be used to control aquatic weeds without appreciable danger to fish and their food organisms.

Senator JACKSON. That completes the hearing today. We stand adjourned.

(Whereupon, at 12:40 p.m. the committee adjourned.)

