

BIRDS AND FOREST-RELATED PROBLEMS
IN THE PACIFIC NORTHWEST

David L. Otis
Chief, Section of Bird Damage Control
Denver Wildlife Research Center
USDA/APHIS
Building 16, Federal Center
Denver, Colorado 80225

ABSTRACT

Consumption of conifer seed by many species of birds, mainly Fringillids, has long been considered a factor in reducing the cost effectiveness of direct seeding for forest regeneration and, on a more local basis, bare-root nursery programs. The failure of early (circa 1910) experiments with direct seeding was attributed mainly to effects of seed-eating rodents and birds. Coincident with development and use of the compounds 1080 and Endrin for rodent and bird control, direct seeding began to play a major role in forest regeneration in the early 1950's. During the next two decades, approximately one-third to one-half of all artificial reforestation in the Pacific Northwest was accomplished via direct seeding. Approximately 1.5 million acres in Washinton, Oregon and California were directly seeded, mostly to Douglas fir. In the early 1970's, registration problems with many of these compounds, coupled with the Executive Order banning use of pesticidal control methods on public lands, contributed to the decline of direct seeding techniques.

Consideration of a return to direct seeding practices and/or sufficient concern about bird damage at nurseries leads to the need for recommendations aimed at bird control. First, however, it is useful to review the state of current knowledge relevant to this problem. The literature contains little quantitative data on the relationship between seed consumption by birds and subsequent production. There are several reasons for this knowledge gap, including: (1) past emphasis on rodent rather than bird damage, (2) difficulty in estimating seed consumption, and (3) difficulty in relating seed removal by birds to decrease in production. Although it may be a considerable challenge to overcome these difficulties, a prudent first step may be to conduct research focused on quantification of the problem and identification of factors that can influence the magnitude of the damage. Such information, when combined with estimates of necessary resources for development of various control techniques, will allow an evaluation of research strategies from a cost-benefit perspective.

Chemical repellents represent the most logical choice for consideration as a method for bird control. Within this class, DRC-736 (methiocarb) is the top candidate for development. The compound has been shown to be an effective repellent for many species of birds in many different crops. Field studies have shown the effectiveness of Mesuro 75% Seed Treater (1 percent a.i. methiocarb) in protecting

nursery plots of ponderosa pine seeds from mourning doves. Concurrent laboratory studies revealed no phytotoxic effects to three species of conifer seed at concentrations up to 4%. Federal registration of such a tool may be relatively inexpensive because MesuroI is currently registered as a bird repellent for corn seed. In addition, three northeastern states currently maintain state 24C registrations for MesuroI on conifer seed. Several variations on this basic approach are possible. For example, methiocarb has shown activity as a rodent repellent, and it may be possible to identify a concentration that would be effective for both birds and rodents. Similarly, it has been suggested that a combination of methiocarb, mestranol, and monastrol green may be most effective as a bird and rodent repellent, although the cost of registration of such a tool could be substantial. The cost-benefit of such treatments could perhaps be increased by diluting treated with untreated seed, based on results from Batesian mimickry models.

Proceedings of the Symposium on Animal Damage Management in Pacific Northwest Forests, Spokane, WA, 1987, pp. 63-64