LONG-TERM IMPACT OF BT ON DIET AND REPRODUCTIVE SUCCESS OF CHICKADEES – 1988

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ABSTRACT – Studies in northwestern Oregon in 1986 and 1987 found that spraying with *Bacillus thuringiensis* (BT) caused significant reductions in Lepidopterans, but no significant secondary effects to nesting Chestnut-backed Chickadees (*Parus rufescens*), although there were sudden nest failures from unknown causes during a one-week period following treatment in 1987. This follow-up study monitored for residual effects on chickadee reproductive success and recovery of caterpillars, an important food resource for chickadee nestlings. A total of 153 nest boxes at seven sites around Portland, Oregon, were used to monitor Chestnut-backed and Black-capped Chickadee (*P. atricapillus*) nest activity in 1988. Eggs or nestlings were counted and visual diet samples collected. Of the 29 chickadee nests studied, seven were in the treatment areas. Predation eliminated several of the nests, leaving a sample size too small for statistical testing of reproductive success. However, the percent of eggs hatched and nestlings fledged in the treatment sites appeared comparable to the control sites. The proportion of caterpillars in diets of chickadees was still significantly lower in sprayed areas (71% compared to 90% at control sites), but higher than in the treatment year (45%), indicating partial recovery of Lepidopteran populations. There were no detectable long-term impacts of BT spraying on the parameters of chickadee reproductive success that were investigated.