Oregon Department of Agriculture Gypsy Moth Eradication Program: Comments on the Environmental Assessment for Jackson and Multnomah Counties, February 12, 2001

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Introduction

The Xerces Society and the Audubon Society of Portland recognize that the Asian strain of gypsy moth (*Lymantria dispar* L.) poses a serious threat to trees. We support the Oregon Department of Agriculture in their desire to contain the threat. However, we have serious concerns about the proposed treatment and the Environmental Assessment (EA) that was completed for Forest Park, Portland. Our concerns focus on four issues:

- the lack of data on Asian gypsy moth populations in the Park,
- the lack of data on nontarget Lepidoptera in Forest Park,
- the impact of *Btk* spraying on nontarget Lepidoptera, and
- other options that have not been adequately explored.

Asian gypsy moth populations

There is an increasing tendency among agencies to initiate Asian gypsy moth eradication programs based on the trapping of adults alone. It is important that a second life stage (eggs, larvae, pupae) be found before initiating a program that may not be necessary. In fact the decision to treat 910 acres of Forest Park and adjacent business areas is based on the discovery of *a single male moth* in a pheromone trap. Since the one specimen was found in a trap that had not been inspected during the summer, all that we can truly say from this evidence, is that one male Asian gypsy moth has been trapped, *not that there is a population or even a breeding pair in the area*.

How accurate is ODA's assessment that a single male specimen equals a population capable of successfully breeding? There is no indication of how long the *one moth* might have been in the area. Subsequent ground surveys failed to provide any other evidence of egg masses or any other life stages of Asian gypsy moths. The trapping site is close to docking facilities on the Willamette River where Asian gypsy moths are likely to be transported, so it could equally be assumed from this evidence that this is an isolated individual that flew off a ship.

Although females of the Asian strain of gypsy moth can fly up to 18 miles, there is no evidence of Asian gypsy moths (except the one that was found) in the treatment area, suggesting that either there may be no additional moths, or that they have flown beyond the treatment area. *In both situations, aerial spraying of more than a square mile around the trap location will have no impact on the Asian gypsy moth.*

- ***We strongly urge ODA to postpone the proposed aerial spraying program until a more accurate assessment of the actual population of moths is known.***

Known status of Lepidoptera in Forest Park

There is no complete survey information about the existing populations of Lepidoptera in Forest Park, so a true assessment of the impact of the proposed spraying cannot be made. The statement "Thus, the proposed action is not expected to have any significant adverse impact on threatened or endangered species, or on any candidate species in Portland" (EA, page 17, paragraph 4) is based on ignorance of Lepidoptera populations rather than knowledge. The ODA appears to have limited information on the populations of Lepidoptera in the treatment area, and so is not in a position to state whether there are or are not vulnerable nontarget species within the spray treatment area.

The margined white (*Pieris napi marginalis*) and Clodius parnassian (*Parnassius clodius*) butterflies, and probably others, have been absent from Portland for many years in general but may well survive in Forest Park—no one has surveyed for them, not to mention many moths. Without a thorough survey, it cannot be determined if there are threatened, sensitive, or endangered species in the project area. Any federal or state agency that initiates projects that may impact endangered or threatened species must consult with the United States Fish and Wildlife Service. The consultation is required under the Endangered Species Act.

- ***The ODA should initiate surveys to properly understand the populations of all Lepidoptera so that a decision can be made based on a true knowledge of the proposed treatment area.***

Nontarget impacts of *Btk* spraying

Is *Btk* spraying overkill? Although *Btk* is far less damaging than the broad-spectrum insecticides used in the past (which gave rise to Rachael Carson's *The Silent Spring*), it still has a wide impact on nontarget insects. *Btk* is lethal to Lepidoptera—butterflies and moths—resulting in an order of insects being almost wiped out. Although Lepidoptera is the only order of insects that *Btk* will impact, this order is one of the most diverse, with

potentially hundreds of species in Forest Park. If the ODA policy of eradication using aerial *Btk* spraying is allowed to continue every time a gypsy moth is discovered, a dead zone for butterflies and moths could be created around the port.

Jeff Miller (2000), working at OSU, found a decline in Lepidoptera species abundance of between 80 and 100 percent and a decline in live caterpillar mass of between 84 and 99 percent, following aerial application of *Btk*. Although there is substantial recovery after three years, there is no evidence to indicate a complete recovery of all species to previous abundance.

There are substantial food-chain impacts: larvae-feeding warblers, moth-feeding bats. With habitats already highly fragmented, we should think very hard before stripping a significant area of the country's largest forested urban park of its Lepidoptera.

This impact appears to be trivialized by the Environmental Assessment. The EA quotes a study in Virginia that confirms the immediate affects of *Btk* spraying as "limited to immature Lepidoptera" (page 21, paragraph 5). Since immature Lepidoptera become mature Lepidoptera (i.e. butterflies and moths), this statement seems disingenuous at best. The same paragraph continues, "Other insects, including most beneficial types, are not affected," which appears to suggest that Lepidoptera are not beneficial.

ODA Environmental Assessments for all gypsy moth outbreaks in Oregon appear to be substantially similar documents (cut and paste). Surveys must be completed to determine the impact on non-target populations before each control program is implemented.

As a State agency the Oregon Department of Agriculture must follow applicable environmental laws and decisions should be preceded by a complete environmental analysis (NEPA, 42 U.S.C. 4321 et seq.).

- ***The ODA should prepare a document that details the effects of this project on wildlife resources. These resources include all of the Lepidoptera in the project area.***

Other options need to be explored

There are many other options. The GypChek virus and lymantriid-specific *Btk* strain would lessen the impact on non-target Lepidoptera. Intensive pheromone trapping should also be explored. It is wrong to be locked into a policy that is so rigid in its implementation that it may be far worse than the problem being treated.

- ***The ODA needs to vigorously explore alternatives to blanket* Btk *spraying as the control method of choice. Using GypChek virus, pressuring for commercial availability of the lymantriid-specific* Btk *strain and intensive pheromone trapping are all viable options.***

Conclusion

We cannot continue to spray large areas every time a gypsy moth flies in from the Port of Portland. *If the Oregon Department of Agriculture continues with its current policy of eradication every time a gypsy moth is discovered, we could see dead zones around Portland's port, where butterflies and moths have been killed off.*

There are alternatives. The ODA must determine if there is a viable population of gypsy moths in the project area, must learn more about the non-target Lepidoptera that will be affected, and try all alternatives before more needless spraying is carried out if they expect to obtain conservationist support for these kinds of preventive reactions.

References

Miller, J. C. 2000. Monitoring the effects of *Bacillus thuringiensis kurstaki* on nontarget Lepidoptera in woodlands and forests of Western Oregon. Pages 277-286 in P. A. Follet and J. J. Duan, editors. Nontarget Effects of Biological Control. Kluwer Academic Publishers, Boston, MA.

National Environmental Policy Act. 42 USC 4321 et seq.