

5. UNDERSTANDING THE GYPSY MOTH THREAT IN BRITISH COLUMBIA:
DEVELOPING A STRATEGIC PLAN

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Introduction

For the past eight years, occasional collections of gypsy moth (Lymantria dispar) have been recorded and mapped in southwestern British Columbia. To date, these occurrences have been sporadic, small, and mostly confined to urban settings (e.g. Kitsilano, Fort Langley, Chilliwack, Courtenay). We consider our present situation here minor and inconsequential in comparison to the recent "explosions" in Ontario (Table 1) and the big surprise in Lane county, Oregon in 1984 (Buffam, these proceedings). However we consider the B.C. situation fortunate as well because there is now a golden opportunity to develop a master plan to deal with this pervasive pest based on the experience of others.

Table 1. The Ontario situation as summarized in the Great Lakes Forest Research Centre's summer 1985 "Survey Bulletin"

Year	Gross Area (ha) of Moderate-to-Severe Defoliation
1981	1 450
1982	11 600
1983	40 954
1984	80 624
1985	246 342

Gypsy moth infestations, which are known worldwide and which have occurred in eastern North America for over 100 years, cause a variety of perplexing and complicated problems not wholly related to plant health or survival. In addition to the direct threat to certain agricultural and forestry crops, the pest may also:

- destroy or diminish amenity values,
- render recreational facilities unusable,
- significantly reduce property value,
- affect human health,
- by means of indiscriminate egg-laying habits (Figure 1), create quarantine zones or embargo conditions which threaten export of products.

The B.C. Plant Protection Advisory Council (PPAC) has accepted the challenge to develop a comprehensive strategic plan to facilitate the assumption of roles and responsibilities for several agencies of government while recognizing the multiple impacts of the gypsy moth. The plan must include the current emergency measures in place under federal legislation and regulations, while addressing a worst case scenario (the eventual establishment of gypsy moth as a new resident pest), and the need to activate appropriate provincial or municipal level procedures to augment or replace the federal responsibility as required.

This paper outlines current discussions, the major activities under consideration, and the framing of future roles and responsibilities of key agencies of senior governments. It is emphasized at this point that the plan is now only in the draft stage. The final PPAC document will be subject to approval and revision as required by representatives of the identified agencies. However, the basic objective is the production of a useful and flexible plan to deal with gypsy moth in the most responsible and proactive manner as possible.

Basic Ingredients for a Strategic Plan

To be effective, any interagency and operationally-oriented plan must be simple, short, and specific. As well, the plan must be flexible and "friendly" for the PPAC-member agencies identified as role players. These factors are particularly important when considering legislation, regulation, and policy that direct two or more tiers of bureaucracy, that accommodate special interest groups (i.e., forestry, agricultural, municipal, environmental), and which must influence the allocation of scarce resources.

In the case of this threat, members of PPAC's Gypsy Moth Strategic Planning Group have identified a simple three-dimensional matrix to accommodate the functions and activities of several government agencies on the assumption that roles and responsibilities will change over time. The plan also presumes the inevitable, but predictable permanent incursion by the pest into British Columbia (Figure 2).

Major concerns or activities that require further discussion and resolution which have been identified include:

1. Integration or connection of operational policies of diverse agencies,
2. Coordinated public affairs programs,
3. Intensive annual detection surveys,
4. Adequate and reliable funding,
5. Comprehensive operational information bank,
6. Pertinent local research and development projects.

These topics raise questions directly related to the roles and responsibilities of at least six agencies of federal and provincial government:

1. Agriculture Canada - Plant Health Division
2. Agriculture Canada - Canadian Forestry Service
3. B.C. Ministry of Forests (B.C. Forest Service)
4. B.C. Ministry of Agriculture and Food
5. B.C. Ministry of Municipal Affairs
6. B.C. Ministry of Lands, Parks and Housing

Other agencies such as Research Branch of Agriculture Canada and the Department of National Defence (e.g. Chilliwack and Comox Bases) will likely assume key roles also.

The PPAC plan will emphasize the need to cooperate and collaborate during Outbreak Phase I (Emergency) in order to defer Phase II (Early Establishment) or Phase III (Resident Pest) situations for as long as possible. The strategic plan will serve as a benchmark for interagency communication via PPAC as well as for internal resolution of involvement levels for participating agencies.

Three Scenarios

The PPAC acknowledges the need to address progressive incursion of gypsy moth into British Columbia. Brief scenarios have been developed to portray changing roles and likely responsibilities of the six agencies. A proposed Strategic Plan Matrix (Figure 3) has been developed for this purpose.

In the emergency phase, the scenario is based on federal regulations attached to the Plant Quarantine Act and current emergency response procedures. As portrayed in Figure 4, the lead role and major responsibility at this time is lodged with Plant Health officials attached to Agriculture Canada. Several provincial agencies, notably the B.C. Forest Service and the Ministry of Agriculture and Food, support and augment the federal effort, particularly in field surveys and in programs for public awareness. Clearly, Agriculture Canada has the primary mandate to allocate resources for detection and control operations at this stage.

The early establishment phase (Figure 5), likely to be the most difficult to identify with precision, will occur when several communities, forest stands, or agricultural areas are infested concurrently for a number of years.

At that time, additional actions based on provincial regulations will likely be required. Legislation such as B.C.'s Forest Act, Plant Protection Act, and Municipal Act could be utilized to reinforce Agriculture Canada's lead role and to share responsibilities. Difficult questions pertaining to funding, intensity of survey efforts, and the magnitude of control operations (likely utilizing the bacterial insecticide "B.t." will surface. The plan should provide means, primarily via PPAC deliberations, for evolving recommendations for executive decisions about interagency responsibilities and involvement. Depending upon the success or failure of intensified detection and control efforts, the situation, hopefully, could revert to Phase I conditions, or at worst, develop into Phase III.

At Phase III (Figure 6), British Columbia has reluctantly acknowledged gypsy moth as a new resident pest. Here, federal efforts diminish, and lead roles and major responsibilities for surveys and control will most likely shift to provincial authorities. Hopefully, Agriculture Canada would maintain momentum in public relations, information collection, and research.

Regardless of the sequence and time frames for the potential establishment of gypsy moth in B.C., responsible agencies of government will have critical linkage well in hand to deal with operational needs. This coordinated effort, based on the PPAC strategic plan, will represent British Columbia's best proactive effort to deal with the problem. With insertion of new techniques whenever possible, along with a reasonable allotment of luck, chances will be good that the "inevitable" will be prolonged for a very long time. But when and if it does happen, British Columbia will be ready.

Acknowledgements

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Captions for Figures

- Figure 1. Egg masses on vehicle wheel assembly representing the potential spread of hundreds of caterpillars. (Photo courtesy of U.S. Department of Agriculture)
- Figure 2. Three hypothetical phases of gypsy moth incursion into British Columbia.
- Figure 3. A strategic plan matrix for interagency cooperation.
- Figure 4. Potential roles and responsibilities during the emergency measures (Phase I).
- Figure 5. Potential roles and responsibilities during the early establishment (Phase II).
- Figure 6. Potential roles and responsibilities after establishment as resident pest (Phase III).

PHENOLIC RESIN DETRICTION WITHIN AN AREA

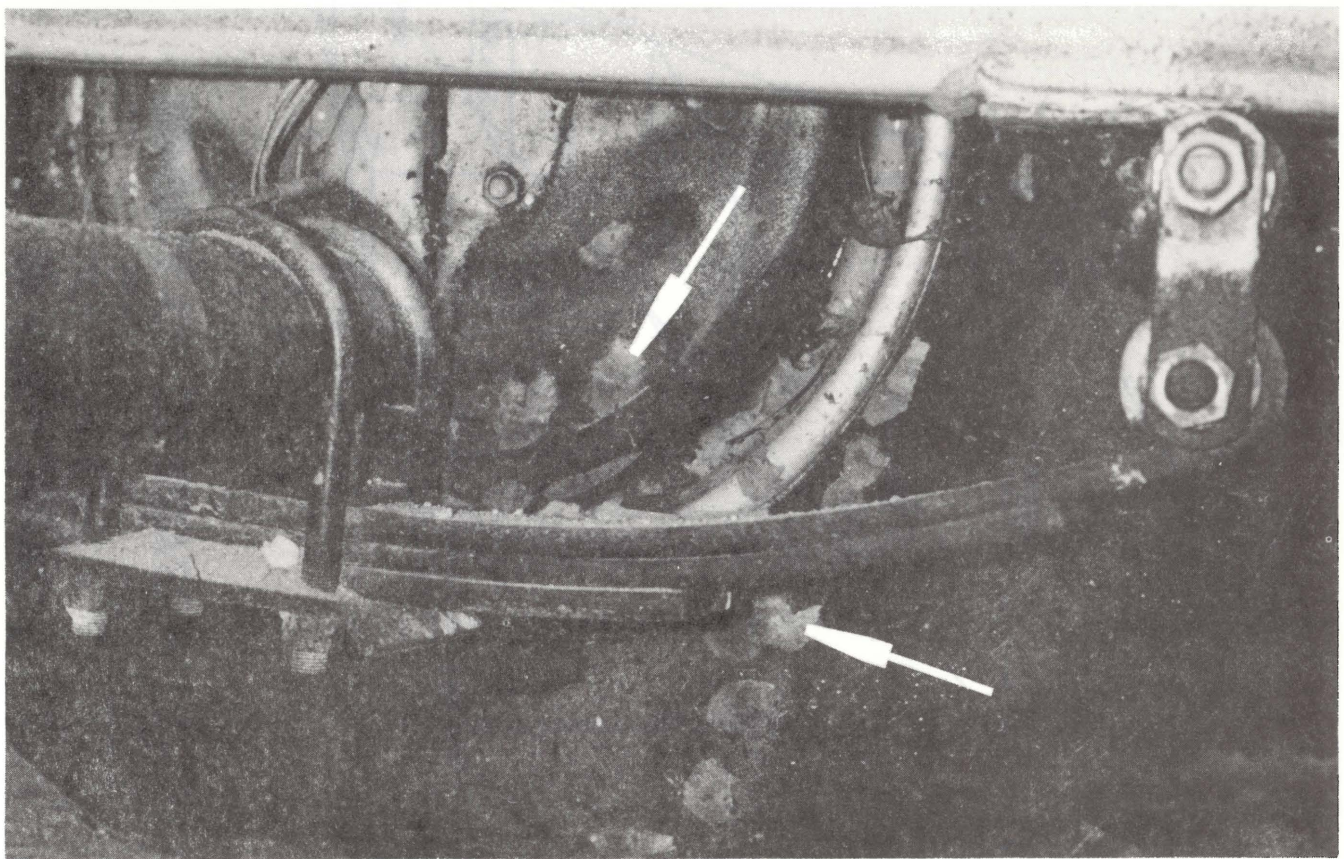


Figure 1

FREQUENCY OF DETECTION WITHIN AN AREA

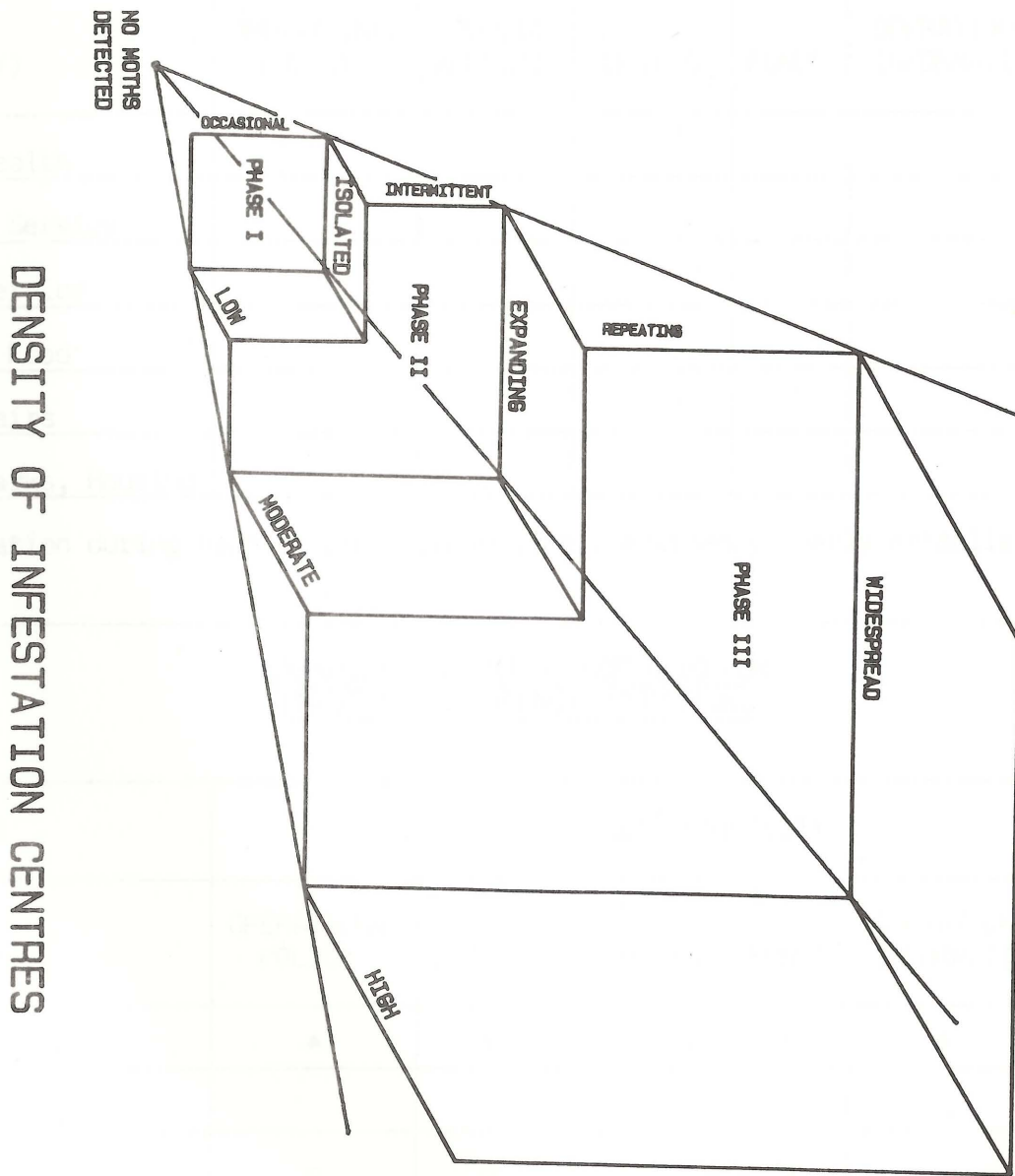


Figure 2

Figure 3

B.C.P.P.A.C.
STRATEGIC PLAN MATRIX FOR INTERAGENCY COOPERATION*

ROLES	RESPONSIBILITY					
(AGENCY)	OPERATIONAL POLICY	PUBLIC AFFAIRS	SURVEYS	FUNDS	OPERATIONAL INFORMATION	RESEARCH & DEVELOPMENT
AgCan Plant Health						
Cdn. Forestry Service						
B.C. Forest Service						
Min. Agric. & Food						
Min. Mun. Affairs						
Min. Lands, Parks, Housing						

*For consideration during each outbreak phase (i.e., emergency, early establishment, resident pest).

Figure 4

EXAMPLE: POTENTIAL SCENARIO FOR
 PHASE I. EMERGENCY OPERATIONS

ROLES	RESPONSIBILITY					
(AGENCY)	OPERATIONAL POLICY	PUBLIC AFFAIRS	SURVEYS	FUNDS	OPERATIONAL INFORMATION	RESEARCH & DEVELOPMENT
AgCan Plant Health	▲	▲	▲	▲	▲	▲
Cdn. Forestry Service			□	□	□	▲
B.C. Forest Service	□	□	□	□	□	
Min. Agric. & Food	□	□			□	
Min. Mun. Affairs	□	□				
Min. Lands, Parks, Housing	□	□	□			

- ▲ Lead Role, Major Responsibility
- Support Role and Responsibility

Figure 5

EXAMPLE: POTENTIAL SCENARIO FOR
PHASE II. EARLY ESTABLISHMENT

ROLES (AGENCY)	RESPONSIBILITY					
	OPERATIONAL POLICY	PUBLIC AFFAIRS	SURVEYS	FUNDS	OPERATIONAL INFORMATION	RESEARCH & DEVELOPMENT
AgCan Plant Health	▲	▲	▲	▲	▲	▲
Cdn. Forestry Service			□	□	□	▲
B.C. Forest Service	▲	□	▲	▲	□	□
Min. Agric. & Food	□	□	□	□	□	□
Min. Mun. Affairs	▲	□	□	□		
Min. Lands, Parks, Housing	□	□	□	▲		

- ▲ Lead Role, Major Responsibility
- Support Role and Responsibility

Figure 6

EXAMPLE: POTENTIAL SCENARIO FOR
PHASE III. RESIDENT PEST

ROLES (AGENCY)	RESPONSIBILITY					
	OPERATIONAL POLICY	PUBLIC AFFAIRS	SURVEYS	FUNDS	OPERATIONAL INFORMATION	RESEARCH & DEVELOPMENT
AgCan Plant Health	□	▲	□	□	▲	▲
Cdn. Forestry Service			□	□	□	▲
B.C. Forest Service	▲	□	▲	▲	□	□
Min. Agric. & Food	▲	□	▲	▲	□	□
Min. Mun. Affairs	▲	□	▲	▲	□	
Min. Lands, Parks, Housing	▲	□	▲	▲	□	

- ▲ Lead Role, Major Responsibility
- Support Role and Responsibility