

THE YELLOW POINT ACCORD:
SETTING A DIRECTION FOR RESEARCH AND
TECHNOLOGY TRANSFER FOR PEST MANAGEMENT
IN FORESTRY.

BY

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FOREWORD

In May, 1987, selected representatives of several organizations met at Yellow Point Lodge on Southern Vancouver Island to review past and current forest pest management research endeavors, and to determine parameters and priorities for the future. The group, a valid cross-section of special interests, traditional views, pragmatic perspectives, and particular needs, worked for three days and two nights to develop a potential path for recognition of priority work and collaborative opportunities.

The session was sponsored by the B.C. Forest Service's Research Branch as a result of several surveys which indicated the growing importance of organized forest pest research in this province. The project, coordinated by Research Contractor Rick Ellis, was endorsed by the Pacific Forestry Centre where the largest pest management research and development program resides. Dr. Malcolm Shrimpton, on work transfer for PFC to Protection Branch during 1988-89, has reviewed these records and recommendations in depth. His interpretation of the best opportunities and the path to adopt to optimize productivity (and thus satisfy forest management needs) are contained in this report.

Our intention is to pursue the opportunities contained in this report in order to (1) satisfy operational requirements, (2) ensure quality of research projects, and (3) collaboration and integration of resources wherever and whenever possible.

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Research Branch

G. Miller
Forestry Canada

R.F. DeBoo
Protection Branch

BACKGROUND

A workshop was held in May, 1988, at the Yellow Point Lodge near Ladysmith, B.C., to review the current status of technology relative to the management of forests to reduce the losses from pests. The need to integrate pest management into overall forestry management and a series of recommendations to this effect had been proposed earlier in a task force report (Sutton, et al., 1985). The workshop considered ways to improve the flow of new technology in pest management into forestry practice. Fifteen forestry specialists from the B.C. Forest Service, (BCFS), universities, industry and the Pacific Forestry Centre (PFC) of Forestry Canada attended. The workshop was led by R. Ellis, a forestry consultant who was under contract to the Research Branch, B.C. Forest Service and prepared a preliminary report (Ellis, 1988).

Workshop participants (Appendix 1), in reviewing the current situation, concluded that there is a genuine commitment to good forest management in British Columbia. They also concluded that there are good personnel in the field of pest management, with a broad base of experience and an indicated willingness to innovate. The historic information base is good and includes all of the major pests.

Despite the excellent resources of personnel and information in the field of pest management, a number of problems remain to be overcome. It has not been possible to establish clear roles and responsibilities for the various agencies in the province regarding the development and adoption of forest management practices for pest problems. This is partly due to a lack of linkages at the decision making level between the various agencies. Research, development and the application of new methods for pest management have not yet been coordinated into a sound program. As a result, pest management has yet to become part of the mainstream of forestry practices and pest impacts are not currently viewed in terms of stand rotations.

On the other hand, opportunities to get pest management into forestry practices are growing. There is a growing demand for wood supplies. Any reduction in the losses due to pests can help meet this demand. There is also a need to preserve amenity values and non-timber products from forested land. Any reduction in the present level of damage from pests can help preserve these values. Furthermore, industry has an increased responsibility for forest management as a result of amended legislation. This is generating a demand for knowledge and effective methods for pest management. Decision making systems and information technology must be applied to the issue of pest control in forestry. Training programs need to be developed for staff who will make the decisions and apply the pest management prescriptions.

A number of situations currently exist which threaten proposed programs to develop new pest management strategies and apply them in the mainstream of forestry practice. These threats include: the continuing policy to reduce staff in government agencies, a segmented research effort, restricted budgets, and environmental pressures which are curtailing established treatments (e.g., chemical options) before new or replacement methods are developed.

FIGURE 1

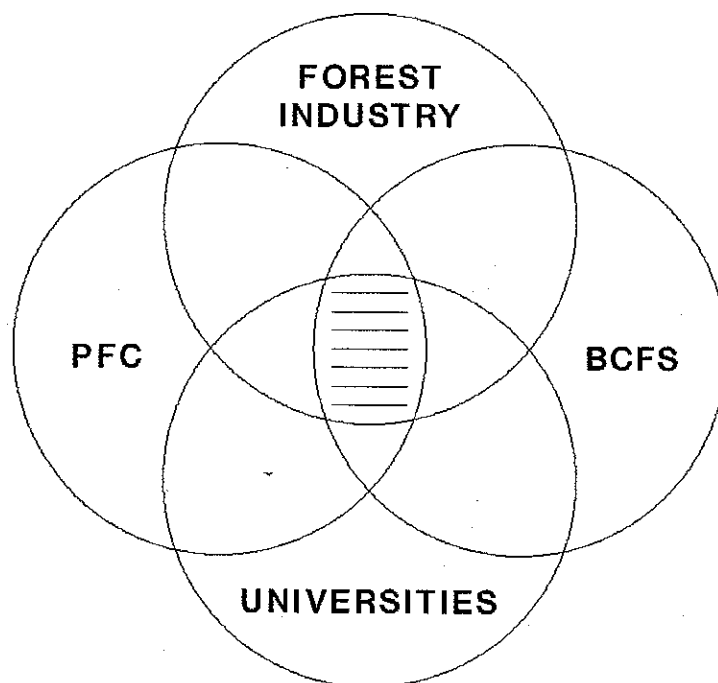


Figure 1. Modes of interaction between the British Columbia Forest Service, the Pacific Forestry Centre, Universities and Industry for a technology transfer program.

- * BCFS - British Columbia Forest Service
- PFC - Pacific Forestry Centre

These various strengths, weaknesses, threats and opportunities which all have significant effects at this point in time are reflected in an often confused and contradictory work environment. The workshop participants concluded, because of this working environment, that it is essential to define the needed projects and key tasks and accomplish them as quickly as possible. Roles and responsibilities for programs in pest management in the Forest Service, universities, industry and Forestry Canada, need to be defined clearly and agreed to by all parties.

OBJECTIVES FOR A TECHNOLOGY TRANSFER PROGRAM IN PEST MANAGEMENT

From the onset of the workshop, the group emphasized that research and development programs in pest management must encourage and make possible an interaction between industry, the universities, the B.C. Forest Service and the Pacific Forestry Centre. Part of the research and development program of each of these four sectors should have a common area of overlap (Figure 1). In the area of common overlap, a coordinated interagency program on pest management needs to be developed. Each participating agency should have input and involvement in any joint research, development and staff training programs. It was recognized that each agency would continue to have areas of exclusive concern and that joint work between any two will also take place. However, the emphasis in this workshop was on the development of cooperative efforts between all four responsibility centres.

Cooperation between agencies needs to continue into the application phase of a new technology, partly because technical aspects need to be refined during this phase. In addition, implicit in the application phase, is a training program for staff who will make decisions, apply the new technology or supervise its use. This training effort also requires input by technical specialists. Accordingly, the requirements for successful training programs were also discussed at the workshop. Within the Forest Service and industry, many of the field applications will be done by contractors. Also discussed, therefore, were the contract management procedures which need to be established and transferred to the field staff responsible for pest management.

There are several recent examples of new technology developed in Canada for pest management which can be evaluated for models for future programs. One of the better known examples is the use of B. t. (Bacillus thuringiensis) to control eastern budworm. The research role, which included live testing and small scale trials was principally the responsibility of research scientists in Forestry Canada Laboratories. As the program developed into the field testing stage, cooperative efforts between research scientists and provincial protection staff became the focus of program activities. Gradually other research agencies and private companies were drawn into a coordinated program to solve the production and application problems. Today, as a direct result of this cooperative effort, a product is registered and available for use against a number of defoliators. Research is now focused on specific application problems and the preparation of formulation for additional pests.

Workshop participants agreed that the mission for a joint program should be: to provide the forestry sector with effective tools that will enhance wood value and increase wood supply by 2 million cubic meters by 1995. It was deemed self evident that other forestry values, e.g. watershed, wildlife and recreation would need to be preserved.

The strategic objective agreed to by the workshop team was: to create a coordinated interagency program of pest management research and technology transfer which defines program priorities, components and processes and assigns roles and responsibilities.

IMPLEMENTING THE TECHNOLOGY TRANSFER PROGRAM

Who will be the clients for this program? This question is important because clients must ultimately support any research and subsequent training programs for them to be successful. Clients for the forest management applications developed through this projected program will be the District Managers in the Timber Supply Areas and the Divisional Managers responsible for the operation of Tree Farm Licences. These clients represent stable socioeconomic units. They operate in a goal driven environment and are committed to their area of responsibility. However, these clients generally represent a short-term perspective. They do, however, have long-term concerns for a stable wood supply. Because many of the effects of pests are part of the development and final breakup of stand structure, treatment of pest damage should become part of forest management to secure a stable wood supply.

To achieve the objectives set at the workshop, a process is needed which evaluates the pest problems which need attention and assesses the potential for applying new technology into their control. This process must then systematically develop the needed forest management methods, train staff in their application and ensure that these new methods become established forestry practice. Within the joint program, research opportunities need to be defined, issues ranked, responsibilities established and resources allocated. Each issue, to be addressed in a joint program, must be defined in objective terms.

The only existing system which reviews research needs in forest management on a broad basis across the province is the B.C. Forestry Service Regional (RRAC) and Provincial Research Advisory Committee (PRAC) structure. If this system can be utilized, several modifications will be needed. Pest management issues will need to be introduced into the system which is not generally the case at this time and these issues ranked according to agreed priorities. The universities and CFS must also have input into the process and industry concerns must remain an integral part of the process (Figure 2) if these institutions are to contribute to joint programs. Operational trials, it was stressed at the conclusion of the workshop are essential for the development and acceptance of pest treatments.

FIGURE 2

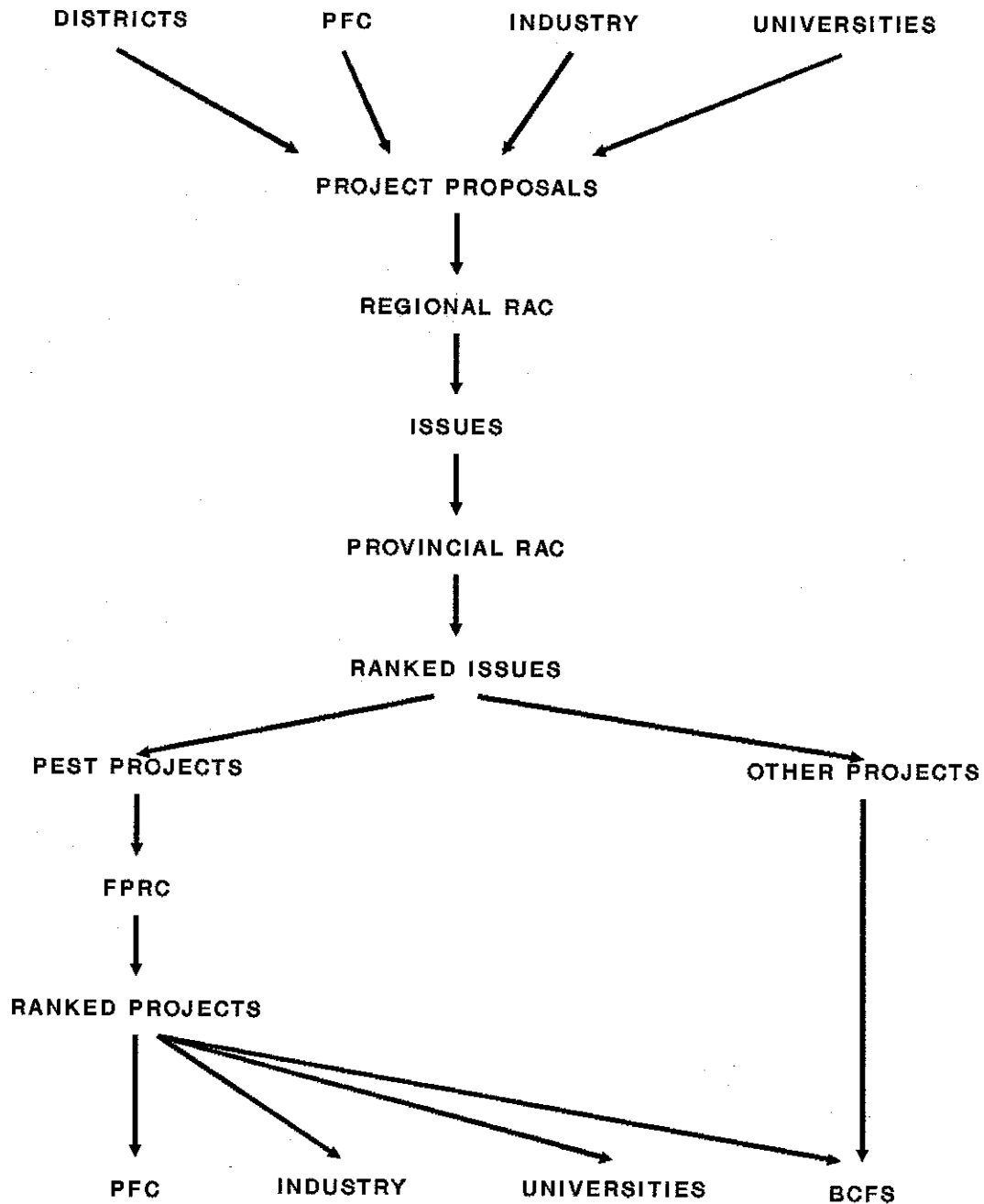


Figure 2. Process for the approval of research and development projects under the cooperative technology transfer program.

*PFC - Pacific Forestry Centre; RAC - Research Advisory Council;
FPRC - Forest Pest Review Committee

The impact of pests on forestry values is the first issue to address in developing a joint research and development process. Initially these impacts may be considered for individual pests but ultimately they must be considered as a complex of effects upon stand development. For this a reliable data base with sufficient detail, and measured in units understood and used by operational foresters, is needed. Steps must then be taken to ensure that field staff can recognize symptoms, identify pests, measure impacts and establish trends for pest damage. Training programs will be needed. These must be organized and receive Executive approval. The fire suppression training program was judged a good model. A target date in 1990 was judged realistic to complete these initial steps. Survey methods and standards, including training materials and aids must be developed to support the Pest Management Information System.

A procedure to develop and implement a pest management information system and train staff in its use was outlined by workshop participants. The outline is as follows:

- Develop a record system for pest impacts.
- Integrate this system into Forest Service procedures.
- Develop a process to update the system routinely.
- Develop procedures to check the operation of the system.
- Input pest impact data into the pre-harvest silvicultural prescriptions.
- Develop specifications for contracted operations.
- Develop quality control mechanisms for contracted operations.
- Develop training program structure and curriculum for operational staff.
- Secure Executive approval for the training program.
- Contract SIBC to manage the system and deliver courses.
- Develop and compile decision making aids appropriate for pest management operations.
- Prepare a training program for staff in the use of the decision making aids.
- Ensure that decision aids become part of operating procedures.

STAFF TRAINING

On the premise that field personnel are in the best position to make these appraisals of pest impacts, it is necessary to provide them with appropriate decision-making aids. Field staff must also be trained in the use of procedures to arrive at a sound decision. Again, well structured training programs and training materials need to be developed, approved and incorporated into the local, regional and province-wide operations of the Forest Service.

The day-to-day application of forestry treatments for pest problems was the last item reviewed at the workshop. At this time, it appears that many specific applications will be contracted. Treatments such as spray application, pheromone placement and disposal of infected trees can be done effectively by contractors. This will emphasise upon contracting demand a process based upon clear and unequivocal written documents. This situation again places major responsibility upon field staff. For the process to

operate effectively, field staff must be assisted in dealing with the problems associated with contractual operations. Quality control on contracted work is critical. Guidelines for contracts need to be written consistent with the rationale for each pest management application and must be clear on the reasons for the prescribed control action. This process needs to gain the acceptance of the relevant branches of the B.C. Forest Service.

THE NEXT STEP

Participants at the workshop agreed that it is essential to generate sound data bases on pest impacts and to obtain high level support for cooperative research and development programs in the field of pest management. However, committee structure which recognizes pest impacts and brings new applications and research and development opportunities to the attention of the decision makers is lacking. Advocates for pest management are also lacking within the present structure. Accordingly, the Protection Branch will take the initiative and develop a proposal for a Technical Advisory Committee which would have an advocacy and planning role for research and development in pest management.

In anticipation of a new Provincial Forest Research Advisory Council, this proposed committee should provide an opportunity to blend pest management activities firmly into the decision making process. The proposal to form a technical advisory committee will emphasize the benefits of a healthy forest and the gains resulting from sound pest management. Committee responsibilities would be:

- to define the benefits from forestry practices in pest management,
- to propose research and development programs that will result in gains,
- to provide a liaison and advocacy function with other committees and organizations, and
- to document and publicize successful programs.

LITERATURE CITED

Ellis, R., (1988). Pest Management Research and Training, Report of Workshop (May 18-20). File Report, British Columbia Forest Service, Protection Branch.

Sutton, R.C., P.M. Wood, T.L. Shore and R.D. Cozens, 1985. Report of the Task Force on a Pest Management Information System for B.C. British Columbia Forest Service, Protection Branch, Internal Report.

APPENDIX I

*Purpose of the workshop

Concern over the production and delivery of new information for pest management (insects, disease, and small mammals) has been growing for some time. Questions regarding the adequacy and priority of pest management research and tech transfer have been raised by operational managers and Protection Research Branch staff. In response to this concern and questioning, a cooperative review has been initiated by Research Branch (Henry Benskin, Mik Kovats), Protection Branch (Bob DeBoo) and the CFS (Gordon Miller). The mandate of the review is to:

1. Review the information needs (research and technology transfer) of operational pest managers; districts, regions, branches, and industry.
2. Evaluate the adequacy of the present research and technology transfer programs (BCFS, PFC, and academic) in meeting the need.
3. Develop and implement a new, coordinated strategy to improve both the production and delivery of pest management information.

Information is being collected via questionnaire to assist in the evaluation of steps one and two (see attached). A summary of the questionnaire results will be sent to you to assist you in preparing for the workshop.

Participants for this workshop were selected based on: their knowledge of the topic, their ability to represent their constituency, their ability and authority to make decisions and set objectives in creating a new strategy, and their position to implement the new strategy.

*This statement of purpose was included in the letter of invitation to the participants.

APPENDIX II

List of Workshop Participants:

W. Bloomberg	Pacific Forestry Centre
D. Calder	Gorman Bros.
R. Clevette	BCFS, Protection Branch
R. DeBoo	BCFS, Protection Branch
D. Errico	BCFS, Research Branch
G. Fraser	CIP
M. Geisler	BCFS, Smithers
D. Gilbert	BCFS, Protection Branch
B. Hall	BCFS, Inventory Branch
M. Kovats	BCFS, Research Branch
T. Lacey	BCFS, Merritt
J. McLean	UBC, Faculty of Forestry
G. Miller	Pacific Forestry Centre
J. Rahe	SFU, Biological Sciences
M. Wyeth	BCFS, Silviculture Branch

Facilitator: R. Ellis