

Minutes of the FGC Pest Management Subcommittee
Thursday, Feb. 3, 2005: 2:30 – 4:45 PM
Telephone conference - continuation of Jan 31 teleconference

Present: Robb Bennett (Chair), BC MoF	Coast pest management
Dan Gaudet, Vernon Seed Orchard Company	Interior industry orchards
Dave Kolotelo, BC MoF	Nursery and seed pest management
Ward Strong, BC MoF	Interior pest management
Staffan Lindgren, UNBC	University pest management research
Jack Woods, SelectSeed	Forest Genetics Council
Tim Crowder, Timberwest Forest Company	Coast industry orchards
Regrets: Dave Reid, BC MoF	Ministry Orchards
Roger Painter, BC MoF	FGC (guest)
Vacant:	Canadian Forest Service

ACTIONS:

Bennett	Prepare initial draft of response to FGC request.
All	Finalize response to FGC

CONVENED at ~ 2:30 PM.

AGENDA.

Agenda was designed to cover unfinished business from Jan. 31 meeting. Agenda approved with addition of two further items.

CONTINUATION OF RESEARCH DELIVERY MODELS DISCUSSION

- 1. Summary of e-mail discussions.** See attached typescripts of relevant information from e-mails circulated on 2 Feb. Bennett summarized relevant discussion from 31 January teleconference. Lindgren provided detailed commentary on University research delivery options and the Gene Conservation Centre model. Woods suggested a format for response, and provided insight on GCC model and potential for housing research within Ministry of Forests. Kolotelo asked for specific definitions of operational trials and applied research. Lindgren provided definitions within a general discussion of the nature of research.
- 2. The “3-legged stool” — clarification.** Subcommittee requested clarification of purpose and direction of the subcommittee’s response to the FGC request; the following was offered. The desired “delivery model” for the provincial cone and seed pest management program has 3 components (the “3-legged stool”): Operations, Extension, and Research. Subcommittee effort is striving to
 - strengthen ability of orchard staff to handle day-to-day regular pest management activities (OPERATIONS),
 - focus current TIB pest management group on primary duties of training for and support to orchard staff, assistance with research activities, and related extension duties (EXTENSION), and
 - propose a new model for addressing basic and applied research needs (RESEARCH). Present discussion is focused on Research because this is currently the weakest leg of the stool. Proposal presented to FGC will address all 3 legs.

Remainder of meeting was spent developing basic models for research delivery and is summarized below.

3. **University model.** University model would require Ministry of Forests involvement and direction from FGC (PMP) to ensure focus on FGC goals and priorities. It will be very important that the “right” person lead the University-based model. UBC is currently seeking to establish a new NSERC Chair in forest biology. This Chair would be a new program and not be a replacement for either John McLean (forest entomology) or Bart van der Kamp (forest pathology) who will soon be retiring. Canadian Forest Service will likely be contributing to this Chair; industry support is missing currently. Some possible **options** for University model are:

- UBC NSERC Chair, possibly based at Okanagan campus,
- Cone and Seed Pest Management Research Centre, modelled after UBC Gene Conservation Centre – lead by existing faculty member, funded through contribution agreement with FGC, guided by FGC (PMP business plan),
- Forest Service researcher posted to University – CFS or MoF employee with direct linkage to University (direct posting or secondment).
- Simple buy-out of teaching duties of existing faculty member

Some perceived **advantages** of University model are

- PMP subcommittee controls activities (Research Centre option)
- No salary dollars involved, assuming existing faculty member or employee leads
- Good venue for training new researchers (graduate students, post-docs)
- Good potential for industry support
- Good potential for leverage of funds.

Some perceived **disadvantages** are:

- Lead will be remote from orchard sites
- Potential for FGC to lose control of research activities
- Program will crash if not lead by “Dr. Right”

4. **Forest Service model.** Canadian Forest Service base for this model is unlikely to be successful as FGC funds would have high potential to be co-opted by national priorities. Subcommittee will not pursue this option. Ministry of Forests (Research Branch) base has some potential (especially if request comes from FGC and has industry support) although there will always be FTE concerns. Base could be located at existing Ministry orchard facility.

Some perceived **advantages** of Forest Service (MoF) model are

- PMP subcommittee controls activities
- Great potential for integration with University research community
- Good venue for training new researchers (undergraduate, graduate, post-doc students) if lead has adjunct University affiliation
- Good potential for industry support
- Good potential for leverage of funds if lead is adjunct

Some perceived **disadvantages** are:

- Slight possibility of loss of FGC control if position is co-opted by overriding issues
- FTE and other administration issues may be problematic
- Program will crash if not lead by “Dr. Right”

5. **Larger allocation model.** Under this model, a specific request for research proposals addressing particular topics and a larger allocation of funds would be made for the annual PMP Call for Proposals. This model is a slight improvement over the *status quo* and has the disadvantages of remaining reliant upon short-term funding and having no guarantees that priorities will be addressed or work will be carried out.

MODELS RANKING

Subcommittee members agreed that “larger allocation” model is least favoured for delivery of research needs. Opinions on ranking of University and Forest Service models was decided by vote: 5:1 in favour of Forest Service model for delivery of research.

Decision. Bennett will draft response to FGC request using format suggested by Woods. To address the Research leg of the 3-legged stool, Bennett will use the Forest Service / University / Greater Allocation models within the Gold / Silver / Bronze resourcing levels. Face to face meeting to finalize draft of “Response” was scheduled for the morning of Monday, 14 February 2005.

OTHER NEW BUSINESS.

Discussion on spring field meeting, projects feedback loop, 2005 seed orchard staff meeting, and summary of PMP progress-to-date carried forward to next meeting

ADJOURN.

Meeting adjourned by consensus at approximately 4:45 PM.

Minutes compiled by R. Bennett, 8 February 2005.

Relevant comments from 2 Feb 2005 e-mails

From Lindgren (re: University research options):

2. If there is a need for directed, applied research, then the best options would be to:
- provide funding at one of the universities for a research associate specifically charged with seed and cone pest management research. Such a position could be put in place as a term position, e.g., 5 years, or as a post-doctoral position.
 - alternatively, buy out teaching for an interested professor at one of the BC universities. This would probably cost around \$15-20,000 p.a. The buyout could be done on a year-to-year basis depending on the need for research in the area of expertise of the professor, or it could be continuing subject to available funds.
 - provide 1-2 scholarships @\$17-20,000 p.a. in support of graduate students working on seed and cone pest management issues under the direct supervision of the professor with whom the research associate is affiliated, AND one of the two BCMoF researchers (Bennett or Strong).
 - provide basic operating funds for research, preferably in such a manner that it can be levered through other research grants.

3. If the need is for increased knowledge, e.g., of life cycles, mechanisms of damage, chemical ecology (identifying and synthesizing pheromones etc.), downstream ecological effects of pesticide use etc., then other options may be better.

- it may be better to provide scholarships as per the Bennett model, because the funds would then be tied to the specific need. However, I would suggest that the application process should be for the scholarship PLUS operating funds, i.e., funding packages of \$30-50,000 p.a. should be anticipated depending on the project. Such a funding program would generate a high level of interest.
- a seed and cone pest management chair could be established at one university
- funding could be provided to a university for a seed and cone pest management institute, where the funds could be accessed by several faculty members (while perhaps administered by a particular faculty member)

It should be noted that any university involvement is unlikely to provide exactly what the program requires. This is because graduate training comes with specific requirements of their own, and these have to be met. Therefore, university research cannot replace the type of research that is of a more routine nature, e.g., pesticide efficacy tests etc.

From Lindgren (re: GCC):

[The Gene Conservation Centre is] funded through FIA (Forest Investment Account). This envelope is normally for industry, and can be applied only to topics that have been approved by the auditors. The approval includes explicit strategic goals developed by the appropriate government agency. For example, I know that Tim Ebata is part of the process to develop acceptable strategic goals and species that FIA money can be used for. They have specific approaches to gene conservation that they pursue. All of these are listed on the site. They also have a number of reports linked to the site. We need to formulate similar objectives, and probably a road map as to how to get there in order to have any success in getting funding from FGC (because the money would ultimately come from FIA?)

Consequently, it is really important that we develop clear strategic goals. These should be

relatively focused, e.g., minimize seed losses to pest organisms. Under this overall strategic goal, we need to have tactics. These would specify the activities that can be legitimately used to address the strategic objectives.

From Woods (re: formatting response, GCC, and MoF research):

Here are my thoughts on the response to Council.

Prepare a brief proposal with the following headings:

1. Purpose (i.e. response to FGC request)
2. Orchard pest impacts on FGC objectives (draw from existing spreadsheet; keep high level)
3. Program needs (operational; extension-research liaison-pesticide registrations; research)
4. Delivery (cover each of the 3 program needs)
5. Cost estimates (cover FIA, MOF direct, OTIP, orchard direct)

The university delivery option we started to discuss could take the form of the development of a "Centre", whereby the leader of the Centre would work with the PM Committee to develop annual priorities and a business plan. This is similar to the Gene Conservation Centre. The leader would likely be a professor at a BC university and would use FGC-directed FIA funds to develop a research program, including perhaps a post-doc, graduate students, and contract money where needed. Leverage of NSERC, BIOCAP, or other funds is possible. This option would use university staff, but it would allow additional resourcing of staff allowing the leader to direct rather than do all the work. I believe this option is well worth considering.

I also spoke with Henry Benskin about the possibility of a MoF scientist. He said that a well put together case from Council, with industry support, might convince Jim Snetsinger to find a way to get the FTE. Such things are difficult in the MoF still.

From Lindgren (re: research definitions):

"... there is an obvious continuum from basic research through applied research to operational trial. In other words, basic research leads to applied research, which in turn leads to operational trials when everything progresses as one would like.

First, to me research implies risk. In other words, you do research when you are looking for answers that you do not yet have answers for. One of the problems with the current FIA/FII envelope, is that what is being billed as research and approved for funding generally carries little or no risk, because the approval process is focused on the end user. In other words, if I propose a project where I know that the likelihood is very high that I can prove something that at worst will be neutral to end users, then the likelihood of funding is higher than if I propose something where I have no idea what the outcome will be, or even if I will get anything meaningful out of it at all. Again, there is no clear-cut boundary between research and trial or test, but the most fundamental difference to me is risk.

I see "applied research" as research that as part of its objectives includes an attempt to develop something that can be applied. The end component of that is very close to the operational trial, but is still bound by stringent rules in terms of replication and analysis. The level of risk decreases as you get closer to the operational trial. Applied research is also carried out at a

relatively small scale, e.g., blocks of 10 trees, individual trees, etc.

An "operational trial" is the final step in the process, where you take the best potential tools available to you, e.g., pesticides or pheromones, and attempt an operational scale application. The level of replication is often reduced at this point, control treatments are not always used because of the scale and because you presumably know from the applied research that treatment is better than control, and you have to be sure enough of the outcome to risk a substantial loss of crop if the application fails. It may also be an attempt to make an application by "operational methods", e.g., using full scale blowers for application (which again means that the scale has to be large).

The other difference I see is that in applied research, you generally collect information that you would not collect at the operational scale. For example, you may do fairly detailed extraction and emergence counts of the damaging agent. For a pheromone disruption experiment you may look at mating status of females or something similar. At the operational scale, you would be more likely to only look at the desired outcome, i.e., did the treatment prevent damage. Using the same pheromone disruption experiment, you would only look at crop damage and the benefit-cost ratio. But again, the boundaries are blurred because what you can do depends so much on available resources (funds and human resources).