

**REVIEW OF
BRITISH COLUMBIA
MINISTRY OF AGRICULTURE AND FOOD
WILDLIFE DAMAGE CONTROL
GUIDELINES
AS THEY APPLY TO THE
OPERATION OF PROPANE CANNONS**

FARM PRACTICES BOARD

MAY 1999

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EXECUTIVE SUMMARY

INTRODUCTION

The Farm Practices Board ("the Board") hears complaints about farm odours, noise, dust or other disturbances and may study, report on and make recommendations concerning any matter related to farm practices.

The Board, Ministry of Agriculture and Food ("MAF") and local governments have received numerous complaints about the noise arising from the operation of propane cannons ("cannons") used to protect agricultural crops from bird predation.

MAF, the Ministry of Environment, Lands and Parks and other agencies are reviewing the overall impact of wildlife predation on agriculture. The Board's review was based on MAF's August 10, 1996 Wildlife Damage Control Guidelines ("Guidelines") as they apply to propane cannons ("cannons").

BACKGROUND

Bird predation on agricultural crops is increasing. Pest bird population control can only be fully addressed by a multi-level, multi-jurisdictional and international review involving all levels of government, the industry and the public.

Cannons are used to protect fruit crops from bird predation. They are used from late spring through late fall, depending on the crop and the location of the farm.

The *Farm Practices Protection (Right to Farm) Act* ("the Act"), a statute enacted in 1996, is designed to protect farmers from injunctions or liability in nuisance for their farm operations. Under the Act, the Board hears complaints about the use of cannons to combat bird predation.

REVIEW PROCESS

The Board received eighty written submissions from the industry, government agencies, local governments and members of the non-farming community.

ISSUES IDENTIFIED IN SUBMISSIONS

Grower organizations and farmers using cannons were supportive of the existing Guidelines. Cannons are effective and currently used extensively. Farmers are seeking alternatives. The peer advisor system, where grower organizations work with farmers and neighbours to resolve disputes, works well. They agree that many parties need to come together on this issue.

A cannon supplier noted that few effective alternatives to cannons exist and generally agreed with the Guidelines. Farmers need to be trained in the proper operation of cannons, with regulated hours of operation a possible solution to some disputes.

The non-farming community expressed strong feelings about cannons. People have concerns about the effect of the noise on lifestyle, enjoyment of property and the health of human and animal residents. Also of concern were the hours of operation and frequency of detonations from multiple cannons in the same vicinity. Many did not think that cannons are effective. Several noted that farmers were difficult to contact when cannons malfunctioned or when the Guidelines were not adhered to. Concerns about the complicated dispute resolution process were also expressed.

Local governments and agencies focused on the times of operation, frequency of detonations and enforcement of the Guidelines. Cooperation between farmers, government and the public was a desired outcome of this review. Local governments called for the registration of cannon users and enforcement of the hours of operation.

BOARD'S GENERAL COMMENTS

The real problem is unmanageable pest bird populations. The Board will continue to monitor the progress of other initiatives examining the overall predation issue.

The industry feels that, used properly and in conjunction with other control measures, cannons are still an effective tool. It is equally clear that cannons have a very real social impact on the non-farming community.

The statutory privilege granted to farmers by the Act does not remove their basic obligation to consider the needs of non-farming neighbours. We live in a world that is increasingly crowded and complex. All of us must adjust.

BOARD'S RECOMMENDATIONS

The Board distinguished between the operation of noise devices in general and the operation of cannons. The major area of dispute is in the use of cannons to protect berry, tree fruit and grape crops on the Lower Mainland, the Fraser Valley and the Okanagan.

In making its recommendations, the Board has not determined a "normal farm practice" with respect to a specific farm subject to a formal complaint under the Act.

1. Pest Bird Population Control

The Board recommends that the Minister of Agriculture and Food, government agencies, the farming community and the non-farming community work together in addressing the underlying problem of pest bird population control.

2. Guidelines for the Operation of Propane Cannons

In order to maximize crop protection from wildlife predation and to minimize the impact of cannons on neighbours, the Board suggests that MAF and the industry adopt revised Guidelines for the operation of cannons.

Farmers:

- **should operate cannons only between 6:00 a.m. and 8:00 p.m. local time or dawn to dusk, whichever is of lesser duration;**
- **should operate no more than one cannon per two hectares of cropland at any one time;**
- **should try to alternate or relocate cannons being used on a farm operation at least every 4 days;**
- **should try to locate and/or aim cannons away from residences in close proximity to the farm;**
- **should maintain cannons, including timing mechanisms, to ensure they operate properly and not outside the recommended hours of operation;**
- **should, commencing in the year 2000, use cannons only as part of a wildlife predation management plan; and**
- **may, once a farm has an established wildlife predation management plan, use cannons for the protection of crops immediately prior to ripening to prevent habituation by birds.**

3. Wildlife Predation Management Plan

Studying bird predation on a farm helps to establish which control methods should be used. The appropriate use of control methods, including cannons, benefits the farmer and neighbours.

The Board recommends that grower organizations, in consultation with MAF, design basic, flexible and easy to use models of a wildlife predation management plan for use by farmers. These models may vary depending on the size of farms and the varieties of crops being grown.

Wildlife predation management plans should come into general use in the 2000 crop seasons. This will allow farmers to observe bird predation on their operations during the 1999 season, and for the development of model plans for 2000.

4. Prescribed Hours of Operation

The Board recommends to the Minister of Agriculture and Food that, effective immediately, hours of operation for cannons used to protect berry, tree fruit and grape crops from bird predation on the Lower Mainland, in the Fraser Valley and the Okanagan be prescribed by the Lieutenant Governor in Council as being from 6:00 a.m. to 8:00 p.m. local time or from dawn to dusk local time, whichever is of lesser duration.

Note: A farmer loses the protection of the Act if a cannon is used outside the prescribed hours of operation. MAF and industry will have to ensure those farmers affected are advised if hours of operation are prescribed.

5. Registration of Propane Cannon Users

Pending the development of local government bylaws (Recommendation #6) and with a formal, prescribed registration and permit program being an option if the informal process is unsuccessful, the Board makes the following recommendations.

The Board recommends to MAF and the Horticultural Coalition that they work together, in consultation with other grower organizations, local governments and police forces, to develop an informal, cost effective registration and contact system.

The Board recommends to MAF and the Horticultural Coalition that they work together, in consultation with other grower organizations, to develop a brochure designed to advise farmers, in whatever languages are necessary, of their rights and responsibilities in using cannons. The Board further recommends that this brochure offer generic advice on the proper technical and mechanical operation of cannons, and be distributed to farmers prior to the outset of each season and be made available to the non-farming community for educational purposes.

6. Local Government Bylaws Affecting Farming

Over the longer term, and as an alternative to hours of operation prescribed by Cabinet, the Board recommends that the Minister of Agriculture and Food be responsive to local governments developing bylaws related to farming in accordance with sections 887(8), 903(5), Division 8 and section 918(1) of the *Municipal Act*.

The Board recommends that the Minister not approve such bylaws without guarantees that the variance approval process and other matters affecting farmers are appropriate and effective in their application.

7. Netting - Funding Alternative

The Board strongly recommends that one-time funding options be provided to farmers for netting of croplands for protection from bird predation. The Minister should support the implementation of a funding initiative that would allow farmers to net their crops, reducing the need for cannons. The initiative should be developed in consultation with industry and MAF

The Board also recommends that subsequent damage to netting beyond normal wear and tear be included in crop insurance programs.

8. Recommendations to Grower Organizations

The Board recommends grower organizations, working with MAF, other government agencies and local governments: work on pest bird population controls; address the need for technological and repellent advances; test various types of noise barriers and develop model wildlife predation management plans; develop a cannon user registration and contact program; and address the need for communication and education.

9. Recommendations to the Non-farming Community and Local Governments

The Board recommends local governments work with MAF and industry organizations to develop methods by which the farming and non-farming community can communicate their respective concerns.

CONCLUDING REMARKS

The Board wishes to thank all those who contributed to this review via their written submissions. Cannons are a contentious issue in certain areas of BC, both the farming and non-farming communities must show understanding and be willing to compromise.

The Recommendations acknowledge the need for cannon use by farmers but recognize the criteria for their use need strengthening. The Act provides farmers with a powerful tool to protect agriculture but they must use this tool wisely.

The Recommendations recognize the concerns of the non-farming community by: setting legal limits on the hours of operation; recommending farmers implement, by 2000, wildlife predation management plans; and improving the process for identifying and contacting farms on which cannons are being used improperly.

Recognizing the ongoing importance of this issue to both the farming and non-farming communities, the Board will monitor the effect and progress of the Recommendations.

INTRODUCTION

The Farm Practices Board ("the Board") was established in 1996 under section 9 the *Farm Practices Protection (Right to Farm) Act* (the "Act"). The Board hears complaints from persons aggrieved by any odour, noise, dust or other disturbance resulting from a farm operation. Under s.11(2) of the Act, the Board may also study, report on and make recommendations concerning any matter related to farm practices.

In early 1998, the Minister of Agriculture and Food received a letter from the City of Surrey requesting advice regarding the enforceability of the hours of operation for propane cannons ("cannons"), a noise scare device used in protecting fruit, other crops and livestock food from bird predation. The Minister forwarded Surrey's letter to the Board with the suggestion that the Board conduct a review, under s.11(2) of the Act, into the use of cannons in agriculture.

Of the 15 formal complaints the Board has received since April 1996, eight have involved the use of noise scare devices, principally cannons. Numerous informal 'concerns' regarding cannons are also lodged with the Ministry of Agriculture and Food ("MAF") and the British Columbia Horticultural Coalition ("Horticultural Coalition") each year during the growing season(s).

Current farm practices with respect to the operation of cannons are outlined in the August 10, 1996 MAF Wildlife Damage Control Guidelines ("Guidelines"). A copy of the Guidelines is attached at Appendix A. After receiving the Minister's suggestion, the Board reviewed the existing Guidelines and its own history of cannon complaints. The Board also monitored the concerns raised about cannons during the 1998 season. The Board learned that MAF and the Ministry of Environment, Lands and Parks ("MELP"), through their joint Partnership Committee, are studying the overall impact of wildlife predation on agriculture.

Board Review

Pending any long-term developments that may arise out of the Partnership Committee's initiative, and to avoid overlap with that study, the Board determined that a review of the Guidelines as they apply to the operation of cannons, was warranted.

The purpose of the review was to establish whether changes to the existing Guidelines should be recommended to the industry and/or the Minister of Agriculture and Food. These recommendations could include advice that certain practices related to cannon operation be prescribed by standards set by Lieutenant Governor in Council in Accordance with s. 1 of the Act. The Board instructed its Technical Committee to undertake this review and report back to the Board.

Since its inception, the Board has issued one decision on one complaint concerning cannons. In this review it must be stressed that the Board has not taken any general position with respect to farm practices involving the operation of cannons. The Board took the opportunity presented by the review to solicit information with respect to an issue that underlies many of the recurring disputes that have come to its attention via concerns and formal complaints.

Review Terms of Reference

The Board instructed the Technical Committee as follows:

1. Review the operation of cannons in terms of farm practices, as outlined in the August 10, 1996 MAF Wildlife Damage Control Guidelines, used in British Columbia. The Technical Committee may research farm practices in other jurisdictions as part of this review.

2. Examine the benefits and detriments of the practices from the viewpoint of the farmer and agri-industry (e.g. farm suppliers).
3. Examine the benefits and detriments of the practices from the viewpoint of farm neighbours and their local governments.
4. Examine the benefits and detriments of the practices from the viewpoint of the public interest.
5. Make recommendations concerning the most appropriate practices for use in British Columbia on a regional and/or province-wide basis. The Technical Committee may recommend that a practice or practices be enforceable by standards prescribed by the Lieutenant Governor in Council.
6. Identify, if it deems appropriate, new or alternative practices and/or initiatives that may be used to address issues related to bird predation in the longer term.
7. Make other recommendations as its conclusions may warrant.
8. Report to the Board not later than March 31, 1999 so that, if necessary, the Board can make recommendations to the industry, the Minister of Agriculture and Food and/or others prior to the commencement of the 1999 crop seasons.

BACKGROUND

Wildlife Predation on Agriculture Crops

The loss of wildlife habitat and the success of provincial, national and international wildlife protection programs have resulted in the concentration of bird populations and increased predation on agricultural crops. Expanding urbanization together with wildlife protection legislation have affected the ability of farmers to protect their crops. The effect of wildlife predation in general can ultimately only be fully addressed by a multi-level, multi-jurisdictional and international review involving all levels of government, the industry and the public.

Uncontrolled wildlife predation can cost farmers their livelihood and have an adverse economic impact on their local communities.

The joint MAF/MELP Partnership Committee has established an Agriculture - Wildlife Task Group sub-committee to study the effect of wildlife predation on agriculture. The Task Group is reviewing the matter in terms of proposing means by which broad policy issues around wildlife conflicts can be resolved. Other initiatives are underway in other jurisdictions, where committees, representing both farming and environmental interests, have been established to study bird predation issues. The Board will continue to monitor the progress of these initiatives and may comment on their activities as it deems necessary.

The Use of Propane Cannons in Agriculture

Bird predation on crops and animal feed is a problem for many BC agricultural commodities. Bird control methods include: auditory deterrents (cannons, electronic bird distress calls, warblers, compressors, motorcycles, firearms); visual deterrents (balloons, tape kites, hawks, scarecrows, flares), netting, repellent sprays, and shooting.

In BC, cannons are most commonly used on the Lower Mainland, in the Fraser Valley and in the Okanagan to protect fruit crops, notably blueberries, cherries and grapes. New, sweeter apple varieties are also subject to increasing bird predation. Other commodity producer groups, such as in dairy and grain, are also beginning to employ cannons to protect their crops and feed storage facilities.

Usually, cannons are employed from around mid-June to the early fall on the Lower Mainland and in the Fraser Valley. The season is longer in the Okanagan starting with cherries in the spring, running through the apple season and ending with grapes in the late fall. The employment of cannons by other commodity groups - dairy farmers protecting their feed storage facilities, for example - may result in an extension of the cannon "season."

Cannons, designed to be loud, are the frequent subject of disputes between farmers and their neighbors. Cannons may operate every few minutes during daylight hours over a period of weeks and can have an effect on a neighborhood.

Regulatory Control

The Act is designed to protect farmers from injunctions or liability in nuisance for their farm operations where three conditions are met: (a) the farm operation is conducted in accordance with normal farm practices; (b) the farm operation is conducted on agricultural land (either agricultural reserve land or land zoned for farming under municipal by-laws); and (c) the farm operation does not contravene a land use regulation or the *Health Act*, *Pesticide Control Act* or *Waste Management Act*.

The Act defines "normal farm practice" as follows:

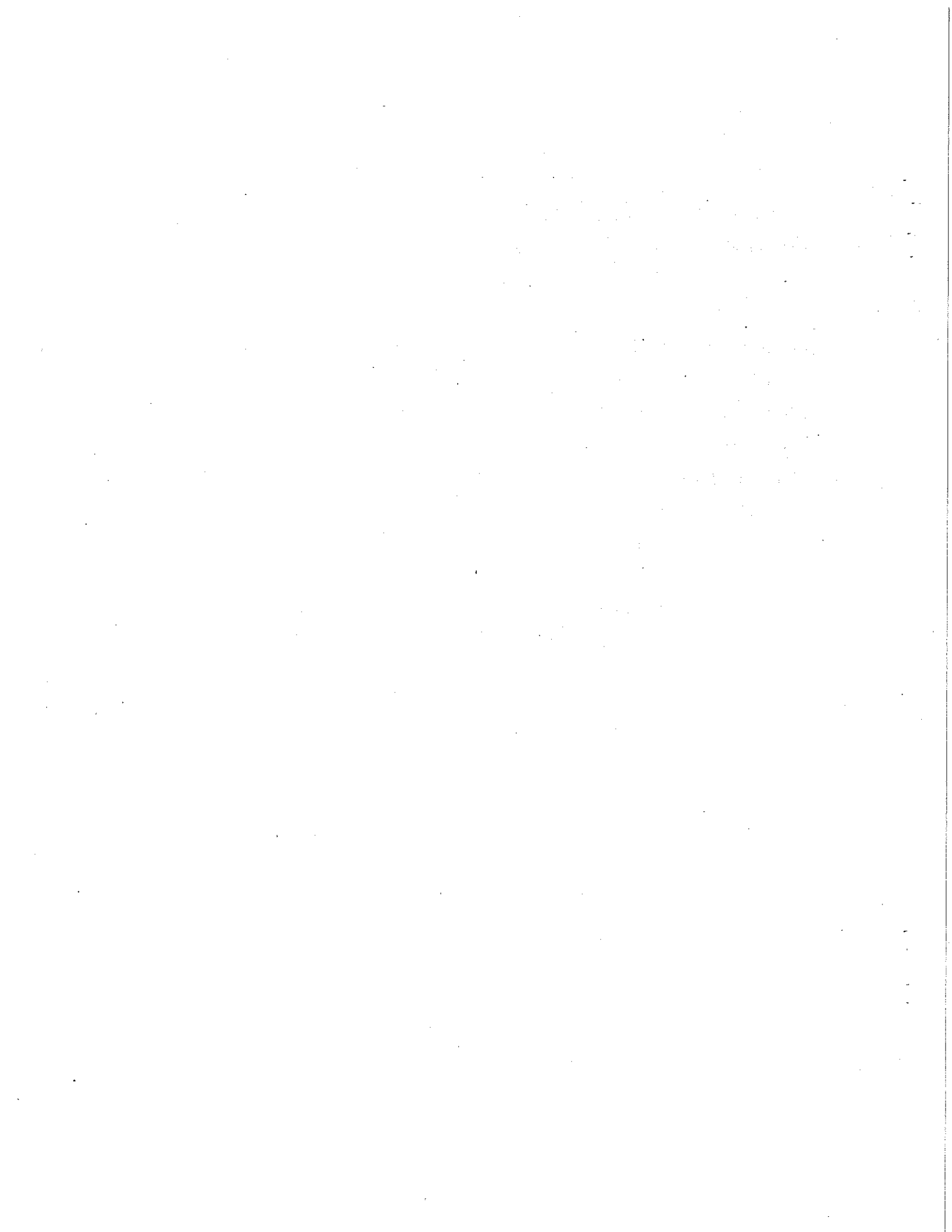
"normal farm practice" means a practice that is conducted by a farm business in a manner consistent with

- (a) proper and accepted customs and standards as established and followed by similar farm businesses under similar circumstances; and
- (b) any standards prescribed by the Lieutenant Governor in Council.

To date, neither this Board nor Cabinet has provided any general definition of "normal farm practice" in relation to the operation of propane cannons.

On a more informal level, however, MAF has issued the Guidelines. The Guidelines do not have the force of law but provide a series of practices currently used by BC farmers.

The Horticultural Coalition also provides a peer advisor service that uses the Guidelines when working with farmers and their neighbours to address concerns about the operation of cannons.



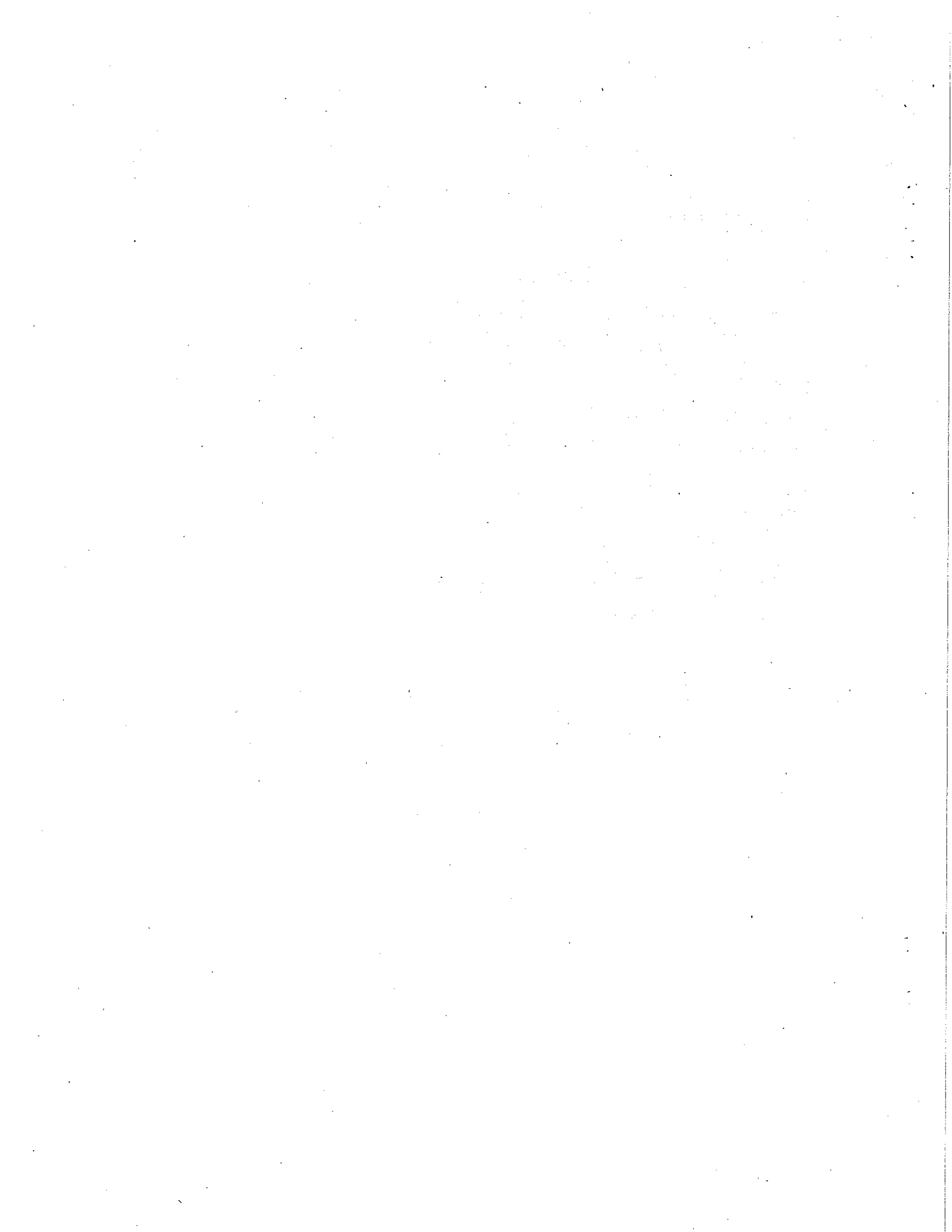
REVIEW PROCESS

The Technical Committee prepared a request for submissions document which included background material on wildlife predation and provided the Terms of Reference for the Review.

The request for submissions was circulated to the industry, government agencies, local governments and members of the non-farming community. As well, an information bulletin was circulated to community newspapers in the areas of the province where there is general use of cannons for bird control. People were asked to respond by written submission. Eighty submissions and a farmer petition were received. In order for the Board to be as informed as possible about the issues around the use of cannons, submissions were accepted up until the report was being finalized.

On March 24, 1999, the Technical Committee met with MAF to clarify agriculture and technical data and land use planning information.

Upon completion of the review, the Technical Committee submitted a draft report to the Board on March 31, 1999. The report was finalized and approved for release by the Board on May 28, 1999.



ISSUES IDENTIFIED IN SUBMISSIONS

Grower Organizations

The response from grower organizations was supportive of the existing Guidelines. It was their position that in order for a farmer to produce a viable crop he must use all kinds of devices to prevent loss of his crop to wildlife predation. The cannon is one of those devices, one that is control effective, cost effective and currently used extensively. It was widely recognized that farmers who use cannons do so to save their crops and thus their livelihood.

Urban/rural land use pressures have affected the ability of farmers to use cannons unchallenged. Complaints against cannons have prompted them to address the need for alternatives. The peer advisor system, where grower organizations work with farmers and their neighbours to effect solutions to problems, works well and resolves most disputes. (This system is described at Appendix E of this report.)

These organizations agree that many parties need to come together to: undertake research; study alternatives to cannons; implement public education, grower education and information programs; communicate the value of farming; control bird populations; and strengthen and enforce the Guidelines. The grower organizations are aware of the public interest in cannons and the potential for widespread support for the total banning of cannons.

Farmers Using Propane Cannons

Farmers employing cannons use these devices to protect their crops from bird predation. They concur with the Guidelines and feel that to successfully protect their crops they must use all means available to them. Bird populations are on the rise and bird damage is a serious problem. Cannons are cost effective and are a valuable tool in reducing bird

predation. Farmers feel the pressure from neighbors and urban dwellers inhibiting their right to farm.

Cannon Supplier

Issues identified surrounding cannon use are similar to those described by the public and acknowledged by farmers and grower organizations. Few effective alternatives to the use of cannons exist. There is general agreement with the Guidelines, however, it was recommended that cannons be used for the prevention of bird predation before a problem is evident. Farmers need to be trained in the operation of cannons; over or inappropriate use can be counter-productive as birds become accustomed to the sound. Regulated hours of use were posed as a potential solution to complaints. Conflict concerning the use of land by urban and rural communities is increasing, and education and discussion about the importance of farming to BC is needed to help resolve land use issues.

Non-Farming Community

In general, submissions from the non-farming community expressed strong feelings about the use of cannons to combat bird predation. The effect of the noise level of cannons - on lifestyle, the enjoyment of property and the health of the human and animal residents - was the most prevalent issue raised. The hours of operation and frequency of detonations from multiple cannons in the same vicinity were also issues.

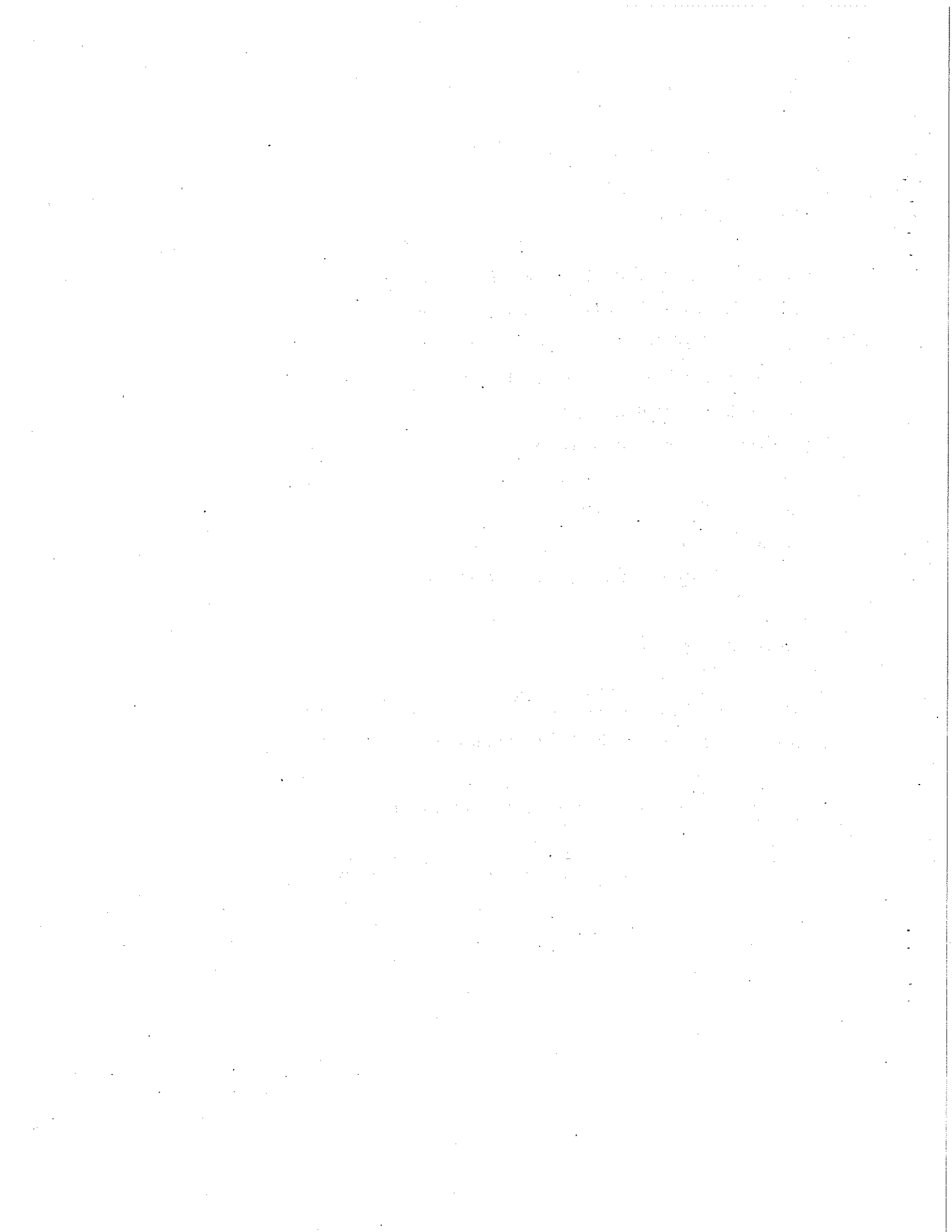
Many respondents did not think that cannons are effective; they see birds fly off when the cannons explode only to see the birds return almost immediately. Cannons operating when birds were not visible to them was also an issue. A number of respondents were concerned about farmers who inadequately monitored or maintained their cannons, resulting in the cannons firing outside the recommended hours. Farmers who did not live on the farm property were difficult to contact when cannons malfunctioned or when the Guidelines were not adhered to. Several people expressed concern about a dispute

resolution process that involves local governments, MAF, peer advisors, and the Board. They feel the process is complicated, taking too long to resolve a problem, or is ineffective as the Guidelines are not enforceable. Some demanded prohibition of cannons used against bird predation altogether.

A number of long time residents felt their rights were violated when farmers began putting cannons into operation on new fields. This was particularly frustrating when the farmer did not live on the property. Noise barriers were not seen as effective and several raised the issue of the deflection of noise from cannon explosions off nearby buildings, trees and hills. A number of respondents expressed empathy for farmers who must control bird predation in order to make a living, and suggested alternatives such as netting for consideration.

Local Governments and Government Agencies

Local governments and MAF's concerns regarding cannon operations were mostly confined to times of operation, frequency of detonations and enforcement of the Guidelines. Some useful solutions focused on the grower organizations as the best means for handling non-formal complaints. Generally governments were satisfied with the MAF Guidelines with some form of registration so that farmers can be contacted. Cooperation between farmers, government and the public was a desired outcome of this review. Cannons were viewed as necessary for the farmer but, in addition to some form of registration, there was a desire on the part of local governments to be able to enforce some of the Guidelines, particularly with respect to the hours of operation.



BOARD'S GENERAL COMMENTS

Pest Bird Populations

The real problem, giving rise to cannon issues, is unmanageable pest bird populations. The Board recognizes that effective pest bird population control is the best answer to this issue. Starlings have an ability to shift their populations within a 300 square kilometer area. As birds do not recognize political boundaries, solving this problem requires a major, multi-level, multi-jurisdictional and international effort; something that could not be encompassed by the Board's review.

The Board will continue to monitor, and may comment from time to time, on the other initiatives concerning the broader aspects of pest bird population and predation issues facing both the farming and non-farming communities.

Propane Cannons

Bird predation of agricultural crops is of significant economic concern to farmers. The use of cannons has resulted in a considerable number of complaints. There is a steady increase in the three opposing elements of bird predation: bird population; hectares in berry and fruit production; and in the interface between rural and urban areas.

Although at some point in the future cannons may be replaced by other predation control methods, there is no doubt that they are currently important to BC's agricultural community. It is clear from the submissions by the grower organizations that used properly, and in conjunction with other control measures, cannons are still an effective tool to address bird predation on crops. However, it is equally clear from the submissions from the non-farming community that cannons have a very real social impact.

The grower organizations support the retention of cannons without any limits other than those outlined in the Guidelines while many in the non-farming community want cannons banned outright.

Farm Practices Protection (Right to Farm) Act

Under the Act, farmers are granted a statutory privilege. This privilege protects a farmer from nuisance complaints such as noise, dust, odour or other disturbance, provided it is determined that the activity is a "normal farm practice." The term "strengthening farming" is commonly and appropriately used to describe the purpose of the Act.

At the same time, the Act is also intended to promote "good neighbour farming" and to encourage farmers and their neighbours to respect each other's needs. However, it does not remove the basic obligation on farmers to consider the needs of non-farming neighbours.

The use of cannons is not simply a rural versus urban interface issue. Rather, it must be defined from a broader perspective. We live in a world that is increasingly crowded and complex. All of us must adjust.

BOARD'S RECOMMENDATIONS

The Board believes a distinction should be drawn between the operation of noise devices in general and the operation of cannons. The Board did not review the use of other noise devices and consequently the suggested Guidelines at Recommendation #2 apply only to cannons.

The use of cannons is not limited in agriculture to bird predation control. They are also used to scare off other wildlife, such as bears and deer, from crops and are used by dairy farms to protect feed from bird predation. These cannons are often some distance away from their neighbours and were not identified as a contentious issue in the submissions.

The Board has concluded that the major area of dispute lies in the use of cannons to protect berry, tree fruit and grape crops from bird predation on the Lower Mainland, the Fraser Valley and the Okanagan. The suggested new Guidelines can apply to the use of cannons generally, however, there may be differences, both regionally and in cannon use (e.g. protecting feed storage facilities) requiring some flexibility in their application.

In making our recommendations, the Board has not determined a "normal farm practice" with respect to a specific farm subject to a formal complaint under s. 3 of the Act.

1. Pest Bird Population Control

The Board believes that the initiatives of the MAF/MELP Partnership Committee's Agriculture - Wildlife Task Group, and others who are addressing the broader issue of pest bird population control, should be promoted and supported.

The Board also believes that grower organizations and farmers, local governments and the non-farming community should be consulted and encouraged to assist these initiatives. Without a control program, pest bird populations will continue to increase,

resulting in escalating predation on crops. Farmers will need to intensify efforts to combat the problem, including the potential use of more cannons. Although effective on many types of farm operations, netting alone is not the solution. Pest birds displaced by netting will concentrate and increase predation elsewhere, and not just on agricultural operations. That is an undesirable outcome for everyone.

The Board recommends that the Minister of Agriculture and Food, government agencies, the farming community and the non-farming community work together in addressing the underlying problem of pest bird population control.

2. Guidelines for the Operation of Propane Cannons

The Board believes that the existing Guidelines, while sound in principle, need clarification. For example, using noise devices “only when a bird problem is evident” can mean different things to different people. The farmer prefers to stop predation by causing the birds to avoid a farm in the first place. The neighbour who does not observe any birds on a farm will not see an “evident” bird problem.

The most critical issue is the hours of operation, dealt with in more detail later in this report. The Board supports the existing 6:00 a.m. to 8:00 p.m. guideline for the operation of cannons. It is important to note, however, that birds can commence feeding well before 6:00 a.m. and continue feeding until well after 8:00 p.m. Farmers still need effective bird predation control measures outside these hours.

The periodic relocation of cannons on a farm should be a recommended practice as the variability and unpredictability of cannons are key to their success against bird predation. Every effort must be made to locate and/or point cannons away from nearby residences. There is a distinct difference in noise level when cannons are pointed at a residence and when they are not. Local topography can sometimes affect the impact of cannon noise as well. Buildings, trees or hills can deflect or magnify sound in different directions without

the farmer even realizing this is occurring. Occasionally, a residence further away from a farm can be affected by noise more than a residence in close proximity.

A predation management plan should be part of the Guidelines. Having a clear understanding of the predation affecting an agricultural operation allows the farmer to develop a more effective response. This benefits the farmer in terms of crop and revenue protection. Since cannons are most effective when combined with other predation control methods, a good management plan will often, but not always, reduce the impact of cannons on the neighbourhood. For example, there may be certain times of the day when the cannon need not be fired at all or at least less frequently.

The recording, even in the most simple way, of bird predation on a farm can be used to support the use of cannons. The comparison of these results with other farms can lead to a better understanding of the overall predation problem in an area and result in more comprehensive and effective control programs.

Preconditioning birds by exposing them to the noise of a cannon before a crop ripens may moderate the need for cannons later in the season. Since this extends the cannon season, preconditioning should only be done just prior to the crop ripening and only as part of a management plan. It is better to stop birds from coming in the first place, than attempt to scare them away once they have habituated to a field providing a source of food.

The Board has given consideration to neighbours by clarifying and strengthening the Guidelines regarding the hours of operation, limiting the number of cannons used to one per two hectares of cropland and controlling the direction and proximity of cannons where possible. The development of wildlife predation management plans supports the farmer, in terms of improved income, and the non-farming community in terms of accountability.

In order to maximize crop protection from wildlife predation and to minimize the impact of cannons on neighbours, the Board suggests that MAF and the industry adopt revised Guidelines for the operation of cannons.

Farmers:

- should operate cannons only between 6:00 a.m. and 8:00 p.m. local time or dawn to dusk, whichever is of lesser duration;
- should operate no more than one cannon per two hectares of cropland at any one time;
- should try to alternate or relocate cannons being used on a farm operation at least every 4 days;
- should try to locate and/or aim cannons away from residences in close proximity to the farm;
- should maintain cannons, including timing mechanisms, to ensure they operate properly and not outside the recommended hours of operation;
- should, commencing in the year 2000, use cannons only as part of a wildlife predation management plan; and
- may, once a farm has an established wildlife predation management plan, use cannons for the protection of crops immediately prior to ripening to prevent habituation by birds.

3. Wildlife Predation Management Plan

The Board recommends that farmers develop and use wildlife predation management plans.

An understanding of the predation affecting an agricultural operation enables the farmer to effectively address problems that vary from field to field or crop to crop, especially on a large farm. Studying bird predation can also establish which control methods work best. Good predation management results in reduced crop loss and increased income for the farmer.

Plans could take into consideration crop varieties, seasonal weather, bird and other pest predation patterns, proximity to neighbours and other factors specific to the farm's location and environment. Plans should not be limited to determining how cannons will be used. Instead, the plan should be part of a farm's pest management program and be

used to determine how various types of audio, visual and other deterrents, as well as cannons, can be coordinated to effectively address predation problems.

Predation management plans do not have to be complex in order to be effective. Plans should be flexible to allow for adjustment in control methods as bird predation patterns vary when affected by such simple things as a change in the weather between morning and afternoon. Plans should be 'living' documents, that are updated annually but can be easily adjusted during a season.

Education and communication are fundamental and were mentioned in various submissions. It is important that neighbours understand the issues facing farmers and why farmers need to use cannons. A predation management plan can form the basis of that education and communication. A farmer can advise neighbours of what the problem is, what the farmer is doing about the problem and why.

A good predation management program can also benefit the neighbours as farms will only be using those methods, both in terms of type and frequency of operation, which are appropriate to a specific farm operation. If and when cannons are used, the frequency of operation will be supported by a predation management plan.

Farmers would be able to produce their management plan in circumstances where the use of a cannon is questioned by a peer advisor or MAF, as a result of an informal concern, or by the Board in a formal complaint.

The Board recommends that grower organizations, in consultation with MAF, design basic, flexible and easy to use models of a wildlife predation management plan for use by farmers. These models may vary depending on the size of farms and the varieties of crops being grown.

Wildlife predation management plans should come into general use in the 2000 crop seasons. This will allow farmers to observe bird predation on their operations during the 1999 season, and for the development of model plans for 2000.

4. Prescribed Hours of Operation

Addressing the issue of hours of operation is more difficult due to the range of cannon use throughout the province and in the various types of agriculture. There are also legal considerations to be taken into account. A standard prescribed by Cabinet becomes part of the definition of normal farm practice. As a result, any farmer who breaches that standard loses the protection of the Act with respect to that farm operation and is subject to local bylaws or court injunctions. From the submissions, the great majority of concerns relate to the operation of cannons to protect berry, tree fruit and grape crops from bird predation in the close confines of the Lower Mainland, the Fraser Valley and the Okanagan.

It is clear that the existing recommended hours of operation, 6:00 a.m. to 8:00 p.m. is a compromise. The cooperative effort in Pitt Meadows, where local government, farmers and the non-farming community originated the existing Guidelines is an example of such a compromise. Farmers are making a concession because birds feed from dawn to dusk (which can be much earlier than 6:00 a.m. and much later than 8:00 p.m. in summer). Neighbours are making a concession because they still may hear cannons for up to 14 hours a day. There was some acceptance of cannons by the non-farming community if the 6:00 a.m. to 8:00 p.m. hours of operation were strictly enforced.

Even given that acceptance, there were calls for a cessation or reduction in the operation of cannons at certain times of the day (e.g. in the heat of the day when birds may not be feeding or during pickings). Due to the variety of local conditions, this is not possible to regulate by prescribed hours. However, knowledge of bird predation on a farm and effective management of that predation can result in a reduction in the use of cannons as outlined previously.

The Board recommends to the Minister of Agriculture and Food that, effective immediately, hours of operation for cannons used to protect berry, tree fruit and grape crops from bird predation on the Lower Mainland, in the Fraser Valley and the Okanagan be prescribed by the Lieutenant Governor in Council as being from 6:00 a.m. to 8:00 p.m. local time or from dawn to dusk local time, whichever is of lesser duration.

5. Registration of Propane Cannon Users

Local government submissions noted the inability of bylaw enforcement and police officers to contact farmers whose cannons were firing late into the night (e.g. when timing devices fail). This can be even more of a problem when the farm is operated by a farmer who does not live on the property. An ability to quickly shut down cannons firing after hours can alleviate problems before they become contentious.

The Board recognizes that farmers and their neighbours should be educated on the rights and responsibilities involved in using cannons.

The Board considered a Cabinet-prescribed permit system to register farmers using cannons to protect berry, tree fruit and grape crops in the prescribed areas. This would involve farmers obtaining an annual permit and the registration information being made available to local governments and police forces. When registering each year, farmers using cannons would be provided with updated information on their rights and responsibilities, as well as generic advice on the technical operation and maintenance of cannons.

The Board decided not to recommend a prescribed registration system because there is not a readily available or appropriate regulatory structure in place to administer such a program on a cost-effective basis. This will change over time as local governments develop bylaws related to farming under the *Municipal Act* (see Recommendation #6).

Nevertheless, the Board believes a more informal and very basic program, at no or low cost to the farmer, should be established and administered by industry organizations.

In their submissions, the grower organizations pointed out the increasing capability and success of the peer advisor system. Some grower and other industry organizations are receiving government funding to support the development and training of peer advisors.

Since they have a vested interest in supporting farmers, the Horticultural Coalition, with the assistance of other grower organizations such as the BC Tree Fruit Growers Association and Association of BC Grape Growers, could administer such a program with minimal cost and effort. The Horticultural Coalition already has some role in the administration of the pesticide applicator permit system.

In consultation with MAF, local governments and local police forces, these grower organizations should be able to identify and define those areas and/or farms within local jurisdictions where the use of cannons is particularly contentious. This information could ensure that local governments and police forces have the ability to contact specific farmers before a problem with a farm's use of cannons becomes overly contentious or a formal complaint needs to be filed.

Under this proposal, there would be no requirement to register the majority of growers as there would in a formal registration and permit program. A more formal, prescribed registration and permit program remains an option if the informal system is determined to be unsatisfactory during the 1999 crop seasons. Such a program could be administered by MAF, local governments, industry, or all three in combination, depending on what option is deemed the most effective.

The type of informal registration and contact information required might include:

- name and 24-hour telephone contact number of the farmer operating the cannons;
- alternate local telephone contact number (if owner/operator not available);
- address of the farm on which the cannons are being operated;
- type of crop(s) being protected;
- the maximum number of cannons the farmer intends employing on the farm involved; and
- any safety (e.g. cannon shut off procedure) information considered necessary.

The Board recommends to MAF and the Horticultural Coalition that they work together, in consultation with other grower organizations, local governments and police forces, to develop an informal, cost effective registration and contact system.

The Board recommends to MAF and the Horticultural Coalition that they work together, in consultation with other grower organizations, to develop a brochure designed to advise farmers, in whatever languages are necessary, of their rights and responsibilities in using cannons. The Board further recommends that this brochure offer generic advice on the proper technical and mechanical operation of cannons, and be distributed to farmers prior to the outset of each season and be made available to the non-farming community for educational purposes.

Note: If prescribed hours of operation come into effect in 1999 as recommended by the Board, MAF and industry will have to ensure those farmers affected this year are advised of their new responsibilities as soon as possible.

6. Local Government Bylaws Affecting Farming

The legislation contemplates that there may be certain practices in certain localities that should be regulated, through farm bylaws, in a manner consistent with standards set by the Minister of Agriculture and Food.

These bylaws, which some local governments are already investigating, will be developed in consultation with the local community, including farmers and MAF. The bylaws, which are subject to the final approval of the Minister, should incorporate whatever appropriate Guidelines are in existence at the time and should not restrict hours of operation any further than those prescribed by Cabinet. When contemplating a registration/permit system, bylaws should ensure such a system is as streamlined and cost effective as possible. In developing bylaws, consideration should also be given to what role the Horticultural Coalition and other grower organizations might play.

The bylaws could, in order to address local, regional differences (including the number of daylight hours) and/or crop varieties, include the opportunity for industry to apply for permits to vary the hours of operation, from the prescribed hours of 6:00 a.m. to 8:00 p.m., based on a demonstrated need for control of bird or wildlife predation. Criteria for these permits might include such information as:

- crop and crop variety
- geographic location
- proximity to neighbours
- identification of and substantiation of a predation problem
- specifics of the request - dates and hours of operation
- neighborhood communication - method and means

Over the longer term, and as an alternative to hours of operation prescribed by Cabinet, the Board recommends that the Minister of Agriculture and Food be responsive to local governments developing bylaws related to farming in accordance with sections 887(8), 903(5), Division 8 and section 918(1) of the *Municipal Act*.

The Board recommends that the Minister not approve such bylaws without guarantees that the variance approval process and other matters affecting farmers are appropriate and effective in their application.

7. Netting - Funding Alternative

In many of the submissions complaining about cannon noise, reference is made to the alternative of using netting. Although generally acknowledged as being very effective, the high cost of netting per hectare, both in terms of initial capital outlay and maintenance, is the factor working against this practice.

Netting of blueberry fields involves setting nets high enough to allow access to picking machinery, thus making nets cost prohibitive in some instances.

As grapes are picked in a single harvest and the clusters of fruit grow within the protection of the vine, the netting can be draped over a single row. In the Okanagan, there have been complaints received of rare birds being trapped in netting. To prevent the incidental capture of birds in the netting, the nets must be of the proper gauge and correct tension requiring more initial expense and maintenance. The decision whether to use netting is economic, based upon the projected value of the particular commodity coupled with the realization that the farmer may not be able to afford the initial capital outlay.

The Board strongly recommends that one-time funding options be provided to farmers for netting of croplands for protection from bird predation. The Minister should support the implementation of a funding initiative that would allow farmers to net their crops, reducing the need for cannons. The initiative should be developed in consultation with industry and MAF

The Board also recommends that subsequent damage to netting beyond normal wear and tear be included in crop insurance programs.

8. Recommendations to Grower Organizations

The Board makes the following recommendations to the various grower organizations, as well as cannon suppliers, most affected by bird predation and the use of cannons for their control:

- **work with government on alternative pest bird population management programs;**
- **address the need for technological and repellent advances in the control of birds by undertaking pilot studies with MAF on new technological equipment (including such possibilities as motion detectors and devices to limit the rotation of cannons) and other repellents;**
- **work with MAF on testing various types of noise barriers that might be effective in minimizing the impact of noise from cannons on neighbours;**
- **work with MAF to develop simple and flexible models for wildlife predation management plans;**
- **work with MAF and local governments to develop a simple, low cost system for identifying farmers using propane cannons to protect prescribed crops from bird predation in the prescribed areas;**
- **address the need for communication and education within and outside the industry about proper use of cannons and to promote good neighborhood communication between farmers and the non-farming community. A standard form letter, similar to the one already developed by MAF, could also be made available to farmers to use in communicating with neighbours about their particular farm operations and predation management plans; and**
- **work with MAF to develop a low cost brochure, that can be provided to farmers using cannons and to the non-farming neighbours for information, about the rights, responsibilities and technical aspects of cannon operation;**

9. Recommendations to the Non-farming Community and Local Governments

Improving communication between the farming and non-farming communities is an area in which local governments can have a role.

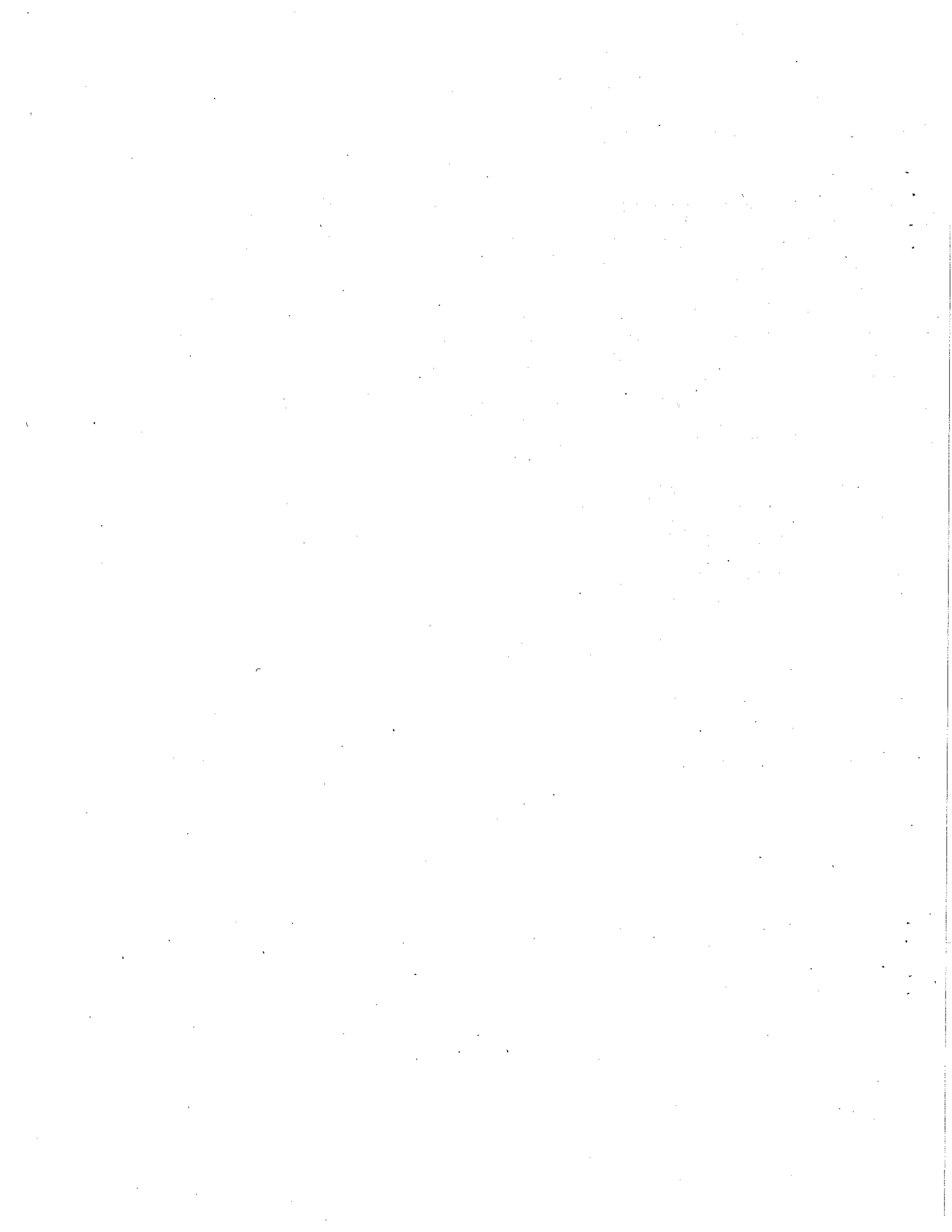
This could be achieved by appointing a farming representative(s) to local government Advisory Planning Committees to ensure industry has input into planning and development decisions.

Local government planning staffs should be encouraged to regularly solicit input from the farming community when considering development applications that may affect industry. Developers, real estate agents and home purchasers should expect and understand the practices that may be employed by their farm neighbours.

Ensuring good communication can also be achieved by the appointment of a non-farming community representative(s) to local government Agriculture Advisory Committees to ensure the public has effective input into decisions concerning industry.

As well, many local governments have access to their constituents through notices on their websites and/or in their community newspapers. Notices advising, for example, of an upcoming blueberry season and what farmers do to address the bird predation problem could be very useful. At the same time, the non-farming community could be advised of a farmer's rights AND responsibilities in using cannons.

The Board recommends local governments work with MAF and industry organizations to develop methods by which the farming and non-farming community can communicate their respective concerns.



CONCLUDING REMARKS

The Board wishes to thank all who provided written submissions in support of our review. They were of great assistance in considering the use of propane cannons in agriculture.

The Board would also like to acknowledge the work of MAF, agriculture organizations and peer advisor groups in successfully handling the great majority of concerns relating to this farm practice. They have a challenging role in attempting to find a balance between urban and rural interests.

The Board undertook this review because it recognized that the use of cannons is a contentious issue, especially in certain areas of BC. In making its Recommendations, the Board is suggesting to both the farming and non-farming communities that there has to be understanding and compromise on both sides.

The Board's Recommendations acknowledge the need for cannon use by farmers but recognize the criteria for their use need strengthening. The Recommendations leave much of the responsibility for using cannons in the hands of farmers. The Board strongly encourages grower organizations to adopt the Recommendations and actively support the effective use of cannons. The alternative is increased regulatory control via standards prescribed by Cabinet or by farm bylaws. Potentially, either could lead to a partial or full ban on the use of cannons.

The Act provides farmers with a powerful tool to protect agriculture but they must use this tool wisely.

The Board heard and appreciated the concerns expressed by the non-farming community. Although the Board was not prepared to recommend that cannons be abolished outright, as so many wished, it recognized that these concerns could not be ignored.

The Recommendations benefit the non-farming community in three principal areas: (a) the setting of legal limits on the hours of operation for cannons; (b) recommending farmers implement, by 2000, wildlife predation management plans that promote more responsible use of cannons; and (c) improving the process for identifying and contacting farms on which cannons are being used improperly.

The Board recognizes that the result of this Review is not and cannot be a complete answer to bird predation in agriculture. Until a solution is found to the large and pressing problem of bird population growth, there is a need for continued cooperation and a willingness to work together by all concerned. There must be shared communication of concerns and new information as it becomes available.

The suggested revised Guidelines, the recommended wildlife predation management plan, the prescribed hours of operation and the registration program will form a bridge between the current dependence on cannons for effective bird predation control and the future when accessible alternatives are available.

Recognizing the ongoing importance of this issue to both the farming and non-farming communities, the Board will monitor the effect and progress of the Recommendations.

