A Citizen's Guide to Pesticide Use and the Law in BC

West Coast
Environmental Law
2007

WEST COAST
environmental law

Acknowledgements and grateful thanks to:

Nancy Klenavic, Kathy Grant, and Karen Campbell for their previous research and writings on pesticides and the law, as well as Environment Canada's Community Action Plan for funding that research, which have been incorporated into this Guide. Dominique Nouvet, Dr Josette Wier and Dr Anne-Marie Nichol who reviewed and made suggestions to an early draft and to Andrew Gage who offered his guidance, assistance and substantially contributed to the final draft. Rika Saha contributed legal research and writing, and oversaw the production of the Guide, from the early draft to the final version. Christopher Heald for his design and technical support and Ceciline Goh for proofreading. Also, thanks to the Capital Regional District for their kind permission to reprint their model pesticide bylaw.

West Coast Environmental Law is grateful for the generous support from the Notary Foundation and CNC Sales & Repair Inc. We would also like to express our thanks to the Law Foundation for their core support in the production of this guide.

THE LAW FOUNDATION OF BRITISH COLUMBIA

THE NOTARY FOUNDATION INC. 1986

CNC SALES & REPAIR INC.

The viewpoints expressed in the Guide are on behalf of West Coast Environmental Law.

Printed on 100% post-consumer recycled paper.

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WEST COAST environmental law

20A07/M5/J7

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Background and Purpose

West Coast Environmental Law receives many pesticide-related queries each year. Members of the public are concerned about the risks of commercial and home pesticide use in our communities and they want to know what avenues are available to them to counter the threats posed by these toxins. For the purposes of this guide, the generic term "pesticides" is meant to be inclusive and generally refers to all products that are used to prevent, destroy, repel or mitigate a pest.

Public concern is well-founded. Even the advocates of pesticides concede that many pesticides are powerful chemicals which, if used improperly, can have serious health and environmental impacts. Add to this, the concerns about:

- pesticides that were approved on the basis of old science;
- new research demonstrating the vulnerability of children, women and the elderly to certain pesticides;
- information about how some pesticide ingredients can interact in harmful ways in the environment;

and it is clear why the potential negative effects of pesticides have been recognised at the highest political and legal levels in the country. The Federal Standing Committee on Environment and Sustainable Development, for example, noted (in their 2000 report on pesticides[1]) that several chronic effects can arise from repeated low-level exposure of humans and wildlife to pesticides including cancer, interference with the development of the foetus and child, and disruption of reproductive, endocrine, immune and nervous systems. Similarly, the Ontario College of Family Physicians, after conducting a comprehensive literature review of the impacts of pesticides on human health, "strongly recommend[ed] that people reduce their exposure to pesticides wherever possible," and stated:

> 'the review shows consistent links to serious illnesses such as cancer, reproductive problems and neurological diseases, among others. The study also shows that children are particularly vulnerable to pesticides.'[2]

This is not to say that all pesticides, properly used, have a negative health or environmental effect. Nor is it to dismiss the fact that many farmers, foresters, and other pesticide users view pesticides as essential to their business. However, it is our recommendation that where pesticide use can be minimized or eliminated, it should be.

Pesticide legislation, both federally and in BC, has recently undergone substantial revisions. In BC, the changes have largely removed government oversight of pesticide use on public lands. At the same time, changes to the federal legislation, while not without their flaws, have generally strengthened federal government regulation of these chemicals. This publication is intended to provide a guide for the public on the law and on the role for members of the public who wish to participate in matters regarding pesticide use in their communities.

Part 1: Introduction to Pesticides

A farmer may view pesticides as being an essential part of modern agriculture. A property owner might appreciate how chemicals rid their lawn of dandelions. An environmental or health activist might view them as an unnecessary poison that harms our communities. There are strong feelings all around about these substances.

What are Pesticides?

Pesticides are substances or devices used to kill, suppress, or repel pests. They may be natural or chemically derived and work by disrupting a vital process in the **target organism**, such as photosynthesis in plants. Widespread use of chemical pesticides began in the 1930s and burgeoned in the 1950s.

Because pesticides are designed to disrupt a part of the life cycle of a target organism, chemical pesticides are generally very potent and powerful chemicals. Although a pesticide ideally harms just the target organism, and just where it is applied, the reality is that many pesticides harm a number of "non-target" species – birds, fish, and amphibians are all especially susceptible to certain pesticides, but other animals and plants can also be affected. Sometimes the animals worst hit are the predators of the very pest that is being targeted, resulting in a population boom of the pest the next year.

A 2003 pesticide use survey for BC showed that British Columbians purchased or used 4,666,709 kg of pesticides containing 287 different active ingredients (excluding most pesticides used in people's home environments).[3]

Different types of pesticide

Pesticides may be categorised in many different ways, such as according to their target organism, the method by which they are applied, chemical composition, selectivity or other trait. However, some of the most common terms used to describe pesticides are based on their target organism. Some of these categories include:

- **Herbicides:** pesticides meant to kill or harm plant life;
- **Insecticides:** pesticides meant to kill or harm insects;
- **Fungicides:** pesticides meant to kill or harm fungi;
- **Avicides:** pesticides meant to kill or harm birds; and
- **Rodenticides:** pesticides meant to kill or harm rodents.

There are a number of other classes of pesticides that are not as significant world-wide, but which are nonetheless important in BC. These include anti-microbial pesticides such as wood preservatives and anti-sapstain chemicals, which comprise 73% of the active ingredients of pesticides sold in BC.[4]

As noted, the effects of many pesticides are not limited to the target organism. The insecticide Diazinon, for example, is commonly used on lawns, vegetable gardens and golf courses but is also highly toxic to both birds and fish. [5]

Use of Pesticides

Some common types of pesticide use include the following:

Agriculture – Agriculture and food processing represent the primary pesticide use in Canada. Of the 36.4 million hectares of available land area in crops in Canada in 2000, 25.9 million hectares were treated with herbicides, 2.2 million hectares with insecticides and 2.6 million hectares with fungicides.[6] While organic agriculture is becoming increasingly popular, the vast majority of agriculture in BC continues to depend heavily on pesticide use.

Buildings and Structures – Pesticide application in buildings is the second most popular use of pesticides. Pesticides are used in almost all types of buildings including homes, schools, hospitals, department stores, supermarkets, theatres and even restaurants. They are used to control pests such as ants, cockroaches, fleas, termites and rodents. Given that these types of pests affect buildings, they are collectively referred to as "structural pests."

Landscaping – Pesticides can be applied on a variety of landscapes on both private and public lands, such as golf courses, hospital and university grounds. Often, commercial landscape contractors will be

SOME PESTICIDE TERMINOLOGY

The term "pesticide" may refer to an active ingredient or to a formulation. An active ingredient is that part of the pesticide that has a toxic or lethal effect on the target organism (the pest that the pesticide is designed to control).

A formulation is a particular pesticide product that may contain both inert ingredients and synergists. Inert ingredients refer to those ingredients included in a pesticide to help deliver the active ingredients to the target organisms and include things like solvents, emulsifiers, dilutents, surfactants or wetting agents. For example, the purpose of surfactants is to ensure that the active ingredient stays on leaves that are sprayed, rather than rolling off the leaves. Inert ingredients are not "inert" in the sense that they are not toxic or biochemically active; they are called inert only because they do not have a pesticidal effect on the target organism. Sometimes inert ingredients can be the most toxic part of a pesticide. For example, synergists are substances that enhance the active ingredient's toxicity to a particular pest or pests by lowering the pest's immune system or natural defences.

Formulations are regarded as trade secrets by pesticide manufacturers and are not generally disclosed. Rather, they are often referred to by a trade name. For example, the herbicide known as "Roundup" is a formulation of the chemical herbicide Glyphosate, and isopropylamine salt. Some groups such as the UK Pesticide Action Network have pointed out that surfactants in Roundup can sometimes be more toxic than the active ingredient depending on which formulations are used. See http://www.pan-uk.org/pestnews/actives/glyphosa.htm.

From Briggs, "Basic Guide to Pesticides: Their characteristics and hazards." 1992 Rachel Carson Council.

"Homeowners use up to 10 times more chemical pesticides per acre on their lawns than farmers use on crops, and they spend more per acre, on average, to maintain their lawns than farmers spend per agricultural acre."

US Fish and Wildlife "Homeowner's Guide to Protecting Frogs — Lawn & Garden Care", 2000. http://www.fws.gov/contaminants/Documents/Homeowners_Guide_Frogs.pdf

responsible for applying pesticides, such as herbicides and insecticides, on large areas of land.

Lawn and garden care – Pesticide use for lawn care and beautification is extremely common. It has been estimated that approximately two-thirds of Canadian households use pesticides to beautify lawns. Frequently, the pesticides used for lawns and gardens are referred to as cosmetic pesticides. The terms "cosmetic" pesticides or "cosmetic uses" of pesticides are used when the pesticide in question, or use of pesticide, is for a non-essential or aesthetic use only, i.e., to make a lawn attractive or vegetables and fruits perfect. The actual quality of the vegetables or fruits may not be affected, but consumers may be reluctant to buy produce that has been scarred by mites for example. The pesticide is not being used to manage an infestation of pests as such, but the driving factor to use it may be economic (such as ensuring the produce is blemish free) or societal (having the perfect lawn).

Forested land – Forest companies frequently use both herbicides and insecticides to help produce commercially desirable timber. By killing plants which compete with the commercially desired trees (and particularly newly-planted seedlings) for light and resources, the forest companies can speed the growth of new crops. Similarly, insecticides can be used to kill some of the insects which kill trees, or, in some cases, leave the tree alive, but commercially less valuable. Concerns have been raised about human health and exposure to contaminants. For example, tree planters can be exposed to pesticides if they are planting seedlings that were treated with chemicals. Currently, the University of British Columbia is conducting research to determine the level of toxins that tree planters may be exposed to in the course of their work.[7]

Wood preservation – Wood is susceptible to insects and to rot (brought on by microbes or fungus). In 2003, wood preservation accounted for the majority of pesticides used in British Columbia.[8] The most widely-used wood preservative active ingredient was Creosote, given that 2,163,142 kg was used in BC Wood Treatment Plants in 2003 alone.[9] Previously, wood preservatives, such as Pentachlorophenol, were applied extensively as a wood protection agent, but were found to have large amounts of dioxins that are extremely toxic.

Domestic uses – Pesticides are used in the home environment for a variety of purposes, from killing rats, mice, ants, cockroaches and other pests, to disinfecting a swimming pool. They are contained in commonly-used products such as outdoor paints and flea collars. Pesticides for domestic uses are sold at local hardware stores, garden centres and drugstores.

Other commercial uses – Pesticides are used in many other types of activities, from clearing railway right of ways, to protecting public swimming pools, to indoor application.

Common Effects of Pesticides on Health and Environment

The chemical composition of pesticides varies considerably, making it difficult to say that "pesticides," as a group, have a particular environmental or human health impact.

Some impacts of a pesticide on the natural environment will generally be unavoidable, since control of a so-called "pest" population is itself an impact on the environment, and will generally have direct or indirect impacts on other species of plants and animals. Though the target organism may be thought of as a "pest," most species perform an important function in their ecosystem. One plant may be a necessary food source for certain animals, or may indirectly control other plants by competing with them for available nutrients. An animal may be either prey or predator for many other animals.

Thus, if pesticide use decimates a predator species, this may allow their prey to over multiply, themselves becoming a pest. An animal species that favours a particular plant, on the other hand, may have trouble finding it in the treated area, and may be forced to move to new territory. For example, pesticides used in clearcuts to promote the growth of new trees, kills some of the plants that Grizzly Bears rely upon for forage, forcing the bears to migrate to new areas where they may then affect other wildlife or humans.

Other environmental impacts relate directly to the toxic effects of the pesticide. There are few pesticides which will not affect any non-target species, and some pesticides have an impact on a wide range of species. These effects can cause mortality, behavioural changes, reproductive problems, and other issues in populations of both terrestrial and aquatic wildlife.

The impacts of pesticides on humans vary considerably depending on the ingredients of the pesticide and the amount of exposure to the pesticide. While the federal government does require industry to do extensive testing of new pesticides, and under the new *Pest Control Products Act*[10] (discussed in Part 2), future testing of those pesticides will need to be more stringent, many approved pesticides can have significant health impacts, particularly if used improperly, or if they escape into the natural environment. Moreover, it is extremely difficult to test for any and all possible health impacts, particularly impacts like cancer, birth defects, developmental or neurological problems, that may not show up for years after exposure. Adding to the difficulty is the fact that many chemicals are harmless by themselves, but cause real health problems in conjunction with other chemicals.

While it is difficult to generalise about the impacts of pesticides, studies focussed on farm workers and farmers, who are exposed to a range of pesticides, frequently report a

number of symptoms. The most common and milder symptoms lasting a few hours include sore eyes, nausea, headaches, and rashes. More serious but short-term consequences may include diarrhoea, vomiting, or triggering asthma attacks for asthma sufferers. Still more serious, and longer-term, impacts can include cancer, neurological impairment, developmental problems and even birth defects.[11] In some cases, pesticide exposure has led to fatalities.[12]

From a human health concern, many people have a special concern for pesticides that do not stay where they are applied, but "migrate" off the property – either by entering water or, where sprayed from airplanes (for example) by drifting off the property. In either case, members of the public who do not have the benefit of safety gear, or indeed, may not even be aware that they are being exposed to pesticides, may suffer health impacts.

While there is a debate about what level and types of pesticide use are necessary, given the significant health and environmental impacts, West Coast Environmental Law believes that it is crucial that pesticides be used sparingly and wisely, where at all. Where pesticides can be safely and economically eliminated, they should be.

Philosophies of Pesticide Use

There are different philosophical approaches to pesticide use. On the one hand, there are still some members of industry and of the public who view pesticides as a great innovation, to be used to advance human prosperity. This idealistic view, in addition to ignoring health and environmental risks, often ignores the cost-savings that can be achieved by using different means of pest control and recognising that pesticides are only one option to control pests.

At the other end of the spectrum is the organics movement, which views pesticides as largely unnecessary. It is beyond the scope of this publication to review the tools and philosophical approach used by organic agriculture, organic landscaping, and other organic industries to keep potential pest-species from becoming a problem without the use of pesticides. However, the success of the organic movement around the world does demonstrate that pesticides can be eliminated from many industries where it might be thought indispensable.

For those who are convinced that pesticide use should be reduced where possible, but who are

FOR MORE INFORMATION ON ENVIRONMENTAL AND HUMAN IMPACTS OF PESTICIDES SEE

1. BC Ministry of Agriculture and Lands website has information on the environmental fate of pesticides:

http://www.agf.gov.bc.ca/pesticides/c_2.htm

2. The City of Toronto has collated a number of resources on the health effects of pesticides. These resources are available at the following website:

http://www.toronto.ca/health/pesticides/health_effects.htm

not yet convinced that it is always possible to eliminate pesticides, the middle road may be integrated pest management.

Integrated Pest Management (IPM) is an alternative system of pest control that can reduce the number and amount of chemicals needed to control pests. IPM tries to get away from a "trigger-happy" response that overuses harsh chemicals to kill pests and instead encourages a "step back" approach to evaluate the actual threat from the pest and to investigate alternative options to pesticides. The thinking behind IPM is that first the pests and their ecosystem will be monitored, and then non-chemical methods of control, such as disrupting mating habits or planting disease resistant varieties, will be considered. Finally, where necessary, pesticides will be used judiciously.

The authors, Cloyd, Nixon, and Pataky[13] state:

> IPM is an approach to dealing with pests-including insects, mites and diseases – using a single cultural, physical (mechanical), chemical or biological management strategy, or a combination of strategies…. With IPM, the combination of environmental and economical management strategies is not aimed at eliminating pests, but at keeping pest numbers low enough to minimize…damage…. IPM does not mean the elimination of pesticides, rather it promotes their use only when needed, that is, after other management options have been exhausted.

Thus, IPM emphasises that the best way for managing pests is to prevent pests or diseases in the first place. For example, using proper gardening techniques such as watering, feeding and placing and maintaining plants properly helps to keep plants healthy and prevent attack by pests or viruses. Other IPM techniques include weeding, (physical pest management) and crop rotations or changing the time of harvesting (cultural pest management).

IPM has been successful in significantly reducing pesticide use, while also reducing the financial costs of excessive pesticide use. From both an economic and environmental standpoint, there is no reason to treat pesticides as the primary means of controlling pests. However, the term "integrated pest management" can be co-opted, to allow a high level of pesticide use to be presented as an environmentally-friendly option. As will be discussed in the following chapters, there is a question as to whether the province's integrated pest management legislation actually encourages integrated pest management at all.

FOR MORE INFORMATION ORGANIC AGRICULTURE AND INTEGRATED PEST MANAGEMENT SEE

1) The Certified Organic Associations of British Columbia website has a range of information on organic agriculture:

http://www.certifiedorganic.bc.ca

2) For more information generally on Integrated Pest Management, see the BC Ministry of Environment website, which has produced a number of IPM manuals:

http://www.env.gov.bc.ca/epd/epdpa/ipmp/ipm-manuals.htm

Part 2: Federal and Provincial Regulation of Pesticides

Over the years, considerable public concern has been voiced to federal, provincial and local governments regarding the potential effects of pesticides. At the same time, however, the pesticide industry and others argue that responsible pesticide use is a cornerstone of modern agriculture and numerous industries: pesticides are a safe, effective and necessary means to control pests, especially those which can be dangerous to humans or where pest-related damage causes economic harm.

This longstanding policy debate has resulted in legislation at both the federal and provincial levels which purport, in combination, to allow the use of pesticides in Canada in accordance with certain conditions meant to ensure safe and responsible use.

Division of Powers

Under the Constitution, the federal government and the provincial government both share responsibility for the environment, and regulation of environmental issues such as pesticide use.

The federal government is responsible for the federal pesticide regulatory system which includes deciding which pesticides (referred to as "pest control products" in the legislation) should be registered for use in Canada. This means that there are federal standards for general use and marketing of pesticides. For example, federal laws state that pesticides may not be used in Canada until they are registered.

The provincial and territorial governments are responsible for regulating all aspects of pesticide sale, use, storage, transport and disposal after they have been registered for use by the federal government.

Federal Government

In 2000, the House of Commons Standing Committee on Environment and Sustainable Development reviewed the pesticide legislation that had been in force

for almost three decades and called[14] for 77 recommendations to revamp the law. In particular, the registration process for pesticides governing pesticide use were considered outdated. The first of the Committee's recommendations was that the federal government should introduce new pesticide legislation as a matter of top priority. In response, a new *Pest Control Products Act* (PCPA)[15] was created in order to protect human health and safety and the environment by regulating pest control products. It received Royal Assent on December 12, 2002 and came into force on June 28, 2006.

The **Pesticide Management Regulatory Agency** (PMRA) – a branch of Health Canada – was created in 1995 and is responsible for administering the PCPA and regulating pesticides in Canada. Its mandate is:

> "…to prevent unacceptable risks to people and the environment from the use of pest control products."[16]

The PMRA's main areas of work include:

- **Reviewing applications** for the registration of new pest control products, and conducting science-based health, environmental and efficacy assessments of each pesticide;[17]
- **Re-evaluating registered pest control products** to ensure that the pesticides that have been in use for many years are reviewed for their toxicity and efficacy against current standards;
- **Approving labels** for each pesticide which set out how the pesticide is to be used, including setting requirements for safety gear, periods in which treated areas should not be accessed, and other requirements intended to limit possible human health or environmental impacts;
- **Setting maximum limits** of pesticide residue that can be present on food;[18] and
- **Enforcing compliance** with the PCPA, including label requirements.

In addition, the PRMA develops policies on **sustainable pest management** and it provides information on pesticide use to the public.[19] For example, the PMRA has developed a public registry available on the PMRA website which allows the public access to pesticide registration information, as well as regulatory and policy documents. This means that the public can see details of a pesticide's active ingredients, review consultation documents and in addition, have access to policy documents such as guidelines and Codes of Practices documents, which help to set standards.

The health and environmental assessments of pesticides

Before a pesticide can be registered, and approved for use in Canada, it undergoes health and environmental assessments under the direction of the PMRA.

According to the PMRA, these assessments will only find that the health or environmental risks of a pest control product are "acceptable" if there is "… reasonable certainty that no harm to human health, future generations or the environment will result from exposure to or use of the product, taking into account its conditions or proposed conditions of registration."

However, if it is found that a pesticide will cause potential harm to humans or the environment, the PMRA then considers whether the risk of this harm can be "mitigated," or reduced, by restricting how the pesticide can be used. If they can reduce the risk of the pesticide to an "acceptable" level by including requirements in the label related to, for example, not applying the pesticide to water-bodies, safety gear to be used while applying the pesticide, or other similar measures, then the PMRA may register the pesticide, notwithstanding the risks. This does not mean that the pesticide does not or cannot cause harm. If used in a way that is inconsistent with its label, the product may cause harm. There is currently little available evidence about how often pesticide users do or do not comply with the label requirements.

In addition, while there is no doubt that the new PCPA requires a more stringent testing of pesticides, many people continue to have difficulty with what is meant by "reasonable certainty" that there will be no harm. They feel that it is inherently difficult to reach anything approaching certainty when dealing with health impacts, like cancer, which may take decades to show up, and when it is almost impossible to test for the collective impacts of exposure to multiple pesticides.

As will be clear from the above, the label of a pesticide product contains valuable information about the safety and use of the product. In addition, if a pesticide user fails to follow a label requirement, he or she is committing an offence under both the PCPA and the province's *Integrated Pest Management Act*.[20]

Labels are, therefore, an important tool for concerned citizens to learn more about the pesticides about which they are concerned and to require safe use of those pesticides. It is not necessary to purchase a pesticide to view its label. The PMRA maintains a database of pesticide labels on its website that may be accessed by the public with no charge.[21]

Each label has two display panels: a main display panel and a secondary panel. The panels lists factual information about the pesticide such as its ingredients, the directions for use, the precautions that need to be taken and what to do if someone has been poisoned by the product. Some products which are more toxic than others also may have special conditions on the labels for storing, displaying or distributing the pesticide. [22]

Labels also set out the types of settings that a pesticide can be legally used for (i.e., domestic, commercial, industrial, etc.). These classifications also play a role in provincial regulation of these pesticides.

Unfortunately, it may be difficult for members of the public to find out what pesticide is being used by a private land owner (except where required by the

provincial legislation). In such a case, it may be impossible to learn what the specific legal requirements are, if the pesticide user is not willing to discuss the matter with you. As part of the registration process for 'new registrations, major new uses of a pesticide, re-evaluations or special reviews,'[23] members of the public can participate in a public consultation process by submitting comments to the PMRA. While there may be little obvious link between a neighbour spraying pesticides next door, and the renewal of a particular pesticide at the federal level, members of the public with a general interest in pesticides may wish to become involved in this process for particular pesticides.

In addition, under the new legislation, there are increased rights of appeal. For example, a member of the public can now file a Notice of Objection within 60 days of a decision to approve a pesticide and label being made, and a review panel comprising different experts can be established to determine whether the concerns have merit.[24] The panel hearings are generally open to the public, (except if confidential information will be discussed) and the public can present information at the hearings. After the decision is made, the Panel's report is released on the Public Registry.

Although this procedure will most often be used by individuals and groups with an interest in pesticides generally, it could be used by someone who is interested in the use of a specific pesticide in a particular place. In addition, in BC, if a concerned member of the public comes across new scientific information on the health or environmental effects of the pesticide and feels that the pesticide's toxicity should be re-evaluated, the member of the public can contact their local PMRA office (and the BC Ministry of Environment) to request a special review of the pesticide.

Criticisms of the *Pest Control Products Act*

In 2003, the Commissioner of the Environment and Sustainable Development responsible for conducting environmental audits of federal government departments released a report[25] on "Managing the Safety and Accessibility of Pesticides," which had several criticisms for the PMRA, including concerns over:

- the deficiencies in product information accepted for the evaluation and registration of some new pesticide products;
- the use of temporary registrations in the absence of complete information and repetitive renewals of the temporary registrations;
- the time taken and the methodology for re-evaluations of older pesticides;
- vagueness in labels, complexity and length of instructions in fine print, which increased the likelihood of a lack of compliance with the label, risking exposure to the pesticide for the user, other people and the environment; and

- failure to fully understand the possible harmful human health effects and environmental impacts, due to a lack of information.

Since the report and the introduction of the new *Pest Control Products Act*, there have been some changes. For example, the increase in transparency and public participation is a direct result of the new legislation. In addition, the PMRA website also has an incident reporting facility which allows anyone to report any harmful effect or incident resulting from pesticide use although after April 26, 2007,[26] members of the public will be asked to report incidents directly to manufacturers, as manufacturers and registrants of products will be required by law to let the PMRA know of any adverse effects. There are mandatory re-evaluations at structured intervals and the government has stated that it will accelerate the re-evaluation of older pesticides:

> The Government of Canada will accelerate the re-evaluation of the remaining 200 older pesticides, targeted for completion by 2009. These re-evaluations are being conducted to determine if these pesticides meet today's health and environmental standards. Review and registration of new and reduced-risk pesticides, to potentially replace older pesticides removed from the market following a re-evaluation decision, will also be done more quickly.[27]

Nonetheless, the new Act does not entirely resolve the problems identified by the Commissioner. For example, the Act does not the address vagueness in label

SUMMARY: YOUR ROLE AT THE FEDERAL LEVEL

ACCESS TO INFORMATION

- If you would like to know more about a particular pesticide, you can see summaries of risk and value assessments as well as detailed evaluation reports applications, registrations, re-evaluations and special reviews.

REGISTRATION

- Citizens may influence decisions about pesticides by becoming involved in the federal government's decision to register a pesticide, and all other "major registration" decisions. All major decisions will be made with public consultation. This means the public will be invited to comment prior to the decision regarding registration is made. While it is not guaranteed that all concerns brought forward will be adequately addressed, participating in the process is an important way to ensure these concerns are heard.
- Once a "major" decision has been made, you can object to the decision. If the PMRA accepts that you have a scientific basis for your objection, a review panel will be set up to investigate further.
- Further information on the Public Registry is available at: http://www.pmra-arla.gc.ca/english/pubreg/pubreg-e.html

REPORTING AN INCIDENT

- Members of the public are encouraged to report pesticide-related incidents. It is useful to have this information, so that the government and the manufacturers can be alerted to problems, for example, with the product, or labelling.

requirements – a major problem since the label requirements can provide a basis for approving pesticides that would otherwise be deemed unacceptable.

Moreover, one recent commentator[28] has argued that the PCPA fails to:

- 'require substitution of safer products for more harmful products,
- emphasize pollution prevention,
- establish specific targets or timelines for reducing pesticide use,
- ban cosmetic and non-essential uses of pesticides,
- make the precautionary principle govern all decisions, and
- emphasise IPM.'

Provincial Government

While the federal government regulates the approval of pesticides for sale in Canada, the provincial government regulates what happens once a pesticide has entered Canadian markets including the sale, transport, storage, disposal and application of pesticides in BC. This is done primarily through the *Integrated Pest Management Act* (IPMA)[29] which came into force on December 31, 2004, replacing the *Pesticide Control Act*. The IPMA **Administrator**, who is an employee of the Ministry of Environment, is responsible for administering the Act. The *Integrated Pest Management Regulation*[30] ('IPMR') sets out many of the requirements of the Act in more detail.

The focus of this section of the guide is on how the IPMA regulates certain types of use of pesticides, and the opportunities for members of the public to get involved in the processes set up under the IPMA. Please note that the information below is meant to be a general overview only. For specific questions with respect to pesticide use, please contact either the BC Ministry of Environment or West Coast Environmental Law.

Before turning to the legal tools under the IPMA, it is important to understand the basic approach taken by the IPMA and key concepts under the Act.

What does the IPMA regulate?

The IPMA does not apply to all pesticide use or to all pesticides, so it is important to understand what is covered by the Act. If you are concerned with a pesticide use or a pesticide that is not regulated by the IPMA, then you may have to look to other political or legal tools.

Although the IPMA regulates certain types of pesticide use in several different ways, there are only two major requirements under the IPMA that apply to almost all pesticide use in BC. These are:

- Pesticides must be used in accordance with their federal labels (already required under the federal PCPA); and
- No person should use a pesticide in a way likely to cause an unreasonable adverse effect to human health or the environment, or contrary to the IPMA. See the discussion of "unreasonable adverse effect" at page 20.[31]

The IPMR sets out more detailed requirements related to specific types of pesticide use, revolving around licences, permits or pesticide use confirmations which must be obtained before pesticides can be used, and associated public notices and consultations.

These requirements apply generally to regulation of pesticide use:

- on public land,
- on private land used for forestry,
- on private land used for transportation, public utilities and pipelines,
- in multi-use residences, and
- by pest control service companies.

They are discussed in more detail, at pages 22 to 33. The public may have some opportunity to become involved at this stage, especially in relation to permits or plans.

Although this Guide focuses on the regulation of how and when pesticides are actually used, it should be noted that the IPMA also regulates the sale and handling of pesticides, including qualifications for individuals and businesses involved in selling or applying pesticides. The IPMA contains several general requirements related to the safe sale, storage, disposal and transportation of pesticides that apply to pesticides that are not excluded (see page 21). For example:

- A business selling pesticides, except excluded pesticides, must be licenced by the province and must have an employee who is certified to conduct the sales of the pesticides; and
- All pesticides, except domestic use pesticides and pesticides excluded under the IPMA, must be stored in a secure place, and be labelled appropriately.

If you are concerned with what seems like the unsafe storage, transportation or disposal of pesticides, you may want to consult the BC Ministry of Environment, or West Coast Environmental Law, on the specific requirements around these stages in the life of a pesticide.

Key concepts

The IPMA is based around some key ideas and concepts. Before turning to opportunities available to the public, it is worth examining the following ideas, as used in the IPMA:

- Integrated Pest Management;
- Unreasonable Adverse Effect; and
- Classifications of Pesticides.

Integrated Pest Management (IPM) under the IPMA

To some degree, licences and plans are supposed to be based on IPM. For the purposes of the IPMA, IPM is defined[32] as 'a process for managing pest populations that includes the following elements:

(a) planning and managing ecosystems to prevent organisms from becoming pests;

(b) identifying pest problems and potential pest problems;

(c) monitoring populations of pests and beneficial organisms, damage caused by pests and environmental conditions;

(d) using injury thresholds in making treatment decisions;

(e) suppressing pest populations to acceptable levels using strategies based on considerations of

(i) biological, physical, cultural, mechanical, behavioural and chemical controls in appropriate combinations, and

(ii) environmental and human health protection;

(f) evaluating the effectiveness of pest management treatments.'

Compare this definition of IPM to the one discussed at page 11. A key difference is that true IPM requires pesticides to be used only "after other management options have been exhausted." By contrast, the IPMA defines IPM only in terms of the information gathered – not in terms of the *type of decision* made on the basis of that information. Since, as we shall see, the IPMA leaves the decision on how pesticides should be used entirely to the pesticide user, this represents a major weakness in the legislation.

However, members of the public can and should argue both to pesticide users and the Administrator, that IPM has its own meaning: that it is a planning process intended to minimize the use of pesticide and that the IPMA's definition should be interpreted in light of this definition. According to this argument, the reference to "a process for managing pest populations" should be interpreted as a process based on integrated pest management – which therefore places an emphasis on pesticide reduction.[33]

"Unreasonable adverse effect"

A second key term in the IPMA is "unreasonable adverse effect" as the Act makes it illegal to use a pesticide in a way that causes such an effect. While "unreasonable adverse effect" is not defined in the legislation, an "adverse effect" is defined under the Act as "harm to humans, animals or the environment."

If this was the only use of the phrase, it would probably be totally unenforceable. A pesticide user's idea of what is "reasonable" probably bears little resemblance to what an average member of the public might consider reasonable. However, the phrase does have some teeth; the Administrator can order a person to stop using a pesticide, if its use is causing, or may cause, an unreasonable adverse effect. A member of the public that fears that the use of a pesticide is causing, or may cause, an unreasonable adverse effect can contact the Administrator and provide reasons for his or her fears. It is important to note, that this can include situations where a pesticide is being applied incorrectly, or where necessary safety measures are not being taken. The Administrator can then make a number of orders aimed at ensuring that the pesticide use, if it does go ahead, does so in a way that will not (in the Administrator's opinion) cause an unreasonable adverse effect.

In addition to the Administrator's role, the term "unreasonable adverse effect" was used in the *Pesticide Control Act*, and in the Environmental Appeal Board (EAB) and the courts have given direction as to how it is to be interpreted. According to the courts, if it can be shown that a pesticide will have any adverse effect, the decision-maker (in this case, the Administrator) should consider whether the effect is unreasonable in the circumstances.

In *Wier v. Environmental Appeal Board et al.*,[34] the Court considered whether the EAB had taken into account all the evidence of toxicity to determine whether an adverse effect would occur. The court stated that the precautionary principle – the principle that the government can and should act even where there is not scientific certainty of a risk – should apply so as not to limit the evidence that the Board could consider.

It should be noted, however, that appeals to the EAB are now much more restricted under the IPMA. In most cases, submissions on the meaning of "unreasonable adverse effect" will need to be made directly to the pesticide user or the Administrator.

Classes of Pesticides

Under the IPMA, pesticides are classified in one of five ways, loosely based on the federal government's labels:

- **Permit restricted** – these pesticides are considered to have a higher risk of an unreasonable adverse effect and therefore attract the greatest controls under the IPMA. Currently, there are only two pesticides listed in "Schedule 1" – the list of Permit Restricted pesticides – 4-aminopyridine and monosodium methanearsonate (MSMA). Interestingly, prior to it being included in Schedule 1, the

provincial Ministry of Forests was the main user of MSMA and the government denied that it had an adverse effect on the environment or human health.

- **Restricted** – These pesticides are listed as Restricted on their federal labels and require a pesticide applicator certificate – a certificate indicating that the user has been trained in the proper application of pesticides – before these can be used or applied.
- **Commercial** – Pesticides in this class are suitable, according to the federal labels, for industrial, commercial or agricultural uses, (are intended for use by commercial or licensed operators) and which do not appear in the excluded list.
- **Domestic** – These pesticides are designated for domestic use by the federal government, and which do not appear in the schedule of excluded pesticides. The IPMA relaxes some of its requirements around the sale and storage of pesticides for domestic pesticides.
- **Excluded** – These pesticides are deemed to require the least amount of oversight, as the Administrator considers that by "excluding" these pesticides from requiring licences, permits and plans, they will not increase the risk of unreasonable adverse effects. Moreover, the province has prevented local governments from regulating these pesticides as well. Although government regulations suggest that this list is intended to include safe pesticides, in actual fact the exclusion list includes a number of pesticides for which there are legitimate health and environmental concerns. (See box below).The complete list of excluded pesticides is available at http://www.qp.gov.bc.ca/statreg/reg/I/604_2004.htm#schedule2.

Unfortunately, the schedules listing permit restricted and excluded pesticides refer only to the pesticide's active ingredient and not to common product names. If a member of the public does not know what the active ingredient is, or have a label (which should indicate this), he or she would have to refer to the PMRA website, which includes a database of labels, and cross reference the product name.

EXAMPLE OF LEGITIMATE HEALTH AND ENVIRONMENTAL CONCERNS FOR EXCLUDED PESTICIDES

All three of the active ingredients in the pesticide D-TRANS® House & Garden Spray 1862 (d-trans Allethrin, Piperonyl butoxide, and N-Octyl bicycloheptene dicarboximide) fall within the exclusion. The federal government's label for this pesticide gives the following warnings: "Harmful if swallowed or absorbed through skin. Avoid breathing vapors. Avoid contact with skin. In case of contact, immediately flush skin with plenty of water. Do not use in commercial food processing, storage, preparation or serving areas. In the home, all food processing surfaces and utensils should be covered during treatment, or thoroughly washed before use. Cover or remove exposed food. Remove pets, birds and cover fish aquariums before spraying. Do not use this product on any edible crop. This pesticide is toxic to fish. Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

The different types of authorisation required for pesticide use

There are certain types of pesticide use that will require a pesticide user to have a **licence**, **pest management plan** or **permit.** Which of these requirements applies will depend upon the extent and type of the pesticide use. The following table shows some of the many types of pesticide use and the type of legal tool that will be required in each case.

Type of legal tool needed	What type of pesticide use?
None	• Agricultural Land (except if restricted pesticides are being used) • Residential Use (except Multi-family dwellings) • Industrial or commercial use that does not otherwise require a licence, permit or plan • Use of a pesticide listed by the province as "excluded"
Licence[35] *(see page 23)*	• Most use of pesticides on public or private land involving less than 20 hectares for railway right-of-ways, highways, power lines, water utilities, or gas pipelines • Management of forest pests on 20 hectares or less of public land used for forestry • Multi-family residences and associated outdoor areas containing four or more units • Control of forest pests on privately owned forest land • Control of landscape and garden pests, or pests infesting buildings, on public land • Management of noxious weeds or invasive plants on up to 50 hectares of public land
Pest Management Plan *(see page 27)*	• Management of vegetation on specific rights-of-way such as railways, highways or public utilities, on public or private land involving treatment of 20 hectares or more a year • Management of vegetation on specific industrial sites, such as airports, dams and landfills, on public land, involving treatment of 20 hectares or more a year • Management of forest pests in more than 20 hectares of public land used for forestry • Management of noxious weeds or invasive plants on more than 50 hectares of public land
Pesticide Use Permit *(see page 30)*	• Use of a pesticide which the province has listed as "permit restricted" (currently 4-aminopyridine and monosodium methanearsonate (MSMA)) • Aerial spraying of a pesticide except where the spraying is over private agricultural land or non-residential spraying of certain types of pesticides[36] authorised under a licence or Pest Management Plan • Use of a pesticide over most bodies of water • Use of pesticides on public lands that cannot be authorized under a Licence or Pest Management Plan

Table 1, above, is a simplified overview of when a permit, licence or pest management plan is required. The shading is used to illustrate the government controls needed for each process: the darker the shading, the stricter the controls.

Licences and pesticide use under the IPMA

Who needs a licence?

Some of the types of use for which a licence will be required may be found in Table 1, above. Generally, licences are required for smaller scale uses on public or certain types of private lands. A major exception is private forest lands, for which pesticide use over large areas can be authorized through a licence.

A licence is a fairly general permission given by government to someone to apply pesticides. The process to apply for a licence is very straightforward and does not require any real government oversight. Nor does the licence need to provide the public with much detail on what pesticide will be used or when.

Most recently, the IPMR has been amended so that a pesticide user licence is now required at multi-residences (i.e., a building with four or more units). So for example, if a building manager wanted to apply pesticides on a lawn outside an apartment building (or deal with bedbugs within the building), he or she would require a licence unless he or she

- hired a contractor that already had a licence; or
- used a pesticide that is an excluded pesticide.

It is worth noting that licences are needed for different types of users of non-excluded pesticides. For example, there is a difference between a seller of pesticides ('pesticide vendor') and a pest control company that provides a service ('pesticide user service'). These in turn are different from individual companies or other entities that own or manage land and wish to apply pesticides on the land that they own or manage. However, in all cases, each licence applicant has to ensure that either (s)he holds, or employs someone who holds, a certificate to show that they are qualified to handle the pesticide.

What are some of the requirements that licence holders must undertake?

Some of the requirements that the public can expect from a licensee includes a requirement to use integrated pest management techniques before using a pesticide, although the requirements of section 68 of the IPMR for the licensee appear to be a little weaker as compared to the rest of the Act.

Some licensed pesticide users, such as when there is pesticide use in a multi-residence building, have to provide a treatment notice. For example, if a pesticide is going to be applied to indoor living accommodation, then occupants must be told 72 hours in

advance. The treatment notice must have information on it such as: the description of the treatment area; name of the targeted pest; the federal registration number of the pesticide to be used and its active ingredient; the proposed date and start time of the pesticide use and proposed alternate dates and times of the pesticide use; the name of licensee and licence number; a phone number at which the licensee or an employee can be reached for more information about the proposed pesticide use; precautions that should be taken to minimize exposure to a pesticide or its residues, including specifying the period following the use during which people should not enter the treatment area. In addition, licensees have obligations to keep records of use, recording the day of treatment and the record of the treatment area. See the discussion on page 30 for further information on the requirements for licensees to notify the public.

In addition, there are a number of requirements[37] related both to licensees and **confirmation holders** (these are holders of a confirmation notice, known as a PUN confirmation, which allows pesticide use under a pest management plan to go ahead – see page 27 for more information). The following list is an example of some of the requirements:

- Ensuring that the person who will be applying the pesticide knows exactly where the pesticides should be applied (the person should know the boundaries of the treatment area).
- It is imperative that the person who is applying the pesticide knows how to apply the pesticide safely so that they protect themselves, other people and the environment from pesticide exposure. Given that pesticides must be applied exactly as the label states, the licensee must make sure that any equipment to apply the pesticide is in good working order and calibrated properly to ensure the pesticide is applied according to the label's instructions.
- The licensee also has to ensure that (unspecified) precautions are taken before the pesticide is applied to protect other people's health, domestic and agricultural water sources and to avoid the use of pesticide over animals.
- There are important measures that a licensee has to take when it comes to "no-treatment zones." A no-treatment zone is an area of land that must not be treated with pesticides. and are required, in most cases, for 10 metres around water bodies, streams and some wetlands. Some of these measures include having a no-treatment zone so as to protect water sources, and not using a "residual pesticide" on soil that is water saturated during or before heavy rainfall.
- Unfortunately, in certain instances, there is softening of the requirements for specific uses that involve glyphosate, which is an active ingredient of Roundup.
- As windy conditions mean that pesticides will drift and increase the risk of exposing people or the environment to the pesticide, the IPMR states that apart from some limited situations, a person must not spray pesticides (when broadcast spraying or foliar spraying) if the wind exceeds 8km an hour.

- There are specified time limits for when licensees (except when managing adult mosquitoes) can spray – the aim is that it should be light enough to see the person applying the pesticide and the pesticide use from at least 30m away.
- Also, licensees must not use herbicides to remove any vegetation that affects slope stability, prevents erosion of a stream bank, prevents debris, which would cause an unreasonable adverse effect, from entering a stream.

Often, members of the public call West Coast Environmental Law with queries voicing concerns about pesticide use in forests and near railways. The following sections set out some of the specific requirements with respect to forestry and railway vegetation, for licence holders and the proponents of PMPs in effect.[38]

Specific requirements for licence holders[39] for pesticide use in forests

The regulations set out further requirements for licensees who use pesticides in forests. For example, monitoring under the IPM system must be undertaken within 18 months of the proposed pesticide use.

However, note that for licensees who use glyphosate, the regulations allow the pesticide free zones to be limited to 2 metres, around or along a body of water or a classified wetland, if

- the body of water or wetland is not fish bearing and
- selective application methods are used between 2 and 10 metres above the high water mark.

However, the pesticide free zone in not required at all around or along a body of water, when glyphosate is being used, if the body of water is:

- temporary free-standing body of water,
- is not a classified wetland or a wildlife habitat feature,
- not fish bearing and does not drain into a fish bearing body of water within 100 metres, and
- if no glyphosate is applied below the high water mark of the body of water.

The regulations set out further exceptions which specify when glyphosate can be applied to bodies of water and to dry streams. See page 30 for a discussion of public consultation that must be carried out by orivate forest land owners who hold a pesticide use licence.

Pesticide use requirements and railway vegetation management

The regulations also set out exceptions when it comes to controlling railway vegetation. For example, a shrouded boom[40] can be used to spray pesticides when the winds are between 8-16 kilometres an hour. Licensees can apply pesticides from a moving vehicle in certain instances, particularly where a shrouded boom is used and the vehicle does not go faster than 30 kilometres an hour, or if a wood preservative

is being used. If a wood preservative is used, and precautions are taken that prevent the deposit of the wood preservative below the high water mark – then the pesticide free zone around or along bodies of water, dry streams, and classified wetlands is not required under the law.

There are specific precautions when it comes to the Rubus plant species (such as the Himalayan Blackberry found commonly in BC). Licensees cannot apply pesticides to any of these plants if they are more than 3 metres away from rails, signals or switches. This requirement applies from the time the plants' flowers are open until the berries have dropped from the vines.

Also the regulations allow a licensee or confirmation holder that uses glyphosate to reduce the pesticide-free zone required under section 73(1) of IPMR to a 1 metre, no-treatment zone along or around a body of water if the pesticide is applied to railway ballast or yards, and if the body of water is a temporary, free-standing body of water that is not fish bearing at any time of the year and does not drain directly into fish bearing waters.

If the pesticide will be applied selectively to trees at highway crossings along the right of way, and if a body of water (or dry stream) is not fish bearing at any time of the year and does not drain directly into fish bearing water, and if the water is temporary and free-standing, then only a 1 metre no-treatment zone is required around or along the body of water or a dry stream.

There are also other detailed requirements for licensees and confirmation holders when it comes to:

- noxious weed and invasive plant management
- mosquito management
- the use of wood preservatives on poles
- bacterial pesticide
- rodenticide use
- fumigant gas

If any of the requirements for forestry, railway vegetation and the other situations are breached, a member of the public may complain to the Administrator, who can order a stop to the pesticide use, or make various other orders to correct the illegality.

Pest Management Plans ('PMP') and pesticide use under the IPMA

What is a PMP?

The IPMA defines a PMP as "a plan that describes:

(a) a program, for managing pest populations or reducing damage caused by pests, based on integrated pest management, and

(b) the methods of handling, preparing, mixing, applying and otherwise using pesticides within the program."

When is a PMP required?

A PMP will be required for a fairly wide range of large scale pesticide use, as described in Table 1 on page 22.

The IPMA intends that each PMP should be developed with public consultation and that through this process that any major issues will be brought forward at this stage. Indeed, the required publication of notice that a company is developing a PMP may be the first that the public hears of a planned pesticide use.

How is PMP put into effect?

A PMP does not, by itself, authorize a pesticide user to go ahead and use the pesticides. Instead, once the plan has been prepared, the pesticide user sends a notice, known as a Pesticide Use Notice ('PUN') [41] to the Administrator.

The PUN must have the following information:

- the name and address of the person or entity;
- confirmation that the legal requirements of the IPMA were followed in developing the PMP, and the results of public consultation are reported;
- the type of pesticide that is going to be used, its active ingredients, and how it will be used, including whether there will be any aerial spraying;
- the location where the pesticide use will occur;
- information on the area covered by the PMP; and,
- the contact person for the PMP.

It is important to note that the PMP does not form part of the notice and the Administrator does not need to look at the PMP on receiving the notice, or ever.

Unless the Administrator is willing to accept a very active role in reviewing public complaints about the content of PMPs, this turns responsibility for determining how pesticides will be used almost entirely over to the pesticide users. Even if, as we have suggested, the Administrator can and should intervene where a plan does not prevent the risk of an unreasonable adverse effect or fails to minimize pesticide use, the IPMA at a minimum, puts a large burden on the public to identify problematic plans and to bring them to the attention of the Administrator.

Once the PUN has been received by the Administrator, the Administrator must confirm receipt of it, and issue a confirmation notice, known as a **PUN confirmation**. The PUN confirmation will include an expiry date on it, and a proponent of a PMP cannot start the pesticide use without a PUN confirmation. Once a PMP is in effect, the plan can last up to five years, depending on the expiry date determined by the Administrator.

What should a PMP tell you?

As there can be considerable inconsistencies in the pest management plans that are produced, and the amount of detail produced for each plan can vary widely, Appendix 1 is a suggested checklist based on the requirements under the legislation, for the public to use as a reference tool to satisfy themselves that a PMP in their area contains adequate information. As there is an opportunity to consult on PMPs, members of the public should press for as complete information as possible, and should suggest additional strategies and measures to be taken in minimizing pesticide use and avoiding any unreasonable adverse effect (on the assumption that any unnecessary effect is unreasonable).

For an example of a PMP used by the BC Ministry of Forests and Range with respect to invasive alien plants, see the Ministry's website at: http://www.for.gov.bc.ca/hfp/invasive/. Some companies, such as Canfor, also have one of their forest PMPs available online.[42]

We believe that one Ministry of Forests and Range PMP advertised on the Forest Practices Branch website, cited above, provides an example of a plan that may not meet the basic requirements of the Act and its regulations. A PMP is required to contain strategies related to the protection of wildlife and wildlife habitat aimed at preventing harm from the pesticide use. The only discussion of protecting wildlife and wildlife habitat found in the Ministry of Forests' plan focuses solely on the impacts of invasive plants on the wildlife habitat, and entirely fails to address the impacts of the pesticides on either wildlife or wildlife habitat:

> Wildlife habitat can be significantly impacted by invasive plants, specifically areas of deer winter range along south-facing slopes. Standard invasive plant control strategies will be conducted within these areas unless it is identified that a site requires additional treatment to maintain critical habitat.[43]

More difficult than determining whether a PMP contains the necessary content, is determining whether the plan represents an appropriate balance between the pesticide user's economic needs and the public's right to a healthy and safe environment. In *Granby Wilderness Society v. Environmental Appeal Board,*[44] the BC Supreme Court, commenting on the purpose of PMPs, stated,

> "The provisions of the statute are, therefore, to be construed in a manner that maintains public confidence in any decision to use a pesticide. The legislative intention implicit in the definitions of "pest management plan" and "integrated pest management" is that any decision to use a pesticide will be made based on all relevant considerations, and within a process that assures a careful weighing of those considerations."

While the court was considering the language of the old *Pesticide Control Act*, the language of the IPMA – at least in relation to the definitions of PMP and IPM – are substantially the same.

On this basis, we suggest that a PMP should include enough detail to satisfy a reasonable person that the proponent proposing to use the pesticide, will take into account "all reasonable considerations." In addition, it is our view that the decision-making process set out in the PMP must be reasonable and must minimize the use of pesticides in a manner consistent with the principles of IPM and to ensure that any resulting adverse effect is reasonable.

Members of the public can press these arguments with pesticide proponents. However, if they do not believe that the PMP process or content meets the requirements of the IPMA, and/or there is a risk of an unreasonable adverse effect if the PMP is implemented, they may alert the Administrator of these facts. The Administrator may be reluctant to become involved unless the violation of the IPMA, or the risk of an unreasonable adverse effect, is clear, so it is important to carefully document the failures to comply with the IPMA, and to gather credible evidence – from an expert if possible – of the possible risks of the pesticide use.

If the Administrator agrees that there is a risk of unreasonable adverse effect, or if the Administrator considers that the confirmation holder has not been complying with the law or has not acted in accordance with the PUN, the Administrator then has the ability to suspend or revoke a PUN confirmation.[45] Alternatively, the Administrator may make orders to stop the pesticide use for a period of time, and also ensure that the confirmation holder cannot receive another PUN confirmation, for a period of time, for the same or another PMP.

How can you find information on an existing PMP in your area?

Any person can request to see the PMP, and can inspect the PMP wherever it is kept. Within 48 hours of receiving the request for copies of the PMP, the user must provide copies of the PMP at $0.25 a page to the member of the public requesting to see the document.[46] Under the IPMA, there are a number of sanctions if requests to inspect the PMP are refused, including an order to stop using the pesticides and the PMPs proponent may have to pay a fine of up to $400,000.[47]

Other requirements for PMPs

There are a number of requirements for a pesticide user who has received a PUN Confirmation or who has a licence under the IPMA. These requirements are discussed at pages 23 to 25. This discussion also examines specific requirements for confirmation holders (and licensees) dealing with forestry operations and railway lines.

Permits and pesticide use under the IPMA

Permits are specific authorizations by government to use a particular pesticide for a specific purpose in a particular place. They have a much higher level of detail and government involvement than either licences or PMPs. These uses of pesticides require a higher level of oversight, as there is a higher risk of an unreasonable adverse effect from using them.

When is a permit required?

Permits are required for those pesticides which are categorised under the IMPR as "permit-restricted." A permit is also required for when a proponent desires to use a pesticide in a way that requires permission as it goes beyond what is ordinarily permissible under BC pesticide laws. For example, if someone wishes to use strychnine to control bird populations, then a permit will be required. See Table 1 at page 22 for further examples of when a permit will be required.

What steps are needed to obtain a permit?

- An application for a permit must be filled in and sent to the Administrator with details such as the contact information of the applicant, the federal registration number, the active ingredient, and the method and rate of pesticide application.
- Anyone that applies for a permit has to conduct public consultations. The requirements are discussed in further detail later in this section.
- Each permit holder has to comply with standard terms and conditions under the IPMR; for example, a permit cannot be transferred to someone else, without the Administrator's written approval.

When does the public have to be consulted or notified of pesticide use?

Pesticide users seeking a Licence or Permit, or developing a Pest Management Plan, may be required to consult with the public.

Unfortunately, since the consultations are carried out by the person who plans to use the pesticide, and – in the case of licences and PMPs – the results of the consultation may not be reviewed by anyone other than that person, the public may have little confidence that their concerns will be appropriately addressed. Nonetheless, companies can be swayed by public opinion, and participation in these consultations represents an important opportunity to make your views known.

In addition, it may be possible to complain about particularly poor consultation to the Administrator. Anyone engaged in consultations should keep records of their comments and concerns about the licence, permit or plan. You should confirm your comments in writing, so that there is a record of your concerns.

If, during the course of a consultation, a pesticide user offers to directly notify a member of the public of a specific use of pesticide under a licence, PMP or permit, then the pesticide user must do so before applying the pesticide.

First Nations have additional leverage with respect to influencing PMPs given their constitutional right to consultation on matters that could have a negative impact on their reasonable aboriginal or treaty rights claims. As the Guide went to press, the Ministry of Environment was consulting with First Nations on guidelines to be used by pesticide users in consulting First Nations. This is a complex matter and First Nations opposed to pesticide use may wish to consult a lawyer on this issue.

Licences

Under the IPMR, licensees are required to notify nearby property owners when pesticide use is used to control forest pests on 20 hectares or more of private land used for timber production. This includes private roads, roadsides and areas close to the forest. Under the IPMR,[48] the licensee must give written notice to the owner of any property within 150 metres of the treatment area, at least 14 days before the pesticide use. The notice must describe the treatment area, state the reason for the pesticide use, state the active ingredient, the earliest date for the pesticide application and contact details for the licensee if anyone needs further information. The licensee must also state the width of the no-treatment zone from a water supply intake, or a well which that used for domestic or agricultural purposes (this includes water used for irrigation and livestock). The licensee must ask the property owner for information on the location of any water supply intake sites or wells, as well as if there is any land use that might be affected by the pesticide use. These requirements only apply to private forest lands.

As discussed, the public also has to be specifically notified under the IPMR, when it comes to pesticide use in residences and this includes indoor and outdoor common areas of multiple residence buildings or properties. Also, licensees have an obligation to notify the public if pesticides are going to be used in "outdoor public use areas." Essentially, these are areas on public land that are commonly used for public passage or recreation. Finally, where pesticides will be used on school property, or a child care facility, the licensee has to notify a school official, such as the Principal, and provide a treatment notice.

Pest Management Plans (PMPs)

The IPMA and its regulations require extensive public consultation on PMPs by the individuals and companies seeking to use pesticides.

With respect to notification of pesticide use, at least 45 days before a proponent of a PMP (the applicant) submits a PUN to the Administrator, the law states that a notice must be published in a newspaper for the communities in the area. The notice must include details such as the trade name and active ingredient in the pesticide, the pesticide use, the contact details of the applicant, how long the PMP is expected to be

in effect, and details of where the proposed PMP and maps of the proposed treatment area can be examined. If anyone has information about a proposed treatment site that is relevant to the PMP, the notice should set out that information should be sent to the applicant within 30 days of the notice being published. Finally, if the proposed pesticide use has the potential to significantly impact a member of the community or an individual, then at least 45 days before submitting a PUN, the applicant has to take steps to contact and consult with that person directly.

Permits

Anyone that applies for a permit has to publish a notice in a local newspaper which gives details of the application. Again, if anyone has information about a proposed treatment site that is relevant to the permit application, the notice should set out that information should be sent to both the applicant and the Administrator within 30 days of the notice being published. Other requirements for the applicant include submitting a signed statement within 90 days of the notice being published, to the Administrator, setting out the action that the applicant proposes to take to deal with the information received in response to the notice. The Administrator has to be satisfied that both notice was given and that the applicant has submitted a description of the action that the applicant proposes to take.

There are exceptions to the consultation requirement. For example, if the applicant can satisfy the Administrator that:

- an unforeseen pest problem exists and so delays from the consultations would likely lead to an unreasonable adverse effect; or
- the application is for pesticide use (on either a very small area or a very remote area) so that the pesticide use is unlikely to affect any person (apart from the person who owns the area where the pesticide will be used) or any other person's property.

Criticisms of the IPMA

The IPMA provides the least oversight for any pesticide that the government has identified as an "excluded" pesticide. The concerns are that the use of most excluded pesticides will not require notices or engagement with the public, and it may be difficult for the public to identify unreasonable adverse effects in advance. In addition, the ability of members of the public to influence pesticide use in the province has been limited by the IPMA. As the IPMA is so new, no precedents have yet been set. It is therefore difficult to say how successfully concerned citizens can influence decisions about pesticide use.

For pesticides that are not excluded, in many cases, the IPMA provides only limited, and difficult to enforce, regulation of the use of pesticides – for example:

- agricultural use of pesticides,
- residential use of pesticides (except for multi-family dwellings), and
- many private commercial or industrial use of pesticides.

However, even if a pesticide is regulated, the two most common legal tools – licences and pest management plans – provide for little accountability for pesticide use, turning crucial decisions about how much pesticide should be used and where over to the person hoping to use the pesticide. We, and others, have suggested that the IPMA, by turning these key decisions over to private interests with no real direction on the need to reduce pesticides, fails to provide effective regulation of pesticides. It fails to accomplish what its name suggests that it should – to promote true integrated pest management that results in more efficient and safer use of pesticides.

YOUR ROLE AT THE PROVINCIAL LEVEL

- The public has an important watchdog function to fulfil with respect to pesticide use in their community. If a member of the public suspects a pesticide user is violating the Act, or conditions of their licence, permit or PMP registration, they should contact their local Ministry of Environment office and report the matter. If the Ministry feels there is reason to be concerned, they will initiate an investigation.
- Certain decisions of the Administrator in approving or refusing to amend licences, PMPs or permits can be appealed by a concerned of member of the public to the Environmental Appeal Board. See page 38 for more information.
- Under the IPMA, either the Minister or the Administrator have broad powers, if they believe that "an unreasonable adverse effect has resulted or is likely to result from a pesticide user" to restrict the pesticide use. As such, it is important the Ministry is made aware of any circumstances in which a pesticide may be being used in a manner that may cause an unreasonable adverse effect.

Part 3: Local Government Approaches to Address Pesticide Issues

Local Governments and Pesticide Use

"The purposes of a municipality include:

- *providing for services, laws and other matters for community benefit,*
- *fostering the economic, social and environmental well-being of its community."*[49]

Although pesticides are regulated by the provincial and federal levels, local governments – whether a local municipality or a **regional district** – have an important and distinct role to play in pesticide use. Some people may feel that federal regulatory approval will be enough to ensure only safe pesticides are used in Canada and provincial legislation is enough to ensure the safe use of pesticides, but the reality is that the system in place requires an active participation by all of society and all levels of government. Given that provincial legislation only covers public land and certain types of private properties use, as discussed earlier, municipalities can protect their residents by limiting pesticide use on private lands. In addition, local government has a role as a property owner, and by making decisions about when and when not to use pesticides.[50] Local governments can also play a valuable role in education on pesticide use or in providing services for the disposal of pesticides.

The courts have supported the viewpoint that municipalities have a role to play in overseeing pesticide use within their jurisdictions. For example, in a case that reached the Supreme Court of Canada in 2001[51] (*'Spraytech'*), the small Quebec municipality of Hudson, was challenged over its decision to introduce a pesticide use bylaw. The bylaw purported to ban cosmetic pesticide use within the municipality, except in certain circumstances. The Supreme Court of Canada affirmed that Hudson had the power to pass bylaws regulating pesticides (because of Quebec legislation which

allowed the municipality to make bylaws for the "general welfare in the territory of the municipality") and it could use this power to set requirements for pesticides that were even stricter than the provincial or federal standards. The Supreme Court didn't stop there: the judges found that the municipality had acted appropriately by applying the "precautionary principle" in making the bylaw, a principle of international law which advocates that environmental decision-making must take into account risks of serious harm even when there may not be full scientific certainty that the harm will occur.

Following the *Spraytech* decision, local governments across Canada have begun to enact prohibitions or regulation of pesticides used for cosmetic purposes. While some have been challenged, the bylaws have generally been upheld by the courts.[52]

The Power of Local Governments

On January 1, 2004, the *Community Charter*[53] came into force in BC. The *Charter* and its regulations make it clear that municipalities, but not regional districts, have the right to regulate, prohibit and impose requirements in relation to the application of pesticides. The *Charter* states[54] that a council may, by bylaw, regulate, prohibit and impose requirements in relation to the natural environment and public health. However, these broad powers are somewhat restricted by both further regulation and a Consultation Agreement between the BC Government and the Union of BC Municipalities.[55]

For example, a regulation governing local government regulation of the environment[56] makes clear that local governments can "regulate, prohibit and propose requirements in relation to…the application of pesticides, except exempt pesticides [for cosmetic use]…on a parcel…used for residential purposes, or on land vested in the municipality." However, it does not allow for the regulation of pesticide use on agricultural, industrial or other non-residential lands. Moreover, the bylaws can only regulate "cosmetic pesticide use" – the use of pesticides to make land look good – and cannot restrict the use of pesticides which are listed as "excluded" under the IPMA. As noted above, excluded pesticides can include some fairly serious pesticides that a municipality might wish to regulate.

Furthermore, the Consultation Agreement sets out that municipalities may not restrict pesticide use with respect to:

1) Management of pests that transmit human disease or that threaten the environment. The examples listed in the Agreement include mosquitoes and gypsy moth.

2) Noxious weeds management or any invasive pests that are of "provincial interest" such as the codling moth and cherry fruit fly.

3) On land used for agricultural, forestry, transportation, public utilities and pipelines (however municipalities can regulate any utilities or pipelines that they own).

The *Public Health Regulation*, which deals with the powers of municipal governments to pass bylaws for public health purposes under the *Community Charter*, may give municipalities broader powers to regulate pesticides, if the bylaw is made to protect human health. However, since the *Environment Regulation* deals with pesticides specifically, while the *Public Health Regulation* does not, there is a legal debate as to whether pesticide bylaws could be enacted under the Public Health power or not. That being said, regional districts have the authority to pass bylaws for the purpose of protecting public health, but not a general environmental protection power.[57] Thus, regional districts seeking to enact a bylaw regulating pesticide use may be forced to argue that such a bylaw is intended to protect public health.

As such, the clearest power of municipalities to regulate pesticide use is limited to regulating cosmetic use of pesticides on residential property and the municipality's own property. Any municipal government seeking to enact a broader pesticide bylaw should seek legal advice.

Many communities across Canada have already enacted bylaws regulating pesticide use. As such, there are many examples from which BC communities can learn. For example, the City of Toronto's pesticide bylaw came into effect on April 1, 2004. In a recent evaluation of how well the bylaw has been working, Toronto's Medical Officer of Health reports that Toronto's pesticide program which consists of the bylaw and an education program, has seen a reduction in the number of residents and companies using pesticides. There have been different phases to the program; for example, as of September 1, 2007, the homeowners and tenants will have to pay penalties if they violate the bylaw. The report "credits the early success in reducing the number of residents and companies using pesticides to an implementation strategy based on public education and bylaw enforcement, phased-in penalties and ongoing review and adjustment."[58]

Communities in BC can also look to model bylaws that are available, for discussion with their own municipalities. For example, the Capital Regional District has produced a draft bylaw on their website – a copy of which may be found at Appendix 2 of this Guide.

Another possible approach is to require pesticides to be applied, if at all, by companies that are trained and certified in the use of IPM techniques. Certification programs for IPM are currently under development.

Bylaws restricting cosmetic pesticide use are not the only approach to bylaws regulating pesticides. For example, for the past four years, the municipality of Kelowna has maintained a Commercial Pesticide Notification Registry program,

whereby persons who have added their names to the list are given notice of commercial spray operators who apply pesticides on residential properties on their area. Although program participants have to re-register every year, the program allows residents to take appropriate precautions so as to limit their exposure to pesticides. Local citizens are now encouraging Kelowna to adopt a more stringent pesticide us bylaw.

It is worth noting that the City of Vancouver (which is given its authority through the *Vancouver Charter)* has included provisions in its *Health Bylaw* with respect to use of pesticides for a number of years. Its provisions include the requirement for every owner of buildings or land to prevent pest infestations that might give rise to the need for pesticide use, and to give notice to tenants of upcoming pesticide use.[59] While some Regional Districts, such as the Capital Regional District, have adopted pesticide reduction programs, and others have adopted bylaws, the ability of Regional Districts to regulate pesticide use is less clear than it is for municipal governments. It may therefore be easier to convince municipalities to adopt cosmetic pesticide bylaws.

Local governments, whether municipalities or regional districts, can, of course, manage their own lands to reduce pesticide use, and can carry out educational or incentive programmes to encourage land owners to reduce their use of pesticides.

YOUR ROLE AT THE LOCAL LEVEL

1. Consider working on a community group that has an interest in pesticides.
2. See West Coast Environmental Law's *Smart Growth Guide to Local Government Law and Advocacy*, 'How do you build relationships with local politicians,' at pp.158-159 for a discussion of how to engage with your local government officials. For example, you may wish to attend council meetings and make presentations on pesticide issues. The *Smart Growth Guide* is available online at http://www.wcel.org/wcelpub/2001/13300.pdf.
3. Advertise your decision to reduce pesticide use. For example, you can talk to your neighbours about the need to reduce their pesticide use, or post a "pesticide free zone" sign in your yard.
4. Hold public meetings or events, where perhaps invited speakers can give more information on pesticides and their use.
5. Think of engaging with specific groups such as gardening clubs to talk about alternatives to pesticides.

Part 4: Role of the Environmental Appeal Board and the Courts

This section is intended to give some basic background information on the possible role of the Environmental Appeal Board and the courts regarding the IPMA and Regulation. However, if a member of the public feels that they have a legal issue, a lawyer should be consulted as the legal remedies and options available will vary on the individual facts, and the law as it applies to those facts.

Environmental Appeal Board (EAB)

The EAB has been mentioned several times in the previous sections above. It is an appeal body appointed by the government, but is arms-length from the Ministry of Environment, and hears appeals on a number of environment-related decisions under a number of different statutes.

The IPMA allows any person to make an appeal to the EAB, but limits the types of decisions that can be appealed in ways that makes it difficult for members of the public to get their issues before the Board.

What can be appealed?

In general, the types of decisions that can be appealed are those which a pesticide user would be interested in appealing, rather than the public. For example, it is possible to appeal the refusal to issue a licence, but not the decision to issue a licence in the first place. The Administrator may amend, revoke, suspend, or renew a licence, and the decision to take any of these actions can be appealed at the EAB.

Interestingly, the Administrator's refusal to amend a licence can also be appealed to the EAB. On its face, this potentially allows any member of the public to request the Administrator to amend a licence – to include, for example, more restrictions on the licensee's pesticide use – and, if the Administrator refuses, to appeal that decision to the Board.

With respect to permits, as with licences, the Administrator's refusal to issue a permit can be appealed to the EAB, even though the decision to approve the permit in the first place may not be. The decision to amend, revoke or suspend a permit can be

appealed. Again, there maybe the potential to appeal the refusal of the Administrator to amend a permit, when asked by a member of the public to do so.

If the Administrator makes an order restricting the pesticide use of a pesticide user, but a member of the public believes that the order does not go far enough in protecting the public, it also may be possible to appeal the order.

Members of the public may also be able to become involved as an "intervener" when a pesticide user appeals a decision of the Administrator to the Board.

How to make an appeal to the EAB[60]

Once an administrative decision has been made, and a person affected by the decision wishes to appeal, (s)he has 30 days, from the date of the decision, in which to lodge a notice of appeal at the EAB. As with any type of hearing, the applicants will need to prepare their cases and most applicants will want to ensure that they have legal representation. In most cases, the appeal to the EAB is in the form of a live hearing, where all the parties present their arguments and evidence in person. In certain cases, parties can make written submissions. This is often a longer process, as all the parties must respond to each of the written submissions that are received by the EAB. Usually, the appeals are conducted by panels which consist of one to three members.

Decisions by the EAB

In the past, the EAB has demonstrated a technical understanding of their role, which is limited to determining that the appellant (member of the public) has proven an error on the part of the decision-maker (Administrator). This can create problems – especially for lay appellants.

It is important that appellants identify specific problems with the decision that they wish to appeal, and assemble expert evidence on health and environmental risks. See page 42 for more information on choosing an expert. If possible, appellants should also consider getting legal advice from a lawyer, to assist with the case and legal strategy.

The Role of the Courts

Courts have not yet had many opportunities to apply or interpret the IPMA and the IPMR. There are several questions about the legislation that may be decided in the courts. For example, the courts may have the opportunity to decide how precise and detailed PMPs have to be. In addition, the courts may further define the concept of an unreasonable adverse effect.

Should a member of the public seek to challenge pesticide use, it is possible that there are options for actions such as a judicial review. This is where the decision of a statutory decision-maker (ordinarily the Administrator) can be reviewed by a judge. If there are injuries or damage caused by the pesticide use, there may also be a possibility that an action can be started against the pesticide user, for the loss or damage caused. However, as with all court actions, and pesticide actions in particular, it is worth bearing in mind that there are a number of limitations to court actions.

(a) **Expense and time** – Bringing and arguing a lawsuit effectively requires both legal and scientific expertise, and as a result, it is very expensive. Judicial reviews will often be cheaper, but are still expensive. Lawyer and expert fees will be billed to the parties. It may be possible, in some cases, to find lawyers and/or experts who will work at a discounted rate, or even, sometimes, for free, but this will be the exception rather than the rule. Moreover, even with a reduced salary, most lawyers will expect their expenses to be covered in full.

(b) **Court-ordered costs** – If a party loses a court battle, they will usually be ordered by the Court to pay a portion of the other side's legal costs. This can be a significant deterrent to bringing a claim.

(c) **Focus on damages** – Classic court battles focus on compensating someone for damage after the damage has occurred. Litigation can be less well-suited to prevent future (potential) damages or damage to the environment. The environment only has a voice in court insofar as damage to it may affect the legal interest of a person. Sometimes proving that a health or environment impact will happen can be extremely problematic, and leads to difficulties in preventing pesticide use before it has occurred.[61]

(d) **Focus on individuals** – A lawsuit focuses on the person(s) who caused the damage and the person(s) who suffered it. In general, lawsuits do not consider general damage to the public or damage to the environment. As a result, lawsuits often have only an indirect impact on public policy and broader issues of pesticide use.

Some of these issues can be addressed to an extent with careful planning. Issues of costs and expense can be addressed, for example, by bringing an action in small claims court. A person cannot claim more than $25,000 in small claims court, but the court process is generally simpler, and more open to people without lawyers, than most court processes. Also, small claims court will not award costs to the winning party (beyond minimal filing costs).

Similarly, judicial reviews – challenging a government decision in court – are somewhat cheaper than claims for damage from harm arising from pesticides, although still expensive.

Types of legal actions typically associated with pesticide use

Judicial Review

It is beyond the scope of this Guide to give detailed information on judicial review actions. However, generally speaking, a judicial review action is where the legality of an administrative decision, such as one taken by a government body or a tribunal such as the EAB, is reviewed by the courts. There are different standards of review that the courts can use, and the courts will take different factors into account, based on the facts of the case, to decide exactly which standard of review to assess the decision. For example, a court will often consider factors such as a tribunal's experience and expertise in a subject matter.

With respect to the IPMA, either the decisions of both the Minister or the Administrator (with some exceptions) could be judicially reviewed. However, there is some debate as to how useful judicial review actions will be, and whether or not PMPs can be judicially reviewed. For example, once the pesticide user has finalized the PMP and submitted a PUN to the province, and the PMP is registered (which occurs with no actual decision by the government), the IPMA does not explicitly allow the public to ask for a government review of the PMP or to appeal it. Indeed, it is uncertain whether a member of the public can challenge the PMP directly even if the IPMA or its regulations were not followed, or if the PMP will provide no meaningful protection to human health or the environment. Anyone in such a situation should consult a lawyer.

Other actions

A typical lawsuit arising from pesticide spraying affecting private property will probably raise issues of nuisance, trespass and the rule in *Rylands v. Fletcher*.

Nuisance

Nuisance may occur at law where a person is deprived of the ability to use or enjoy their property in a reasonable way by the actions of another person. If the offending individual can show that his or her actions that caused the deprivation are reasonable, they may not be found guilty of nuisance. Farmers using pesticides may have some protection against claims in nuisance under the *Farm Practices Protection Act*.[62]

Trespass

Where a pesticide is applied directly to the property of a person, or to the persons themselves, who have not agreed to the pesticide use, a trespass can be said to result. Unlike nuisance, the trespass does not require that damage be demonstrated. It is enough that the trespasser has deposited something unwanted on someone else's property or person. As a result, this cause of action has been used where pesticides have drifted from one property to another for example, after aerial pesticide spraying.

Strict Liability

In a seminal case known as *Rylands v. Fletcher,*[63] a negligence case which has its own distinctive features, the court stated:

> The occupier of land who brings and keeps upon it anything likely to do damage if it escapes is bound at his peril to prevent its escape, and is liable for all the direct consequences of its escape, even if he had been guilty of no negligence.[64]

With respect to pesticides, if a person brings pesticide on to land, and injury to persons or property result because the pesticide "escapes" from the person's land, that person can be liable for all the direct consequences of its escape. In such a case, it would not matter to what extent or how careful they were to avoid negative consequences. Several cases have found defendants liable under this rule for damages resulting from pesticide drift, specifically in relation to aerial spraying.[65]

Other types of legal action are possible such as negligence and so a lawyer can discuss these and other actions, and explore all the possible remedies for a particular situation.[66]

Consulting and Using an Expert

As pesticides and their impact on the environment and human health depends on scientific knowledge and understanding, most parties involved in either an EAB matter or a court action, will want to consult with an expert. Each party can ask an expert to either agree to provide evidence in person, or to provide a written opinion. However, sometimes it may be helpful to consult with an expert, or to obtain expert information, in order to understand a situation thoroughly before any action is contemplated.

There are different types of experts available, each with different specialisations. For example, agronomists study soil and its relation to agricultural crops and may be able to provide information on the likely effects of pesticides on forest health. Entomologists study insects and may be able to comment on the likely effect of

pesticides on insect populations and ways to control insect pests. Other specialists include: ecologists, hydrologists and toxicologists to name but a few. A toxicologist specialises in determining how a substance is toxic and the likely effects of that substance on humans and the ecosystem.

Once you know what information is required, how do you find your expert? Keep in mind that not all experts are equal. Some will specialise in a manner which makes them more or less able to answer your questions. Others will have a high level of credibility or experience which makes them desirable. On the other hand, a high level of expertise may mean that the expert will expect to be paid more for their work. Also, experts will have a varying level of sympathy for the goals of controlling pesticide use. Despite the perception that science is science, there are many issues where there is significant controversy about the approach to be taken. Pesticide use is frequently such an area, and you may well find that you will get different answers to the questions depending on which expert you ask. Moreover, a sympathetic expert may be willing to work at a discount in the right case. At the same time, a professional is expected to be objective, and an expert who is blatantly biased in favour of a position will lose credibility.

The best starting point to finding experts on pesticides and their effects will often be by word of mouth. Start by talking to organisations and individuals with a history of working on pesticide issues (whether in your immediate community or nearby). Organisations with a history of working on these issues will often have come into contact with scientists and other experts with knowledge about these issues. In addition, informed groups will have developed their own expertise which can help interpret technical information or point you in the right direction for finding experts.

Concluding Remarks

In January 2007, the Globe and Mail reported that four federal ministers had had testing done to find out what chemical pollutants they had in their bodies.[67] The results showed that each minister had a large number of pollutants in their systems, including insecticides. One minister had a high level of organophosphate pesticides in his system, the highest level of out of the four ministers tested. While it is true to say that even minute concentrations of chemicals in the body have not been proven to cause harmful effects, it is equally true to say that we do not know the full extent of the harm of the chemicals on the body or within the ecosystem. All studies will be limited by the current state of knowledge of likely effects. That being the case, it makes sense, as a society to actively limit the levels of chemicals that we are exposed to. For industry, this means: to only use chemicals when necessary; examining alternatives to chemicals even though it may cost more to use non chemical alternatives; to ensure that all employees have limited exposure to pesticides and that workers are trained effectively to apply chemicals safely and sparingly to prevent exposure to others and to the environment.

The importance of all levels of government in regulating pesticides cannot be overstated. This applies equally to federal responses to the chemicals allowed in the first place, effective provincial oversight and management of chemicals in our midst and municipal regulation for each of its citizens. For example, as new research and information becomes available, it is critical that that older pesticides are re-evaluated in a timely manner to allow for the prompt removal of the pesticides from the market. All levels of government can use educational campaigns – these have been shown to affect pesticide use, however, more guidance is needed on alternatives to pesticide use or integrated pest management rationales.

Pesticide use is everybody's business and everybody's responsibility. There are many opportunities for the public to engage with the government to ensure that environmental and health protection is paramount. The public's role can be extremely varied, from engaging in consultations on pesticide registration, to using all available legal channels, and to making individual choices so as to limit the toxins used in homes and gardens. However, improvements can and must be made at all sectors of society to ensure that pesticides do not continue to impact human health or the environment in this generation or in future generations to come.

Helpful Links and Resources

The following websites were all accessed March 14, 2007

1. The Canadian EarthCare Society
   http://www.earthcares.org/
2. Pest Management Regulatory Agency Product Information
   http://www.pmra-arla.gc.ca/english/pubreg/productinformation-e.html
3. Responsible Pest Management (website funded through Environment Canada and Federation of Canadian Municipalities)
   http://www.pestinfo.ca/index.php3/lang/EN
4. Organic Agriculture Centre of Canada
   http://www.organicagcentre.ca/index_e.asp
5. Certified Organic Associations of British Columbia
   http://www.certifiedorganic.bc.ca/index.htm
6. Labour and Environmental Alliance Society (LEAS)
   http://leas.ca/Pesticides.htm
7. Pesticide Wise -BC Agriculture and Lands
   http://www.agf.gov.bc.ca/pesticides/index.htm
8. Pesticide Glossary – BC Agriculture and Lands
   http://www.agf.gov.bc.ca/pesticides/l_6.htm
9. Pest Management Regulatory Agency
   http://www.pmra-arla.gc.ca/english/index-e.html
10. Ministry of Environment Integrated Pest Management Program
    http://www.env.gov.bc.ca/epd/epdpa/ipmp/index.html
11. Pesticide Action Network North America
    http://www.panna.org/ and their pesticide information website:
    www.pesticideinfo.org
12. Progressive Intercultural Community Services (PICS) (provides help and support to farmworkers)
    http://www.pics.bc.ca/
13. Farmworkers Legal Advocacy program (Abbotsford Community Service and PICS)
    http://www.farmworkersinfo.ca/

14. World WildLife Fund's campaign: "Pesticide Reduction is Possible!"
http://www.wwf.ca/satellite/prip/factsheets/factsheets.html

15. Society Promoting Environmental Conservation(SPEC) Pesticide Information Centre
http://www.spec.bc.ca/project/focusarea.php?focusID=21

16. Capital Regional District Roundtable on the Environment Alternatives to Pesticides
http://www.crd.bc.ca/rte/pest/index.htm

17. 2003 Report of the Commissioner of the Environment and Sustainable Development Managing the Safety and Accessibility of Pesticides
http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20031001ce.html

18. Canadian Lung Association
http://www.lung.ca/protect-protegez/pollution-pollution/outdoor-exterior/pesticides-pesticides_e.php

19. Iowa and North Carolina Agricultural Health Study
http://www.aghealth.org/results.html

20. Northwest Coalition for Alternatives to Pesticides
http://www.pesticide.org/

21. The Canadian Association of Physicians for the Environment
http://www.cape.ca/

Appendix 1

Checklist for Pest Management Plan (PMP) Content

Identifying information

- ❑ Name and address of proponent, with the contact details for the principal contact for the PMP.
- ❑ Description of the geographic areas where the pesticide application will take place (will be affected by the plan) and maps and diagrams of the proposed treatment area ('treatment area').
- ❑ Name of the person responsible for managing the pests in the treatment area(s).

Integrated Pest Management process/procedures

- ❑ Description of the program that can be adopted that will prevent the organisms from becoming pests.
- ❑ Description of the program to identify the pests.
- ❑ Does the plan identify and consider different strategies:
  - ❑ cultural,
  - ❑ physical,
  - ❑ mechanical, and
  - ❑ biological?
- ❑ Description of a monitoring program (method, frequency and description of data needed) to assess the pest population, the ecosystem, and the environmental effect of the pest population.
- ❑ What decisions have been made to determine the "injury threshold" i.e., that the abundance of the pests and the damage they are causing are enough to require pest control treatment?
- ❑ What is the injury threshold?
- ❑ What are the pest treatment options? (Rationale, benefits, limitations of both pesticide and non pesticide treatment options and a description of the decision for the treatment option for the PMP).
- ❑ What are the details of each pesticide (Product name; active ingredient) that will be used under the plan?

Practical information on the pesticide application

- ❑ Description of the methods for safely: handling, preparing, mixing, applying or using the pesticide.
- ❑ Who is/are the person(s) responsible for the pesticide application?
- ❑ What are the procedures for responding to pesticide spills?
- ❑ What is the application method for each pesticide used under the plan and what equipment will be used?

Environmental Protection Strategies

- ❑ What are the descriptions of the environmental protection strategies under the plan to protect the following from the adverse effects of pesticide use:
  1. Community watersheds
  2. Domestic and agricultural water sources
  3. Fish
  4. Wildlife
  5. Riparian areas
  6. Wildlife habitats
  7. Food intended for human consumption
- ❑ What are the descriptions of the procedures in place under the plan for
  1. Inspections (pre-treatment) to identify the treatment area,
  2. Maintaining and calibrating pesticide application equipment, and
  3. Monitoring weather conditions and what are the associated strategies for modifying pesticide application methods for different weather conditions?

Appendix 2

Example of a Model Pesticide Use Bylaw

CAPITAL REGIONAL DISTRICT'S MODEL PESTICIDE USE BYLAW
(Full details available at the CRD website: http://www.crd.bc.ca/rte/pest/documents/modelpesticideusebylaw_000.pdf)

CAPITAL REGIONAL DISTRICT MODEL PESTICIDE USE CONTROL BYLAW

City/District/Township of _____

Bylaw No. _____

A BYLAW TO REGULATE THE USE OF PESTICIDES FOR NON-ESSENTIAL PURPOSES WITHIN THE CITY/DISTRICT/TOWNSHIP OF _____

WHEREAS:

A. the residents of the City/District/Township of _____ are concerned about the non-essential use of pesticides and the risk that pesticides may pose to the natural environment;

B. the application of pesticides contributes to the cumulative chemical load absorbed by the natural environment;

C. pesticides cannot be necessarily confined to a single location but move through the environment in the air, land and water and may have an impact on non-target organisms and plants;

D. alternatives to the application of pesticides exist;

E. the Precautionary Principle supports local governments anticipating and preventing threats of harm to the environment, even if some cause-and-effect relationships are not fully established scientifically;

F. municipalities have jurisdiction to pass bylaws regulating the application of pesticides pursuant to sections 8(3)(j) and 9 of the Community Charter and BC Reg. 144/2004 (Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation);

G. the City/District/Township of _____ deems it expedient to provide for regulating the use of pesticides for non-essential purposes within the City/District/Township of _____.

NOW THEREFORE the Council of the City/District/Township of _____, in open meeting assembled, enacts as follows:

PART 1 – GENERAL PROVISIONS

Title

1. This Bylaw may be cited for all purposes as "Pesticide Use Control Bylaw, No. _____, 20___."

Schedules

2. The following Schedule attached to this bylaw forms an integral part of this bylaw and is enforceable in the same manner as this bylaw.

a) Schedule A – Permitted Pesticides

PART 2 – DEFINITIONS

Definitions

3. In this Bylaw:

"Council" means the Council of a municipality.

"Farm" means land classified as farm land by an assessor appointed under the *Assessment Authority Act*.

"Land Used For Agriculture" means land designated as agricultural land under the *Agricultural Land Commission Act* and includes agricultural land under a former Act.

"Permitted Pesticide" means a Pesticide listed in Schedule "A."

"Pest" means an injurious, noxious or troublesome living organism, but does not include a virus, bacteria, fungus or internal parasite that exists on or in humans or animals.

"Pesticide" means a micro-organism or material that is represented, sold, used or intended to be used to prevent, destroy, repel or mitigate a Pest, and includes:

(a) a plant growth regulator, plant defoliator or plant desiccant;

(b) a control product as defined in the *Pest Control Products Act* (Canada); and

(c) a substance that is classified as a Pesticide by the IPMA (British Columbia).

"Private Lands" means a parcel or part of a parcel if the parcel or part is used for residential purposes.

"Public Lands" means lands vested in the City/District/Township of _____.

"Sensitive Ecosystem" means Private or Public Lands with one or more of the following characteristics:

(a) areas or landscape features identified in the Sensitive Ecosystems Inventory for Eastern Vancouver Island and the Gulf Islands, BC Ministry of Environment;

(b) areas or landscape features identified in a municipal plan, map or zoning bylaw as environmentally sensitive, environmentally significant, environmental protection area, development permit area for protection of the environment, or other similar purpose that is compatible with the conservation of ecological features and functions of the site; or

(c) local government parks or other protected areas designated or managed for the conservation of ecological features and functions of the site.

PART 3 – REGULATION

4. Except as permitted in this Bylaw, no person may apply or otherwise use Pesticides for the purpose of maintaining outdoor trees, shrubs, flowers, other ornamental plants and turf on a parcel if the parcel or part of the parcel is Private Land or Public Land. In this section, "maintain" includes the control, suppression or eradication of a Pest.

5. Section 4 does not apply to the application of Pesticides:

(a) that are Permitted Pesticides as listed in Schedule "A";

(b) for the management of Pests that transmit human diseases or impact agriculture or forestry;

(c) on the residential areas of Farms;

(d) to buildings or inside buildings; or

(e) on Land Used For Agriculture, forestry, transportation, public utilities or pipelines unless the public utility or pipeline is vested in the municipality.

6. A person may apply to Council for an exemption from section 4 for the use of Pesticides for Pest infestations that threaten the integrity of sensitive ecosystems.

An application for exemption under section 6(1) may be made by an applicant using the form attached to this bylaw as Appendix 1.

7. Council may grant an exemption under section 6 where the need for the use of the Pesticide is urgent and no effective non-Pesticide alternative is available.

8. When granting an exemption under section 6 Council may impose one or more conditions relating to:

(a) the species of plant or Pest to which the Pesticide may be applied;

(b) the area of land on which the Pesticide may be applied; and

(c) the period of time in which the Pesticide may be applied.

9. A person who has obtained an exemption from Council to use a Pesticide pursuant to section 6 must provide written notice of the use of the Pesticide in accordance with sections 10 and 11.

10. Written notice must be posted on public or private land where the Pesticide will be used and must comply with the following requirements:

(a) The notice must be posted on the public or private land at least 48 hours before the Pesticide will be used;

(b) The notice must remain on the public or private land until the later of 72 hours after the application of the Pesticide or the time, if any, indicated on the product label specifying when the area can safely be re-entered after application;

(c) Notices must be posted in locations that are clearly visible from each highway or public pathway adjoining the public or private land, and

(i) within three metres of each of the property lines intersecting each highway or public pathway; and

(ii) at driveways, walkways, and other usual entrances to the public or private land;

(d) The notice must be made of material that is weather resistant;

(e) The notice must measure at least 12 centimetres by 17 centimetres;

(f) The notice must include the following information:

(i) the location, date and approximate time of the Pesticide use;

(ii) in the event of inclement weather, an alternate date or dates on which the Pesticide use may occur;

(iii) the brand name and registration number of the Pesticide that will be used;

(iv) the Pest for which the Pesticide is being used;

(v) the time, if any, indicated on the product label specifying when the area can safely be re-entered after application; and

(vi) the following phrase: "Permission to undertake this activity was obtained from the City/District/Township of _____. Further details may be viewed at the municipal hall, [address and department]."

11. Written notice must be delivered to residents of lots that are adjacent to the public or private land where the Pesticide will be used and must contain the information set out in section 10(6).

12. In section 11, "lots that are adjacent" include lands separated by a highway or public pathway.

PART 4 – OFFENCE AND PENALTY

13. A person commits an offence who:

(a) violates a provision of this Bylaw;

(b) consents, allows or permits an act or thing to be done in violation of a provision of this Bylaw;

(c) neglects to or refrains from doing anything required to be done by a provision of this Bylaw.

14. A person is guilty of a separate offence each day that a violation occurs or continues to exist.

15. A person who commits an offence is liable on summary conviction to a minimum fine of $250 and a maximum fine not exceeding $10,000.

PART 5 – SEVERABILITY

16. If a section, subsection, sentence, clause or phrase of this bylaw is held to be invalid, by the decision of a Court of competent jurisdiction, the invalid portion shall be severed and the decision shall not affect the validity of the remaining portions of this bylaw.

PART 6 – EFFECTIVE DATES

17. This Bylaw shall come into effect on _____, 20___

READ A FIRST TIME the _____ day of _____, 20___

READ A SECOND TIME the _____ day of _____, 20___

READ A THIRD TIME and passed by the Council on the _____ day of _____, 20___

ADOPTED by the Council, signed by the Mayor and Municipal Clerk and sealed with the Corporate Seal the _____ day of _____, 20___

_____

MAYOR

_____

MUNICIPAL CLERK

Please note that Part 7 of the Bylaw, (SCHEDULE A) which sets out the excluded pesticides as referred to in Schedule 2 of the IPMR, and Appendix 1 of the Bylaw are not reproduced here.

Endnotes

[1] Report of the Standing Committee on Environment and Sustainable Development, *Pesticides, Making The Right Choice for The Protection Of Health and the Environment*, May 2000. Available at: http://cmte.parl.gc.ca/Content/HOC/committee/362/envi/reports/rp1031697/envi01/04-toc-e.html.

[2] Ontario College of Family Physicians, "Comprehensive review of Pesticide Research Confirms Dangers, Family doctors highlight link between pesticide exposure and serious illnesses and disease; children particularly vulnerable." News Release dated April 23, 2004, available at http://www.ocfp.on.ca/local/files/Communications/Current Issues/Pesticides/News Release.pdf, discussing the findings of the literature review, available at: http://www.ocfp.on.ca/local/files/Communications/CurrentIssues/Pesticides/Final Paper 23APR2004.pdf.

[3] ENKON Environmental Limited, *Survey of Pesticide Use in British Columbia: 2003* (Environment Canada and the Ministry of Environment, October 2005), [hereinafter ENKON] at p17-18. Available at: http://www.env.gov.bc.ca/epd/epdpa/ipmp/technical_reports/pesticide_survey2003/pest_survey_03.pdf. Last accessed March 14, 2007. Pesticides with domestic use labels – intended for household use – were generally not included in this survey.

[4] ENKON at page 17.

[5] Briggs, *Basic Guide to Pesticides: Their Characteristics and Hazards*, 1992, Rachel Carson Council, page 130.

[6] Office of the Auditor General of Canada, *2003 Report of the Commissioner of the Environment and Sustainable Development*, Chapter 1 — Managing the Safety and Accessibility of Pesticides, at page 4. Available at: http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20031001ce.html.

[7] UBC Centre for Health and Environment Research, *New study to investigate tree planter health*, Press release dated August 14, 2006. See http://www.cher.ubc.ca/News/MediaReleases/tree-14-08-06.asp.

[8] ENKON at page 23.

[9] ENKON at pages 24-25. Bear in mind that the authors of the survey report that two wood treatment plants did not participate in the survey.

[10] *Pest Control Products Act*, 2002, c.28.

[11] Pesticides Literature Review, above, note 2.

[12] Mehler LN, Schenker MB, Romano PS, Samuels SJ, *California surveillance for pesticide-related illness and injury: coverage,bias and limitations*, Agromedicine. 2006;11(2): 67-69.

[13] Cloyd, Nixon, Pataky, *IPM for Gardeners A Guide to Integrated Pest Management*, 2004 Timber Press, pages 8-9.

[14] Note 1 supra.

[15] The new PCPA replaced an act of the same name, which had been force since 2002. In addition to the PCPA, other federal legislation that have an impact on pesticides include

the: *Pesticide Residue Compensation Act, Fisheries Act, Food and Drugs Act, Migratory Birds Convention Act, Species at Risk Act*, *Transport of Dangerous Goods Act*.

[16] PMRA, "About the PMRA," available at: http://www.pmra-arla.gc.ca/english/aboutpmra/about-e.html.

[17] For more information, see Health Canada's general fact sheet, "Agency Assesses the Risks of Pesticides." Available at: http://www.hc-sc.gc.ca/sr-sr/activ/environ/pesticides_e.html. Information is also available on the scientific assessments required by PMRA - see PMRA's website at: http://www.pmra-arla.gc.ca/english/aboutpmra/healtheval-e.html.

[18] Pursuant to the *Food and Drugs Act*, R.S., 1985, c. F-27 (FDA).

[19] For further information, see PMRA, *Pest Management Regulatory Agency – Overview Document*," available at http://www.pmra-arla.gc.ca/english/pdf/pmra/pmra_overview-e.pdf.

[20] *Integrated Pest Management Act*, [SBC 2003] Chapter 58.

[21] To find the pesticide label for a particular pesticide, you can search Health Canada's, "ELSE Label Search," website available at http://eddenet.pmra-arla.gc.ca/4.0/4.01.asp.

[22] The BC Ministry of Agriculture and Lands' "Pesticide Wise," site gives a basic overview of labels and the information that should be on the display panels. See http://www.agf.gov.bc.ca/pesticides/k_2.htm.

[23] See PMRA, "Getting Involved in Canada's Pesticide Regulatory Process" fact sheet, June 2006. Available at: http://www.pmra-arla.gc.ca/english/pubs/fact-e.html.

[24] It appears that a review panel will not be convened in all cases, but will only be convened if the PMRA determines that it is appropriate. It is possible that the PMRA's decision not to review could be appealed, but the success of such an action would depend on many factors including the process of the decision itself, and basis for the decision including the evidence available for the decision.

[25] Office of the Auditor General of Canada, *2003 Report of the Commissioner of the Environment and Sustainable Development*, Chapter 1 – Managing the Safety and Accessibility of Pesticides. Available at http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20031001ce.html.

[26] See http://www.pmra-arla.gc.ca/english/legis/aer-e.html – last accessed March 21, 2007.

[27] See http://www.chemicalsubstanceschimiques.gc.ca/plan/index_e.html -– last accessed March 14, 2007.

[28] Boyd, David, *Unnatural Law, Rethinking Canadian Environmental Law and Policy*, 2003, UBC Press, page 127. In a comprehensive review, Dr David Boyd refers to federal policy and provincial policies across Canada and also refers to Canadian pesticide policy as compared to some other countries, such as Sweden, Norway and Denmark.

[29] A summary of BC's *Integrated Pest Management Act and Regulation* is available at: http://www.env.gov.bc.ca/epd/epdpa/ipmp/regulatory.html. Other provincial legislation that has a bearing on pesticide use (but will not be discussed in detail here) include: *Workers Compensation Act and Occupational Health and Safety Regulation, Health Act, Drinking Water Protection Act, Environmental Management Act (and Regulation)*.

[30] *Integrated Pest Management Regulation*, B.C. Reg. 604/2004.

[31] IPMA, s.3(1).

[32] IPMA, s.1.

[33] Some support for this view can be found in the IPMR, s.68, which refers to "principles of integrated pest management" which are to be applied by licensees in relation to a simplified version of the content requirements contained in the definition of IPM.

[34] 2003 BCSC 1441.

[35] This list is based on the IPMR, s.5. For the sake of simplicity, it is not a complete list. Any reference to an area of land refers to the total area managed by a single legal entity.

[36] Bti (bacillus thuringiensis var. israliensis), Btk (bacillus thuringiensis var. kurstaki), Glyphosate (Roundup) or nuclear polyhedrosis virus.

[37] Please note that there are some exceptions for bacterial pesticides.

[38] See s.75 and s.76 of the IPMR. In addition, the BC Ministry of Environment has produced some specialized sector papers on the forestry sector and for the railway sector, which gives an overview of the requirements. See http://www.env.gov.bc.ca/epd/epdpa/ipmp/regulatory.html for further information.

[39] Please note that these requirements also apply to PUN confirmation holders.

[40] A shrouded boom is a method of pesticide application, designed to prevent pesticide drift. Usually boom sprayers are connected to a tractor, and can disperse pesticides on a wide area. For more information on boom sprayers and methods of pesticide application generally, see PMRA, "Information Note: Pesticide Application Methods and Areas of Use," available at: http://www.pmra-arla.gc.ca/english/highlights/in20060109-e.html.

[41] Further details on the requirements for a pesticide use notice can be found in BC Ministry of Environment, *Forest Pest Management Sector Review Paper*, 2005. Available at: http://www.env.gov.bc.ca/epd/epdpa/ipmp/regulatory.html.

[42] For example see, Canadian Forest Products Ltd, *Integrated Pest Management Plan 2006-2011*, Available at: www.canfor.com/_resources/sustainability/ipmp/IPMP_2006-2011.pdf.

[43] See Ministry of Forests and Range, *Invasive Alien Plant, Integrated Pest Management Plan for the Range Branch, Ministry of Forests and Range Southern Interior MoFR PMP 402-0649 05/10* at page 20, available at: http://www.for.gov.bc.ca/hfp/invasive/.

[44] 2005 BCSC 1031 at paragraph 34.

[45] s.15, IPMA.

[46] See s.7(4)-(7) of the IPMA.

[47] See s.26, IPMA.

[48] See s.62, IPMR.

[49] S.7 (b) and (d), *Community Charter* [SBC 2003], Chapter 26.

[50] For example, see the City of Victoria's pesticide policies at: http://www.victoria.ca/cityhall/departments_compar_prkipm.shtml.

[51] *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)* [2001] 2 S.C.R. 241.

[52] For example see: *Croplife Canada v. Toronto (City),* 2005, 75 O.R. (3d) 357; (2005), 254 D.L.R. (4th) 40 (C.A.).

[53] *Community Charter* [SBC 2003], Chapter 26.

[54] *Community Charter,* s. 8(3)(j).

[55] Consultation Agreement between the Ministry of Water, Land and Air Protection, Ministry of Community, Aboriginal and Women's Services, and Union of British Columbia Municipalities (2004); available at: http://www.civicnet.bc.ca/siteengine/activepage.asp?PageID=165&bhcp=1

[56] *Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation* (B.C. Reg. 144/2004), ('the Environment Regulation'), s.2.

[57] Under s.523(1) of the *Local Government Act*, R.S.B.C. 1996, c.323, "Subject to the *Health Act*, a board may, by bylaw, (a) regulate and prohibit for the purposes of maintaining, promoting or preserving public health or maintaining sanitary conditions, and (b) undertake any other measures it considers necessary for those purposes." This power, like the municipalities' power, is subject to section 9 of the *Community Charter* – the Concurrent Jurisdiction provisions: s. 523(2).

[58] City of Toronto, *Interim Evaluation Report on Toronto's Pesticide Bylaw*, dated February 9, 2007; available at: http://www.toronto.ca/health/pesticides/pdf/interim_evaluation_summary_report_02262007.pdf.

[59] *Health Bylaw*, Vancouver City Bylaw No. 6580, s.5, available at http://vancouver.ca/bylaws/79234v3.pdf – last accessed March 15, 2007.

[60] Further details on the EAB appeal process can be found at http://www.eab.gov.bc.ca/app_proc.htm.

[61] In *Palmer v. Nova Scotia Forest Industries* (1983), 26 C.C.L.T. 26, 2 D.L.R. (4th) 397 (N.S.T.D.), the plaintiffs were unsuccessful in preventing aerial spraying of areas of Nova Scotia, as they were unable to convince the court of potential health effects and resulting nuisance to their persons and property.

[62] RSBC 1996, c.131.

[63] *Rylands V.Fletcher* (1866), L.R. 1 Ex. 265,aff'd (1868), 37 L.J. Ex.161, L.R. 3 H.L. 330, [1861-1873] All E.R. Rep. 1.

[64] Salmond on Torts, 14th ed. P.441.

[65] For example, see: *Fondrick v. Gross*, 2003 SKQB 307 (CanLII).

[66] There is also some debate as to whether a constitutional challenge under the Canadian Charter of Rights and Freedoms in certain cases would be appropriate, for example, if children at school or in daycares were exposed to pesticides. Anyone seeking further information on this point can contact West Coast Environmental Law.

[67] Globe and Mail, *Canada's politicians carry chemical cocktail*, article written by Martin Mittelstaedt, January 3, 2007.

West Coast Environmental Law is BC's legal champion for the environment. West Coast empowers citizens and organizations to protect our environment and advocates for the innovative solutions that will build a just and sustainable world.

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