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Scoping Paper on North American Environmental Standards Comparisons

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I. INTRODUCTION

The North American Commission for Environmental Cooperation has contracted the Canadian Institute for Environmental Law and Policy (CIELAP) to develop a scoping paper to assist it in determining future directions for the Commission's Law and Policy program, particularly with respect to the harmonization of North American environmental standards.

This scoping paper considers the potential for North American standards comparison work by the Commission from a Canadian perspective in the following five areas: hazardous waste management; emission standards for the electricity market sector; controls on invasive species; forestry practices; and intensive agriculture.

II. ASSESSMENT OF POTENTIAL AREAS FOR NORTH AMERICAN ENVIRONMENTAL STANDARDS COMPARISONS

1. Hazardous Waste Handling and Disposal.

i. Description of the law pertaining to the subject area

Federal

The key federal statute in this area is the *Canadian Environmental Protection Act* (CEPA) first enacted in 1988. Two major sets of regulations dealing with hazardous waste have been made under the Act, one group dealing with PCB use and storage and the destruction of federally owned PCBs, and the second regarding hazardous waste imports and exports.

The hazardous waste import/export regulations, promulgated in 1991, establish procedures for notification and approval of hazardous waste imports and exports, as per Canada's obligations under the 1986 Canada-US Agreement on the Transboundary Movement of Hazardous Wastes, and the Basel Convention. The regulations cover the movement of both hazardous wastes and hazardous recyclable materials. However, these regulations are procedural in nature, and contain no specific standards regarding the handling, treatment, storage and

disposal of hazardous wastes. Rather the federal government has relied upon receiving provinces to assess their capacity to deal with imported wastes in an environmentally sound manner. The only exceptions in this regard are with respect to PCB storage and the destruction of federally owned PCBs.

Provincial

All Canadian provinces have implemented hazardous waste shipment manifesting systems to track movements of hazardous wastes under their environmental protection legislation. These requirements are generally designed to link with the federal requirements under the CEPA transboundary waste movement regulations in the case of international waste movements in and out of the province.

Hazardous waste transportation, treatment and disposal facilities are generally required to obtain approvals before commencing operations under provincial environmental protection legislation. However, as at the federal level, with the exception of requirements related to PCBs, there are virtually no specific regulatory standards regarding handling, treatment and disposal practices. Terms and conditions regarding treatment and disposal standards and practices may be written into the approvals for individual facilities, although these vary from province to province, and even among facilities within a given province.

Some provinces provide exemptions for hazardous waste 'recycling' activities from the normal hazardous waste handling and facility approval requirements. These are intended to promote and facilitate the recycling of hazardous wastes.

ii. Recent law reform initiatives

Federal

A revised version of CEPA was adopted by Parliament in September 1999. The new Act included a number of significant changes to the provisions of the original statute regarding the transboundary movement of hazardous wastes. These include the granting of explicit authority to the federal Minister of the Environment to refuse hazardous waste imports or exports, even when a province agrees to the waste movement, if the Minister believes that the waste will not be managed in a manner that protects human health and the environment. Provisions are also made for the reestablishment of regulations related to the interprovincial movements of hazardous wastes, previously dealt with under the *Transportation of Dangerous Goods Act*.

In addition, the new Act includes provisions which permit the Minister of the Environment to require that hazardous waste exporters develop and implement plans to reduce their exports of hazardous waste for final disposal.

The federal government has indicated that it intends to develop national standards regarding «environmentally sound » hazardous waste disposal in conjunction with the provinces under the auspices of the Canadian Council of Ministers of the Environment.

Provincial

Provincial regulatory regimes for hazardous waste management have undergone significant change in the past few years. This has included expansions of exemptions for hazardous waste 'recycling' activities and the reduction of manifesting and monitoring requirements. Approval requirements for hazardous waste disposal facilities have also been significantly reduced in a number of provinces, such as Ontario.

These regulatory changes have been accompanied by major reductions in the operating budgets of environmental agencies. This has significantly affected their law enforcement capacity, including the enforcement of laws and regulations related to hazardous waste management.

As a result of a number of incidents involving the import of hazardous wastes for treatment and disposal in a manner which would not be permitted in the United States, in September 1999 the province of Ontario indicated its intention to harmonize its standards regarding handling and disposal with those at the federal level in the United States. However, progress on this commitment has been very slow. To date the only specific measures that have been implemented have been related to the harmonization of waste definitions, rather than treatment and disposal standards.

iii. Status as National Priority

There has been a significant growth in imports of hazardous wastes for disposal and recycling into Canada over the past decade. Imports, which are almost entirely from the United States, have grown from 154,304 tonnes in 1989 to 540,000 tonnes in 1998, with a particularly sharp increase from 1993-1994 onwards. The increase in imports has been almost entirely to the provinces of Ontario and Quebec, where there have been significant increases in disposal capacity over the past five years.

Hazardous waste exports from Canada have remained roughly stable over same period, with 223,079 tonnes recorded in 1991 to 276,000 tonnes in 1998. Waste exports are almost entirely to the United States, and have originated overwhelmingly from Ontario and Quebec.

The rise in waste imports has given rise to suggestions that US wastes are being imported into Ontario and Quebec for disposal due to the presence of weaker standards regarding disposal practices and more limited potential for liability for long-term damage relative to the United States. The government of Ontario has itself acknowledged that these may be factors in the growth of imports for disposal, and has stated its intention to harmonize Ontario's standards with those established under RCRA.

iv. Potential to identify gaps/Need for further standards

There are significant differences in hazardous waste disposal standards between Canada and the United States. As a result of amendments to the RCRA adopted in 1984 and to the *Clean Air Act* in 1990, the United States Environmental Protection Agency has developed and implemented comprehensive and detailed standards regarding hazardous waste handling, treatment and disposal practices, including a ban on the land disposal of untreated wastes and the adoption of new standards for hazardous waste incinerators and other facilities using such wastes as fuels.

Comparable standards are virtually non-existent in Canada. The existing laws and regulations in Canada establish procedures for the handling of wastes, such as manifesting requirements, and procedures for the approval of handling, treatment and disposal facilities, but establish no substantive rules regarding the operation of such facilities. At best these are dealt with on a case-by-case basis through individual facility approvals.

The dramatic increase in hazardous waste imports into Canada for disposal has been explicitly linked to this gap between Canadian and US standards. The significance of these differences in standards has been publicly acknowledged by the province of Ontario, the leading Canadian waste receiver as well. Ontario Minister of the Environment is also on the record attributing the increase in waste imports to the North American Free Trade Agreement.

Recent, detailed studies exist of the hazardous waste management regulatory regime in Ontario and at the federal level and selected states in the US, although an explicitly comparative study has not been completed.

2. Emission Controls at Electricity Generating Facilities

i. Description of the law pertaining to the subject area

Federal

CEPA provides regulatory authority to regulated substances declared 'toxic' for the purposes of the Act. A number of heavy metals associated with coal fired electricity generating plants have been declared CEPA toxic, including Mercury, Arsenic and Lead. However, no regulations have been established under the Act to control emissions of these substances from the sector.

CEPA also provides for the establishment of emission controls on sources of international air pollution within Canada. However, again, no regulations affecting the electricity generating sector have been established under this authority to date.

Emissions of certain substances, including heavy metals, and sulphuric and hydrochloric acids, from the electricity generating sector are required to be reported to the National Pollutant Release Inventory (NPRI) on an annual basis. However this does not currently include key criteria air pollutants, such as particulate matter, SO_x, NO_x, and carbon monoxide and greenhouse gases such as CO₂.

Provinces.

Emissions of acid rain precursors (SO₂ and NO_x) from electricity generating facilities have been subject to regulatory emission caps under provincial environmental protection legislation, since the mid 1980s in Ontario, Nova Scotia, and New Brunswick as a result of the Eastern Canada Acid Rain Control Program.

Controls on emissions of other pollutants from the sector, such as particulate matter and heavy metals have been imposed on a facility specific basis through provincial environmental approvals processes. These requirements have focussed strongly on criteria air pollutants (particulate matter, SO_x, and NO_x), and have tended to be silent on the matter of emissions of other contaminants, such as heavy metals. The province of Ontario does have regulatory standards for certain air toxics which apply regardless of the content of certificates of approval, although these are widely recognized as being out of date and inadequate to protect human health.

ii. Recent law reform initiatives

Federal.

It is widely expected that Particulate Matter <10 (PM₁₀) microns and its precursors will be declared to be toxic substances under CEPA. This would open the possibility of regulation of emissions of PM from the electricity sector by the federal government. Under the new CEPA, requirements for pollution prevention

planning could also be applied to sources of PM. The addition of criteria pollutants, likely beginning with PM and its precursors, to the NPRI also appears to be under consideration.

The CCME Canada-Wide Standards process for ambient levels of particulate matter and ground-level ozone, and air emissions of mercury may impact the electricity generating sector in the future, although federal implementation of specific standards is unlikely. Individual provinces are also expected to make commitments to further reductions in emissions of acid rain precursors under the CCME Acid Rain Strategy for Post-2000.

The federal government has recently initiated negotiations with the United States regarding the development of an Ozone Annex under the 1991 Canada-US Air Quality Agreement. The control of emissions from the electricity sector, in the context of competitive electricity generation markets on both sides of the border, seems likely to be a focus of these discussions.

Provinces

A number of provinces, lead by Alberta and Ontario have recently moved to introduce competition in the electricity generating sector. In Ontario this has been accompanied by the adoption of new, lower emission caps for the electricity sector for acid-gas (NO_x and SO_x) emissions. However, no new measures were announced regarding other pollutants, such as particulate matter, heavy metals and carbon dioxide. In addition, the Ontario regime is accompanied by an emission trading system, which it has been argued will actually permit major increases (as much as 42%) in total emissions of NO_x and SO_x and other pollutants from the electricity generating sector.¹

In the case of Ontario competition has opened the Ontario market to out of province suppliers, including those based in the United States. The Ontario regulatory regime attempts to establish emission performance requirements for out of province suppliers, although the likely effectiveness of these measures, particularly in the absence of formal cooperation arrangements with US federal and state authorities is uncertain. The capacity of the province to use limits on market access as a means of controlling emissions from US suppliers is also uncertain in terms of international trade law. Ontario generators may also seek access to the U.S. market as a result of the introduction of competition in that market.

Alberta appears to have undertaken no specific measures to deal with emissions from the electricity sector when it introduced competition into its market.

iii. Status as National Priority

Air quality has emerged as a major public health issue in Canada over the past three years. A number of medical and public health organizations have published reports and made public statements highlighting the health impacts of poor air quality. These have drawn a great deal of public attention. Published estimates of premature deaths due to air pollution range from 5,000 to 16,000 per annum nationally. Air pollution problems are seen to be particularly severe in the Lower mainland of British Columbia, Southern Ontario, and New Brunswick.

The federal and provincial Ministers of the Environment have consistently identified improved air quality as their leading priority in both individual statements and through the Canadian Council of Ministers of the Environment. As noted earlier, the federal government has initiated negotiations on an Ozone Annex to the 1991 Canada-US Air Quality Agreement with the United States.

The electricity generating sector, especially coal-fired generating plants, is a leading source of acid rain and smog precursors and emissions of hazardous air pollutants, especially heavy metals, particularly in Southern Ontario. Emissions from facilities in Ontario and the Ohio Valley in the US also heavily affect air quality in New Brunswick and the New England states. Emissions for the sector have also been associated with air quality problems in Alberta.

Emissions from the sector have risen significantly in the past three years, particularly in Ontario, partially as a result of the re-commissioning of coal-fired generating capacity by Ontario Hydro (now Ontario Power Generation (OPG)) to replace nuclear generating capacity de-commissioned for safety reasons. This was originally to have been a temporary measure while nuclear facilities were repaired, but there is evidence of a desire on the part of OPG to keep the coal-fired facilities on-line even when nuclear capacity is restored, for the purposes of revenue generation and maximizing facility value in the sale of assets that is required as part of the competition system.

In the absence of significant new emission control requirements, further increases in emissions from the sector are anticipated as more jurisdictions move to competitive electricity markets. Effective control and reduction of these emissions in an international competitive market will require extensive intranational and international cooperation.

iv. Potential to identify gaps/Need for further standards

The weaknesses in the existing air quality management system in Canada have been identified in a general sense through the report soon to be published by the CEC's air quality program. This will also provide a foundation for comparative work on the systems in the US and Mexico. More specific studies on the

electricity generating sector in Canada have been limited, although detailed critiques of the new regime in Ontario are available.

The sector has received a great deal of public attention in Ontario as a leading source of air pollution, and awareness of the weakness of Canadian requirements, particularly at the national level relative to the US is growing.

In the US, the electricity generating sector is subject to an emission cap for SO₂ under the 1990 *Clear Air Act* amendments. Reporting for the sector under the Toxic Release Inventory began in 1997.

The Federal Energy Regulatory Commission (FERC) opened the US electricity market to competition in April 1996. Despite expressions of concern by the USEPA that competition would lead to significant increases in air pollution, particularly NO_x, FERC declined any role in regulating the environmental impacts of de-regulation.²

In 1997, USEPA adopted new National Ambient Air Quality Standards for ground-level ozone and PM. These standards will require states to take measures to reduce emissions of ozone and PM precursors in areas where the standards are not met. This may require significant reductions in NO_x emissions, particularly from the electricity generating sector.

In September 1998, EPA issued an NO_x State Implementation Plan call, requiring 22 states and the District of Columbia to reduce NO_x emissions that cross state boundaries, forming ground-level ozone in downwind states. The EPA's call was upheld in the face of a legal challenge by eight states in June 2000.

The proposed *Comprehensive Electricity Competition Act*, released by the Clinton Administration in April 1999, would clarify EPA authority to require a cost-effective interstate cap and trading system for NO_x pollution reductions addressing the regional transport contributions needed to maintain National Ambient Air Quality Standards for ground level ozone. However, this legislation has yet to be adopted by the Congress.

3. Controls on Invasive Species

i. Description of the law pertaining to the subject area

Federal.

The Convention on Biological Diversity, which Canada has ratified, commits parties to « prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats and species. «

Existing law in this area is extremely limited. Certain agricultural statutes, such as the *Health of Animals Act*, and the *Plant Protection Act* provide for prohibitions on imports of potential plant or animal pests, although their application is very specifically limited to agricultural contexts, rather than wider biodiversity conservation goals. Under the *Fisheries Act*, the *Fish Health Protection Regulations* permit the control of the import or transfer of wild or cultured fish, for the purpose of preventing the spread of listed fish diseases. The *Migratory Bird Regulations* under the *Migratory Birds Convention Act* prohibit the introduction into Canada for purposes of sport, acclimatization or release from captivity of any bird « not indigenous to Canada, » except with the consent of Environment Canada.

In theory, deliberate introductions of exotic species which are not regulated under other Acts of Parliament would require notification and assessment of potential toxicity (i.e. potential immediate or long-term negative impacts on human health, the environment or biological diversity) under the Other Organisms Schedule of the Biotechnology Part of the New Substances Notification Regulations made under CEPA. However, to date, no such notifications have occurred.

Other federal legislation may provide authority to control the introduction of exotics under certain circumstances. Provisions of the *Canada Shipping Act*, for example, provide authority for controls on ballast water exchange and discharges, a major source of introductions into the Great Lakes basin ecosystem, although such controls have yet to be put in place.

Provincial

Provincial legislation specific to this issue appears to be non-existent. It is conceivable that the deliberate introduction of an alien species might be considered a violation of the general offence provisions of certain statutes, such as the *Ontario Environmental Protection Act*, or legislation requiring approvals for activities on public lands, although such interpretations do not appear to have been formally tested to date.

ii. Recent law reform initiatives

The 1995 Canadian Biodiversity Strategy, commits the federal and provincial governments to implement Article 8(h) of the *Convention on Biological Diversity*, specifically the prevention of the introduction of and control or eradication of those alien species that threaten ecosystems, habitats or species. This includes ensuring that there is adequate legislation and enforcement to control introductions or escapes of harmful alien organisms. However, no specific

additional actions beyond existing legislation and policies have been proposed or taken by Canadian governments to implement this commitment.

In addition, there have been consistent recommendations from the International Joint Commission (IJC) to deal with ballast water exchange issue in the Great Lakes basin, but action to date has been limited to voluntary programs. The federal government's proposed Species at Risk Act (SARA) is silent on the issue of invasive species.

iii. Status as National Priority

The issue of invasive species is nominally a national priority through the Canadian biodiversity strategy, and is consistently identified as a leading threat to the integrity of the Great Lakes Basin ecosystem.³ However, little or no action beyond existing legislation and policies has been taken on the issue in recent years. The focus of government efforts remains on pests to economically valuable plants, animals and fish, rather than biodiversity in general. The failure to act on more aggressively on the ballast water exchange issue in Great Lakes, for example, may speak to the priority status of this issue.

Canada's first report to the Conference of the Parties to the Convention on Biological Diversity identifies the introduction of harmful alien species as a threat to Canada's biodiversity,⁴ but identified no additional actions to be taken to address the issue.

iv. Potential to identify gaps/Need for further standards

An extensive report on biodiversity law and policy in Canada was completed by the CIELAP in 1997, including discussion of alien species control, providing a Canadian base case discussion for comparative purposes.

As in Canada, the United States has a number of statutes, including the *Plant Pest Act* and *Noxious Weed Act* intended to deal with invasive species that may affect agricultural production. In addition, the *Nonindigenous Aquatic Nuisance Prevention and Control Act*, first enacted in 1990 and amended by the *National Invasive Species Act* of 1996, is intended to deal with aquatic nuisance species, particularly from ballast water discharges in great lakes. The statute also provides for research and control measures for introductions of alien species through other pathways, and for research on the economic and ecological impacts of non-indigenous species. The habitat protection provisions of the *Endangered Species Act* also include provisions related to non-indigenous species.

In February 1999, President Clinton signed an Executive Order barring federal agencies from authorizing, funding or carrying out actions likely to cause or

promote the introduction or spread of invasive species. The Order also established an Invasive Species Council of key federal agencies and mandated the Council to develop a National Invasive Species Management Plan within 18 months. The National Plan is then to be updated biennially.

The Environmental Law Institute is currently developing a review of state law and policy related to invasive species. It is believed that the bulk of state law in this area is agricultural statutes dealing with invasive plants.

4. Forestry Practices

i. Description of the law pertaining to the subject area

Federal

There is no Canadian federal law dealing with forest management per se, as this is understood to be a provincial and territorial responsibility. There are however, a number of federal statutes that may impact forest management practices. The federal *Fisheries Act* prohibits the harmful alteration or destruction of fish habitat, and the discharge of deleterious substances into waters frequented by fish. Forestry operations have been subject to prosecution under these provisions of the Act, particularly in British Columbia.

Requirements for federal approvals for the alteration or destruction of fish habitat, or the construction of roads or bridges which may interfere with navigable waterways under the *Navigable Waterways Protection Act* may also trigger federal environmental assessments under the *Canadian Environmental Assessment Act*, prior to the granting of these approvals. However, recent judicial decisions regarding the appropriate scope of these assessments have been contradictory. Some recent Federal Court decisions have indicated that assessments should consider the environmental impacts of the broader forestry operations of which the specific activities which may harm fish habitat or interfere with navigable rivers, form part.⁵ However other recent decisions have suggested that the federal government has discretion to limit federal assessments to the specific undertaking for which approval is sought, such as a bridge or river crossing.⁶

The federal Canadian Forest Service has traditionally limited its role to monitoring and scientific research, except with respect to certain federal lands in the territories, and within certain National Parks, where it acts as forest manager.

Provinces

The provinces have primary constitutional responsibility for the management of public forests, and can also set standards for forest management on private

lands. Forest management is controlled through specific forest management legislation in each province. This legislation has traditionally dealt primarily with issues of the allocation of forest industry access to public forest resources, through the granting of timber cutting or tree farm licenses. This legislation has contained nominal commitments to sustainable harvesting, but given little or no attention to wider issues such as biodiversity conservation, the broader environmental impacts of forestry operations or competing land uses.

ii. Recent law reform initiatives

A number of provinces, most notably British Columbia (*Forest Practices Code Act*, 1994) and Ontario (*Crown Forests Sustainability Act*, 1994) have recently adopted new legislation establishing standards for forest management. This legislation was intended to respond to public criticism of traditional approaches to forest management, from the perspectives of both sustainability and biodiversity conservation. The Ontario CFSA, for example, requires the Minister of Natural Resources to ensure that forests are managed in a way that sustains environmental values (fish, wildlife, water quality, etc), economic values (timber, trapping, tourism, etc.) and social values (recreation, heritage etc).

The BC Code and Ontario CFSA share a number of common features, with umbrella legislation, several comprehensive sets of regulations, and a variety of guidebooks or guidelines. The Guides are intended to provide direction to those who apply the Acts and Regulations, by setting out recommended procedures and desired results. The provisions of the Guides become enforceable when inserted into individual forest management plans, prescriptions and contracts. Individual guidance documents cover topics ranging from biodiversity and visual impact assessment to forest road engineering and logging plans.⁷

More recently, Ontario, following the lead of other provinces, particularly Alberta, has been moving towards a « self-monitoring and management » system for the forest industry. This has included greater industry responsibility for forest management planning, forest operations, including forest renewal, collecting information about the forest, and aspects of monitoring and compliance. This shift has been driven in large part by major reductions in personnel within the Ministry of Natural Resources Forest Management Branch (approx. 50% since 1995) due to budgetary reductions.

A number of provinces, including British Columbia, Alberta, and Ontario have recently engaged in extensive public land allocation processes. These have been intended to allocate public lands between competing uses, such as forestry and protected areas.

iii. Status as National Priority

Forest management remains a major national priority for Canada due to the significance of forest-related exports to the Canadian economy (estimated \$70 billion/yr), and the degree to which those exports have been threatened by international concern over forest management practices within Canada. Indeed, these concerns were a major driver behind the adoption of the BC Forest Practices Code. Forest management practices within Canada have also been a significant issue in the Canada-US softwood lumber trade dispute.

The past few years have seen moves in a number of provinces including Alberta, Saskatchewan, Manitoba, Ontario, Quebec and Newfoundland and Labrador, to allocate their northern boreal forest regions to timber harvesting. Given the global ecological significance of these forests, this development is likely to attract further international attention to forest management practices in Canada.

iv. Potential to identify gaps/Need for further standards

Research and publication on forest management standards in Canada is limited. The bulk of the existing literature deals with specific issues in British Columbia, while a smaller literature, related to the Class Environmental Assessment of Timber Management on Crown Lands, and more recently the implementation of the CFSA, exists in Ontario.

The opening of the northern boreal forests to harvesting in particular is likely to renew international debates about Canada's approach to forest management. This is likely to result in pressures on other provinces to upgrade their forest management practices, and continued close scrutiny of the Forest Practices Code in BC and the CFSA in Ontario.

Recent US policy in this area has been driven by litigation around the *Endangered Species Act*. In response to the growing controversy over the management of natural forests, the US Forest Service tabled a Natural Resource Agenda in March 1998. This has four major themes :

- watershed health and restoration, making maintenance and restoration of watershed health an « overriding » priority in future forest plans, increased stream and riparian area restoration, increased habitat restoration and conservation for threatened, endangered and sensitive species and improve efforts to prevent the entry or spread of non-native species;
- sustainable forest ecosystem management, with a major focus on the management of state and privately owned forests;
- forest roads, including a proposal for an 18 month « timeout » for new road construction, acceleration of decommissioning of unneeded substandard roads, and selective upgrading of other roads. A major policy tabled in May 2000 proposed to prohibit new roads in 43 million acres of

- inventoried roadless areas within the national forest system, provided opportunities for additional protection in uninventoried areas; and recreation, including a land management planning guide for recreation, heritage, wilderness and tourism.

5. Intensive Agriculture

i. Description of the law pertaining to the subject area

Federal

There are no federal environmental regulatory statutes dealing specifically with the environmental impacts of agricultural operations.

The habitat protection and deleterious substances provisions of the federal *Fisheries Act* are applicable to agricultural operations. However, both the federal government and the provinces have traditionally been reluctant to enforce the Act's provisions in relation to agricultural operations, especially within the inland provinces.

Provincial

The status of agricultural operations under provincial legislation varies from provinces to province. In Ontario agricultural operations are exempted from the normal requirements of provincial environmental legislation. This includes both general offence provisions and requirements for approvals and permits before engaging in activities which may result in the release of contaminants into the environment, or which involve the handling and disposal of waste.

In British Columbia, a similar exemption from the *Waste Management Act* is conditional on compliance with a Code of Practice for Agricultural Operations developed by the Ministries of Agriculture and the Environment. In Quebec, specific regulations dealing with certain aspects of agricultural operations have been developed under the *Environmental Quality Act*.

Over the past decade, a number of provinces, including Ontario and Nova Scotia have adopted right-to-farm legislation. This typically provides protection to agricultural operations from common law nuisance actions by the owners or occupiers of neighbouring lands. Ontario amended and strengthened its legislation in 1998, to add provisions which permit the Normal Farm Practices Protection Board, the quasi-judicial body established through *the Farming and Food Protection Act* to resolve disputes over the environmental impacts of agricultural operations, to overturn municipal by-laws intended to control these

impacts. These amendments were specifically designed to remove barriers to the construction of additional intensive livestock operations in the province.

ii. Recent law reform initiatives

In the face of growing public concern over the environmental and health impacts of intensive agricultural operations, including the filing of an Article 14/15 complaint under the North American Agreement on Environmental Cooperation in Quebec, a number of provinces have recently launched initiatives intended to strengthen the environmental protection requirements related to intensive livestock operations.

In June 2000, Alberta proposed an environmental framework for intensive livestock operations. However this is focussed on a voluntary Self-Assessment and Certification program, and an updated, but still non-enforceable Code of Practice.

Concerns regarding the impacts of intensive agricultural operations were raised by the Quebec Provincial Auditor in his 1995-96 report. The government of Quebec has recently adopted new regulations with respect to agricultural pollution, and new measures to improve enforcement of the Environmental Quality Act in this area. The new regulations address issues related to manure-spreading conditions, spreading agreement rules, ownership of land where spreading occurs and record-keeping. However, it has been pointed out that due to budgetary reductions fewer staff will be available to enforce the new regulations than were available with respect to the older standard.⁸ In June 2000 the Quebec Commission sur la gestion de l'eau au Quebec recommended an extensive review of the province's agricultural pollution abatement strategy.

A report on environmental impacts of intensive livestock operations in Ontario was released by the Ministry of Agriculture, Food and Rural Affairs in July 2000. It proposed new legislation, to be administered by the Ministry, to control the environmental and health impacts of intensive livestock operations.

iii. Status as National Priority

The environmental impacts of intensive livestock operations have drawn national attention over the past month, due to the identification of such operations as potential sources of e.coli contamination of drinking water, which lead to at least 7 and potentially 14 deaths, as well as 2,000 illnesses in the town of Walkerton, Ontario in May 2000.

However, concerns over the environmental impacts of intensive hog and cattle operations were already a significant public issue in Southern Alberta, Manitoba,

Ontario and Quebec, due to issues of ground and surface water contamination due to manure run-off and usage as fertilizer, and severe odour problems. Recent press reports have suggested that industrial hog operations are being established in Canada to escape higher environmental standards in Europe and Asia.⁹

iv. Potential to identify gaps/Need for further standards

The environmental and health impacts of intensive agricultural operations has emerged as the leading environmental issue in agricultural regions of Canada in the past few years. The Walkerton disaster has further heighten public concern over the effects of these operations. No comprehensive study of existing Canadian regulations and practices in this area has been completed to date. The most comprehensive studies available to date are from Quebec, although a provincial government strategies has been recently released in Alberta and Ontario.

In the US, the environmental impacts of intensive agricultural operations has been emerging as significant environmental issue in a number of states over the past few years, particularly in the Carolinas, Minnesota and Oaklahoma.¹⁰

The USEPA initiated the development proposals for controls on water pollution from intensive livestock operations under the *Clean Water Act* in 1997. The expansion of regulatory requirements to address land application of animal wastes from large operations was the major focus of this initiative. A US Unified National Strategy for Amimal Feeding Operations was announced in March 1999 by USEPA and US Department of Agriculture. This will place a strong emphasis on the voluntary development of Comprehensive Nutrient Management Plans (CNMPs) by operators. However, permit and CNMP requirements will be applied to large facilities (those greater than 1000 « animal units », smaller facilites that have unacceptable conditions that pose a significant risk of water pollution or public health problems, or are significant contributors to water pollution. However, the timeframe for implementing permitting requirements for all facilities extends to 2010.

III. STANDARDS COMPARISION OPTION RANKING

The potential areas of study were evaluated against the following criteria:

- a) Builds on work previously done by the CEC or complements existing work in any of the CEC program areas (pollutants and health; biodiversity; law & policy; environment, ecomony and trade);

- b) Ability to clearly highlight differences between standards in each of the NAFTA countries;
- c) Area where one country has recently modernized standards and other countries have old, low standards;
- d) Impacts under NAFTA and other applicable trade agreements;
- e) Regional impacts of development or improvement of standards in area chosen;
- f) Area of significance for all 3 NAFTA countries (relevance).

For the purposes of assessment, each of these criteria was given 5 points, for a total of 30 points available for each subject.

The results of this assessment are presented in the following table:

Criteria	Hazardous Waste	Electricity Generation	Alien Species	Forest Management	Intensive Livestock
Builds on work previously done by the CEC or complements existing work in any of the CEC program areas	5/5. Builds on previous law and policy work, and relates to NAFTA effects work	4/5 Potential linkages to air program, Art. 13 study underway	4/5 Linkages to biodiversity program, work underway on aquatic invasive species.	3/5 Potential linkages to biodiversity conservation, emerging trends.	4/5 Linkages to NAFTA effects
Ability to clearly highlight differences between standards in each of the NAFTA countries	5/5 Clear differences in standards between countries	3/5 Field is extremely complex given introduction of competitive markets open to domestic and international suppliers.	2/5 Law and policy in all three countries in this incomplete. US working on National Plan.	2/5 Law and policy in this area is complex. In Canada is almost entirely provincial jurisdiction vs. federal role in US.	3/5 Jurisdictional complexities a potential issue. Provinces and states major players. Potential major federal role in US, none in

Area where one country has recently modernized standards and other countries have old, low standards	5/5 US has significantly strengthened standards under RCRA. Little movement in Canada or Mexico.	3/5 US Ozone and PM standards will require NOx reductions from the sector. Legislation to cap NOx emissions from sector proposed. Ontario is only province to adopt rules to deal with environmental issues in competitive market to date	3/5 US federal Exec Order and Invasive Species Act amendments	3/5 Canadian standards in flux, recent initiatives to both strengthen and weaken standards. US Natural Resources Agenda proposals, with strong emphasis on roadless areas.	Canada. 3/5 USEPA has been moving proposals for new national standards forward. Various provincial initiatives, although actual significance unclear.
Impacts under NAFTA and other applicable trade agreements	4/5 Chapter 11 issues have arisen over hazardous waste disposal standards (SD Meyers and PCBs, Metalclad). NAFTA may have impact on La Paz Maquiladora rules.	4/5 Significant potential for trade issues to arise if jurisdictions limit access to market as a way of enforcing environmental standards.	3/5 Trade agreement impacts limited. However increased trade is leading to increased potential for introduction of invasive species.	4/5 Forest management standards already a matter of dispute in softwood lumber case.	3/5 No specific disputes to date, but intensive agriculture operations are increasingly linked to the movement of investment to where costs can be externalized easily.
Regional impacts of development or improvement of standards in area chosen.	3/5 Potentially significant, particularly in border areas where transboundary waste traffic is concentrated.	4/5 Potentially very significant. Electricity generating sector is a major source of air pollution in all three countries, and in the absence of new standards, emissions	3/5 Invasive species a major threat to specific major ecosystems in North America (e.g. Great Lakes)	3/5 Potential impacts in Canada and Mexico, although provincial by-in would be key.	4/5 Emerging as a major environmental issue in Canada and the US. Status in Mexico unclear.

		from the sector are predicted to rise significantly with competition.			
Area of significance for all 3 NAFTA countries	3/5. Major concern in Mexico, growing concern in Canada, transboundary traffic less of a public concern in US.	4/5 Major issue in US, emerging as significant issue in Mexico and Canada	3/5 Level of political commitment around issue beyond agricultural plant and animal protection unclear.	4/5 Major issue in all three countries.	4/5 Emerging as a major environmental issue in Canada and the US. Status in Mexico unclear
Total Points	25/30	22/30 but may overlap with Art.13 Study.	18/30	19/30	21/20

IV. SUMMARY AND CONCLUSIONS

1) Overview Assessment of Potential Fields for North American Standards Comparisons

i) *Hazardous Waste Management*

New and comprehensive standards in this area are now in place in the US, while Canadian and Mexican standards are incomplete and outdated. Consequently a comparison of standards by the Commission would be a relatively straightforward undertaking. Differences in standards appear to be a significant factor in the growth of hazardous waste exports from the US to Canada for disposal seen since 1993/94.

In light of this situation, both the Canadian federal and Ontario governments have recently indicated their intention to move towards US standards in this area. Work by the Commission could make a significant contribution to those processes. The NAFTA also has significant implications for La Paz arrangements for the management of hazardous wastes generated by US owned facilities in the Maquiladoras, which will require Mexico to upgrade its standards in this area as well.

ii) *Electricity Market Competition*

The introduction of competition is widely seen to have the potential to have major negative impacts on air quality in North America. The regime adopted in Ontario to deal with the effects of competition on air quality has been subject to significant criticism, while no steps were taken to deal with this issue at all in Alberta. Other Canadian provinces are considering moves towards competitive markets as well, as is Mexico.

The US regulatory regime in this area remains a work in progress. FERC has declined any regulatory role related to air quality in its decisions opening the US market to competition. The Clinton administration has advanced legislative proposals to control with NOx emissions from the electricity sector, but these have yet to be adopted. State Implementation Plans for the new federal standards for ground level- ozone and NOx made under the *Clean Air Act* are expected to have a positive impact on emissions from the electricity sector, but precise implementation measures with respect to the sector, in the context of a competitive market, remain unclear.

Comparative standards work in this area would have to be considered in light of the CEC Article 13 study on the impacts of electricity market competition currently being undertaken by the Commission. Work by the Commission in this area could also make a significant contribution to the development of an Ozone Annex under the 1991 Canada-US Air Quality Agreement. The control of emissions from the electricity sector will require substantial international cooperation, particularly in the context of competitive markets that are open to out-of-country suppliers.

iii) *Intensive Livestock Operations*

Intensive livestock operations have been the subject of growing public attention in Canada and the United States and are emerging as a major environmental. A national strategy to deal with the environmental impacts of these operations was announced by USDA and USEPA in March 1999, and is now moving towards implementation.

There are current no specific federal regulatory initiatives in this area in Canada. A number of provinces, including Alberta, Ontario and Quebec, have either undertaken new initiatives in this area or are proposing new measures. However, the significance and potential effectiveness of these steps remains the subject of significant debate.

Certain types of intensive livestock operations have been considered as case studies in the Commission's NAFTA effects program.

iv) *Forest Management*

Forest management would present a number of significant challenges for the conduct of comparative standards work by the Commission. New forest management regimes, with much stronger emphases on sustainability and biodiversity conservation have been adopted in some provinces, most notably Ontario and British Columbia, in the past decade. However there has been significant retrenchment in these jurisdictions as well.

Recent US initiatives related to the management of National Forests have not dealt with overall forest management directly, but rather have been focussed on watershed protection and issues related to roadless areas. There have been no specific legislative or regulatory initiatives comparable to the Ontario *Crown Forest Sustainability Act* or British Columbia *Forest Practices Code*.

v) *Invasive Species*

Comparative work on standards related to invasive species would also present significant challenges, although there are significant gaps in this area. The key legislation in Canada and the United States is focussed primarily on preventing the entry of agricultural pests, rather than wider biodiversity conservation goals.

There have been no recent significant legislative or regulatory initiatives related to this issue in Canada, despite commitments to action to implement the *Convention on Biological Diversity*, and the consistent identification of invasive species as a leading threat to the integrity of the Great Lakes Basin Ecosystem.

An Executive Order has been made in the United States directing agencies to develop a national plan on invasive species. However, this has yet to be completed.

2. **Conclusions**

A comparison of North American environmental standards in the area of hazardous waste management would be the most feasible option available to the Commission. The issue is one of growing continental significance, and one where differences in standards, particularly between the United States, which has a comprehensive regulatory regime in place, and other NAFTA parties, who do not, appear to be having noticeable effect on hazardous waste management practices in the continent.

The United States is relatively advanced in its development of a national strategy and standards for intensive livestock operations, and the issue is emerging as one of growing concern in Canada. Consequently, comparative work in this field would be a relatively straightforward undertaking, although it would be complicated by the strong role of provinces as the lead regulators in Canada.

Standards in the electricity market competition and invasive species remain works in progress in Canada and the United states, and therefore may not lend themselves as easily to comparative work. However, the emergence of a continental electricity market will require extensive international cooperation to deal effectively with its potential environmental impacts.

Recent initiatives in forest management in Canada and the United States do not lend themselves easily to comparative work, as they have been of a different focus. In addition, the ultimate direction and outcomes of many of the recent 'reform' initiatives in Canada remain unclear.

In light of the foregoing discussion the five policy fields are recommended in the following order of preference as topics for comparative standards work by the Commission for Environmental Cooperation:

1. Hazardous Waste Disposal.
2. Intensive Livestock Operations/Electricity Market Competition
4. Invasive Species.
5. Forest Management.

ENDNOTES

- ¹ Ontario Clean Air Alliance, Pollution Loopholes (Toronto: OCAA, 1999).
- ² Federal Energy Regulatory Commission, Order No. 888, April 24, 1996.
- ³ International Joint Commission Biennial Reports on Great Lakes Water Quality (Ottawa/Washington, Various Years); Environment Canada and USEPA, State of the Lakes Reports (Ottawa/Washington, Various Years).
- ⁴ Environment Canada, Caring for Canada's Biodiversity : Canada's First National Report to the Conference of the Parties to the Convention on Biological Diversity (Ottawa : Public Works and Government Services Canada, 1998) pg.4.
- ⁵ *Friends of West County Association v. Canada (Minister of Fisheries and Oceans)* (1999) 29 C.E.L.R. (N.S) 97 (Fed. T.D.); 31 C.E.L.R. (N.S.) 239 (Fed. A.D.).
- ⁶ *Manitoba's Future Forest Alliance v. Canada (Minister of the Environment)* (1999) 30 C.E.L.R. (N.S.) 1 (Fed T.D.).
- ⁷ A good summary of the provisions of the Forest Practices Code is provided in Jeremy Wilson Talk and Log : Wilderness Politics in British Columbia (Vancouver : UBC Press 1997), pp.306-307).
- ⁸ Pers.comm., Yves Corriveau, Centre Quebecois du la droit de l'environnement, June 2000.
- ⁹ A.Nikiforuk, "The Price of Bringing home the bacon", Globe and Mail June 17, 2000
- ¹⁰ See www.hogwatch.org.