
Environmental Markets in Canada





About Sustainable Prosperity

Made up of business, environment, policy and academic leaders, Sustainable Prosperity (SP) is a national green economy think tank/do tank. We harness leading-edge thinking to advance innovation in policy and markets, in the pursuit of a greener, more competitive Canadian economy. At the same time, SP actively helps broker real-world solutions by bringing public and private sector decision-makers to the table with expert researchers to both design and apply innovative policies and programs. We believe that achieving the necessary innovation in policy and markets for a stronger, greener Canadian economy requires a new knowledge base and new conversations. SP's approach is to promote both by generating policy-relevant, expert knowledge to inform smart policy solutions and foster innovative conversations and connections.

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Key Messages

- Environmental markets allow us to see the full costs of using our environment and the full benefits of preserving it. Properly designed environmental markets can help promote economic activity that is environmentally sustainable.
 - The value of environmental markets in Canada for 2012 is estimated to be between \$406 million and \$625 million. This represents no discernible growth from our previous estimate of the value of environmental markets in 2011.
 - New environmental markets are emerging. The highlight from the past year has been the official launch of Quebec's greenhouse gas emissions cap-and-trade system, linked with California's cap-and-trade system. This new market is not counted in this year's survey because it was not operational in 2012.
 - Canada has the potential to use environmental markets much more widely. For example, Quebec's new carbon market alone is estimated to have an annual value of \$425 million by 2016.
 - Climate change policy will continue to be the main driver of new environmental markets. Provinces are developing greenhouse gas reduction policies that will likely include environmental markets. The pending federal oil and gas sector greenhouse gas regulations may contain provisions for market mechanisms to facilitate the achievement of emissions reductions.
 - Data and transparency challenges persist and are a major impediment to valuing environmental markets and to promoting their more widespread use in Canada.
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Introduction

Canadians benefit enormously from Canada's natural environment. Firms and industries extract natural resources for use in their production processes; individuals enjoy access to it for positive health effects and recreation; and all Canadians benefit from the natural services it provides – such as the purification of air provided by forests and flood control provided by wetlands and plains.

Extraction of resources and degradation of the environment without limits can erode the benefit we draw from our environment. These activities impose costs on our society that are not factored into the prices of goods and services. If we are not valuing the negative environmental impacts and positive environmental benefits of our actions, we are making decisions without full information – and that means we risk making poor decisions.

Theory and experience show that policies that make visible the costs of depleting our natural environment and the benefits of protecting it are among the most effective and efficient at helping us make better-informed decisions. **By putting a value on something that isn't currently valued explicitly – by making visible what is otherwise invisible – such policies help us promote economic activity that is environmentally sustainable.**

This annual survey considers one particular approach policy makers can use to help ensure environmental costs and benefits are visible: the creation of environmental markets. Generally speaking, environmental markets are markets that have been created with the purpose of advancing environmental outcomes. They work by creating a market for the positive environmental attributes of goods or services or by creating a market to limit the impact of damaging activities.

Sustainable Prosperity believes that when the protection or degradation of the environment is given a price through the creation of a market, an incentive is created to reduce our impacts and protect our environment while allowing economic activity to continue. For that reason, Sustainable Prosperity is interested



in cataloguing Canada’s existing environmental markets and encouraging the growth of both new and existing environmental markets.

Last year, Sustainable Prosperity released its inaugural survey of environmental markets in Canada. The 2012 survey reported on the year 2011 and found that Canada has been slow to develop environmental markets, compared to other countries and relative to our natural wealth. This reflects findings by the Organization for Economic Cooperation and Development (OECD) and other organizations, which have found that Canada has been slow to use markets to promote sustainable economic development.¹

Highlights from the 2013 Survey

Overall, this 2013 survey (which covers the year 2012) finds no discernible growth in the dollar value of environmental markets in Canada. However, we do find some room for optimism in the form of new markets just emerging. The highlight from the past year has been the advancement of the Quebec greenhouse gas (GHG) emissions system, with Quebec officially launching its cap-and-trade system and finalizing the linkage with California’s cap-and-trade regime. More detail on this market can be found in “Featured Market: Quebec Cap and Trade,” on page 21 of this report. We will be reporting on this market in next year’s 2014 survey, which will cover market activity in 2013.

This form of provincial activity reflects another general finding of our survey, which is that while the provinces have taken more action to create markets in carbon, water and conservation, Canada has made minimal strides federally to embrace environmental market opportunities. However, it is possible that pending federal government regulations on the oil and gas sector may contain scope for the use of environmental markets necessary for meeting our national GHG emissions target.² Similarly, environmental markets could figure in the anticipated review of the federal Species at Risk Act.

1. See for instance, “OECD Environmental Outlook to 2050: The Consequences of Inaction”, OECD, 2012.

2. In 2009, Canada agreed to the Copenhagen Accord, under which Canada must reduce its GHG emissions to 17% below their 2005 levels by the year 2020.



Environmental Markets Defined

The definition of what constitutes an environmental market is evolving and there is no generally accepted definition of what an environmental market is. For the purposes of this survey, we start with the concept of a “market” as generally understood -- but refine it to the specific instances where a market has been created to place a value on the positive environmental attributes of goods or services, or to put a cost on damaging activities.

The term market refers to any system or institution that brings together a buyer (or buyers) and a seller (or sellers) of goods or services. Through the interaction of these buyers and sellers, prices are established. Markets can work very well to establish prices; however, there are instances where this does not work well. If the buyers and sellers are trading at a price that does not reflect all the impacts created by their activities, the outcome from the market is not ideal.

The natural environment is a classic area where markets might not lead to ideal outcomes. When one person or institution takes an action to preserve or enhance the environment, they are not compensated for taking an action that benefits everyone.

For instance, if a landowner sets aside natural land that helps protect biodiversity, he/she will not be compensated for the resulting benefit that others enjoy. This reduces the incentive to carry out environmentally beneficial actions. As such, these actions will not occur as much as they would if the full benefit to society was valued.

Similarly, when one person or company degrades the environment, they do not compensate the other users for the cost they impose. Because the environment is shared, environmental damages are felt by all users, even those who do not consume the good or



service whose production or use is causing the degradation. For instance, if an agricultural producer releases pollution into a common stream, others downstream will be negatively impacted, but the damages they feel are not felt by the polluter. If the market price made transparent to everyone the full costs of environmental damage, reduction of environmental damages would be made easier.

When these environmental costs and benefits are not valued, there is a role for public policy to create a mechanism to value them. There are many possible mechanisms, including direct program spending, regulation, taxation or the creation of new markets that capture these environmental costs and benefits. Using markets is a particularly appealing approach because, compared to regulations that prescribe a technology or an outcome, markets allow greater flexibility and cost-effectiveness. Buyers and sellers can look at the price and can choose their level of activity and whether or not to participate in the market.

For the purposes of this report, “Environmental Market” refers to any market in which the transactions taking place are aimed at either improving or maintaining environmental quality, or minimizing environmental degradation. This includes markets in which:

1. A good or service with an environmental benefit is being bought or sold with the aim of protecting it.
 - For example, included in this category are markets in which a payment is made for conserving land for the protection of biodiversity or in which there is trading of the credits from renewable energy. In both cases, through the use of a market, the environment is treated as an asset and a value is created for the environmental benefits of the good or service being traded.
2. A good or service with an environmental cost is bought and sold, if the intent of buying and selling the good or service is to limit the level of the activity – thus limiting its environmental impacts.
 - For example, this includes markets in which payment is made for the right to undertake a limited amount of an activity that causes environmental impacts felt by others, such as paying for an allowance to emit GHGs or to release pollution into a lake. It also



includes paying to draw water from a common source. In these cases, the market acts as a limit on activities that can cause environmental impacts on others.

In both categories, the role of the market (as defined in this survey) is to create a monetary value where none exists. That value creates an incentive to protect and promote the environmental asset or minimize the environmental damage. This definition includes both credit and allowance trading for greenhouse gases and other pollutants. It also includes direct payments for preserving ecosystems or enhancing ecosystem services. It does not include the full scope of traditional government spending programs, taxes or regulation (other than the regulation required to establish and/or oversee these markets).

What is an Environmental Market?

There are 2 ways in which environmental markets work.

1. Limiting Pollution

Eg. A factory releases greenhouse gases, which contribute to climate change and lower air quality.



Market

The company buys a permit for each tonne of carbon it releases.



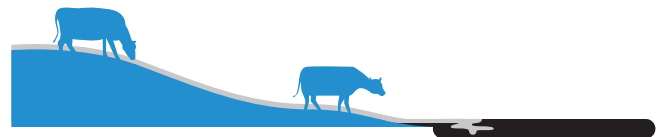
Impact

Because they have to pay to use our shared environment, the company has incentive to reduce their emissions. The cleaner they are, the less they spend in permits



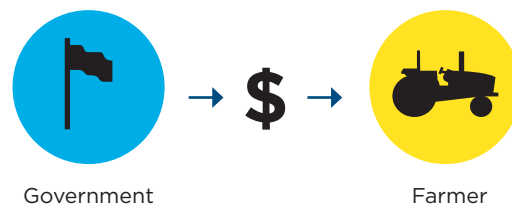
2. Rewarding protection

Eg. A farmer's field is beside a river. When the farmer's cattle use the river, they erode the bank, damaging the water quality and habitat



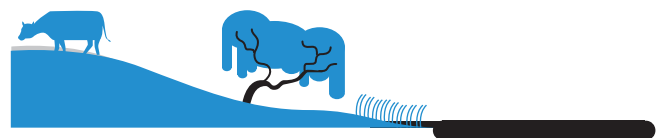
Market

The government pays the farmer to plant trees and bushes along the bank, to prevent erosion and keep the cattle out.



Impact

Because they are paid for protecting and improving our shared environment, the farmer has a reason to protect the riverbank.



Environmental markets can help us create a healthier environment.



Categories of Environmental Markets

Markets come in many forms and vary by their size, number of parties involved, volume of trades and degree of government intervention. For the purpose of qualifying environmental markets in this survey, two categories are used: established markets and payment programs.

Established Markets

Many of the environmental markets covered in this survey look much like traditional markets, and can have multiple buyers or sellers, a tangible asset being traded, and significant volumes transacted. We find that emissions allowance markets, emissions reduction credit markets and water markets fall under this category.

Payment Programs

Some of the environmental markets in Canada could be considered to be more simply structured than those captured in a traditional definition of a market. These markets may be based on individual projects, generally because they are at an earlier stage of development. For instance, when governments or other institutions pay landowners or farmers to adopt management practices that have environmental benefits or lessen environmental degradation, a buyer and a seller are coming together in a transaction and a monetary value is being placed on these ecosystems and/or on the natural benefits they provide, without a formal market infrastructure existing.

In addition to categorizing markets by the stage of their development, this survey considers markets in three environmental areas: air and carbon, water, and habitat and biodiversity.⁴ These categories are not discrete. Each market is categorized according to the primary environmental purpose for which it was designed, but these purposes are interconnected.

4. Descriptions of these three environmental areas are included under “Canada’s Environmental Markets in 2012”.



5. This survey does not assess the environmental impact of the activities captured by the markets in the survey, but rather attempts to quantify the value of environmental markets in Canada and to track the development of environmental markets over time. As this is only the second attempt to define and measure environmental markets in Canada, the supporting methodology relies on the best available information but in many cases represents an approximation of the full value of the market. The accompanying Annex contains valuation information on the specific markets, including notes on calculations, any relevant uncertainties, and any changes from the 2012 methodology.

Methodology

The data provided in this survey were collected using the methodology outlined in Sustainable Prosperity's *Environmental Markets 2012: A Survey and Assessment of Environmental Markets in Canada*, to ensure consistency in data reporting. The 2013 survey covers the year 2012. Research was conducted from May to August 2013, and data were primarily collected from information provided through interviews with market participants and program administrators. Information was also obtained through internet searches of government programs and other sources.⁵

Where possible, the value of individual markets has been reported or calculated, using one of three methods, as applicable:

- Through the collection of market values from program reports, market participants and program personnel;
- By aggregating volume and price information listed for individual trades and projects funded; or
- Where required due to data limitations, an alternate methodology based on available information was used.

In cases where the data provided a range of estimated prices, both the “high” and “low” values are included. As the environmental markets covered in this survey change and evolve, the methodology will be reassessed in order to ensure it is based on best available data.

The value of environmental markets is a representation of the current state of the use of environmental markets in Canada. As this is the second year of the survey, it is now possible to compare the findings from the year 2012 with those from 2011. By quantifying these markets each year, Sustainable Prosperity is able to track how these markets are changing over time and what factors influence these changes.

Canada's Environmental Markets in 2012





The value of environmental markets in Canada for 2012 is estimated to be between \$406 million and \$625 million. The range for this value is the result of having a range of values reported for various individual programs, as described under Methodology above.

Value of Environmental Markets in Canada

Table 1

				
	AIR	WATER	HABITAT	
2011				TOTAL
Low Estimate	\$171 Million	\$31 Million	\$260 Million	\$462 Million
High Estimate	\$190 Million	\$31 Million	\$531 Million	\$753 Million
2012				TOTAL
Low Estimate	\$121 Million	\$52 Million	\$233 Million	\$406 Million
High Estimate	\$134 Million	\$52 Million	\$440 Million	\$625 Million

The 2012 value is slightly smaller than the 2011 estimate of \$462 to \$753 million (Table 1). Given the data challenges present in this exercise, the slight decrease in the overall market size from the inaugural survey to this year's survey cannot be deemed significant.

The difference between the values is due primarily to the change in number of offsets, licenses and credits sold, the emergence and discontinuation of some government initiatives and the availability of data. There are data gaps for some programs (such as the Growing Forward program, found in the Habitat and Biodiversity




category), where information was collected for 2011 but similar information was not available for 2012. In addition, this year's survey does not include a value for Renewable Energy Certificates due to a lack of publicly available information on trade volumes and values (see "The Market for Renewable Energy Certificates" on page 20). Decline in data availability was a factor in all three market areas.

The research surveyed 52 distinct environmental markets in Canada, as defined earlier (see Table 2). This compares to 57 markets-reported in last year's survey. A small number (4) of markets in this year's survey did not report trading in 2012 (either because they are new or terminating). For example, while we have included federal regulations such as the Heavy-duty Vehicle and Engine Emission Regulations trading system and the On-road Vehicle and Engine Emission Regulations trading system, these markets have not experienced trading this year because they remain under development and simply did not see reported trading this year, respectively.

Similarly, the Nova Scotia Voluntary Carbon Emissions Offset Fund was established in 2010, but is currently not in operation. In a small number (9) of the markets included in this survey, transactions did occur but volume and/or price data were not available so no market value is included in this report. Further information regarding the values of each market is available in the Annex.

Summary of Environmental Markets in Canada

Table 2

 Air and Carbon Markets	Market Type
Alberta Greenhouse Gas Emissions trading system	Established Market
Ontario Emissions Trading Registry	Established Market
On-Road Vehicle and Engine Emission Regulations trading system	Established Market
Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations trading system	Established Market
Pacific Carbon Trust	Established Market
Renewable Energy Certificates	Established Market
Voluntary carbon offsets	Established Market
Quebec Cap and Trade for Greenhouse Gas Emission Allowances	Established Market
Federal Solvent Degreasing regulation transferable allowances	Established Market
Nova Scotia Voluntary Carbon Emissions Offset Fund	Established Market

 Water and Water Quality Markets	Market Type
Saskatchewan Water Security Agency water use payments	Established Market
South Nation River Total Phosphorus Management trading system	Established Market
South Saskatchewan River Basin tradable water allocations	Established Market
Ontario Landowner Environmental Assistance Program	Payment Program
Lake Simcoe Farm Stewardship Program	Payment Program
Watershed stewardship activities under Conservation Ontario umbrella	Payment Program
Prince Edward Island Alternative Land Use Services program	Payment Program
Alberta Growing Forward On-Farm Water Management program	Payment Program

Habitat and Biodiversity Markets | **Market Type**

Allocation Transfer Programs (2) for Fisheries (Pacific Region and Maritime regions)	Established Market
Alberta tradable hunting rights	Established Market
Federal Fish Habitat Management Program ⁶	Payment Program
Various (4) wetland habitat compensation programs (Federal wetlands compensation; New Brunswick wetland habitat compensation; Nova Scotia wetland habitat compensation; PEI wetland habitat compensation ⁷)	Payment Program
Federal Habitat Stewardship Program for Species at Risk	Payment Program
Aboriginal Fund for Species At Risk	Payment Program
Disbursements from the Environmental Damages Fund	Payment Program
Manitoba Habitat Heritage Corporation conservation agreements	Payment Program
Nature Conservancy of Canada programs (including Natural Areas Conservation Program)	Payment Program
Ducks Unlimited Canada projects	Payment Program
North American Waterfowl Management Plan	Payment Program
Wildlife Habitat Canada projects	Payment Program
Various (4) local-level Alternative Land Use Services programs	Payment Program
Ontario Species at Risk Stewardship Fund	Payment Program
Québec Partenaires Pour la Nature program	Payment Program
Ontario Species At Risk Farm Incentive Program	Payment Program
Growing Forward Farm Stewardship programs (includes 11 programs, one in each province and 1 in the Yukon)	Payment Program

6. Changed to the “Fisheries Protection Program” in 2013

7. Of these programs, estimates were available for the Nova Scotia wetlands program only.

Summary of Environmental Markets in Canada

Markets

Air

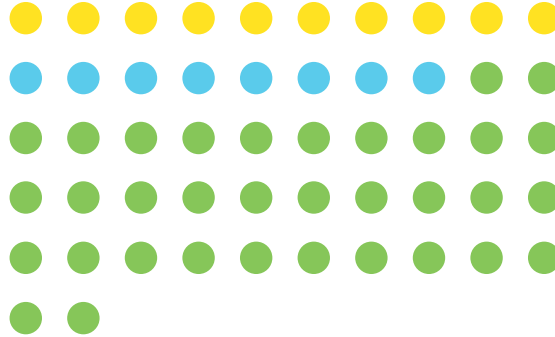
Water

Habitat



52

• Total number of distinct environmental markets in Canada.

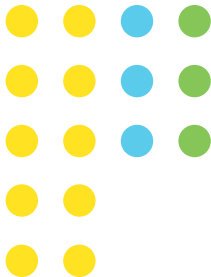


Of the **52** distinct markets, there are **10** air and carbon markets, **8** water markets and **34** habitat and biodiversity markets.

16

Established Markets.

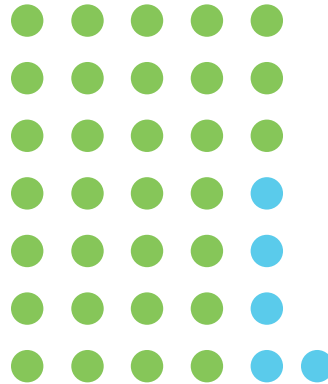
- Their value is between \$148 million and \$165 million.
- Tangible asset being traded
- Some degree of liquidity.



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Payment Programs

- Not as developed.



As more data become available and as policy priorities evolve over time, it is possible that some of the markets currently defined as payment programs will develop into established markets. Sustainable Prosperity plans to track the development of these individual markets as they evolve.

Air and Carbon Markets



8. Markets for energy efficiency actions and renewable energy generation are not included, but markets for any credits created to value their environmental attributes, such as renewable energy certificates/credits, are included in this definition. The exception to this rule is that some energy efficiency improvements may be captured in some agriculture programs.

9. Emission trading systems (ETS) limit the amount of a pollutant that can be released by allocating to emitters a set number of permits (also referred to as allowances). These permits represent the right to emit a set amount of pollution and can be traded.

10. In environmental markets, there may be provisions for trading offset credits (commonly called “offsets”). In an air market or water market, offsets are created when a person, institution or firm that does not have a mandated emissions target chooses to voluntarily reduce emissions and have that reduction formally recognized. In a biodiversity or habitat market, a biodiversity or conservation offset is created when habitat is protected voluntarily and formally recognized as conserved.

Air and carbon markets involve the trading of rights to emit specified amounts of air pollution or the trading of credits created from reducing air pollutant emissions.⁸ Management of air pollution and greenhouse gases has led to some of the most active environmental markets in Canada. Included in this category are:

- Air pollutant emissions trading systems;⁹
- Renewable Energy Certificate (REC) markets (see “The Market for Renewable Energy Certificates” on page 20 for more information); and
- Offset credits¹⁰ created by emissions reductions, traded in both regulatory and voluntary markets.

The 2012 value of air and carbon markets is approximately \$121 to \$134 million. The range between the values is due to the range of offset prices reported between \$11 and \$15 per credit in the case of Alberta’s Greenhouse Gas Emissions Trading System program, and the price range of \$1-300 for emission credits in the Ontario Emissions Trading Registry. The difference between the years 2011 and 2012 is due primarily to the change in the number of credits bought and sold in both voluntary and compliance markets and the discontinuation or transfer of certain programs such as the Manitoba Wetland Restoration Incentive Program and the Manitoba Sustainable Agriculture Practices Program.¹¹

Two new markets have emerged since the 2012 reporting year which forms the basis of this report: the Quebec cap-and-trade market for GHGs (see “Featured Market: Quebec Cap and Trade,” on page 21 of this report) and emissions trading through the newly released federal Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations. These new markets were not operational in 2012 and so do not have values reported in this survey, but surveys in subsequent years will include the value of these important markets.



The Market for Renewable Energy Certificates

Renewable Energy Certificates (RECs) are a tradable commodity that represent proof that one megawatt-hour (MWh) of electricity was generated from a renewable energy resource. Two main markets exist for RECs: voluntary markets, in which consumers seek to demonstrate they are using “green” electricity, and compliance markets, in which energy suppliers need to provide a certain percentage of renewable power to meet the requirements of renewable portfolio standard¹² policies.

Unfortunately it has proven a challenge to collect information on the quantity and value of RECs traded in Canada; no value is included in this survey. In the 2012 survey, we reported a value estimated by Sustainable Prosperity for 2007.¹¹ Updated analysis is not available at this time; however, the general sentiment of those involved in trading RECs is that there was a slowdown in REC transactions during the economic downturn with potential increases in demand expected in the future.

11. Both of which will be amalgamated into the Federal-Provincial-Territorial Growing Forward 2 Program in 2013.

12. Some jurisdictions have renewable portfolio standards (RPS) in which a set level or share of electricity generation must be certified as coming from renewable sources.



Featured Market: Quebec Cap and Trade

Early 2013 saw the introduction of Quebec's cap and trade system for greenhouse gas emissions – the first of its kind in Canada. The compliance-based system covers large emitters and imposes significant fines for entities that fail to obtain allowances and/or credits equal to their emissions.

Emitters have three options to obtain allowances to meet their emissions cap before the end of each compliance period:

- to purchase emission units through the government-run auction or from other emitters (for the first year (2013), industrial emitters were provided a significant number of free allowances in order to reduce a potential competitive disadvantage);
- to purchase offset credits from an approved provider; or
- to apply for early reduction credits (only available for particular industries for the first year).^{II}

All revenues raised through the auctioning of allowance permits will be used to finance GHG reduction strategies contained in the 2013–2020 Climate Change Action Plan.^{III} In the inaugural auction held on December 3, 2013, over 1 million units were purchased, at a price of \$10.75 each (each unit represents one tonne of CO₂e).^{IV} It is estimated that the value of the carbon market will grow from this \$11 million value in its first year to a cumulative \$2.4 billion from 2013 to 2020.^V

Starting in 2014, the Quebec market will be fully integrated with California's cap-and-trade system.

Water Markets





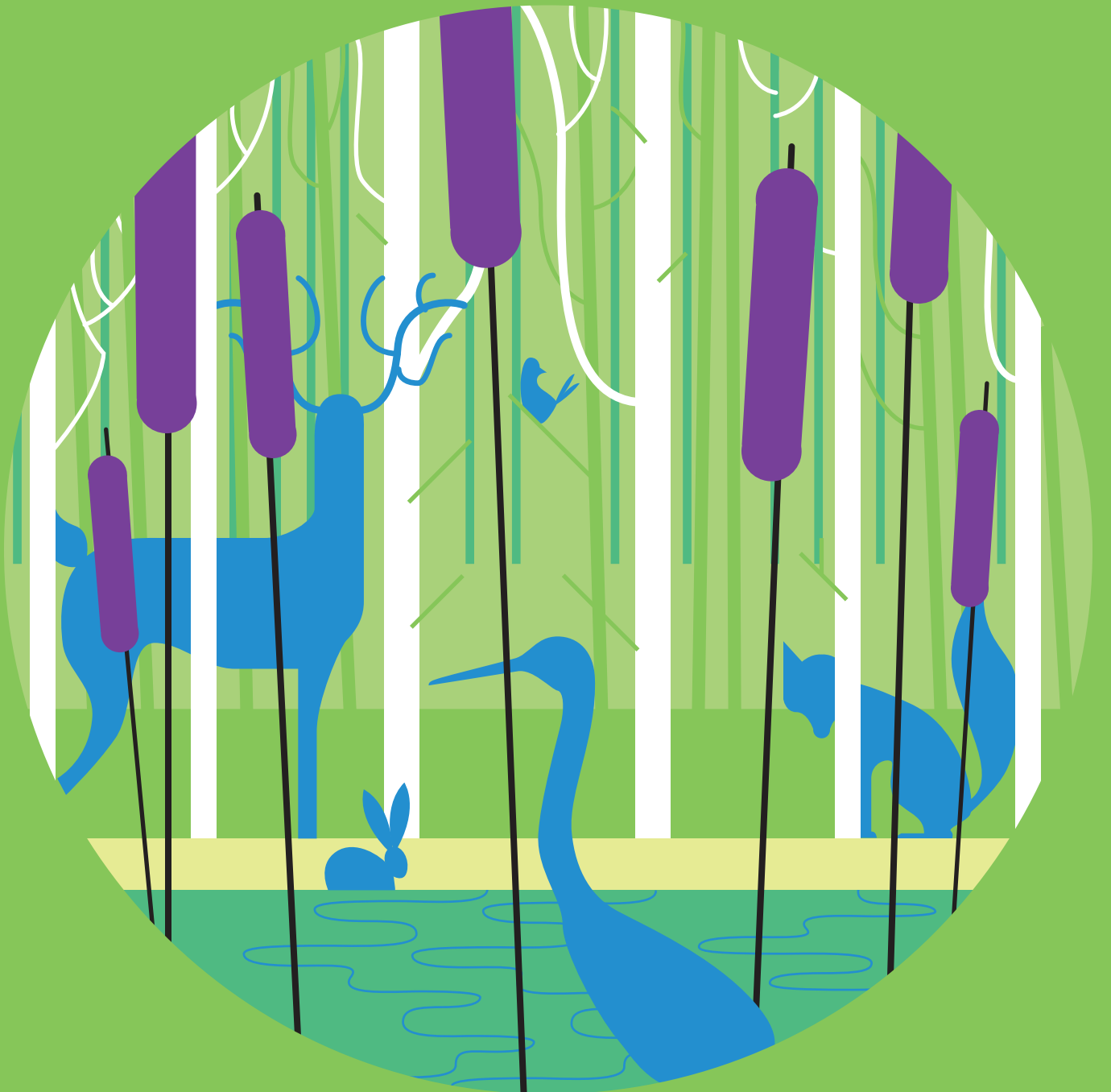
Water has a recognized value as a commodity and there are markets that exist to ensure that both water quantity and quality are priced. These markets trade in rights to emit substances into water, or in rights to draw a water allocation. Programs generally provide compensation in one of three ways:

- Water quality trading regimes, in which the right to emit a pollutant to water is traded;
- Direct payments from government or private individuals for protecting watersheds; and
- Trading in water allocations (i.e., water quantity trading).

The value of water markets in Canada is approximately \$52 million annually. This value is an increase from \$31 million in 2011. The primary reason for this increase is due to a correction in the calculation of the Saskatchewan Water Security Agency water use payments in this year's survey as compared to the 2011 methodology.¹³ Aside from this particular market, other water markets experienced a decline in value since 2011. For example, the Ontario Drinking Water Stewardship Program was discontinued, and there was an overall decline in water payments and in sales of water licenses.

13. Please refer to the Annex for further information on the calculation of the Saskatchewan Water Security Agency water use payments.

Habitat and Biodiversity Markets





Habitat and biodiversity markets secure habitat against development (such as through conservation easements¹⁴) or seek to offset losses in habitat and biodiversity resulting from specific projects. Habitat conservation and restoration can have positive impacts on species at risk and the maintenance of healthy ecosystems. There are several models for habitat and biodiversity preservation through market mechanisms:

- Compensatory mitigation,¹⁵ (which some regulations require before project permits can be issued);
- Payment for voluntary conservation actions or for voluntary changes to agricultural land-use practices by landowners to benefit biodiversity; and,
- Resource access allocations, such as tradable rights for hunting or fishing (though information on these markets is scarce).

The value of biodiversity markets in Canada in 2012 is approximately \$233 to \$440 million. Biodiversity markets represent the largest environmental market area in Canada. This value has a slightly smaller range than the \$260 to \$531 million range reported for 2011, primarily due to the change in the number of authorizations issued by the Department of Fisheries and Oceans (see “Calculating the value of federal fish habitat compensation programs” on page 26 of this report), the change in disbursements from the Environmental Damages Fund, the change in expenditures for habitat conservation and management, and changes in the availability of data.

For example, the Growing Forward Farm Stewardship Program, which represents a federal-provincial-territorial shared effort to improve agriculture and agri-food practices, ended in early 2013 and has been replaced by the Growing Forward 2 program. As the programs under the Growing Forward framework are currently in transition to Growing Forward 2, data are less available. The 2014 survey will review the methodology for Growing Forward and adjust it as necessary to reflect the new initiative.

14. Conservation easements are legal agreements where landowners agree to permanently restrict the uses of the land in order to preserve biodiversity and other environmental attributes.

15. Compensatory mitigation takes place when those seeking to undertake a project that would have negative habitat and biodiversity impacts are required to compensate for their impacts, either financially (by buying biodiversity offset credits from a habitat bank) or by protecting habitat elsewhere.



Calculating the Value of Federal Fish Habitat Compensation Programs

The value of the Harmful Alteration, Disruption and Destruction (HADD) of Fish Habitat initiative required by the federal Fisheries Act was calculated using three methods presented in a report by Ecosystem Marketplace,¹⁶ in which a value for habitat offsets in 2008-09 is calculated.¹⁶ The following papers were consulted for this calculation:

- Annual Report to Parliament on the Administration and Enforcement of the Fish Habitat Protection and Pollution Prevention Provisions of the Fisheries Act 2011-12.^{VII}
- Harper, D.G. & Quigley, J.T. (2005). No Net Loss of Fish Habitat: A Review and Analysis of Habitat Compensation in Canada. *Environmental Management*, 36 (3), p. 343.

The low estimate for this value results from calculating the number of authorizations issued by the Department of Fisheries and Oceans in the 2011/12 fiscal year (277), and multiplying this number by the average cost of a compensation project, and by the percentage of authorizations which included a compensatory habitat plan. The high estimate was derived by multiplying the land area protected or restored from fish habitat compensation by the mean per unit compensation costs.¹⁷ As a result, there is a large range reported for the value of this market. As the HADD program is currently under transition, SP expects that the 2014 survey will provide an opportunity to review the methodology in hopes of providing a more precise value.

16. See the *State of Biodiversity Markets Report Compendium: Methods Appendix* (p. 10-11), available [here](#).

17. See the Annex for more information on the data behind the calculations.



Current Context

The 2013 survey has shown that while environmental markets in Canada help provide a monetary value for the environmental costs and benefits of some goods and services, the potential for using environmental markets more widely remains very large. From this year's report, the developments in the Quebec carbon market are the key highlight and will offer additional opportunities to learn how best to create and manage environmental markets.

Outside of the high profile focus on climate policy, we can also point to some more general conclusions on environmental markets in Canada. While defining and classifying these markets remains a challenge, it is clear that these markets are being used in Canada nationally, provincially and locally.

Data availability on scope and scale of market activity is often limited, and information gaps are found in some of the larger-scale initiatives (such as renewable energy certificates and voluntary offsets) and in smaller-scale initiatives (like many of the provincial or local water and habitat/biodiversity markets). The lack of data and transparency around existing environmental markets is a major impediment to their growth. As such, focusing on data sources and methodologies remains a priority for future iterations of this survey.



What to Look for Next

Looking forward, new markets are likely to arise out of climate change policy, although the typical lag that exists between policy announcement and market implementation suggests that it may be some time before we can report on their specific value. Provincial action on this front will continue, particularly as provincial governments define their climate change action plans in anticipation of promised federal regulation of the oil and gas sector.

At the same time, federal policy on climate change will continue to evolve. The existing national commitment to a greenhouse gas reduction target of 17% below 2005 levels by 2020 is not yet within reach. The current action plan is predicated on a sector-by-sector approach, and it is possible that some of these sectoral regulations will contain provisions for market mechanisms that facilitate the achievement of the desired environmental outcomes. We know, for instance, that trading mechanisms have been built into the new federal vehicle emissions regulations (which are listed, without value, in this survey) and regulated companies may choose to access them in the future. Similarly, pending oil and gas regulations may include flexibility mechanisms for compliance, which could involve the use of approaches based on environmental markets.

Overall, the delay in federal action, which translates into the need to eventually impose greater stringency (due to the growing distance between what our emissions are expected to be and our established target), could prompt a greater reliance on environmental markets because of their greater cost effectiveness. **Delay is costly, but the flexibility offered by environmental markets can help in mitigating those costs.**

Habitat and biodiversity markets may also see some prominence in the near future. Environmental markets may feature in the anticipated review of the federal *Species at Risk Act*. Similarly, the province of Alberta released its new Alberta Wetland Policy in September 2013. The new policy includes provision for wetland “replacement”, through physical restoration of wetlands, “non-res-



toration” replacement, or paying an in-lieu fee. Though it does not include a trading mechanism for biodiversity preservation, this policy has been interpreted by some as a biodiversity offset program under another name.

Similarly, there is potential for expansion of water markets in Canada. British Columbia concluded a consultation phase on its proposed new *Water Sustainability Act* in November 2013 and will be introducing legislation in Spring 2014. The proposed draft regulation included potential expansion of licenses for water use, including both ground water and surface water use.

The evolution of these new and existing regulations and policies, and any environmental markets they create, will be of great interest.

SP’s annual survey of environmental markets will continue to bring the current state of environmental markets to the attention of Canadians, in the hopes that they can be more widely implemented in Canada. Creating the right policy framework to allow environmental markets to develop and to be effective will remain a challenge, but should become easier as Canada’s use of these markets grows. Governments, environmentalists, policy-makers, investors, researchers, industry, public and private institutions and citizens can all benefit from the use of environmental markets and all have a role in promoting them in Canada. The more Canadians become familiar with them in concept and in practice, the greater the likelihood that environmental markets will make a critical contribution to Canada’s sustainable development.



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