

TD's 2017 Natural Capital Valuations

Background

TD Economics¹ has defined natural capital as “the stock of natural resources (finite or renewable) and ecosystems that provide direct or indirect benefits to the economy, our society and the world around us.” Natural capital valuation enables us to understand the true costs, benefits and return on investment of planned activities.

TD has valued the natural capital impact related to reduction of greenhouse gas (GHG) emissions and airborne pollutants of three of its 2017 initiatives:

- TD Tree Days
- The purchase of renewable energy credits (RECs) and carbon offsets
- The TD Green Bond

Our natural capital valuations account for benefits accrued only in fiscal 2017 (November 1, 2016, to October 31, 2017), although the impact of these initiatives will span more than one year – for example, the benefits provided by many of the projects funded by the TD Green Bond will extend over a number of years.

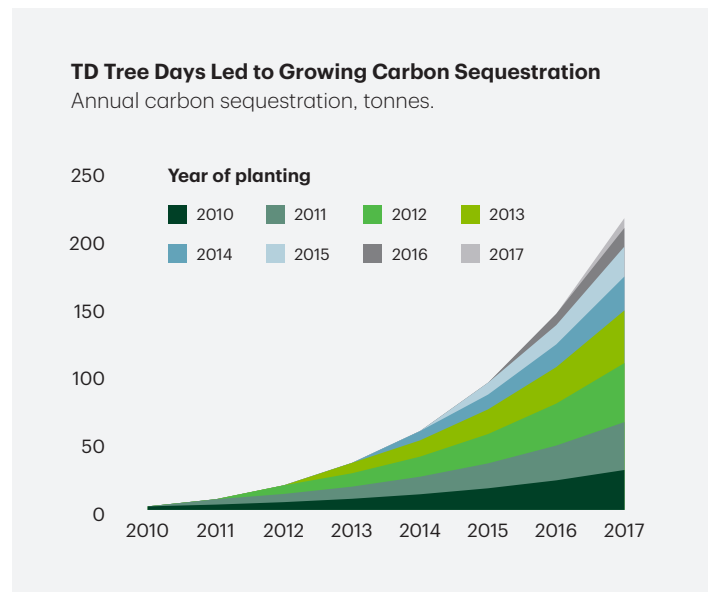
Several facts should be kept in mind regarding the natural capital values presented here.

- There is currently no universally agreed on or formalized system for valuing natural capital. In performing our analysis, we have employed conservative assumptions. Our methodology has been reviewed by TruCost, an industry leader in analyzing natural capital impacts.
- Due to current data limitations our 2017 natural capital valuations are based entirely on atmospheric emission benefits and exclude benefits on, for example, water resources and biodiversity.
- We use Environment Canada’s estimate of the social cost of carbon. While these values are based on current, state-of-the-art models, they are still open to the criticism that they do not adequately account for certain aspects such as ocean acidification or those related to biodiversity. For other air pollutants, the marginal cost of abatement is used, rather than the social cost, as a clear consensus has not yet formed around the social costs of these pollutants.

TD Tree Days

	2017	2010-2017
Carbon Captured (tonnes CO ₂ e)	216	5,768
Natural Capital Value (\$CAD)	\$33,568	\$89,701

2017 marked the eighth year of TD Tree Days, TD’s flagship urban greening program, seeing more than 48,000 trees and bushes planted from coast to coast. Since their start in 2010, over 344,000 trees and bushes have been planted, which continue to grow and sequester carbon. As the graphic shows, despite most plantings being saplings, significant carbon capture is already occurring, with an estimated 216 tonnes of carbon dioxide equivalent (CO₂e) sequestered in 2017, resulting in over \$33,000 in natural capital value.²



Source: TD Bank Financial Group.

¹ <https://www.td.com/document/PDF/economics/special/NaturalCapital.pdf>

² Note that these figures are approximate. Figures are not based on timber-cruises or other audits: carbon sequestration is based on ¼ inch growth in diameter-at-breast height per year (1mm ring growth), per tree, with a ½" diameter typical size assumed for time of planting.



Renewable Energy Credits and Carbon Offsets

	2017	2010-2017
Carbon Captured (tonnes CO ₂ e)	244,479	2,162,387
Natural Capital Value (\$CAD)	\$38,044,645	\$336,500,354

As a carbon neutral bank, TD purchases both renewable energy credits (RECs) and carbon offsets to account for its energy use and carbon emissions. RECs are instruments that track renewable energy, sourced from resources such as solar power and wind, and allow renewable energy to be traded globally. By purchasing RECs equivalent to 100% of TD's use of purchased electricity, we are reducing our electricity carbon footprint to zero. Carbon offsets represent greenhouse gas reductions associated with projects that reduce energy use, such as building retrofits, along with initiatives that sequester carbon, such as afforestation projects. Carbon offsets allow TD to address the emissions associated with our direct energy use and travel.

RECs and carbon offsets represent the reduction of carbon dioxide, a key greenhouse gas. TD's 2017 purchase of RECs and carbon offsets resulted in a reduction of over 244,000 tonnes CO₂e.³ This reduction resulted in a matching decrease in TD's impact on natural capital throughout the United States and Canada. The value of GHG emission reductions associated with the carbon offsets and RECs TD purchased in fiscal 2017 – based on the lifetime impact the emissions would have had – is approximately \$38 million.

TD Green Bond Projects

	2017	2014-2017
Carbon reduced or avoided (tonnes CO ₂ e)	23,677	2,513,365
Natural Capital Value (\$CAD)	\$2,513,365	\$ 7,062,114

In March 2014, TD became the first Canadian commercial bank to issue a green bond, underwriting a three-year, \$500 million issuance. In September 2017, TD issued its second green bond, a three-year, \$1 billion (USD) bond. The proceeds of these bonds were used to fund projects that provided a measurable environmental benefit, such as the construction of energy efficient buildings, solar farms, wind power developments and low impact hydroelectric facilities. These projects provide a natural capital benefit in the region where they occur.

The TD Green Bonds not only provide a guaranteed financial return to investors but also provide an environmental benefit – or return – to society. The value of the natural capital benefits associated with the TD Green Bonds in fiscal 2017 was approximately \$2.5 million. Given that we have excluded lending for general corporate purposes and impacts on water and other resources, the overall natural capital value generated from the TD Green Bonds is likely to be higher.

³ The GHG emissions quantified here represent emissions reduction specific to the offset project, or location of the REC.

