

The Costs of the Climate Emergency

by **BARRETT TEFT** /// EAC Volunteer

The latest tropical storm to devastate the Atlantic coast — Hurricane Fiona — has yet again highlighted Canada's lack of preparation for the advancing climate crisis. The damages suffered during events like this demonstrate the economic toll that global warming has and will continue to produce.

The Insurance Bureau of Canada (IBC) reported an estimated \$660 million CAD in insured damages to Eastern Canada from Fiona, and \$385 million of that was in Nova Scotia alone. However, as homeowners insurance rarely includes damages due to storm-surge flooding, the actual cost of damages is projected to be much higher. Events like Fiona are likely to continue growing in intensity, and with that comes increasing costs: insured damages from extreme weather have quadrupled since 2008, according to the IBC. Canadian homeowners will continue to pay.

Flooding during tropical storms is caused by storm pressure pushing the ocean water toward the coastline, and is exacerbated by rising sea levels. According to the Intergovernmental Panel on Climate Change (IPCC), the sea level has risen a global average of 0.2 metres since 1900, and they predict another global average rise of 0.59 metres during this century. A study of Hurricane Katrina that looked at the relationship between rising sea levels and flooding during tropical storms estimated that, as a result of the rising sea levels, flood elevation during storm events was 15-60 per cent higher than it was in 1990.

Another study, this one on Hurricane Sandy, estimated that the increase in sea levels has led to flooding during storm events being three times as likely — a likelihood that will continue to rise as the sea levels do. In Nova Scotia, where it is predicted that the sea level will rise more than the global average, reaching one metre by 2100, this is severely impactful to communities: 70 per cent of the population lives on the province's 13,300 kilometres of coastline.

In the past, to protect against surges, communities built dykes, which act as barriers against the tide. However, organizations such as the Clean Foundation claim that these dykes only worsen the issue by blocking water drainage during intense storms. Instead, focusing on restoring the coast's natural ecological balance will protect communities against the increasing intensity of these events.

Clean-up of MacCormacks Beach in Eastern Passage after a bad winter storm. **PHOTO:** Will Balser



TAKE ACTION

These projects need volunteers! In order to sign up, visit the Clean Foundation's website at cleanfoundation.ca/clean-coasts

Salt marshes have been an area of interest for an increasing body of scientific literature concerning their ability to protect against tropical storms. A restored coastline provides multiple florae that slow and break up oncoming waves and surges. Unlike the dyke system, salt marshes allow water to drain back out during storm events.

An American study estimated the value of salt marsh protection to be up to \$5 million USD (almost \$7 million CAD) per square kilometre. Furthermore, once restored, these salt marshes are self-sustained ecosystems requiring little to no maintenance.

In 2018, the Canadian government approved \$7 million in grants for four organizations working to repair the Canadian coastline. Among these was the Clean Foundation, which received the largest grant of \$2.4 million to focus on the restoration of the Northumberland Strait Salt Marsh. Similarly, the government granted Saint Mary's University \$1.8 million to remove dyke systems — to allow for a restoration of the salt marshes — throughout the Bay of Fundy. Both projects listed their durations to be five years, finishing next year.

Barrett Teft (he/him) lives in Halifax with his girlfriend and studies at Dalhousie University. He enjoys having electricity and an apartment that is not flooded.