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CONTRIBUTORS
Kathleen Olds, Joanna Bull, Stephen Thomas, Jackie Davis, Meghan McMorris, Veronica Sherwood, Brittany Maguire, Megan Pagniello, Reanne Harvey, Emma Norton

CONTENT EDITORS
Gillian Wesley, Cormekia Clayton, Raymond Plourde, Karen McKendry, Shannon Arnold, Simon Ryder-Burbidge, Jackie Davis

COPY EDITORS
Jackie Davis, Ian Johnston

PHOTOGRAPHERS
ACORN, Ferme Jolivent, Hayes Farm, Veronica Sherwood, Karen McKendry, Nick Hawkins

DESIGN &PRODUCTION
Dean Gallant, Pinwheel Communication Design

DISTRIBUTION
EAC staff, members & volunteers

COVER ARTWORK
Tayla Fern Paul is an L'nusk sculptor, painter, welder and metal fabricator from Eskasoni First Nation.

Contents

Ecology Action Centre

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The Ecology Action Centre is a member-based environmental charity in Nova Scotia. We take leadership on critical environmental issues from biodiversity protection to climate change to environmental justice. We are grounded in community, and a strong voice and watchdog for our environment. We work to catalyze change through policy advocacy, community development and building awareness. We take a holistic approach to the environment and our economy to create a just and sustainable society. Views expressed in *Ecology & Action* are those of the writers and do not necessarily represent the EAC or its supporters.

Ecology Action Centre
2705 Fern Lane
Halifax, Nova Scotia B3K 4L3
902.429.2202

www.ecologyaction.ca
/EcologyActionCentre
/EcologyAction
/EcologyAction

Letter from the Centre

WE LOVE HEARING FROM YOU! EMAIL YOUR THOUGHTS TO MAGAZINE@ECOLOGYACTION.CA

Correction to *Emissions Footprint* article in E&A Fall 2018 Magazine

I would like make a correction and clarification to Kathleen Olds and Julie-Simone Rutgers' important article about the problem of military emissions and expenditures. The chart provided in the article is sourced from the Treasury Board of Canada Secretariat's *Greening Government* website, rather than from myself as an interviewee.

The chart, *Figure 4: Trends in greenhouse gas emissions from federal organization*, shows that among all federal departments, the Department of National Defence (DND) has the highest level of emissions at 544 kilotonnes of carbon equivalent. Yet, those reported emissions are only from DND's buildings and non-military vehicles used within Canada.

The greenhouse gas emissions from military vehicles and operations at home and abroad are exempted from Canada's GHG inventories and reduction targets. For example, the climate impacts of the excessive fuel used by Canadian troops in Latvia, Poland and the Ukraine as they currently engage in war exercises on Russia's borders are not counted. Nor are the climate impacts calculated of the 65 million lbs of fuel that the Canadian Forces delivered to US-led coalition forces as they dropped over 100,000 bombs on Syria and Iraq over the past two years. DND has disregarded not only the climate impacts, but the tragic civilian impacts of that bombing. The truth is that we cannot decarbonize and avert catastrophic climate change if we do not demilitarize. This will require that we divert public spending away from the military and to a just, green and peaceful transition. Time is running out. Let's make demilitarization for decarbonization a federal election issue this year!

Submitted by Tamara Lorincz. Lorincz was interviewed by Kathleen Olds for an article titled Emissions Footprint, which appeared in our Fall 2018 issue of Ecology & Action.

Correction: In our article titled *Peace Off Our Coast* (Ecology & Action, Fall 2018) we cited a population of less than 100 breeding pairs of piping plovers in the wild. We received a correction letter letting us know that in 2018 there were fewer than 200 breeding pairs of Piping Plover (Charadrius melodus melodus) in Eastern Canada (including St. Pierre and Miquelon), well below the recovery target of 310 pairs for the region. Of those, fewer than 50 pairs nest in Nova Scotia.

Unpredictable Elements:

WHAT DOES CLIMATE CHANGE MEAN FOR FARMERS?

by **BRITTANY MCGUIRE** /// EAC Volunteer

Sarah Smith leading a farm tour about her experiences with climate change at an ACORN workshop.
PHOTO: ACORN

Climate change is top of mind for many farmers in Atlantic Canada as they experience less predictable growing seasons and stronger and more frequent weather events. Over the last year, the Atlantic Canadian Organic Regional Network (ACORN) has begun engaging farmers about climate change. Many are worried about how these changes already have and will continue to impact their farmland, infrastructure, and crop production.

Farmers are experiencing long periods of drought and heat waves, punctuated by heavier rains and flooding. Some are having to seriously think about water management for the first time, both for too much and too little water in the same growing season. This past year, a cold spring with a late frost, followed by an early fall frost and winter made it difficult to plan in advance for seeding and harvesting, and caused significant crop loss for some. Warmer annual temperatures and warmer winters also bring concern about new pests and diseases. Unpredictability is the central theme to the changes that farmers are experiencing.

Storms are also increasing in frequency and severity. Low pressure systems and strong winds cause unusually high tides, also known as storm surges, which can result in coastal flooding. Sea level rise compounds the risk of coastal flooding and farmers located near the coast are worried about what this means for their farmland and the coastal routes they rely on for transporting food to market.

Speaking on their experience with changing and sometimes extreme weather conditions, Claire May and Mark Trealout from Hayes Farm in Fredericton, New Brunswick, stress that these events have made farming more challenging, less predictable, more risk averse, and, ultimately, less profitable.

Learning about the impacts of climate change, adapting to changing and unpredictable growing conditions, and preparing for an increased level of risk is an immense burden for farmers. Guy Gautreau, from Ferme Jolivent in Memramcook, New Brunswick, has expressed wanting more opportunities to talk about these new challenges."Climate change is actually something I think about on a regular basis, but striking up a conversation with someone about it is not always easy to do," Gautreau says.

TAKE ACTION

Learn about farmer experiences with climate change and continue to support local organic and ecological farmers throughout the challenges ahead. If you are interested in learning more about climate resilient farming, subscribe to ACORN's climate e-news, which includes experiences and perspectives from local farmers in each issue. **acornorganic.org**

To encourage these conversations, ACORN is facilitating opportunities for farmers to share their experiences with climate change and adaptation methods they are implementing. Through their Regenerative Farming Certificate program, Hayes Farm is teaching new farmers practices that help mitigate and adapt to climate change.

Improving the climate resilience of farms - the ability to withstand, respond, and adapt to changes - is a key piece of being ready for the challenges ahead. One fundamental part of resilience is soil health. Increasing soil organic matter can improve soil health and the farm's ability to withstand both wet and dry conditions. To improve soil structure, farms are experimenting with decreasing the amount they till their land. These practices are called no-till, low-till, or conservation tillage. Covering the soil with cover crops, planted specifically to protect the soil from erosion, add nutrients back to the soil, and improve soil structure, is another important part of building soil health. Increasing soil organic matter can also increase the amount of carbon stored in the soil, ultimately contributing to climate mitigation.

Sarah Smith runs Sweet Soil Organic Farm in the Tantramar region of New Brunswick. Smith deals with low-lying and wet heavy clay soils. Wet conditions have shortened her growing season as she cannot work in the fields when there is standing water or wet soil. To manage this, Smith is planning on increasing drainage on her farm, building high raised beds, and pathways to access the gardens in wet conditions. She is also focused on increasing soil organic matter by using cover crops or harvest waste to cover the soil. Gautreau has experienced similar challenges. He has built a pond and added drain tiles under their fields to improve soil drainage.

Strong storms and winds have damaged greenhouses, tunnels, and other infrastructure. To protect farms from increasingly strong winds, farmers are creating windbreaks by planting trees and shrubs along fields. They are also investigating how to better protect their infrastructure, particularly tunnels and greenhouses.

While storm and precipitation events are becoming more intense, farmers are also experiencing longer periods of drought in between rains. To prepare for dry periods, Hayes Farm and others are catching rainwater and increasing water storage to use for irrigating crops. Ponds also help to trap and store water during heavy rains, which can then be used for irrigation when needed. Improved soil health also helps to increase the water holding capacity, ultimately making farms more resilient to changes in precipitation.

Pond built to improve water management at Ferme Jolivent.
PHOTO: Ferme Jolivent

Waterlogged soil at Hayes Farm.
PHOTO: Hayes Farm

Organic farmers already think of their farms as agro-ecosystems and prioritize soil health, both of which are fundamental tenets of organic agriculture, and this approach aids them in being more resilient. "Small scale farmers are at an advantage in being more adaptable and better able to react to the effects of a changing climate," say May and Trealout. Nonetheless, farms will have to invest money and labour in changes in production, infrastructure, and technology for adaptation, and will need support in doing so - from government, farmer organizations, each other, and consumers.

Farmers have expressed that they see community awareness and support as a key piece of resilience. Continued commitment to purchasing from local farms, despite possible changes in produce availability, will give farms the financial stability necessary to weather these new challenges. Purchasing from local farms reduces the distance travelled and amount of greenhouse gases emitted for food to get to our plates. Supporting farmers who use organic practices also means supporting farms that are prioritizing the long term health of farmland and soils. Essentially, buying from local and organic farms helps both mitigate and adapt to climate change.

Brittany Maguire is the Environmental Projects Coordinator for the Atlantic Canadian Organic Regional Network (ACORN) and has been consulting farmers on climate change and building a program in response to their identified needs.

The Ripple Effect of Local Initiatives

ILLUSTRATION: Freepik.com

by **MEGHAN MCMORRIS** /// EAC Staff

Change is like a drop of water falling from the clouds above and landing in the ocean below. As it breaks the calm surface of the water, it triggers a ripple effect that extends out beyond the initial point of collision. Eventually these ripples build, changing the ocean from calm serenity to powerful chaos.

One form of change is unique. It presents itself in all other forms of change, and it amplifies, exaggerates and complicates other forms of change. It is climate change. This unique characteristic of climate change means that we must consider it in all other forms of change. In order to effectively address societal changes, like changing technology, agriculture patterns, water management systems, education systems, approaches to health, urban planning, energy sources, community development and peace, we must mimic the integrated breadth of climate change in our solutions.

On August 28, 2018, a group of more than two dozen labour organizations, Mi'kmaq groups, students, businesses, energy affordability advocates and environmental organizations came together as a network to launch the 2030 Declaration.

The 2030 Declaration calls on the provincial government to set a greenhouse gas reduction target of 50 per cent below 1990 levels by the year 2030. It emphasizes that the transition required in order to achieve this target must be based on support, equity and justice for workers and communities by centring the voices of Mi'kmaw people, African Nova Scotians, and other marginalized peoples and by respecting traditional, local, and academic knowledge and the results of strong consultation.

The 2030 Network and Declaration represent direct local action by organizations, businesses and individuals who care about the environmental, humanitarian and economic well-being of Nova Scotia. With the 2030 Network and Declaration having only been launched in late August 2018, its potential is still somewhat unknown. Using a framework from the Sustainable Development Goals, the extent of the ripple effect for the 2030 Declaration reveals that it has the potential to accomplish far more than meets the eye.

We are calling on the Government of Nova Scotia to set strong greenhouse gas targets – 50 per cent below 1990 levels by 2030 – and, in doing so, transition to a low carbon economy. We must meet this target, and transition our economy, in a way that recognizes the structural inequities of race, gender, income, and the ongoing impacts of colonization and environmental racism in our province. Taking this action now will prevent the worst impacts of climate change, which is already affecting our health, livelihoods, and communities.

We are imagining this just, prosperous future from different present realities. Our transition to a low carbon future must reflect these differences while moving towards climate justice and sustainable economic prosperity.

We can invest in greenhouse gas reductions now, with the goal of greater job creation, in a way that creates better and higher-paying jobs, so more Nova Scotians can find value in their work. We must ensure that workers and communities benefit equitably from this transition, and we must provide training and support for workers throughout Nova Scotia.

Our transition must centre the rights of Indigenous Peoples and follow treaty rights and responsibilities under the Peace and Friendship Treaties here in Mi'kma'ki. Our transition must centre the voices of Mi'kmaw people, African Nova Scotians, and other marginalized peoples, and respect traditional, local, and academic knowledge and the results of inclusive, accessible, transparent, and timely consultation.

Together, we must work toward a just, sustainable, and prosperous future for all communities in Nova Scotia.

The United Nations Sustainable Development Goals

On September 25, 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development[1]. Considered a "plan of action for people, planet and prosperity", it set 17 sustainable development goals (SDGs) and 169 targets for the global society to work towards in an effort to shift the world onto a more sustainable and equitable path.

Translating Between Local and Global; Seeing the Ripple Effect of the 2030 Declaration

The direct calls of action of the 2030 Declaration are:

1. To set a greenhouse gas emission reduction target of 50 per cent below 1990 levels by the year 2030.

2. To recognize the structural inequities of race, gender, income, ongoing colonialism, and environmental racism.

3. To invest in greenhouse gas emission reductions with the goal of creating better, and higher-paying jobs.

These three calls of action directly contribute to the achievement of SDGs 13 (Climate Action), 10 (Reduced Inequalities) and 8 (Decent Work and Economic Growth).

By taking a deeper look into **how** the 2030 Declaration will be realized, we see that the impact of its work extends far beyond climate action. Achieving the 2030 Declaration will require the following actions, and they will directly contribute to the success of the corresponding SDGs.

Talking to educational institutes, like NSCC, and communities about programming needs, and development.

Having conversations with those in both traditional energy industries (i.e. coal) and renewable energy industries (i.e. solar).

Engaging with community on the culture of efficiency.

Maintaining a relationship with Efficiency Nova Scotia Corporation (Efficiency One).

Understanding, building relationships and acting in partnership on the topics of climate justice, reconciliation, and environmental racism.

Partnering with other EAC teams to achieve our goals together.

Finally, the 2030 Network, who will be carrying out the work to realize the 2030 Declaration will be fulfilling SDG 17; Partnerships for the Goals.

- Labour
- Physician
- Law
- Grassroots organizations
- Renewable Energy Industry
- Artists
- Food Industry
- Research and Policy
- Youth
- Economics

The work being done by an ever-growing 2030 Network here in Nova Scotia to see the 2030 Declaration become a reality extends beyond the borders of Nova Scotia. It directly contributes to achieving ten out of the 17 SDGs. It addresses climate action, reduced inequalities, decent work and economic growth, quality education, industry, innovation and infrastructure, responsible production and consumption, sustainable cities and communities, life below water and partnerships. The 2030 Declaration is not just a form of climate action, it is a collaborative and holistic form of change, aimed at triggering ripple effects and changing our society from one heavily reliant on fossil fuels, to one that is more equitable and sustainable.

1. United Nations General Assembly. (October 21, 2015) Resolution adopted by the General Assembly on 25 September 2015 70/1. Transforming our world: the 2030 Agenda for Sustainable Development

Meghan McMorris is the Community Energy Coordinator at the Ecology Action Centre. She has extensive experience working with communities, both in Canada and abroad, on collaborative projects related to community development and the United Nations Sustainable Development Goals.

Grassroots to Groundswell

by **KATHLEEN OLDS** and **JOANNA BULL** /// EAC Staff and Volunteer

The oceans are warming faster than expected. Giraffes are endangered. Forest fires are ravaging the west coast of Turtle Island. The IPCC has given us a decade to reduce emissions by 45 per cent. As our tired brains absorb the headlines about the all-encompassing threat of climate change, our hearts often respond with feelings of loss, despair and hopelessness. The climate crisis is overwhelming, and the grief we feel as a result can begin to feel paralysing. We are at a tipping point in human history, when the actions and choices of governments, industries, and citizens determine the near future of our planet. And so, regardless of whether or not we are optimistic about the outcome, we must act in this moment and do everything we can to bend the course of human history toward a hopeful future. Around the world people are rising up, in the many different ways they can, to tackle the climate crisis. From Sweden's Greta Thunberg to China's Chai Jing and Wang Jiulang to the Unist'ot'en protectors in British Columbia, here are some of the examples of climate action around the world, and what we can learn from them.

"Act as if the house is on fire. Because it is."

- Greta Thunberg, World Economic Forum, Davos, Switzerland

Greta Thunberg

The tenacity and fire of this 16-year-old activist from Switzerland is a beacon of hope to environmentalists the world over. In August 2018, she started the first-ever school strike for climate action in Switzerland, which has inspired thousands of students to stage similar actions on a weekly basis across Europe, Oceania, and North America. One of the largest mass strikes happened in January of this year, when at least 45,000 students came out to protest in Switzerland and Germany.

What we can learn:

- Young people have absorbed the reality of the climate crisis, and are calling for radical and systemic change.
- We must not be afraid to speak uncomfortable truths to powerful decision-makers. Even if our voices are unlikely to change everything overnight, the impact of our actions can ripple across the world.

"The main focus of the Unist'ot'en camp is healing."

Unist'ot'en Camp and Healing Centre

Indigenous peoples have been protecting the land and water since time immemorial, and are often found on the front lines of environmental struggles; from Elsipogtog to Alton Gas to Pictou Landing and beyond. The Unist'ot'en are a people indigenous to Northern British Columbia who established the camp in 2009. It is frequently assumed that the camp was built for the purpose of resisting fossil fuel development by companies including Chevron, TransCanada, and Enbridge. However, its purpose is much deeper: to heal the people and, simultaneously, heal the land.

What we can learn:

- Persistence and longevity cannot be overemphasized. The rest of the climate movement would do well to learn about this history, and follow their leadership as we join the fight for a safe and healthy world.
- There is a distinction between stopping the things we don't want, and building the world we do- both of these focuses are critical and can complement one another.
- We are winning this fight. Were it not for pipeline protests across Turtle Island, we would now have four more major pipelines.

2030 Network

A network of more than two dozen groups—labour organizations, Mi'kmaq groups, students, businesses, energy affordability advocates, artists, and environmental organizations—have been coming together to imagine the future that we want here in Mi'kma'ki, and to coordinate local action for climate justice. The 2030 Declaration, calling for real and ambitious targets for greenhouse gas emissions reductions and a just transition to a low carbon economy, centres the voices of Mi'kmaq and African Nova Scotian people, and is based in equity and justice for workers and the poor.

What we can learn:

- There is power in unusual alliances, especially when those alliances are built on genuine relationships across the lines that sometimes divide us.
- When we bring together people with different perspectives and backgrounds, the work we are able to do becomes stronger and more complete. We are less likely to leave out key pieces of the puzzle.

Under The Dome, Chinese Documentary

Filmmaker Chai Jing's harrowing account of the impacts of air pollution in China was viewed approximately 300 million times in the first three days of its release. It was promptly censored, possibly because it made explicit the connections between fossil fuel companies and the Chinese government, and pointed out that these companies are far more responsible for air pollution than an average citizen's consumption. Not to be dissuaded, Wang Jiulang's film Plastic China focused on the polluting industry of plastics recycling. After it went viral in 2017, the Jinping government quickly banned it on the internet. However, a scant eight months later in July 2018, the same administration banned imports of some kinds of plastic waste. Similarly, after *Under the Dome* the Chinese government has strengthened its commitments to battling air pollution. Prior to the film, state weather services sometimes referred to air pollution as "bad fog."

What we can learn:

- Art is an important and powerful tool for expressing common truths and galvanizing public opinion around an issue.
- Even if the impacts of our actions are not immediately obvious, this does not mean they are don't make an impact! They may bear fruit in invisible or surprising ways.

"[e]very day we drink the water, every day we die a little bit"

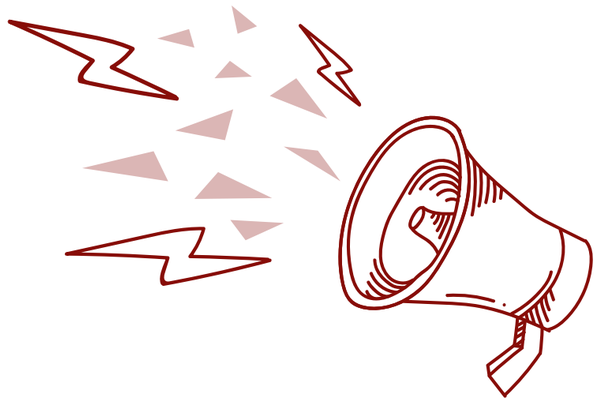
- Maria do Socorro Silva.

Land Defence in Brazil

Maria do Socorro Silva, a Brazilian land and water protector, has been involved in numerous fights to protect the land and water in her Quilombo community. Since 2009, she has been leading a resistance to the world's biggest Alumina refinery, owned by the Norwegian company Hydro-Alunorte. do Socorro Silva states that the plant was built without permission on her land and was poisoning the water. Her power, poise, and persistence contributed to official testing of the water and court recognition that the plant was built illegally. Hydro-Alunorte has appealed the decisions; however, they also apologized and promised free medical care and bottled water to do Socorro Silva's community. Vindicated, but still unsatisfied, do Socorro Silva has now turned her gaze upon the refinery executives and political officials that allowed this to happen."They have to be arrested. They do not like what we do. That is why we are being threatened. But I'm not afraid of the mayor or anyone else."

What we can learn:

- Between nations, as well as within them, it is the most systematically disadvantaged who bear the brunt of environmental destruction. These are the same people who have been at the forefront of environmental activism for years, and it is their voices we should amplify, their fight we must support.
- One victory cannot stop us from pushing for more - none of us are free until all of us are free.
- One barrier, or many, will not stop the fight for justice.



TAKE ACTION

- Support frontline Indigenous resistance! Donate to Unist'ot'en Camp at **unistoten.camp** and the Alton Gas Treaty Truckhouse at **stopaltongas.wordpress.com**
- Talk to your politicians about the climate crisis, emphasizing how much you care and that the outcome of the next election depends on them having a strong climate platform.
- Learn about the Peace & Friendship Treaties that preside over this land now called Nova Scotia.
- Sign on to the 2030 Declaration: **ecologyaction.ca/sites/ecologyaction.ca/files/images-documents/2030%20Declaration%20with%20Signatories%20-%20Aug%2027_0.pdf**
- Donate to grassroots organizations in other countries, prioritizing frontlines climate organizing.
- Ask the faith, education, or employment organizations you're a part of to be part of the solution to the climate crisis.
- Get organized, get engaged, join an action group, create art, write letters, do anything you can do!

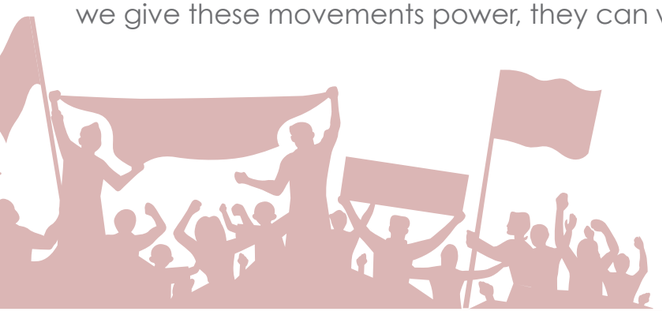
Extinction Rebellion

A group from the UK called Rising Up! has called for "international non-violent rebellion against the world's governments for criminal inaction on the ecological crisis," or Extinction Rebellion for short. Inspired by the civil rights and suffragette movements, Extinction Rebellion is using non-violent direct action and civil disobedience to ramp up pressure on governments around the world to tell the truth about the climate crisis, commit to net zero emissions by 2025, and commit to participatory democracy to put the power back in the hands of people. Their website notes that while this movement needs to be global to be truly effective, it is fitting for it to start in the UK, as this is also where the industrial revolution began.

What we can learn:

- We must trust in collective power and the possibility for a better world. We have far more power as ordinary citizens than we often realize!

These stories only scratch the surface of the many grassroots movements that are shifting conversations around the world. Many communities have been resiliently fighting for the land and water for much longer than we've known about climate change - Maria de Socorro Silva's Quilombo community and the Unist'ot'en people are but the latest in a long line of grassroots environmental protection. There is so much that we can learn from their examples of persistence and fortitude. Survival is the underpinning factor in all of these stories, whether the movements are for survival of a community or culture, or survival of the human species as a whole. If we fail to listen to those voices, there are dire consequences. The UN Special Climate Report has made it clear that we are facing a potentially uninhabitable world. Listening to, uplifting, and joining in the chorus of movements asking for action will ensure not only a habitable, but a better world for future generations. Grassroots movements have won us all of the human and environmental rights that we enjoy in society and when we give these movements power, they can win us even more.



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Kathleen Olds is a fourth-year economics and sustainability student, heading off to law school next fall. She's passionate about building and nurturing hope and resilience in the movements that fight for for social and environmental justice.

Joanna Bull is continually humbled by the dedication and passion of climate justice activists, land defenders, and water protectors all over the world, and is inspired to help us all take good care of ourselves as we fight this fight. Joanna is the Volunteer Coordinator of the Ecology Action Centre.

Listen to the Migration

by **VERONICA SHERWOOD** /// EAC Volunteer

Each spring and fall millions of birds travel thousands of kilometres from Canada to southern climates. The global impact of climate change leaves birds vulnerable as they face changes to the land, water and air during their long journey.

Wildlife biologists at Environment and Climate Change Canada recognize that increasing temperatures in the fall months are a threat to birds. Warmer weather causes migratory birds to hit headwinds and they often end up over water on their southern flight path. This change in course requires more energy and food for their long trips. Birds are often unable to find food to refuel, and sadly this can lead to starvation.

Similar concerns are shared by Bird Life International, a global partnership that protects birds and their habitats by promoting sustainable natural resource development. The partnership fears that climate shifts are increasing the risk of birds whose low energy levels result in more birds being killed by predators.

Back in Nova Scotia, we are accustomed to seeing robins, loons, hummingbirds, and warblers, to name a few. Their stamina is awe-inspiring (the ruby throated hummingbird weighs less than a nickel). What can we learn from the struggles birds face as they travel across the globe? Aside from their beauty and song, birds make exceptional indicators of environmental health as they live in almost every habitat. Can the story of the birds help us to protect other animals who also rely on our lakes, oceans and forests for survival?

Understanding the challenges migratory birds face allows scientists to examine many changing environmental patterns that result from climate change. Researchers around the world can observe birds during their most active parts of the day. This research also allows for information gathering on other plants and animals that share their space. We also have citizen scientists, also known as bird nerds, who report on unusual sightings of rare species that are uncommon to the Maritimes.

My appreciation and affection for birds pushes me to understand and share with you what can be done to help the birds to weather the threat of climate change. The Audubon Society offers simple suggestions that will not only introduce more people to the bird world, but also support the birds while they embark on their travels. You may want to try a few of the following steps to help protect the birds that live on the land or sea.

Veronica Sherwood is a volunteer with the Ecology Action Centre's Bird Conservation Committee and a long time cat enthusiast.

TAKE ACTION

- Plant native species that provide the necessary nutrients birds needs.
- Do not use pesticides.
- Keep kitty inside and ensure that neighbourhood cats are not using your property to hunt.
- Turn lights off to reduce window collisions.
- Select grass fed beef and sustainable wood products as both preserve forests and bird habitat internationally.
- Reducing the use of plastic can save hundreds of seabirds.
- Provide natural food, water and shelter for birds.
- Join your local naturalist groups for a beginner's bird walk and bring a friend.

Imagining a Better Future

SETTING GOALS FOR CLIMATE ACTION, GOOD JOBS, AND COMMUNITY BENEFITS IN NOVA SCOTIA

by **STEPHEN THOMAS** /// EAC Staff

Much like the rest of the world, Nova Scotia is at a crossroads. Today, we have the option of believing in ourselves by moving forward with bold and necessary climate and economic policies.

But that option won't be available forever. We have just enough time to get it right.

In Nova Scotia we have the skills, knowledge, and experience to build a strong green economy based in justice, climate action, and good work for all. Sometimes it's difficult to envision the future we want, but I believe that, as Nova Scotians, we have everything we need to build a just transition toward a future we can truly thrive in-

Nova Scotia has what it takes.

In the last ten years, we have had many strong examples of taking action on climate change and creating thousands of jobs. Here are just a few:

1. Efficiency Nova Scotia is a leader in Canada in delivering world-class energy efficiency and conservation programs. As of 2017, there are 1,400 people working in energy efficiency for more than 150 companies in Nova Scotia. The utility has, so far, reduced the province's electricity use by ten per cent and has saved more than 840,000 tons of CO_2.[1]

2. As of 2017, there were more than 850 jobs created in the renewable energy sector of Nova Scotia. Exponential growth in solar electricity is expected in the next few years, and Nova Scotia has great stories to tell with the success of the community feed-in tariff between 2012 and 2015.[2]

3. There are more than 40 Megawatts (MW) of Mi'kmaq-owned wind energy projects across Nova Scotia. These wind projects produce more electricity than all 13 Mi'kmaq communities consume on an annual basis.[3]

4. In February 2018, the Imagining 2030 Network hosted conversations on what climate justice could look like here in Mi'kma'ki (the ancestral and unceded territory of the Mi'kmaq people, of which Nova Scotia is a part).[4] The network has been discussing what we could do to come together to ensure good jobs for our communities, rights for Indigenous people, and strong climate action. In August 2018, the network launched the 2030 Declaration, which outlines a framework for moving toward climate justice in Nova Scotia, while achieving deep emission reduction.[5]

More than 40 organizations – including businesses, organized labour, teachers, community organizations, faith groups, groups working on environmental racism, public policy organizations, and Indigenous groups – signed the 2030 Declaration. The Declaration calls for Nova Scotia to set a greenhouse gas emissions target of 50 per cent below 1990 levels by 2030 – which the Green Economy Network has said will create more than 30,700 jobs in the province.[6]

skills, knowledge, and experience to build a strong green economy based in justice, climate action, and good work for all.

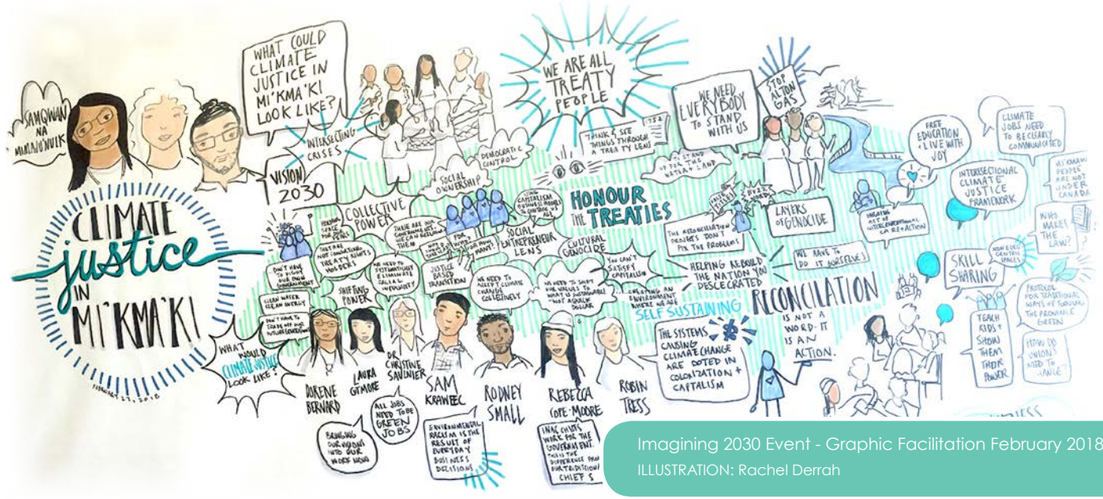
We do not need to wait for some billionaire to propose a destructive, short-sighted megaproject, like a coal mine, a liquified natural gas (LNG) plant, or a tar sands pipeline, to provide us with the promise of jobs and false hopes. We have all we need to build a prosperous, green economy here at home. The just transition can provide ample opportunities for job creation and an investment in ourselves for the long term.

By having conversations like these, we can give ourselves the license to imagine a future where climate and environmental justice is possible. We can build an economy that is based on local renewable resources and on working with Mother Nature, not against her.

We do not have to be resigned to projections for a future that locks us in for climate catastrophe and uncertain prospects for our communities. We can imagine something different, something better. In conversations navigating action on climate change and working toward a just transition for workers and communities, it is always critical to ask ourselves "who benefits?"

5. The concept of a Green New Deal is taking a hold in the United States and also in Canada, with sweeping policies for deep emission reductions, creating millions of jobs, and strengthening social and economic programming. In Nova Scotia, we have a history of taking steps toward that direction. For instance, the Environmental Goals and Sustainable Prosperity Act (EGSPA), that was first legislated in 2007, was supported by all major provincial political parties in Nova Scotia.

EGSPA was renewed in 2012 with new goals. This act legislates strong targets for things like greenhouse gas reductions, renewable energy targets and land protection, but it also has the ability to put forward bold economic programs to ensure good work, supports and training for people joining the growing, green economy. However, EGSPA is very overdue for another process of renewal. Although we've done great work in the past, we currently have no credible plan for the future in Nova Scotia – but we can come together to chart that path.



Imagining 2030 Event - Graphic Facilitation February 2018.
ILLUSTRATION: Rachel Derrah

As these examples show, we just need to believe that we can continue down this path. If we do not believe in ourselves, we tend to rest on our laurels, and miss opportunities.

On January 1, 2019, Nova Scotia's Cap and Trade Program began operating our first-ever carbon pricing system. This was the opportunity to be an important mechanism for a progressive and ambitious climate action. Sadly, it is a system that barely scratches the surface of what we need.

It sets a long-term emissions reduction target that was simply our business-as-usual scenario. It will only reduce emissions in the province by about one per cent below our baseline between now and 2022. It gives away the vast majority of emission credits to polluters for free (80 per cent to liquid fuel producers, 90 per cent to Nova Scotia Power, and 100 per cent to large industries). Carbon pricing has the opportunity to do so much more, and provide real benefit to communities, workers, and low - and middle - income people in Nova Scotia.

A key part of the carbon pricing history in Nova Scotia is that there was no public consultation in the creation of the system. Moving forward, that has to change. We need input from communities coming from broad, accessible, public consultations.

We need something more.

We believe that a renewal of EGSPA can be a critical piece of legislation for important steps forward. We can create good jobs for African Nova Scotian, Indigenous and rural communities, and those looking to come home to find meaningful work in an industry that is here to stay.

I'm grateful and excited to join with the amazing communities across Nova Scotia who are already working to make this dream a reality. We can have goals for strong climate action, good jobs for everyone across Nova Scotia, and an economic outlook that we can be proud of.

2030 Declaration Launch August 2018.
PHOTO: Dani Miller

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Stephen Thomas has been the Energy Campaign Coordinator since 2016. He supports the work of the Energy Action Team and leads its campaigns, policy, and advocacy work on energy and climate change issues. Before joining EAC, Stephen worked for five years in energy efficiency and community renewable energy development as an engineer and project coordinator. He attended COP21 in Paris, and he loves cycling and hosting solar-powered concerts around Nova Scotia. Stephen grew up in Nova Scotia and is grateful to be a guest on unceded Mi'kmaq territory.

Ecology Action Centre

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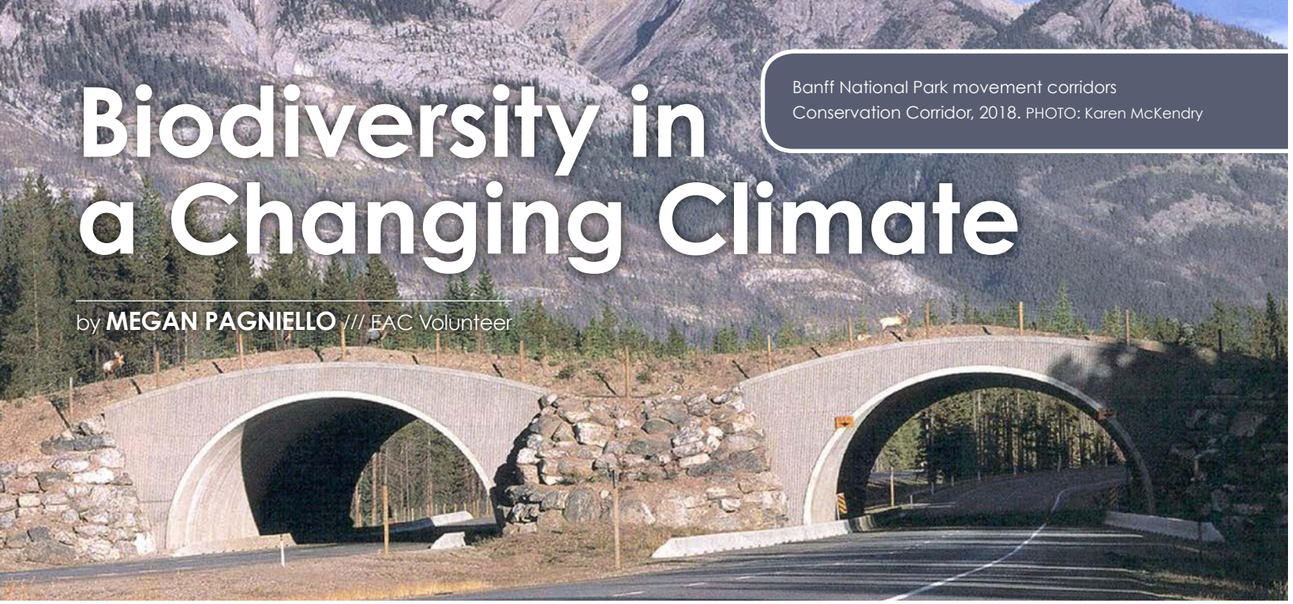


Banff National Park movement corridors Conservation Corridor, 2018. PHOTO: Karen McKendry

Biodiversity in a Changing Climate

by **MEGAN PAGNIELLO** /// EAC Volunteer

Climate change is occurring more rapidly than its has in the past.[1] But there is uncertainty as to how it will look in the future. We also don't yet know how climate change will continue to affect biodiversity.

If we want to try and avoid future extinctions and species loss on a global, national, and provincial scale, we need a better understanding of the effects climate change is having on biodiversity.

By understanding patterns and relationships that currently exist, we can better prepare and prevent biodiversity loss, and begin to address the overarching issue of climate change. We know that climate change is occurring more rapidly than it has in the past,[2] but there is uncertainty as to how it will look in the future, and uncertainty as to how climate change will affect biodiversity.

Here's what we do know; as climate change continues to worsen, species will be put under increasing stress to adapt to rising temperatures, move to more suitable habitat, or face extinction. Extinction – where a species no longer exists – and extirpation – where a species no longer exists in a certain region but exists elsewhere – are both occurring as climatically suitable habitat disappears or becomes geographically inaccessible. It is important to note that the extinction threshold, or the amount of habitat loss that results in extinction, varies from between species and regions.

There is inconsistency among predicted future global extinction rates, which range from zero to 54 per cent, depending on the methods, species, and regions being studied. However, the literature seems to be consistent in that extinction rates are projected to be highest in South America, Australia, and New Zealand. The latter two regions, specifically, have relatively little land mass for species to disperse to as a result of climate change pressures[3].

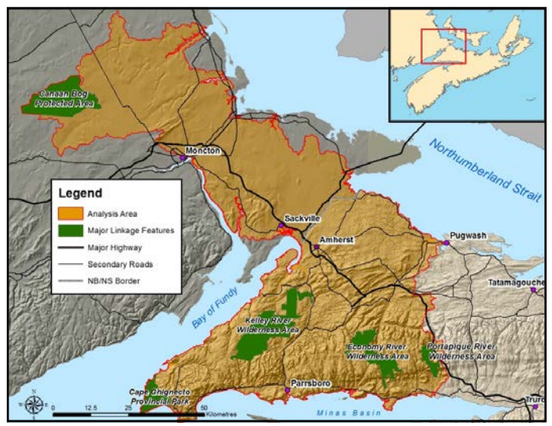
Human impact on habitat, coupled with climate change pressures, means that less habitat exists. It is estimated that less than one per cent of the world's rivers remain untouched by humans[4] and half of the global land coverage has been converted for agricultural purposes[5]. Within the United States, it is estimated that only 45 per cent of the land is natural, and of that land, only 41 per cent is connected enough to allow for species to move as the climate changes[6]. These pressures, combined with increasing temperatures, have resulted in less habitat and increased fragmentation. Habitat fragmentation – the human impacts and alterations that have broken up other species' habitat- has resulted in restricted movement for species, and in some cases, complete movement barriers. With this in mind, we need to understand how far species can potentially move, and if it is going to be enough movement for them survive temperature changes. Unfortunately, the general consensus is that the current landscape does not allow for species to disperse enough to find climatically suitable habitats.

Within Nova Scotia there are many examples of species that are gravely affected by habitat fragmentation. The mainland moose, which is a species at risk in Nova Scotia, has a population of less than 1,000 in the province. Nova Scotia's high road density has resulted in the isolation of populations and individuals, including the mainland moose, which means that the species are unable to disperse to more suitable habitat and to increase their populations[7].

One way we can try to address the issue of habitat loss, fragmentation and temperature increase is through climate connectivity. Climate connectivity refers to natural lands being in a spatial pattern that allows for species to move from unfavorable climatic regions to habitat that is better suited to the species or population[8]. For areas that are not well connected, often as a result of human impact, wildlife movement corridors can be used to connect patches of natural land and encourage species dispersal.

By connecting different areas through the use of corridors, species are able to disperse and find climatically suitable habitat. Increasing climate connectivity is cited by many as being one of the best ways to conserve biodiversity in the face of climate change[9]. These corridors take on many forms and exist across the globe, covering just a few hundred meters to thousands of kilometers. There are a handful of corridors that exist within Canada. In Banff National Park in Alberta, man-made corridors extend over the TransCanada Highway to allow animals, such as grizzly bears and elk, to disperse from one side of the highway to the other[10]. Yellowstone to Yukon (Y2Y) is a large-scale corridor that spans from Wyoming, United States, to the Yukon Territory in Canada, and covers 1.3 million square kilometers. Y2Y is intended to restore habitat and increase connectivity for species such as caribou, lynx, and grizzly bears[11]. In Eastern Canada, the Chignecto Isthmus region, which is the area around the border between Nova Scotia and New Brunswick, has been recognized as a critical corridor for wildlife movement[12]. It is the only land-based connection between Nova Scotia and the rest of North America, which also means it is a vital dispersal path for terrestrial species to find suitable habitat. This corridor would be used by several species, including the mainland moose, black bear, and red fox[13].

Climate connectivity planning is a lengthy process, and because of the human influences that obstruct dispersal routes, it can be extremely difficult to create routes that would be used. However, it is one of the best ways to address the impacts that climate change is having on biodiversity. Although it is not the only mechanism that can be used to address the issue at hand, climate connectivity planning is one viable option. In fact, successful corridors exist across the globe, and there has been extensive research performed here in Nova Scotia to see where corridors are most needed, and what needs to be done to create them. While the Chignecto Isthmus region is not currently a connectivity corridor, it is hopeful that the current research and planning being conducted will one day allow for species to disperse from Nova Scotia, if needed. Climate change is one of the biggest threats to biodiversity, and we need to take action now on behalf of our fellow species if we want to begin to conserve those that are left.



Chignecto Isthmus region as a connectivity corridor. Map by Nature Conservancy of Canada, 2018.

Y2Y Big Sky Conservation. Map by Institute GIS, 2008

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Megan Pagniello is a Master of Resource and Environmental Management student at Dalhousie University, with a passion for biodiversity conservation.

Burned: A Bio-Mess

by **JACKIE DAVIS** /// E&A Committee

Burned: Are Trees the New Coal? Alan Dater and Lisa Merton, 2017, **burnedthemovie.com**

The EAC's Wilderness Issues Committee has been hosting film screenings of *Burned: Are Trees the New Coal?* by Alan Dater and Lisa Merton, touring across the province to educate folks on the issues of using forest biomass for energy production.

Through a combination of narrative, interview and exposé, *Burned* "...interweaves the science of climate change, the escalating energy-policy disputes, the dynamics of forest ecology, the industry practices, and the actions of activists and citizens who are working to protect their own health, their communities, the forest, and the planet's climate."[1]

Screenings are followed by discussion, and a shorter film *Too Big* (2019, Peter Murphy) which grounds the issue in our own province. Biomass for energy is a small but key factor in the energy sector and in the larger context of the forest-resource industry. *Burned* makes clear statements, educating us all on this issue affecting the Eastern seaboard of the U.S., and upwards to our own coastal province.

The film expands on a political-industrial relationship between companies in the United States and countries in the European Union. The driving force of biomass industry in the film's context comes from the European Union's 2009 Renewable Energy Directive,[2] which obliges some countries to be accountable for a 20 per cent reduction in carbon emissions by the year 2020. To meet these goals some are using carbon-neutral energy sources that require little-to-no change in production facilities. Biomass is considered a carbon neutral energy from a renewable resource.

As was explained in *Burned*, biomass is meant to be waste wood; sawdust, bark, off-cuts from lumber which can be made into wood-pellets or wood chips to be burned for electricity in former coal-fired power plants. As early as 2006[3] it was being considered as an answer to needs for reduced carbon emissions. It is from this context that an industry boomed and major political decisions were made on the neutrality and production of biomass for energy. It was deemed to have high potential as a transitional energy source between detrimental fossil fuels and intermittent wind energy.

Facade Far from Reality

Cut a tree, burn a tree, plant a tree. It seems simple.

However, it has been found[4] that burning wood- especially green wood- is less efficient, yielding 21 per cent [5] of what coal would per tonne and producing 40-60 per cent more carbon per megawatt hour than burning fossil fuels! This doesn't take into account equipment use during harvest, transport emissions across the Atlantic, and carbon released into the atmosphere from the soil once a tree is extracted goes uncounted.

It certainly doesn't take into account that tree's potential to sequester carbon in the future. The responsibility for counting carbon is not enforced with the harvesting company, nor is it counted when being burned for energy in European plants. In order to avoid counting carbon twice, the carbon emitted is just *not counted*.

It seems the decision that biomass is a carbon neutral green energy is not based on *physical reality*. In search of accountability[6] governments and industry have made an accounting mistake.

The Physical Reality

Trees sequester carbon through photosynthesis. When you cut a tree, carbon is released from the soil into the atmosphere, the ability of that tree to remove and use carbon from the atmosphere is gone, and the process of burning that tree will emit more carbon.

Trees are theoretically a renewable resource – if harvested at a reasonable pace, and/or replaced at a higher rate (20-30 times the area)[7] than being cut. However, given the needs of current industry, we will wipe our land clean of forest before anything useful renews itself. How much land can be cleared and replanted and still allow for the continuation of our wild plant, animal and insect species?

Root of the Problem

The choice of waste wood is not always straightforward. Waste is an industry term, not an ecology term. Waste only refers to the plant's viability for market. In *Burned* we see proof that companies are purpose-specific clear-cutting for biomass, sometimes clearing large swaths of natural forest only for chipping or pellets.

In *Too BIG*, a second film shown by organizers after the main film, local foresters and citizens talk about the impacts of the big biomass-power generating plant in Port Hawkesbury and its practices on private and crown land in Nova Scotia. The plant uses approximately 660,000 tonnes a year cut, much of it coming from purpose-specific clear-cutting on crown land.

In Nova Scotia, Emera produces biomass-energy for domestic use at the Brooklyn plant in Liverpool, converted for biomass in 2012 and in 2013, the Nova Scotia Power-owned Port Hawkesbury plant also began burning biomass. Together at 30 MW and 60 MW they generate four per cent of our province's total electricity. Most of the fuel comes from clearcutting our forests. As in Europe, Nova Scotia does not count the carbon emissions from biomass electricity renerations. Combined with the ecological detriment, how much does this industry really give back to our province?

Incinerator burning wood pellets at the Port Hawkesbury Plant.

Can we get it right?

Biomass energy is an industry pushed by pressure to respond to climate change, ironically making the situation much worse in a fairly short term. How could Nova Scotia mitigate this mistake, and transition from the current industry issues?

As in the films, biomass is more effectively used as a source of home heating than for electricity on a large scale.[8] If the province and companies used only waste-wood and lumber industry residuals and focused on smaller markets, biomass for heat could make sense and still support a more locally-based industry.

The massive demand for biomass both domestically and internationally places far too much pressure on our province's relatively small landmass and already highly-stressed forests. Using forest biomass to produce electricity is also a distraction from other truly sustainable energy sources like wind or solar, putting off our development of these alternatives. We should make sure that biomass does not become the new carbon-emitting, limited resource that we harvest using detrimental extraction processes.

If we are looking towards a climate-energy solution and the question is "are trees are the new coal?" we don't want to answer "yes".

1. burnedthemovie.com
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6. Dater, A and Merton, L *Burned* 2017, 41 mins 45 secs.
7. Stuart L Pimm, Duke University In *Burned* 2017
8. David Publicover in *Burned* 2017, 41:45

Jackie Davis is an Editor and Farmer, trimming either words or weeds, depending on the season. Using her Master's in Cultural Studies to investigate current issues, she is currently part of the *Ecology & Action* Magazine Team.

A Right Whale Movement: Mirroring Change

by **REANNE HARVEY** /// EAC Volunteer
PHOTOS by **NICK HAWKINS**

In 2017, the Gulf of St. Lawrence witnessed an unprecedented North Atlantic right whale mortality event.

Twelve whales lost their lives and another five were seen entangled in fishing gear, alive and struggling, by at-sea observers. Upon examination of seven of the dead whales, veterinary experts with the Canadian Wildlife Health Cooperative determined the leading causes of death were blunt force trauma and drowning. The former is a common fate when a whale is struck by a transport ship, the latter when a whale becomes so entrapped in fishing rope it can't escape to the surface for air. These necropsies confirmed what many already feared: the whales were colliding head on with Gulf fisheries and maritime waterway traffic.

For one of the most endangered whale species in the world, with an estimated global population of 411 and far fewer breeding-age females, an event of this magnitude was, and remains, extremely worrisome.

North Atlantic right whales (*Eubalaena glacialis*) were once common in the temperate waters of the North Atlantic, until the species was driven to the brink of extinction by intense whaling pressures. A League of Nations agreement banned their hunting in Canadian waters in 1935, but the population still struggled to recover.

Ship strikes and entanglements are now the leading causes of death for North Atlantic right whales each year. Historically, this migratory species has spent April to November feeding in or near the Bay of Fundy before heading back to U.S. waters in the winter months. But in recent years, the whales have been appearing less frequently in the Bay of Fundy, instead travelling north to feed in the Gulf of St. Lawrence.

This change in migration patterns may be linked to climate change. The primary food source of the North Atlantic right whale is the copepod (*Calanus finmarchicus*), a tiny and abundant zooplankton species, no bigger than the tip of your pen. Scientists are observing a decrease in the population density of this vital species with increased temperatures, particularly in its southern range, from the Chesapeake Bay to the Bay of Fundy. Right whale feeding grounds appear to be mirroring the northward movement of their food, leading the whales into areas of high fishing and shipping activity where mitigation measures are not in place. It was these shifting patterns that led to the devastating fatalities of 2017.

The iconic whales were not the only ones to suffer as a result of these changes. Fishermen and processing plants throughout coastal New Brunswick were affected, too. The 2017 entanglement incidents led the Marine Stewardship Council to suspend the Southern Gulf snow crab fishery's sustainability certification. United States lobby groups also threatened Canada with a call to ban all Atlantic Canadian snow crab imports if the fishery continued to harm right whales. Both of these measures held major implications for the export-based fishery, which relies on U.S. markets for 70 per cent of its sales.

The Canadian government took the situation very seriously. For the 2018 season, Fisheries and Oceans Canada (DFO) implemented emergency measures to reduce the risk of whale entanglement. Gulf snow crab fishermen had to observe a new static closure area, overlapping a right whale hotspot just east of New Brunswick's Lamèque Island, as well as temporary closure areas that came into effect for 15 days at times when right whales were spotted. The static closure's "no-fishing zone" covered an area where 20 per cent of the previous year's crab quota had been caught. The fishing season was also compressed, ending two weeks earlier than usual, to minimize interactions with right whales in the area.

As a result, fishing intensified outside of the closed areas and harvesters struggled to reach their catch quota, spending longer at sea in unfamiliar areas to find new fishing grounds. An unpredictable crab supply meant less work for processors too. Corporate seafood buyers, responsible for cross-border trade with the United States and elsewhere, faced a new challenge getting lucrative snow crab exports to market in a stunted fishing season.

While there was resistance to the new regulations from some fishing fleets, most fishermen came together in collaboration with researchers and environmental organizations to act swiftly and do what was necessary to stay on the water and fish while also avoiding the whales. Many were part of entanglement rescue efforts as well. Now, some fishermen are piloting new gear types to reduce potential harm to whales and other marine mammals going forward.

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In 2018, there were no known North Atlantic right whale deaths in Canada, likely due in large part to the strict mitigation measures. Still, at least five entanglement incidents occurred in Canadian waters during the summer, and two dead whales were found in American waters. In that context, all parties remain on high alert for right whale populations continuing to navigate new areas of the busy Northwest Atlantic.

For the 2019 fishing season, DFO has announced similar fisheries closure measures to accompany increased right whale monitoring and gear technology innovation – support that aims to continue to reduce entanglements. But ultimately, shifting ocean patterns are becoming harder and harder to predict. The future of the North Atlantic right whale is still unclear. As temperatures continue to rise, similar tales are likely to become increasingly common, with the consequences of climate change reaching further and impacting marine species and socioeconomic systems everywhere.

"Right now, the right whales are the hot-button species, and so they should be," says Shannon Arnold, Marine Coordinator at the Ecology Action Centre. "But who knows what's next?"

"To continue to address these crises on an ad hoc basis means leaving fishing communities in limbo, buffeted by changing oceans and regulations that can't adequately adapt," says Arnold.

"We have to start embedding adaptability into what is otherwise a very rigid structure of fisheries management in Canada," says Arnold. "If we don't, we risk the future of our Maritime communities. This is going to get worse before it gets better, and the North Atlantic right whale is just the canary in the coal mine."

Reanne Harvey is a Masters student at Dalhousie University studying Marine Management. She would like to see more support for co-management when it comes to climate change adaptation for coastal communities.

The Invisible Climate Solution

by **EMMA NORTON** /// EAC Staff

The International Energy Association estimates that **49 per cent of GHG emissions reductions** needed to stay below two degrees are going to **come from energy efficiency**. That's a bigger piece of the pie than renewable energy, nuclear, or carbon capture and storage.

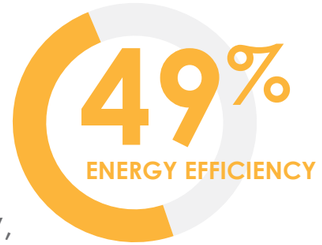

ILLUSTRATION: Freepik.com

Whether it's insulation, a variable speed fan, a heat pump, or an automated building energy management system, energy efficiency is the technological climate solution we can't see. **Emma Norton** explains why it's so important to invest in energy efficiency in order to address our climate crisis.

It's the largest slice of the climate solution pie. And the benefits of increasing our energy efficiency don't stop at GHG reductions – they can help save money, create jobs, reduce strain on our electricity infrastructure, and so much more. Here are nine reasons energy efficiency is the key technical solution to climate:

1 **IT'S CHEAPER:** In Nova Scotia, it costs at least six cents to generate a kilowatt hour using the cheapest fossil fuel. But efficiency costs just three cents to save a kilowatt hour. We can reduce the amount of added capacity that we need to build by investing in energy efficiency. This makes it easier to keep up with growing populations and the increasing electrification of our world, but also eases demand on existing grids.

2 **ENERGY EFFICIENCY IS A SOURCE OF ENERGY:** You might have heard the phrase "The greenest kind of energy is the energy you don't use". It's true! In Nova Scotia, our power utility is legislated to buy the most cost effective form of energy available. The most cost effective form of energy available to them is – you guessed it – energy efficiency! That's why every year Nova Scotia Power buys energy efficiency from Efficiency Nova Scotia.

3 **WE CAN ALL BECOME MORE ENERGY EFFICIENT:** As our cheapest energy source, we can all adapt to increase our energy efficiency. Nova Scotia offers free programs to help people get energy saving light bulbs and pipe insulation. Nova Scotia's HomeWarming program provides low-income homeowners with free energy upgrades to their homes so that they can save an average of between $600 and $1,000 each year. Other programs help subsidize or finance energy efficiency upgrades so that some of the larger projects are more affordable for more people.

4 **LARGE INSTITUTIONS CAN (AND SHOULD) LEAD THE WAY:** When large institutions like governments invest in energy efficiency in their buildings, they save taxpayers money and stimulate industry, while providing green jobs. There are larger systemic changes that can be made to improve the energy efficiency of our systems like improving the efficiency of our grid, recommissioning large buildings, capturing waste heat from water treatment plants, and ensuring distributed renewable energy sources and storage.

5 **ENERGY EFFICIENCY HELPS REDUCE ENERGY POVERTY:** Programs like HomeWarming (mentioned above) are helpful for the many people around the world who live in energy poverty. Energy poverty is when a person or household spends more than ten per cent of its income on energy to heat and power the home (electricity, fuel oil, propane, firewood, etc.), including the fuel needed for routine commutes. Energy efficiency generally helps to reduce the overall expenditure of a household on energy, heating, and transportation. The Netherlands is using an initiative called EnergieSprong to reduce the energy consumption in social housing homes to zero. They can retrofit a home in a week using prefabricated wall panels and roofs. British Columbia and New York are already following suit.

6 **LIKE RENEWABLE ENERGY POLICY, WE CAN ALSO SET EFFICIENCY TARGETS.** In Nova Scotia, we have achieved about one per cent energy efficiency in our electricity system every year since 2007. That means we have increased our energy efficiency by about 12 per cent since 2007. What would be wonderful to see is a goal to increase the total energy efficiency of our province every year – including non-electric heating (oil, natural gas, wood), and transportation. Efficiency Canada and Clean Energy Canada, commissioned an economic impact study about energy efficiency for Canada. They found that if Canada could achieve 40 per cent of its Paris Commitment by setting targets to improve the energy efficiency of its electricity, gas, and oil sectors by between 1.75 per cent and 2.5 per cent a year. These targets are being achieved in other jurisdictions like the Massachusetts and Rhode Island.

7 **ENERGY EFFICIENCY INCREASES RESILIENCY:** A key tactic to increase energy efficiency is upgrading the efficiency of our homes and buildings. When a home is super energy efficient, it takes a long time for the heat to escape. A super energy efficient home in Nova Scotia won't fall below zero in winter even without a heat source. With increasing dramatic weather events and more frequent power outages, a super insulated home adds security so that you know you'll stay warm even when the power is out. Furthermore, efficiency is the energy source that produces the most during extreme weather, as these are the time periods that place the most strain on our energy consumption.

8 **IT'S ALREADY CATCHING ON:** This concept is not lost on policy-makers. It is common to see energy conservation policy introduced as municipalities, provinces and territories, and our country move towards climate action. The Pan-Canadian Framework (PCF) on Clean Growth and Climate Change outlines several key goals that will help us achieve 25 per cent of Canada's Paris Climate Commitment. These goals are a Net Zero Energy Ready Building Code, a building code to help make upgrades to energy efficient buildings, better standards for appliances, labelling and benchmarking of energy use in homes and buildings, and support for indigenous communities to upgrade the efficiency of their building stock.

9 **IT CREATES JOBS:** Not only will achieving the PCF building goals reduce our greenhouse gas emissions, it will create 118,000 annual jobs in Canada, 4,200 of which are in Nova Scotia Meanwhile, setting total system efficiency targets would create 174,500 annual jobs across Canada. These are jobs in the trades, in engineering, office jobs, tech jobs, and education jobs.

The next time you're talking to your representatives about climate change solutions, make sure you mention energy efficiency and thank them for the energy efficiency programs that already exist.

Action is our Middle Name

ENERGY

Spreading Energy to Illuminate a Nova Scotian Green New Deal

Motivated by the American Green New Deal the Energy Team has been working on a diversity of projects that together we think can contribute to a Nova Scotian Green New Deal. We have been doing research and policy outreach on how to phase out coal fired electricity in a just way, and engaging in building code processes and advocating for partnerships that contribute to a just transition. We have also been connecting with communities, non-profit organizations, and tradespeople in order to raise awareness of energy efficiency practices and programs available to affordable housing, and have started conversations about the development of the Green Fund, which is part of the Nova Scotian cap and trade system, which launched January 1, 2019. Finally, we're advocating for the renewal of the Environmental Goals and Sustainable Prosperity Act, which we believe would serve as foundational legislation for a Nova Scotian Green New Deal.

FOOD

Making Connections

The Halifax Mobile Food Market (MFM) expanded its services to seniors and is exploring new models of food service delivery in HRM. Through the MFM Provincial Mentorship Pilot, we began providing support to a team in Digby for the development of My neighbourhood Market, a food access initiative due to launch in the summer of 2019. In collaboration with provincial and national partners, we supported the development of the Speak Up for School Food campaign asking the federal government for an investment in healthy school food. In Cape Breton, the Island Food Network has been engaging communities on a Shared Food Vision to inform a future regional Food Action Plan. The IFN also hosted the second annual *Farmer to Farmer Retreat*, a sold out event where farmers had the chance to connect, collaborate, and share a delicious local meal to celebrate another year of growing. In Cumberland, we have been working with local partners to build a community garden strategy and strengthen the network of garden coordinators.

MARINE

In March, we saw some of our Atlantic marine protection coalition work paying off with the announcement of the 1,000-km^2 Banc-des-Américains Marine Protected Area, just off the Gaspé Peninsula. With a vibrant, nutrient-rich ocean community along a steep underwater ridge, protections at Banc-des-Américains will help to conserve some of the Gulf region's most unique and sensitive marine life for generations to come.

Last September, one of Canada's largest fishery corporations was quietly charged with illegal fishing. Nova Scotia-based Clearwater Seafoods was found leaving thousands of lobster traps in the water for months on end. A "gross violation," according to Crown prosecutors, as federal regulations restrict "soak time" allowances for untended gear at sea to three days for conservation purposes. The Ecology Action Centre helped to bring the details of Clearwater's unlawful practices to light, and has since being pushing for the suspension of the company's Marine Stewardship Council (MSC) sustainability certification. Ocean Wise, another seafood eco-certifier, has since dropped Clearwater from its ledger, and the MSC is now conducting an official audit.

WILDERNESS

Connecting the Dots on our Natural Landscape

The Wilderness Team keeps pushing for the change that our forests and wildlife need to be a part of our future. This fall we continued to call for more provincial protected areas (we must get to 13%), our anchors of biodiversity. Our depleted forests should no longer be exported for biomass burning, and our tour of the film Burned is showing people why. We continue to pressure the province to implement the recommendations of the Lahey report on forestry activities, and truly move to ecological forestry on provincial Crown land. Environmental destruction and racism have to end, including at Boat Harbour, by January 31, 2020. Our climate is in peril, and our people and fellow creatures are feeling the heat, so we will continue to advocate for a good Biodiversity Act for Nova Scotia, and will call out projects that put profits before people and the planet. It is still a joy and inspiration to get out into nature, and we shared this natural asset at guided hikes at Blue Mountain Birch Cove Lakes this fall.

TRANSPORTATION

Geared Up for 2019

The Transportation Team continues to roll forward in 2019! Our Winter Walk Day event saw over 11,000 students from 75 schools/groups participate throughout February. We continue to work on advocacy issues such as defending HRM's Integrated Mobility Plan Budget, engaging on province-wide school transportation programs and policy, and supporting a people-first design for the Cogswell Redevelopment in Halifax. And the amazing Welcoming Wheels and Bike Again volunteers have settled into their new space 5664 Charles St (Halifax) and are now hard at work fixing up bikes for spring. Throughout all this, the transportation team has taken a deep dive into our program models, impacts and vision. As spring approaches, we're geared up for change. Want to join the action? Come to a Sustainable Transportation Action Team (STAT) meeting. They take place the first Monday of every month!

COASTAL & WATER

Meet the Coastal Protection Act!

On Tuesday, March 12th, NS Environment Minister Miller introduced the Coastal Protection Act. The Ecology Action Centre offered our support at this important stage, and we were pleased to do so after more than a decade of rallying alongside our coastal community members for this much needed legislation. Here is the bill: **nslegislature.ca/legc/bills/63rd_2nd/1st_read/b106.htm**

The bill went through a second reading later that week. NS Environment will now begin working on regulations which should be completed by mid to late 2020. The Coastal Team will be working hard to support NSE, to contribute our expertise and to ensure that the regulations will protect our coastline from inappropriate development. We will also continue to build understanding about our coastal ecosystems and why they need to be protected.

In addition to our efforts on the Coastal Protection Act, our team is in the final stages of our ECoAS Project, educating coastal communities about sea-level rise (**sealevelrise.ca**) and we are looking for new partnerships to continue this work.

The Seasonal Gourmet

by **CHIATI SETH** /// EAC Volunteer

Homegrown Sprout Salad

Eating seasonally means a lot of heartier, denser vegetables during the winter months. By the time spring rolls around, I am usually craving crisp, lighter foods. Although the days are getting longer and brighter, the slight complication of growing time means that our gardens and local farms can't supply fresh produce for a few months after our bodies are ready and the soil is warm enough to plant in! Luckily, you can grow some green, crunchy things right in your kitchen. Sprouts are wonderfully easy to grow – mung beans are great to start with, but feel free to experiment (alfalfa, brassicas, clover, etc.) once you get the hang of the process. Account for two to three days of sprouting time to make this salad.

INGREDIENTS

½ cup dried Mung beans

1 cucumber, finely diced

1 medium red onion, finely diced

1 Tbsp. olive oil

2-3 Tbsp. lemon juice

Salt and pepper to taste

½ cup Feta cheese, crumbled (optional)

1 Tbsp. red chilli flakes (optional)

DIRECTIONS

1. Soak mung beans in plenty of water in a large glass bottle or mason jar for six to eight hours. Drain, rinse with fresh water and drain again. Place a folded cheese cloth or other breathable cover over the top of the jar and secure with thread or rubber band.
2. Leave the jar in a warm place out of direct sunlight and rinse mung beans twice a day, draining completely after each rinse – they want to be moist but not sitting in standing water.
3. Watch the magic of sprouting unfold!
4. Your mung bean sprouts should be ready in two to three days depending on the ambient conditions. They are good to eat at any point after the sprouts are 1 inch or longer. Store remaining sprouts in the fridge for two to three days.
5. To prepare the salad: pour lemon juice over diced onions and allow to sit for 15-20 minutes. Combine remaining ingredients in salad bowl, add marinated onions with lemon juice. Stir to combine and serve immediately.

Chaiti Seth is an avid home gardener and cook who loves to grow and eat food! She works on helping build healthy and sustainable local food systems near Wolfville, Nova Scotia.

EAC Staff & Contacts

OPERATIONS STAFF

Policy Director: **MARK BUTLER** (902) 429-5287 /// action@ecologyaction.ca
Managing Director: **MARLA MACLEOD** (902) 429-5287 /// centre@ecologyaction.ca
Financial Director: **CARLA VANDENBERG** (902) 442-0254 /// eac@ecologyaction.ca
Community Giving Manager: **DANA LIPNICKI** (902) 442-0210 /// dana@ecologyaction.ca
Community Giving Coordinator: **GABRIEL EPPRECHT** (902) 442-0210 /// gabriel@ecologyaction.ca
Facilities and Operations Officer: **CORMEKIA CLAYTON** (902) 454-5226 /// info@ecologyaction.ca
Strategic Communications Manager: **GILLIAN WESLEY** (902) 442-0300 /// communications@ecologyaction.ca
Finance Manager: **HEATHER NAGY** (902) 442-0254 /// heather.nagy@ecologyaction.ca
Volunteer Coordinator: **JOANNA BULL** (902) 454-5226 /// joanna@ecologyaction.ca
Communications Officer: **JESSE SHARRATT** /// jesse.sharratt@ecologyaction.ca
Data and Systems Officer: **SAM FRASER** /// sam.fraser@ecologyaction.ca

MEMBERSHIP STAFF

Membership Relations Officer: **ROWAN SWAIN** (902) 429-0924 /// rowan@ecologyaction.ca
Membership Relations Officer: **HOPE PEREZ** (902) 487-4173 /// hopeperez@ecologyaction.ca

PROJECT STAFF

Coastal & Water

Senior Coastal Adaptation Coordinator: **NANCY ANNINGSON** (902) 442-5046 /// coastal@ecologyaction.ca
Coastal Community Outreach Coordinator: **BRITTANY MACISAAC** (902) 442-5046 /// coastaloutreach@ecologyaction.ca
Community Conservation Researcher: **SADIE BEATON** (902) 221-1953 /// sadie@ecologyaction.ca

Energy

Energy Campaign Coordinator: **STEPHEN THOMAS** (902) 442-0199 /// stephen@ecologyaction.ca
Energy Efficiency Coordinator: **EMMA NORTON** (902) 442-0199 /// efficiency@ecologyaction.ca
Building Efficiency Coordinator: **BEN GRIEDER** (902) 442-0199 /// bengrieder@ecologyaction.ca
Community Energy Coordinator: **MEGHAN MCMORRIS** (902) 442-0199 /// meghanmcmorris@ecologyaction.ca

Food

Senior Coordinator, Community Food: **AIMEE GASPARETTO** (902) 442-1077 /// aimee@ecologyaction.ca
Senior Coordinator, Community Food: **SATYA RAMEN** (902) 442-1077 /// satya@ecologyaction.ca
Research and Evaluation Coordinator: **MAGGIE SUTHERLAND** (902) 442-1077 /// maggiesutherland@ecologyaction.ca
Community Food Coordinator, Leadership Development: **ERICA FRASER** (902) 442-1077 /// erica.fraser@ecologyaction.ca
Community Food Coordinator (Cape Breton): **JODY NELSON** /// jody@ecologyaction.ca

Marine

Marine Policy Coordinator: **SHANNON ARNOLD** (902) 446-4840 /// sarnold@ecologyaction.ca
Marine Conservation Officer: **SIMON RYDER-BURBIDGE** (902) 446-4840 /// sryderburbidge@ecologyaction.ca
Marine Science and Conservation Officer: **JORDY THOMSON** (902) 446-4840 /// jordy.thomson@ecologyaction.ca
Sustainable Seafood Coordinator: **CHRISTINA CALLEGARI** (902) 446-4840 /// christine.callegari@ecologyaction.ca

Transportation

Making Tracks Coordinator: **ASHLEIGH BOERS** (902) 442-0209/// mt@ecologyaction.ca
Youth Active Transportation Coordinator (Cape Breton-Eastern NS): **STEPHANIE JOHNSTONE-LAURETTE** /// stp-cb@ecologyaction.ca
Welcoming Wheels Coordinator: **ANIKA RIOPEL** (902) 446-0209 /// ww@ecologyaction.ca
Bike Again! Coordinator: **KRISTA WELSH** (902) 446-0209 /// kristawelsh@ecologyaction.ca
Sustainable Transportation Coordinator: **KELSEY LANE** (902) 446-0209 /// kelseylane@ecologyaction.ca

Wilderness

Wilderness Coordinator: **RAYMOND PLOURDE** (902) 442-5008 /// wilderness@ecologyaction.ca
Wilderness Outreach Coordinator: **KAREN MCKENDRY** (902) 442-5008 /// karenmckendry@ecologyaction.ca

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5664 Charles Street
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Contact us

www.bikeagain.ca

bikeagainvolunteer@ecologyaction.ca

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