

Provincial Government - Climate Change Information, Roles and Responsibilities



#LdnOnt
ClimateAction





#LdnOnt
ClimateAction

Note to Reader

This supporting document (Overview of Provincial Climate Change Actions) was developed to help the reader understand that:

- various levels of government have responsibilities and programs for climate change (mitigation and adaptation). These responsibilities often include legislative and regulatory authority;
- actions at the local government cannot conflict with senior levels of government;
- senior levels of government have additional revenue generation opportunities to pay for climate change initiatives compared with municipal government that generally only have municipal taxes, municipal rates (e.g., water, wastewater) and user fees and charges;
- to be most effective, comments, questions, concerns and ability to influence change is best focused on the correct level of government; and
- to be most effective, collaboration and action across all levels of government must be viewed as a high priority.

The table on the next page highlights generally which level of government leads in these climate change areas. Also note that with respect to municipalities, legislation and regulation at the provincial and federal level dictates how items are to be implemented by municipalities. The work contained in this supporting document covers developments and actions up to November 30, 2021. Additions may have occurred since that date.

The details in this document will be of interest to:

- Individuals and community groups
- Businesses and business groups
- Institutions and networks
- Academia
- Energy stakeholders and service providers
- Government staff at all levels



This supporting document was a key piece of work that informed the creation of the CEAP and assisted with support and consensus building at various levels within the City and with external stakeholders and partners.

There are 444 municipalities in Ontario. Municipalities have a broad range of powers and responsibilities under the *Municipal Act, 2001*, the *City of Toronto Act, 2006* (for the City of Toronto) and over 100 provincial acts. The *Municipal Act, 2001* is the legislation that enables incorporation and stipulates governance of Ontario's municipalities, excluding the City of Toronto.

The Association of Municipalities of Ontario (AMO) is an important organization with respect to the municipal-provincial climate change relationship. There are also numerous municipal organizations like Regional Public Works Commissioner of Ontario, Regional Planning Commissioners of Ontario, Municipal Finance Officers' Association of Ontario, etc.

City of London	Province of Ontario	Government of Canada
• Building permits • By-laws • Community improvement plans • Cycling and pedestrian infrastructure • Development approval • Land use planning • Local improvement charges • Public awareness, engagement and collaboration • Public transit • Residential rental property licensing • Social Housing • Transportation planning • Urban design standards • Vehicle-for-hire licensing • Waste reduction and management	• Carbon pricing • Clean fuel standard • Electricity and natural gas conservation programs • Electricity grid operation • Flood plain management (via Conservation Authorities) • Funding for public transit, social housing • Climate change funding investments • Highway Traffic Act rules, other legislation and regulation • Natural gas distribution • Ontario Building code • Provincial land use policies • Regional and inter-city transit • Research	• Approval for new technologies • Carbon pricing • Clean fuel standards • Consumer product energy efficiency standards • Electric vehicles charging incentives • Electric vehicle purchase incentives • Funding for public transit, social housing • Climate change funding investments • Inter-city railways • Interprovincial pipelines • Legislation and regulation • Model National Building Code • Vehicles fuel economy



Table of Contents

1. The Role of the Provincial Government in Climate Change Actions	1
2. The Made-in-Ontario Environment Plan	3
3. Progress to Date as Reported by the Provincial Government	5
3.1. Progress on climate change adaptation actions since 2018.....	6
4. Forecasts for Increasing GHG Emissions from Ontario’s Power Grid.....	10
5. The Provincial Government’s Ecological Concerns About Climate Change	13



1. The Role of the Provincial Government in Climate Change Actions

At a high level, the Province of Ontario plays the leading role in the following climate change related actions and programs:

- **Clean fuel standards** – through the Ontario Ministry of the Environment, Conservation and Parks, establishes regulatory requirements for aspects such as ethanol content in gasoline and biodiesel content in diesel fuel.
- **Electricity grid operation** – through the Ontario Ministry of Energy and the Independent Electricity System Operator (IESO), manages the power system in real-time, plans for the province's future electricity needs, enables electricity conservation programs, and operates the electricity marketplace.
- **Electricity and natural gas conservation programs** – through the Ontario Ministry of Energy and the Ontario Energy Board, approves the energy conservation targets and funding for programs administered through the Independent Electricity System Operator and Enbridge Gas. This includes programs such as energy retrofits (insulation, draft-proofing, new furnace).
- **Flood plain management** – Ministry of North Development, Natural Resources and Forestry (MNDNRF) services is the provincial lead in flooding with Conservation Authorities and municipalities as the lead in mitigation and preparedness with delegated roles as well as legislative and regulatory responsibilities to ensure new development is not at risk of flooding.
- **Funding for public transit** – through the Ontario Ministry of Transportation, provides funding programs that municipalities can use to develop specific transit projects.
- **Funding for housing** – through the Ministry of Municipal Affairs and Housing and in cooperation with the Federal Government, provides subsidized housing programs to eligible low- and moderate-income households in Ontario under two main categories: social housing and affordable housing.
- **Natural gas distribution** – through the Ontario Ministry of Energy and the Ontario Energy Board, regulates the natural gas sector by approving distribution rates and commodity prices, as well as licensing gas marketers

- **Highway Traffic Act** – through the Ontario Ministry of Transportation, regulates what types of vehicles are allowed to be used on roads and how they are to be operated (e.g., speed limits).
- **Ontario Building Code** – through the Ontario Ministry of Municipal Affairs and Housing, regulates the minimum standards for building construction, including energy efficiency aspects, materials of construction, and structural integrity.
- **Provincial Land Use Policies** – through the Ontario Ministry of Municipal Affairs and Housing, the Ontario Planning and Development Act (1994) and Provincial Policy Statement (2020) lay out the foundation for local land use that must be consistent with the provincial direction, including the recognition and need to “prepare for the impacts of a changing climate through land use and development patterns”.
- **Regional and inter-city transit** – through the Ontario Ministry of Transportation, provides funding programs for regional transit systems, such as Metrolinx in the Greater Toronto Area and Hamilton.

In the past, the Province of Ontario had played a bigger role in climate actions, but no longer does so. This included:

- Renewable electricity generation procurement (e.g., Feed-in Tariff programs)
- Carbon pricing under the Cap & Trade Program with Quebec and California
- Programs funded by the Cap & Trade Program, including
 - Electric vehicle purchase incentives
 - Electric vehicle charging infrastructure incentives
 - Electric vehicle charging infrastructure requirements for new buildings
 - Renewable natural gas procurement by natural gas distributors
 - Heat pump purchase incentives
 - Funding for municipal government climate action projects

2. The Made-in-Ontario Environment Plan

On November 29, 2018, the Province of Ontario released their [Made-in-Ontario Environment Plan](#) (referred to as the Plan in the rest of this report). This Plan is a 53-page long document that outlines the Provincial Government's holistic approach to managing all the environmental aspects that it is now responsible for:

- Protecting Our Air, Lakes and Rivers
 - Clean Air
 - Clean Water
- Addressing Climate Change
 - Building Resilience: Helping Families and Communities Prepare
 - Continuing to do Our Share: Achieving the Paris Agreement Target
 - Make Polluters Accountable
- Activate the Private Sector
 - Use Energy and Resources Wisely
- Doing Our Part:
 - Government Leadership
- Reducing Litter and Waste in Our Communities & Keeping Our Land and Soil Clean
 - Reduce Litter and Waste
 - Clean Soil
- Conserving Land and Greenspace

The Plan's climate action focusses on the following:

Building resilience: helping families and communities prepare – preparing families and communities for the costs and impacts of climate change, and to protecting our natural environment, communities, businesses and municipalities. We will improve our understanding of how climate change will impact Ontario.

The Provincial Government will be following through on its commitment to undertake Ontario's first-ever broad, multi-sector provincial climate change impact assessment to identify where the province is vulnerable and which regions and economic sectors are most likely to be impacted.

The Provincial Government is helping make information available to homeowners on the practical and affordable actions they can take to help lower their risk of basement flooding, such as by supporting the [Home Flood Protection Program](#).

Making polluters accountable: ensuring polluters pay their fair share for their greenhouse gas emissions, while also ensuring industry continues to make advances to help Ontario achieve its share of reductions.

On July 4, 2019, Ontario finalized its new emissions performance standards to reduce greenhouse gas emissions from large polluters, without a carbon tax.

The Provincial Government is finalizing amendments to Ontario fuel regulations to increase access to clean and affordable energy for families and encourage the uptake of lower carbon fuels to help reduce emissions from the transportation sector.

Activating the private sector: facilitating the private sector's capital, capability, and know-how to transform clean technology markets to drive emission reductions at the lowest cost, using public resources to drive private sector investment.

From the climate change perspective, the Plan weakened Ontario's greenhouse gas emission reduction targets through the re-alignment with the national targets for Canada at that time, specifically reducing total province-wide emissions to 30 per cent below 2005 levels by 2030. It is important to note that Canada's target framework was developed to consider Alberta and Saskatchewan's plans for increasing oil and gas development alongside the planned reductions from Ontario and other provinces. Ontario's current Plan will make it less likely that Canada will meet the Paris Agreement greenhouse gas emission reduction goals unless Alberta and Saskatchewan also agree to scale back their plans for oil and gas development.

In April 2021, the Federal Government revised its 2030 target to reducing total Canada-wide emissions to 40 to 45 per cent below 2005 levels by 2030. However, the Provincial Government has not changed its 2030 target.

At this point in time, the Provincial Government has not stated any greenhouse gas emission reduction targets beyond 2030, whereas the Federal Government has committed to achieve net-zero emissions by 2050.

3. Progress to Date as Reported by the Provincial Government

Progress, as of November 30, 2021 on climate change mitigation actions since 2018 that will assist London include:

- In 2019, invested \$103 million in transit projects in London, including the creation of the three bus rapid transit routes (Wellington Gateway, Downtown Loop and East Link)
- Finalized and received federal recognition of [Ontario's emissions performance standards](#) to ensure large, industrial emitters are accountable for their greenhouse gas emissions.
- Matched a \$295 million investment with the federal government to retool Ford of Canada's Oakville Assembly Complex into a global hub for battery electric vehicle production. This investment ensures Ontario continues to lead North America and the world in automotive manufacturing and innovation, while boosting our competitiveness in this key sector, creating jobs, and supporting a low-carbon, clean-growth economy.
- Created the [Cleaner Transportation Fuels regulation](#) to set requirements that increases requirements for renewable content in gasoline (currently at 10%) while maintaining requirements for diesel. The new regulation requires fuel suppliers to blend renewable content (such as ethanol) in gasoline to 11% in 2025, 13% in 2028 and 15% in 2030.
- Released a low-carbon hydrogen discussion paper to inform a low-carbon hydrogen strategy that could create jobs and help the province move towards its greenhouse gas reduction target.
- Issued \$4.95 billion in green bonds to help finance public transit initiatives, extreme-weather resistant infrastructure, and energy efficiency and conservation projects.
- Established an advisory panel on climate change to provide the minister with expert advice on the implementation of the province's climate change actions, especially on how Ontario can prepare for the costs and impacts of climate change.

Next steps:

- Work with the federal government to ensure a smooth transition for industry to Ontario's emissions performance standards program.
- Finish the phase out of coal by supporting efforts of Ontario industry to reduce their greenhouse gas emissions by reducing and phasing out their use of coal.
- Develop Ontario's first-ever low-carbon hydrogen strategy that would create jobs, support economic recovery and help the province move towards its greenhouse gas reduction target.
- Continue to look at ways we can support the clean technology sector as part of our broader economic growth and recovery efforts.
- Continue the work of the advisory panel on climate change to provide advice to the province on implementing its climate change actions, especially how Ontario can prepare for the costs and impacts of climate change. The ministry anticipates it will receive the panel's final report in fall 2021.

3.1. Progress on climate change adaptation actions since 2018

- Launched [the first-ever broad, multi-sector provincial climate change impact assessment](#) in August 2020 to identify where the province is vulnerable to climate change. Following a competitive procurement process, Ontario selected a consulting team led by the Climate Risk Institute to conduct the assessment.
- Updated the Provincial Policy Statement to include changes to enhance direction for planning authorities to prepare for the impacts of a changing climate. It also includes enhanced stormwater management policies to protect water and support climate resilience.
- Launched a \$1-million "Build Back Better" pilot project, through which the province provided municipalities that qualified for Municipal Disaster Recovery Assistance funding up to 15% above the estimated cost of rebuilding damaged public infrastructure to make it more resilient to extreme weather.
- Named a special advisor on flooding and launched extensive public consultation on the province's existing flood mitigation and land use planning policies. The special advisor submitted his report in 2019 and outlined ways that all levels of government, and individuals, can make Ontario more resilient to flooding.

- Building on the Special Advisor's report, the Ministry of Natural Resources and Forestry released [Protecting People and Property: Ontario's Flooding Strategy](#) in March 2020. The Strategy outlines steps the Ontario government will take with its partners over the coming years to reduce flood risk and help Ontarians better prepare for flooding events through a series of new and enhanced actions.
- Building on the 2020 Flooding Strategy – “Priority #1: Understand Flood Risks”, the Ministry of Natural Resources (now titled Ministry of Northern Development, Natural Resources and Forestry – MNDNRF) established a Multi-Agency Flood Hazard Mapping Technical Team. This team comprised of both provincial and federal flood staff plus conservation authority and AMO municipal representatives are, plotting the approach to update and fill the gaps in flood hazard mapping in Ontario. It is a three-year commitment for the Team. The City of London has staff members assisting AMO.

Waste management actions with climate change benefits include:

- Launched a [working group](#) and released proposed amendments to the food and organic waste policy statement to clarify and expand the types of materials that should be collected by municipalities in green bins and encourage innovation in the processing of compostable products.
- Provided over a \$5 million investment through the [Surplus Food Redistribution Infrastructure program](#) to help food rescue organizations divert high quality food to those who need it and out of landfill.
- Next steps:
 - Consult on a proposal to phase out food and organic waste from landfills by 2030 that will focus on building processing capacity in the province.
 - Provide guidance to educate the public and key stakeholders about reducing and diverting food and organic waste.
 - Explore opportunities to better manage landfills, such as working with industry to better understand any issues, promote best practices to support better management and operation of landfills and improve opportunities for landfill gas capture.

Protecting natural spaces actions with climate change benefits include:

- [Invested \\$20 million](#) in Ontario's land conservation efforts by providing partially matched funding over the next four years to land trusts for the purchase of new

privately-owned protected areas, their management and restoration.

Infrastructure actions with climate change benefits include:

- Streamlined permissions for certain low impact combined heat and power technologies that use natural gas or wood biomass as fuel, so more communities and businesses can benefit from cheaper and more energy-efficient technologies that can also provide more reliable power in emergency situations.

Broader government-supported actions with climate change benefits:

- The Independent Electricity System Operator (IESO) has been asked by the Ontario Minister of Energy to report back by November 2022 on a moratorium on the procurement of new natural gas generating stations and to develop an achievable pathway to zero emissions in the electricity sector in Ontario.
- Ontario Power Generation released a [climate change plan](#) to drive efficient, economy-wide decarbonization and economic renewal, while protecting the environment. Key actions of the plan include advancing electrification initiatives in the province and exploring opportunities in renewables, energy storage, and Small Modular Reactors (SMR) among other actions.
- Enbridge Gas launched a new voluntary renewable natural gas program, which allows customers to contribute \$2 a month as a cost-effective option to help offset the increased costs to acquire carbon-neutral renewable natural gas.
- The [Ontario Energy Board approved an application by Enbridge Gas for a project in Markham, Ontario to pilot the blending of renewable hydrogen gas](#) into the existing natural gas network, reducing greenhouse gas emissions.
- The Ontario Energy Board announced the commission of a distributed energy resources impact study to forecast adoption of distributed generation and storage in Ontario. This study supports the Environment Plan commitments of ensuring the Ontario Energy Board keeps pace with consumer demands, adopts innovative energy solutions (like renewable natural gas) and modernizes the energy grid.
- The Ministry of the Environment, Conservation and Parks will continue to contribute to and participate in environmental groups in Canada and abroad, such as The [Green Ribbon Panel](#), a collection of environmental and economic leaders from across Canada. The recent [Green Ribbon Panel Report](#) highlights many opportunities, including leveraging Ontario's unique clean energy technologies and existing assets to reduce GHG emissions and lower energy costs, pursuing electrification of the economy supplemented by the application of

hydrogen to incrementally and reliably reduce GHG-emissions, and establishing Ontario as a jurisdiction known for its sustainable products.

- The Ivy Charging Network, a joint venture owned by Ontario Power Generation and Hydro One, plans to install electric vehicle fast-charging stations at all ONroute locations along the province's busiest highways, thanks to an agreement between Ivy Charging Network and ONroute and its partners, Canadian Tire Corporation and the Ministry of Transportation. Natural Resources Canada, through its Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative, invested \$8 million to help build the Ivy Charging Network.

4. Forecasts for Increasing GHG Emissions from Ontario's Power Grid

With the Provincial Government's cancellation of 758 renewable electricity generating projects in Ontario in 2018, combined with the upcoming closure of the Pickering Nuclear Generating Station in 2025 as well as planned refurbishments of nuclear reactors at other generating stations, Ontario's electricity grid is expected to get dirtier over the next 20 years. This is due to the fact the Ontario's natural gas fuelled power plants, currently used only to meet peak power demand, will be called upon to replace some of the power generation capacity lost from the decommissioned and refurbishing nuclear reactors.

As noted in its 2020 Annual Planning Outlook, the IESO has forecasted that annual greenhouse gas emissions from electricity generation in Ontario will increase from 4.4 million tonnes of equivalent carbon dioxide (CO₂e) per year in 2019 to as high as 12.2 million tonnes per year by 2030 and 16.3 million tonnes per year by 2040. For perspective, London's total community-wide greenhouse gas emissions in 2020 were 2.7 million tonnes per year.

The IESO's Scenario 1 assumes a shallow economic recession in 2020 and early 2021 followed by a rapid economic recovery in 2021 and 2022, with demand expected to reach pre-pandemic levels by the end of 2022. In contrast, Scenario 2 assumes a deep economic recession until the end of 2021, followed by a slow multi-year economic recovery starting in 2022, with demand not expected to reach pre-pandemic levels until 2024.

From an emissions intensity perspective, the grid average emissions factor for electricity use is expected to increase from current levels (about 30 grams per kilowatt-hour) to 72 grams per kilowatt-hour by 2030 and 88 grams per kilowatt-hour by 2040 under Scenario 1.

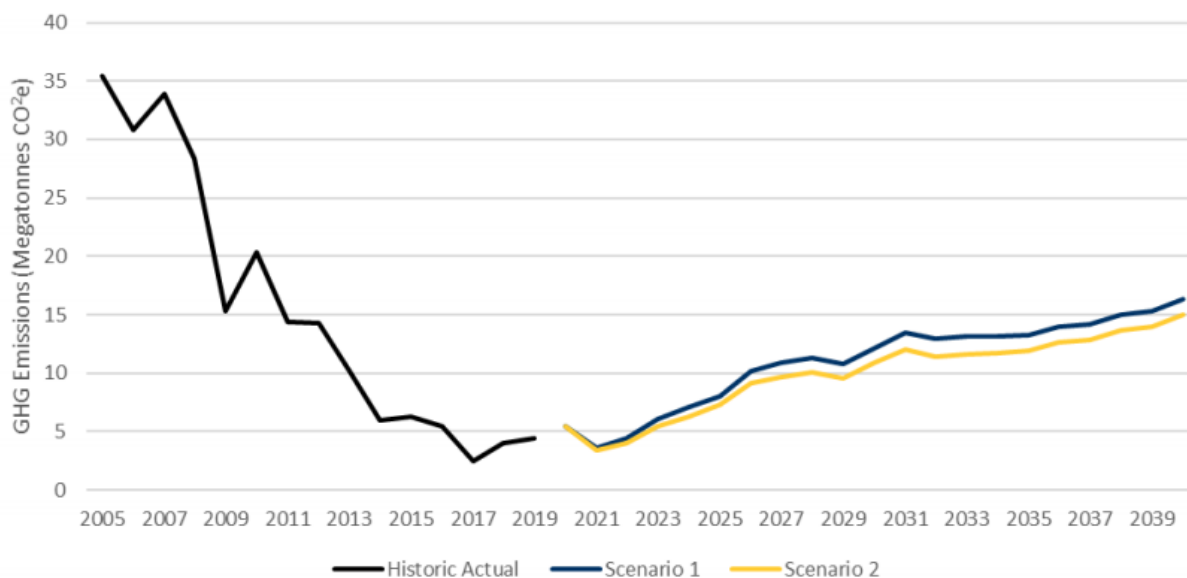


*Figure 1 - Electricity Sector Greenhouse Gas Emissions, Historical and Forecast
(Source: IESO, 2020 Annual Planning Outlook)*

This represents a challenge for London's emission reduction goals, in that the climate action strategy of electrifying transportation and building heat will lose some of its benefits in Ontario, as shown in Table 1 below. There will still be net emission reduction benefits from these actions. However, with the dirtier power grid, Londoners and London businesses will need to do more to offset these emissions on the path to net-zero emissions by 2050. This includes increased efforts for energy conservation and efficiency, as well as significant investment in local renewable electricity generation that makes use of existing net-metering programs, such as rooftop solar photovoltaic (PV) panels, to replace some of the power from Ontario's dirtier power grid. Widespread use of net-metered solar power also has the potential lower greenhouse gas emissions from Ontario's power grid by reducing the need to use the natural gas power plants.

This issue has been raised by over 30 Ontario municipalities, who asked for the Provincial Government to phase-out gas-fired power generation by 2030. The IESO was asked to study this, and they reported back in October 2021 that this timeline was not feasible. However, as noted earlier, the Ontario Minister of Energy asked the IESO to report back by November 2022 on a moratorium on the procurement of new natural gas generating stations and to develop an achievable pathway to zero emissions in the electricity sector in Ontario.

Table 1 – Forecast Emissions Intensity of Energy Commodities in Ontario

Energy Commodity	Emissions Intensity (kg CO ₂ e per gigajoule)
electricity – 2020	8
electricity – 2030	21
electricity – 2040	26
natural gas	51
gasoline (10% ethanol content)	63
diesel	70

5. The Provincial Government's Ecological Concerns About Climate Change

The Government of Ontario list the following concerns for Climate Change and Ecological effects.

Plants and animals

- As the climate changes, some species will adapt by:
 - migrating to new locations
 - changing their breeding seasons
 - seeking new food sources
- Less adaptable species may even disappear from their current habitats.

Biodiversity

- The way certain species interact with one another and their environment may change
- The geographic range of plants and wildlife is predicted to move north as the temperature increases. Moose, gray jays, and polar bear populations are expected to shift north
- Species at risk and isolated habitats may be the most sensitive to changes
- Less ice cover and changes to lake freeze-up and break-up times may affect the food supply for aquatic species and may also affect fish spawning
- Changes in water and air temperature may make conditions more favorable for diseases and invasive species, which puts pressure on native species

Forests

- There may be more insect and disease outbreaks
- Increased tree stress may affect forest growth
- Drier forests will lead to more intense and frequent forest fires
- Local tree species will be less suited to local conditions. Climate conditions may change faster than local trees can migrate, which may cause them to die off in some areas
- Healthy forests store carbon; damaged and unhealthy forests will be less effective at this
- Healthy forests can withstand – and reduce – the impacts of climate change

Water

- Milder, shorter winters lead to:
 - earlier snowmelt
 - less ice cover on lakes
 - changing rainfall patterns
 - changes in water's movement between air, soil, plants and bodies of water
- There may be less water available for renewable energy production and waterways
- Increasing water temperatures may result in lower water quality as more micro-organisms are found in lakes
- Warm-water species may spread into new northern habitats
- More extreme weather may result in more frequent flooding, erosion, shoreline damage, infrastructure failures and decreased water quality.

Fish

- Most aquatic species' growth and reproduction are strongly influenced by water temperatures
- Higher temperatures in the great lakes and inland lakes could result in fewer cold water species in Ontario (e.g., lake trout, yellow perch, largemouth bass)
- At-risk fish species such as lake sturgeon may disappear from Ontario completely
- Changes in the composition and availability of phytoplankton and zooplankton (organisms in the water that are an important food source for many fish) may favour some fish species over others
- Changes to water quality, water levels and ice cover may affect the type and number of fish in lakes and rivers
- Lake conditions are expected to be more favourable for invasive species (e.g., zebra mussels, round goby)
- Fish diseases such like viral hemorrhagic septicemia may become more common

Wildlife

- Some wildlife species will be forced to move further north to a more favourable habitat
- Species in southern areas will live in a smaller area due to increased parasites and competition
- Hybridization between different animal species (e.g., northern and southern flying squirrels) is already being observed due to climate change
- While some animals will adapt, species that require a narrow range of temperature and precipitation conditions are most likely to decline or die out completely
- Climate change may affect:
 - wildlife reproduction
 - relationships between predators and prey

- survival
- rates of disease in wildlife species
- the availability of food and habitat. For example, if migratory songbirds arrive at their breeding grounds earlier, the food they need for successful reproduction may be unavailable.

Wetlands

- Wetlands help reduce the effects of climate change by capturing and storing carbon
- Climate change alters wetlands and the native species living there
- Changes in precipitation and temperature may change wetland water systems, causing localized flooding and droughts that specifically impact the wetland beyond their normal range of water levels
- When there is a decrease in precipitation and increased evaporation due to warmer air, wetlands may dry up or disappear
- It is likely that as wetlands dry up, plants living in the area will shift and marshes may become more swamp-like as woody plants move into marsh areas.

Note: Inland wetlands, as described in their 4 categories as Swamps, Fens, Bogs and Marsh, will evolve with a changing climate. This may impact London's wetlands (e.g., Sifton Bog, Westminster Ponds) by shifting their wetland characteristics over time.