



Anxious for Action

Channeling Children's Environmental Concerns Into Empowerment

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Foreword by Dr. Anna Gunz, Lesley Brennan, Dr. Donald Spay, Dr. Anne Hicks and Dr. Irena Buka (Children's Environmental Health Clinic) and Dr. Lise Van Susteren (Climate Psychiatry Alliance)

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EXECUTIVE SUMMARY

Why eco-anxiety is an issue worthy of every parent's attention

When children are worried or anxious, they often turn to grown-ups for answers. They want to be reassured that the adults in their life have a solution. But when that source of fear is something as big and complicated as climate change, even the most prepared parents and caregivers might struggle to help kids cope with feeling scared, angry, and overwhelmed. We need to better understand how the climate crisis is impacting not only children's physical health, but their mental health as well.

"Eco-anxiety" includes feelings of worry, fear, and despair that someone experiences as a result of their exposure to the realities of climate change, biodiversity loss, and other forms of environmental degradation. While eco-anxiety is not an official diagnosable disorder, it affects children and adults in real ways. The question is: what can we do about it?

This was the starting point for Earth Rangers' research. As a children's environmental organization with a mission to foster our next generation of conservationists, it's critical to understand the relationship between environmental concern and feelings of hopelessness, cynicism, and detachment, which pose significant barriers to action. The goal of this research was not only to uncover new findings and insights about eco-anxiety among grade school-age children, which is limited in the current academic literature, but more importantly to understand the solutions and opportunities.

In partnership with Ipsos Canada and leading experts, Earth Rangers conducted a scan of the global literature on eco-anxiety in children, as well as a survey in 2020 to capture attitudes and actions around environmental issues by children (age 6-11) and their parents. Participants included Earth Rangers members, as well as non-members. Comparing the groups' results, the survey team developed an Eco-Anxiety Index and an Eco-Action Index to capture and contrast participants' feelings about climate change and the environment over time.

Our key findings and insights

Some level of concern for the environment can actually be useful and healthy when it leads to environmental action. As we have seen in earlier studies, children who were hopeful and concerned about climate change were more likely to take environmental action. In contrast, children who felt climate despair were less likely to take action. Approximately 44% of Earth Rangers members (vs. 26% for non-members) expressed worry about climate change. However, 88% of Earth Rangers members felt capable of making a positive difference (vs. 72% for non-members). Finally, 65% of Earth Rangers members had volunteered in a project to help the environment in the last year (vs. 43% for non-members).

Compared to other children, Earth Rangers members feel more concerned about the environment AND more empowered to take action. While most people recognize the importance of protecting the environment, Earth Rangers members were more likely to feel empowered to act on environmental issues (78% vs. 54% for non-members). Additionally, Earth Rangers members are significantly less likely to be disengaged (20% vs. 36% for non-

members) or apathetic toward such issues (1% vs. 10% for non-members). Similarly, Earth Rangers parents are significantly less likely to be disengaged (37% vs. 45% for parents of non-members) or apathetic toward such issues (3% vs. 12% for parents of non-members). Together, these feelings of concern and empowerment can be powerful and motivating, especially for young people.

Empowering kids means empowering the whole family. Research shows when children grow concerned about issues like climate change and are spurred to take environmental action, they also prompt their parents to feel more empowered and take action. This is called the “passthrough effect.” Our survey revealed that not only are Earth Rangers members significantly more empowered to act on environmental issues (78% vs. 54% for non-members), but Earth Rangers parents are as well (60% vs. 43% for parents of non-members).

Recommendations for parents

The big takeaway: kids' concerns about our environment are real. With the right support, so is their ability to act.

"Eco-anxiety" is a valid response to the real challenges our kids see around them. As adults, our job isn't to make their concerns go away—it's to help channel them into action. When we validate our kids' concerns and demonstrate how our actions as part of a family or community can make a difference, it restores their sense of autonomy—their ability to meaningfully impact their own future. We know this is critical to every person's mental health. And the good news is: when parents engage with their children through environmental action, it may help restore parents' feelings of well-being as well.

Overall, the results of the study provide parents with a handy framework (what Earth Rangers calls “the 5 E's to drive eco-action”) on how to help their kids feel empowered to take action. It's a lesson in resilience and mental well-being that will serve kids their entire lives.

Empathy

Provide ample space and opportunities to discuss climate change and other environmental concerns, and allow kids to identify and express their feelings about these issues.

- As parents, don't be afraid to talk to children about negative environmental news stories, like floods or wildfires. Ask how they feel about these stories and validate those feelings by sharing personal reflections.
- Do the same with positive stories, like when the government passes new climate change policy or stories of endangered species making a recovery.
- Whether the news is positive or negative, make environmental stories a regular part of conversation, so that children know that these issues are important and that their concerns are normal and accepted.

Education

Offer opportunities to learn about climate change and suggest actions that kids and families can take to protect the natural environment.

- Encourage children to learn more about environmental issues, whether through programs like the [Earth Rangers Podcast](#), [Wild Wire Blog](#), or through other age-appropriate resources that are fun and engaging for kids.
- When kids learn about an environmental issue, suggest a next step by discussing what actions they can take to help address the issue.

Environmental Stewardship

Find opportunities to spend more time outdoors. This will help foster a deeper connection to nature and spark new, tangible ways that kids can protect the natural environment.

- The mental health benefits of spending time in nature are well-documented, including reducing feelings of stress and anxiety. Caregivers can go one step further by combining time spent outdoors with opportunities to learn about nature and take action. This could include:
 - Planning a [nature scavenger hunt](#), creating a backyard [habitat for bugs or small animals](#), or [planting a pollinator garden](#).
 - Foraging for natural elements that can be used for sustainable crafts or other creative activities at home.

Excitement

Make conservation activities and learning about the natural environment something for kids to look forward to.

- When parents make it a game, it creates opportunities for kids to see conservation and learning about the natural environment as fun and exciting.
- Games are especially helpful in simplifying complex concepts—like those found in ecosystems and the environment!

Empowerment

Give kids ways to teach their parents and other adults how to protect nature.

- Kids love to feel like they know something adults don't. And often, they do!
- Some Earth Rangers Missions are specifically designed to make kids leaders in their households, allowing them to educate (or even trick!) adults on how to be more environmentally responsible. Some of these Missions include [Carbon Footprint Investigation](#), [Water Taste Challenge](#) and the [More Plastic More Problems](#).

Remember: the challenge is big, but the mission is simple. Let's give kids—and their grown-ups—the power to act. Learn more about Earth Rangers, eco-anxiety, and what you can do at <http://www.earthrangers.com/earson>. Earth Rangers connects kids and their adults with fun, practical eco-actions that have tangible impacts. Explore our resources, join the community, and start your first family mission today!

ABOUT THE CONTRIBUTORS

Earth Rangers: Origin of our eco-anxiety study Earth Rangers is the kids' conservation organization, dedicated to educating children and their families about biodiversity, inspiring them to adopt sustainable behaviours, and empowering them to become directly involved in protecting animals and their habitats.

When members are asked why they chose to join Earth Rangers, kids frequently raise concerns relating to animals, the environment, and climate change. Similarly, when asked about the actions they took to address these concerns, members repeatedly share feelings of hopefulness, optimism, and pride. Overall, the common themes that emerge from members' testimonials prompted us to further explore the impact of the Earth Rangers program on children.

In 2015, Earth Rangers commissioned a study to examine the matter further. Key results from the research revealed that Earth Rangers members feel they can make a difference on environmental issues, and that participation in Earth Rangers programs helps bolster optimism and self-confidence.

With the emerging area of study on eco-anxiety and the increasing frequency of climate-related disasters, we felt now is the time to deepen this research and more precisely understand Canadian kids' outlook on environmental issues, and how programs like Earth Rangers can provide support and alleviate kids' concerns. We also wanted to better integrate our research and program into the growing body of literature, and make a meaningful contribution to this important area of study. Ultimately, our goal is to provide parents with actionable advice on how to help kids work through the emotional impacts of environmental issues.

Katie Hayes, PhD As a researcher whose work focuses on addressing the mental health effects of climate change in Canada, Katie Hayes supported Earth Rangers in the investigation of eco-anxiety and eco-action among children and parents across the country. She supported this project by providing input into the framing of the survey questions, analysis of the findings, and linking the findings to the latest, global research on eco-anxiety. It has been a pleasure for Katie to support this work that aims to not only understand children's and parent's concern about climate change but also empowers children and parents to take action to support human and environmental wellbeing.

Steve Levy As the CCO at Ipsos in Canada, a prominent member of Canada's Marketing community and an Earth Rangers board member, Steve Levy provided input and guidance from several perspectives. He and his team were instrumental in survey design/execution and the construction of the Eco-Anxiety and Eco-Action Indexes and, more importantly, what this means for children, for parents, and for Canada. Steve's connection and commitment to Earth Rangers as a board member ensured that the research was designed to fit the context and be highly relevant.

The authors wish to thank the following individuals for their input and support on this report:

[Dr. Ellen Field \(Assistant Professor, Faculty of Education, Lakehead University\)](#)

[Dr. Anna Gunz, Lesley Brennan, Dr. Donald Spay, Dr. Anne Hicks, and Dr. Irena Buka \(Children's Environmental Health Clinic\)](#)

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FOREWORD

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Climate change poses an existential threat to human health. While people of all ages will be affected, children will be among the worst affected globally¹ and ultimately will face its lasting effects. Childhood is a time to grow and develop; children only gradually reach their full intellectual potential to understand, cope and act. Children are gaining awareness of climate change sooner than we think, or want. After extreme weather events, studies have documented post-traumatic stress, depression and anxiety disorders in children.² Children do not need to experience climate events directly to be affected; they witness severe weather events and learn about environmental devastation on visual and media, in school, and during family and peer discussions. Worry, fear, and anxiety about how climate change will affect their future is ubiquitous among children and youth. These consequences have led to research exploring the effects of climate change on the evolving psychological wellbeing of children. This report documents one way to help children adapt to their changing world.³

Understanding how to support children with these feelings is unclear. Overall, environmental engagement is one important way that children and youth can address the stress and distress caused by climate change.³ Earth Rangers, a children's conservation organization, is well poised to educate and engage future generations. The study described in this document was designed to evaluate Earth Rangers' program. Children, and parents of children who participate in Earth Rangers have more worries about climate change yet were more engaged in environmental action and felt more empowered than children and parents not involved in Earth Rangers. Despite these climate worries, children involved with Earth Rangers have appreciably more hope about the future and a stronger belief that they can make a big difference in the environment than children in the general population and all parents who participated.

¹ Watts N, Amann M, Arnell N, et al. The 2019 report of The Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate. *The Lancet*. 2019;394(10211):1836-1878. doi:10.1016/S0140-6736(19)32596-6

² Kar N. Psychological impact of disasters on children: review of assessment and interventions. *World J Pediatr*. 2009;5(1):5-11. doi:10.1007/s12519-009-0001-x

³ Burke, SEL. The Psychological Effects of Climate Change on Children | SpringerLink. Accessed May 6, 2021. <https://link.springer.com/article/10.1007/s11920-018-0896-9>

The study results are intuitive and speak to the resilience and positivity of children. As adults, we often see ourselves as teachers and guides for children as they grow and develop. Yet this study suggests that children's engagement in Earth Rangers may influence their parents' understanding of environmental issues and their willingness to engage in environmental action. The children are teaching the parents!

A previous study demonstrated that children who participated in social activism projects had high-levels of enthusiasm and empowerment;⁴ this study supports that observation. Thus, it is striking and inspiring to see how children who participate in this program construct and maintain a more promising outlook than other children and all adults. This may be linked to their sense of empowerment and environmental engagement. As clinicians who support child environmental health, we see that the optimism of these Earth Rangers children as inspired and enabling.

The United Nations Rights of the Child states that children have the right to provision, which includes education, and participation, and to have their voices heard and their views respected. Children and youth are passionate advocates for causes they believe in. As adults, we should help children learn about the environment, to foster their empowerment, to encourage them to raise their voices when they express their concerns, and join their efforts to make a healthier planet.

An ancient proverb states "We do not inherit the earth from our Ancestors; We borrow it from our children". In the face of certain global change, the need to respect that proverb has never been more important. It is gratifying to see children learning to actively prepare for their future, but also to see parents join in their engagement.

Dr. Lise Van Susteren, MD

Climate Psychiatry Alliance

With its bounty of sights, sounds, and smells – what a transformative thrill for a child (and adult!) to be drawn into the wonder that is nature. Earth Rangers' mission is to foster this enchantment: helping children and their families connect to something bigger than ourselves, to be absorbed by the amazing vastness of our planet, and to be part of protecting and restoring our only home.

In my work, I have learned that awe, a feeling that brings unique benefits, is associated with these experiences. Awe has a profound effect on us physically, even reducing inflammation in the body, a factor contributing to many diseases. It also has a profound effect on us emotionally: absorbing us so fully in a moment that we are able to forget about ourselves, become more generous, and more likely to look outward – to recognize and respond to the needs of others. Music can inspire awe, so can art. But what is most often identified as the source of awe? Nature.

⁴ Torres-Harding S, Baber A, Hilvers J, Hobbs N, Maly M. Children as agents of social and community change: Enhancing youth empowerment through participation in a school-based social activism project. *Educ Citizsh Soc Justice*. 2017;13(1):3-18. doi:<https://doi.org/10.1177/1746197916684643>

As an expert on the physical and mental health toll of “nature disruption” in adults and children, not much surprises me anymore. With this outstanding paper from Earth Rangers, however, we all have a better lens. We have proof, now, of what we might have guessed: the suffering of the natural world is most assuredly not just the province of adults. The damage to all the miraculous and magnificent animals and plants and places is also having a profound toll on our children - both physically and mentally.

The report doesn't just stop at the problems; it makes a clear case for transforming the “eco-anxiety” children are experiencing into action. As adults, as parents and caregivers, we can lift children up from their concerns with hands-on experiences that connect them to the living world around them – fostering a “bred in the bone” empathy that assures a lifelong journey as respectful stewards of nature. And to do so not by pretending everything is OK when it's not, but by having age-appropriate conversations that honestly address our collective, troubling conditions. By engaging in meaningful activities with tangible solutions that involve the whole family, we heal and rebuild not only a hurting outside world, but our hurting inside world as well.

And, as it turns out, Earth Rangers isn't just about instilling optimism in kids. It's about helping their parents feel it too.

Research shows how contagious the behaviors of young people are and how effectively they can influence their potentially reluctant, resistant or understandably distracted adults. We now can confidently state that among the best ways to break through adult disengagement is by having our children guide them. I guess we should have known.

But who knew??

As it turns out, the great highway of life is actually a two-way street of intergenerational experiences that helps us in the face of the global ecological crisis. For adults, let this be a call to consciousness: seek to understand what our children are going through, invest in connecting them to nature by taking action, and let us all be in awe of the wonders of nature.

And listen carefully, because if we do, we can hear the children telling us what we have forgotten about the feeling of wonder, and have faith that with our help, current and future Earth Rangers will be our star guides.

INTRODUCTION

What does “eco-anxiety” mean?

Eco-anxiety broadly refers to feelings of worry, nervousness, and concern that are triggered by our awareness of ecological degradation due to climate change (Albrecht, 2011, 2012). This concept is also often referred to as “climate anxiety.”

Eco-anxiety is not a pathological condition, meaning it is not an official disorder under the Diagnostic and Statistical Manual of Mental Disorders (DSM-V). Rather, it is a term created by scholars to describe the emotional and behavioural reactions to the climate crisis. The intent behind the term's creation is to describe the normal worries and fears people may be feeling as they bear witness to our current climate crisis (Albrecht, 2011).

Taking an even closer look, the base term “anxiety” has also been defined in a myriad of ways – a disorder as well as an emotion or a mental state. The term “anxiety” in and of itself does not indicate a mental health problem. While there are indeed anxiety disorders, anxiety can also be expressed as an emotional response people may experience with varying levels of intensity as part of everyday life. In fact, at the low end of the intensity range, anxiety is a normal and often adaptive response that can motivate people to act and prepare for future threats.

Eco-anxiety among children and youth - a growing concern

A growing body of academic research suggests that children and youth may be at a greater risk of experiencing eco-anxiety (Ojala, 2012a; 2013; Clayton, 2020). In the US, research interviews with 10 - 12 year olds showed that 82% of children expressed feelings of fear, sadness, and anger when discussing environmental issues (Burke, Sanson, Van Hoorn, 2018). Within Canada, research on students aged 12 - 18 years old showed that 46% of youth are categorized as “aware,” meaning they understand human-caused climate change is happening, but they do not believe human efforts to stop it will be effective (Field, Schwartzberg, Berger, 2019).

This phenomenon may be due to children and youth reflecting more about their future while having limited agency and control in their lives to solve the climate crisis. Children and youth, for instance, have less control over many everyday decisions, such as whether to drive or take public transportation. Further compounding this stress may be children's lack of understanding of climate change, as well as the fact that the crisis' deadliest consequences are likely to occur during their lifetime. Eco-anxiety among young people may also be due to collective senses of despair in media, activism, and society at large, particularly as these spaces are often bereft of messaging of hopeful climate-altered futures (Nairn, 2019). Kelsey (2020) infers that children are suffering emotional and psychological anguish not from their lived experiences, but in anticipation of an apocalyptic future they think is inevitable. In addition, children and youth often have more time to reflect on environmental issues than adults, leaving them with more time to lament about the climate crisis (Ojala, 2012a; 2013; Clayton, 2020).

There is growing interest among the public and media on the topic of eco-anxiety, perhaps reflecting the rise in concern among youth. A recent BBC-commissioned survey in March 2020 examined the experiences of 2,000 youth (aged 8-16) with climate change. The survey found 73% of respondents were worried about the state of the planet, 19% had at least one bad dream about climate change, and 41% indicated a lack of trust in adults to address climate change (BBC, 2020).

While the public and media conversation around eco-anxiety has been on the rise, climate anxiety among youth has not been well studied from an academic perspective. The nascent yet growing field of study focuses primarily on the problem side of the equation, for example, recent work published in 2020 exploring how climate change affects psychological well being (Clayton, 2020; Clayton & Karazsia, 2020; Panu, 2020). Less, however, is known about the impact among different age ranges of youth (specifically grade school students), as well as effective interventions or educational approaches for addressing eco-anxiety.

One key thread in the existing research on eco-anxiety looks at coping behaviours (Ojala, 2012a; 2013) such as problem-focused coping (focusing on the problem and worrying a lot about climate change), and meaning-focused coping (feeling a sense of hope and agency in relation to addressing climate change). This research finds that meaning-focused coping resulted in more well-being, optimism, and pro-environmental behaviours. Other literature in this burgeoning area explore how processing and honouring emotions of grief, despair, and anger related to existential climate change impacts can be better understood and facilitated.

Eco-action as a potential solution

For many older youth and adults, outlets like advocacy and activism to address climate change may be a highly effective way to channel their eco-anxiety. Whether it is engaging in personal climate change mitigation efforts, pressuring decision-makers to act, or speaking to friends and family about the issue, these actions may help give people a sense of agency to addressing the issue, and perhaps add meaning and purpose to their lives. These behaviours are often also done in group settings, which can enhance social connections and support mental health and wellbeing.

For young children, the usual outlets to channel eco-anxiety are often less appropriate. For example, young children typically have limited ability to influence purchasing or travel decisions, or limited understanding of civil acts of protests or of political structures and processes. Research conducted by Earth Rangers and Ipsos in 2020 helps add to our understanding of what types of eco-action can serve as an effective means of addressing eco-anxiety for school age students. The survey is part of Earth Ranger's annual effort to measure the impact of the organization's program for children and adults. Our findings provide new insights to build our collective understanding of the issue of eco-anxiety as well as potential solutions.

Fundamentally, eco-anxiety may be a valid response to the real environmental challenges children and youth see around them. Earth Rangers' findings underscore the importance of helping to channel these feelings of worry, nervousness, and concern into eco-action.

METHODOLOGY

In order to measure the impact of the Earth Rangers program on both children and adults, Ipsos conducted a survey focused on trying to understand four segments of the Canadian population;

- Current Earth Rangers members aged 6-11 years ("**Earth Rangers Members**") (n = 999)
- Children from the general population aged 6-11 years ("**Gen Pop Children**") (n = 1,000)
- Parents of children who are current Earth Rangers members ("**Earth Rangers Parents**") (n = 1,000)
- Parents from the general population with children aged 6-11 ("**Gen Pop Parents**") (n = 1,018).

Participants spanned across Canada, including the West Coast, Prairie Provinces, Central Canada, and the Atlantic region (Appendix). Ipsos solicited responses through their online panel, and Earth Rangers solicited responses through email blasts to their membership. Response rates ranged from 2% (Earth Rangers Members and Parents) to 4% (Gen Pop Children) and 5% (Gen Pop Parents).

The overall intent of the research was to measure the impact of the Earth Rangers program on children. To do this and to show demonstrable impact, Ipsos drew direct comparisons between Earth Rangers Members and Gen Pop Children. A secondary objective of the program was to measure what, if any, impact the program had on parents. Similarly, to measure the impact on parents, Ipsos drew direct comparisons between Earth Rangers Parents and Gen Pop Parents.

The survey content included a broad swath of questions intended to capture individuals' sentiments and attitudes towards environmental issues, including the extent to which they felt empowered to make a positive difference. The survey questions were crafted based on expert input and review of the global literature exploring eco-anxiety among children and youth.

As part of this initiative, Ipsos developed two indices to measure levels of Eco-Anxiety and Eco-Action amongst the four groups considered. Indices of this kind are commonly used and, in this case, can be used to serve two purposes. They will allow us to:

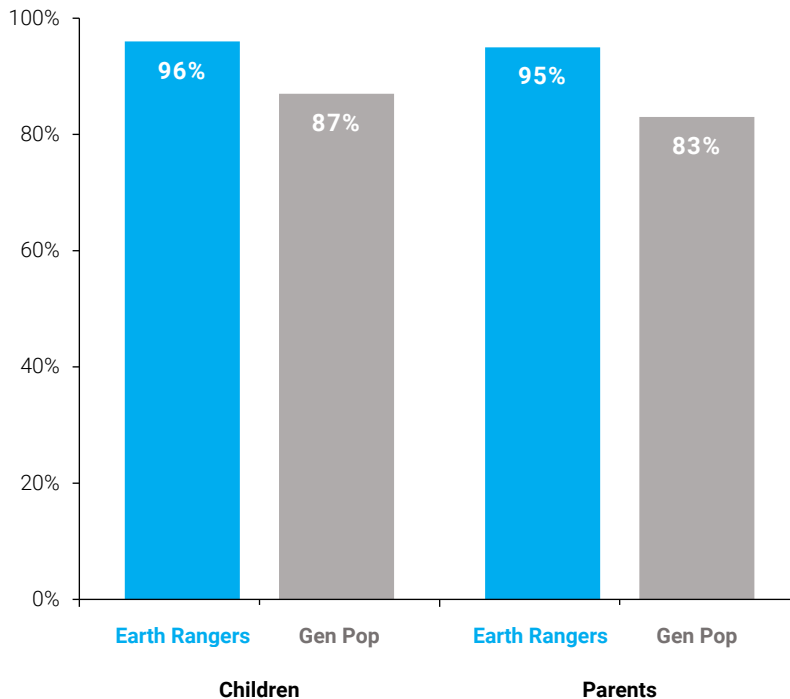
- compare differences between Earth Rangers members and parents versus children and parents within the general population and therefore the degree to which Earth Rangers is having an impact.
- compare scores over time so that we can understand (and demonstrate) that the organization's initiatives are continuing to have an impact.

The way these indices were constructed is provided in the appendix.

KEY FINDINGS

The majority of those surveyed indicated that it is important to protect the environment (see Figure 1). This demonstrates the increasing importance of environmental stewardship within a changing climate among respondents. Compared to the general population (Gen Pop) surveyed in this research, however, a greater proportion of Earth Rangers members and Earth Rangers parents indicated that it is important to protect the environment (see Figure 1).

Figure 1. Importance of Protecting the Environment ⁵



Our research suggests that almost two-thirds of Earth Rangers members indicated they volunteered for projects to protect animals (65%) or to help the environment (69%) in the last year, this is compared to the Gen Pop children where less than half volunteered for a project to protect animals (41%) or to help the environment (49%) in the last year. Actions taken in the last year by Earth Rangers parents, while not as common as actions taken by their children, include volunteering on projects to protect animals (46% compared to 29% Gen Pop) or to help the environment (45% compared to 31% Gen Pop). Earth Rangers parents were also more likely to have donated to environmental charities in the last 12 months (65% compared to 51% Gen Pop) and to engage in activities at work or school to improve the environment (92% compared to 78% Gen Pop). Our survey also suggests that Earth Rangers members and parents are significantly more empowered to act on environmental issues and are significantly less likely to be disengaged or apathetic toward such issues (Figures 2 & 3). This suggests that Earth Rangers members and parents are more engaged in environmental issues and more likely to take actions to address these issues.

⁵ Scale: [It was the most important thing, Very important, Kind of important but not a lot, Not important]
 % important = It was the most important thing or Very important

Figure 2. Eco Groups – Children

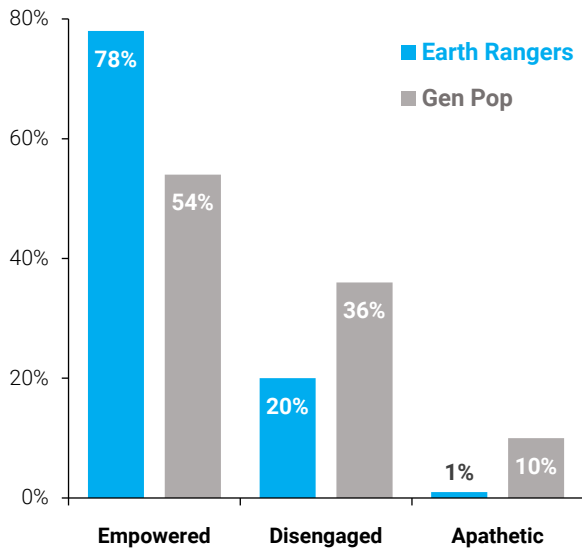
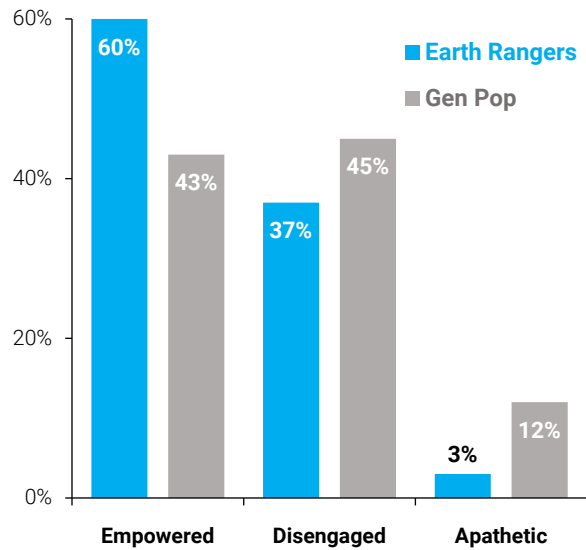


Figure 3. Eco Groups – Parents



When asked about the importance of activism related to issues facing children (including addressing bullying and protecting the environment through: recycling; species protection; water and energy conservation; and, fighting climate change), Earth Rangers members and parents were more likely to place greater value on actions to enhance environmental protection than the Gen Pop (see Figures 4 & 5). Notably, bullying was identified as the top issue to address via activism among all respondent groups except Earth Rangers members. Earth Rangers members ranked bullying third after activism related to protecting animals from extinction and recycling (see Figures 4 & 5). This suggests that Earth Rangers members place the greatest value on environmental activism than all other surveyed groups, and thus are more likely to pursue actions to address environmental problems.

Figure 4. Activism – Children: How important to you are each of the following? Please indicate your answer for each one. (% very important) ⁶

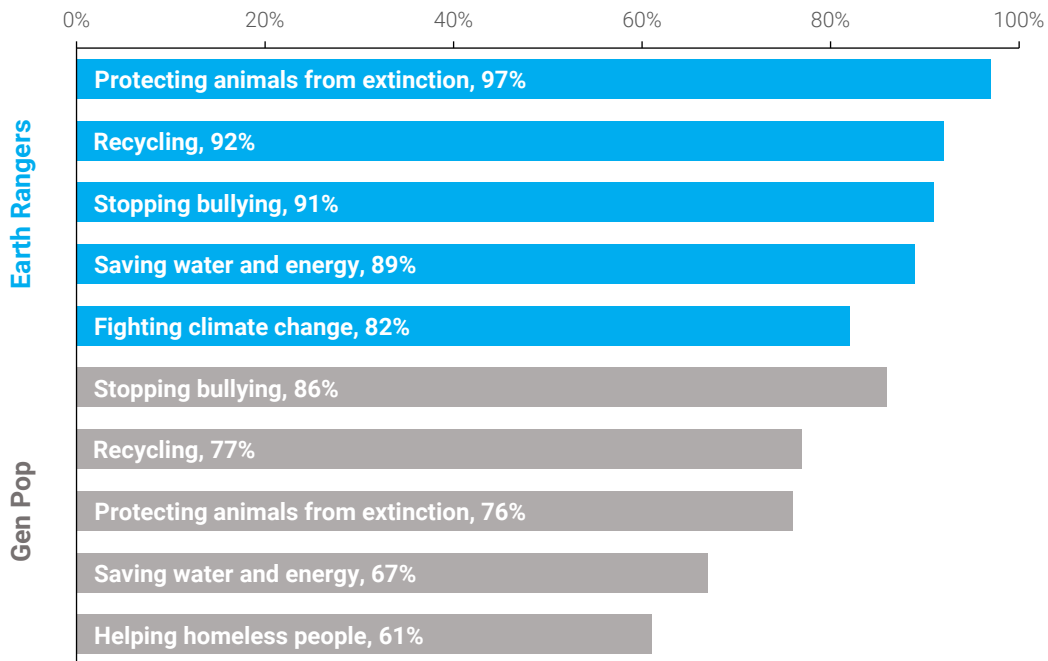
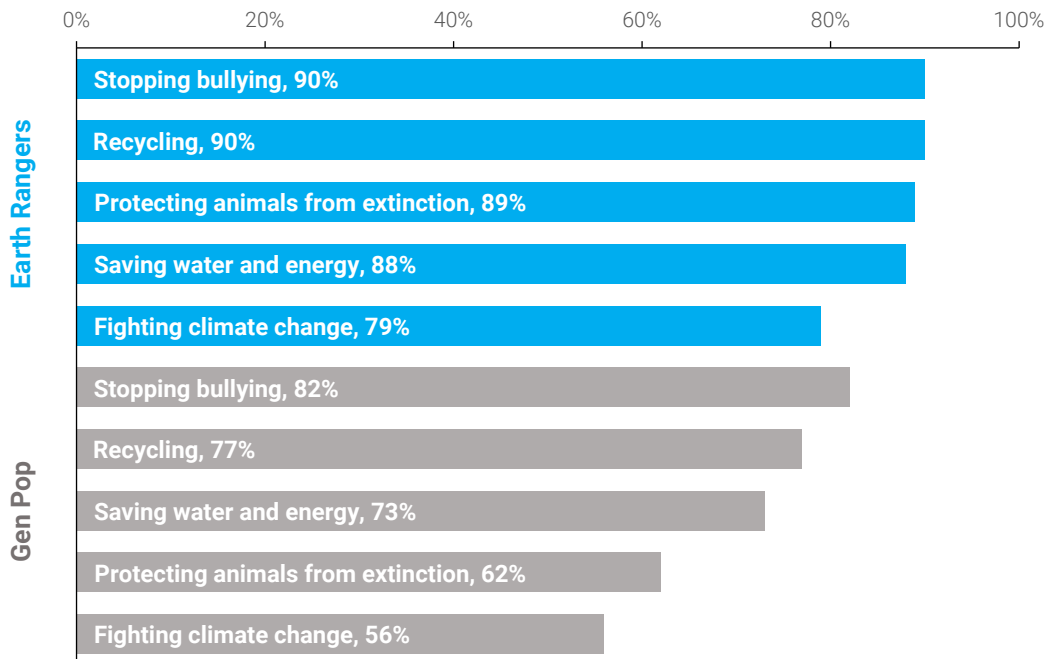


Figure 5. Activism – Parents: How important to you are each of the following? Please indicate your answer for each one. (% very important) ⁷



⁶ Scale: [Very important, Kind of important but not a lot, Not important]
⁷ Scale: [Very important, Kind of important but not a lot, Not important]

Survey results suggest Earth Rangers members are more worried and anxious about climate change than the Gen Pop. Approximately 44% of Earth Rangers members (compared to 26% among Gen Pop) expressed that they were very worried about climate change and Earth Rangers members were 27% more likely to be anxious about climate change. However, when asked whether they feel capable of making a positive difference for the environment, and whether they felt capable of making a big difference, Earth Rangers members agreed at a significantly higher rate than Gen Pop children (83% vs. 72% and 44% vs. 26% respectively). Further, Earth Rangers members were more likely to be hopeful about the future of the planet (52% compared to 35% of Gen Pop children). These results suggest that Earth Rangers members, while worried and anxious about climate change, feel more empowered to take actions, which may lead to greater sense of hope for the future of the planet. These findings are corroborated by the existing literature on eco-anxiety among children and youth and will be discussed further in the discussion section.

Interestingly, parents of Earth Rangers members were also more likely to worry about climate change (51% compared to 33% of Gen Pop parents); however, both groups showed little hope for the future of the planet. These findings suggest that parents, in general, are less hopeful about the future than their children. Among the subgroups studied, Earth Rangers members are the most likely to be hopeful for the future of the planet. This suggests that the Earth Rangers program may contribute to childrens' increased sense of hope.

When examining changes in children's behaviour after joining Earth Rangers, parents noted a significant increase in such behaviours as: asking more questions about the environment, talking about the environment more often, and worrying more about the environment and animals (Table 1). Likewise, Earth Rangers parents also saw notable changes in their own behaviour, including increased likelihood to: take additional steps to conserve energy, think of the environment when making purchases, and celebrating initiatives such as Earth Day (Table 2). Notably too, compared to Gen Pop parents, Earth Rangers parents indicated that they felt more capable of making a positive difference for the environment (81% vs. 71%). Survey results also suggest an increase in the perceived difference Earth Rangers members feel they can make for the environment after joining the program (from 30% before joining to 44% after joining). Notably there was only a marginal difference among Earth Rangers parents (from 14% before children joined to 16% after). Survey results also suggest that the importance of protecting the environment increased for Earth Rangers members and parents after joining Earth Rangers (see Figure 6). These results suggest that the Earth Rangers program empowers actions and enhances interest in protecting the environment amongst both parents and children who participate in the program.

In summary, findings from this research suggest that while most respondents see the importance of protecting the environment, Earth Rangers members seem to be the most concerned about the environment and most empowered to take action, which may result in attitudes of hopefulness for the future among Earth Rangers members. This suggests that the Earth Rangers program may enhance a sense of empowerment and eco-actions which may be supportive for children experiencing eco-anxiety.

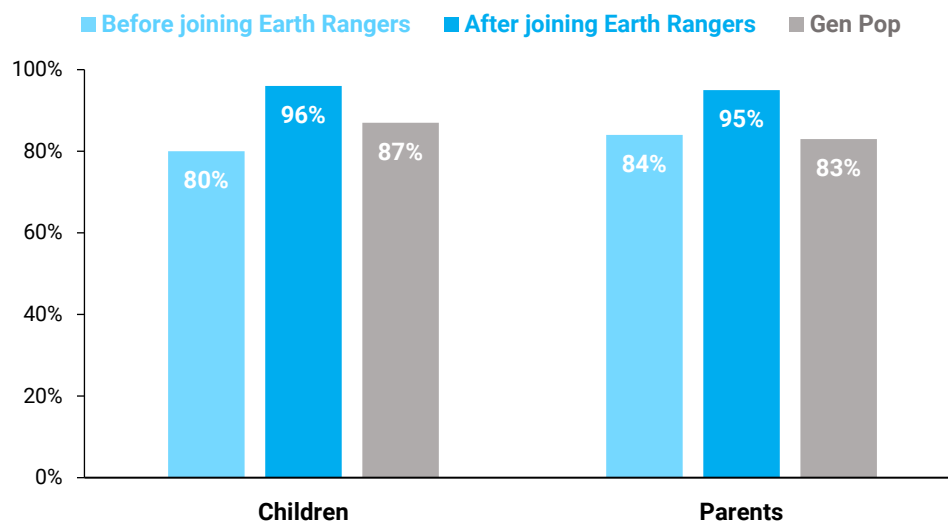
Table 1. Changes in Child’s Behaviour (% mentioned, Earth Rangers)

Ask more questions about environment	58%
Talk about environment more often	58%
Exhibit more environmentally friendly behaviours	57%
Worry more about the environment and animals	54%
Ask me to do more to protect the environment	42%
Read more books about environmental issues	24%
None of the above	9%

Table 2. Changes in Parent’s Behaviour (% increased ⁸, Earth Rangers)

Taken additional steps to conserve energy	76%
Think of environment when making purchases	73%
Celebrates initiatives such as Earth Day	64%
More likely to support environmental politicians	58%
More reading and research on the environment	54%
Walk, bike, or take public transit more	54%
Speak with family and friends about environment	51%
Donated to environmental charity	46%
Reduced meat consumption	37%
Participated in demonstration or rally	17%

Figure 6. Protecting the Environment – Earth Rangers Members Before & After: How important is it to do things to help protect the environment? (% important) ⁹



⁸ Scale: [Increased a lot, Increased a little, Has not changed]

% Increased = % Increased a lot or increased a little

⁹ Scale: [It was the most important thing, Very important, Kind of important but not a lot, Not important]

% important = It was the most important thing or Very important

DISCUSSION

A healthy level of concern for the environment can empower children

Our findings reveal that some level of anxiety can be useful or healthy, and can facilitate environmental action. Research by Stevenson and Peterson (2016) explored if and how climate change hope, climate change despair, and climate change concern interact to produce pro-environmental behaviours among K-12 audiences. The two researchers surveyed a random sample of 1486 middle school students in North Carolina and found no interaction between climate change hope, despair or concern. They did find, however, that climate change hope and concern had independent and positive pro-environmental behaviour outcomes, while climate change despair was negatively related to pro-environmental behaviours. This suggests that avoiding climate change despair and fostering climate change hope and concern may lead to more pro-environmental behaviours among children. Relatedly, Maria Ojala's research on climate change hope among Swedish adolescents suggests that hope is an essential part of prompting climate action (Ojala, 2012b; 2013; 2015).

A sense of agency makes a real difference

It is unavoidable that children will hear about environmental doom and gloom through the media or in conversations with adults. This presents unique challenges for children, particularly given the extent to which they have less perceived and actual agency to address climate change in substantive ways. Indeed, feelings of hopelessness and helplessness, and a pessimistic outlook of the future can arise for children and youth (Tucci et al., 2007; Ojala, 2015). Providing children with opportunities to build agency through tangible actions to address climate change, as well as helping children to see the difference these actions make, is key to empowerment and pro-environmental behaviours (Stevenson & Peterson, 2015). Important research in the field (Busch, 2019) has shown that for middle and high school students, having a sense of efficacy, that is a person's beliefs about their capabilities to produce outcomes that exercise influence over events that affect their lives, is one of two strong predictors of pro-climate behaviour.

The other psychosocial variable that is a strong predictor is a young person being immersed in social norms that accept climate change. Conversely, a weak predictor of youth pro-climate behaviour is a young person's knowledge about climate change causes and effects. Busch's (2019) research supports programming that focuses on developing a young person's sense of agency or efficacy through a socially-oriented program that promotes the acceptance of climate change science.

It is important to note though that some options for taking action are less appropriate for young children. Increasingly, we are seeing youth and young adults advocate for climate action via strikes, marches, protests, and other advocacy-based campaigns. These actions are meaningful ways to engage youth and adults; however, they may not be as accessible or appropriate for younger children. By the same token, we need to meet children "where they are at" and provide tangible actions that they can take that are age-appropriate, interactive,

fun, and demonstrate how they can make a difference. Where children and youth “are at” in their knowledge and understanding of climate change can vary greatly so adults need to engage in conversation with young people and have mindfulness of the psychological fallout that can unfold for children and youth as they come to understand both the urgency and complexity of the climate crisis.

Let's not forget about the parents

There is an interesting passthrough effect from kids to parents when it comes to climate concern and action. Researchers including Lawson et al. (2019) highlight how children can prompt climate concern among their parents. Children's perceptions of climate change are less susceptible to political ideology or context (Lawson et al., 2019) whereas adults' views may be skewed based on their social, economic, and political stances. These researchers conducted an experimental evaluation of Intergenerational Learning in North Carolina. Comparing both a treatment (n=11) and control group (n=12) of children aged 10-14, the authors examined the effects of educational intervention over two years.

The researchers' work yielded several key findings. First, children who participated in the Intergenerational Learning curriculum showed larger increases in climate change concern than students in the control group. Additionally, children in the treatment group fostered more climate change concern among their parents than was the case for the control group. Finally, changes in parents' climate change concerns were most pronounced among the groups that are typically most resistant to climate change communication. Fundamentally, these findings contribute to evidence that educating children and youth has a passthrough effect on parents.

Our own findings are especially significant insofar as the Earth Rangers program can not only enable environmental action among children, but also perceptions among parents of Earth Ranger's members. Indeed, for both children and parents alike, joining the Earth Rangers program is associated with placing greater value on protecting the environment. Moving beyond the findings of Lawson et al. (2019), our research also suggests that the Earth Rangers program may also enable pro-environmental behaviour among parents. The uptick in pro-environmental behaviour among children has also not gone unnoticed, with Earth Rangers' parents observing greater frequency of eco-actions after joining the program.

KEY INSIGHTS & RECOMMENDATIONS

Key Insights

- 1. Some level of concern for the environment can actually be useful and healthy when it leads to environmental action.** As we have seen in earlier studies, children who were hopeful and concerned about climate change were more likely to take environmental action. In contrast, children who felt climate despair were less likely to take action. In contrast, children who felt climate despair were less likely to take action. Approximately 44% of Earth Rangers members (vs. 26% for non-members) expressed worry about climate change. However, 88% of Earth Rangers members felt capable of making a positive difference (vs. 72% for non-members). Finally, 65% of Earth Rangers members had volunteered in a project to help the environment in the last year (vs. 43% for non-members).
- 2. Compared to other children, Earth Rangers members feel more concerned about the environment AND more empowered to take action.** While most people recognize the importance of protecting the environment, Earth Rangers members were more likely to feel empowered to act on environmental issues (78% vs. 54% for non-members). Additionally, Earth Rangers members are significantly less likely to be disengaged (20% vs. 36% for non-members) or apathetic toward such issues (1% vs. 10% for non-members). Similarly, Earth Rangers parents are significantly less likely to be disengaged (37% vs. 45% for parents of non-members) or apathetic toward such issues (3% vs. 12% for parents of non-members). Together, these feelings of concern and empowerment can be powerful and motivating, especially for young people.
- 3. Empowering kids means empowering the whole family.** Research shows when children grow concerned about issues like climate change and are spurred to take environmental action, they also prompt their parents to feel more empowered and take action. This is called the “passthrough effect.” Our survey revealed that not only are Earth Rangers members significantly more empowered to act on environmental issues (78% vs. 54% for non-members), but Earth Rangers parents are as well (60% vs. 43% for parents of non-members).

The big takeaway: kids' concerns about our environment are real. With the right support, so is their ability to act.

"Eco-anxiety" is a valid response to the real challenges kids see around them. The job of parents and caregivers isn't to make their concerns go away – it's to help channel them into action. When children's concerns are validated and they can see how actions—even the small ones—as part of a family or community can make a difference, it restores their sense of autonomy—their ability to meaningfully impact their own future. This is critical to every person's mental health. And the good news is, when parents engage with their children through environmental action, it may also help restore their feelings of well-being.

Overall, the results of the study provide parents with a handy framework and recommendations (what Earth Rangers call the 5 E's to drive eco-action) on the support that can be provided to children to help them discover their agency and act on environmental challenges. It's a lesson in resilience and mental well-being that will serve kids their entire lives.

The five E's to drive eco-action

Empathy Provide ample space and opportunities to discuss climate change and other environmental concerns, and allow kids to identify and express their feelings about these issues.

Education Offer opportunities to learn about climate change and suggest actions that kids and families can take to protect the natural environment.

Environmental Stewardship Find opportunities to spend more time outdoors. This will help foster a deeper connection to nature and spark new, tangible ways that kids can protect the natural environment.

Excitement Make conservation activities and learning about the natural environment something for kids to look forward to.

Empowerment Give kids ways to teach their parents and other adults how to protect nature.

Recommendations for parents: the five E's to drive eco-action

Empathy

Provide ample space and opportunities to discuss climate change and other environmental concerns, and allow kids to identify and express their feelings about these issues.

- As parents, don't be afraid to talk to children about negative environmental news stories, like floods or wildfires. Ask how they feel about these stories and validate those feelings by sharing personal reflections.
- Do the same with positive stories, like when the government passes new climate change policy or stories of endangered species making a recovery.
- Whether the news is positive or negative, make environmental stories a regular part of conversation, so that children know that these issues are important and that their concerns are normal and accepted.

Education

Offer opportunities to learn about climate change and suggest actions that kids and families can take to protect the natural environment.

- Encourage children to learn more about environmental issues, whether through programs like the [Earth Rangers Podcast](#), [Wild Wire Blog](#), or through other age-appropriate resources that are fun and engaging for kids.
- When kids learn about an environmental issue, suggest a next step by discussing what actions they can take to help address the issue.

Environmental Stewardship

Find opportunities to spend more time outdoors. This will help foster a deeper connection to nature and spark new, tangible ways that kids can protect the natural environment.

- The mental health benefits of spending time in nature are well-documented, including reducing feelings of stress and anxiety. Caregivers can go one step further by combining time spent outdoors with opportunities to learn about nature and take action. This could include:
 - Planning a [nature scavenger hunt](#), creating a backyard [habitat for bugs or small animals](#), or [planting a pollinator garden](#).
 - Foraging for natural elements that can be used for sustainable crafts or other creative activities at home.

Excitement

Make conservation activities and learning about the natural environment something for kids to look forward to.

- When parents make it a game, it creates opportunities for kids to see conservation and learning about the natural environment as fun and exciting.
- Games are especially helpful in simplifying complex concepts—like those found in ecosystems and the environment!

Empowerment

Give kids ways to teach their parents and other adults how to protect nature.

- Kids love to feel like they know something adults don't. And often, they do!
- Some Earth Rangers Missions are specifically designed to make kids leaders in their households, allowing them to educate (or even trick!) adults on how to be more environmentally responsible. Some of these Missions include [Carbon Footprint Investigation](#), [Water Taste Challenge](#) and the [More Plastic More Problems](#).

CONCLUSION

Earth Rangers: 15 years of building eco-empowerment in kids

A natural sense of concern

These recent findings, combined with Earth Rangers' 15 years of experience working with kids, re-affirmed that environmental worry and anxiety is natural and—when combined with a sense of hope—can lead to eco-action. Our organization works to address eco-anxiety by acknowledging that concern is valid and focusing on the solutions.



The most common reason kids provide for joining Earth Rangers is their concern for animals and the planet, as well as their excitement in finding opportunities to contribute to the solution. By giving children a variety of activities that appeal to a diverse set of interests we are able to keep them engaged and motivated. Earth Rangers' environmental "missions" for children empower them in various ways. Some, like Stop and Go Green, Carbon Footprint Investigation and Water Taste Challenge, make children the leader in their household, tasking them with speaking to their parents about environmental issues and educating them on how to be more sustainable. Others, like Pollinator Power, Shoreline Saver and BatteryBlitz, provide more immediate gratification, as kids are able to see the tangible impact of their actions. After children complete these activities, among the most frequent feedback that Earth Rangers receives is how proud or excited children felt about their activities and accomplishments.

While Earth Rangers programs feature positive stories, cute animals and beautiful nature, we don't shy away from serious issues like biodiversity loss and climate change. Rather, factual, scientific information about the threats are paired with tangible actions that children can take, ensuring that education is always accompanied by empowerment and a sense of agency over the issue they're learning about. Not only do we show kids they're not powerless, we also show them they're not alone. By highlighting the projects that different industries, governments and communities are actively engaging in, we can show them larger progress is underway and there is reason to be hopeful.

Empowerment is “contagious”

Engaging children means engaging their parents as well. Most submissions we receive from children for their missions reference help and support from their parents, or highlight how they helped to educate their parents about an issue of which they were previously not active on.

By taking a positive and balanced approach, rather than using scare tactics or taking political positions, we speak more effectively to families not typically involved in environmental protection. This approach allows us to reach a more diverse range of families that encompass different political leanings, education backgrounds, and professions as well as regional/cultural differences. For instance, parents who work in the resource sector may lean more conservative politically. At the end of the day, changing attitudes and behaviours in fun and inspiring ways for kids and their parents is our biggest impact.

Get ready for the next generation of conservationists

As Earth Rangers continues to grow and evolve, we are committed to developing programs that leverage the key recommendations from this report and continuing to produce new and compelling content and activities for kids and families. We are also developing new ways to engage children in conversations and actions related to climate change, including through community challenges. While missions focus on individual actions, community challenges will bring kids together from across the country to work towards one big goal and will focus on community building and positive reinforcement amongst participants. This new program will launch in November 2021. We are also investing in developing partnerships and strategies to reach more kids from diverse backgrounds across Canada, ensuring our membership community represents all Canadians. Research and program development is underway to offer additional engagement opportunities for youth after they age out of our core programs, like the continuation of [The Big Melt](#), a podcast aimed at high school aged youth that addresses climate anxiety head on.

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GLOSSARY

Anxiety disorder

Excessive fear and anxiety. There are several types of anxiety disorders, including generalized anxiety disorder, panic disorder, and various phobia-related disorders¹⁰.

Climate change

According to the United Nations Framework on Climate Change (UNFCCC), "change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."¹¹

Diagnostic and Statistical Manual of Mental Disorders (or DSM-V)

Diagnostic tool prepared by the American Psychiatric Association (APA) for psychiatric diagnoses

Earth Rangers

Children's conservation organization, dedicated to educating children and their families about biodiversity, inspiring them to adopt sustainable behaviours, and empowering them to become directly involved in protecting animals and their habitats.

Eco-anxiety or climate anxiety

Feelings of worry, nervousness, and concern that are triggered by our awareness of ecological degradation due to climate change (Albrecht, 2011, 2012)

Ecological degradation

According to the United Nations Office for Disaster Risk Reduction (UNDRR), "[the] reduction of the capacity of the environment to meet social and ecological objectives and needs," including "land misuse, soil erosion and loss, desertification, wildland fires, loss of biodiversity, deforestation, mangrove destruction, land, water and air pollution, climate change, sea level rise and ozone depletion."¹²

Mental health

As defined by the World Health Organization (WHO), "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community."¹³

Passthrough effect

Phenomenon in which children's concerns about the environment also raise their parents' concerns about climate change (Lawson et al., 2019).

¹⁰ <https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>

¹¹ <https://unfccc.int/resource/ccsites/zimbab/conven/text/art01.htm>

¹² <https://www.eird.org/esp/educacion2/we/inform/terminology.html>

¹³ https://www.who.int/mental_health/who_urges_investment/en/

APPENDIX

The development of an Eco-Anxiety and Eco-Action Index

The calculation of an index score is obviously unique to each study. For this study, Ipsos asked participants to respond to two blocks of statements. Responses to one block of statements formed the Eco-Anxiety Index and responses to the other formed the Eco-Action Index.

For the Eco-Anxiety Index, children, and parents each rated 8 statements. For the Eco-Action Index, children rated 7 statements, and parents rated 8 statements. Ratings were based on a 4-point agreement scale; Agree a lot, agree a little, disagree a little, disagree a lot. An individual’s index score was calculated based on their level of agreement with the statements;

- Two points were scored if the respondent said “Agree a lot”
- One point was scored if the respondent said “Agree a little”
- The total points for the respondent were then summed and divided by the maximum number of points possible for a respondent to score. This percentage reflects the overall index score for that respondent.

What follows is an example show how the scoring could fall out for a respondent answering the Eco-Anxiety statements:

Eco-Anxiety Statements	Response	Score
Statement 1	Agree a lot	2
Statement 2	Agree a little	1
Statement 3	Agree a lot	2
Statement 4	Agree a lot	2
Statement 5	Agree a lot	2
Statement 6	Disagree a lot	0
Statement 7	Agree a little	1
Statement 8	Disagree a little	0

Total Points Scored 10

The maximum that the respondent can score across these statements is 16 (8 questions multiplied by 2 points each if the respondent said “Agree a lot” to all the statements). Their index score is calculated by dividing their actual score by 16. In the case above, this would be $10/16 = 62.5\%$.

Once individual index scores had been calculated and assigned to all respondents, the average score for all respondents within the same group was calculated:

Eco-Anxiety Index	
Gen Pop Parents	Score
Respondent 1	62.5%
Respondent 2	90.0%
Respondent 3	100.0%
Respondent 4	50.0%
Respondent 5	72.5%
Average	75.0%

Again, by way of an example, In the table above, the Eco-Anxiety score for “Gen Pop” Parents would be 75.0%, since this is the average index for the 5 respondents within this group.

To compare groups with one another, one group is selected as the control group and their score is recalculated and forced to equal 100. Then, comparison groups are assigned their own scores based on how their own index compares to the control group.

Eco-Anxiety Index Score		
Gen Pop Parents	Score	Adjusted Score- INDEX
Control Group	62.5%	100.0
Comparison Group 1	73.5%	117.6
Comparison Group 2	57.5%	92.0

In the table above, Comparison Group 1 has an Index of 73.5%. When compared to the Control Group’s score of 62.5%, we calculated that Comparison Group 1’s index is 117.6. Another way of interpreting this is that Comparison Group 1 is 17.6% more Eco-Anxious than the Control Group ($117.6 - 100 = 17.6$).

Conversely, Comparison Group 2 has an average Score of 57.5%. When compared to the Control Group’s score of 62.5%, we calculate that Comparison Group 1’s index is 92.0. Another way of interpreting this is that Comparison Group 2 is 8.0% less Eco-Anxious than the Control Group ($92.0 - 100 = -8.0$).

Geographic Distribution – Children

Region	Earth Rangers	Gen Pop
British Columbia	13%	11%
Alberta	13%	12%
Saskatchewan	4%	4%
Manitoba	8%	3%
Ontario	52%	54%
Quebec	3%	8%
Atlantic	7%	8%

Geographic Distribution – Parents

Region	Earth Rangers	Gen Pop
British Columbia	15%	12%
Alberta	13%	14%
Saskatchewan	3%	4%
Manitoba	6%	3%
Ontario	50%	43%
Quebec	4%	18%
Atlantic	9%	6%

