



Skills Essential for Success in the Environmental Sector

September 2019

Canada

Funded by the Government of Canada's
Adult Learning, Literacy and Essential Skills Program

About ECO Canada

Environmental Careers Organization of Canada (ECO Canada) is a not-for-profit organization that was founded in 1992 to help nurture Canada's growing environmental sector. For over 25 years, we have partnered with employers, educators and governments to build the world's leading environmental workforce. We offer programs, resources and services to:

- Guide individuals in building meaningful environmental careers
- Help employers attract, develop and retain the best environmental practitioners
- Inform organizations and individuals about environmental workforce needs and trends

Visit eco.ca to learn more about our organization.

ECO Canada provides timely, relevant and credible information and insights regarding Canada's environmental workforce that can be applied in policy, business, and educational contexts. The complete collection of reports is available at eco.ca/research.

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Acknowledgements

ECO Canada wishes to express its appreciation to all the organizations and individuals that contributed their time and expertise to this research. ECO Canada would also like to thank Inshtrix Research Inc. for their support in survey data collection and tabulation.

This study was funded by the Government of Canada's Adult Learning, Literacy and Essential Skills Program.

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Research Highlights

In a rapidly changing work environment, skills can easily become outdated. This is especially true in a work environment that is highly influenced by shifting business, regulatory, social and technological priorities and trends.

Since 2010, ECO Canada has periodically monitored training needs to determine how they have changed and whether there is continuity with required skill sets for environmental work. In 2018, we embarked on a larger study and engaged 686 individuals representing employers from both private and public sectors, employees, and post-secondary institutions. The objective of this comprehensive study was to identify the knowledge, skills, and training most needed to support Canada's growing environmental sector.



Our research indicates that, while knowledge and technical skills are most important to *obtaining* employment within the environmental sector, soft skills development is essential to *progressing* in a professional's career.

What Employers Look For

Knowledge and Technical Skills

Knowledge and technical skills were deemed critical for gaining employment within the environmental sector. However, some technical backgrounds were identified by employers as the most important for an employee to have. These were:



Policy and Legislation



Communications and Public Awareness



Industry Knowledge



Health and Safety



Research and Development

In general, employers reported that their employees' technical backgrounds were quite strong. However, a few themes emerged around employers' perspectives on training needs for their employees:

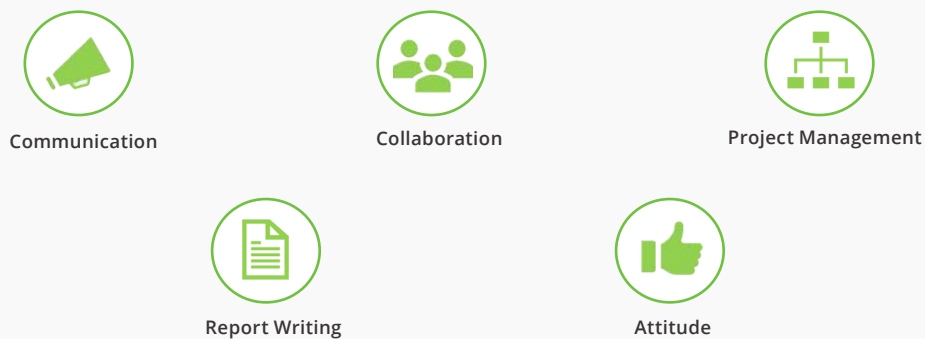
- Industry knowledge was viewed by employers as the most important area for their employees to receive training in. With environmental work spanning multiple industries, employers felt that it was important for their employees to stay informed.
- Knowledge and technical skill requirements change with level of experience. Having competencies in climate change and in research and development are deemed more important at the higher experience cohorts (mid to senior levels).
- Policy and legislation were viewed as the most important knowledge for mid to senior employees to have or to be continuously trained in to keep up with regulatory changes.

Soft Skills

Soft skills emerged as an important element for success and growth in an environmental career. Soft skills encompass key skills that allow individuals to successfully work well with others, perform well and achieve their goals; therefore, gaps in these skills can hinder one's ability to thrive in their career. Employers typically search for candidates with strong technical backgrounds but noted that those that also have superior soft skills have a significant edge in the hiring process (**Figure 1**).

There is a recognized gap in these soft skills among environmental workers, particularly within junior employees. Post- secondary institutions cannot always provide training in these areas. Most environmental programs focus on equipping students with the foundational knowledge and technical skills they will need to enter the workforce. Institutions are, therefore, challenged to integrate soft skill development in a more meaningful way.

Figure 1: Top 5 Soft Skills that Employers Deemed Most Important



Our analysis also revealed that essential skills (see page 16), which are used in nearly every job in different ways and at varying levels of complexity, matter regardless of experience levels. Essential skills enable workers to gain or update knowledge as well as acquire advanced technical and soft skills that are valued within the environmental profession. For example, continuous learning is an essential skill that enables environmental workers to keep up to date on policy and legislation, industry codes and standards, and other areas of knowledge.

Overcoming Barriers to Training: Solutions for Success

The reality is that workers are expected to keep up to date with their knowledge and technical skills while developing their soft skills on the job through experience, training and other forms of professional development. However, over half of the workers surveyed reported facing barriers to accessing training. The most common barriers faced were related to cost, scheduling, and accessibility:

- 60% couldn't personally afford the cost of training
- 41% couldn't find a training program for the skills they need
- 35% reported no training opportunities in their location

All stakeholders can play a role in helping overcome these barriers. Environmental employers, workers, education and training providers, governments and other stakeholders, including ECO Canada, can use these findings to make decisions and formulate strategies regarding professional development.

When considering developing or offering increased access to training opportunities, several participants spoke about the effectiveness of combining face-to-face and online training into a hybrid method.

In addition to pursuing or supporting common training and professional development methods, more creative solutions may include custom in-person training, mentorship, and networking.

On ECO Canada's part, we will continue to gather, monitor and report on skills training needs, and broader environmental trends facing the sector and its workforce. We will also use this information to further develop and enhance value-added programs and initiatives, such as tailoring training programs to growing or emerging [specializations](#) or skills that are highly in-demand.



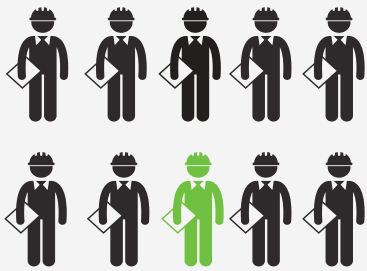
Introduction

The workplace is evolving, and changes are occurring more rapidly than ever. Technological advancements and shifting business, regulatory and social priorities are shaping the quantity and quality of the workforce needed today and in the future.

Canada’s environmental sector faces unprecedented challenges in attracting, developing, and retaining its workforce. Environmental employment is expected to grow at a faster rate than total Canadian employment. We estimate 364,000 environmental workers were employed in 2017 and expect this number to grow by 28% which equates to over 100,000 new jobs by 2024. In comparison, we estimate total employment in Canada to grow by 6% within the same forecast period. Although this equates to approximately 1.05 million new jobs by 2024, the bottom line is that one in every ten new jobs created in Canada could be for environmental roles.

Attracting new workers into the sector is paramount to ensuring an adequate supply of workers. Adding to this challenge, however, is that 22% of the current workforce will likely retire in the next decade, and the sector will need to replace experienced and knowledgeable workers, particularly those in managerial and professional roles.

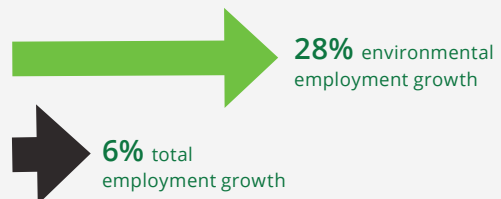
Employment Opportunities within the Environmental Sector



1 in every 10
new jobs created
in Canada could be for
environmental roles

Environmental employment is expected to grow at a faster rate than total Canadian employment to 2024

(2017-2024 Forecast)



22% of the environmental
workforce will likely retire in the next
decade.



The sector will need to attract
and develop talent to replace retiring
workers, particularly those in
managerial and professional roles

The next generation of environmental leaders and practitioners, including current workers, newcomers to Canada, mid-career transitioners and under-represented groups, must fill these gaps. That being said, labour shortage is one thing, but skill shortage is quite another matter¹. So, we asked:

Are current and upcoming workers equipped with the necessary skills to be employable and, more importantly, succeed in the many environmental career and job opportunities in Canada? What are some viable solutions to develop a productive, qualified and competent environmental workforce?

We consulted public and private sector employers, employees and post-secondary institutions to determine the knowledge, technical and soft skills required to build a successful environmental career. This report summarizes feedback received from 686 research participants. It includes participants' perspectives on skills deemed to be most essential in gaining employment and progressing in one's professional career, as well as barriers to training and suggested strategies to overcome them.

The results presented in this report can be used to inform the design of future training programs, including those offered by ECO Canada. The intended outcomes of this study are to increase employment for underemployed or unemployed environmental professionals, and to advance the careers of employed environmental professionals across industries, occupations and regions.

Scope and Methodology

The information in this report is based on a study of training needs completed by ECO Canada in early 2018 and further validated in the fall of 2018.

The study was divided into the following activities:

- Survey of environmental employees
- Survey and interviews with environmental employers specifically within governments, regulators, key industries and environmental consultants
- Interviews with post-secondary institutions

We asked employers what knowledge, technical and soft skills, including essential skills, their employees needed training in and how these needs differ by experience level. We also surveyed workers to find out what skills they think would aid them in finding employment, and which ones would help them further their careers². In addition, we interviewed post-secondary institutions to understand their capacities and challenges. The key survey and interview questions are included in Appendix A.

¹ [LMI Insights: What's in a Name? Labour Shortages, Skills Shortages and Skills Mismatches](#). LMIC. October 2018.

² See "Definition of Essential Skills", page 9.

In total, 686 participants provided insights that were collected and analyzed.

592 respondents completed the environmental worker survey and 66 respondents completed the employer survey. The remaining 28 individuals participated in qualitative interviews and represented governments, regulators, key industries, consulting firms, and post-secondary institutions and trainers.

The response rate for the environmental worker survey was 8% and the response rate for the employer survey was 9%. Interviews were one-on-one and followed a set structure. Each interview was approximately thirty minutes long and occurred over the telephone. Sample descriptions of the phone interviews are available in Appendix B.



The sample of environmental workers is characterized as being young, experienced, and highly educated.

- 79% of respondents are under 44 years of age
- 42% of participants have 8 or more years of environmental work experience
- 93% have a post-secondary education

DEFINITION OF ESSENTIAL SKILLS

Essential skills are the skills that people need for work, learning and life. According to the Office of Literacy and Essential Skills, essential skills include the skills associated with literacy as well as thinking, communication, digital, continuous learning skills and working with others. Essential skills provide the foundation for learning all other skills and enable people to better prepare for, get and keep a job, and adapt and succeed at work. There are nine essential skills:

- | | |
|--------------------------------|------------------------|
| 1. Reading | 6. Thinking |
| 2. Writing | 7. Oral Communications |
| 3. Document Use | 8. Working with Others |
| 4. Numeracy | 9. Continuous Learning |
| 5. Computer Use/Digital Skills | |

For the purposes of this document, and unless otherwise referred to as the nine essential skills, ECO Canada also uses the term 'essential' in the context of skills that are desirable for employment in the environmental sector and that can be built upon for career progression.

Key Findings: Skills Essential for Success

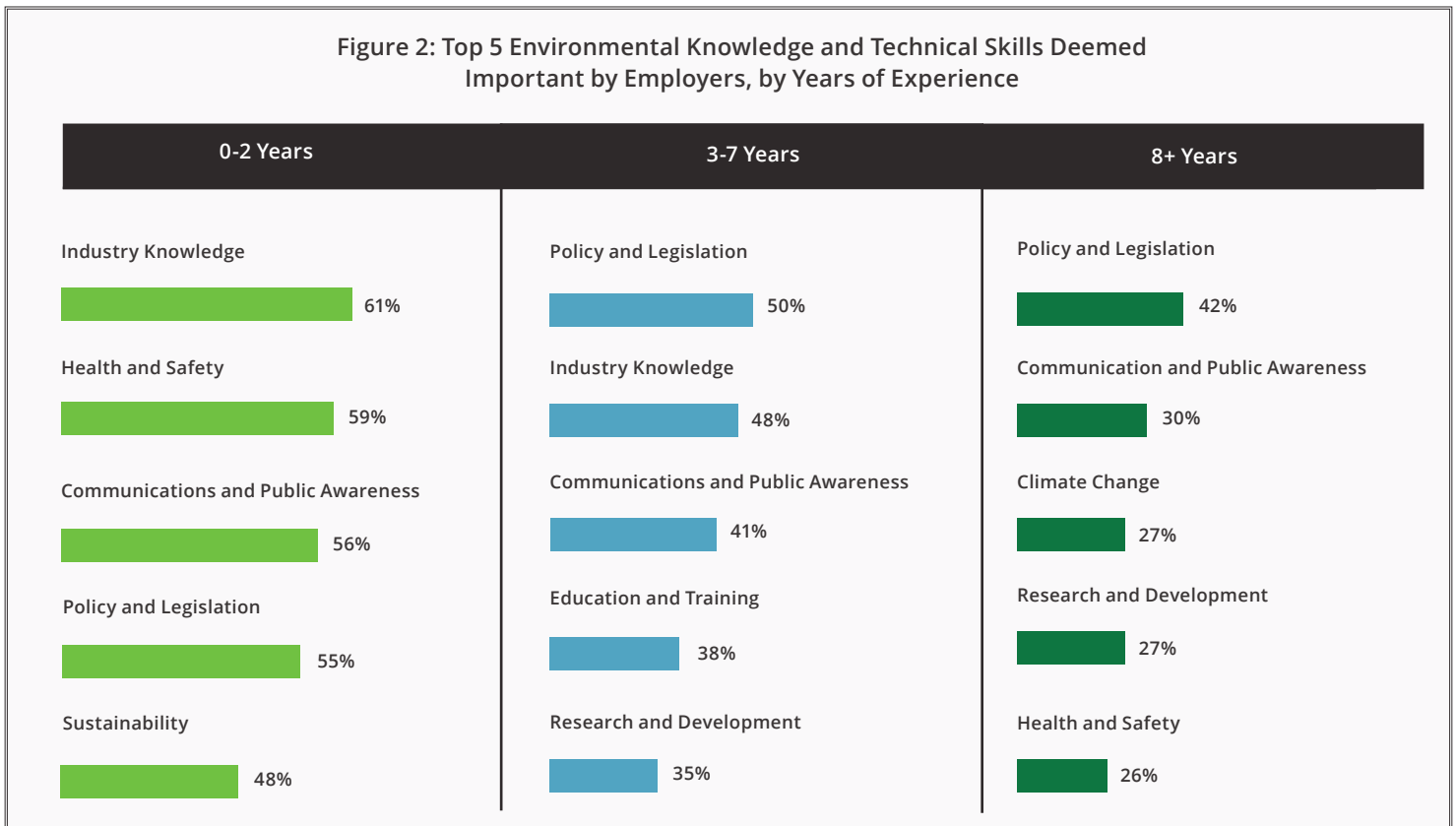
Interviewees identified that technical skills were important for obtaining employment and soft skills were very important for career development and advancement. The study revealed that although employees' technical backgrounds were generally strong, employers noted soft skills were typically lacking in new employees.

Knowledge and Technical Skills

Knowledge and technical skills, in the context of environmental work, were defined as the knowledge and proficiency necessary to perform successfully in certain fields. They are cumulative skills required for professionals and specialists to do their work.

This research revealed that the knowledge and technical skills that employers identify as being the most important for an employee to have varied with the employee's role or experience level, as shown in **Figure 2**. For example, out of the employers who responded to the survey question regarding employee training requirements, 55% indicated that policy and legislation was a knowledge area in which entry level employees (0-2 years of experience) require additional training while only 42% said the same of senior level employees (8+ years of experience).

Figure 2: Top 5 Environmental Knowledge and Technical Skills Deemed Important by Employers, by Years of Experience



Employer respondents from governments, regulators, key industries and consulting firms stated that employees would not have been hired had they not already obtained the relevant knowledge and technical skills. Respondents from industries and consulting firms also noted that there did not seem to be significant gaps in new employees' technical backgrounds. Overall, the study revealed the following knowledge areas were of great importance:

Understanding the industry “big picture” and viewing things in a more holistic manner.

Employers indicated that industry knowledge is the most important technical area of training for entry level workers. Once new employees are familiar with the industry and context they are working in, training in areas such as health and safety, communications and public awareness, policy and legislation, and adopting sustainability practices becomes more applicable.

Awareness and proper interpretation of industry and environmental legislation and regulations.

Employers reported policy and legislation as the most common area that intermediate and senior level employees require training in. As employees become more experienced, the importance of policy and legislation increased relative to the other technical areas.

Workers were also asked to select an environmental area for which they need/want training, and employee survey results supported the themes that emerged from the employer surveys and interviews. The top five environmental areas in which participants wanted to receive technical training are listed in **Figure 3**.

More experienced cohorts seem to place higher importance on policy and legislation as well as industry knowledge. In terms of skills deemed important by junior professionals, there seems to be a mix.

If there is one major trend that permeates both employer and worker research results, it is that **employees will always need to keep up with policies, legislation and regulations as well as industry trends and standards**. It is clearly very important to stay informed.

Figure 3: Top 5 Environmental Knowledge and Technical Skills Sought After by Environmental Workers



Policy and Legislation



Industry Knowledge



Sustainability



Site Assessment and Reclamation



Climate Change

SPOTLIGHT: Emerging Knowledge and Technical Skills

Environmental employers and post-secondary institutions were asked to identify areas and skills that would be important for environmental workers to develop going forward. There was a wide array of answers, but several distinct themes emerged. They were:

- Awareness and understanding of changes in regulations and standards (e.g. ISO 14001 knowledge)
- Retraining for older staff who are not familiar or comfortable with new technology
- Geographic Information Systems (GIS)
- Social media
- Climate change from several perspectives including carbon reduction, policy and legislation, and adaptability
- Data skills, specifically computation, logging and interpreting data, and spatial data

Other than the six themes listed above, there were several areas that were also mentioned:

- People skills and the ability to collaborate
- Focus on basic science
- Integrating traditional ecological knowledge (TEK) with technical knowledge
- Air quality
- Regional planning and monitoring
- Risk management and assessment
- Triple bottom line accounting
- Satellite imagery
- Computational physics
- Marketing environmental sustainability (i.e., How to market sustainability to a for-profit company)
- Wetland policy and implementation
- Experience with large infrastructure projects

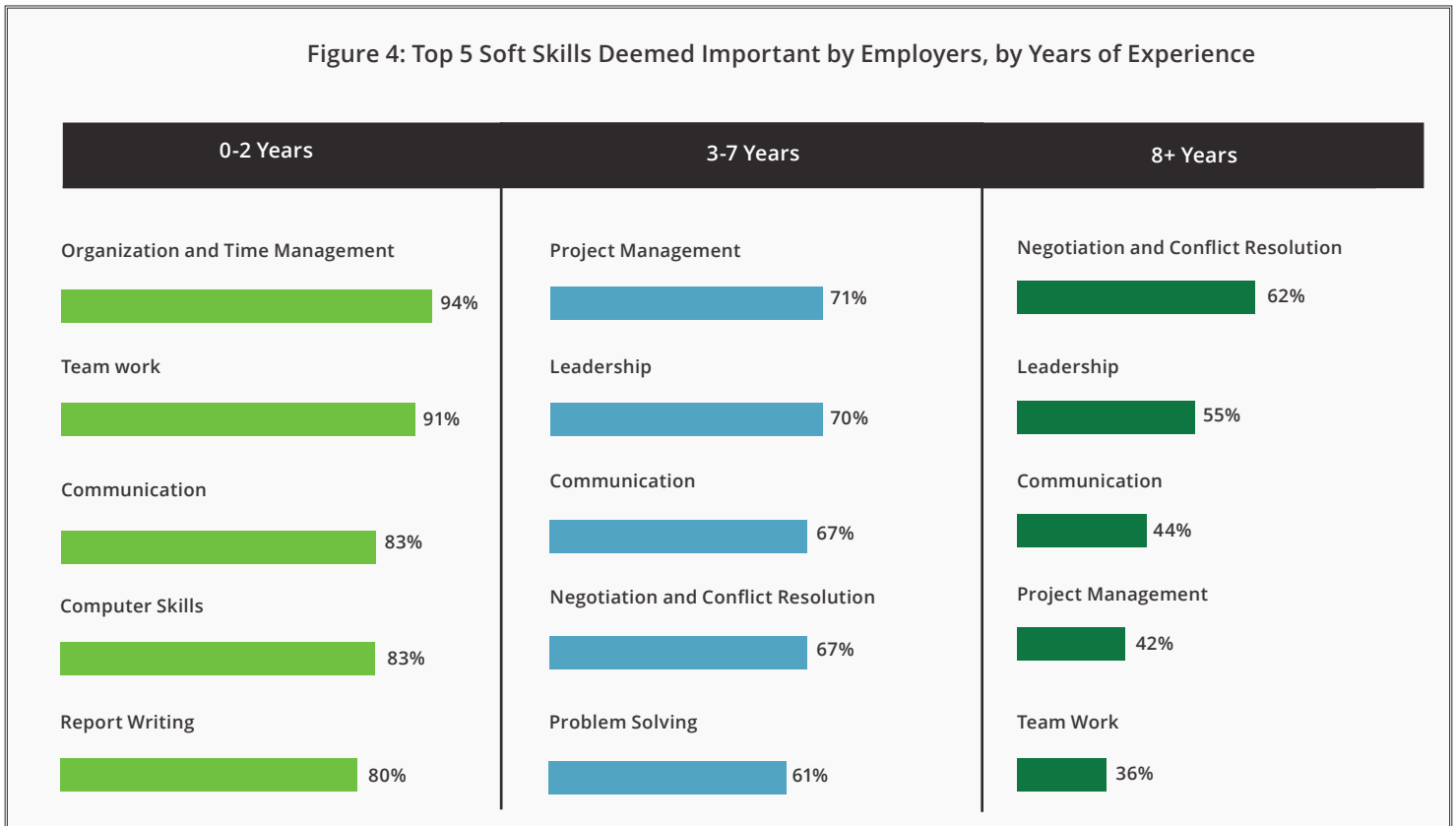


Soft Skills

Soft skills are a combination of interpersonal skills, communication skills, personality or character traits, behaviour and other attributes needed for success. In the workplace, soft skills are considered a complement to hard skills, which refer to a person's knowledge and technical skills³.

Although not unique to the sector, soft skills are critical for environmental workers to have. It was noted several times that, while employers search for employees with strong technical backgrounds, having strong soft skills often provides candidates with a significant edge in the hiring process. In addition, these skills become increasingly important for individuals to grow and advance in their careers.

Figure 4: Top 5 Soft Skills Deemed Important by Employers, by Years of Experience



³ <https://www.investopedia.com/terms/s/soft-skills.asp>

WHY ARE SOFT SKILLS IMPORTANT?

An employee with strong soft skills is valuable because:

- Employees with well-honed soft skills can demonstrate leadership.
- Soft skills enable employees to communicate effectively with stakeholders. This can improve client relationships and increase business opportunities.
- Employees that can give presentations or mentor other staff can also reduce organizational costs incurred by the employer such as onboarding or employee turnover.
- Employees with strong soft skills increase the value of a company's assets, especially in a business model where staff form the basis for service delivery.

Communication is important for all experience levels. Communication is an integral skill to have in the environmental industry, and it continues to be an important skill to develop as an employee grows within their career. A worker who can present clearly and professionally to a client, who can contribute to a team, and who can explain technical information in everyday language is a useful asset to any company.

Leadership and conflict resolution become more important as workers advance in their careers. As workers gain experience and take on more responsibilities, they are expected to continuously refine and apply these skills.

Soft skills are generally lacking in junior employees. Some employers assumed that gaps in soft skills exist because academic curriculums are unable to cover them. Several post-secondary institutions articulated that due to the short amount of time relative to the content that must be covered in a degree/ diploma program, they are unable to cover all soft skill development that would be beneficial to their graduates. Many referred to communication, collaboration, decision making, and industry awareness as areas that graduates would develop once employed. Some employers said that soft skill gaps were not obstacles to employment, and that these skills could also be developed through work experience, additional training and short-term work placement programs such as internship and co-op programs.

When hiring candidates for environmental roles, employers are looking for these three characteristics:



Adaptability: the ability to perform both generalist and specialist functions

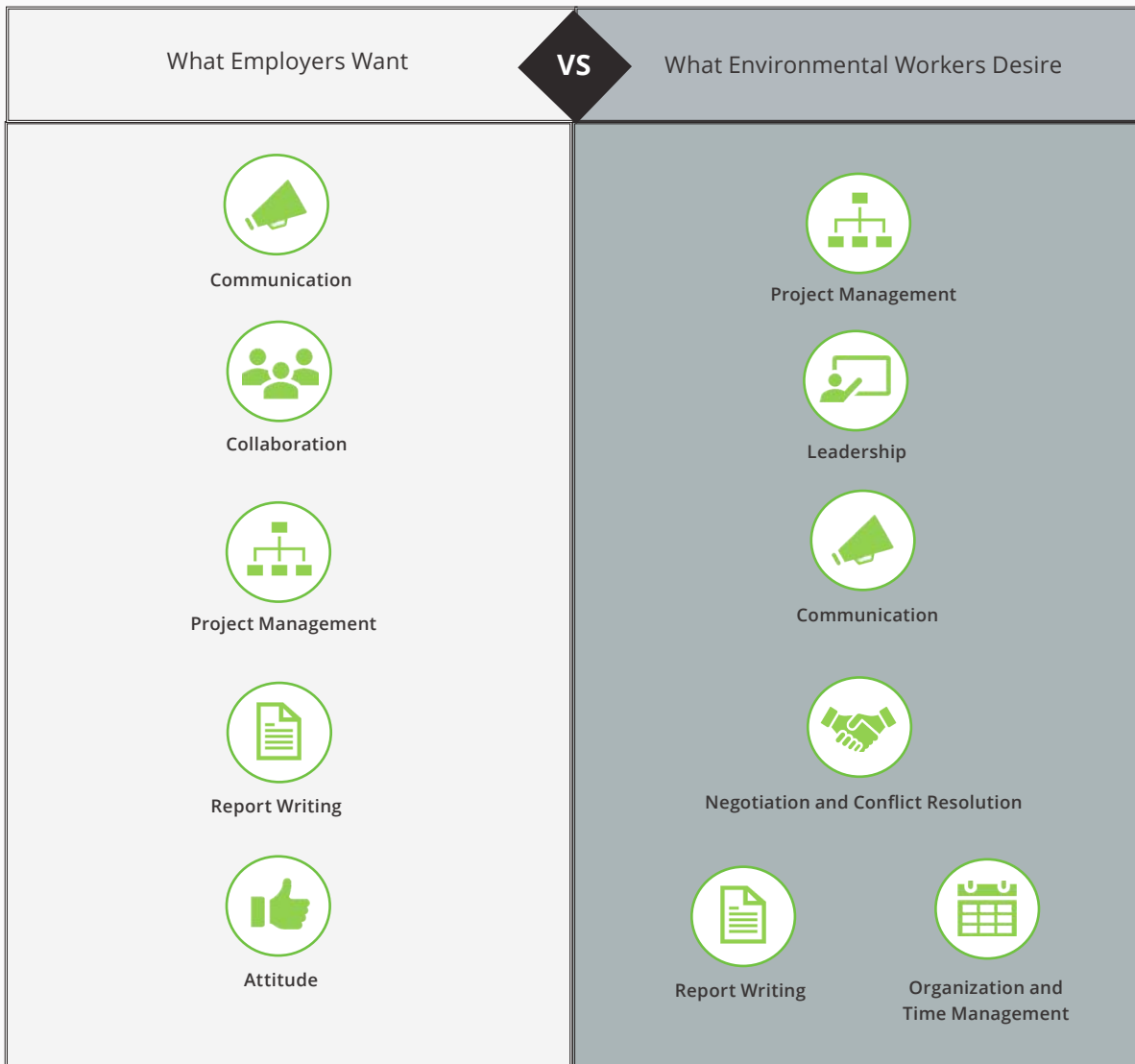


Flexibility to relocate: working remotely and the ability to move to other regions where the demand is



Other desirable attributes: include **business communications** and **project management**

Figure 5: Top Soft Skills Required by Employers versus Those Sought After by Environmental Workers



Notes:

Project Management is the #1 skill required/desired across most age and experience levels. Project Management is a blend of *soft* and *technical* skills. The soft skills are needed to manage people and resources, but technical skills are needed to meet the project requirements and objectives.

Report Writing as well as Organization and Time Management were tied for the #5 most desired skill by environmental workers.

SPOTLIGHT: Essential Skills Matter Regardless of Experience Levels

As previously mentioned, essential skills are the foundational skills everyone uses while conducting tasks, including job-related ones. They are also key to learning, developing, and applying all other skills. In short, they are essential to one's success.

All nine essential skills are used in every occupation but with different combinations, applications and complexity levels⁴.

Essential skills enable workers to learn as well as acquire advanced technical and soft skills. It is not surprising that four of the top five soft skills required by employers for junior employees relate in one way or another to the nine essential skills.

Fewer essential skills are found amongst the top five knowledge and technical skills employers expect from more experienced workers. Nonetheless, soft skills such as communication, problem solving and team work continue to be priorities and are directly linked to oral communication, thinking and working with others.

As previously noted, it is essential for environmental employees to be up to date with policies, regulations and industry standards. This suggests continuous learning is a critical workplace essential skill in every industry but particularly within the evolving and dynamic environmental professions.

⁴ Essential skills profiles have been developed for over 350 occupations organized according to the National Occupational Classification (NOC): <https://www.canada.ca/en/employment-social-development/programs/essential-skills/profiles.html>

The Nine Essential Skills

- **Reading** refers to understanding information in the form of sentences or paragraphs. It generally involves reading memos, manuals, regulations, books, reports or journals.
- **Writing** is conveying ideas by writing text and writing in documents, such as filling in forms or preparing a technical report.
- **Document use** involves a variety of information displays in which words, numbers, icons and other visual characteristics are given meaning by their spatial arrangement. For example, interpreting policies and regulations or plotting information on a graph.
- **Numeracy** refers to the workers' use of numbers and their capability to think in quantitative terms. This includes analyzing data or preparing budgets or estimates.
- **Computer use** involves working with computer applications or technical tools such as e-mails, spreadsheets and more sophisticated programs.
- **Thinking** is evaluating or processing ideas or information to reach a logical decision. It involves six types of interrelated cognitive functions: problem solving; decision making; critical thinking; job task planning and organizing; significant use of memory; and finding information.
- **Oral communication** pertains primarily to the use of speech to give and exchange thoughts and information by workers in an occupational group.
- **Working with others** involves working with and dealing with co-workers to carry out tasks, either as a member of a team, or in a supervisory position.
- **Continuous learning** is an ongoing process of learning and acquiring new skills either on-the-job or through formal education or training.

Solutions for Success

Investing in workforce training and professional development matters; in fact, it is integral to the current and future success of Canada’s environmental sector. Skills development is most successful when it’s viewed as a shared responsibility between employers, individuals, governments, education and training providers as they all play a role. The first step in meeting the development needs of environmental professionals is understanding the potential barriers to training.

Employees were asked if they had ever faced barriers to receiving the training that they need. The results were almost split evenly in that 52% of participants identified as having faced barriers, and 48% of participants identified as not having faced barriers to training. Females (57%) reported facing barriers more than males (47%) and the younger cohorts were also more likely to face barriers.

The most common barriers that are faced are related to cost, scheduling, and accessibility.

Across the surveys and interviews, the most common barrier cited was the cost of training. Either the participant or employee could not afford the cost, their organization/department could not afford the cost, or budgets at post-secondary institutions adversely impacted the number of students that could take a course. Scheduling conflicts with busy times of the year, not being able to get time off work, and an inability to effectively schedule courses to ensure students are able to graduate on time were major barriers as well. Location and accessibility were a final major barrier. People living in remote areas, without access to internet, and training not being offered in specific regions were all common themes of inaccessibility.

Figure 6: Employers and Employees — Most Common Barriers to Training



- Employee can't find a training program for the skills they need
- Employee job demands do not allow them time to take training
- Employee location does not offer training opportunities
- My organization is unable to cover the cost of training
- The available delivery methods do not match employee learning needs

- I cannot personally afford the cost of training
- I can't find a training program for the skills I need
- My location does not offer training opportunities
- My job demands do not allow me time to take training
- My employer will not cover the cost of training

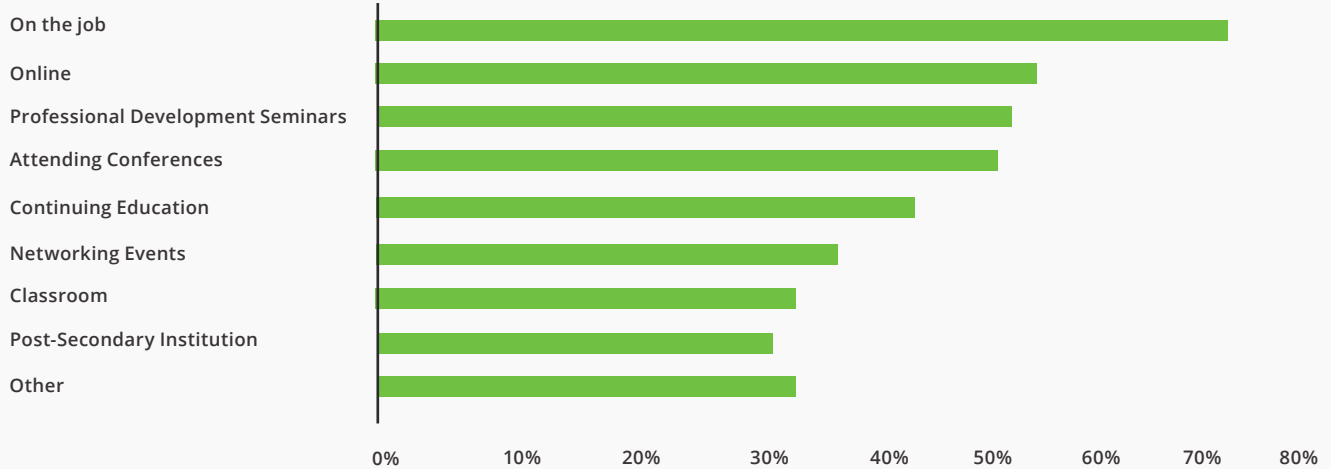


When developing or offering training opportunities, consider a hybrid delivery method.

Employers mentioned that face-to-face training would be the most effective form of training as it is more engaging and not as “cold” as other forms of training. However, many respondents appreciated the convenience and flexibility of online training. In fact, several spoke about the effectiveness of combining face-to-face and online training into a hybrid method.

On the other hand, preferred methods by employees fluctuate by experience level. As the participants experience levels increase, so does the preference for online training and continuing education.

Figure 7: Preferred Training Methods by Employees



Solutions for Consideration

Specific recommendations are also offered to employers, individuals, institutions and governments:

Key Considerations for Employers

- Provide on the job training. This could be a formal training plan, bringing experts in-house to train your team, or offering mentorship or job shadowing.
- Define which skills are important within the organization and procure or create training.
- Standardize training across locations and offices; if you've implemented a new technology or a new process, ensuring that everyone is trained will increase productivity.
- Incorporate training into the performance evaluation process. Plan out a training pathway for your team and review it periodically to check your team's progress towards their goals.
- Support employees' desire to learn new skills. Employers tell us they want their teams to succeed, but many don't support paying for training. A well-rounded employee is a benefit to your company.
- Be open to new ideas and opportunities, don't let generational differences deter employees from participating in business growth. If an employee comes to you with a great idea, try to act on it. Many businesses fail to retain good staff because they just didn't listen.

Keep in mind:

- Online training is available to help employees develop the soft skills that they need to succeed in their careers and breaks down location-based barriers.
- Mentorship and in-house training can help employees develop their skill sets.
- Custom training options can be designed to meet the needs of the company and the employees and can be delivered face-to-face and on-site.

Why Training Matters

Skill-building and employee development can help teams excel and have the added benefits of encouraging employee retention, minimizing project inefficiencies, improving service delivery, increasing the scale of your business and getting the most out of your team.

Below are just some of the benefits of supporting essential skill development for your team:

- You can create well-rounded employees who are an asset to your organization.
- You'll notice improved communication, delegation, and collaboration when you empower your team to develop these skills.
- Don't avoid succession planning - many employers think of junior staff as higher-risk to onboard, but by investing in your team, you're investing in employee retention and organizational knowledge. You're also potentially building future clients and company/brand ambassadors even if those employees do move on.
- Supporting soft skill development can take an employee who specializes in technical data and turn them into a report-writing superstar who can communicate complex information using clear language.
- Leverage your team's strengths and create opportunities for employees to demonstrate their skills; for example, you can ask them to give a presentation, write a business plan or proposal, lead a committee or task force, manage a scalable project, or give them a client-facing role.

Key Considerations for Individuals

- Be accountable for your success. This means owning both your accomplishments and failures. View each outcome as an opportunity for professional growth.
- Take ownership of your professional development. If you have identified an area for training that you would excel in, or see as a benefit to your company, advocate for yourself to get the training. Employers are usually supportive if you present a strong case and prove how your learning will benefit the organization.
- Seek out opportunities to gain new and/or improve your soft skills. Does your job involve project management? Technical writing? Delivering presentations? Look for opportunities to learn or build upon your skills in these areas. Skills like these are essential, transferable⁵ and will help you stand out as a strong performer.
- Offer solutions. If you see a path ahead, don't be afraid to speak up. A solutions-based approach will make you an asset to your employer. Share your insights or pitch a new idea when appropriate.
- As you gain experience, encourage junior professionals to gain career-building skills and knowledge. Sharing your experiences through mentoring or informal coaching can make a difference and help position you as the go-to expert.
- Use your company's feedback or performance review process to carve out a learning path. Keeping track of your goals year-round will help you showcase the expertise you've gained when it comes to formalizing your evaluation.
- Research what it takes to succeed in your industry. Do you need a professional designation to move to the next level? Do you need to obtain an additional qualification? These are conversations that your senior leadership or mentor can help you address.
- Visualize your career progression. Are you satisfied in your current role? Do you want to specialize in a specific area? Would you like to branch out and become a generalist? Don't let yourself become pigeonholed! This is a worthwhile exercise at any stage of your career. Map it out but leave room for your path to shift with new opportunities.
- Invest in yourself. In some cases, your employer may not be able to offer you training. Don't let this hinder your career. There is a lot of free or low-cost resources available. If you face barriers to training, think of gaining training as a long-term investment. If you put in the time and money now, it can have a long-term payoff as your career soars to new heights.

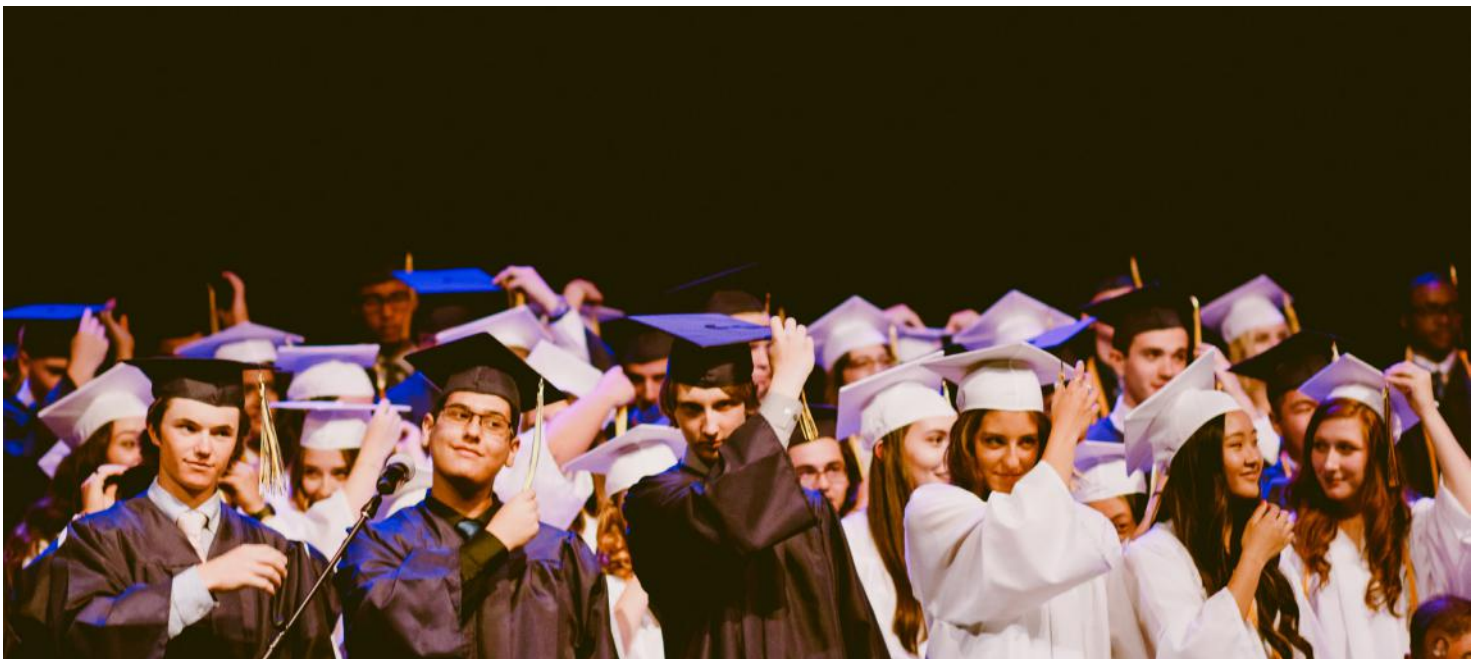
⁵ ECO Canada uses the term 'transferable skills' to denote competencies, whether knowledge, technical or soft skills, that are required or preferred across many jobs and careers and are therefore portable. See: <https://www.thebalancecareers.com/transferable-skills-list-525490>

Key Considerations for Education and Training Institutions

- Instill confidence in students that they will have most of the skills and knowledge to succeed in the industry. Advise students that every employer has different skill needs and wants, and not all of these are related to the skills and knowledge gained through their studies. Continuous learning is part of life, and something that needs to be embraced and not seen as a detriment.
- Define the essential skills needed to complement their technical background knowledge and encourage growth in these areas.
- Help connect students with industry professionals, career resources and industry information to increase their success in the navigation of a career path.
- Seek out wage funding programs to help support graduates looking for work get their foot in the door in an environmentally related role.

Key Considerations for Governments

- Continue to emphasize the importance of essential skills in life and career growth for individuals across Canada.
- Support employers, new graduates and youth through wage funding and other programs that provide subsidies for individuals looking for full-time employment in the environmental sector.
- Offer funding opportunities to organizations looking to develop training resources that align with priority and emerging knowledge as well as technical, soft and essential skill development.



Conclusion: Moving Onward and Upward

This research provides valuable insights on skills needs and trends and sheds light on training challenges and opportunities. Governments, educators, trainers, workers, students and industry planners can use these findings to make decisions and formulate strategy.

Our mission at ECO Canada is to ensure an adequate supply of people with the demonstrated skills and knowledge required to meet the environmental human resource needs of the public and private sectors.

On our part, we will use this information to further support our initiatives and inform resource development so we can continue to provide valuable support to environmental workers and professionals. The following ECO Canada programs will be enhanced to support training and professional development needs:

- Providing networking opportunities and allowing members to stay connected and continuously monitor environmental trends, skills gaps and training needs.
- Striving to make training affordable, convenient and accessible in response to the common barriers that were identified.
- Tailoring training programs to [specific areas or specialties](#).
- Continuing to provide training opportunities on topics such as environmental legislation, carbon accounting and data analysis, environmental assessment, and essential skills needed for career growth and advancement.
- Brokering training opportunities with professional organizations.
- Creating information and resource centers.

Environmental sector careers and in-demand skills are in constant evolution. As a result, ECO Canada will continue to gather, monitor, and report on talent and training needs and broader environmental trends facing the sector and its workforce.

Appendix A: Survey/Interview Questions

Participants in each of the three studies were asked slightly different questions related to skills most essential for workers in the environmental sector.

The participants that completed the environmental worker survey were asked:

1. What soft and technical skills would best aid participants in finding employment
2. What soft and technical skills would aid in advancing their current role
3. What soft and technical skills would aid in furthering their career goals
4. What formal training delivery methods they preferred
5. What types of organizations they have taken training from in the past
6. What kinds of barriers to training they have experienced

Participants that completed the employer survey were asked:

1. What soft or technical skills their employees needed training in and whether training needs differed by experience level
2. What types of formal training delivery methods were used by the organization
3. What kinds of barriers to training have they witnessed within their employees

Participants that completed an expert interview, whether they are environmental employers or representatives of post-secondary institutions were asked the following:

1. What the most important skills were for environmental employees in their organizations
2. What skills, if any, employees or potential employees lacked
3. What emerging areas (e.g., new regulations, technologies) it would be important to develop skills for

Appendix B: Sample Description

Expert Interview Sample Description

The 28 expert interview participants were broken down into three stakeholder groups in the following manner:

- Eight experts that worked in government and/or as regulators were interviewed. Participants included individuals from public organizations such as large urban municipalities, rural municipalities, federal and provincial government departments and regulators.
- Twelve experts that worked in industry and/or as consultants were interviewed. Participants included individuals with significant experience in many facets of the environmental sector. Most experts were senior-level professionals (typically managerial level or higher) with hiring and supervising experience.
- Eight experts were interviewed that work in post-secondary in some capacity. Experts were professors or instructors (either current or former) involved in curriculum development for environmental programs. In addition to teaching, participants also held senior-level or executive positions, such as executive director, associate dean, and Canada Research Chair.

Environmental Worker Survey Sample Description

The 592 participants that completed the environmental worker survey had a demographic composition that was different than the environmental sector in general. The major differences are as follows.

The sample is characterized as being young. Almost half (45%) of respondents were less than 30 years of age. An additional 34% of respondents were between 30 and 44 years of age, meaning that 79% of respondents were less than 44 years of age⁶.

The sample is relatively experienced. 42% of participants have eight years or more of total environmental work experience, which seems quite high considering the young age of the sample.

There were more female respondents than male respondents, but only by a small margin. 53% of the sample identified itself as female, and 45% as male.

The sample was very educated. 93% of respondents have a post-secondary education of some kind. 86% of those participants had a bachelor's degree or higher, with 38% having completed a graduate (master's or higher) degree.

It is important to note that the sample is not random or representative. It is likely that interests in training are biased in this survey as all participants have a relationship with ECO Canada because they have taken extra steps to improve their careers. Despite having potentially biased responses, ECO Canada is confident that the themes from this research are valid as both the qualitative and quantitative components reinforce each other.

⁶In comparison, ECO Canada's [Profile of Environmental Employment, September 2017](#) reports that 62% of environmental professionals in Canada were found to be under the age of 44.

Environmental Employer Survey Sample Description

The employer survey sample description is slightly different than both the environmental worker survey and the expert interviews. Questions to determine specific demographic data were not asked. Rather, the objective was to determine the number of interns within employers that have participated in ECO Canada's internship program in the last three years, and their workforce size.

32% of participants had hosted three interns in the past three years. 24% of participants had hosted two interns and 20% had hosted one intern. 14% of participants had hosted five or more interns in the past three years.

Organizations that have hosted ECO Canada interns are typically small. 64% of participants selected that their organization has "less than 20" employees. A further 20% of participants selected that their organization has "between 20 and 100" employees. Relatively smaller percentages identified as working for organizations that had "100-500 employees" (9%) and "more than 500 employees" (8%).



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