



LABOUR MARKET INFORMATION

From Recession to Recovery: Environmental Workforce Needs, Trends and Challenges

Updated Labour Market Outlook to 2025

March 2021

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- Bow Valley College
- Environmental Services Association of Alberta
- Environmental Services Association Maritimes
- EnviroSearch Ltd.
- General Motors
- Government of New Brunswick
- Government of Saskatchewan
- Indigenous Works
- Labour Market Information Council
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- Ryerson University
- SAIT Polytechnic
- Stantec
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- Tait Human Capital

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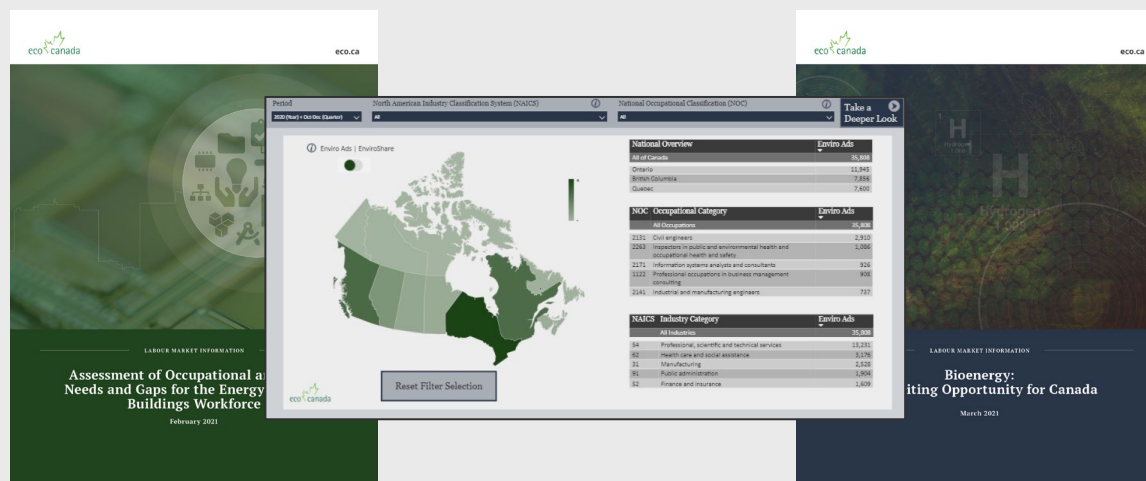
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ECO CANADA RESEARCH Our Value Proposition

ECO Canada provides **up-to-date, relevant, and credible** data and insights on **Canada's environmental workforce** to guide decision making within organizations and for individuals. Our labour market information helps:

- ✓ **Individuals** build meaningful careers
- ✓ **Employers** attract, develop and retain the best environmental talent
- ✓ **Governments** develop or refine programs or policies
- ✓ **Educators and trainers** prepare the workforce with the required knowledge and skills



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HIGHLIGHTS

HIGHLIGHTS

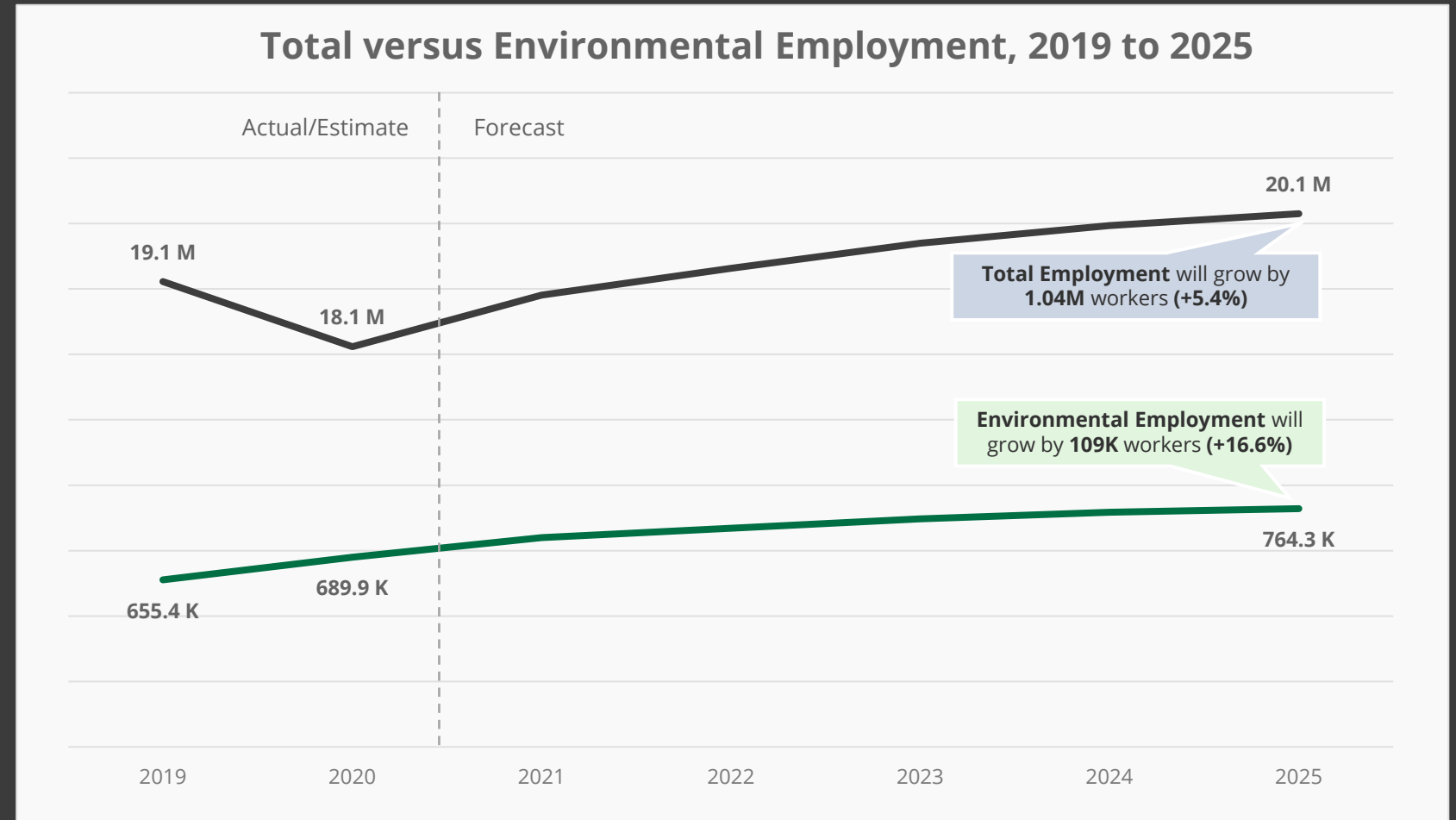
A Greener Economic Recovery for Canada

Canada's labour market has partially recovered from the initial COVID-19 shutdown. The unemployment rate was 8.8% at the close of 2020—still higher than when we entered the decade (5.6%).

The impacts were not evenly distributed among employers and workers. A full job recovery have taken hold for some but could take longer for others. And in certain segments such as the environmental sector, growth was still underway.

While Canada's employed labour force shrank in 2020, the environmental sector **added 35K net new jobs**—reflecting a 5% increase.

Our updated forecasts also reveal that environmental employment could increase by **17%** to 2025, compared to 5.4% for Canada overall.



HIGHLIGHTS

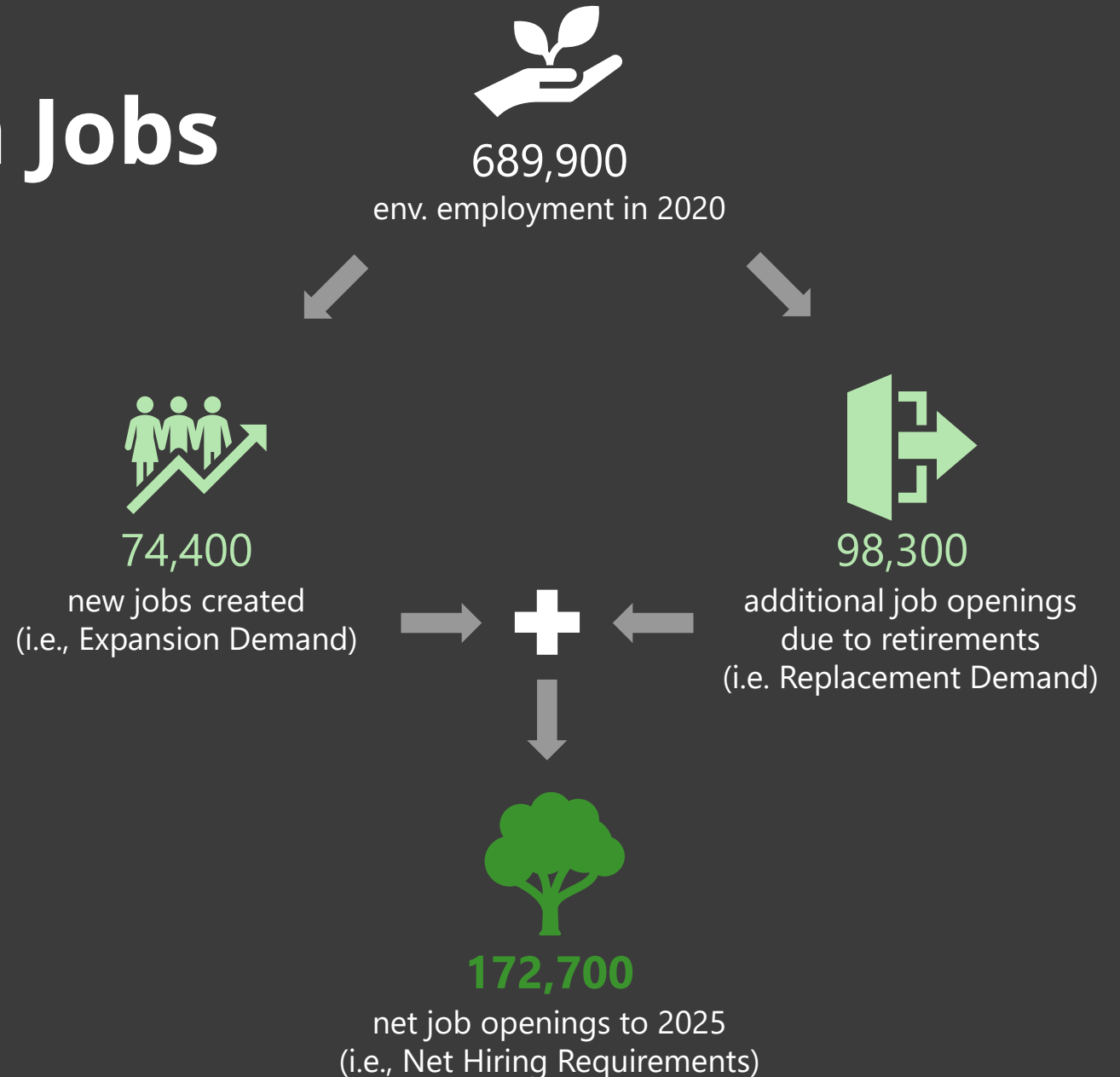
The Future of Green Jobs

About **1 in 26 workers** in Canada (**689K workers**) was in a green job in 2020, up from 1 in 30 in 2019.

- Environmental workers were present in every Canadian region, industry and practically every occupation.
- Green talent is needed in a variety of environmental fields, from Air Quality to Natural Resource Management to Environmental Policy and Legislation.

Job growth and retirements will account for **173K net environmental job openings by 2025**—equivalent to 25% of 2020 employment levels.

- About 43% of net job openings will stem from expansion demand, while 57% will be due to replacement demand.
- About 37% of net hiring requirements (108K jobs) will be for core environmental workers—or those in roles that require environmental competencies.



HIGHLIGHTS

Critical Shortages Expected

The following occupations are projected to experience a shortage of environmental workers across Canada due to (1) wider supply/demand gaps, (2) post-secondary education pre-requisites, and (3) environmental-specific competency requirements:



Legislators and senior management



Engineering inspectors and regulatory officers & Inspectors in public and environmental health and occupational health and safety; Non-destructive testers and inspection technicians



Utilities equipment operators and controllers (incl. Water and wastewater treatment plant operators)



Physical and life sciences professionals



Construction managers; Construction millwrights and industrial mechanics



Electrical and electronics engineers; Aerospace engineers & Other professional engineers, n.e.c.



Architects; Landscape architects; Urban and land use planners & Land surveyors



Forestry technologists and technicians & Conservation and fishery officers; Agricultural and fish products inspectors



Managers in manufacturing and utilities



Contractors and supervisors, mining, oil and gas

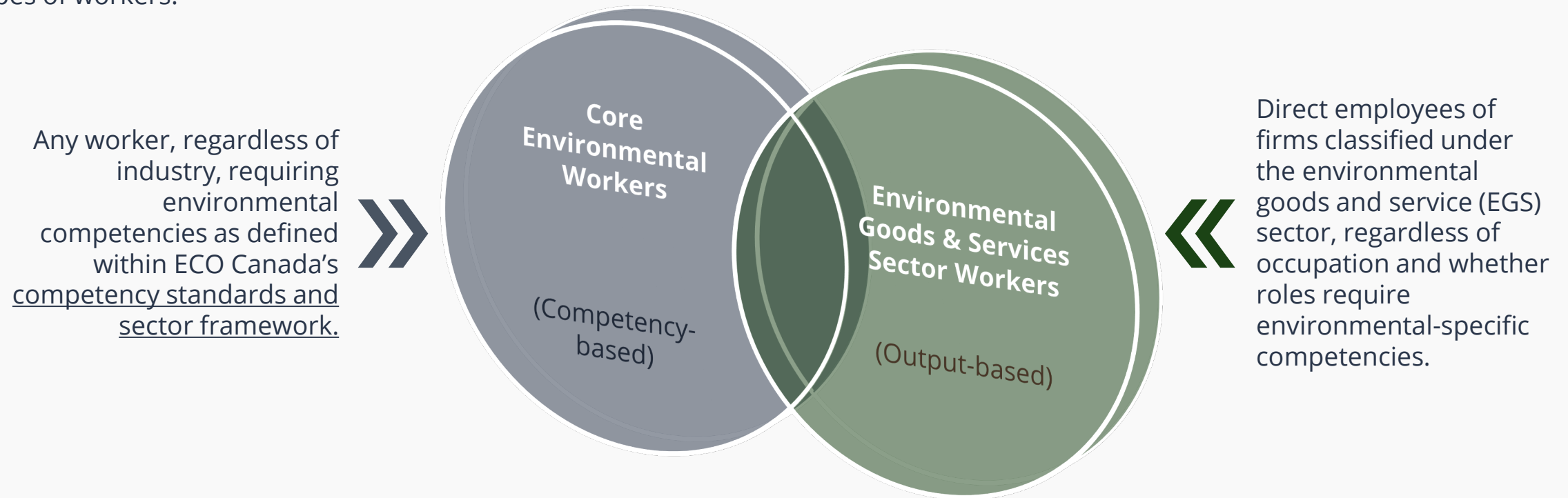


SCOPE AND METHODOLOGY

THE ENVIRONMENTAL WORKFORCE DEFINED:

Two Classification Streams

The environmental workforce is broad and includes workers across various industries and occupations that drive or support the goals of **environmental protection, resource management, and sustainability**. Our definition and research encompass two types of workers:



A Sustainability Manager working in a mining company and an Accountant employed in a cleantech company are included in this definitional framework. An Impact Assessment Lead in an environmental consulting firm is both a core environmental worker and an EGS sector worker.

Scope and Methodology

	Labour Demand	Labour Supply
ENVIRONMENTAL WORKFORCE	<ul style="list-style-type: none"> • Core environmental workers • All environmental workers include core workers and environmental goods and services sector workers 	<ul style="list-style-type: none"> • All environmental workers with additional analysis on core environmental workers
LABOUR CHARACTERISTIC	<ul style="list-style-type: none"> • “EnviroShare” (share of environmental to total jobs or workers in the Canadian economy) • Environmental employment estimates • Net environmental hiring requirements (or net job openings): <ul style="list-style-type: none"> – Expansion demand (new jobs created), plus – Replacement demand (jobs that become available as green workers retire). 	<ul style="list-style-type: none"> • Number of environmental job seekers • Demand-supply gaps <ul style="list-style-type: none"> – Moderate risk: gaps range between 100 and 500 environmental workers – High risk: gaps of 500 or more environmental workers
OTHERS	<ul style="list-style-type: none"> • National Occupational Classification (NOC), up to the 4-digit level • National and regional data • North American Industry Classification System (NAICS), at the 2-digit level • Environmental sub-sectors, using ECO Canada’s <u>sector model</u> 	<ul style="list-style-type: none"> • National Occupational Classification (NOC), at the 3 or 4-digit level • National

NATIONAL OCCUPATIONAL CLASSIFICATION (NOC)

Core Workers or Jobs Mapped to NOCs

Environmental workers were matched with **455 of 500** NOCs. Of these, **60** were mapped to core workers, including:

NOC Title and Code	Sample Environmental Jobs and Titles	EnviroShare in 2019
Forestry professionals (2122)	Area Forester; Chef de section - forêt urbaine; Coordinator Forest Operations; Forest Technologist; Forestier-vulgarisateur; Planning Forester; Technicien chef foresterie arboriculture; Urban Forester	56.8%
Water and waste treatment plant operators (9234)	Biosolids Plant Operator; Technicien en traitement des eaux; Facility Operator; Industrial Waste Treatment Plant Operator; Opérateur de station de filtration de l'eau; Technicien traitement de l'eau; Water & Sewer Operator; Water Treatment Specialist	50.5%
Forestry technologists and technicians (2223)	Arboriculture Technician; Avian Wildlife Technician; Conservation Technician; Forestry Conservation Technician; Forestry Technician; Responsable des bénévoles-patrouille de conservation; Technicien en inventaire forestier régional	49.1%
Conservation and fishery officers (2224)	Agent de soutien à la gestion des terrains et des ressources naturelles; Bird Control Officer; Conservation Land Negotiator; Fish and Wildlife Officer; Interprète de la nature (spécialiste de la flore); Land Stewardship Coordinator; Naturaliste; Watershed Technologist	47.7%
Geological engineers (2144)	Géologue de projets; Geomechanical Engineer; Geotechnical Engineer; Mining Engineer; Mine Planner; Production Geologist	42.0%
Civil engineers (2131)	Acoustic Engineer; Asset Planning Analyst; Chargé de projet sénior en infrastructures municipales; Civil and Geological Engineer; Civil Technologist; Ingénieur de projets; Spécialiste en vérification de projets; Water/Wastewater Engineer	41.7%
Meteorologists and climatologists (2114)	Adjoint de recherche en santé environnementale des sols; Agent d'évaluation environnementale - programmes maritimes; Agroclimatologiste - modélisation des cultures; Air Quality Meteorologist; Carbon and Climate Change Researcher; Climate Change Specialist; Cumulative Effects Specialist; Environmental Scientist	41.3%
Geoscientists and oceanographers (2113)	Environmental Geologist; Géochimiste; Geologist; Geophysicist; Hydrogeologist; Hydrogéologue principal; Surface/Subsurface Land Analyst	41.1%
Urban and land use planners (2153)	Development Planner; Heritage Planner; Planification de l'environnement; Regional Planner; Technicien en aménagement urbain; Transportation Planner	31.8%
Inspectors in public and environmental health and occupational health and safety (2263)	Advisor Health, Safety & Environment; Agent de sensibilisation; Assistant Health and Safety Manager; Employee and Environmental Health & Safety Coordinator; Occupation Health & Safety Officer; Regulatory Compliance Advisor; Spécialiste de la santé, de la sécurité et de l'environnement	31.7%

EMPLOYMENT

Drivers & Trends

The convergence of market, regulatory, social and technological factors will influence the number and type of environmental workers needed today and in the future.

The main trends employers expect will impact the number and type of environmental workers needed in the future:



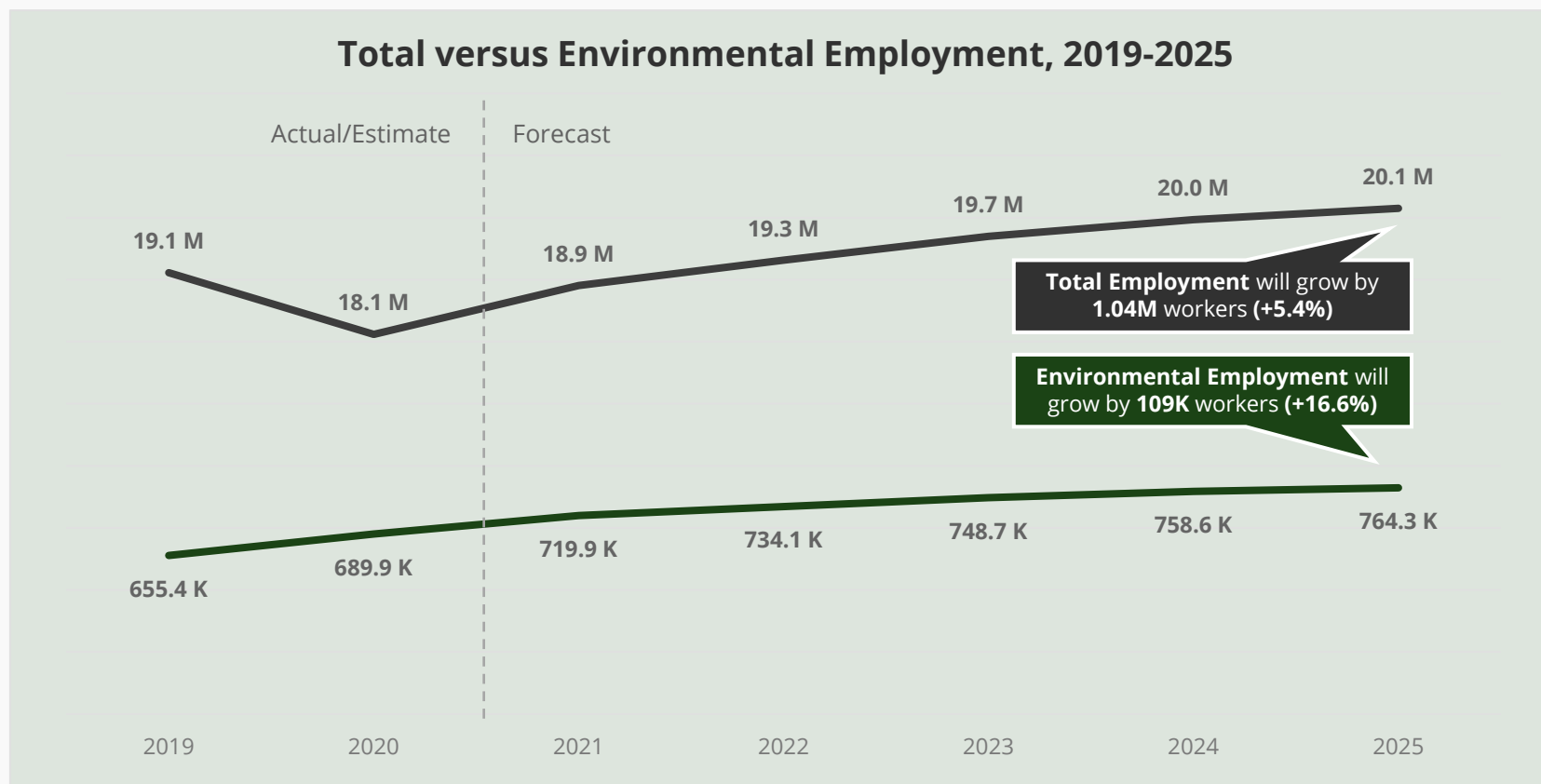


DETAILED FINDINGS

EMPLOYMENT OUTLOOK

A Greener Economic Recovery for Canada

While Canada's employed labour force shrank in 2020, the environmental sector added **35K** net new jobs (5% growth). An additional **74K** net environmental job openings will be created between 2020 and 2025—resulting in an **11% growth** from 2020 employment levels.



Top Occupations among Core Workers Based on Environmental Employment in 2020

Civil engineers (26,300 workers)

Administrative officers (18,300)

Inspectors in public and environmental health and occupational health and safety (11,100)

Construction managers (10,900)

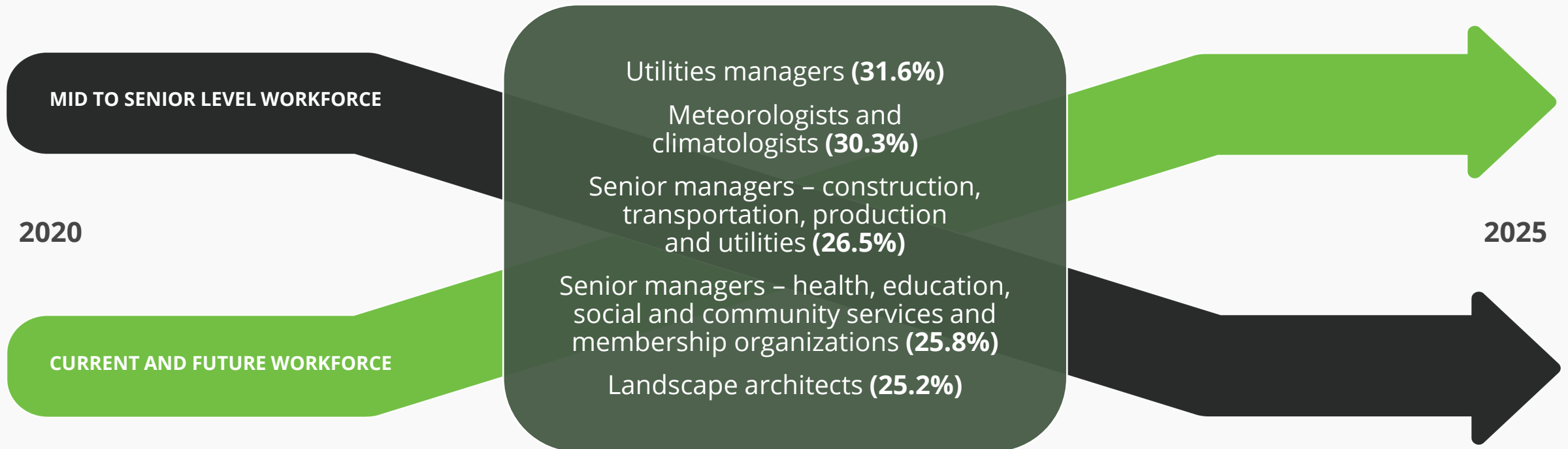
Senior managers - health, education, social and community services and membership organizations (10,400)

PROJECTED RETIREMENTS

For Next Five Years

The larger opportunity for environmental employment will come from the gradual retirement of an estimated **98,300 workers (14% of 2020 employment)**, particularly those in mid to senior level roles. That's an average retirement rate of 2.8% yearly.

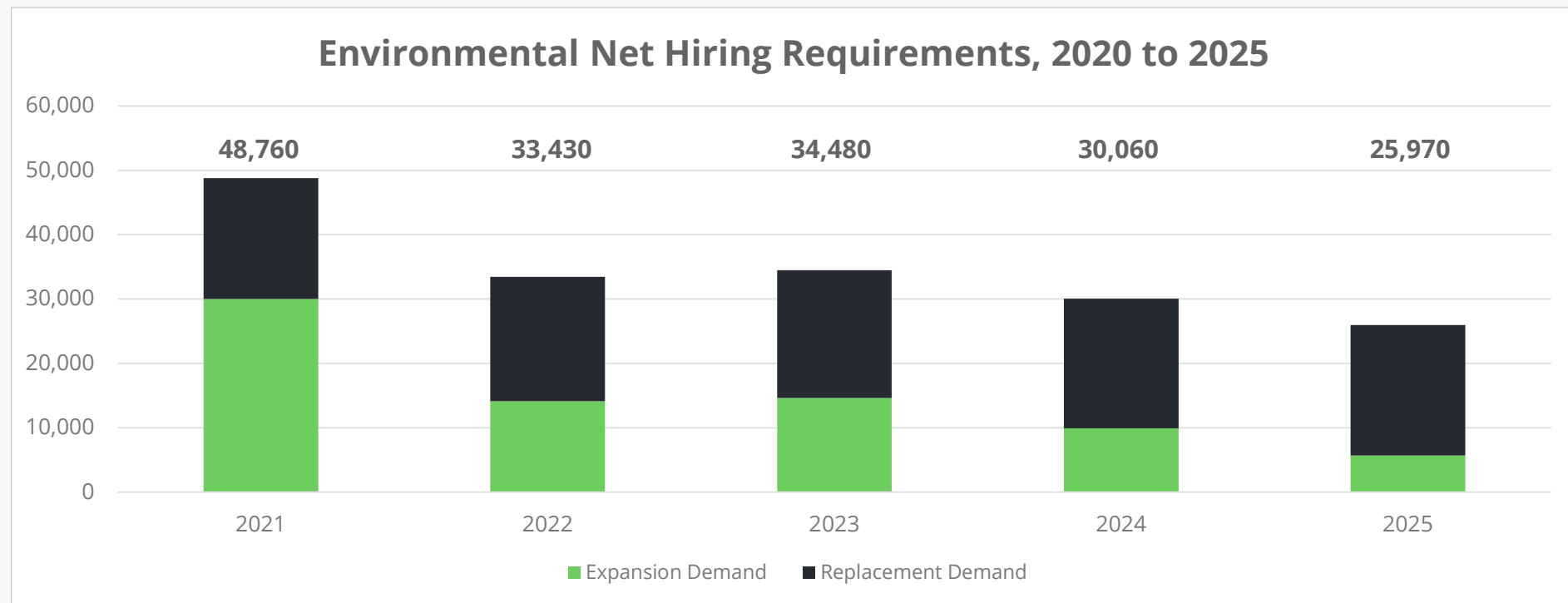
Top Occupations among Core Workers Based on Projected Retirement Rates, 2020 to 2025



NET HIRING REQUIREMENTS

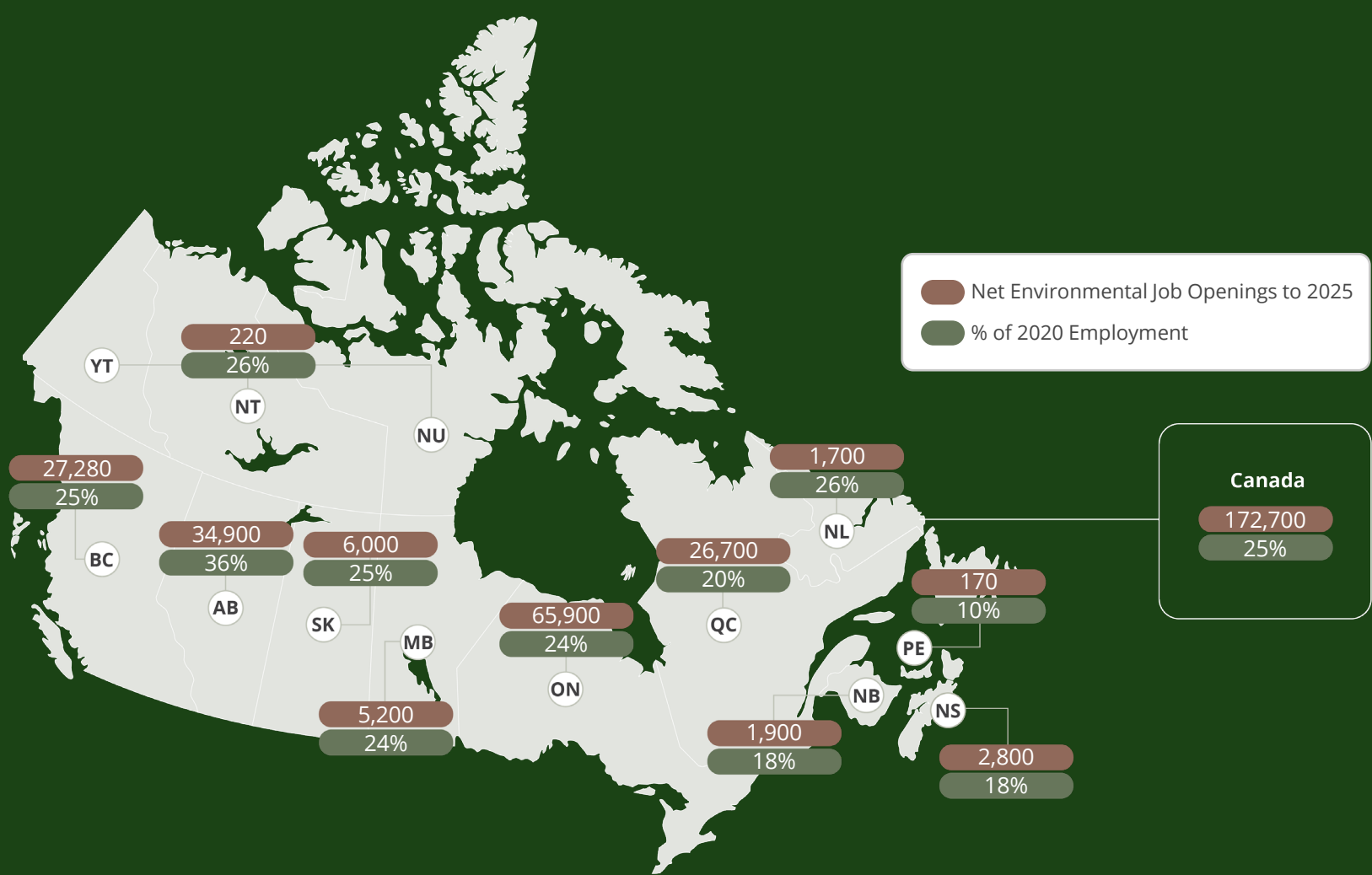
For Next Five Years

Together, job growth and worker retirements will account for **172,700 net environmental job openings** by 2025—or **25%** of 2020 employment levels. While job growth will drive hiring in 2021, the impetus for adding new workers to the sector will shift towards replacement demand.



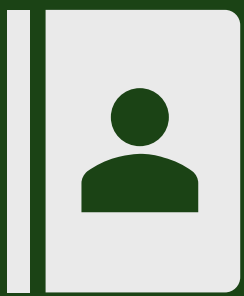
REGIONAL HIGHLIGHTS

Green Job Opportunities in Every Region



Every province and territory in Canada will be looking for environmental workers over the next five years.

Opportunities will result from jobs in growth sectors, as well as openings created by retiring workers.



INDUSTRY HIGHLIGHTS

A Cross-sectoral Workforce

The Professional, scientific and technical services sector employed over a quarter of Canada's environmental workforce in 2020. This sector also has the highest EnviroShare at **11.6%**, followed by the Utilities sector at 10.3%.

Industry (NAICS)	Environmental Employment in 2020 (% of Total Workforce)	EnviroShare
All industries	689,900 (100%)	3.8%
Agriculture, forestry, fishing and hunting (11)	18,400 (2.7%)	5.2%
Mining, quarrying, and oil and gas extraction (21)	17,400 (2.5%)	7.5%
Utilities (22)	13,700 (2.0%)	10.3%
Construction (23)	52,300 (7.6%)	3.7%
Manufacturing (31-33)	78,800 (11.4%)	4.9%
Wholesale and retail trade (41, 44-45)	39,700 (5.8%)	2.5%
Transportation and warehousing (48-49)	16,800 (2.4%)	1.7%
Information and cultural industries (51)	15,000 (2.2%)	3.6%
Finance and insurance, and real estate and rental and leasing (52-53)	37,400 (5.4%)	3.0%
Professional, scientific and technical services (54)	176,700 (25.6%)	11.6%
Management of companies and enterprises (55)	1,600 (0.2%)	8.2%
Administrative and support, waste management and remediation services (56)	28,000 (4.1%)	3.9%
Educational services, health care and social assistance (61-62)	95,400 (13.8%)	2.5%
Arts, entertainment and recreation (71)	10,100 (1.5%)	3.5%
Accommodation and food services (72)	14,100 (2.0%)	1.4%
Other services (except public administration) (81)	19,900 (2.9%)	2.7%
Public administration (91)	54,700 (7.9%)	5.4%

INDUSTRY HIGHLIGHTS

A Cross-sectoral Workforce (cont.)

The Professional, scientific and technical services sector will also account for over 30% of net environmental job openings to 2025.

Worker retirements will drive most of environmental hiring for many sectors, including:

- Agriculture, forestry, fishing and hunting,
- Utilities,
- Manufacturing,
- Educational services, and
- Public Administration.

Environmental Net Hiring Requirements by Industry, 2020 to 2025



SUB-SECTOR HIGHLIGHTS

Meeting Environmental Goals

- Although hiring will need to take place for a variety of environmental sub-sectors, the greatest needs will occur in:
- Sustainability (79,100 net job openings)
 - Natural Resource Management (69,000)
 - Energy (68,900)
 - Fisheries & Wildlife (62,300)
 - Environmental Health & Safety (59,400)

Note: An environmental job or role could be mapped to one or more sub-sectors.

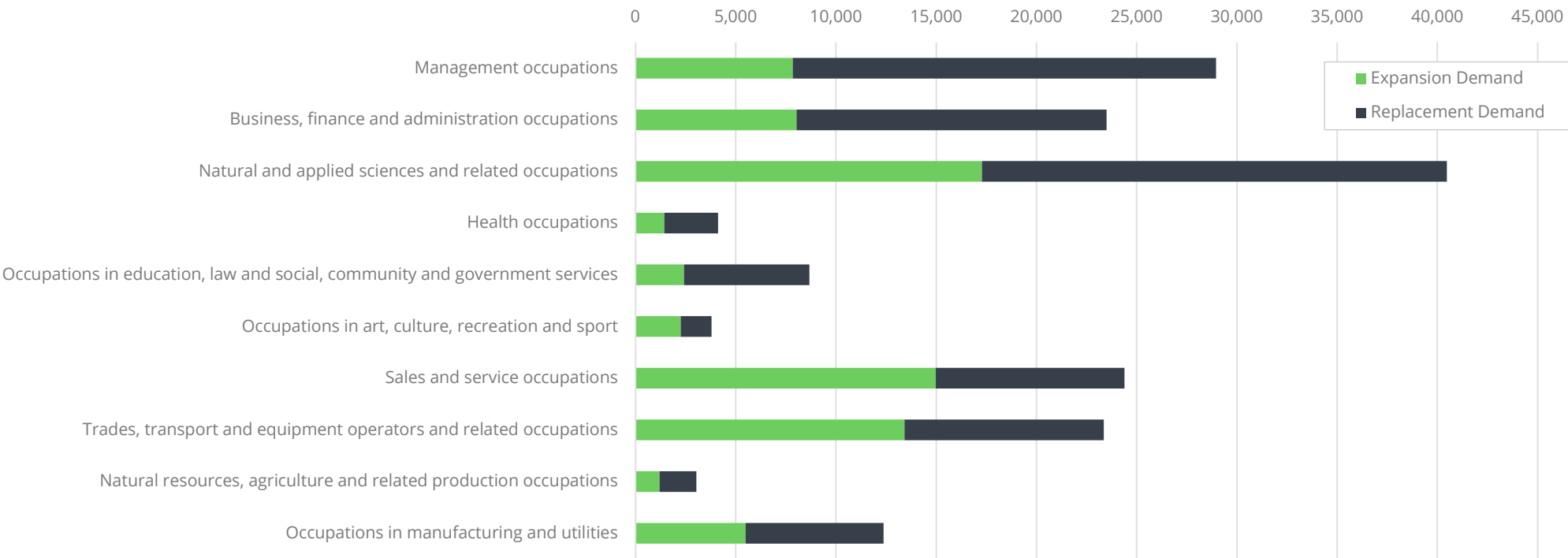


OCCUPATIONAL HIGHLIGHTS

A Multi-disciplinary Workforce

Green job opportunities exist across all functions. Over **40% of all openings (69,400 jobs)** will be in roles related to (1) natural and applied sciences, and (2) management.

Environmental Net Hiring Requirements by Job Family, 2020 to 2025

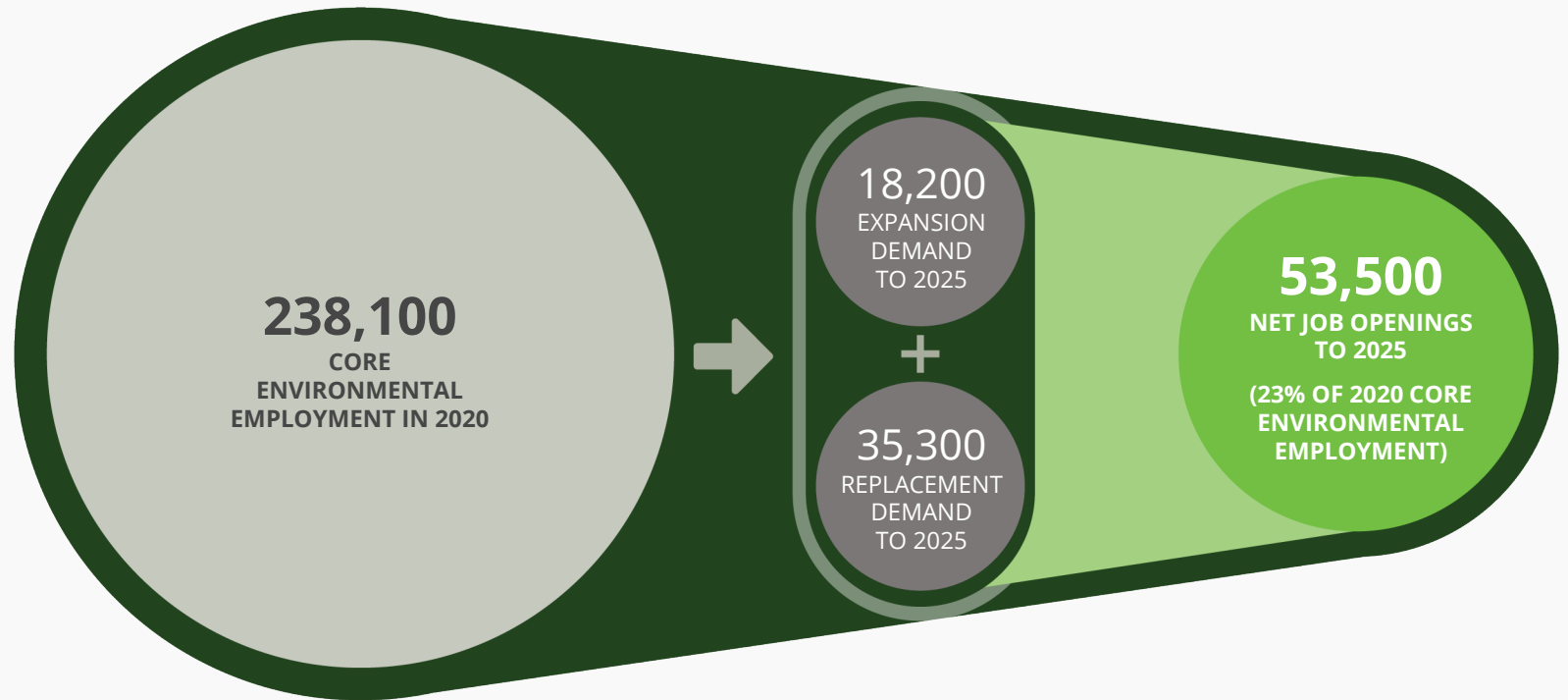


OCCUPATIONAL HIGHLIGHTS

Core Workers

Core environmental workers are a key to advancing responsible and sustainable economic growth. These workers have invested and prepared for the roles they are in by honing environmental-specific knowledge and skills, including the ability to integrate multiple disciplines and work across industries.

About **37%** of Canada's environmental workforce in 2020 were core workers (**255,800 in 60 occupations**). Approximately **59,200 new core workers** will be needed by 2025.



OCCUPATIONAL HIGHLIGHTS

Core Workforce (cont.)

Core environmental workers are key to advancing our green economy and meeting policy or values-driven environmental targets.

These workers have invested and prepared for the roles they are in by honing environmental-specific knowledge and skills, including the ability to integrate multiple disciplines and work across industries.

Top Occupations Based on Net Hiring Requirements, 2020 to 2025

	Inspectors in public and environmental health and occupational health and safety (4,830 net job openings)
	Administrative officers (4,710)
	Civil engineers (4,660)
	Construction managers (3,810)
	Senior managers - health, education, social and community services and membership organizations (3,650)
	Senior managers - construction, transportation, production and utilities (3,410)
	Electrical and electronics engineers (2,780)
	Other professional engineers, n.e.c. (2,620)
	Water and waste treatment plant operators (2,370)
	Geoscientists and oceanographers (2,320)

OCCUPATIONAL HIGHLIGHTS

Core Workforce (cont.)

The following occupations could experience **moderate shortages** in the next five years (i.e., gaps between 100 and 500 workers).

Occupation	Projected Shortage by 2025
Civil engineering technologists and technicians	420
Chemical engineers	300
Engineering managers & Architecture and science managers	220
Mechanical engineers	200
Facility operation and maintenance managers	190
University professors and lecturers	170
Industrial engineering and manufacturing technologists and technicians	110
Mathematicians, statisticians and actuaries	100

OCCUPATIONAL HIGHLIGHTS

Core Workforce (cont.)

The following occupations could experience **shortages of 500 or more environmental workers** in the next five years.

Occupations	Projected Shortage by 2025
Legislators and senior management	7,550
Engineering inspectors and regulatory officers & Inspectors in public and environmental health and occupational health and safety; Non-destructive testers and inspection technicians	3,170
Utilities equipment operators and controllers (incl. Water and wastewater treatment plant operators)	2,200
Physical science professionals	2,090
Construction managers	1,830
Aerospace engineers & Other professional engineers, n.e.c.	1,830
Electrical and electronics engineers	1,420
Landscape architects; Urban and land use planners & Land surveyors	1,060
Architects	910
Forestry technologists and technician & Conservation and fishery officers; Agricultural and fish products inspectors	860
Life science professionals	750
Managers in manufacturing and utilities	700
Contractors and supervisors, mining, oil and gas	650
Construction millwrights and industrial mechanics	610

A woman with short blonde hair, wearing a dark blazer over a polka-dot top, is smiling and looking towards a man whose back is to the camera. They are sitting at a table with papers and a tablet. The image is dimmed to serve as a background for the text.

KEY RECOMMENDATIONS

ADDRESSING ENVIRONMENTAL TALENT GAPS

A National Strategy Framework

Industry, educators, diversity organizations, and governments identified the following priority actions to (1) address the current and anticipated talent needs and gaps within this growing sector; and (2) build the world's leading environmental workforce right here in Canada.

1. Understand the representation of diverse groups by occupation and experience level and investigate the cause/source of said underrepresentation
2. Develop scenario projections and enhance modelling to reflect workforce implications from new projects and policies
3. Characterize how technology and innovation are impacting workplaces, practices, and skill requirements
4. Validate future occupation and skill shortages through improved labour supply data (e.g., number of graduates per program) and share findings with employers, governments, educators, and trainers to support the allocation of funding and resources to address talent needs and gaps
5. Identify interprovincial mobility issues and opportunities by occupation, industry and specialization

Source: *A National Sector Workforce Strategy to Address Environmental Talent Needs and Gaps*. ECO Canada. (2021). www.eco.ca.

Strategy Framework (cont.)

6. Provide end-to-end support to remove the barriers around the supply, attraction, integration, and retention of underrepresented workers (e.g., matchmaking, wage and training subsidies, day care, etc.)
7. Address workplace barriers (e.g., culture, amenities needed, work environment) to improve inclusiveness
8. Offer career development programs and pathway information for diverse groups to increase representation throughout career levels, improve integration and advancement to leadership roles
9. Elevate the profile of the environmental sector, professionals and careers through broad-based and targeted awareness campaigns to enhance perception
10. Map and assess competency requirements and demand by experience/role level to develop capacity and recognize the value of experience within the sector
11. Engage, reintegrate and retain individuals taking maternity or parental leaves
12. Support employees requiring unplanned personal emergencies and leave requirements

Source: *A National Sector Workforce Strategy to Address Environmental Talent Needs and Gaps*. ECO Canada. (2021). www.eco.ca.

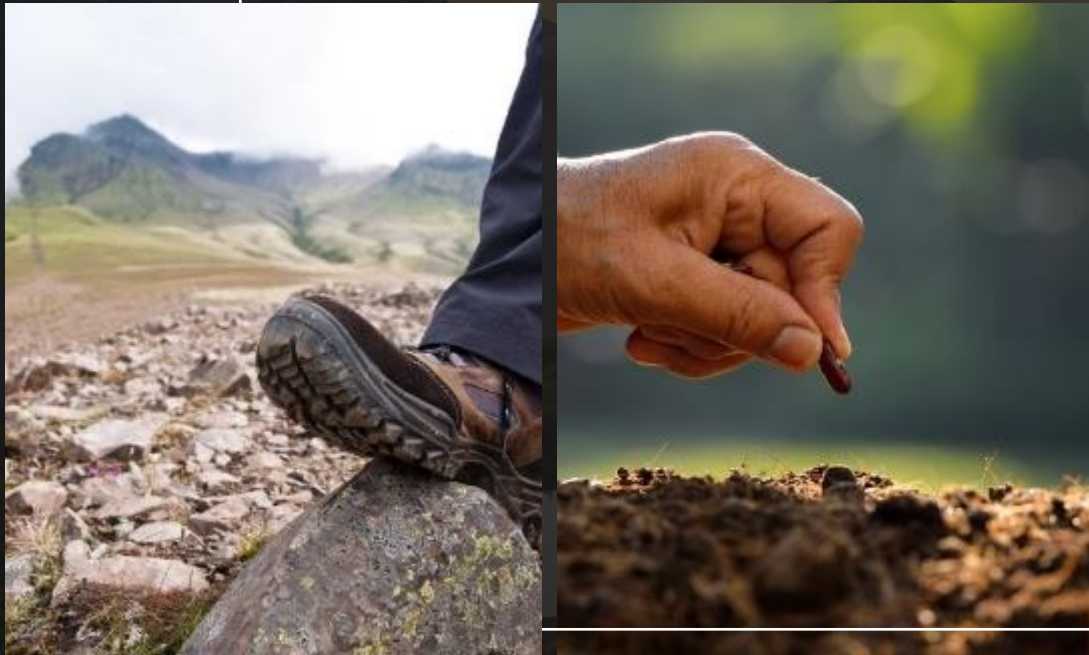
ADDRESSING ENVIRONMENTAL TALENT GAPS

Strategy Framework (cont.)

13. Develop experiential learning opportunities for career and job seekers and support capacity building among employers (e.g., co-op and internships, mentoring programs, etc.)
14. Increase capacity within the education system to support in-demand and growing occupations and environmental specializations (e.g., micro-credential/up-skilling or program expansion)
15. Remove educational barriers through financial supports to attain credentials and PSE (e.g., micro loans)
16. Develop new or enhance existing environmental competency or occupational standards for career awareness, competency assessment and recognition, and professional development (to help workers stay relevant)
17. Promote talent management best practices, tools and resources for capacity building among small and medium-sized enterprises (SME's)

Source: *A National Sector Workforce Strategy to Address Environmental Talent Needs and Gaps*. ECO Canada. (2021). www.eco.ca.

About ECO Canada



ECO Canada is the steward for the Canadian environmental workforce across all industries.



We champion the end-to-end career of an environmental professional.



Our efforts promote and drive responsible, sustainable, economic growth to ensure that environmental care and best practice are a priority.

We are thought leaders in the environmental labour market. Our research provides unmatched statistics with up-to-date, relevant data and insights for policy, business and educational purposes.



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