

2022-2023 Annual Report



THE YEAR IN REVIEW: COMMITTED TO RECONCILIATION AND ADVANCING TRADITIONAL KNOWLEDGE

The past year has seen many remarkable Clear Seas achievements. Through continued publication of fact-based, independent research on marine shipping, Clear Seas has brought clarity and understanding to the sector to support informed decisions by governments, industry, and the public.

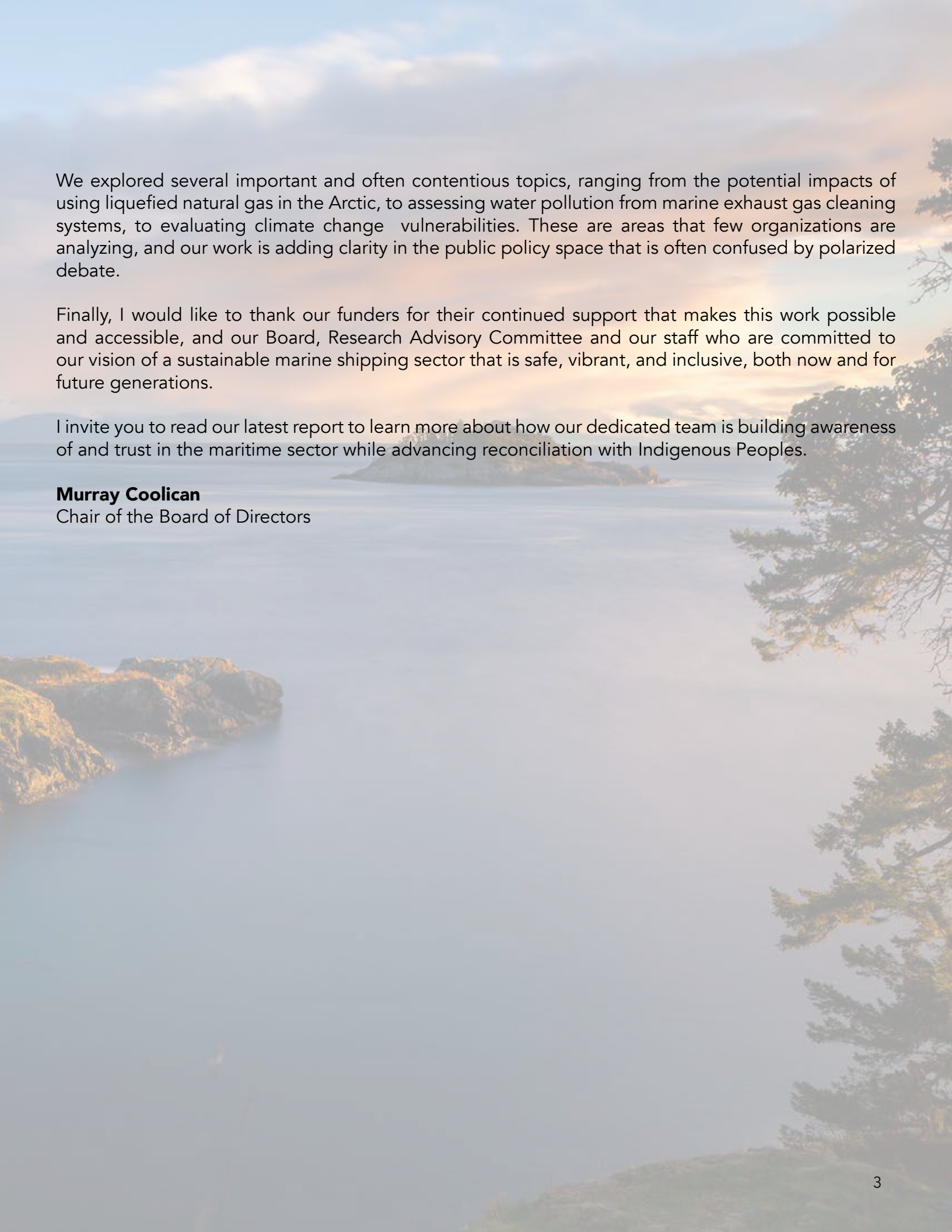
I am particularly proud of the leadership we have shown in supporting Indigenous-led research as part of our efforts to advance reconciliation with Indigenous Peoples in Canada. Developing our Indigenous Internship Program has connected Indigenous students with unique opportunities for learning in partnership with communities, advancing inclusive maritime-related research and building research capacity. The success of this program was featured at IMPAC5, the Fifth International Marine Protected Areas Congress held in February of this year in Vancouver, where our Indigenous Programs team and interns showcased their achievements and built key connections within this global community. This program is growing and positioned for greater success moving forward.

Our Indigenous Career Pivot Program is another initiative that is opening doors by supporting Indigenous mid-career professionals interested in pursuing a career in the maritime sector and the rapidly growing ocean economy through training and work placement opportunities. This past year saw 11 candidates supported.

As a research-based organization, we are committed to upholding the First Nations Information Governance Centre's principles of data ownership, control, access, and possession (OCAP®) in our work. Recognizing and protecting Indigenous rights to their data is essential to move the field of research toward reconciliation. All Clear Seas staff completed this training in spring 2023; our Board and Research Advisory Committee are committed to learning and applying these principles as well.

While a key part of our work is to engage with stakeholders from industry to academia, we also have an important role to play in telling the story of marine shipping to the public. To that end, we published articles that communicated a range of topics including the recovery of oil leaking from a 1960s-era wreck on the Pacific coast, a spotlight on shipping in the Great Lakes, and the importance of emergency towing vessels in Canada and around the world.

This year saw the completion of six Clear Seas research projects plus a story map of the results of a study on Inuit rights in Nunavut completed by academic partners – the most releases over a single year in our eight-year history. Another insightful piece was the fourth in our series of public opinion surveys conducted in partnership with the Angus Reid Institute to track public attitudes toward marine shipping. It's clear that Canadians are aware of the central role marine shipping plays in their daily lives, enabling them to purchase the goods they need. Most Canadians also believe that marine shipping is a safe way to transport those goods, but significant concerns about the risk of water pollution – by oil or ship waste – remains top of mind.



We explored several important and often contentious topics, ranging from the potential impacts of using liquefied natural gas in the Arctic, to assessing water pollution from marine exhaust gas cleaning systems, to evaluating climate change vulnerabilities. These are areas that few organizations are analyzing, and our work is adding clarity in the public policy space that is often confused by polarized debate.

Finally, I would like to thank our funders for their continued support that makes this work possible and accessible, and our Board, Research Advisory Committee and our staff who are committed to our vision of a sustainable marine shipping sector that is safe, vibrant, and inclusive, both now and for future generations.

I invite you to read our latest report to learn more about how our dedicated team is building awareness of and trust in the maritime sector while advancing reconciliation with Indigenous Peoples.

Murray Coolican

Chair of the Board of Directors



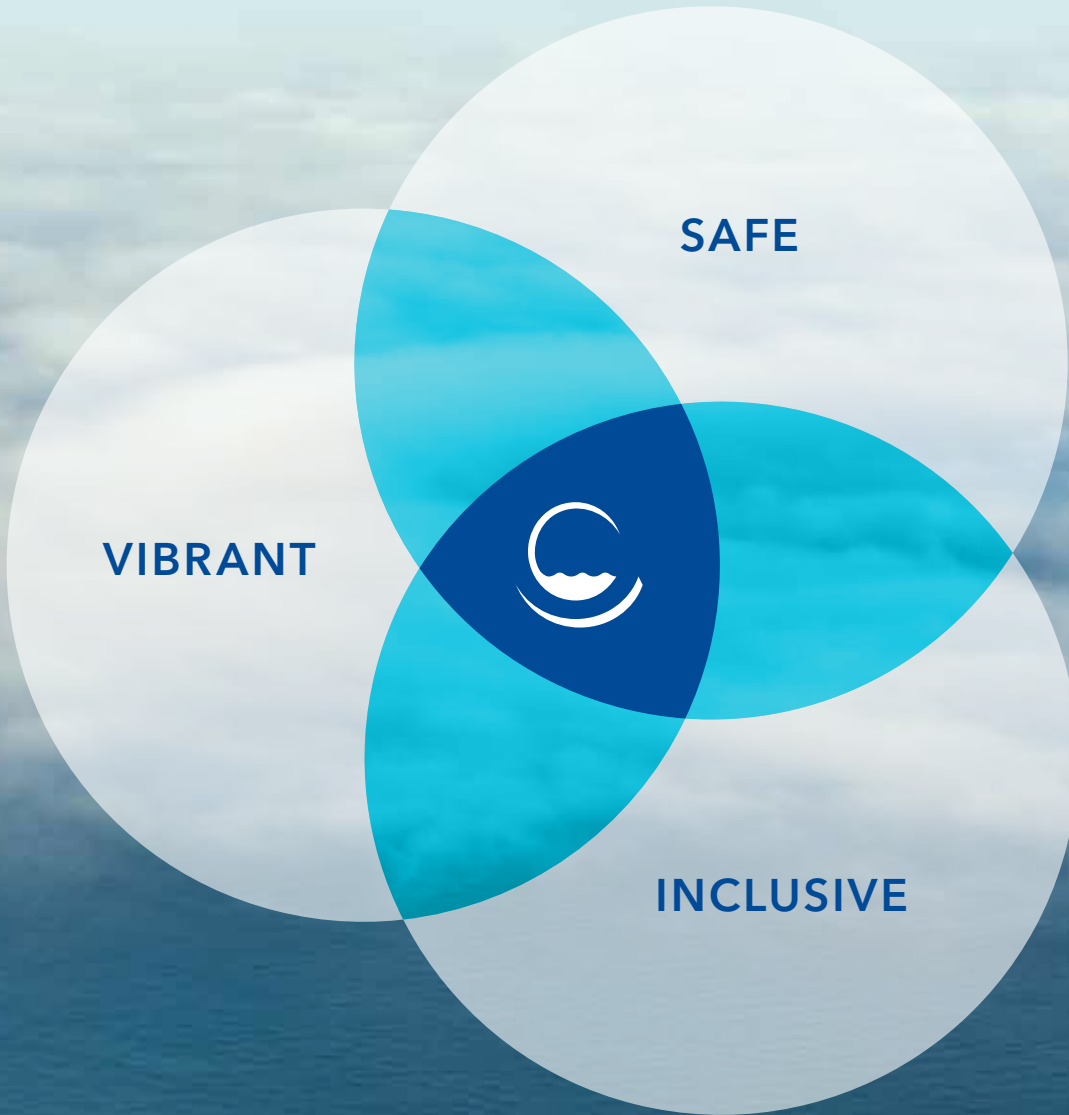
**ANNUAL REPORT
2022-2023**

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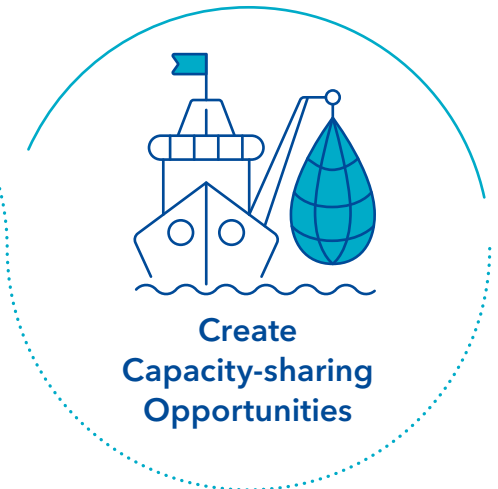
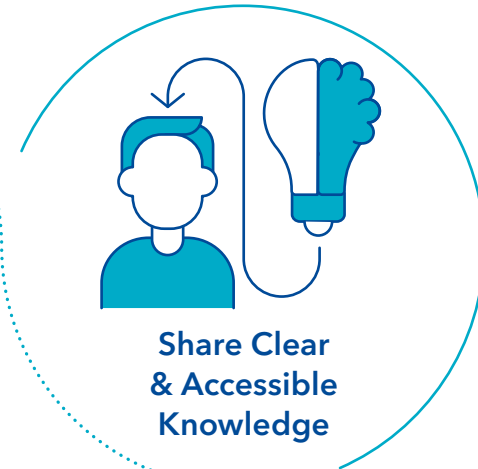
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OUR VISION, MISSION & PURPOSE

VISION FOR MARINE SHIPPING IN CANADA



MISSION



PURPOSE

Clear Seas is a Canadian not-for-profit organization that provides independent fact-based information to enable governments, industry, and the public to make informed decisions on marine shipping issues. We work to build awareness and trust so that all people can feel a part of the marine sector. Our vision is a sustainable marine shipping sector that is safe, vibrant, and inclusive, both now and for future generations.

BY THE NUMBERS FY2023

RECONCILIATION & INDIGENOUS KNOWLEDGE

9

Indigenous interns working with 7 First Nations in 3 provinces

11

staff completed OCAP® training



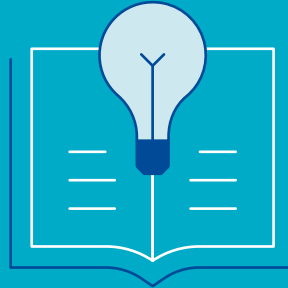
11

Indigenous candidates participated in the Career Pivot Program employed with 8 maritime companies

3rd

spotlight in our annual series on reconciliation in the maritime industry

RESEARCH

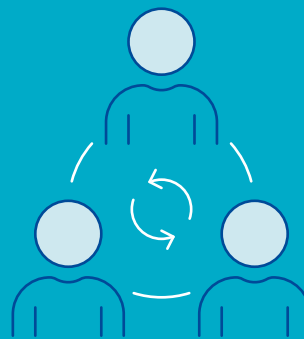


6

research projects completed

8

research reports published



4

partnerships with academic institutions across Canada

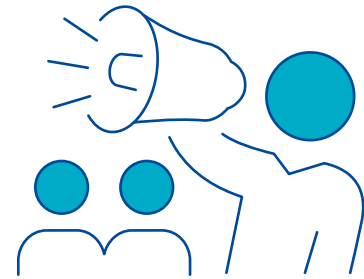
1,805

research report downloads

COMMUNICATIONS & EXTERNAL RELATIONS

4th

in our series of public opinion surveys in partnership with Angus Reid Institute to track attitudes toward marine shipping



12

presentations at conferences



500

participants engaged at Clear Seas events

14,136

followers on social media

135,000

website visits

161,465

views of 9 published articles

2.0 ENGAGEMENT

Clear Seas produces a wide range of research, decision-making tools, and information on sustainable marine shipping, relied on by people in Canada and internationally. One of the key objectives is to make sure that this research is freely available and accessible to as wide an audience as possible in English and French. The interactive, easily navigable website acts as the publishing hub. Publications are further promoted through social media campaigns and quarterly newsletters. This section of the report describes how the performance of these channels creates a measure of Clear Seas' public impact.

2.1 WEBSITE PERFORMANCE

Over the years, Clear Seas' website has become a trusted online reference for a cross-section of Canadians – from interested members of the public, to Indigenous groups and communities, policy makers, industry stakeholders and academics – to easily access neutral and comprehensive information on important marine shipping issues. Furthermore, the website has an effective search engine optimization capability which means that Clear Seas webpages are often the most highly returned page in any given web search.

WEBSITE AUDIENCE

Website visits are an excellent measure of Clear Seas' research and communications relevance and FY2023 saw continued growth in the number of users of the website. Website traffic, as shown in Figure 1, increased compared to the previous year, with more than 135,000 users visiting the site over the course of a single year. Just over 68% of users live within Canada, while the remaining 32% of users were international. The cumulative number of pages viewed (i.e., pageviews) by website users since 2017 reached nearly 1.5 million at the end of March 2023.



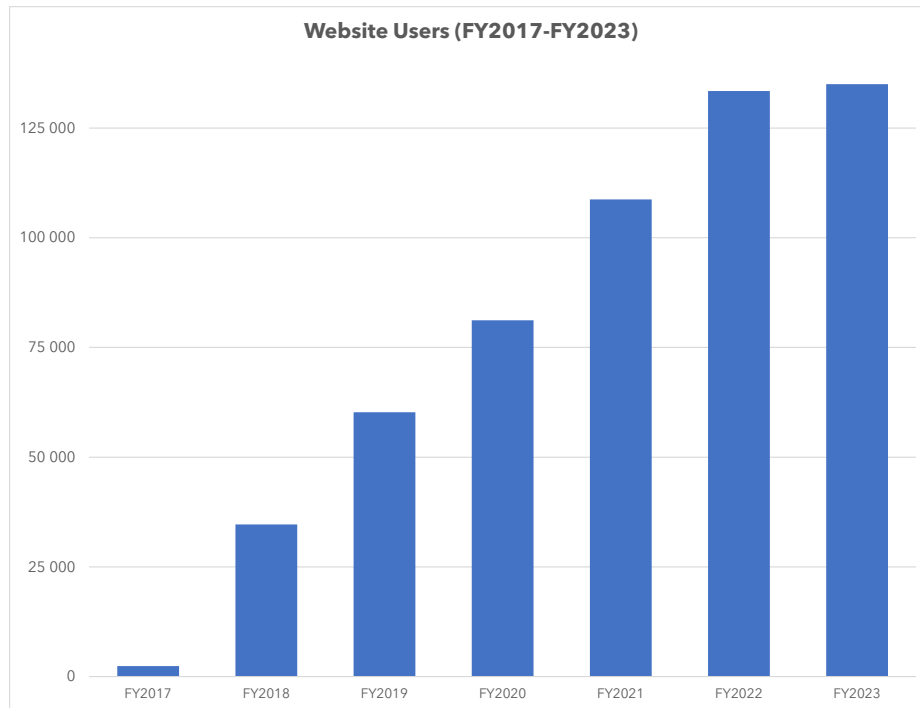


Figure 1: Year-over-year growth of website traffic (in number of users)

Clear Seas' national reach is evidenced by the distribution of the more than 387,000 website users within Canada between fiscal years 2017-2023, as shown in Figure 2. Provinces with a maritime focus like Quebec, Atlantic Canada, and British Columbia have the strongest interest as a percentage of the population of those provinces.

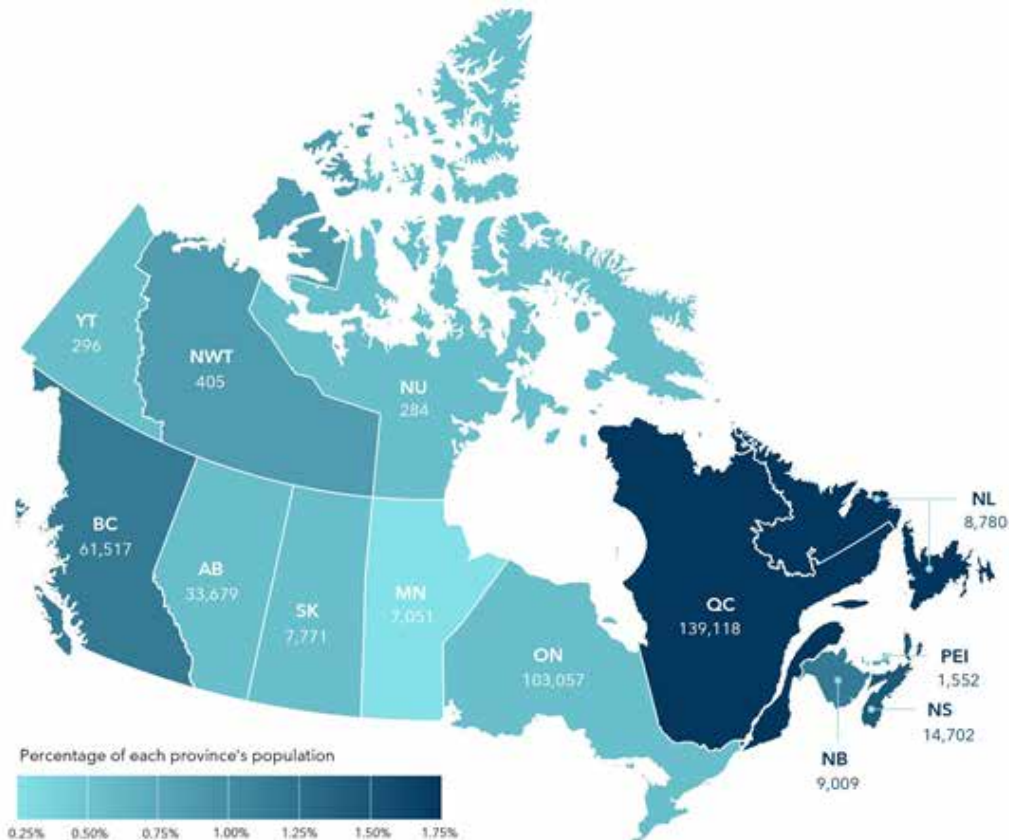


Figure 2: Geographic distribution of web users, cumulative from fiscal years 2017-2023.

The two charts in Figure 3 illustrate the diversity of the self-identified age and first language of the users of Clear Seas’ website. All age ranges are well represented in the audience and while English remains the most common language among users, French-speaking users are growing and currently represent more than a quarter of Clear Seas’ website traffic, which exceeds the percentage of the Canadian population that speaks French.

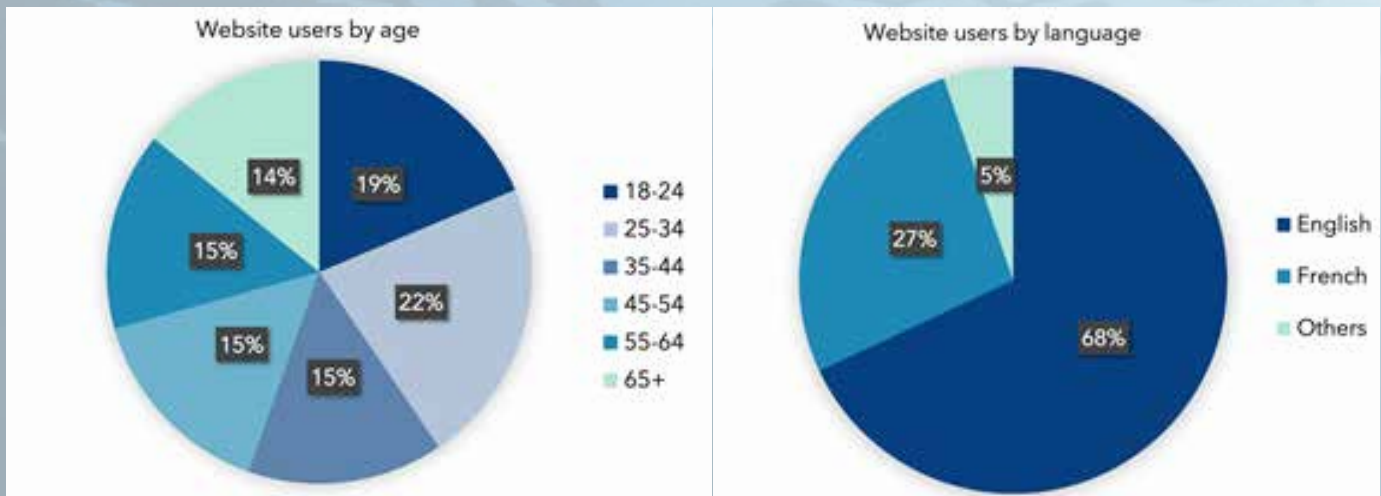


Figure 3: Website user distribution by age and language

During FY2023, website traffic was driven in large part by the introduction of relevant new content as evidenced by the website’s high search engine rankings and significant proportion of traffic generated by direct search activity.

WEBSITE CONTENT

Clear Seas now has a total of nine Key Issues web pages and 24 research reports. Clear Seas also provides a range of infographics to facilitate understanding of complex, multifaceted marine shipping concepts. Five infographics on marine governance were added to Clear Seas’ library this year.

While research reports and Key Issues web pages have a longer planning and production horizon, articles are a regular feature that allow Clear Seas to cover and respond to current issues. These comprehensive pieces – accompanied by visuals and infographics – address topical issues of interest to Clear Seas’ audience. The nine articles published over the past year, together with those that were released in previous years, generated significant interest among Clear Seas’ audience and were viewed more than 270,056 times, accounting for almost 49% of all the pageviews recorded in FY2023.

The topics explored and explained over the year included:

- Exhaust Gas Cleaning Systems (Scrubbers) on Ships: Clearing the Air on the Controversy
- Anti-Fouling Paints: What are They and What Effects do They Have on the Environment
- Key Issues and Resources for COP 15: The Convention of the Parties on Biological Diversity
- Reconciliation in the Canadian Marine Shipping Industry (Part III): A Love Affair with the Sea
- Emergency Towing Vessels: Providing a Lifeline to Safety for Ships in Distress Around the World

- Marine Shipping in the Great Lakes: What You Need to Know
- IMPAC5: Spotlight on Conservation and Marine Protected Areas
- Climate Change and Energy Transition in the Marine Transportation Industry: A Look at the St. Lawrence River Region
- Disaster Avoided: Oil Removed from 1960s Shipwreck, but Threat From Other Historical Wrecks Persists

2.2 SOCIAL MEDIA

Social media provides opportunities to engage directly and build relationships with the public, stakeholders, policy makers and influencers including members of the news media. Clear Seas maintains a highly responsive and interactive presence on Twitter, Facebook, and LinkedIn. These channels broaden its reach with the public and encourage them to learn more about relevant topics through both organic followership and advertising campaigns. Modest investments in advertising programs on these channels fulfill the goal of expanding the audience and drawing people to Clear Seas’ website.

Clear Seas’ social media approach prioritizes engaging with and informing its audience, rather than simply growing a large, but not necessarily committed, following. Figure 4 shows the growth of Clear Seas’ social media following across Facebook, LinkedIn, and Twitter for FY2023. The most significant growth in the number of followers occurred on LinkedIn, where the number of followers increased by 6.8%, reaching 2,070 at the end of the fiscal year. This year, the relevance and frequency of the content published on social media combined with “invitations to follow” sent daily to people who liked a Clear Seas post continues to contribute to the consistent growth of Clear Seas’ social media audience.

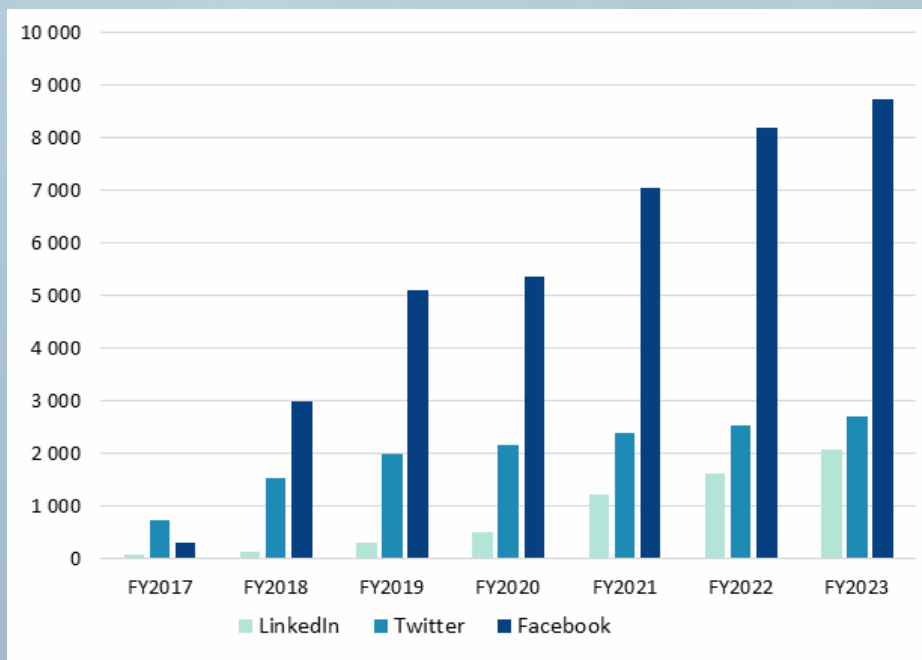


Figure 4: Year-over-year growth of social media audience (in number of followers)

The audience on social media continued to engage and interact with the content Clear Seas shared on Facebook, Twitter, and LinkedIn, which generated approximately 301,044 clicks, 36,336 reactions and 3,594 shares. The number of comments received, 4,620, represented a 8.32% increase from the numbers recorded during the last fiscal year.

2.3 E-NEWSLETTER

During FY2023, Clear Seas grew its e-newsletter mailing list by 13.8%, acquiring 303 new subscribers. The e-newsletter, which features a digest of new research, news, and articles, is distributed to close to 2,500 individuals across Canada and abroad, in both English and French.

Its average open-rate of 36% over the year is above the industry standard of 34% for subscription-based e-newsletters. At 19%, the average click-rate of Clear Seas' emails received was well above the industry open-rate of 1.3%, indicating the strong interest that subscribers have in Clear Seas' content.

These improvements were also due to changes that ensured emails were designated as a 'trusted source' and avoided anti-spam filters.

2.4 MEDIA COVERAGE

A robust media relations campaign is a central part of Clear Seas' engagement strategy. As reported by the Canadian Ocean Literacy Coalition, the majority of Canadians receive ocean-related information through traditional media sources like radio and newspapers. Earned media allows Clear Seas to showcase its research and build credibility with a public audience.

Coverage also builds awareness with other media and since most of this news is published on-line, it enhances search engine optimization on platforms like Google and Bing to ensure that Clear Seas' reports are the top search results.

Throughout 2022 and early 2023, we secured media coverage for our Clear Seas' various initiatives and research reports. The British newspaper The Guardian interviewed Paul Blomerus, Executive Director of Clear Seas, on the topic of black carbon. With a circulation of more than 115,000 readers and many more online, this type of coverage increases the reach with a global audience.



Clear Seas Study Assesses Shipping Risks in Canadian Waters

AUTHORED BY

Clear Seas Centre for Responsible Marine Shipping

Those who don't understand the past are often doomed to repeat it. While that saying is most often echoed by political leaders and philosophers, it could apply equally well to the risks associated with marine shipping.

Looking at the past to secure a safer operating environment of the future was the key to Clear Seas' latest study to help build a safer marine shipping environment, which was built on two earlier studies – the first in partnership with the Canadian Council of Academies on Commercial Marine Shipping Accidents, Understanding the Risks in Canada (2011) and the 2011 Maritime Commercial Incidents and Accidents (MCAI) project.

These earlier undertakings revealed a gap that didn't account for the volume of ship traffic and how it impacts the frequency of occurrences. The number of events needs to be given context by considering the volume of shipping to gain a balanced picture of risk from individual vessel types. Our latest report, *Assessing Shipping Risks in Canada (ASRC)* fills that gap by creating statistics on historical occurrence rates for the different regions in Canada based on the volume of traffic.

Clear Seas Dashboard Looks at Marine Incidents

An online dashboard developed by the Clear Seas Centre for Responsible Marine Shipping (Clear Seas) provides a comprehensive, first-of-its-kind publicly available picture of marine shipping incidents and accidents in and around Canadian waters. It creates the dashboard, Clear Seas accessed more than 340,000 reports of vessels involved in marine events, which were filtered to create a spatial dataset of cargo ships, tugboats, motor ships and ferries involved in occurrences involving commercial shipping, or fishing and government vessels as well as pleasure craft are not included. The dashboard and the project's summary report are available here:

This new study covers a four-year span from January 2015 and ending December 2018, offering the most comprehensive view of the marine occurrence and vessel traffic datasets. Marine occurrences are reported here, so four years of data reduced inaccuracies produced one-to-year variations in calculating the occurrence rates. The study looked at vessel traffic and marine occurrences involving only commercial shipping vessels, ferries, and motor

ships. The types of commercial shipping vessels include various types of solid and liquid cargo ships and tugs. Fishing vessels (both commercial and non-commercial), government vessels, pleasure craft, and other types of vessels are not included.

Ferries and motor ships were included as a reference point for ship types that the wider public may find more accessible. Incidents involving small passenger vessels, like harbour passenger ferries, tour boats and non-scheduled cruise ships, are excluded. For this project, people-related incidents and accidents, such as injury, loss of life, or instances where a person has gone overboard a vessel, are out of scope, since this work is not intended to analyze passenger and crew safety.

After applying the same study area as the MCAI project, summarized vessel traffic data was obtained from Transport Canada in a spatial grid format, which was overlaid onto the study area. Traffic information was gathered for all the 50 km by 50 km grid cells that were partially or fully encompassed within the study area (Figure 1).



Figure 1. Shaded traffic-statistics overlaid from a 50 km by 50 km grid within the project's study area boundary (7° 45' North to 47° 15' North and 110° 00' West to 60° 00' West).

Un Estudio de Clear Seas Evalúa los Riesgos de Transporte Marítimo en Aguas Canadienses

ESCRITO POR

Centro Clear Seas para El Transporte Marítimo Responsable

Aquellos que no entienden el pasado a menudo están condenados a repetirlo. Si bien los filósofos políticos y los filósofos se hacen eco de ese dicho con mayor frecuencia, podría aplicarse igualmente a los riesgos asociados con el transporte marítimo.

Mirar el pasado para asegurar un entorno operativo más seguro en el futuro fue la clave del último estudio de Clear Seas para ayudar a construir un entorno de transporte marítimo más seguro, que se basó en dos estudios anteriores, el primero en el desarrollo que el Consejo Canadiense de Académicos sobre Accidentes de Transporte Marítimo Comercial, *Comprender los Riesgos en Canadá* (2011) y el proyecto de accidentes e incidentes comerciales marítimos (MCAI) de 2011 (Maritime Commercial Incidents and Accidents (MCAI)).

Estos estudios anteriores revelaron una brecha que no tuvo en cuenta el volumen del tráfico de barcos y cómo afecta la frecuencia de los accidentes. La cantidad de eventos debe contextualizarse considerando el volumen de envío para obtener una imagen equilibrada del riesgo de los tipos de embarcaciones involucradas. Nuestro último informe, *Evaluación de los Riesgos de Envío en Canadá (ASRC)* (Assessing Shipping Risks in Canada, ASRC) llena ese vacío al crear estadísticas sobre los datos históricos de ocurrencias para las diferentes

Clear Seas Dashboard analiza los incidentes marítimos

Un tablero en línea desarrollado por el Centro Clear Seas para el Transporte Marítimo Responsable (Clear Seas) proporciona una imagen integral, primera en su tipo, disponible públicamente, de los incidentes y accidentes del transporte marítimo en y alrededor de las aguas canadienses. Para crear el tablero, Clear Seas accedió a más de 340,000 informes de embarcaciones involucradas en eventos marítimos, que se filtraron para crear un conjunto de datos espaciales de barcos de carga, remolcadores, buques y transbordadores involucrados en incidentes durante un período del 25 años (enero del 2015 hasta diciembre del 2018). El tablero se basa en eventos relacionados con el envío comercial, por lo que no se incluyen los buques pesqueros y gubernamentales, así como las embarcaciones de recreo. El tablero y el informe de resumen del proyecto están disponibles aquí:

regiones de Canadá en función del volumen de tráfico. Este nuevo estudio cubre un lapso de cuatro años desde enero de 2015 hasta diciembre de 2018, y ofrece la superposición más larga entre los conjuntos de datos de ocurrencias marítimas y tráfico de embarcaciones. Los sucesos marítimos son reportados aquí, por lo que cuatro años de datos redujeron las inexactitudes producidas por las variaciones de un año a otro en el cálculo de los tasas de ocurrencias.

El estudio analizó el tráfico de embarcaciones y los sucesos marítimos que involucran únicamente embarcaciones de transporte comercial, transbordadores y cruceros. Los tipos de buques de transporte comercial incluyen varios tipos de buques y remolcadores de carga sólida y líquida. No se incluyen las embarcaciones pesqueras (tanto comerciales como no comerciales), las embarcaciones gubernamentales, las embarcaciones de recreo y otros tipos de embarcaciones.

Los transbordadores y los cruceros se incluyeron como puntos de referencia para los tipos de barcos que el público en general puede encontrar más accesibles. Se excluyeron los pasajeros que involucran a pequeñas embarcaciones de pasajeros, como transbordadores de pasajeros portuarios, barcos turísticos y cruceros que no se reportan por otro medio. Para este proyecto, los incidentes y accidentes relacionados con los pasajeros, como lesiones, pérdida de la vida o casos en los que una persona se ha caído por la borda de una embarcación, están fuera del alcance, ya que este trabajo se pretende analizar la seguridad de los pasajeros y la tripulación.

Después de aplicar la misma área de estudio que el proyecto MCAI, se obtuvo información de tráfico de embarcaciones resumidas de Transport Canada en un formato de cuadrícula espacial, que se superpuso en el área de estudio. Se recopiló información de tráfico para todos los celdas de cuadrícula de 50 km por 50 km que estaban parcial o totalmente abarcadas dentro del área de estudio (Figura 1).

EL ÁREA DE ESTUDIO CUBRE CINCO REGIONES CLAVE

Para comprender los datos de ocurrencias de diferentes áreas alrededor de Canadá, el área de estudio se dividió en cinco

Clear Seas also secured coverage in niche maritime publications like Soundings, the influential American Salvage Association publication, which ran a summary prepared by Clear Seas of our study assessing shipping risks in Canadian waters.

Other media covered the Angus Reid survey of how Canadians view marine shipping and Clear Seas' study on demystifying marine governance as well as the Indigenous Internship Program.

2.5 GROWING RELEVANCE IN QUEBEC

Building on outreach efforts initiated in FY2021 and FY2022 with Quebec ports, maritime associations and councils, research networks, and government departments, Clear Seas continued to build relationships with local stakeholders to develop and strengthen its strategy for a Quebec-based satellite office and future research of relevance to Quebec stakeholders.

Clear Seas continued conversations with academic and industry groups, including Réseau Québec maritime (RQM), Armateurs du Saint-Laurent (ASL) and Société de développement économique du Saint-Laurent (SODES), to understand issues, concerns, and priorities for research and communication efforts for Clear Seas to undertake. Following these conversations, a joint call for proposals for research leveraging Quebec's academic network, as well as a Quebec-focused Indigenous employment program, are being considered and assessed by local stakeholders. Discussions continue to be open and ongoing.

2.6 CONTRIBUTING TO THE DIALOGUE ON SAFE AND SUSTAINABLE MARINE SHIPPING

The organization continues to be recognized for its impartiality and relevant publications and is invited to contribute to important public policy issues and leading conferences attended by industry experts. During FY2023, Clear Seas hosted, presented at, or participated in 37 marine industry events and conferences. Attendance at major conferences and meetings permits the team to share findings and engage with industry leaders and decision makers, supporting the evidence-based formulation of important public policy initiatives.

Notable events hosted by the Clear Seas team include launch webinars for its research projects on Climate Change Vulnerability of the Canadian Maritime Environment in June 2022 and Demystifying Maritime Governance in February 2023. Clear Seas also collaborated with the Ocean Frontier Institute in Halifax, NS, to host a pioneering cross-sectoral two-day workshop on Using Area-Based Management to Reduce Marine Shipping Risks in Canada, attended by over 80 people in person and 90 online. Collectively, the events hosted by Clear Seas brought together nearly 500 participants from across Canada and internationally.

In other outreach to the maritime community, the team also presented Clear Seas' research at 10 events, 7 of which were in person, including GreenTech 2022, Clean Pacific, the Shipping Federation's Mariners' Workshop, Greenship 2022 Decarbonization Conference, national and regional Canadian Marine Advisory Council gatherings, the Oceans Protection Plan Dialogue Forum, and three separate presentations at the Fifth International Marine Protected Areas Congress (IMPAC5) as well as convening a Coastal Marine Strategy Indigenous Youth and Young Professionals Summit in collaboration with the Province of British Columbia.

Clear Seas' expertise is sought by the public, the media, and government through various channels. In FY2023, Clear Seas provided closing reflections at the Oceans Protection Plan Pacific Dialogue Forum, joined the Joint Planning Committee for the Salish Sea Strategy, served on the Advisory Board and Working Groups for the Vancouver Maritime Centre for Climate, participated in Canada's Ocean Supercluster strategy conversations, led a workshop on information accessibility at the Mariners' Workshop, and engaged in a three-part workshop to imagine the future of the Port of Vancouver and the Pacific Gateway.

This type of participation puts the organization in contact with public policy leaders and connects tangible, trusted research to a real-world setting.

2.7 ADVANCING A SHIPPING RISK COMMUNITY OF PRACTICE

The Canadian Marine Shipping Risk Forum (CMSRF) was co-founded by Clear Seas and the Marine Environmental Observation, Prediction & Response (MEOPAR) Network with support from exactEarth in 2019. This Community of Practice (COP) was convened in response to a growing need for a shared approach to and understanding of shipping risk management in Canada. It is open to people and organizations working in or conducting research on shipping risk. It provides those interested with a platform to network and share knowledge around shipping risk.

Risks from, and to, marine shipping are inherently interdisciplinary in nature, with interest held in diverse fields, including waterway traffic management, remote sensing, environmental science, geospatial modelling, transportation regulation, and risk analysis and management. The natural tendency of research within disciplines is generally more inward-looking, which tends to concentrate globally valuable information within single fields of study or organizations. The CMSRF is one mechanism to help lower inter-discipline barriers to marine shipping analysis.

The COPs activities revolve around three primary areas of interest: shipping movement data, shipping traffic modelling, and shipping risk quantification and assessment. Shipping risk topics range from assessment of risks within a given operating region, to examination of the impacts of shipping traffic on diverse receptors (e.g., environment, species at risk, human health), and applications concerning vessel safety.

During FY2023, the CMSRF hosted six virtual events attended by diverse participants from academia, government, industry, non-profit organizations, and Indigenous communities. Four webinars focused on the role of Automatic Identification System (AIS) data in mitigating shipping risk, exploring what it is and how it is used in research, to support communities, and navigate challenging environments (the Arctic). The continued development of the CMSRF shipping risk inventory project was the subject of an interactive workshop to demonstrate the prototype database web interface in December 2022, and the Salish Sea Transboundary Working Group had an October 2022 event with a presentation from the Washington Department of Ecology about transboundary oil spill response with the case example of the recovery of a sunken fishing vessel in the San Juan Islands. The year wrapped up with a webinar featuring the Ship-source Oil Pollution Fund, continuing the conversation on transboundary oil spills, focused on liability and compensation. An average of 60 people attended each webinar, with more registering to receive the recordings.

3.0 ADVANCING INDIGENOUS PROGRAMS

Clear Seas acknowledges and values the important role that Indigenous People have had as mariners and stewards of the coastal and marine environment since time immemorial. Following its commitment to adopt the UN Declaration on the Rights of Indigenous Peoples, Clear Seas has made significant strides forward with its Indigenous Coastal Communities (ICC) strategy, supported by two permanent and one part-time staff to manage this important portfolio. This investment in the ICC strategy has substantially advanced Clear Seas' relationships with Indigenous communities across Canada.

3.1 INDIGENOUS INTERNSHIP PROGRAM

Following the establishment and launch of the Indigenous Internship Program in FY2022, Clear Seas partnered with the British Columbia Institute of Technology to expand the program in FY2023. With continued financial support from industry donors matched by funding from Mitacs, Clear Seas established new partnerships with Indigenous Peoples and communities across Canada for more inclusive research in the marine sector. Interns conducted research on maritime topics of concern to Indigenous communities that relate to safety and sustainability of marine shipping from an Indigenous perspective. Whether it is understanding and conserving marine life, applying a medicine wheel approach to the well-being of communities affected by marine shipping, or mitigating the effects of invasive species on traditional food sources, this program is providing Indigenous students with a unique opportunity for learning, with mentorship in many capacities. The second year of the program saw a total of nine interns undertaking research with seven First Nations communities in British Columbia, Manitoba, and Ontario. Three of the students were continuing in the program by undertaking second internships to further work on their research.

Beyond their individual research projects, the Internship students benefitted from additional learning opportunities including participation at the 5th International Marine Protected Areas Congress. Two of the interns were able to present their work and several others participated in conference sessions and networking.

3.2 INDIGENOUS CAREER PIVOT PROGRAM

For mid-career Indigenous people, Clear Seas' ICC team worked with Canada's Ocean Supercluster to develop and launch a wide-reaching Indigenous training and employment program facilitating meaningful work placements in ocean-based industries. The Indigenous Career Pivot Program launched in FY2023 and began mobilizing a network of 460+ maritime organizations and companies, from coast to coast to coast, to support Indigenous employment in this key sector of the Canadian economy.

In this program, Indigenous participants embarked on a 12-month placement support program focused on creating full-time positions. Through their placements, the candidates acquired experience in maritime-related industries, built new competencies, and strengthened existing knowledge by mobilizing their skill sets and natural aptitudes.

The program offers competitive compensation packages as well as a range of professional development opportunities to the Indigenous workforce, including:

- Full orientation and on-boarding process
- A work-integrated learning plan
- Online and in-person training and development courses
- Career building conferences and workshops
- Mentoring support provided by Canada's Ocean Supercluster and the hiring organization
- Intercultural Competency Training
- A peer support network

Both Indigenous Peoples looking for a career in ocean-related industries and Ocean Supercluster member organizations looking to hire Indigenous talent enrolled in the program.

A total of 11 participants on the Pacific and Atlantic coasts received support through the program, either in the form of training and skills development, or wage subsidies for employers in need of financial support to hire Indigenous candidates. Employers were also assessed for cultural safety and received training where needed. The employers included BC Ferries, SAAM Towing, Seaspan, Pices RPM, SmartICE, Mercury Transport, Miawpukek, and Indigrow.

4.0 RELEVANT AND TIMELY RESEARCH

Clear Seas' mission is to be the leading source of credible, fact-based information and to bring clarity to decision-making for safe and sustainable marine shipping in Canada. It uses its in-house capabilities and works with a network of academic and industry experts across Canada to conduct its research. As part of achieving this goal, the organization published seven new research reports and continued to work on a range of other research studies during the fiscal year. These studies contributed to a greater understanding of marine shipping issues in Canada, and were the focus of academic analysis, utilized by stakeholders from government, consulted by First Nations and referenced by others across the marine shipping community.

4.1 RESEARCH IMPACT

While the objective measures of users and followers demonstrate Clear Seas' impact with the wider public, its research has also been adopted and used by government, Indigenous People, public policy leaders and industry influencers to make decisions about marine shipping. Over the past year, Clear Seas' work has made news around issues from what Canadians think about marine shipping, assessing pollutants in scrubber discharges from ships to the climate change vulnerability of the Canadian maritime environment. The Executive Director and research team have hosted webinars and have been invited to conferences to share this work.



Clear Seas' research has real-world applications and contributes to public policy decisions. During FY2023, Clear Seas' work and research continued to foster informed dialogue on marine shipping risks and safety from coast to coast to coast as well as in transboundary waters.

marine shipping risk with an analysis of maritime incident and accident frequency presented at the national Canadian Marine Advisory Council meeting in spring 2022, clarifying the environmental impact of operational ship-source waste with a new Key Issues page launched, decarbonizing the maritime industry with alternative fuel options with research published in a widely shared article, and supporting Inuit rights and marine use in the Canadian Arctic region with a quadrilingual story map that supported communities' and governments' access to information.

In late 2021, the Canadian Coast Guard (CCG) approached Clear Seas for support in understanding the implications of climate change on its operations, vessels, and other infrastructure. Clear Seas launched a project with the support of Dillon Consulting to provide clear, accessible information to support the development of the CCG's climate change adaptation strategy. The research findings had broad relevance and were made available to the public and formed part of the dialogue on Canada's National Adaptation Strategy.



4.2 RESEARCH PUBLICATIONS

The research projects and related materials published during FY2023 accounted for more than 127,666 pageviews and over 1,805 downloads from the website since their release:

ASSESSING POLLUTANTS IN SCRUBBER DISCHARGE WATER: INFORMING THE REGULATION OF SHIPS' EXHAUST GAS CLEANING SYSTEMS



Clear Seas completed an investigation on the environmental impact from Exhaust Gas Cleaning Systems (scrubbers). Final peer review was completed and the report was published in August 2022. The report compares the effluent produced by scrubbers on commercial ships to Canadian water quality standards to assist in policy decision making. The results of this project provide additional evidence-based information and insight to the debate about the use of or restrictions on scrubbers. A research article was also released to raise awareness on the controversy surrounding scrubbers as a means to reduce air pollution from ships and the concerns around resulting trade-offs to water quality.

INVESTIGATING LIQUEFIED NATURAL GAS (LNG) AS A MARINE FUEL FOR CANADA'S ARCTIC



The results of the Arctic LNG project were published to Clear Seas' website in September 2022. This project, completed in collaboration with the Canadian Natural Gas Vehicle Alliance and VARD Marine, with support from Transport Canada's Innovation Centre, sought to assess the feasibility, benefits, and risks of the use of natural gas in the Canadian Arctic. This work has implications for shipping decarbonization, climate change and other environmental impacts from shipping in the Arctic, the shipment of natural gas resources, and the use of local supplies of natural gas in the Arctic.

DEMYSTIFYING MARITIME GOVERNANCE: ANALYSIS OF THE FRAMEWORK AND EMERGING ISSUES FOR THE GOVERNANCE OF SHIPPING IN CANADA



Results from Demystifying Maritime Governance, a multi-year project in collaboration with Dalhousie University and Memorial University were released in FY2023. The final report, a multi-part Primer on the Governance of Shipping with a Focus on Canada, was published in November 2022, and in February 2023 Clear Seas hosted a panel discussion on topical issues related to shipping governance with members of the research team. The results are intended to add clarity around the complexities of the governance of shipping and to inform decision makers, rights holders, and stakeholders tasked with shipping issues.

2022 PUBLIC OPINION POLL: CANADIANS' ATTITUDES TOWARDS MARINE SHIPPING



Clear Seas published the fourth edition of its biennial national public opinion poll on attitudes towards marine shipping, conducted in partnership with the Angus Reid Institute. The study's most notable results included that a majority of Canadians think that reducing greenhouse gas emissions from the marine industry is as or more important than other industries, and that despite the overall rise in the cost of living, nearly two-thirds (62%) of Canadians say they would pay more for goods from overseas to reduce or offset emissions. The Shipping Confidence Index was measured for a second time to highlight how the different viewpoints towards shipping evolved in recent years.

4.3 RESEARCH IN PROGRESS

Clear Seas continued working on other research projects around shipping impacts to communities, mitigating shipping impacts to the environment, decarbonization and pollution that will contribute to the discussion on these important topics in the coming decade, including:

MAPPING MARINE TRAFFIC: PROVIDING CANADA'S COASTAL COMMUNITIES WITH TOOLS TO UNDERSTAND SHIPPING AND ITS RISKS



Clear Seas formally launched its Mapping Marine Traffic project in September 2022. The project brings together different open-source geospatial data and models, in-house data, data visualization strategies, various open-source and private software, and Clear Seas technical and financial support to democratize access to data and information about marine shipping and its associated risks. In FY2023, Clear Seas worked to engage a range of rights holders and stakeholders to inform the development of new models and ensure the accessibility of the project, compiled open-source data in a geodatabase to provide context along the coastline, and invested in recent AIS data covering BC's coastal waters as a foundation for future analysis.

PATHWAYS TO ZERO IMPACT SHIPPING



In collaboration with the National Research Council of Canada (NRC) and the University of British Columbia (UBC), Clear Seas is undertaking a project to develop a decision support assessment framework tool to evaluate and prioritize technological solutions to help the overall environmental impacts of marine shipping. This multi-year project was launched in July 2022. Activities during the first year of the project included forming the research team, a project Steering Committee and completion of a literature review and stakeholder interviews to inform development of a decision framework tool.

SMART ADAPTIVE SOLUTIONS TO UNDERWATER NOISE FROM SHIPS



Conducted in collaboration with the University of British Columbia (UBC) and funded by Transport Canada's Quiet Vessel Initiative and Mitacs' Accelerate Program, Clear Seas is undertaking a project to develop innovative solutions to ship-source underwater noise to help make the ocean soundscape less stressful to marine mammals. Launched in May 2022, the first year this multi-year project brings together an interdisciplinary research team from UBC's Naval Architecture and Marine Engineering program and the UBC Marine Mammal Research Unit. Initial work towards developing a noise prediction toolkit and to understand marine mammal response were completed in FY2023.

DECARBONIZING MARINE SHIPPING: AIR QUALITY CO-BENEFITS FOR COASTAL COMMUNITIES



Conducted in collaboration with a research team at the University of British Columbia, and supported by MEOPAR, this project addresses the decarbonization of marine shipping by developing an integrated modelling framework that links policy scenario analysis, emissions and air quality modelling, and health impact analysis. The design, deployment, and data collection of the first phase of the study, which consists of an expert elicitation of future decarbonization pathways for the marine shipping industry, have been completed. Data analysis and manuscript drafting are expected to be complete in 2023.



4.4 RESEARCH IN DEVELOPMENT

To create an informed, balanced, and relevant research program, Clear Seas engages in ongoing horizon-scanning and conversations with stakeholders to understand the issues and identify knowledge gaps that Clear Seas is well positioned to address. The intelligence gathered through these efforts is reviewed with Clear Seas' Research Advisory Committee to develop a portfolio of topics that, once approved by the Board of Directors, forms the basis of the research programme for subsequent years' research projects.

The topics with a high degree of relevance include:

- Maritime Industry Progress on UN Sustainable Development Goals
- Green Shipping Corridors: Calculating the GHG Emissions Footprint of Canadian Marine Trade
- Understanding Factors Affecting Small Tug Safety
- Impacts of Technology on Safe, Efficient Ship Pilotage
- Ship Technology Prioritization: Understanding how decisions are made when selecting environmental impact-reduction technologies on ships
- Potentially Polluting Historical Wrecks - Mapping Wrecks in Canadian Waters by Risk of Oil Spill
- Analyzing the Role of Port State Control Inspections in Marine Safety

Other topics for further investigation include:

- Understanding Shipping Risk in Canada, including:
 - Update and Expand Vessel Drift & Response Analysis
 - Update and Expand Vessels of Opportunity
- Changes in Risk for Shipping Hazardous and Noxious Substances
- Selecting Alternative Marine Fuels for Decarbonization
- Demonstrating the Benefits of an Integrated and Data-informed Supply Chain
- Ballast Water Management System Effectiveness



5.0 FINANCIAL HEALTH, GOVERNANCE AND PEOPLE

5.1 BUILDING A SUSTAINABLE FUNDING BASE

Funding in FY2023 was secured from the Vancouver Fraser Port Authority, the Canadian Coast Guard, Transport Canada, and the National Research Council of Canada. Donations from industry contributors provided additional support for the Indigenous Internship Program.

Clear Seas continues its transition to a hybrid funding model with industry contributions through port authorities expected to make up approximately half of the annual operating budget with the remainder provided by a combination of federal and provincial government funding.

5.2 MANAGING ANNUAL BUDGET EXPENDITURES

The organization exercised sound management of its resources during FY2023. As per the audited financial statements, Clear Seas had current assets in the amount of \$2.2 million at March 31, 2023. Expenditures in FY2023 were approximately \$2.3 million. At this level of expenditure and current committed funding arrangements, the cashflow forecast, considering current assets and liabilities (severance and rental), indicates that the organization is in a healthy position for the next two fiscal years.

5.3 MAINTAINING CAPABLE LEADERSHIP AND GOVERNANCE

The Board of Directors continued to conduct quarterly meetings with Chair Murray Coolican and Vice-Chair Kim Baird. The board is currently composed of nine directors. We welcomed two new members to our board in FY2023. They are Richard Sparrow and Peter Xotta. Richard is a member and Councillor of *xwməθkwəyəm* (Musqueam Indian Band), is active in the field of First Nations conservation and restoration management and policy. Peter is Vice-President, Operations and Supply Chain, at the Vancouver Fraser Port Authority. Past-Chair Bud Streeter, as well as board members John Hepburn, Kate Moran, and Duncan Wilson, who have been part of the Clear Seas Board since its founding, retired.

Clear Seas' research program is developed with the support of an independent committee of experts in diverse fields located across North America who provide advice on the relevance, timeliness, and effectiveness of proposed research topics. With four new advisors joining the Research Advisory Committee in 2023, we have eight advisors. Clear Seas was pleased to welcome to Donald Bouchard, Marine Activities Coordinator with Council of the Innu First Nation of Essipit, Alain Brophy, LLM, a lawyer in private practice, Capt. Christopher Hearn, MM, Director of the Centre for Marine Simulation at Memorial University's Marine Institute, and Debbie Murray, Senior Director, Policy and Regulatory Affairs, at the Association of Canadian Port Authorities.

5.4 COMMITMENT TO RECONCILIATION

Clear Seas has created and implemented a multifaceted approach to reconciliation, including incorporating the Truth and Reconciliation Commission's Calls to Action that urge all levels of government and non-governmental organizations to work together to repair the harm caused by residential schools and to advance reconciliation. Call to Action #92 specifically calls on corporate Canada to help create a better future, and Clear Seas has more than 80 initiatives completed, underway, or planned to contribute to:

- Building respectful, meaningful partnerships with Indigenous communities;
- Supporting equitable access to jobs, training, and education opportunities in the corporate sector;
- Providing education for management and staff on the history of Indigenous Peoples in Canada;
- Completing skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism.

Clear Seas continues to integrate the Truth and Reconciliation Commission's Calls to Action into its work in research and relationship building. For the third consecutive year, Clear Seas published an article to survey what the marine shipping industry is doing to improve relations and to work together with Indigenous communities. The article provided an important update of where the industry – from ports, ship builders and operators to educational and training bodies – is on the path towards reconciliation. This series, in combination with other Reconciliation efforts, continues to spark conversations with organizations around the need for the marine sector to invest more attention and resources in this area.

Other actions undertaken by Clear Seas during FY2023 to raise awareness about Indigenous history and perspectives and advance reconciliation include:

- Initiating a site-wide content review to decolonize the language used in Clear Seas' research and communications;
- Publishing and updating a Story Map on the topic of "Supporting Inuit Rights and Marine Use" in Inuinnaqtun, Inuktitut/ᐃᓄᓂᓄᓂᓄᓂ, French, and English;
- Reading and discussing numerous works as part of Clear Seas' Indigenous Book Club;
- Completing reading Honouring the Truth, Reconciling for the Future, the summary report of the Truth and Reconciliation Commission of Canada;
- Updating the organization's purchasing policy to provide special consideration for Indigenous-owned businesses;
- Formalizing a relationship with the First Nations Fisheries Council of BC through a signed partnership accord;
- Training and educating on reconciliation through The Fundamentals of OCAP® course with the First Nations Information Governance Centre completed by all staff;
- Welcoming more Indigenous People to Clear Seas' Research Advisory Committee and Board of Directors.

5.5 COMMITMENT TO EQUITY, DIVERSITY, AND INCLUSION

Clear Seas supports the 50-30 Challenge, an initiative among the Government of Canada, Canadian businesses, and diversity organizations. The goal of the program is to challenge Canadian organizations to increase the representation and inclusion of diverse groups within their workplaces, while highlighting the benefits of giving all Canadians a seat at the table.

Clear Seas has committed to achieving 50% gender representation and 30% representation of recognition deserving groups on its Board, Research Advisory Committee and senior management team and anticipates achieving those milestones by 2024.

6.0 CONCLUSION

Clear Seas continues to build trust and credibility through a voice that provides decision makers and leaders with quality materials required for informed decisions. True to its mandate, it is dedicated to continual improvement of the shipping industry, highlighting both areas for development and the progress being made. Its efforts also aim to improve public understanding of key issues and an evidence-based confidence in the marine shipping which is vital to the well-being and prosperity of Canadians.

BOARD OF DIRECTORS

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Former Senior Executive Vice President at Maritime Life and former Executive Director of the Canadian Arctic Resources Committee
Halifax, NS

Kim Baird, C.M. O.B.C., Vice-Chair

Owner, Kim Baird Strategic Consulting, Chancellor of Kwantlen Polytechnic University and former Chief, Tsawwassen First Nation
Tsawwassen, BC

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Professor, Dalhousie University, and Canada Research Chair in Maritime Law and Policy
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Ginny Flood

Former Vice President, Government Relations, Suncor Energy Inc.
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Julie Gelfand

Former Commissioner of the Environment for the Auditor General of Canada
Ottawa, ON

Serge Le Guellec, Corporate Secretary

Former President and General Manager, Transport Desgagnés Inc.
Quebec, QC

Richard Sparrow

Member and Councillor of xwməθkwəy̓əm | Musqueam Indian Band
Vancouver, BC

Jane Weldon, MBA

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Alain Brophy, LLM

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Gary Drouillard

Member of the Cowichan Tribes and First Crew Member for the Cowichan Tribes Salish Sea Watch
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