

Introduction

Clear Seas' mandate to initiate and interpret research, analyze policies, identify best practices, share information and facilitate dialogue is based on the premise that better information leads to better decisions.

Since its inception, guided by that mandate and premise, Clear Seas has steadily built its reputation by making judicious, timely and relevant research accessible, to the point where it is increasingly viewed as an essential source of credible information about marine shipping in Canada.

The public focus on the sustainability of shipping has been significant and discussions surrounding solutions to climate change and the protection of the marine and coastal environments promise to intensify and perpetuate those deliberations. The dialogue is often clouded by absence of evidence-based information and misunderstanding or misrepresentation of issues, to the extent that it often becomes polarized and combative. Clear Seas is nested in that discussion. With its mission to bring clarity and understanding to the discussion and to decision-making, the organization is poised to make a difference.

Key Impacts and Highlights

Over the 2019/2020 fiscal year, Clear Seas has continued to make a significant impact in monitoring and assessing sustainability issues related to marine shipping in Canada. Its emergence as a trusted, relevant and reliable source of evidence-based information is perhaps best exemplified by the continued strong growth in the number of users and their visits to its website. The cumulative number¹ of website pageviews at the end of March 2020 stood at over 330,000, representing an 88% growth from the cumulative total at the end of the last fiscal year. These pageviews came from over 174,000 users, a 82% increase. Significantly, during this period, the number of francophone users more than doubled to reach over 36,000.

¹ November 2016 is used as the baseline in this report as data from earlier records are assessed as less reliable. Google Analytics is the tool used to track and report website activity.

The past year has seen Clear Seas consolidate its influence and reputation as a respected and trusted source of information through participation at 28 events and conferences.² Clear Seas co-hosted its own workshop, the “State of the art in shipping risk and modelling” workshop in collaboration with MEOPAR and exactEarth. The workshop, held in Halifax in December following a preliminary webinar in October 2019, was the inaugural workshop for the Canadian Marine Shipping Risk Forum (CMSRF) Community of Practice, co-led by MEOPAR and Clear Seas. It was attended by participants from academia, government, ENGOs and industry. The workshop was opened by Andy Smith, Deputy Commissioner Shipbuilding and Strategy, Canadian Coast Guard, further evidence that Clear Seas continues to gain respect and trust among key stakeholders.

This year, Clear Seas once again gave evidence in support of Canadian legislators. At the invitation of the committee chair, the Clear Seas Executive Director appeared before the Standing Senate Committee on Transport and Communications examining Bill C-48 (Oil Tanker Moratorium Act).

Mobilizing Knowledge

Research Reports

Clear Seas published one research report during this fiscal year: Availability of Tugs of Opportunity in Canada’s Pacific Region, which characterizes both the potential capability and the availability of commercial tugs engaged in usual trade for use as Emergency Towing Vessels (ETVs) in Canada’s Pacific Region. The report was received with great interest and was downloaded 212 times since its publication in July 2019. The results of this study were also shared with a broad audience at the Salish Sea Shared Waters Forum in November 2019.

An additional six research studies are currently underway and are in varying stages of completion. They are planned to be published in 2020 and 2021. The first two are elements of the Marine Transportation Corridors (MTC) Initiative, a layered multi-year analysis launched in 2017 to describe the risks related to marine shipping activities and assist in marine spatial planning on Canada’s Pacific coast.

Sensitive Coastal Areas (Pacific) is a study contracted to Dillon Consulting Inc. Its objectives are to map the significance of coastal areas to determine areas that may be vulnerable to harm due

² A Complete list is included at Table 1.

to commercial shipping incidents, assist in marine spatial planning and routing for Canada's Pacific coast, and combine the sensitivity output with other results to support a detailed and nuanced understanding of marine shipping risks in the region. This study is now in the final review stage.

Vessel Traffic Analysis in Canada's Pacific Region was contracted to Nuka Research and Planning Group LLC. Its objectives are to assess Automatic Identification System (AIS) data from 2014 to 2016 in order to determine the travel patterns of commercial ships and identify the number and quantity of petroleum movements, both as cargo and fuel, in the region. The detailed analyses resulting from this study are nearing completion.

Environmental Impact of Exhaust Gas Cleaning Systems (Scrubbers) in Canadian Waters investigates the environmental impact, such as emissions, ocean acidification, eutrophication, heavy metals from scrubbers compared to compliant fuels in order to consider environmental impact on coastal ecosystems from open-loop scrubbers under different scenarios. The intention is to provide evidence-based information for decisions about scrubber use or restrictions. The initial analysis for this study was conducted by Serco Canada Marine.

Reducing Greenhouse Gases: Analysis of Lifecycle Emissions of Marine Fuels assesses the full lifecycle greenhouse gas (GHG) emissions associated with marine fuels, from extraction to combustion. Fuel types considered include marine diesel, biofuels, gas fuels, alcohol fuels, and synthetic fuels. The intention is to assess air pollutants, fuel properties and performance, safety, storage, and feasibility for use associated with each fuel type, in order to support considerations of alternative fuels in accordance with the IMO's commitment to reduce the industry's GHG emissions by 50% by 2050. The initial analysis for this study was conducted by Serco Canada Marine.

Commercial Shipping Issues in Canada's North is a project launched in collaboration with the Marine Environmental Observation, Prediction and Response Network (MEOPAR). The research is being led by Dr. Jackie Dawson of the University of Ottawa. The objectives of this study are to identify marine traffic trends, project future shipping traffic, identify and evaluate shipping risks, create hazard and sensitivity maps, identify best practices for ship operations and visitor experience in Marine Protected Areas, and provide recommendations for routing and ship management in Canada's Arctic region. This study is anticipated to complete in 2021.

Real-time Vessel Monitoring is a project conducted in partnership with Ocean Networks Canada and contracted to the Marine Exchange of Alaska. Its objectives are to understand

potential gaps in marine domain awareness coverage and develop a template for an approach and tools to improve monitoring of the region. The study is currently undergoing an assessment to determine the value of further analysis of this dataset.

Key Issues Pages (Microsites)

The key issues page Liquefied Natural Gas & Marine Shipping was launched in May 2019. It examines the use of LNG as cargo and as a fuel source for the marine shipping industry – including the benefits and risks of LNG use and carriage, the historic safety record, and what’s being done in terms of best practices in prevention to reduce those risks. It has attracted more than 9,122 pageviews between its launch and March 30, 2020.

A key issues page focusing on Oil Spill Response in Canadian Waters was developed during the past year and will be launched in August 2020.

Indigenous Outreach

A key milestone was achieved this year with the signing of a Data Sharing Agreement with the Council of the Haida Nation. The agreement provides a framework which will enable further collaboration in the future.

Clear Seas continues to pursue opportunities to collaborate with First Nations and Indigenous communities, primarily in the Pacific region, and in the Arctic through its support of the Commercial Shipping Issues in Canada’s North study.

Clear Seas intends to expand its efforts to collaborate with First Nations and Indigenous communities and look for opportunities to incorporate Traditional Indigenous Knowledge into its research efforts in the coming year.

Communicating Complex Issues

- *Key Issues* pages (7)
- Blog articles (34)
- Research reports (8)
- Research digests (13)
- Infographics (30)
- Quarterly newsletters
- Reference material:
 - Wheel of Maritime Law
 - Topic toolkits



Clear Seas' primary means of distributing its material remains its website. This interactive website is kept up to date and is used to share results of Clear Seas' research, address key issues related to sustainable marine shipping and highlight its own and others' activities.

In the past year, Clear Seas launched one new key issues page, published one research study and posted four blog articles. Clear Seas now has a total of 7 key issues pages, 34 blog articles, 8 research reports, and 13 research digests. Clear Seas also provides a range of infographics to facilitate understanding of complex, multifaceted marine shipping concepts.

Relevance and Influence

The organization continues to be recognized for its impartiality and invited to contribute to important public policy issues and leading conferences attended by industry experts and leaders.

In the past year, Clear Seas has provided written feedback on Transport Canada's discussion questions on Proactive Vessel Management and Strengthening Marine Environmental Protection and Response Potential Legislative Amendments. In spring 2019, it also provided feedback to the Canadian Coast Guard on its draft West Coast Towing Needs Assessment paper.

Table 1 provides a comprehensive list of events/engagements in which Clear Seas participated and indicates the level of participation, which generally falls into one of the following four categories:

- **Attended** – gathered information, asked questions, took notes and networked.
- **Participated** – Actively participated in plenary and smaller discussion groups, contributing to the desired outcomes. Provided evidence-based information and perspectives/context to other participants and attendees, answered questions, gathered information, asked questions, took notes and networked.
- **Participated as an exhibitor** – Hosted an interactive booth in the exhibitors’ hall as part of the conference. Provided evidence-based information and perspectives/context to other participants and attendees, answered questions, gathered information and networked.
- **Presented** – Made a formal presentation and answered questions. May have produced an abstract and presentation for subsequent publication. Actively participated in plenary and smaller discussion groups, contributing to the desired outcomes. Provided evidence-based information and perspectives/context to other participants and attendees, answered questions, gathered information, asked questions, took notes and networked.

Table 1: FY19/20 Events

Event	Date	Location
Presented to give evidence before the Senate Committee on Transport and Communications on Bill C-48	2 April	Ottawa (VTC)
Participated in Coastal Connection Vancouver	9 April	Vancouver
Attended National CMAC	16-17 April	Ottawa
Participated in WWF-Canada Greywater Symposium	1-2 May	Vancouver
Attended Canada Gas & LNG Exhibition and Conference	21-23 May	Vancouver
Attended Nautical Institute – BC Chapter Arctic Shipping Conference	23-24 May	Victoria
Participated in AMOP: 42 nd Technical Seminar on Environmental Contamination and Response	4-6 June	Halifax
Participated in Oceans Outlook Day and ORCA Workshop	6 June	Halifax
Participated in MEOPAR Annual Scientific Meeting	13-14 June	Victoria
Attended Clean Pacific Conference	18-20 June	Vancouver
Participated in Joint PACMAR-PSHSC Meeting	10 July	Vancouver

Presented to Port of Vancouver Community Liaison Office	29 August	Delta
Participated as Exhibitor and attended the Union of BC Municipalities Convention	23-27 September	Vancouver
Presented at the 7 th Asia-Pacific/Arctic Maritime Security Forum: Ocean Governance in Asia-Pacific and the Arctic	24-25 September	Halifax
Participated in Port of Prince Rupert Marine Mammal Program Annual Meeting	25 September	Prince Rupert (teleconference)
Participated in National Canadian Marine Advisory Committee (CMAC)	5-7 November	Ottawa
Attended Quebec Ocean Sciences Symposium	11-13 November	Rimouski
Participated in ORCA Ocean Science & Policy Symposium and Workshops	13 November	Ottawa
Participated in Canadian Science Policy Conference	14-15 November	Ottawa
Attended Pacific States/BC Oil Spill Task Force 2019 Annual Meeting	13 November	Bellingham, Wa.
Presented at the Salish Sea Shared Waters Forum	14 November	Bellingham, Wa.
Presented at Carleton University's Infrastructure Resilience Research Group Symposium on Sustainability	27 November	Ottawa
Presented at and hosted the Canadian Marine Shipping Risk Forum Annual Workshop	2 December	Halifax
Attended ArcticNet Annual Scientific Meeting	3-5 December	Halifax
Participated in Low Carbon Shipping Centre of Excellence Planning Meeting	25 February	Vancouver
Participated in WWF-Canada Shipping in MPAs Toolkit Workshop	25 February	Ottawa
Attended UBC Marine Systems Initiative - Future Ship Workshop	4 March	Vancouver
Attended Pacific Region CMAC	4 March	Vancouver

Online Presence

Clear Seas' website is the principal means through which it disseminates information and publishes the results of sponsored research. The bilingual site has been visited by more than 174,500 users – including 36,385 francophones – and has received more than 330,000 pageviews since November 2016³.

Figure 1 displays the progression of user traffic on the website. Note that this includes users and pageviews from outside Canada. Key takeaways are that over the past year the:

- cumulative number of pageviews increased 88%
- cumulative number of users increased 82%; and
- the number of francophone users more than doubled

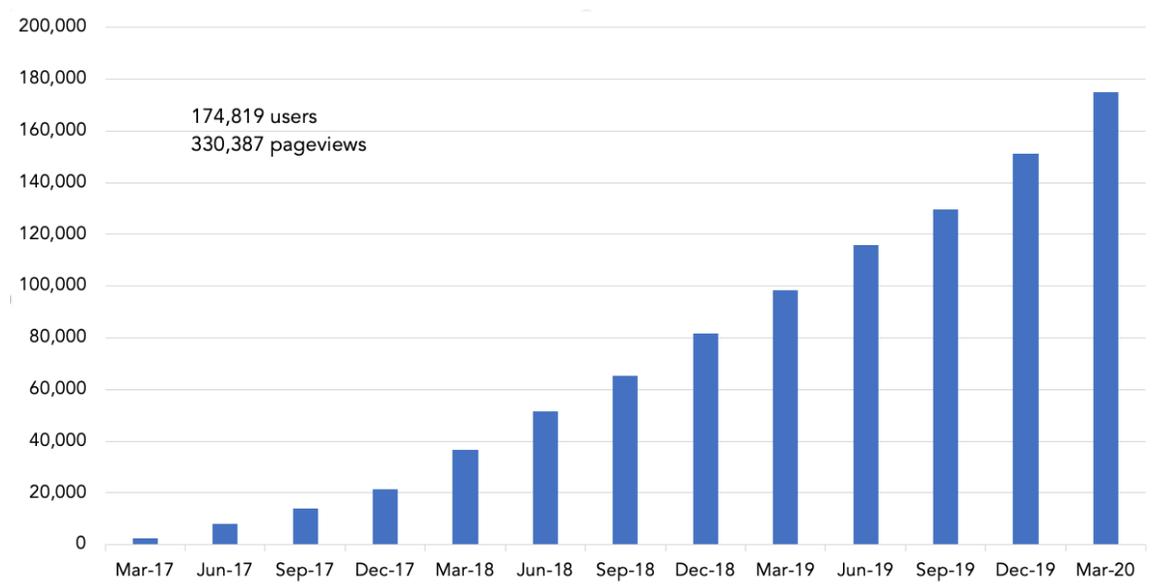


Figure 1: Cumulative Website Users Over Time

Over the past three years significant effort has been made to raise Clear Seas' profile and reputation on a national level. Figure 2, below, provides an overview of the distribution of website users within Canada. It clearly demonstrates that Clear Seas has achieved a significant national reach. Since November 2016, Clear Seas' website was visited by more than 117,000 users across Canada.

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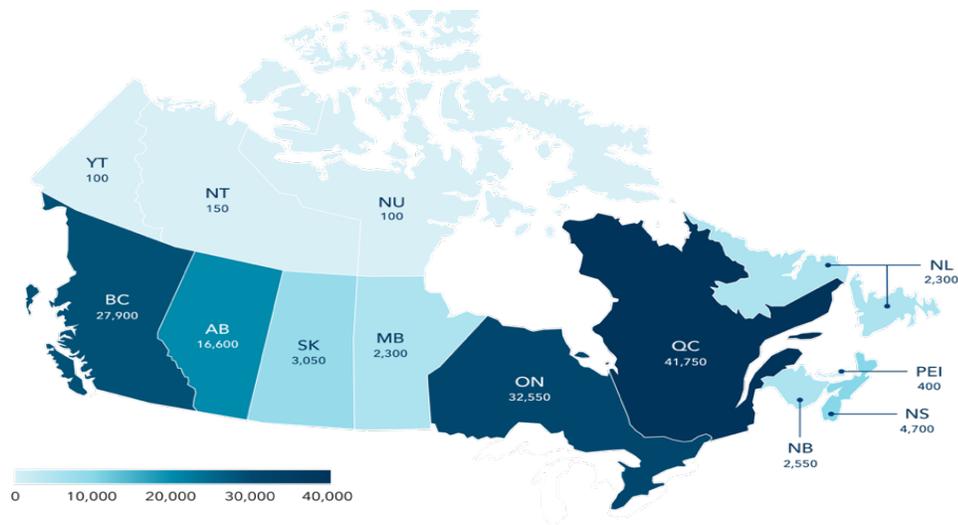


Figure 2: Geographic Distribution of Website Users

The graph at Figure 3 indicates key stakeholder user groups. It should be noted that Federal Government staff are the single biggest identifiable user group and are concentrated in Transport Canada, the Canadian Coast Guard, DFO and Environment and Climate Change Canada. These website metrics, based on the service providers of site users show that Clear Seas is reaching policy makers, educators and students.

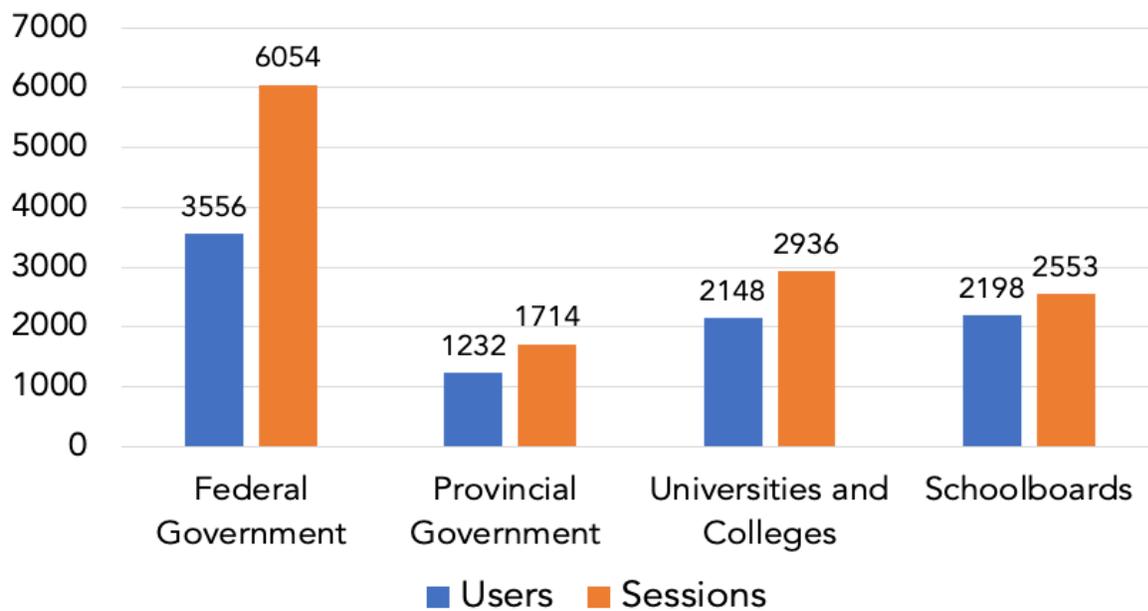


Figure 3: Cumulative Number of Key Website User Groupings

The two charts in Figure 4 below provide an overview of the self-identified age and first language of the users of Clear Seas’ website. Although the age distribution is close to that of the Canadian population, Clear Seas users tend to be slightly younger than the general population.

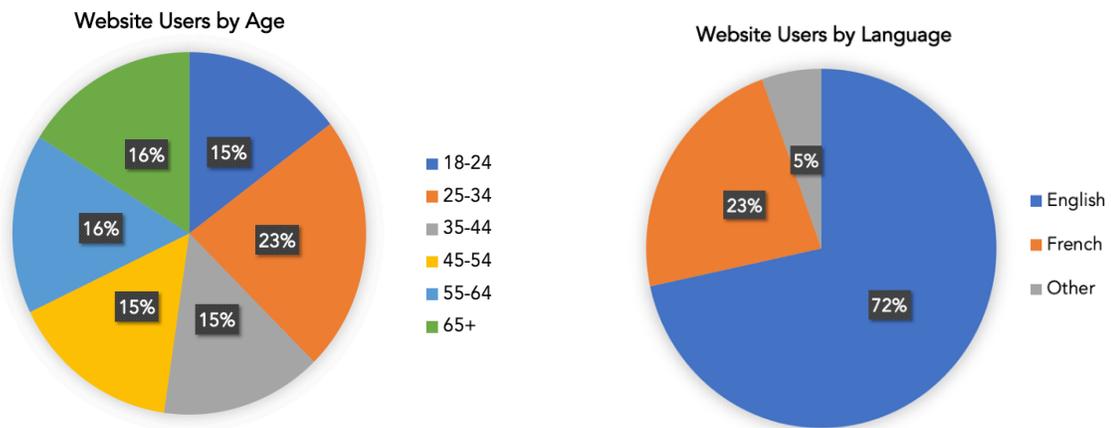


Figure 4: Website User Distribution by Age and Language

In addition to its website, Clear Seas has developed and maintains a highly interactive presence on Twitter, Facebook and LinkedIn. These platforms have provided opportunities to engage directly with the general public, stakeholders and interested parties. They facilitate Clear Seas’ surveillance of and presence in what have emerged over the past few years to be highly active, crowded and charged public policy discussion fora.

Until March of 2019, Clear Seas focused on increasing the number of new followers, which resulted in an impressive growth rate. In the spring of 2019, Clear Seas shifted its focus to develop more meaningful interaction with its existing followers, such as commenting on or sharing Clear Seas postings.

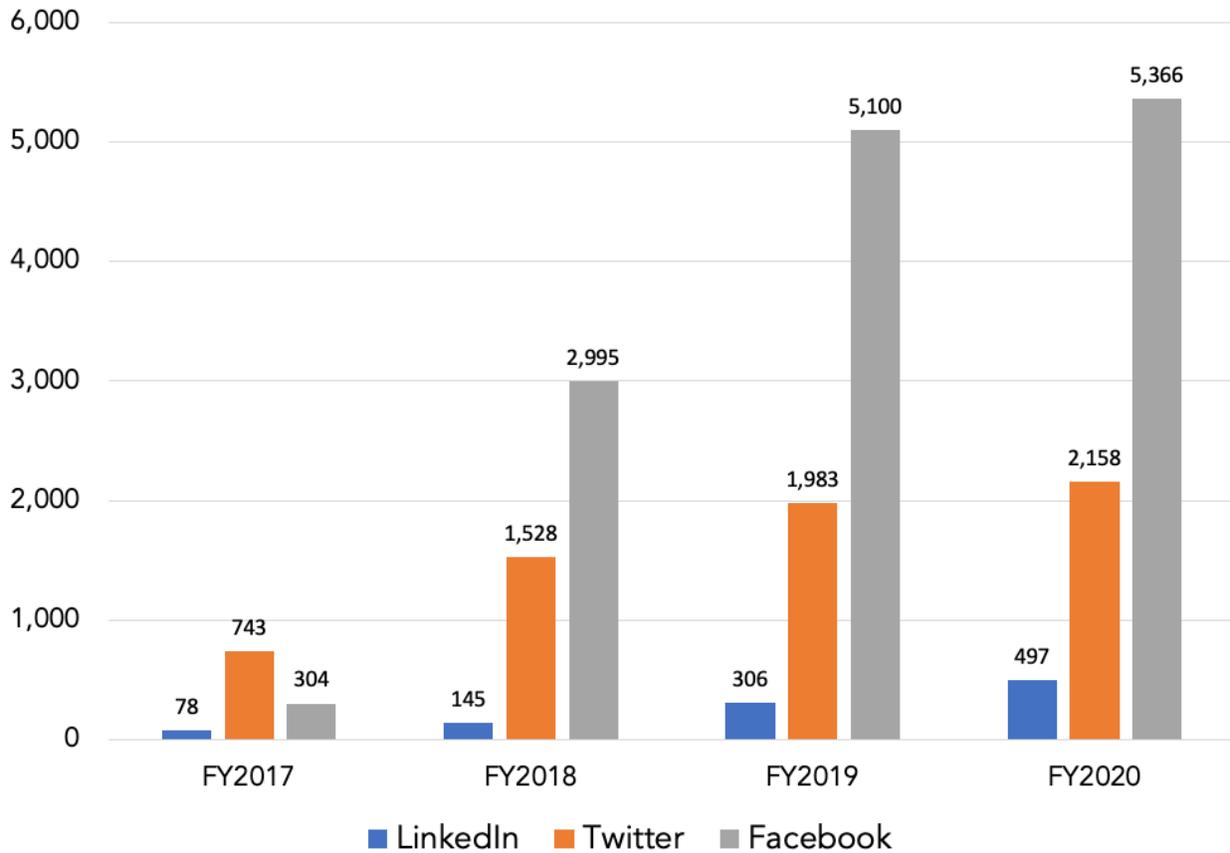


Figure 5: Growth of Social Media Audience Over Time

Cumulatively, Facebook followers increased by 5%, Twitter by 9%, and LinkedIn by 62% this past year. To this day, Clear Seas has:



5,801 followers



2,211 followers



616 followers

While the growth of followers has slowed, it is clear that the level of engagements with followers has become greater. Over the past year, the content Clear Seas shared on social media generated approximately 72,000 clicks, 46,500 reactions, 7,400 shares and 4,500 comments. This allows Clear Seas to interact with its audience and provide additional information and corrections to misinformation online.

Clear Seas Stakeholder Info Portal

Clear Seas' Stakeholder Info (info@clearseas.org) receives approximately 10 requests and enquiries per month. These have ranged from general questions on commercial shipping topics such as: underwater noise and marine mammals; transporting oil by ship in all regions, including the Great Lakes and St. Lawrence Seaway; and other issues. Clear Seas endeavors to provide substantive responses to all serious questions (we occasionally receive misdirected enquiries including applications for employment at sea). Inter alia, in the past three years, questions to our Stakeholder Info have come from the public at large, academics, ENGOs, Transport Canada – Marine Safety, the Embassy of Canada in Ukraine, CBC News and many others.

Newsletter

Clear Seas distributes a quarterly email newsletter to 1,644 subscribers across Canada and abroad. The average open rate of 36% recorded over the past fiscal year exceeds the industry standard of 20% for subscription-based e-newsletters.

Conclusion

Clear Seas continues to build trust through a voice that provides decision makers 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 improvement 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.

Should you have any questions or concerns, please do not hesitate to contact me, or Paul Blomerus, the Executive Director.

Bud Streeter
Chairperson
Board of Directors
July 28th, 2020