# GREENTECH 2013

## GREEN MARINE ANNUAL CONFERENCE

GREEN TECHNOLOGIES AND INNOVATION FOR MARINE TRANSPORTATION


## *GREENTECH 2013, PAVING THE WAY TOWARDS GLOBAL THINKING AND THE SHARING OF TANGIBLE ACTIONS*

*By Manon Lanthier*

Once again this year, Green Marine participants and partners responded generously to the call for expertise and experience launched with the goal of drawing up the program for the sixth environmental conference on green technologies and innovation in marine transportation.

The GreenTech 2013 program is a carefully planned combination of diversity and equilibrium that will provide a global vision while focusing on several specific issues. "For example, during the opening session on ECA, one of our speakers will talk about the impact of new regulations concerning the marine industry in Canada and the United States, while another speaker will discuss a highly detailed study conducted on ECA boundaries," explains Green Marine's coordinator and its program manager Françoise Quintus. "It is a well-balanced combination of concrete examples in managing day-to-day operations and the hindsight needed to provide a comprehensive assessment of a given issue."

GreenTech's goal since the very first conference organized in Montreal in 2008 has always been to provide a forum for encounters and discussions. The presence of several corporate participants in Green Marine's environmental program, who will demonstrate the results of experimentation with new technologies and the implementation of good practices, bears witness once again to the conference's relevance and the user-friendly quality of the Green Marine program.

"When all is said and done, what Fednav, Algoma, Desgagnés as well as the ports of Montreal, Prince Rupert, Vancouver and Seattle have come to do is offer examples of tangible actions that can be taken by other conference participants, a plan to follow with a taste of the hurdles to be overcome and the anticipated results," Ms. Quintus adds.

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*The whole team at Green Marine is pleased to welcome you to Vancouver for its sixth environmental conference.*

*There is nothing random about Green Marine's decision to hold its annual conference on the West Coast for the first time. The burgeoning environmental program is rapidly expanding along the shores of the Pacific Rim with newly registered participants both north and south of the border.*

*Several terminals (Ridley, Squamish, Fraser Surrey Docks and Maher Terminals Holding Corp.) in addition to two major ports have joined the ranks of Green Marine within the past few months. The Port of Seattle, the eighth largest container port in the United States, and Port Metro Vancouver, the biggest in Canada, have both taken a leadership role in environmental protection in large part due to initiatives such as the Northwest Ports Clean Air Strategy.*

*These new players have further increased a membership that is already firmly rooted in the region with the ports of Prince Rupert, Nanaimo and Greater Victoria, Seaspan ULC, SMIT Marine, Island Tug & Barge and Neptune Terminals. Green Marine has also attracted several new partners and is particularly proud to include the Vancouver Aquarium amongst its supporters.*

*In response to this growing interest and with a desire to address local issues, Green Marine this week held the inaugural meeting of its newly established West Coast Advisory Committee, whose role is to contribute to the development and assessment of the environmental program's performance indicators.*

*The committee has the same structure as Green Marine's two initial committees for the St. Lawrence and the Great Lakes and brings together industry representatives, officials from government, associations and environmental groups as well as research and academic experts.*

*As such, the hosting of GreenTech 2013 in Vancouver functions as a milestone to mark the inroads Green Marine has made on the West Coast, inroads that bear witness to the marine industry's firm resolve to go green. It also opens the door to the creation of a new platform for discussion that will help broaden the horizons of the environmental program, both locally and across North America.*

*Enjoy the conference!*

***David Bolduc***
***Green Marine Executive Director***

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Moreover, for each of the sessions, the panels are assembled to help shed a more inclusive light on a specific topic. Accordingly, the event's closing session will focus on LNG and will address such issues as tugboat design, procurement, the use of LNG as a fuel as well as the environmental impacts in an emergency situation: one subject, several perspectives.

The participation of high profile speakers, such as Andreas Chrysostomou, who chaired until recently the Marine Environment Protection Committee (MEPC) at the International Maritime Organization IMO, reflects the growing recognition of the Green Marine's Environmental Program and its annual GreenTech conference.

"Having this accomplished individual who chaired the committee that first examines all of the environmental matters considered by the IMO is testimony to the success and growing awareness of Green Marine within the community of maritime stakeholders," says Green Marine Management Corporation President, Raymond Johnston. "We are delighted that Mr. Chrysostomou has graciously accepted our invitation."

Green Marine partners have also put their shoulder to the wheel: this year GreenTech will be host to a record number of exhibitors. The technological session will serve to highlight the latest advances in a newly redesigned and dynamic format, which will once again create opportunities for dialogue.

*During the session on LNG, Greg Peterson will give an overview of the possibilities for BC Ferries' vessels, such as this one, that burn a biodiesel blend of ultra-low sulphur diesel.*

# EXHIBITORS

Filtramax

Industrial filtration specialist representing major manufacturers of filtration solutions in hydraulic and lube, process liquids and water, dust collection, compressed air. Canadian master distributor of MAHLE Industrial Filtration, manufacturer of customized, highly efficient filtration and separation systems for a wide variety of marine applications: bilge water separation, ballast water treatment, engine maintenance, protection of hydraulic systems and pipelines, transfer and circulation systems, fuel and oil treatment.

VICKERS OILS

Vickers Oils pioneered the development and introduction of Environmentally Acceptable Lubricants (EALs) for the Marine sector and is now clear market leader having supplied more than 1300 vessels worldwide, and having gained approvals and acceptances from many of the leading OEMs. Markets served include sterntubes, stabilisers, thrusters CPPs, hydraulics and greases. Vickers Oils is a private independent UK company established in 1828 which formulates, manufactures and supplies specialist lubricants globally to more than 60 countries.

ENVIROCHEM SERVICES INC

envolv™

ENVOLV SMS (Sustainability Management Software) created by Envirochem Services, an environmental engineering and consulting firm established in 1984, was designed to help marine organizations effectively control costs, efficiently reduce risk and effortlessly comply with permit or regulatory requirements. With a full management suite of easy to use Health & Safety, Quality, Site Security, Environmental, Energy, and Document Control tools, ENVOLV will help to reduce risk while saving time and money.

CAVOTEC Inspired Engineering

Cavotec is a global engineering group that enables industries worldwide to improve productivity, safety and sustainability. Our innovative shore-to-ship electrical power systems, automated mooring technology, MoorMaster™, and E-RTG systems (Electric Rubber Tire Gantry Crane) ensure safe, clean and efficient operations at ports all over the world. Working closely with customers, we also supply Panzerbelt cable protection systems, cable chains, electrical connectors, radio remote controls and motorized or spring driven cable or hose reels. Discover how Cavotec can support your operations at www.cavotec.com

ABB

ABB Turbocharging is the world leader in turbocharging diesel and gas engines. ABB operates over 110 certified turbocharger service stations in more than 55 countries via an online network linked to its head office in Baden, Switzerland. Fast, direct access to the case history of every one of the more than 180,000 turbochargers ensures proactive support in real time. ABB Turbocharging is a division of the ABB Group, an international leader in power and automation technologies that enable customers to improve their performance while lowering their environmental impact.

BC SHIPPING NEWS

BC Shipping News has quickly become the 'must-read' journal for commercial marine industry stakeholders on the West Coast. With a refreshing and unique perspective on maritime issues, BCSN features exclusive interviews, in-depth reviews of matters that impact on marine businesses as well as regular features on legal affairs and maritime history. Our on-line presence – www.bcshippingnews.com – enjoys a large readership where visitors receive up-to-the-minute news, photos and video. BCSN is as much an industry journal as it is a forum for the industry to tell its own story – not just read by the industry, but written by them as well.

Envirolin Canada

ENVIROLIN is the importer and distributor of biodegradable synthetic lubricants of the globally recognized European brand PANOLIN ®. The wide range of eco-friendly products offered by PANOLIN ® meet the specific needs of customers in the heavy machinery industry, maritime, exploration and oil platforms, forestry, railway, agriculture and hydropower; one ocean to the other. Composed of experts on the lookout for the latest innovations, we are available to advise on the best eco-friendly lubricants on the market.

PORT OF PRINCE RUPERT

Prince Rupert is Canada's second largest West Coast port and serves as the North American entry point of the North West Transportation Corridor, linking the fast-growing Asian markets to all North America via CN Rail's high capacity northern mainline. Having the distinct advantage of being the closest North American port to Asia by up to three days, the Port is uniquely positioned to serve shippers and producers, facilitate trade and grow the Canadian economy.

NAVWARE

NAVWARE's mission is to provide best-of-breed innovative technology and top-quality consulting services to the offshore and marine community. Among its green portfolio of products, there is the high performance biodegradable lubricants PANOLIN®, the CONVERTER® which treats any kind of waste, provide weight and volume reduction, without any gas emission (CO2, NOx, SOx, etc.) and the ozone- friendly fire extinguishing system FirePro®.

TMS Total Marine Solutions Inc.

Total Marine Solutions was established in 2000 with a specific mission to supply environmental products and services with the focus remaining fixed on working with ship owners and operators complying with the ever changing regulations related to environmental protection. This is accomplished through representation of quality manufacturers specializing in the treatment of waste streams, development of monitoring devices and analysis support.

HYDREX UNDERWATER TECHNOLOGY

ECOSPEED SHIP HULL PERFORMANCE TECHNOLOGY

Hydrex provides worldwide underwater maintenance and repair services to ship owners. Drydocking is avoided, saving time, trouble and expense. Ecospeed is a coating that lasts the lifetime of the vessel and can easily be cleaned underwater. This keeps the hull roughness at optimum level and results in major fuel savings.

THORDON THORDON BEARINGS INC.

Thordon Bearings is the leading manufacturer of seawater lubricated propeller shaft bearings, grease-free rudder and deck equipment bearings and other shaftline products for the global marine market. Thordon propeller shaft bearing systems eliminate oil leakage, provide excellent bearing wear performance, offer lower in-service costs as well as eliminate emergency seal repairs. Thordon's self-lubricating rudder bearings have a low coefficient of friction and operate without grease above and below the water line.

WWF

WWF (World Wildlife Fund) is Canada's largest international conservation organization with the active support of more than 150,000 Canadians. It connects the power of a strong global network to on-the-ground conservation efforts across Canada, with offices in Vancouver, Prince Rupert, Toronto, Ottawa, Montreal, Halifax, St. John's, and a growing presence in the Arctic. Its mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by: conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable and, promoting the reduction of pollution and wasteful consumption.

ALL-SEA UNDERWATER SOLUTIONS

All-Sea Underwater Solutions - with offices in Vancouver, Halifax, Saint John, St. Catharines, and Busan, Korea - provide innovative, technical repair solutions for below the waterline, and specialize in providing a full range of underwater ship maintenance and repair services worldwide since 1978. With our new Environmental Hull Cleaning Machine and Propeller Polishing systems, we are fully approved by the Port of Vancouver. We are authorized by all major OEM's, and certified by all major class societies. For more information, please visit our website at www.all-sea.com.



Schneider Electric

As a global specialist in energy management, Schneider Electric is well positioned to provide the latest solutions in the Navy, Merchant Marine and Marine offshore segments. We offer increased reliability of electrical systems, a comprehensive suite of services and equipment solutions, energy management optimization and total support throughout each vessel's life cycle. Focused on making energy safe, reliable, efficient, productive and green, the company helps individuals and organisations "Make the most of their energy."

Canadian Sailings | Transportation & Trade Logistics www.canadiansailings.ca

Canadian Sailings & Transportation magazine, founded in 1982 and now published by Great White Publications, is a weekly publication for transportation and logistics professionals, distributed coast to coast in Canada and beyond. The publication provides national/regional trade and transportation news, profiles on industry personalities, companies and ports. They also publish special features on shipbuilding, world trade, temperature controlled cargo, port security, arctic shipping and airfreight. The content also includes The Shippers' Handbook containing detailed information on the international ports of call for all international shipping lines, NVOCCs and Agents sailing from Canadian ports.

TERRESOLVE EnviroLogic® Products

Founded in 1996 and based in Ohio, USA, Terresolve Technologies is dedicated to providing high performance, non-toxic, biodegradable lubricating products to the maritime industry. With more than 50 OEM approvals, the Terresolve ENVIROLOGIC® products have been tested and proven in some of the toughest environments possible. For more information, contact Terresolve Technologies; 9609 Jackson St., Mentor, Ohio 440-639-8633, www.terresolve.com.

CANADA METAL (PACIFIC) LIMITED

Canada Metal (Pacific) Ltd. is a world-leading producer of Martyr anodes, Titan Marine Chain and Rocna Anchors. A global supplier of non-ferrous metal products, engineered & machined die castings and subassemblies for industries such as Marine, Hydraulics, Telecommunications, and Electronics. With manufacturing facilities in North America & Asia, it can provide design through to casting, machining, testing, coatings, assembly and packaging. CMP is dedicated to customer service and committed to product quality.

GEORGIAN GREAT LAKES INTERNATIONAL MARINE TRAINING AND RESEARCH CENTRE

Marine Training begins and continues here. Onboard BRM and ERRM audits verify that the lessons taught in class and that your company policies in place are working. 3-4 days onboard will result in a detailed report from one of our qualified auditors. The environment is always foremost on minds today. The oil spill simulation capability at Georgian is an excellent tool to train and exercise your company in their response.

Coast Lubricants Ltd.

Coast Lubricants Ltd (Coast) is an independent, locally owned company based in Nanaimo, B.C., Canada, with over 50 years of lubricant experience in the marine and heavy equipment industries. The company is the sole distributor for American Chemical Technologies (ACT), including UCON™ Trident™ hydraulic lubricants and Neptune Gear lubricants, in Canada and the west coast of the U.S. These lubricants are made from Polyalkylene Glycol (PAG). Water Soluble PAG's, such as our Dow Chemical UCON Trident, have been determined by the US EPA, the USCG and Transport Canada as "Not an Oil", and non-hazardous chemicals. Canada does not classify PAG fluids as marine pollutants and view them as non-toxic. They are the ONLY lubricants to pass all US environmental regulations including the 40 CFR 435 Static Sheen Test.

WorleyParsons resources & energy

WorleyParsons is a leading provider of professional services to the resources & energy sectors and complex process industries. The BC Business Unit (BCBU) employs more than 275 internationally award-winning personnel, who deliver services ranging from feasibility studies and economic analyses to detailed engineering design, project construction management and commissioning, and the inspection of marine structures and equipment. The BCBU provides innovative solutions to challenging marine terminal, infrastructure, environmental management and materials handling projects.

OpDAQ Systems

OpDAQ Systems specializes in ship-board performance monitoring systems and sea-trial monitoring services. We help ship operators to reduce fuel consumption by providing key performance indicators such as real-time fuel consumption, specific fuel consumption, fuel per nautical mile and engine power. Using state-of-the-art sensors, our team of experts assists our customers to get accurate performance data in order to optimize ship operation and maintenance or to evaluate fuel reduction technologies.

Port Saint John

Port Saint John is proud to be the host of GreenTech 2014! Stop by our booth and learn about the Port and the region of Saint John. Saint John on the Bay of Fundy is an exception city of living history, urban energy, and natural splendor. Convention facilities are located near the Port as are attractions, shopping and restaurants. Modern facilities, old world charm and every service you could desire.

# THE PRESENTATIONS

# MAY 30

## 8:30 am Opening Session

> ***Robin Silvester,*** *CEO, Port Metro Vancouver*
> ***Jonathan Whitworth,*** *CEO, Seaspan ULC*
> ***Andreas Chrysostomou,*** *Former Chairman of the MEPC, IMO*

## 10:30 am The North American ECA: early lessons learnt

### North American ECA - regulations vs. reality

> ***Hauk Larsen Wahl,*** *DNV Petroleum Services*

The North American Emission Control Area came into force on August 1st 2012, dictating ship operators trading in US and Canadian waters to switch to fuels with lower Sulphur content. This paper focuses on the impact of the new regulations, the challenges that ship operators are facing in order to be in compliance from an operational, technical and financial point of view, and the range of solutions that are available. In addition, the paper discusses what bunker suppliers could do to assist ship operators in reducing the risk of non-compliance. Finally, the paper looks into the "brave new world" of distillate fuels that we will see in the North American ECA from January 2015, and predicts which challenges and benefits can be expected from this drastic change.

### The North American ECA and Short-Sea Shipping – An analytical assessment

> ***Ron Sahu,*** *consultant*

Dr. Sahu will discuss the results of a dispersion modeling study for the East and West Coasts of the US/Canada relating to the North American ECA. He will discuss the background of the ECA and the counter-productive nature of the 200 nm ECA limit, as it applies to short-sea shipping routes. Instead, the results of the study show that all of the environmental benefits of the ECA can still be obtained with a much smaller ECA boundary.

### North American ECA: the cruise lines' perspective

> ***Greg Wirtz,*** *Cruise Lines International Association, North West and Canada*

Committed to the human health and the welfare impact of all shipping on coastal areas, the member cruise lines of the North West & Canada Cruise Association support the goals and principles of the North American Emission Control Area (ECA). However cruise also wants to minimize economic and job-related impacts of the ECA. This presentation will demonstrate how a variety of flexible approaches can be utilized to achieve health benefits, including average based air quality, innovative exhaust scrubbers, using alternative energy sources such as shore power in port, and adjusting ship speeds.

## 10:30 am Meeting environmental and social challenges

### Mapping soil quality and pollution reports

> ***Carole Nuttall,*** *Montreal Port Authority*

Following the adoption of its environmental policy, approved by the Board of Directors, the Montreal Port Authority implemented an Environmental Management System which led to the cataloging of all reports in a database. Reports are indexed by port installation and tied to the applicable project number, thus enabling the user to quickly identify all studies realized for a specific installation or project. To date, 1 390 reports, 5 500 subsurface investigations and 870 projects have been entered into this database. The soundings and soil quality data are plotted on the interactive port mapping tool with a live link to the reports. This tool is not only utilized by the environmental department, but also by the engineering and maintenance groups for project planning purposes. In 2012, the environmental team together with the IT group launched a similar project to georeference pollution reports. This presentation will provide a brief overview of both these mapping tools.

### Marine dredging at Pacific Coast Terminals: planning sustainability

> ***Andrew MacKay,*** *Envirochem Services Inc.*

Located in Port Moody, British Columbia, Pacific Coast Terminals (PCT) is one of the most advanced bulk terminals around the globe. To facilitate planned operational expansion, local channel dredging is required to eliminate current shipping restrictions for loaded vessels departing PCT. An effective combination of hopper, cutter-suction and clamshell dredges will be used to dredge and direct place approximately 530,000 m3 of sediment behind an existing and new (proposed) containment berms. Planned results include:

- vital business process efficiency at PCT through more timely and safer shipping;
- beneficial end use of dredge spoils (instead of disposal at sea) for habitat restoration;
- diversion of clean suitable aggregate from typical waste streams to build the new berm;
- significantly reduced air emissions and improved turbidity control;
- First Nations participation in an extensive long-term monitoring program.

The creative project plan achieves a balanced "sustainable" approach that supports diverse multi-stakeholder interests while achieving timely operational improvement at Pacific Coast Terminals.

# THE PRESENTATIONS >
# MAY 30 (CONTINUED)

### Shipyard modernization: environmental, efficiency and production improvements
**> *Tony Matergio,*** *Seaspan ULC*

In October 2011, the Government of Canada selected Vancouver Shipyards to build the future Non-Combat ships for the Royal Canadian Navy and the Canadian Coast Guard. This historic announcement was the culmination of a procurement process which engaged the remaining large shipbuilders in Canada and set the stage for reinvestment and regeneration of the shipbuilding industry in Canada. In order to meet the challenges of the future shipbuilding programs, Vancouver Shipyards has committed to invest in new facilities, equipment and processes to make the leap to become a modern world class shipbuilder. The new facilities facilitate the move to an efficient continuous manufacturing process with highly efficient workstations completing specific tasks. In addition, during the design of the facilities, care was taken to reduce the impact to the environment and to the local community.

### A partnership-driven approach to sustainability strategy
**> *Jason Scherr,*** *Prince Rupert Port Authority*

The development of partnerships is integral to implementing the Prince Rupert Port Authority's sustainability goals, programs and initiatives. This includes working together with tenants, both current and future. The Prince Rupert Port Authority's Environmental Sustainability Plan supports the advancement of PRPA's vision and mission, particularly as they relate to environmentally-sustainable development and growth of the Port of Prince Rupert. Key to the development of the Plan was the Performance Indicators and criteria of the Green Marine program, as well as Environmental Management Plans that resulted from a comprehensive Environmental Footprint Study. Our partnership-driven approach to sustainability continues the work being done through Environmental Assessments, and integrates the components of the Environmental Sustainability Plan, Environmental Management Plans and the Green Marine program. Over time, the Environmental Sustainability Plan will foster a culture of leadership in environmental sustainability within the PRPA and among other Port stakeholders and community. This approach could be considered for other Port Authorities.

## 1:15 pm | Perspectives on sustainability in the marine industry

### Why a responsible business is more than a nice to have
**> *Johanne Gélinas,*** *Raymond Chabot Grant Thornton*

The shipping industry is a major player in the economic and social development of the country. The strong trend towards the integration of environmental aspects in the business operations involves risks and opportunities that companies must manage. To answer this question, ports, shipping companies and terminals should establish a strategic sustainable and corporate vision to ensure their continuity in this competitive market and identify potential strategic alliances to better position the industry. What value does this positioning bring as a responsible organization? What are the expectations of your customers, suppliers and other partners in matters of sustainable development? Across the lifespan of its facilities and vessels, the maritime industry is making the choice today of its sustainable and responsible positioning for the next thirty years.

### From ENGOs to industry: comparing objectives, means and challenges in the implementation of sustainable development
**> *Hilary Miller,*** *SMIT Marine Canada*

In the debate on sustainable development in the maritime environment, there are three major stakeholders – government, industry and environmental non-governmental organizations (ENGOs). While both ENGOs and Industry regularly work with government, they rarely interact directly with one another. With very different raisons d'être, ENGOs and Industry undeniably have differing objectives, means and challenges in implementing sustainable development. Despite this, I will demonstrate that the goals of both industry and ENGOs are not mutually exclusive. Drawing on personal experience gained from working in the realms of both ENGOs and Industry, I will provide insight into the challenges and causes of miscommunication with the intention of creating a greater sense of understanding.

### Truly sustainable development in the shipping industry
**> *Alexandra Woodsworth,*** *Georgia Strait Alliance*

While the shipping industry is doing an excellent job of positively embracing new technologies and systems to reduce their ecological wake, a new way of looking at the global impact of shipping goods from one place to another is emerging. Based on the definition of sustainable development in the Brundtland Report, some conversations about environmentally responsible and sustainable shipping are evolving from how the industry itself operates from an environmental perspective to what is the impact of all the different types of products transported globally by ships. Shipping companies, ports and support organizations can now look at how the products being shipped do have socio-economic and environmental impacts, both positive and negative, which go far beyond the process of transportation. This presentation will explore public interest in what ships carry, and challenges and opportunities for shipping industry leadership in a carbon-constrained world.

### Maritime emission reduction success through voluntary initiatives
**> *Ellen W. Watson,*** *Port of Seattle*

The Northwest Ports Clean Air Strategy, an initiative of the ports of Tacoma, Seattle and Metro Vancouver, B.C., was prepared to help reduce the emissions identified by the 2011 Puget Sound Maritime Air Emissions Inventory. To implement the Strategy, the maritime industry established voluntary initiatives to reduce emissions, including switching to low-sulfur or biodiesel fuels, using shorepower, replacing or retrofitting older engines and improving systems to use equipment more efficiently. Additionally, there have been important regulatory changes, such as requirements for cleaner fuel in both on road and off road engines, which have contributed to emission reductions. The 2005-2011 comparative data shows that maritime-related air pollution has decreased as much as 40% within the Puget Sound region. While economic conditions did contribute to emission reductions, the 2011 Inventory results demonstrate that coordinated emission reduction efforts by the maritime industry have been successful.

## 5:30 pm | Certification Ceremony

> *Guest speaker:* ***Ian Anderson,*** *President, Kinder Morgan*

## GREENTECH 2014 HEADS EAST!

*After having visited the West Coast this year, Green Marine will take its annual conference from one sea to the other in 2014. GreenTech 2014 will be held in Saint John, New Brunswick, home of Port Saint John (PSJ), the first East Coast port to join Green Marine, in 2011. PSJ is Eastern Canada's largest port and has a diverse cargo base, handling over 31 million metric tonnes of cargo annually, including dry and liquid bulks, break bulk, containers, and cruise. Port Saint John is a facilitator of trade and a part of Canada's Atlantic Gateway, providing a marine gateway to global markets. PSJ President and Chief Executive Officer, Jim Quinn, is very pleased to be welcoming the next GreenTech conference: «We look forward to welcoming GreenTech delegates to Canada's oldest incorporated city, home to one of Canada's most diversified ports, as well as the nation's largest oil refinery and only deep water oil and LNG marine facilities. Come and experience the natural beauty of the Bay of Fundy and the charm of this historic port city.» Green Marine's other East Coast participants include the Port of Halifax, Oceanex, Atlantic Towing Ltd., TBS Shipping Services, Svitzer, McKeil Marine and terminals from Logistec, Ceres and Federal Marine Terminals.*



# THE PRESENTATIONS >
# MAY 31

## 8:30 am | Rewarding environmental performance

### Port Metro Vancouver - EcoAction Program
**> *Ronan Chester,*** *Port Metro Vancouver*

In recognition of the marine industry's environmental leadership, Port Metro Vancouver's EcoAction Program offers a discounted harbour due rate to vessels that reduce air emissions and employ environmentally preferable practices. Vessels can apply for Gold, Silver or Bronze harbour due rate and those vessels with highest participation are eligible for Port Metro Vancouver's annual Blue Circle Award. This presentation provides an overview of the EcoAction Program including eligible environmental criteria, application process and lessons learned through the recent program update.

### MVEP: Quantitative metrics for ten dominant air emissions and effluent streams
**> *Eleanor K.N. Kirtley,*** *The Glosten Associates*

The Marine Vessel Environmental Performance (MVEP) assessment estimates the impact of a marine vessel's design and operations on the marine environment by collecting vessel data and performing emission-specific calculations. Thus far, ten dominant air and effluent emissions estimates are formulated: CO2, SOX, NOX, PM, VOCs, oily water, the spread of invasive species by hull fouling and by ballast water, wastewater, and solid waste. The MVEP calculation tool includes survey entry forms, embedded formulas, and performance summaries. The outputs are given in quantitative units; such as tonnes of SOX from exhaust gas, cubic meters of solid waste, and milliliters of oil from bilge water discharges. Inputs to the estimates are based on readily available data sources; such as Bunker Delivery Notes, Garbage Record Book entries, and oily water separator rated parts per million. The survey collects inputs from operational data logs, engineers' estimates, and equipment specifications.

### Finding a green ship in a blue ocean
**> *Eric Clarke,*** *Rightship*

Energy efficiency and environmental performance are significant challenges for the global shipping industry. Although shipping is the most energy-efficient form of transport, studies estimate that it is responsible for between 3% and 4.5% of worldwide $CO_2$ emissions. To reduce these, industry must understand and compare existing ships, noting that the newest are not always the most efficient. RightShip has developed ground breaking online technology to help industry make informed decisions using two powerful but simple tools: The Existing Vessel Design Index (EVDI™) and the Green House Gas (GHG) Emissions Rating.

- The EVDI™ estimates a vessel specific amount of $CO_2$ emitted per tonne nautical mile based on the design characteristics of the ship.
- The GHG Emissions Rating determines a ship's relative efficiency compared to peer vessels. Vessels are rated from A to G (most to least efficient).

## 10:30 am | Green Marine in practice – new shipowners initiatives

### FEDNAV's Hybrid BWT System - A Canadian company's response to 13+ years of US ballast water regulations
**> *Georges Robichon,*** *Fednav Ltd.* **& *Hugh MacIsaac,*** *Great Lakes Institute of Environmental Research*

Georges Robichon's presentation will focus on how Fednav Limited tackled inconsistent US federal and state ballast water regulations and inordinate delays in introducing national BW treatment standards and how Fednav sought out effective and realistic solutions to address the AIS/BW problem. Dr. Hugh MacIsaac's presentation will focus on the invitation made and funded by Fednav, jointly with Canada's Natural Sciences and Engineering Research Council (NSERC), to independently test, analyse and assess the results of a BW treatment concept conceived by Fednav as an alternative to the IMO BW Convention's focus on type approved BWT systems designed to replace deep sea ballast exchange and the salt water flushing of NOBOB tanks. Dr. MacIsaac will introduce the Hybrid BWT System project and the process he and his team followed to test the efficacy of the Hybrid concept installed on a Fednav ship.

### Application of exhaust gas cleaning technology for the Great Lakes
**> *Mira Hube & Robert Houston,*** *Algoma Central Corporation &* **Andy Scaplehorn,** *Wärtsilä*

This presentation will discuss selection and installation of an exhaust gas scrubber for vessels being constructed by Algoma Central Corporation for Great Lakes operations. Current regulatory framework in the Great Lakes, challenges of installation and fresh water operation will be discussed.

### First « *Ici on Recycle* » Certification for a vessel
**> *Daniel Côté,*** *Groupe Desgagnés*

The M/V Camilla Desgagnés, an Arctic supply vessel of the Transport Desgagnés fleet, is the first ship to be awarded the ICI ON RECYCLE! attestation from Recyc-Québec. The many measures targeting awareness, at-source reduction, reuse and recycling enabled the vessel to reach a recycling rate of 84.2% of all solid wastes generated onboard. That result helped her to reach Silver level of the program. High management commitment, crew involvement, shore reception improvement and leadership of the vessel's management have been the key factors to get that great result. That outstanding achievement is part of the Groupe Desgagnés wastes management strategic plan to improve recycling on its vessels.

## 10:30 am | Understanding and mitigating impacts on coastal environments

### Habitat Banking - a proactive approach of meeting compensation requirements
**> *Scott Northrup & Eriko Arai,*** *Hemmera*

Habitat compensation requirements are usually met after a project has been completed. Habitat banking is a proactive practice that has benefits to wildlife, proponents, and industry. A case study will be presented of Port Metro Vancouver's efforts in establishing a corporate-wide habitat banking program for use towards future development projects. Using this case study, the benefits of habitat banking as a proactive approach to habitat compensation, including the benefits to wildlife, proponents, and industry will be presented. In addition, opportunities for partnership and relationship-building with public groups, First Nations, municipal, provincial, and federal governments will be highlighted. Finally, associated challenges and lessons learned to date will be shared to help guide other proponents who may be interested in implementing habitat banking for future projects.

### Implementing an environmental observatory - scientific data supporting decision making processes
**> *Stéphane Richard,*** *St. Lawrence Global Observatory*

Growth and intensification of industrial activities cause increased pressure on the ecosystem. Environmental issues and conservation initiatives are more than ever at the forefront. Consequently coastal communities require timely up-to-date information to get a complete and accurate picture. In that context, the St. Lawrence Global Observatory is planning an environmental monitoring pilot project involving environmental, industrial, academic, municipal and port authority representatives. The objective is to deploy data collection equipment, facilitate data management and develop data access & visualization tools. Measured variables include air and water quality (pollution, noise, brightness, hydrocarbons, temperature, salinity, etc.). The anticipated benefits include the ability to establish credible baseline information, better understanding of potential environmental impacts, better management of expectations and socio-economic concerns and, contribution to decision making processes, while being consistent with science's ecosystemic approach. The project represents a valuable initiative as it fosters cooperation and commitment from the various stakeholders, helps tap into new valuable sources of data, enables efficient use of all available information and leads to informed decisions in a context of coastal zone management.

### Marine spill response in British Columbia
**> *Mark Johncox,*** *Western Canada Marine Response Corporation*

Western Canada Marine Response Corporation (WCMRC) began as a co-operative among the refineries and Oil Handling Facilities in Vancouver harbour's Burrard Inlet in the mid 70's. Changes to the Canada Shipping Act in 1993 led to it being one of Canada's four Transport Canada certified Response Organizations. Certification requires WCMRC to meet certain planning and response standards through equipment audits and exercise requirements under Transport Canada scrutiny. WCMRC uses, and constantly trains in, the Incident Command System of emergency response. The Corporation has always believed in exceeding regulatory requirements and 2013 has brought new challenges as spill response has come under the national microscope. Outreach programs have been undertaken to educate communities about existing spill response capabilities, and to partner with local emergency responders to look for synergies. In that same regard, an acquisition program of new vessels and state of the art technology has been ongoing, personnel are looking at new and innovative ways of training and preparedness, and high tech coastal mapping programs are underway. WCMRC intends on being ahead of any potential changes while maintaining its strong ties with the marine community in British Columbia.

## 1:30 pm | LNG in the marine industry – From project to reality

### LNG development on the West Coast
**> *Craig Jackson,*** *Shell LNG*

Following a brief review of the LNG projects and developments proposed on the West Coast the presentation will focus on some of the challenges faced by a rapidly expanding industry and some of the ways that these can and are being managed.

### Potential environmental impacts of LNG in emergency situations
**> *Marcel LaRoche,*** *Lloyd's Register Canada*

Much has been discussed concerning the technologies, arrangements, and even human interface elements associated with LNG. One key area remains. What is the potential consequence if all of the measures taken to mitigate risk fail? When considering the inherent risks of storage and transfer of LNG either ship-to-ship or shore-to-ship, the potential consequences to the environment must be considered. What would be environmental damages be in the event of an emergency situation or spill? How does this compare to conventional energy sources? And finally, what steps must be taken to prepare adequate safeguards and responses to these potential events.

### New Americas era for LNG fuel vessels
**> *John Hatley,*** *Wärtsilä North America Inc.*

This presentation will cover briefly the What, Why, How, and Conclusions on LNG fuel vessels for the Americas. On the "What", the 5 marine drivers that are pressing this trend forward in the Americas. On the "Why", an introduction to LNG Basics along with the compelling price and developing availability. On the "How", integrated LNG gas fuel solutions, how soon- how fast the change is moving, and touch on LNG technology transfer from Europe. For the "Conclusion", current market signals in the news and a look at the path ahead as we move to a future decade for gas.

### LNG: an alternative fuel for British Columbia coastal ferry services
**> *Greg Peterson,*** *BC Ferry Services Inc.*

BC Ferries already operates cleaner than the proposed 2020 sulphur emissions standard for the west coast of North America by burning diesel fuel with an ultra low sulphur content. Injection-blended 5% biofuel is used on routes where supply is available. A transition to liquefied natural gas is the next step in the quest for safe, practical and affordable fuels that will meet near term sustainability objectives. This step is expected to be the most challenging to date both for new vessel construction and for the conversion of existing fleet vessels. This presentation will speak to the promises offered by LNG as a readily available cleaner fuel source, how this promise might best fit with coastal ferry services, and the necessity to moderate technology change with a constant focus on excellence in marine safety.

# SPEAKER BIOGRAPHIES >

## Robin Silvester

*CEO, Port Metro Vancouver*

Robin Silvester was appointed President and Chief Executive Officer of Port Metro Vancouver in 2009, bringing to the position extensive international experience in both the Ports and Property sectors.

Mr. Silvester spent a significant portion of his career serving in senior roles internationally with P&O Ports. As Chief Development Officer, Mr. Silvester led the company's strategy and global acquisition program. Having completed that acquisition, in 2003 Mr. Silvester was appointed the first President and CEO of P&O Ports Canada, based in Vancouver.

In 2004, Mr. Silvester relocated from Vancouver to London, UK, and later to Sydney, Australia, as a member of the P&O Ports global executive team. Following the acquisition of P&O, then the world's fourth largest container terminal operator, by Dubai Ports World in 2006, Mr. Silvester remained in Sydney and joined United Group Limited, an ASX 100 listed Engineering and Property Services firm, as Chief Development Officer. He led the $500m acquisition of US facilities management business Unicco. He was later appointed Chief Executive of United Group Services ANZ, responsible for leading the company's Property and Facilities Management business in Australia and New Zealand.

Mr. Silvester is a chartered engineer and a graduate of Cambridge University. He completed a Corporate Finance Program at the London Business School. Mr. Silvester is the Chair of the Association of Canadian Port Authorities (ACPA), a Director of the Vancouver Board of Trade, a Director of the Western Transportation Advisory Council (WESTAC), and a past Board member of the British Columbia Maritime Employers' Association (BCMEA).

## Jonathan Whitworth

*CEO, Seaspan*

Jonathan Whitworth joined Seaspan in 2009 as Chief Executive Officer, bringing over 20 years of seagoing, shore side, strategic planning, management, and leadership experience to the organization.

After graduating from the Texas Maritime Academy, Jonathan sailed for six years as an officer aboard tankers and chemical carriers in the international market. He also still holds an unlimited chief mate's license, and a 1600- ton captain's license.

After completing his MBA at the University of North Texas, Jonathan came ashore and held a number of management positions at ExxonMobil and Teekay Shipping. He later became CEO of Maritrans Inc., the largest publicly held tug/barge and tanker operator in the US Jones Act trade. Maritrans was sold to Overseas Shipholding Group of New York, in 2006, and Jonathan was retained as President to continue the strategic plan created at Maritrans.

As CEO of Seaspan, Jonathan is primarily responsible for carrying out the strategic plans and policies as established by the Board of Directors. This includes developing and implementing high-level strategies, making major corporate decisions, managing the overall operations and resources of the company, and acting as the main point of communication between the board of directors and corporate operations.

## Andreas Chrysostomou

*Former Chairman of the MEPC, IMO*

Mr. Andreas Chrysostomou graduated from the University of Newcastle upon Tyne in United Kingdom with a Bachelor of Engineering with Honours, in Naval Architecture and Shipbuilding. Andreas also holds an MBA from the same university.

After having worked for 3 years as Junior Naval Architect, Andreas joined the Department of Merchant Shipping in 1993, the Competent Authority for Maritime Affairs of the Government of the Republic Cyprus, as a Marine Surveyor and in 1994 he has been transferred to the Cyprus High Commission in London as the Counsellor Maritime Affairs and alternate Permanent Representative of Cyprus to the International Maritime Organisation.

In 2004 he was transferred back to the Head Quarters of the Department of Merchant Shipping where he is heading the Department's division responsible for Maritime Policy, Multilateral Affairs and Standards.

Andreas' leadership abilities have been shown within the IMO when he was elected as Chairman of the Design and Equipment Subcommittee in 1999 before he was elected as Chairman of the Marine Environment Protection Committee (MEPC) in 2003, a position he held until recently.

Beyond his work with the IMO, he has worked with other UN agencies such as UNCTAD and ILO and other International fora.

Finally as a result of his skills and integrity, he has been recently acknowledged by peers and has been manifested by awarding him the 2011 Award for outstanding contribution to sustainable shipping. In November 2011 he has also been presented with the Outstanding Public Service Award by the United States Department of Homeland Security, United States Coast Guard contribution to International Shipping.

## Ian Anderson

*President, Kinder Morgan*

Ian Anderson is President of Kinder Morgan Canada, a business segment of Kinder Morgan, the largest midstream and the third largest energy company (based on enterprise value) in North America. The Kinder Morgan family of companies include Kinder Morgan, Inc. (NYSE: KMI), Kinder Morgan Energy Partners, L.P. (NYSE: KMP), Kinder Morgan Management, LLC (NYSE: KMR) and El Paso Pipeline Partners (NYSE: EPB).

Mr. Anderson's responsibilities include providing executive leadership to Kinder Morgan's operating, growth and corporate responsibility in Canada. His current role in the oil pipeline sector in Canada is providing the company with the opportunity to participate in what is becoming one of the most competitive and growing segments of the energy economy.

Mr. Anderson is a Certified Management Accountant and a graduate of the University of Michigan Executive Program. He has extensive experience in the energy sector in Canada having provided executive leadership in the areas of finance, regulatory affairs, marketing, business development, strategy development and human resources.

Mr. Anderson is a board member of the Canadian Energy Pipeline Association and a member of the Association of Oil Pipe Lines. He was recently appointed as a Board of Governor to the Business Council of British Columbia (BCBC).

Kinder Morgan owns an interest in or operates approximately 73,000 miles of pipelines and 180 terminals. The company's pipelines transport primarily natural gas, refined petroleum products, CO2 and crude oil and its terminals store, transfer and handle such products as gasoline, ethanol, coal, petroleum coke and steel. Combined, Kinder Morgan has an enterprise value of approximately $110 billion.



### > Eriko Arai, *Hemmera*

Eriko Arai is an experienced project manager who specializes in complex projects that require a collaborative approach. With over 10 years of experience in management roles, she has gained expertise in marine conservation, sustainability, strategic planning, business case analysis, management accounting, non-profit management, and cross-sector partnerships. She holds a B.Sc. in Environmental Sciences from the University of British Columbia and a Masters in Business Administration from Simon Fraser University. Eriko is currently working closely with Port Metro Vancouver on their habitat compensation program.

### > Ronan Chester, *Port Metro Vancouver*

Ronan Chester is Manager, Strategic Environmental Initiatives, with Port Metro Vancouver, responsible for leading air, energy and corporate social responsibility programs. Ronan is a Project Management Professional (PMP), Certified Energy Manager (CEM), Leadership in Energy and Environmental Design Accredited Professional (LEED AP), and holds degrees in economics and environmental studies, as well as a master in sustainability.

### > Eric Clarke, *Rightship*

Eric has been the head of RightShip for the Americas region since 2005. Performing well over 30,000 vets a year, RightShip is the world leader in ship vetting, promoting safety and efficiency in the global maritime industry. Previously Capt. Clarke headed the Seafarer's Documentation and Certification Dept. of the Liberian flag -the second largest in the world- and was an adviser at the International Maritime organization, IMO. He has consulted for the US Coast Guard and the US Navy on various projects and holds both a Captain and Chief Engineer's unlimited license. He has undertaken an MIT/Sloan executive education program and studied Maritime Law at Southampton University.

### > Daniel Côté, *Groupe Desgagnés*

An Engineer, Chemist and MBA (Business Management) graduate (Université Laval), Daniel Côté has held various technical and management positions which have allowed him to get an overview of businesses' operating realities. An environmental consultant with Transports Desgagnés since 2009, he is mandated to ensure that the company meets its environmental obligations in addition to being an involved, environmentally-proactive player within the marine industry.

### > Johanne Gélinas, *Raymond Chabot Grant Thornton*

Johanne Gélinas is a Partner in Raymond Chabot Grant Thornton's Strategy and Performance Consulting Group and in charge of its Sustainability and Greenhouse Gas Management practice. She has over 25 years of public sector experience during which time she led various environment and sustainable development consulting assignments, both nationally and internationally. As the Canadian Commissioner of the Environment and Sustainable Development from 2000 to 2007 and Commissioner with the Québec Bureau d'audiences publiques sur l'environnement (BAPE) from 1990 and 1999, she knows the federal and provincial government apparatus. Johanne has extensive audit experience which she leverages to benefit her private and public sector clients. She also uses her sustainable development consulting expertise to coach clients from the corporate responsibility strategy design phase to the operational implementation of sustainable development approaches.

### > John Hatley, *Wärtsilä North America Inc.*

John Hatley PE, Americas VP Ship Power for Wärtsilä North America, has over 30 years of combined marine experience spanning business development, project management of domestic and overseas vessel construction, owner's representation, ship operations, and vessel design. Prior to joining Wärtsilä he held positions with General Electric, Marine Industries Northwest, First American Bulk Carriers, John J. McMullen Naval Architects, US Container Lines, and Trinidad Tankers. He is a licensed Chief Engineer with 8 years sea experience on commercial ships in global trades. He has a BS degree from the U.S. Merchant Marine Academy Kings Point, an MSE from the University of Michigan, and an MBA from the University of Washington. He holds positions of trust on various industry and academic advisory boards.

### > Robert Houston, *Algoma Central Corporation*

Rob is Director – Technical at Algoma Central Corporation and as such is an integral part of the company's Fleet strategy efforts. Primary responsibilities are for design, construction, and delivery of the company's new construction and life extension projects. Rob is also responsible for the assessment of available and emerging technologies to reduce Algoma's environmental footprint, and to improve upon energy efficiencies. Rob has over thirty years of experience as a shipbuilder in Canada and the United Kingdom focusing in Planning and Operations management.

### > Mira Hube, *Algoma Central Corporation*

Mira is Director, Environment at Algoma Central Corporation where she is responsible for monitoring environmental regulatory and industry developments and implementing environmental policies and programs for Algoma's fleet of vessels. Mira graduated from the University of Western Ontario with a Master's Degree in Earth Sciences and has been working in the environmental field for over twenty years, the last five of these in the marine industry. She is active in the industry, serving as Chair of Green Marine's Great Lakes Advisory Committee and past Chair of the Canadian Shipowners Association's Environmental Committee.

### > Craig Jackson, *Shell LNG*

After spending 15 years at sea on Gas, Oil and Chemical Tankers Craig came ashore to join Golar LNG as Marine Superintendent and later as the Company representative in the US. He then joined Teekay Shipping to assist with developing and expanding their LNG interests, later managing Health Safety and Quality insurance. In 2010 he was seconded to the Society of International Tanker and Terminal Operators (SIGTTO) as a technical advisor. He is currently working with Shell as a Marine advisor on the LNG Canada project.

### > Mark Johncox, *Western Canada Marine Response Corporation*

Mark is the Manager of Finance for the Western Canada Marine Response Corporation, British Columbia's Transport Canada certified marine Response Organization. A chartered accountant by trade, he is a mariner at heart and spends significant amounts of time racing sailboats and cruising in the pristine local waters of British Columbia. This, in fact, is what drove Mark to leave international banking and work in marine response. Prior to working at Western Canada Marine Response, Mark handled hedge fund administration for some of the world's largest international offshore funds.

### > Eleanor K.N. Kirtley, *The Glosten Associates*

Eleanor Kirtley joined the The Glosten Associates in 2008 after completing her PhD at the University of Michigan in Naval Architecture and Marine Engineering. She co-chairs the Technology and Research panel of the Society of Naval Architects and Marine Engineers developing the Marine Vessel Environmental Performance Assessment. Eleanor's design and analysis work includes vessel arrangements and stability, mooring systems, oil spill risk assessment, annual frequency of bridge collapse, finite element hydroelastic analysis of the SR 520 and I-90 floating bridges, and emesis probability. She is a LEED Accredited Professional and a Professional Engineer in Washington State.

### > Marcel LaRoche, *Lloyd's Register Canada*

Marcel LaRoche is employed with Lloyd's Register Canada as the Marine Manager Western Canada. Stationed in LR's Vancouver office, Marcel works to support Lloyd's Registers' commercial marine and Canadian Government clients in the delivery of marine classification and consultancy services. A Canadian Coast Guard College marine engineering graduate, Marcel has contributed for over 30 years to the marine industry serving both as a marine engineering officer at sea and ashore in the development and implementation of innovative technical solutions focused on safety, reliability and sustainable business success in the marine and energy sectors. He holds a 1st class marine engineering certificate and is an active member of both the Society of Naval Architects and Marine Engineers and the Canadian Institute of Marine Engineering. Marcel is an advocate of the Lloyd's Register purpose, which is to serve society through the advancement of technical knowledge and enhancement of safety of life, the environment and operational integrity of assets employed in the marine sector.

### > Hauk Larsen Wahl, *DNV Petroleum Services*

Hauk Larsen Wahl has been with DNV Petroleum Services for the past 19 years, and is currently the Regional Manager for the Americas. Prior to moving to Houston in 2001, he spent 5 years in Fujairah in the United Arab Emirates, where he established the first DNVPS lab in the region, and was responsible for clients in the Middle East and Africa. Mr. Wahl holds a Bachelor's degree in Petroleum Engineering from Texas A&M University, and a Master's degree in Management from Norwegian School of Management in Oslo.

**> Hugh MacIsaac,** *Great Lakes Institute of Environmental Research*

Hugh MacIsaac is a professor at the Great Lakes Institute for Environmental Research at the University of Windsor, who studies pathways and vectors of species introduction. Hugh has worked on alien invasive species for 23 years and currently directs the Canadian Aquatic Invasive Species network, a consortium of 31 professors from across Canada. His research interests include an array of questions regarding invasion biology, with a focus on aquatic ecosystems, ranging from fundamental questions such as what determinants affect species invasion patterns in general, to more applied topics such as how best to prevent ship-mediated invasions of the Great Lakes.

**> Andrew MacKay,** *Envirochem Services Inc.*

Andrew MacKay is a certified Environmental Professional with over 20 years experience in heavy industry environmental management and sustainability planning. A former Montrealer, now based from North Vancouver, BC, Andrew has used a keen eye on most-effectiveness and business opportunity to help numerous clients win environmental management awards, achieve industry firsts and maintain community social license. His experience spans BC's coastline involving matters ranging from operations environmental management and construction monitoring to foreshore assessments, dredging and project permitting. Prior to working as an environmental manager, Andrew was a part-time Killer Whale trainer at the Vancouver Aquarium; skills that now help him manage his home life!

**> Tony Matergio,** *Seaspan ULC*

Tony joined the Seaspan Shipyards group as Manager - Process Improvement in January 2005 and in June 2006 was appointed Vice President and General Manager of Vancouver Drydock. In 2010, Tony assumed the role of Vice President - Lower Mainland Shipyards and with that the added responsibility for Vancouver Shipyards. Tony earned a diploma (Honours) in Welding Engineering Technology at Northern College of Applied Arts and Technology, Kirkland Lake Campus, and in 2006 he successfully completed the Simon Fraser University Executive Management Program. As Vice President - Lower Mainland Shipyards, Tony is responsible for Seaspan's Lower Mainland shipyard operations (Vancouver Drydock and Vancouver Shipyards) supplying ship repair and new ship construction services to both domestic and international ship owners.

**> Hilary Miller,** *SMIT Marine Canada*

Hilary is the Safety, Health, Environment and Quality Officer at SMIT Marine Canada Inc. She previously worked with a prominent Canadian ENGO, Ecojustice. While at Ecojustice, Hilary worked on the Federal Inquiry into the Disappearance of the Fraser River Sockeye Salmon, and performed the organization's first carbon audit. She currently sits on the "Sustainable Livelihoods Alumni Group," part of the NGO Canada World Youth (CWY), and in 2012, traveled with CWY as a civil society delegate to the United Nations Conference on Sustainable Development. Hilary holds a Bachelor's degree in Political Science from SFU and completed graduate coursework in Environmental Studies at the University Of Pretoria, South Africa.

**> Scott Northrup,** *Hemmera*

Scott Northrup is a Project Director at Hemmera who specializes in marine and estuarine impact assessment and planning projects. Scott holds a B.Sc. in Marine Biology from the University of British Columbia, and has more than 20 years of experience in environmental impact assessment, project planning, habitat development, habitat monitoring and regulatory review in marine and estuarine environments. A former Habitat Management Biologist with Fisheries and Oceans Canada, Scott reviewed development, conducted Environmental Assessments under CEAA, developed guidelines and BMP's for a variety of water-use activities and was involved in Habitat Banking programs for both private and government sector clients.

**> Carole Nuttall,** *Montreal Port Authority*

Carole Nuttall joined the Montreal Port Authority in 2010 as an environmental advisor. She works closely with tenants to ensure they meet their obligations with respect to the environmental clauses in their leases: environmental audits, Phases I and II site characterisations, and site remediation. She also ensures the realization of environmental effects evaluations of works carried out on the port territory and assists on litigation projects. Prior to joining the Port, she worked as a Geologist and GIS specialist for environmental consulting firms both in Montreal and in California. Ms. Nuttall graduated with a Bachelor's degree in Geology at Queen's University in Kingston, Ontario.

**> Greg Peterson,** *BC Ferry Services Inc.*

Greg Peterson has 32 years of experience in the marine industry. The past two decades have been with BC Ferries, first as a Chief Engineer and then in maintenance and engineering management roles. He is currently Director, Engineering Services and has been actively involved in recent years with BC Ferries examination of LNG as a potential alternative fuel source.

**> Stéphane Richard,** *St. Lawrence Global Observatory*

Stéphane Richard holds a bachelor's degree in business administration from Université du Québec à Rimouski. He played a key role in the expansion and development of "Globetrotter" Internet services, a pioneer in making the Internet part of our daily lives. He then carried out a wide range of duties as an analyst and a manager in the telecommunications (Internet, Ethernet and wireless), informatics and manufacturing sectors. Since September 2011, he has been Executive Director of the St. Lawrence Global Observatory, whose mission is to promote and facilitate access, dissemination and exchange of electronic data and information about the St. Lawrence system.

**> Georges Robichon,** *Fednav Ltd.*

Georges Robichon, Special Counsel and Secretary at Fednav Limited, is a member of Fednav's board of directors since November, 2000 and a founding director of the St. Lawrence Seaway Management Corporation. Mr. Robichon holds Bachelor degrees in Arts and Common Law from the University of Ottawa and a Masters of Law from The London School of Economics and Political Science. For 27 years, Georges was responsible for the Fednav Group's corporate, commercial and financing legal affairs. Since February 2000, Georges has helped guide Fednav through the myriad of regulations dealing with the introduction and spread of aquatic invasive species through ballast water discharges from ocean going vessels transiting the Seaway/Great Lakes System.

**> Ron Sahu,** *consultant*

Dr. Sahu has a B.Tech (Hons) in Mechanical Engineering from the Indian Institute of Technology (IIT), followed by a M.S and Ph.D in Mechanical Engineering from the California Institute of Technology (Caltech) in Pasadena, CA. He is a consultant with over twenty two years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment; soils and groundwater remediation; combustion engineering evaluations; energy studies; and multimedia environmental regulatory compliance. He has provided consulting services to numerous private sector, public sector and public interest group clients. In addition to consulting, Dr. Sahu provides expert witness services at the interface of regulatory and technical issues. Finally, for over twenty years, Dr. Sahu was adjunct faculty at a number of universities in Southern California, where he is based.

**> Andy Scaplehorn,** *Wärtsilä*

Andy has been involved with sea water scrubbing since 2003; firstly in installation and running the first trial unit on the Pride of Kent in a project between BP and his then employer, P&O Ferries. Joining Krystallon in May 2005 he began work on their 400kW test unit. At Krystallon Andy was involved in every aspect of the company's development, from technical R&D through process development & project planning, marketing and delivery. Krystallon was purchased by Hamworthy in 2010 and became Hamworthy Krystallon. With Wärtsilä acquiring Hamworthy at the end of 2011, closed loop scrubbing was added to the production portfolio. Due to his unique experience in both shipping operations and scrubbing, Andy now heads up the commissioning teams for all scrubbing projects. Andy has a 1st Class Certificate of Competency (Motor) and a postgraduate diploma in Business Management Studies.

**> Jason Scherr,** *Prince Rupert Port Authority*

Jason has eighteen years in the field of fisheries and environmental monitoring. He is responsible for the Environmental Sustainability Plan for the Prince Rupert Port Authority. In all of its activities, the Port Authority is guided by key principles of environmental sustainability, including pollution prevention, preservation of environmental integrity, efficient use of resources, and continuous improvement. Jason is the lead for the Green Marine program at the Port Authority. He is an alumnus of the University of Victoria (Geography, History, English), and is presently the President of the Prince Rupert and District Chamber of Commerce.

**> Ellen W. Watson,** *Port of Seattle*

Ms. Watson has served the Port of Seattle's Seaport Environmental air quality program for 4 years as an environmental program manager. She has stewarded emission reduction programs established to achieve performance measures set in the Northwest Ports Clean Air Strategy. Her work includes collaborating with the Puget Sound Clean Air Agency to implement the At-Berth Clean Fuels Program, overseeing the Port of Seattle's efforts in preparing the 2011 Puget Sound Maritime Air Emissions Inventory; and coordinating the effort to update the Northwest Ports Clean Air Strategy, by the Ports of Seattle and Tacoma and Port Metro Vancouver.

**> Greg Wirtz,** *Cruise Lines International Association, North West and Canada*

Greg Wirtz was appointed as President of the North West & Canada Cruise Association in April 2011. An industry veteran, Greg Wirtz has more than 20 years experience in marketing, planning and trade development. As Trade Development Manager for Port Metro Vancouver, Mr. Wirtz has led the marketing and operations of the cruise sector for Canada's largest and most established cruise home port. Mr. Wirtz also provided industry-wide leadership through his roles as Chair of Cruise British Columbia and Pacific Rim Cruise Association.

**> Alexandra Woodsworth,** *Georgia Strait Alliance*

Alexandra's career has combined academic, public engagement and advocacy work focused on climate and energy issues. Born and raised in Vancouver, she received a B.A. in Geography from the University of Victoria, followed by postgraduate work in the UK where she studied environmental communication at University College London and completed a PhD on public engagement in climate action at the University of East Anglia. She has worked on numerous high profile campaigns advocating for stronger environmental policies in the UK, and now leads the Georgia Strait Alliance's Energy and Shipping programme.



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# WEDNESDAY, MAY 29 2013

**Pre-conference events**

**AFTERNOON: HARBOUR TOUR**
Sponsored by Port Metro Vancouver

**EVENING (5:30PM): OPENING RECEPTION** [GEORGIA]
Sponsored by Port of Prince Rupert

# THURSDAY, MAY 30 2013

**7:30 am** — REGISTRATION & BREAKFAST [GEORGIA]

**8:30 am** — TIME FOR ACTION: HOW LEADING SHIPPING COMPANIES AND ORGANIZATIONS ARE RESPONDING TO THE SUSTAINABILITY CHALLENGE [PLAZA A+B]

***Robin Silvester,*** *CEO, Port Metro Vancouver*
***Jonathan Whitworth,*** *CEO, Seaspan ULC*
*Guest Speaker:* ***Andreas Chrysostomou,*** *former chairman of the Marine Environment Protection Committee at the IMO*

**10:00 am** — COFFEE BREAK & EXHIBITION VISIT [GEORGIA]

**10:30 am**

THE NORTH AMERICAN ECA: EARLY LESSONS LEARNT [PLAZA A+B]

- **North American ECA - regulations vs. reality**
  ***Hauk Larsen Wahl,*** *DNV Petroleum Services*
- **The North American ECA and short-sea shipping - An analytical assessment**
  ***Ron Sahu,*** *consultant*
- **North American ECA: the cruise lines' perspective**
  ***Greg Wirtz,*** *Cruise Lines International Association, North West and Canada*

MEETING ENVIRONMENTAL AND SOCIAL CHALLENGES [PLAZA C]

- **Mapping soil quality and pollution reports**
  ***Carole Nuttall,*** *Port of Montreal*
- **Marine dredging at Pacific Coast Terminals: planning sustainability**
  ***Andrew MacKay,*** *Envirochem Services Inc.*
- **Shipyard modernization: environmental, efficiency and production improvements**
  ***Tony Matergio,*** *Seaspan ULC*
- **A partnership approach to sustainability strategy**
  ***Jason Scherr,*** *Prince Rupert Port Authority*

**12:00 pm** — LUNCH [ENGLISH BAY + CYPRESS (34th FLOOR)]

**1:15 pm**

PERSPECTIVES ON SUSTAINABILITY IN THE MARITIME INDUSTRY [PLAZA A+B]
Guest speaker: ***Johanne Gélinas,*** *Raymond Chabot - Grant Thornton* ***"Why a responsible business is more than a nice to have"***

- **From ENGOs to industry: comparing objectives, means and challenges in the implementation of sustainable development**
  ***Hilary Miller,*** *SMIT Marine Canada*
- **Truly sustainable development in the shipping industry**
  ***Alexandra Woodsworth,*** *Georgia Strait Alliance*
- **Maritime emission reduction successthrough voluntary initiatives**
  ***Ellen L. Watson,*** *Port of Seattle*

**3:00 pm** — COFFEE BREAK & EXHIBITION VISIT [GEORGIA]

**3:30 pm**

ENVIRONMENTAL TECHNOLOGY FORUM [PLAZA A+B]
Short presentations on new technologies and innovation by GreenTech 2013 exhibitors

**5:30 pm**

CERTIFICATION CEREMONY [SEYMOUR + GROUSE (34th FLOOR)]
Presentation of Green Marine **2012 Certificates** to all participants of the Environmental Program
Guest speaker : ***Ian Anderson,*** *President, Kinder Morgan*
**Evening reception** for delegates and guests

# FRIDAY, MAY 31 2013

**7:30 am** — BREAKFAST [GEORGIA]

**8:30 am**

REWARDING ENVIRONMENTAL PERFORMANCE [PLAZA A+B]

- **Eco Action Program**
  ***Ronan Chester,*** *Port Metro Vancouver*
- **MVEP: Quantitative metrics for ten dominant air emissions and effluent streams**
  ***Eleanor K.N. Kirtley,*** *The Glosten Associates*
- **Finding a green ship in a blue ocean**
  ***Eric Clarke,*** *Rightship*

**10:00 am** — COFFEE BREAK & EXHIBITION VISIT [GEORGIA]

**10:30 am**

GREEN MARINE IN PRACTICE: NEW SHIPOWNERS INITIATIVES [PLAZA A+B]

- **FEDNAV's Hybrid BWT System - A Canadian company's response to 13+ years of US ballast water regulations**
  ***Georges Robichon,*** *Fednav &* ***Hugh MacIsaac,*** *Great Lakes Institute of Environmental Research*
- **Application of exhaust gas cleaning technology for the Great Lakes**
  ***Mira Hube & Robert Houston,*** *Algoma Central Corporation |* ***Andy Scaplehorn,*** *Wärtsilä*
- **First *«Ici on Recycle»* Certification for a vessel**
  ***Daniel Côté,*** *Groupe Desgagnés*

UNDERSTANDING AND MITIGATING IMPACTS ON COASTAL ENVIRONMENTS [PLAZA C]

- **Habitat Banking - a proactive approach of meeting compensation requirements**
  ***Scott Northrup et Eriko Arai,*** *Hemmera*
- **Implementing an environmental observatory**
  ***Stéphane Richard,*** *St. Lawrence Global Observatory*
- **Marine spill response in British Columbia**
  ***Mark Johncox,*** *Western Canada Marine Response Corporation*

**12:00 pm** — LUNCH [ENGLISH BAY (34th FLOOR)]

**1:30 pm**

LNG IN THE MARINE INDUSTRY: FROM PROJECT TO REALITY [PLAZA A+B]

- **LNG development on the West Coast**
  ***Craig Jackson,*** *Shell LNG*
- **Potential environmental impacts of LNG in emergency situations**
  ***Marcel LaRoche,*** *Lloyd's Register Canada*
- **New Americas era for LNG fuel vessels**
  ***John Hatley,*** *Wärtsilä North America Inc.*
- **LNG: an alternative fuel for British Columbia coastal ferry services**
  ***Greg Peterson,*** *BC Ferry Services Inc.*

**3:00 pm** — CLOSING REMARKS [PLAZA A+B]