OPENING STATEMENT TO THE HOUSE OF COMMONS' STANDING COMMITTEE ON FISHERIES AND OCEANS AS A PANEL OF WITNESSES IN VIEW OF ITS STUDY OF MARINE CARGO CONTAINER SPILLS PURSUANT TO STANDING ORDER 108(2)

by

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OPENING STATEMENT

The government of Canada, Province of British Columbia, and Coastal First Nations are not operationally prepared to effectively manage a container ship requiring a safe place of refuge and provision of salvage operations to prevent /mitigate wide-spread pollution and/or ship-wreckage. For loss of its containers, there is no response capability to track floating containers, find and recover sunken ones, remove stranded containers, and/or recover debris from their contents that include hazardous substances. There are institutional and technical challenges.

The following provides an overview of EnviroEmerg Consulting's work and credentials, container vessel traffic and risk along British Columbia's West Coast, and a synopsis of Canada's preparedness key deficiencies to support the above opening statement. The following are strictly the opinions of Stafford Reid (Principal of EnviroEmerg Consulting) and not that of any referenced agency, First Nation or organization.

ABOUT ENVIROEMERG CONSULTING

Stafford Reid - Principal of EnviroEmerg Consulting has a 48-year career focusing on regional, national and international environmental issues related to oil and hazardous material spill risk, prevention, preparedness and response. Specialties include emergency management training under the international *Incident Command System* (ICS) and *Shoreline Cleanup Assessment Techniques* (SCAT) for oil spills in marine environments. Sectors include transportation (vessel, rail, road, pipeline) and industrial (manufacturing, storage). Clients include governments, companies, First Nations and non-government organizations. Work includes impact assessments for major coastal projects in British Columbia.

Credentials: *Masters of Science* at *University of Calgary* (1980). Specialized in resource management and environmental policy. Master's thesis: *An Environmental, Social and Economic Analysis of Mitigation and Compensation for Fish and Wildlife Losses*. *Bachelors of Scie*nce at *University of Victoria (1974)*. Majored in marine biology.

WESTCOAST CONTAINER SHIPS TRAFFIC AND RISK

Container ships call at three ports in B.C. including Prince Rupert, Vancouver, and Nanaimo. There is substantially increased current and future growth in container ship demand that is being met by infrastructure expansion (terminals and railways) in Ports of Vancouver and Prince Rupert. Stimulus is largely from multi-billion-dollar investments in the federal/provincial *Pacific Gateway Transportation* initiatives.

More than 4,000 large ships travel the trade routes through the waters in Canada's Pacific region. Container ship traffic is dominant. They are big and carry a large quantity of persistent oil as bunker fuel. The largest container ship to call on a Canadian port was Prince Rupert in 2017 with 14,500 TEUs (Twenty-foot Equivalent Unit). Containers are built-in 20-foot and 40-foot lengths. One 40-foot container is equal to 2 TEUs.

Clear Seas (clearseas.org) - *centre for responsible marine shipping* - have undertaken numerous West coast studies that pertain to container ship traffic and casualty interventions: vessel drift and response analysis (2018), emergency towing vessel needs assessment (2018), availability of tugs of opportunity (2019,) and a vessel traffic analysis (2020). What stands out is container ships on the West coast are getting bigger and more frequent. They are the most problematic for emergency towing rescue owing to their high windage and corresponding drift-rate which increases the likelihood of a swift grounding on a coastal shore if there is a loss of propulsion. Both high windage and mass necessitate extreme emergency tug towing strength to stabilize a drifting container ship. In 2016, there were no tugs of opportunity able to rescue the largest ships on the West coast. Canadian Coast Guard's leasing of two Emergency Towing Vessels (ETVs) under the federal *Oceans Protection Plan* temporarily fills this gap.

For the last three decades, planning, preparing and responding to a major marine oil spill has been the focus of agencies, industries, and the public. There is still work to be done. However, it's important not to lose sight of other marine risks and consequences along British Columbia's coast, particularly a container vessel casualty. This winter's *Zim Kingston* container incident near the entrance to the Juan de Fuca Strait was just a shot across the bow. A previous 2016 *Hanjin Seattle* container incident had more impact on Vancouver Island though it lost only 35 containers overboard compared to 109 from the *Zim Kingston*.

These West-coast container ship incidents were minor events compared to those world-wide notably: *Hanjin Pennsylvanna* (fire and explosion in Indian Ocean 2002), *Hyundai Fortune* (fire and explosion in Gulf of Aden 2006); *MSC Napoli* (an intentional grounding in English Channel, 2007); *Rena* (power grounding off of New Zealand, 2011); *MSC Flaminia* (fire and explosion in North Atlantic 2013); *MOL Comfort* (broke in half and sank in Indian Ocean 2013*);* and *Maersk Honam* (fire in Arabian Sea 2018).

CANADA'S PREPAREDNESS AND RESPONSE DEFICIENCIES

PART 1: CRITICAL INTERVENTIONS FOR A CONTAINER VESSEL CASUALTY

There are three critical interventions should a container vessel lose its propulsion power or rudder steerage and drift "not-under-command". It may be close to drift grounding onto a shore, losing containers, suffering structural hull failure, on fire, flooding or combinations thereof. The three interventions to prevent loss of the vessel and environmental impacts are:

1. An emergency towing to stabilize and maneuver the stricken vessel
2. A place of refuge (POR) or another course of action (COA) decision to provide a safe place/situation to undertake onboard repair, salvage operations, and/or confine coast-wide pollution to a localized area such as within a cove or inlet.
3. A salvage operation to undertake fire-fighting, vessel hull-patching, flood-water pumping, and/or container stabilizing.

Emergency Towing: The call for dedicated emergency rescue tugs (also referred to as Emergency Towing Vessels) began in 1995 by the Government of British Columbia. The 2014 near grounding of the M/V *Simushir* cargo vessel on Haida Gwaii garnered renewed attention and study. The *Ocean Protection Plan* funds provided an opportunity for the Canadian Coast Guard to lease two Emergency Towing Vessels: *Atlantic Eagle* and *Atlantic Raven*. The *Atlantic Raven* played an essential role in the *Zim Kingston* incident. Their two-year $60 million lease has been extended for another year at a cost of $20 million. Their long-term future engagement is uncertain as Canada undertakes its *National Strategy on Emergency Towing*. A political case is that these expensive ETVs are essentially subsidizing the shipping industry - the risk-makers - though the ETVs protect their vessels as well as the marine environment.

Places of Refuge/Course of Action: Once a vessel is either in tow or on its own power, the next major decision is what to do with it. A place of refuge (POR) is a physical location such as a cove, inlet, harbour, whereas a course of action (COA) includes leaving the vessel in place, sending it further offshore, or intentionally beaching it.

Canada's obligations to a major marine vessel in need of assistance arise from the *International Maritime Organization's* (IMO) *International Convention for the Safety of Life at Sea* (SOLAS). Transport Canada is the lead federal agency for ensuring the IMO's guidelines, as well as *Canada's National Places of Refuge Contingency Plan* - and its regionally-based supporting plans - are taken into account and implemented to the greatest extent possible.

A POR decision, inclusive of COAs, is essentially an environmental emergency whereby collaborative efforts are taken to recognize, address, and balance social, cultural, ecological, and commercial values as well as a community's safety with that of saving the stricken vessel. For this reason, the decision whether to provide a POR or take another COA must be made with full consideration of the interests of the Province, First Nations, coastal communities, and others

whose interests could be directly affected. A final POR/COA decision can have significant ramifications to the ship owner, the well-being of coastal people and ecological vitality.

Beginning in 2015, Transport Canada collaborated with the *Council of the Haida Nation* to revise and enhance its outdated *Pacific Region Places of Refuge Contingency Plan*. Over several years of workshops and meetings the initiative resulted in a revised TC Contingency plan that strategically engages First Nations, Federal and Provincial Governments in the POR/COA process, developed POR templates for resources, services, logistics, identified potential PORs on Haida Gwaii, and developed a sophisticated POR/COA Risk-based Decision Tool. The products and collaborations provided a model for additional engagement with coastal communities. However, once these products were vetted by Transport Canada's policy group in Ottawa, all that remained intact was the POR templates and POR locations for Haida Gwaii. In particular, the POR/COA Risk-based Decision Tool that was months in preparation was converted to a simple checklist. These changes were done without consultation with the Haida Nation. The tool makes it transparent to coastal communities, agencies and the public on how, who and what values were considered and contributed to the POR/COA recommendation, how they were ranked. weighed, and compared. This importance of comprehensiveness, transparency, and equity was reduced - let alone trust in government-to-government collaboration.

Salvage: Though there are large ocean-going tugs in British Columbia, there is essentially no major vessel salvage operations capability. Salvage operations is a specialized field that includes stability analysis of a damaged vessel, use of specialized hull patches, operation of large water and fuel removing pumps, underwater remotely operated vehicles (ROVs) and more. Major international salvage companies have no presence or representation in BC such as SMIT and Mammoet - two of about 50 companies.

In Canada, there is no legal requirement that major vessels entering its waters o have an arrangement with a salvage company, nor are there any specifies the performance requirements of a salvage company. In the United States are these requirements. The shipping industry has not invested in regional salvage capacity building such as buying staging critical equipment along the coast and undertaking exercises. They view the low probability of using the expensive resources as out weighting such investments.

PART 2 - MANAGEMENT OF CONTAINERS AND THEIR CONTENTS

If a container vessel should discharge containers overboard, the management considerations include:

1. Tracking container's drift, conditions (if breached).
2. Recovering small particles of broken Styrofoam and/or industrial plastic pellets (referred to as nurdles) before they strand onshore and become embedded in sediments (sand, gravel, pepples, *etc*.).
3. Assessing and cleaning shores of container contents as wide-spread debris consisting of consumer and industrial products that include hazardous materials.

4. Locating sunken and shore stranded containers to undertake salvage operation

Tracking Containers: Tracking containers is generally done by an aerial reconnaissance in a helicopter or fixed-wing plane. Geographic positioning drift buoys might be deployed to satellite-track where they might go, as done for the *Zim Kingston*. These are relevant measures. However, trajectory modelling of containers based on their level of submerging has not been developed such as can be done for an oil spill. An innovative method is to attach a long line with a floating buoy to onto a semi-submerged container. This can be done from a small vessel such as a CCG S&R vessel or a First Nation's Guardian boat. The buoy can be equipped with a radar-reflector, GPS tracking device, and underwater acoustical (pinging) locators. This allows for both surface and underwater tracking and locating. This simple technology has not been developed.

As for shore-stranded containers and any ensuring debris-field, this calls for a structured helicopter field survey that uses coastal shoreline type maps. *EnviroEmerg Consulting* provides the only training on this as part of an *Aerial Observation for Coastal Spills* course - sponsored by the *Council of the Haida Nation*.

Recovering Styrofoam and Industrial Pellets (Nurdles): A common consequence of containers breaking apart is the extensive release of packing Styrofoam that quickly breaks into small particles and collects near to and on shores. As a common container cargo is large quantities of industrial plastic pellets - referred to as *nurdles*. These are used for plastic-product manufacturing. Particles of Styrofoam and nurdles have very high and insidious ecological impacts on marine fish, mammals, and birds as they can ingest them. The particles do not bio-degrade and can rapidly become embedded into a shore's sediments - sand, gravel, pebbles and cobbless. Currently, there has been no research and development on how to recover Styrofoam/nurdles that collect and concentrate in the shore zone (*e.g.,* coves, crevasses, surge channels) or to remove from beach sediments. Un-recovered, they lead to decades of ecological harm.

Assessing and Cleaning Shores: As for oil spills, there is a very well-developed process to document where oil has been stranded on shores, to ascertain cleanup methods, and to establish agreed-on levels of cleanup (endpoints). This process is referred to as *Shoreline Cleanup Assessment Techniques* (SCAT). This is not the case for a container debris-field that can include drums, buckets, Styrofoam, nurdles, boxes, food packages, and more. An operational guideline by the French non-government organization called CEDRE on "Containers and Packages Lost at Sea" describes the scope and classification of wastes created and decisions that need to be made to assess container debris. There is no equivalent guideline for Canada and no training.

Locating Sunken Containers: Typically, sunken containers are left on the sea-bed. It is often too expensive and problematic to find and recover them. It requires a salvage vessel using sonars, cameras, magnetometers, or combinations thereof. Hence the value of pro-actively attached the above-described buoys with their tracking/locating technologies. Over time, containers will disintegrate and release their contents, some are harmful to marine ecologies and/or

contaminates commercial/subsistence fisheries. To date, the 109 containers from the *Zim Kingston* and 35 containers from *Hanjin Seattle* container remain on the sea-bed.

Hazardous Material: British Columbia has marginal hazardous material response capability for a vessel-based incident other than hiring a land-based/experienced Haz-mat company. Hazardous materials are generally "dangerous goods" that have commercial uses, but can also include wastes such as used oils, paints, and solvents. They may be carried in bulk or in packages and may be liquid, solid, or gas. They may be very hazardous or just noxious to people or the environment. In the marine world, these products are referred to as "hazardous and noxious substances" (HNS). Container ships carry a wide range of HNS from industrial solvents to store paints; these must be declared on the ship's manifest.

Transport Canada is the lead federal agency to address HNS response on - or from - vessels. The Ministry of Environment is the lead provincial agency for hazardous materials spills that can potentially impact provincial lands and/or provincial financial, social, commercial and /or environmental interests. Canada's marine oil spill preparedness and response regime does not apply to responding to a hazardous material incident on - or from - a major vessel. This activity is not part of Canada's Response Organization mandate.

Operationally, there has been no progress in this HNS response area. There have been workshops and studies, but no meaningful operational readiness in the way of exercises, training, guidelines, equipment, research & development and more. The following chronology supports this statement:

- Thirty-two years have passed when first recommended by the 1990 *Brander-Smith's report on tanker safety and marine spill response capability*: recommendation in this report, that stated: ....*to involve relevant government agencies and industry in the process of developing a system for response to marine incidents of chemical materials.*
- Workshops in Ottawa (1995) and Toronto (1997) were held to begin the process of establishing a Canadian capability to manage a ship-source hazardous material incident.
- In 1998, British Columbia established a Pacific Working Group to begin setting the foundations for a *Canadian Marine Chemical Emergency Response (MCER) regime.* This proactive report was sent to Transport Canada with no reply or follow-up.
- The lack of progress in hazardous material preparedness from vessel accidents was noted in by the *Auditor General of Canada* its 2010 Fall Report of the *Commissioner of the Environment and Sustainable Development*: Chapter 1 - Oil Spills from Ships in its section on preparing for ship-source chemical spills.
- Transport Canada wrote a background paper on the topic, with essentially no meaningful operational readiness. Refer to: Transport Canada (TP15093E) ,2010 Discussion Paper: *Maritime Transport of Hazardous and Noxious Substances: Liability and Compensation*.
- In 2020, Transport Canada commissioned an Expert Panel on Tanker Safety to address requirements for a hazardous and noxious substances system as Phase 2 of its review on ship-source spill preparedness and response requirements in the Arctic.

Establishing a Shore Clean-up Workforce: Coastal communities have an opportunity to be engaged in a paid and supervised workforce to assist in shore-stranded "non-hazardous" debris cleanup. In the case of oil onshore, it is understood by industry and government that "volunteers" will not be used to clean shores or to remove wastes. Instead, a paid "workforce" will be established at the time of the incident so that the person can be hired, supervised, and - if needed - fired. That is a person can volunteer to register to be part of a workforce.

A workforce approach needs to apply to debris cleanup from a container vessel incident. In the case of both the *Zim Kingston* and *Hanjin Seattle incidents,* the Responsible Party (ship owner) relied on unpaid volunteers. For the *Zim Kingston,* they were at least supervised. The lack of workforce development - registration, assessment, assignment, safety, equipment, supervision, and payment - is unsettling to the coastal community. For example, for the 2016 Hanjin Seattle shore debris was just left a non-government organization whose regional manager expressed in the media the following:

> *Woodbury says that she feels that the shipping industry is disconnected from the repercussions of lost containers and doesn't see the end result. "If they'd been here on the ground they would have seen how disastrous it was for the coastline and how much that hurt the people who live here. Honestly, it's a form of 'waste' colonialism for the Indigenous People, the First Nation. Were they compensated for the disaster that happened on their land? No. But that waste material was just shipped off on to their territory without a thought*.

This is an example of "*recreancy*" meaning the social harm to a community due to institutional failure based on indifference, inaction, and/or indecision, like not being prepared to recover all mobile oil or debris from all locations like shore zones and on shores. As with not recovering sunken containers, unpaid shoreline cleanup does not reflect Canada's "*polluter pay principle"* for ships that cause accidental pollution.

Waste Disposal: Waste disposal is expected to be paid for by the Responsible Party (RP) - the ship owner. Hence, the RP will expect pragmatic and reasonable measures. These objectives are hard to achieve without advanced preparedness. The Government of BC has guidelines for oily waste management, but no current strategy or plans for final disposal. There has been no consideration for temporary and final disposal of other marine vessel pollutions, such as debris-field materials from a container vessel casualty. A consequence is that massive amounts of debris could be stored on remote Provincial Crown or a First Nation's territorial lands until a solution is developed.

Exercises for Container ship Incidents: There have been no exercises in British Columbia that pertain strictly to a container ship casualty that includes such matters as: its incident management related to command roles, operations and planning, its rapid drift rate, an ETV's capability to stabilize and tow, a POR or COA decision, tracking/modelling drifting containers, aerial observation reconnaissance and field surveys, and more. The closest opportunity was a 2018 marine incident "table-top" exercise planned as a collaborative effort between Transport

Canada, Canadian Coast Guard (Fisheries and Oceans Canada) and the Council of the Haida Nation. It was done under the auspicious of the *Marine Awareness Information System* being developed under the *Ocean Protection Plan*.

EnviroEmerg Consulting was invited to suggest and prepare the marine incident exercise based on the highest risk and scenario needing development - which is a major container vessel drifting off of the West coast. There was no oil spill, or threat component injected. A week before the exercise, the Canadian Coast Guard unilaterally changed the marine incident strictly to an oil spill event - despite months of preparation that included maps and charts of vessel drift, coastal resources at risk, established PORs and more. The project delivery changed more to a workshop format where Transport Canada and the Canadian Coast Guard spent most of their time defining who would be the lead agency under-different scenarios. For example, a container ship on fire, but not an oil spill, or just an oil spill. This demonstrates how federal agencies work in silos and within their comfort zone based on their legislated mandates.

Incident Management for a Major Vessel Casualty and Pollution: For environmental emergencies such as a container vessel incident that doesn't involve Search and Rescue (lifesaving), the incident is managed under the provincial to international adopted Incident Command System (ICS). This includes adopting and applying a Unified (shared) command (UC) with all affected jurisdictions. These can consist of the governments of a province, Canada, Local government(s) and First Nation(s). Unified Command also consists of the Responsible Party (ship owner). Unified Command recognizes that no one entity owns and managements the diverse coastal/marine ecological, social, cultural, and commercial values - it is a shared responsibility. Though a "muddy" arrangement, Unified Command is also about respect. It ensures everyone contributes and agrees to the response objectives, strategies, tactics, evaluations, messaging, and more.

The Canadian Coast Guard only adopted ICS/UC in 2013 and is still working through the processes. Transport Canada as a potential lead federal agency subscribes to ICS/UC but has not developed any capacity to deliver it, such as establishing an incident management team. By default, Transport Canada essentially relinquishes their command role to CCG. The Province of British Columbia adopted the ICS/UC in 1991 with their marine oil and hazardous material response plans and Incident Management Team development. Coastal First Nation in B.C. - particularly in the Central and North Coast and Haida Gwaii - all subscribe to ICS/UC and are receiving ongoing training.

For the *Zim Kingston* incident, CCG established Unified Command with the ship owner, the province (Ministry of Environment and Climate Change), and one First Nation - Sc'ianew (Beecher Bay) First Nation located near Victoria. Though containers drift to the Northern end of Vancouver Island (near Cape Scott), none of the fourteen West coast First Nations members of the *Nuu-chah-nulth Tribal Council* were invited or engaged in Unified Command. Instead, they were directed to the Planning Section's Environmental Unit.

The Government of British Columbia and Coastal First Nations do not consider the Environmental Unit the proper place to apply their governance roles. This is because they are

relegated to making only arms-length recommendations to command - essentially having the same authority level as a biologist/scientist from Fisheries and Oceans Canada or Environment Canada and Climate Change. ICS's command section is where "governance" happens.

To have jurisdictional representation in an Environmental Unit is a re-creation of how the CCG worked in the 1970s to 2013 when they did not subscribe to ICS and the Unified Command protocol therein. Once ICS is engaged, one doesn't get to cherry-pick who participates; the incident's impacts and threats to jurisdictions make the determinations.

As for dispute resolution, where a consensus cannot be reached, one must understand that an environmental emergency is about community and coastal values. The matter becomes political and sent up the ladder for a Minister, Prime Minister, Mayor, Band Council and/or CEO to resolve with supporting background information from their respective Incident Commanders. Abuse of authorities to force a UC decision can result in a legacy of acrimonious feelings by those over-ridden. Rarely does a UC decision have to be elevated to the executive policy level; Canadians are a master of consensus making.

From a shipping industry standpoint, ship owners and their agents (lawyers) prefer a single incident commander. It is easier for them to influence and direct the response to meet their interests - keeping company profile and expenses low as possible. As with CCG, there is a strong desire to keep Unified Command as small as possible.

As for non-government organizations (industry or environmental), they are not part of an integrated Incident Management Team established by Unified Command. An NGO can be engaged only if asked to, accountable to an Incident Commander, and agreed on by Unified Command. At this juncture, NGO personnel are supervised and paid for their services, abide by the ICS reporting and protocols like everybody else in the response team. There is no free-wheeling allowed by an NGO.

Limits of Financial Responsibility for a Marine Vessel Casualty: For a major vessel casualty the ship owner can limit its financial responsibility for response costs and compensation awards. This is legally subscribed to within Canada's *Marine Liability Act*. The amount can be calculated based on vessel size as its Gross Tonnage - the larger:, the higher the ceiling. Once a ship owner reaches this limit during a response, their incident commander can legally relinquish their role in incident management and response. All further management and response costs are left with those jurisdictions remaining in Unified Command. This transfer-of-command can occur well before an incident's closure: there can still be containers and debris on shores, and sunken ones on the sea-bed. The short timeline often becomes a surprise to those in UC.

During an incident such as the *Zim Kingston*, the level of financial responsibility is never revealed, how fast the money is being spent (called "burn rate"), when the threshold be reached and the incident's status at the time, and lastly, how much can the ship-owner hold-back for future compensation claims. On the last note, the strategy of a ship owner is to both spend and commit as much response money up-front. When a claim is made in Admiralty Courts, their legal defence

for not paying out is that they have reached their limit of financial responsibility by their response efforts.

There is only one Tier-level of immediate response funding and future compensation awards for a container ship incident with no oil spill or threat. This is provided by Protection and Indemnity Club insurers. All major vessel operations in Canadian navigable waters need to show proof of financial insurance. In contrast, a spill of persistent oil as cargo, those in Unified Command can claim for response costs and compensation from additional funds such as the *International Oil Compensation Pollution Fund* (combined *1992 Fund* and *Supplementary Fund*), and if that is exceeded - then as a last-resort - Canada's *Ship-source Oil Pollution Fund*.

After the recent changes in Canada's *Marine Liability Act*, the CCG can immediately acquire from *the Ship-source Oil Pollution Fund* up to $10 million for emergency response and make a case for up to $50 million. This protects their departmental budget. Tapping into the SOPF was the situation for 2020 spill response and salvage operations for the M/V *Schiedyk* near Bligh Island on the West Coast of Vancouver Island. There was no responsible party to deal with a chronic seepage of bunker oil from this 52 year ago sinking. These emergency funds options are not available for a container ship incident with no oil-threat component.

As a side note: Canada's *Ship-source Oil Pollution Fund (SOPF)* cannot be genuinely viewed as a polluter-pay system that protects Canadian taxpayers. Forty years ago (1976) the Fund's levy was stopped being made by oil industries. Since then, interest has been paid on the original financial contribution of $34.8 million from Consolidated General Revenue. As of 2020, the interest paid into the fund is $477.4 million. As such, 99% of the fund's growth is from taxpayers. The Return on Investment (ROI) to the industry is over 1000%, whereas for claims - which is the only benefit to Canadians - of $30.5 million, the ROI for Canadians is less than 4%. The SOPF does not fully serve the interest of Canadians when one considers all the different marine vessel types, risks, and consequences - such as a container vessel accident.

Canada acceding to the IMO's *Hazardous and Noxious Substances by Sea Convention* - which hasn't been ratified - follows the same restrictive pollution-type pattern.

Canada should reconsider marine vessel casualty compensation that considers all vessel sectors (tankers, barges, general cargo, container, bulk carriers, passenger, and Ro-Ro) that pose environmental risks. Each sector could contribute based on a marginal fee for each container, passenger, a metric tonne of cargo, and cubic meters of oil exported/imported to Canada. The fund doesn't need to be tied to international fund requirements but instead to the real needs of Canadians for complete and equitable compensation.

Compensation: Federal, provincial and international compensation regimes for a marine vessel casualty that damages coastal community's ecological, social, and cultural values are fundamentally flawed and inadequate. After the emergency and cleanup phases, regulations, policies, guides all restrict further action to just more "mitigation" by the company as per *offset plans* (provincial) or that further work or funds can only be directed to *restoration* (feds) or to

reinstate the environment such as in international and SOPF claim manuals. These are restrictive use of an award dictated by a third party - not those harmed, such as a First Nation's community. It is not an equitable approach. The lack of self-determination on where, when and how compensation is used can be viewed as not meeting the rights and titles of First Nation. Instead, compensation should be provided as a direct monetary award to those that suffered social, ecological, commercial harm such as a First Nation's community. The award can then be allocated and used for whatever way decided by a First Nation's Band or Council - as a government - for their community. Examples could be purchasing a new Guardian boat, establishing a University Scholarship, purchasing shore protection booms, whatever helps to mend the community torn-social fabric.

Awards should not be dictated or constrained by a third party such as *Environment Canada and Climate Change's* Environmental Damages Fund, or the Administrator of the *Ship-source Oil Pollution Fund*, or left to the proponent that caused the harm by just doing more mitigation (a.k.a. offset, redress, restore, reinstate - all the same thing).

Canada does not have a natural resource damage assessment (NRDA) process to determine non-market loss of coastal/marine goods and services. NRDA is well established in the United States by *National Atmospheric Administration Agency* (NOAA) and *Environmental Protection Agency* (EPA). As such, unmitigated (residual) environmental damages are not fully documented and compensated for in Canada. Unmitigated (residual) environmental damages stem from government and industry abiding by two operational requirements during a spill to ensure that: 1) all response measures are a reasonable cost (proven and economically efficient), and 2) there is a net environmental benefit (no further ecological harm).