

# Oil Spills in Your Backyard & Opportunities for Citizen Engagement: Workshop report

June 6, 2015

St. James Community Hall, Vancouver, BC, Coast Salish territory

## I. ABOUT THE WORKSHOP

The slow and inept response to the *Marathassa* fuel oil spill in English Bay revealed serious problems with different levels of government's oil spill preparedness, planning, response and available resources. This spill, and the dysfunctional communication between the official parties involved in the response, served as a wake-up call to Salish Sea communities facing the threat of ever increasing tanker traffic. Wanting to help and seeing limited official response on the beaches in the immediate aftermath of the spill, many members of the public came out to try to clean up Vancouver's beaches themselves – without training, safety equipment, or knowledge of the risks to their personal health.

In response, community members invited oil spill experts including *Exxon Valdez* survivor and internationally renowned author and activist, Dr. Riki Ott, to come to Vancouver to share lessons learned from previous spills, with a focus on public health impacts and gaps in official response planning. Following a packed town hall meeting, many people wanted an opportunity for more in-depth learning and planning for what we as a community could do here in Vancouver to get better oil spill planning and response in place.

This day-long workshop, attended by 40 people from across the Lower Mainland and Victoria, was the result. The workshop was led by Dr. Riki Ott, and co-hosted by ALERT Project, Georgia Strait Alliance, Living Oceans Society, North Shore NOPE, ForestEthics Advocacy, Greenpeace Canada, and SFU.

### Presenter Bio

Dr. Riki Ott witnessed first-hand the ecological destruction and social chaos from the *Exxon Valdez* oil spill. A trained marine toxicologist and former commercial fisher woman, she has written two books on oil spill impacts to ecosystems, people, and communities and was featured in *Black Wave*, an award-winning feature film. In May 2010, Ott brought her expertise to the Gulf of Mexico, volunteering for one year to expose a public health crisis of chemical illness and to help with local community organizing. For her work in the Gulf, *Huffington Post* named Ott a 2010 Game Changer. She directs ALERT, a project of Earth Island Institute, and works in communities on the front lines of oil spills or oil activities to make healthy people and healthy communities part of our energy future. In 2015, Ott led a citizen's effort to overhaul the outdated national oil spill response plan. She lectures nationally and internationally from fifth grade to university. For more information: [www.rikiott.com](http://www.rikiott.com)

## II. BACKGROUND: MARINE OIL SPILL RESPONSE

### 1) How is marine oil spill planning and response supposed to work on the West Coast?

Transport Canada is the lead federal agency responsible for regulating marine oil spill preparedness nationally, and its primary focus is industry preparedness. In the Pacific Region, Transport Canada has certified and regulates Western Canada Marine Response Corporation (WCMRC) to respond to marine spills on behalf of the spiller (Responsible Party). Transport Canada requires oil handling facilities, shipping companies, and others who have the potential to spill oil in Western Canadian waters to pay fees to WCMRC, which is a private company owned by these potential spillers. Transport Canada requires WCMRC to have a response capacity for spills up to 10,000 tons. A Regional Advisory Council for the Pacific Region, consisting of government-appointed members, is tasked with promoting public awareness and understanding of preparedness, and advising Transport Canada on the adequacy of preparedness.

The Coast Guard is the lead federal agency responsible for overseeing marine oil spill response operations. If the spiller is known and has a pre-existing contract with WCMRC, the Coast Guard monitors the response by WCMRC. If the spiller is unknown, unable, or unwilling to respond, the Coast Guard will actually implement the response. The Coast Guard's National Response Plan consists of a three-tier framework: a national plan, five regional plans, and area response plans within each region, which are supposed to provide detailed information to responders. The National Coast Guard is responsible for ensuring that area plans are consistent within the regional and national framework; and its regional branches are responsible for ensuring that regional plans, personnel, equipment and procedures are in place and ready for a response. There is no requirement for local area advisory councils.

### 2) What does a good oil spill response plan look like?

Good oil spill response starts with a high quality area plan that is jointly developed by local, provincial and federal governments and agencies, in collaboration with industry response organizations; uses a Unified Command System; defines clear roles and responsibilities for responders in detail; is well-funded; and is operational as demonstrated through annual drills and exercises with all players involved, including industry-funded response organizations. In addition, government rather than industry must retain authority and oversight of both preparedness and implementing the response plan.

Properly designed and implemented oil spill area plans hold spillers accountable to the public and minimize spill-related damages to the environment, people, and local economies. For example, while spill response agencies such as WCMRC hire and train contractors and are responsible for workers' health and safety, it's government's job to ensure that corrective actions are taken when workers get sick and that long-term health care is provided, if necessary. Further, while spill response agencies are responsible for providing and deploying response equipment, it's government's job to ensure adequate preparedness through drills, careful certification procedures, and evaluation; to identify priority areas for protection; to ensure only clean-up products (ie. dispersants) that create a net benefit to the environment are used; and to stage decontamination activities and waste disposal in appropriate areas. Finally, it's government's job to protect public health and welfare; to rehabilitate injured wildlife, as a public trust asset; and to set up and manage safe, effective programs for volunteers.

### 3) How does Canada's oil spill planning and response framework stack up?

Despite a reasonable framework, Canadian oil spill response in practice is dysfunctional, as demonstrated during the *Marathassa* oil spill. There are three main reasons for this dysfunction.

First, the federal government has put the spiller in charge of spill response. Unless the spiller is unwilling or unable to lead the response, the spiller is at the top of the hierarchy in the Incident Command System (acts as the Incident Commander). The Coast Guard monitors the response (as the Federal Monitoring Officer), but is not in charge operationally. During oil spill response, there is an inherent conflict of interest between the government's duty to ensure that the public interest is protected, and the spiller's need to *minimize the appearance of damages to people and the environment* in order to minimize fines and penalties (and maximize profits). Thus, there is a critical need for the government to retain authority and oversight of both preparedness and response, with duties of both government and industry clearly defined in pre-existing plans.

Second, the federal government has reduced the budget for the Canadian Coast Guard, the lead agency responsible for federal government involvement in spill response, and for overseeing industry response or implementing response in the case of spills not covered under an industry plan. Coast Guard base closures in prime areas of risk and consolidation of communication centers undermine spill prevention capabilities, the key to the entire regime. The federal government has also reduced budgets and services for oil spill support agencies such as the Dept. of Fish and Oceans and the Ministry of the Environment.

Third, the federal government has failed to provide a policy framework and associated funding mechanism for local governments and First Nations to develop oil spill plans (the way it has for industry). In a recent study of coastal local governments in BC, all but one of those investigated described themselves as either completely unprepared or having only limited preparedness when it comes to marine oil spills. Furthermore, there is a significant lack of transparency when it comes to any local level plans that do exist – which in theory should contain the operational details that actually provide for a coordinated, efficient response. Neither the Coast Guard's regional or area plans, nor WCMRC's overall oil spill response plan or its eight site-specific Geographic Response Strategies/plans for BC, are currently available for public or researcher review – and it is unknown to what extent, if any, these plans have involved input from First Nations, local governments or citizens.

In summary, the *Marathassa* oil spill has created public awareness of the need for strengthening oil spill prevention and response planning, particularly at the local level. There is a legal framework that supports area plans; however, due to a lack of lack of transparency, adequate funding, operational detail, and involvement by First Nations, local governments, and the public, area plans are not currently adequate to allow for a good quality spill response.

*Note: because this workshop was prompted by the Marathassa spill, this section focused on marine spill response. The core principle of industry-led response, with the Provincial rather than federal government leading oversight and monitoring, remains true for land-based spills.*

### III. SUMMARY OF THE WORKSHOP PRESENTATION AND DISCUSSION LED BY RIKI OTT

#### 1) Opening Exercise: Why am I here?

This exercise served to connect people with each other and to help people recognize the solid foundation from which we work. One participant observed, “*I loved the way the workshop began – connecting us with our values and to each other.*” People shared that they were attending the workshop to gain more knowledge to speak more articulately about risks and to distinguish between myth and truth; and to be part of a community that cares about this place and acts in a safe way to protect it during spills.

#### 2) Lessons learned from past spills: health risks & response gaps

People from front-line communities that have experienced oil spills describe common characteristics of exposure to spilled oil, now more recognized by the medical community. These symptoms include: respiratory problems; central nervous system impacts such as headaches, dizziness, nausea, blurry eyes, brain fog, and seizures; skin rashes and lesions; and blood disorders. Peer-reviewed studies from Spain and South Korea describe long-term illnesses, stemming from these and other untreated initial symptoms, in terms of “years living with disabilities.”

√ *Exxon Valdez oil spill* – Oil is 1,000 times more toxic than previously thought to wildlife and humans. Tiny levels of polycyclic aromatic hydrocarbons (PAHs) in the range of 1–20 parts per billion may stunt growth of development of the young; suppress immune function; interfere with reproduction; and cause respiratory distress, central nervous system disorders, and cancers in individuals and their offspring. Further, oil spills cause individual and community-level mental health trauma.

*RESPONSE GAPS:* Governments fail to recognize work-related chemical illnesses; health costs are borne by the public and individuals, not the spiller. Potentially debilitating and life-threatening effects can occur at PAH levels of 1–20 ppb – 1,000 times lower than what current standards assume are safe. There are no clear federal guidelines for public health. The trend in the U.S. is moving towards mandatory evacuations for oil spills that impact urban areas. Public officials are using Protective Action Criteria, rather than enforcement-based standards, to initiate action, largely because vulnerable sectors of the population – and many others – are getting sick below levels thought to be “safe.”

√ *BP Deepwater Horizon disaster* – Certain products used during oil spill response, such as current formulations of Corexit dispersants (refined oil-based, industrial solvents), make oil spills even more toxic to wildlife and people. Further, spill responders and the general public are sickened by exposure to oil contaminants in air as well as water and, if not treated for chemical illnesses, may remain chronically sickened by exposure.

*RESPONSE GAPS:* Governments and health care providers do not recognize or treat symptoms of toxic exposures; costs are borne by the public and individuals. The BP class action settlement is the first to recognize chemical illnesses from exposure to an oil spill and response activity. In December 2014, the Canada Shipping Act was amended to authorize “dispersal” of oil as a response operation. Yet the federal government has no requirements for screening products to ensure a net environmental benefit or to prevent use of products that do more harm than good.

√ *Tar sands spills* – Wabasca (Alberta) tar sands crude oil spills in Michigan (2010, on water) and Arkansas (2013, on land) – Diluted bitumen separates when spilled into water. The heavy tar sands oil sinks beneath the surface. Traditional response tools for containing and removing oil that floats do not work for non-buoyant oil. Diluents (refined oil-based industrial solvents) have similar characteristics to, and act very similar to, Corexit dispersants; i.e., diluent is extremely toxic and targets the same organs of the body as oil. There was a failure to recognize that homes and belongings that absorb dangerous levels of airborne oil must be destroyed.

*RESPONSE GAPS*: Evacuations occurred in these spills, but response plans did not include provisions for temporary evacuation, housing, and water, or for treatment of sick people. Governments fail to recognize and treat for chemical illnesses.

√ *Bakken shale crude oil spills* (2013 on) – Volatile oil explodes and burns when spilled; it also mixes readily with water, making water unfit for drinking or other uses.

*RESPONSE GAPS*: Traditional response tools for conventional oil do not work on volatile oil or oil under ice. As with the other oils, response plans do not include provisions mentioned above.

### 3) Marine spill scenario: How should oil spill response work?

Next, participants were presented with a spill scenario: a 16,000,000-litre oil spill at First Narrows on June 6 at 4:00 AM with a fresh onshore breeze of 35 km/hour and a rising tide. Oil spill models submitted as evidence to the NEB hearings were shown. A simulated spill trajectory model was used to project the spread and path of the floating oil during the first 72 hours. An air quality model was used to estimate risk to people from airborne levels of benzene (although the model only counts people where they live, not where they work, eg. first responders who may be on the water). The air quality model indicates over one million (mostly sleeping) people are likely to be exposed to acute levels of benzene exposure and experience mild and/or transient effects—at levels of up to 52,000 parts per billion.

If this spill happened, how could a good oil spill area plan, developed collaboratively with local governments, First Nations and residents, help to minimize harm to people and the environment? Participants addressed two questions: What do we want in our area plan? What can we (public/community/volunteers) do safely to help in a spill response?

For **workers**, options considered were: government oversight by trained Occupational & Environmental Medicine (OEM) health care professionals of the spiller or response organization's worker safety program; baseline health screening evaluations and full HAZWOPER 40 (Hazardous Waste Operator 40-hour) training programs; Protective Action Criteria developed by OEM and other health officials; government monitoring programs for the duration of the spill response and after for workers who get sick; and corrective actions to restart work after PACs are triggered. A semi-privatized spill response program, used in Massachusetts, was discussed as a way to separate spill response from the spiller and politics. Funding mechanisms for such programs in the US is through federal and state Trust Funds or community bonds, all created by a levy (e.g., nickel a barrel) on oil transported.

√ Trained volunteers can assist with protecting worker health and safety during spill response by auditing and evaluating private worker training programs on behalf of government; and providing public comments during development of PACs.

For **public health and safety**, participants discussed the need for: public officials to identify sensitive areas for priority protection (e.g., water intakes, schools, hospitals, homes for elderly, areas of cultural significance, recreational areas); an aggressive public awareness push before spills happen to communicate hazards of oil spills including air quality impacts and symptoms of toxic poisoning; assurances that public safety officers work only for the public and that government decides and enforces any area restrictions, not the spiller; timely public notification of events; health care providers to prepare and conduct rapid health risk assessments and to be prepared to diagnose and treat people with symptoms of oil exposures; Protective Action Criteria developed by OEM and other public health officials; government monitoring programs for the duration of the spill response and after for areas where people became sick; corrective actions to protect public health after PACs are triggered; and programs for youth about oil spill impacts.

√ Trained volunteers can assist with protecting public health and safety during spill response by distributing public awareness and educational material; polling rapid health risk assessment surveys on behalf of local government; and providing public comments during development of PACs.

For **environmental protection**, participants discussed the need for public officials to: identify sensitive areas for priority protection (e.g., critical habitats for birds, fish, and mammals); conduct baseline monitoring before spills and environmental monitoring during and well after spills to establish long-term impacts; and run programs to collect carcasses or rescue and rehabilitate injured wildlife.

√ People can provide public comment to help identify sensitive areas, and trained volunteers can assist with collecting baseline environmental monitoring and with wildlife rehab programs.

For **product use** (eg. dispersants), participants discussed the need for public officials to: develop criteria to screen products for use during oil spills to determine what products may be used, the waters in which such products may be used, and the quantities of products that can be used safely in such waters; require environmental monitoring during and after product use by an independent party; develop criteria to re-evaluate product use and to discontinue use for products that don't perform as anticipated; and develop criteria for staging products and public notification of product use.

√ People can keep logs and photo-document response activities in their area; trained volunteers can assist with collecting and organizing evidence.

For **decontamination activities and waste disposal**, participants discussed the need for public officials to: develop criteria for where such activities may occur without further endangering public health and welfare, and monitor such activities; and require and enforce disposal of hazardous wastes at licensed facilities, not public landfills.

√ People can keep logs and photo-document response activities in their area; trained volunteers can assist with collecting and organizing evidence.

For **operational area plans**, participants discussed the need for public officials to require that operators/spillers/response organizations: conduct at least two on-the-water drills and two tabletop exercises annually; prioritize hiring of local contractors; maintain and fund annually a program of paid, stand-by, trained fishermen and boaters for spill response such as the SERVS program in Prince William Sound, Alaska; and fund annually an independent citizens' advisory council for each area plan, modeled after the councils in Alaska.

√ Trained volunteers can assist with auditing and evaluating drills and exercises, and public can participate in a citizen's advisory council.

For **volunteers**, participants discussed the need for public officials to set up programs **now** and train volunteers in advance of another oil spill.

#### 4) **Successful citizen actions: What has the public done during or after past spills?**

Several examples were shared of actions undertaken by citizens to strengthen oil spill prevention and response planning, or to demonstrate harm in the wake of oil spills. The Prince William Sound Regional **Citizens' Advisory Council** was created by federal law after the *Exxon Valdez* oil spill to directly empower and engage area residents in strengthening oil spill prevention and response planning. The **Makah Tribe** in northwest Washington State successfully advocated for control of decisions about product use during oil spill response in their Usual and Accustomed Marine Area from shoreline to the 200-mile boundary of the Exclusive Economic Zone.

**Global Community Monitor** (GCM) is an international organization that works in partnership with communities to provide tools and training for people to monitor air quality. GCM analyses the data and co-authors a final report with local organizations. After the 2013 Alberta tar sands crude oil spill in Mayflower, GCM partnered with the local **Faulkner County Citizens' Advisory Group (CAG)** to conduct a "bucket brigade" to conduct air monitoring. Results found benzene and four other hydrocarbons exceeded air quality standards for Louisiana and Texas (Arkansas doesn't have air quality standards) and one sample detected over 30 hazardous air pollutants. Faulkner County CAG also conducted a Rapid Community Health Assessment and found over 90 percent of those polled were adversely affected by the tar sands spill. As of June 2015, 22 homes have been destroyed, as they are no longer safe due to toxic air quality. Residents still report smelling crude oil during heavy rains.

**ALERT Project** and the ad hoc **Citizens' Coalition to Ban Toxic Dispersants** filed extensive comments during the recent US Environmental Protection Agency rulemaking to demand a comprehensive overhaul to the national oil spill response plan. The plan currently does not provide adequate response for Unconventional Oil and Gas – tar sands crude oil and volatile oil produced by hydrologic fracturing. Having no plan leaves communities like Lac Megantic vulnerable to disaster!

## IV. SUMMARY OF PARTICIPANT DISCUSSION IN SMALL GROUPS

### 1) **What has jumped out at you in what you've heard at this workshop?**

√ *HUMAN HEALTH:* Severity of health risks, long-lasting nature of harms, and length of time to recover were all big surprises. Oil in the air was an unanticipated risk, along with potentially severe health problems from inhalation. People were surprised by what they didn't know about the physical and mental health impacts of oil spills, or the stressful pressures on communities and local economies. Given this information, people felt the risks were much greater than thought to the quality of life and local community and economy.

√ *ENVIRONMENT:* People didn't know that oil spills can't really be cleaned up or that government officials may declare that a cleanup is over for political expediency. People were shocked by the video of fluid black oil welling up from pits dug on beaches in Prince William Sound, Alaska,



17 years after the *Exxon Valdez* oil spill. The lack of baseline monitoring before spills and environmental monitoring after spills was also surprising.

√ **INDUSTRY:** People were surprised to learn that industry does the bare minimum required and that industry ignores Realistic Maximum Oil Discharge in planning response scenarios. Response products used in oil spill cleanups are complex mixtures of toxic chemicals that can make the oil even more toxic. People wondered: What other products besides Corexit 9580 might WCMRC use? How are dispersants and other products disposed of?

√ **GOVERNMENT:** People were unaware that the Shipping Act of 2001 was amended in 2014 to allow “dispersal” of oil spills during response operations. What does this change mean in terms of product use? People were surprised by the difficulty and complexity of coordinating spill response plans, and by the oddity that local governments plan specifically for fire, flood and other disasters, but not (yet) for their engagement in oil spills (especially marine spills). What planning is needed for contaminated air?

√ **CITIZENS:** Citizens’ advisory councils are powerful tools, and the Prince William Sound Council has set great precedent. People can be trained to do air quality monitoring and health risk assessments. Educated, informed youth can be powerful allies.

## 2) What would we like to see in our oil spill response plan?

### ***Citizen engagement***

People need to find out what local governments are doing now and get a clear understanding of who has power to do what for spill preparation and response. The more citizens learn, the more we can pressure our governments to act. We can build on the neighborhood plans that local governments have done for earthquake preparation, but with a plan for oil spills and human health risks. We need to build our skills to do air monitoring (like with Bucket Brigade) and to train fishermen and boaters for spill response like in Prince William Sound. We need to make our businesses and unions aware of the risk from oil spills. We should set up Citizens’ Advisory Councils and strengthen spill preparation and response. We need to plan for the future by creating course content for youth education about oil spills, impacts, and environmental monitoring including air quality.

### ***Local leadership from local governments***

√ **INFORMATION:** We need a big push for public awareness and honest risk communication about oil spill hazards; we need info packages to take home like for natural disasters. We need much better notification of oil spills, product use, and potential risks; oil spill sirens for coastal communities; and signage on beaches for how to report spills.

√ **HEALTH:** We need government oversight of industry’s worker safety programs and Rapid Health Risk Assessments in neighborhoods at risk during oil spills. We need evidence-based criteria rather than standards for initiating protective action; e.g., if people are getting sick, then the air is not safe. We need procedures for evacuation when shelter-in-place is not an option. For workers or residents who get sick from oil spill exposure, we need follow up treatment and long-term monitoring done by health care professionals trained in Occupational and Environmental Medicine.



√ *ENVIRONMENT:* We need baseline monitoring before oil spills and environmental monitoring during and well after spills. We need health officers to say when areas are ‘clean’ or safe and to establish criteria to make that call.

√ *TRAINING:* We need training for people interested in wildlife rescue or rehabilitation, for fishermen and boaters for spill response, for survey polling of health assessments, and for baseline environmental monitoring, including air quality. We need drills to practice our skills.

### ***Laws and policies***

√ *TRUST FUND:* Create a national and provincial oil spill liability trust funds by levying a fee per barrel on conventional and unconventional oil and gas transported through regions to fund oil spill prevention and response planning.

√ *STANDARDS:* Any air quality standards should be updated to include the latest research; there is no federal Clean Air Act in Canada, but there are BC standards for air quality.

## **V. LIST OF FOLLOW UP ACTIONS**

### ***Most participants would like to:***

√ *GET INFORMED:* Go back where we live, try to learn what's there for a Geographic or Area Plan, and build on it. Meet with government officials who are supposed to be in charge, eg. Coast Guard. Meet with WCMRC.

√ *INFORM OTHERS:* Share the workshop report and film on social media and email. Hold house parties to educate friends or neighbors. Build alliances with local businesses, unions, public health organizations, and more/bigger environmental organizations. Package info for different ages and audiences, including school groups.

√ *STAY IN TOUCH:* Do geographic self-organizing and meet in small groups to plan for local awareness-raising and advocacy. Have a region-wide follow up planning meeting over the summer (with whole group of participants and others interested) to lay groundwork for action.

√ *ADVOCATE:* Take specific requests to Council meetings and ask for actions. Email, tweet and meet with MPs and MLAs. Petition to have oil spill prevention and response planning be part of emergency response planning.

### ***Other ideas***

√ Create a process for citizens to engage in baseline environmental monitoring, including air quality and human health

√ Create a template report card and evaluate government response to the *Marathassa* spill, based on what we’ve learned is needed in world-class response plans.

### ***Organizational commitments:***

√ *North Shore NOPE* – Create an oil spill education program for grades 6-8; work on getting a Citizens’ Advisory Council in place; get clarity about spill reporting to government; develop presentation for MLAs, municipal councils, and MP candidates; make Kinder Morgan pipeline

expansion an issue in upcoming federal election.

√ *Sea Shepherd* – Organize a volunteer wildlife rehab training

√ *Georgia Strait Alliance* – Support participants to organize in geographic areas; organize workshop with Riki in Victoria in the fall; organize follow up meeting over summer if desired

**Requests to consider in follow up meetings:** See Handout: What Can I/We Do? Sections on local government, provincial government, federal government, and oil operators. [to follow]

## VI. RESOURCES

### **Workshop Materials**

[Power point for Lessons learned – health risks & response gaps](#) (click to download – may take a few moments)

[Power point for Spill scenario – area plans & citizen actions](#) (click to download – may take a few moments)

[Full notes from small group discussions](#)

### Videos

Exxon Valdez oil on beach after 17 years: <https://www.youtube.com/watch?v=If6i86x0ATQ>

BP spill voices: [www.SBspillActNow.org](http://www.SBspillActNow.org)

Michigan spill voices: <https://www.youtube.com/watch?v=XrFep4IJ6lY>

ALERT Project, Spill Voices Calling for Stronger Oil Spill Response, section on Prince William Sound Regional Citizens' Advisory Council: <http://alertproject.org/watch-spill-voices-call-for-stronger-oil-spill-response/>

Genwest Systems, Inc., 2015, Oil spill trajectory model report prepared for City of Vancouver.

<http://vancouver.ca/green-vancouver/neb-evidence-library.aspx>

Ricochet Media, 2015. Workshop coverage. <https://ricochet.media/en/476/politicians-and-industry-have-not-been-honest-about-the-risks-from-oil-spills>

### **Canadian Oil Spill Preparedness & Response Regime**

Transport Canada, National Oil Spill Preparedness & Response Regime, last updated April 29, 2015.

<https://www.tc.gc.ca/eng/marinesafety/oep-ers-regime-roles-101.htm>

Canadian Coast Guard Environmental Response, 2011. Marine Spills Contingency Plan—National Chapter.

<http://www.ccg-gcc.gc.ca/CCG/ER/Marine-Spills-Contingency-Plan>

Nuka Research & Planning Group, 2013. West Coast Spill Response Study, Volume 1: Assessment of British Columbia Marine Oil Spill Prevention & Response Regime

<http://www.env.gov.bc.ca/main/west-coast-spill-response-study/>

SPARC BC, 2015. An Assessment of Coastal Local Government Marine Oil Spill Preparedness and Response Capability in the Georgia Strait Region.

<https://georgiastrait.org/wp-content/uploads/2015/03/Local-Government-Marine-Oil-Spill-Response-Capability-GSA-May-2015.pdf>

Western Canada Marine Response Corporation, 2012. Information Handbook.

<http://wcmrc.com/wp-content/uploads/2013/06/WCMRC-Information-Handbook-2012.pdf>

### **Understanding What's at Stake: Human Health Impacts of Oil Spills**

Abramson, David, et al., 2013. "Children's Health after the Oil Spill: A Four-State Study. Findings from the Gulf Coast Population Impact (GCPI) Project." National Center for Disaster Preparedness, NCDP Briefing Report 2013\_1.

Columbia University Mailman School of Public Health, New York.

<http://academiccommons.columbia.edu/item/ac:156715>

Air Force Emergency Management, 2006. Pocket guide for oil and hazardous substance disasters, AFEM.

[Helpdesk@tyndall.af.mil](mailto:Helpdesk@tyndall.af.mil)

BP-Plaintiffs Medical Benefits Class Action Settlement Agreement, Exhibit 8: Specified Physical Conditions Matrix, Table 1: Acute SPECIFIED PHYSICAL CONDITIONS, and Table 3: Chronic SPECIFIED PHYSICAL CONDITIONS.

<http://www.laed.uscourts.gov/OilSpill/6.pdf>

Canadian Shipping Act of 2001; amended via Bill C-3 of the '[Safeguarding Canada's Seas and Skies](#)' Act; received Royal Assent on December 9, 2014. See Subsection 181(4).

<http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&DocId=6830552&File=4>

Fingas, Merv, 2014. A review of literature related to oil dispersants, 2011–2014, for the Prince William Sound Regional Citizens' Advisory Council, Anchorage, Alaska. <http://www.pwsrca.org/programs/environmental-monitoring/dispersants/dispersant-literature-reviews/>

Government Accountability Project, 2013. Deadly Dispersants in the Gulf: Are Public Health and Environmental Tragedies the New Norm for Oil Spill Cleanups? <http://www.whistleblower.org/gulftruth>

Government Accountability Project, 2015. Addendum Report to "Deadly Dispersants in the Gulf: Are Public Health and Environmental Tragedies the New Norm for Oil Spill Cleanups?" Apr 22, 2015.

Hasemyer, David, 2013. Enbridge dilbit spill still not cleaned up as 2013 closes, irritating the EPA, *InsideClimate News*, Dec. 23. <http://insideclimatenews.org/news/20131223/enbridge-dilbit-spill-still-not-cleaned-2013-closes-irritating-epa>

- Jung, Suk-Chul, et al., 2013. Respiratory effects of the Hebei Spirit oil spill on children in Taean, Korea, *Allergy Asthma Immunol Res.* 2013 Nov; 5(6):365–370. Doi: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3810542/>
- Kim, Young-Min, et al., 2013. Burden of disease attributable to the Hebei Spirit oil spill in Taean, Korea, *BMJ Open*, Sept 20, 2013. 3(9):e003334. <http://www.ncbi.nlm.nih.gov/pubmed/24056482>
- James “Rip” Kirby, III, “Findings of Persistency of Polycyclic Aromatic Hydrocarbons in Residual Tar Product Sourced from Crude Oil Released during the Deepwater Horizon MC252 Spill of National Significance,” supported by the Surfrider Foundation, April 14, 2012. [http://surfrider.org/images/uploads/publications/Corexit\\_Connections.pdf](http://surfrider.org/images/uploads/publications/Corexit_Connections.pdf)
- Levy, Barry and William Nassetta, 2011. The Adverse Health Effects of Oil Spills: A Review of the Literature and a Framework for Medically Evaluating Exposed Individuals, *Int J Occup Environ Health*, 17:121–167.
- Murphy, Kim, 2001. Exxon spill’s cleanup workers share years of crippling illness. *Los Angeles Times*, Nov. 5, 2001.
- O’Neill, Annie, 2003. Self-reported exposures and health status among workers from the EVOS cleanup. Master’s thesis M. P. H. Yale University, Department of Epidemiology and Public Health. Available as PDF on [www.rikiott.com](http://www.rikiott.com)
- Ott, Riki, 2004. *Sound Truth and Corporate Myths: The Legacy of the Exxon Valdez Oil Spill*, (Dragonfly Sisters Press: Cordova, Alaska).
- Ott, Riki, 2008. *Not One Drop: Promises, Betrayal, and Courage in the Wake of the Exxon Valdez Oil Spill* (Chelsea Green Publishing, White River Junction, VT).
- Peterson, Bradley, et al., 2015. Effects of prenatal exposure to air pollutants (polycyclic aromatic hydrocarbons) on the development of white brain matter, cognition, and behavior in later childhood, *JAMA Psychiatry*, March 25, 2015. doi:10.1001/jamapsychiatry.2015.57. <http://archpsyc.jamanetwork.com/article.aspx?articleid=2205842>
- Peterson, Charles, et al., 2003. Long-term Ecosystem Responses to the *Exxon Valdez* Oil Spill, *Science* 302:2082–86.
- Phillips, Natalie, 1999. Still painful.10 years later, front-line spill workers link physical ailments to cleanup work. *Anchorage Daily News*, 23 March.
- Shaw, Susan, 2010. Consensus Statement: Scientists oppose the use of dispersant chemicals in the Gulf of Mexico, July 16, 2010. Statement drafted by Shaw, Marine Environmental Research Institute. <http://www.meriresearch.org/Portals/0/Documents/CONSENSUS%20STATEMENT%20ON%20DISPERSANTS%20IN%20THE%20GULF%20updated%20July%2017.pdf>
- Short, Jeff, 2015. Fate and effect of oil spills from the Trans Mountain Expansion Project in Burrard Inlet and the Fraser River estuary, prepared for Tsleil-Waututh Nation, City of Vancouver, and Living Oceans Society. May 11. <http://vancouver.ca/green-vancouver/neb-evidence-library.aspx>
- Skinner, Lara and Sean Sweeney, 2012. The Impact of Tar Sands Pipeline Spills on Employment and the Economy, a report by Cornell University Global Labor Institute. [https://www.ilr.cornell.edu/sites/ilr.cornell.edu/files/GLI\\_Impact-of-Tar-Sands-Pipeline-Spills.pdf](https://www.ilr.cornell.edu/sites/ilr.cornell.edu/files/GLI_Impact-of-Tar-Sands-Pipeline-Spills.pdf)
- Sook, Hyun, et al., 2013. Mothers and children’s environmental health study in *Hebei Spirit* oil spill, <http://ehp.niehs.nih.gov/isee/p-3-27-19/>
- Stanbury, Martha, et al., 2010. Acute Health Effects of the Enbridge Oil Spill, Michigan Dept. of Community Health, rev. Dec. 20, 2010. [http://www.michigan.gov/documents/mdch/enbridge\\_oil\\_spill\\_epi\\_report\\_with\\_cover\\_11\\_22\\_10\\_339101\\_7.pdf](http://www.michigan.gov/documents/mdch/enbridge_oil_spill_epi_report_with_cover_11_22_10_339101_7.pdf)
- Song, Lisa, 2012. A Dilbit Primer: How it is different from conventional oil, Inside Climate News, June 26. <http://insideclimatenews.org/news/20120626/dilbit-primer-diluted-bitumen-conventional-oil-tar-sands-Alberta-Kalamazoo-Keystone-XL-Enbridge>
- Tenenbaum, David, 2009. Oil Sands Development: A Health Risk Worth Taking? *Environ Health Perspect.* Apr 2009; 117(4): A150–A156. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2679626/>

### **Spill Response Scenario**

- Beloved Community FILM, 2006. <http://newsreel.org/video/THE-BELOVED-COMMUNITY>
- Canadian Women’s Health Network, 2008. FILM: Toxic Trespass. <http://www.cwhn.ca/node/39374>
- Cenovus Energy, 2015. Material Safety Data Sheet for Cold Lake Dilbit Blend. Example of oil that is delivered to Westridge Marine Terminal, Vancouver, BC. <http://www.cenovus.com/contractor/docs/Cold-Lake-Blend-Crude.pdf>
- Genwest Systems, Inc., 2015. Oil spill trajectory model report in Burrard Inlet for the Trans Mountain Expansion Project, prepared for City of Vancouver and others, May. <http://vancouver.ca/green-vancouver/neb-evidence-library.aspx>
- Levelton Consultants, Ltd., 2015. Air Quality Impacts from Simulated Oil Spills in Burrard Inlet & English Bay, An Air Quality Dispersion Modeling Report, prepared for Metro Vancouver. <http://twnsacredtrust.ca/wp->

[content/uploads/2015/05/TWN-Assessment-Appendix-5.pdf](#)

Massachusetts Commonwealth, 2015, Oil Spill Prevention & Response Trust Fund.

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleII/Chapter21M/Section8>

Massachusetts Energy and Environmental Affairs, Dept. of Environmental Protection, Privatized Waste Site Cleanup Program, 2015. <http://www.mass.gov/eea/agencies/massdep/cleanup/the-privatized-waste-site-cleanup-program.html>

Nalco Environmental Solutions, 2012. Material Safety Data Sheet for Corexit 9580A. Currently stockpiled for use at the Westridge Marine Terminal, Vancouver, BC. [www.nalcoesllc.com/nes/documents/MSDS/NESLLC-COREXIT-EC9580A-Mar2012.pdf](http://www.nalcoesllc.com/nes/documents/MSDS/NESLLC-COREXIT-EC9580A-Mar2012.pdf)

Ott, Riki on behalf of ALERT Project, 2015. Comments to EPA for rulemaking on National Oil & Hazardous Substances Pollution Contingency Plan (NCP), Subpart J Product Schedule. Essentially a rewrite of Subpart J – the products that get used during spill response. [http://alertproject.org/wp-content/uploads/2015/05/ALERT-FINAL-NCP-Rules-150422\\_1.pdf](http://alertproject.org/wp-content/uploads/2015/05/ALERT-FINAL-NCP-Rules-150422_1.pdf)

Ott, Riki on behalf of ALERT Project, 2014. Supplement to petition for EPA rulemaking, NCP. Protective Action Criteria for workers, see Section 300.150; Protective Action Criteria for public health, see Section 300.152. [http://alertproject.org/wp-content/uploads/2015/05/Coalition\\_revisions.pdf](http://alertproject.org/wp-content/uploads/2015/05/Coalition_revisions.pdf)

Picou, Steve, 2011, Prince William Sound Regional Citizens' Advisory Committee (PWSRCSC), Gulf of Mexico Peer Listener Training Manual Team. Peer Listener Training Manual: Gulf of Mexico Edition. MASGP-11-006. <http://www.stevenpicou.com/pdfs/peer-listener-training-manual-gulf-of-mexico.pdf?id=593>

Peer Listening Training Manual for mental health care. <http://www.stevenpicou.com/pdfs/peer-listener-training-manual-gulf-of-mexico.pdf?id=593>

Ponder, Samantha, MD and 26 others, 2011. Letter to Utah Governor Gary Herbert and Salt Lake City Mayor Ralph Becker. <http://local.sltrib.com/upload/2011/06/1306956256chevronletter.pdf>

Prince William Sound Regional Citizens' Advisory Council, 2015. Comments to EPA for rulemaking on 40 CFR Parts 110 and 300, Nation Contingency Plan Subparts A and J; includes latest research on product use in cold marine environments. [http://www.pwsrccac.org/wp-content/uploads/filebase/programs/environmental\\_monitoring/dispersants/PWSRCAC%20Comments%20on%20Subpart%20J%20April%2016%202015.pdf](http://www.pwsrccac.org/wp-content/uploads/filebase/programs/environmental_monitoring/dispersants/PWSRCAC%20Comments%20on%20Subpart%20J%20April%2016%202015.pdf)

Song, Lisa, 2013. What sickens people in oil spills, and how badly, is anybody's guess. *InsideClimate News*, June 18, 2013. <http://insideclimatenews.org/news/20130618/what-sickens-people-oil-spills-and-how-badly-anybodys-guess>

Vancouver Aquarium Ocean Pollution Research Program, starting up for baseline monitoring.

<https://www.vanaqua.org/act/research/ocean-pollution-research-program>

U.S. Environmental Protection Agency, National Oil & Hazardous Substances Pollution Contingency Plan, Subpart J Product Schedule. Example of product schedule, but this is outdated and currently undergoing rulemaking.

<http://www2.epa.gov/emergency-response/national-contingency-plan-ncp-subpart-j-product-schedule-fact-sheet>

### **Citizen Actions**

ALERT Project, 2015. Spill voices calling for stronger oil spill response. In particular, see Joe Banta, Prince William Sound Regional Citizens' Advisory Council section. <http://alertproject.org/watch-spill-voices-call-for-stronger-oil-spill-response/>

Copper River Watershed Project, 2015, Salmon Blitz program to engage citizen scientists in documenting salmon habitat. <http://copperriver.org/programs/fish-habitat-restoration/salmon-blitz/salmon-blitz>

Faulkner County Citizens Advisory Group, 2013. Mayflower community brief health survey.

Global Community Monitor, Community Monitoring Tool Kit. <http://www.gcmonitor.org/communities/start-a-bucket-brigade/community-monitoring-tool-kit/>

Horn, Steve, 2013. Study reveals 30 toxic chemicals at high levels at Exxon Arkansas tar sands pipeline spill site, *DeSmog Blog*, April 29, 2013. <http://www.desmogblog.com/directory/vocabulary/12519>

Louisiana Bucket Brigade, 2011. *Self-Reported Health and Economic Impact Survey: An Analysis of the Deepwater Horizon Oil Disaster in Seven Coastal Louisiana Communities*.

*New York Times*, 1993. Alaska fishermen blockade tankers. Aug. 23, 1993. Action resulted in 10 years of comprehensive ecosystem studies, resulting in paradigm shift in field of oil ecotoxicology. See Peterson, et al., *Science* 2003. <http://www.nytimes.com/1993/08/23/us/alaska-fishermen-blockade-tankers.html>

Northwest Indian Fisheries Commission, 2008. Makah Tribe sees results from work to increase oil spill response capacity. <http://nwifc.org/2008/09/makah-tribe-sees-results-from-work-to-increase-oil-spill-response-capacity/>

Ott, Riki, 2010, An open letter to US EPA Region 6. Aug. 27, 2010. Photo-documentation and logs triggered a Dept. of Justice investigation and support the civil trial against BP. [http://www.huffingtonpost.com/riki-ott/an-open-letter-to-us-epa\\_b\\_697376.html](http://www.huffingtonpost.com/riki-ott/an-open-letter-to-us-epa_b_697376.html)

- Pacific States–British Columbia Oil Spill Task Force. <http://oilspilltaskforce.org>
- Peeples, Lynn, 2013. Arkansas oil spill health issues, lingering ‘putrid stench’ worry Mayflower moms, *Huffington Post*, May 13, 2013. [http://www.huffingtonpost.com/2013/05/13/arkansas-oil-spill-health-mayflower-moms\\_n\\_3267965.html](http://www.huffingtonpost.com/2013/05/13/arkansas-oil-spill-health-mayflower-moms_n_3267965.html)
- Prince William Sound Regional Citizens’ Advisory Council
- √ Ecosystems & Oil Pollution curriculum for grades k–12 <http://www.pwsrcac.org/outreach/education/>
  - √ The Science of Oil Spills curriculum for grades 6–12 <http://www.pwsrcac.org/outreach/education/the-science-oil-spills/>
  - √ Oil spill drills with citizen observers and trained fishermen responders  
<http://www.pwsrcac.org/observer/oil-spill-drills-teach-lesson-prevention/>  
<http://www.pwsrcac.org/programs/oil-spill-response/fishing-vessel-training/>
  - √ Tanker escort system: SERVS (Ship Escort Response Vessel System)  
<http://www.pwsrcac.org/programs/maritime/tanker-escort-system/>
- STRAW: Students & Teachers Restoring A Watershed <http://bairwmp.org/projects/the-students-and-teachers-restoring-a-watershed-straw-project>
- Subra, Wilma, 2011. BP spill blood test results – Louisiana residents: Evaluation of the test results of whole blood volatile solvents testing. <http://leanweb.org/our-work/community/public-health/bp-spill-blood-test-results-louisiana-residents>
- Subra, Wilma, 2012. Results of Louisiana Environmental Action Network (LEAN) survey of the human health impacts due to the BP Deepwater Horizon disaster, Subra Company/Louisiana Environmental Action Network. <https://leanweb.org/uncategorized/results-of-the-louisiana-environmental-action-network-lean-survey-of-the-human-health-impacts-due-to-the-bp-deepwater-horizon-disaster/>
- Subra, Wilma, 2013. Mayflower oil spill pipeline rupture: Evaluation of available data – Air monitoring, health impacts associated with chemicals detected in the air, surface water sampling. Subra Company/Louisiana Environmental Action Network. <https://leanweb.org/public-health/mayflower-oil-spill-pipeline-rupture-evaluation-of-available-data/>

### **Miscellaneous**

Use mushrooms to eat oil:

- √ BioRemediation [Collective.org](http://Collective.org)
  - √ Paul Stamets, 2010. The petroleum problem. <http://www.fungi.com/blog/items/the-petroleum-problem.html>
- Inspiration for kids:
- √ Wright, Morgan, 2015. This marine biologist taught at Occupy camps... *Yes! Magazine for Teachers*, March 13, 2015. Links to inspire youth to action — *under additional resources!* <http://www.yesmagazine.org/for-teachers/curriculum/rethinking-democracy-with-riki-ott>