

ISCO & THE ISCO NEWSLETTER

The International Spill Control Organization, a not-for profit organization dedicated to raising worldwide preparedness and co-operation in response to oil and chemical spills, promoting technical development and professional competency, and to providing a focus for making the knowledge and experience of spill control professionals available to Intergovernmental, Governmental, NGO's and interested groups and individuals

ISCO holds consultative status at the International Maritime Organisation and observer Status at International Oil Pollution Compensation Funds

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INTERNATIONAL NEWS

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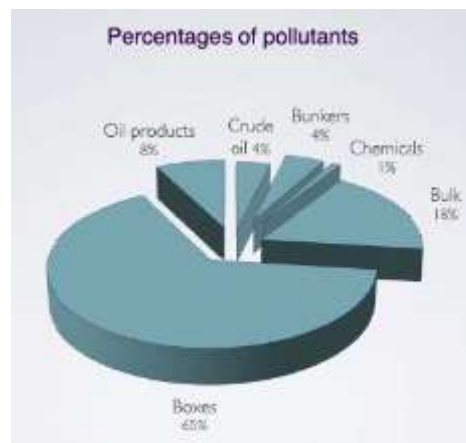
ISU POLLUTION PREVENTION SURVEY SHOWS GREAT ENVIRONMENTAL BENEFIT OF SALVAGE INDUSTRY

March 23 - Members of the International Salvage Union (ISU) provided 226 services to vessels carrying 2.6 million tonnes of potentially polluting cargo and fuel during operations in 2021. It demonstrates the critical role of professional salvors in protecting the marine environment. The data come from the results of the ISU's Annual Pollution Prevention Survey for operations in 2021.

President of the ISU, Captain Nicholas Sloane, said: "The shipping industry knows only too well that it is under the spotlight for its environmental performance: both for the environmental impact of operating ships and for the threat they, and their cargo, present to the environment.

All casualties have the potential to develop into serious incidents and, in a world where even the smallest amount of pollution is unacceptable, the work of our members is essential.

"The most eye-catching number in these results is for containers. ISU members provided services to vessels carrying more than 100,000 TEU amounting to more than 1.5 million tonnes of cargo. The mixed nature of such cargoes – including dangerous goods, harmful chemicals, plastic pellets – means that they are potentially highly polluting and difficult and dangerous to deal with." Marine Salvage / [Read more](#)



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INTERNATIONAL NEWS (CONTINUED)

ISCO NEWS

REMINDER: IF YOU ARE ATTENDING THE CLEAN WATERWAYS CONFERENCE – PLEASE VISIT ISCO IN THE EXHIBITION AREA

You are invited to visit ISCO at the Clean Waterways Exhibition being held on 5-7 April at Pittsburgh, PA, USA. Helena Rowland will be in attendance to welcome you and give you an update on our latest developments. Several ISCO members will be exhibiting or giving presentations during the conference – a great opportunity to catch up with people you know and make new friends.

ISCO REPRESENTATION AT IOPC FUNDS ONLINE MEETINGS

Secretary-General Neil Marson and ISCO's London Ambassador Matthew Sommerville attended the remotely held Meetings of the IOPC Funds Governing Bodies held over March 29-30, 2022.

IMO SUB-COMMITTEE ON POLLUTION PREVENTION & RESPONSE MEETING (4-8 APRIL)

ISCO's London Ambassador, Matthew Sommerville, will attend this meeting.

DW: HOW CHRONIC OIL POLLUTION AT SEA GOES UNPUNISHED

March 28 - Cargo ships continue to pollute the world's oceans with oily wastewater. A DW investigation shows how seafarers circumvent environmental laws to save time and money, with devastating effects on the ocean.

Nothing he had learned at his naval college had prepared the young marine engineer for what he encountered at sea: not for the toxic culture in which superiors bullied and abused junior crew members with seeming impunity, nor for the indifference with which seafarers treated the very oceans that earned them a living — illegally dumping contaminants into the waters without a second thought.

Dumping oily wastewater into the ocean has been outlawed globally for decades, but an investigation by DW, in collaboration with the European nonprofit newsroom Lighthouse Reports and eight other European press outlets, has found that the practice is still common today, with potentially devastating effects for the environment. Hellenic Shipping News / [Read more](#)

RESEARCH RESULTS FROM HONG KONG POLYTECHNIC UNIVERSITY UPDATE KNOWLEDGE OF MARITIME TRANSPORT RESEARCH (MARINE INSURANCE CLAIMS ANALYSIS USING THE WEIBULL AND LOG-NORMAL MODELS: COMPENSATION FOR OIL SPILL POLLUTION DUE TO TANKER ACCIDENTS)

March 29 - By a News Reporter-Staff News Editor at Energy Daily News -- New research on maritime transport research is the subject of a new report. According to news originating from Hong Kong Polytechnic University by NewsRx correspondents, research stated, "In marine insurance, the identification of the distribution of the claim size processes from given observations is of major importance. We evaluate the claim amounts due to accidental oil spill volume from tankers."

For more information on this research see: Marine insurance claims analysis using the Weibull and log-normal models: Compensation for oil spill pollution due to tanker accidents. *Maritime Transport Research*, 2022,3(1):100056. The publisher for Maritime Transport Research is Elsevier. A free version of this journal article is available at <https://doi.org/10.1016/j.martra.2022.100056>.

Insurance Newsnet / [Read more](#)

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MORE INTERNATIONAL & REGIONAL NEWS

FOURTEEN PACIFIC ISLAND NATIONS MAKE MAJOR STRIDES TOWARDS A CLEANER PACIFIC

March 9 - Pacific countries made major strides towards realizing the vision of the Cleaner Pacific 2025 today, with the launch of ISLANDS Pacific – a 14-nation initiative aiming to avoid the release of 28,000 tonnes of marine litter, safely dispose of 720 tonnes of contaminated material, and reduce the burden of persistent organic pollutants (POPs) and mercury in island communities.

ISLANDS Pacific will strengthen existing regional efforts to #BeatPollution, through support for container deposit legislation and improved recycling efforts, as well as building capacity for lifecycle management of key waste streams, including end-of-life vehicles, used hydraulic oil and e-waste – with special attention placed on providing opportunities for women in recycling operations. GEF / [Read more](#)

EUROPE: JUST PUBLISHED: EMSA ACADEMY CATALOGUE OF COURSES

March - EMSA has just published the catalogue of courses offered to national authorities under the framework of the EMSA Academy. This document sets out the various programmes that form the basis of EMSA's routine training activities. It describes those courses which are offered to the national authorities of EU Member States, Norway and Iceland, Enlargement and European Neighbouring Countries, even if these are not necessarily held every year. While the majority of training activities are organised on a regular basis, EMSA also occasionally provides ad hoc courses to cover very specific needs of maritime administrations at a particular time.

[Read more in the EMSA March 2022 Newsletter](#)



ON INTERNATIONAL DAY OF FORESTS, THE CARTAGENA CONVENTION CELEBRATES MANGROVE RESTORATION IN THE WIDER CARIBBEAN REGION

March 21 - The International Day of Forests (IDF) was first proclaimed by the United Nations General Assembly on March 21 in 2012, in order to celebrate and raise awareness of the importance of all types of forests. In the face of the triple planetary crisis of climate change, nature and biodiversity loss, celebrating our forests has become even more important than ever before.

The UNEP Cartagena Convention Secretariat is using this year's International Day of Forests celebration to shine a spotlight on the importance of mangrove forests and their restoration. Reef-mangrove-sea-grass complexes are found across the Wider Caribbean, which play a fundamental role in the economy and well-being of the Caribbean people, especially in the developing small insular states, which strongly depend on coastal marine resources. Mangroves also interact with two of the most important industries of the region: fisheries and tourism, which generate USD 5 billion and USD 47 billion in revenue, respectively. In addition, mangroves are an important natural barrier that reduce the high vulnerability of the region's coastlines during hydrometeorological events such as hurricanes, with an estimated value of USD 23,000 to 45,000 per hectare in the Caribbean alone. UNEP / [Read more](#)

EUROPE: EMSA CONTRACTS SATELLITE COMMUNICATION SERVICES TO SUPPORT MARITIME SURVEILLANCE OPERATIONS CONDUCTED BY REMOTELY PILOTED AIRCRAFT SYSTEMS

March 25 - EMSA has recently awarded six contracts for satellite communication (satcom) services to support the maritime surveillance operations of the Agency's remotely piloted aircraft systems. The contracts are intended to provide fast and effective communications both to the Agency's RPAS service providers as well as indirectly to the maritime authorities using the RPAS services.

With these new capabilities, EMSA will have access to a large pool of satellites to guarantee accessible, secure and autonomous satellite communication services not just for this generation of RPAS services but also for the next. EMSA / [Read more](#)

UN OCEAN CONFERENCE - LISBON, PORTUGAL | 27 JUNE TO 1 JULY 2022

Save our Ocean, Protect our Future - The Ocean Conference, co-hosted by the Governments of Kenya and Portugal, comes at a critical time as the world is seeking to address many of the deep-rooted problems of our societies laid bare by the COVID-19 pandemic and which will require major structural transformations and common shared solutions that are anchored in the SDGs. To mobilize action, the Conference will seek to propel much needed science-based innovative solutions aimed at starting a new chapter of global ocean action.

[More about the conference](#)

CANADA: SHUTTING CANADIAN PIPELINE WOULD COST US CONSUMERS \$23.7 BILLION MORE IN FUEL COSTS: REPORT

March 26 - Decision on pipeline upgrade with concrete-lined tunnel pending in courts

A recently published analysis by a consumer advocacy nonprofit maintains that shutting a 4.5-mile section of a nearly 70-year-old pipeline that spans the Great Lakes from Wisconsin to Ontario would impose \$23.7 billion in higher fuel costs on families and businesses in Indiana, Michigan, Ohio, and Pennsylvania.

Consumer Energy Alliance's (CEA) 14-page report estimates that closing Canada-based Enbridge's Line 5 pipeline in the Straits of Mackinac, which connect Lake Michigan to Lake Huron, would spur regional fuel price spikes of 9.47 to 11.66 percent "independent of any other market conditions, such as the surge in fuel prices observed over the past 12 months that are tied to international oil markets and logistical challenges caused by the pandemic." The Epoch Times / [Read more](#)

GUYANA: SIX-MONTH TRAINING FOR OIL SPILL RESPONSE WRAPS UP WITH JOINT EXERCISE

March 31 - The Civil Defence Commission (CDC) in collaboration with the National Oil Spill Committee on Wednesday conducted an oil spill response exercise in the form of a command post and field tactical exercise. This activity signaled the end of a series of training and workshops which began in September 2021 as part of the national oil spill response effort. Newsroom GY / [Read more](#)

NIGERIA LOSES \$3.27BN TO OIL THEFT IN 14 MONTHS

March 28 - The Federal Government has disclosed that Nigeria lost about \$3.27 billion worth of oil to massive crude oil theft and pipeline vandalism in the Niger Delta in the last 14 months.

According to the government, high-level cases of oil theft have become a threat to the country's corporate and economic existence, with the industry now thinking of transporting crude oil from fields to export terminals by trucks. This is in the face of the Independent Petroleum Producers Group (IPPG) alleging that about 82 per cent of its members' oil production was stolen in the month of February 2022. The Tide / [Read more](#)

NIGERIA: NEWS FROM BODO MEDIATION INITIATIVE



March 29 - BMI Shares Knowledge with UNEP for HYPREP

The United Nations Environment Programme (UNEP) team providing support to the Hydrocarbon Pollution Remediation Project (HYPREP) visited the Bodo area on the 17th and 22nd of March 2022 to physically observe progress made and share knowledge on the model being deployed by the Bodo Mediation Initiative (BMI) for the Bodo Remediation and Revegetation Project. UNEP is providing support to the Federal government cleanup intervention in Ogoniland, having carried out a study on the extent of pollution in the region and made recommendation in its "Environmental Assessment of Ogoniland 2011" report to the government. Read more BMI Shares Knowledge with UNEP for HYPREP (29 Mar) [Read more](#)

March 28 - BMI and UNEP Provides GIS Capacity Training to HYPREP

In view of the Federal Government Ogoni Clean-up programme managed by the Hydrocarbon Pollution Remediation Project (HYPREP), the Bodo Mediation Initiative (BMI) and United Nations Environment Programme (UNEP) facilitated a hands-on geographic

NEWS REPORTS FROM AROUND THE WORLD (CONTINUED)

information system (GIS) lab on Friday 18th 2022 to enhance the capacity of the HYPREP GIS team in designing and delineating the remediation work scope for the Ogoni cleanup. [Read more](#)

March 28 - Shell Corporate Relations Team Tours the Bodo Project Area

Corporate Relations Representatives from Shell Global and SPDC visited the Bodo Remediation and Revegetation Project on Wednesday 16th March 2022 to tour the project area and assess the level of progress made in the phase 2 cleanup process. The Shell Petroleum Development Company (SPDC) Nig. Ltd Joint Venture funds the Bodo Cleanup Project. [Read more](#)

PERU: IOPC FUNDS - IBERO-AMERICAN INSTITUTE OF MARITIME LAW (IIDM)

March 25 - The IOPC Funds participated remotely in a Maritime Law Symposium organised by the Ibero-American Institute of Maritime Law (IIDM) from 22 to 24 March in Lima, Peru. The event brought together leading experts in the legal profession to share knowledge and experiences. It provided an opportunity to analyse and discuss the legal topics which are currently critical to the maritime industry.

Head of Claims, Liliana Monsalve, delivered an online presentation on the international liability and compensation regime. Reference was made to the unfortunate marine pollution incident that had impacted the coastline of Peru (which is not a 1992 Fund Member State) earlier this year. IOPC Funds / [Read more](#)

SOUTH AFRICA: A NEW LIFELINE FOR WILDLIFE CONSERVATION FINANCE

March 23 - What do capital markets have to do with biodiversity? Until now, very little. This changed this week with the launch of a landmark Wildlife Conservation Bond or “rhino bond” that offers a payout linked to the protection of black rhinos, a critically endangered species whose health is essential to the ecosystems in which they live. The bond will support South Africa’s conservation of black rhinos in two of their strongholds in the country: the Addo Elephant National Park and the Great Fish River Nature Reserve. The GEF / [Read more](#)

UGANDA DEVELOPS OIL SPILL CONTINGENCY PLAN

March 29 - Uganda finally launched its national oil spill contingency plan, detailing its preparedness to respond in the event of an oil spill. The East African nation hopes to produce its first oil in the first quarter of 2025. All Africa / [Read more](#)

UK: COUNTER POLLUTION EXERCISE TESTS MCA'S OPERATIONAL PREPAREDNESS



Image courtesy of Maritime and Coastguard Agency

March 30 - The Maritime and Coastguard Agency completed a live training exercise last week (21-24th March), designed to test the MCA’s ability to alert and activate its counter pollution teams and equipment resources in a scenario replicating a real pollution incident at the coast and in the sea.

As the lead authority for marine pollution response and as part of the UK’s National Contingency Plan, the MCA worked alongside its contractor Ambipar Response Limited to deliver the exercise which was held at Heysham, Lancashire.

The Maritime Executive / [Read more](#)

USA: LATEST NEWS FROM NOAA OR&R

March 28 – Please click on the links below to download and read the latest news reports from NOAA OR&R.

[Settlement Finalized to Restore Natural Resources from an Oil Spill in Offshore Louisiana](#)

On March 18, 2022 a settlement was finalized in Federal District Court to resolve claims related to the [Taylor Energy Platform](#) oil spill at Mississippi Canyon 20 (“MC-20”). \$16.5 million of this settlement is to partially restore natural resources injured by the spill.

[NOAA Administrator Visits Office of Response and Restoration Projects in New Jersey](#)



Above: NOAA Administrator Rick Spinrad visited a former restoration site, along with OR&R Director Scot Lundgren.

On Thursday, March 24, the Office of Response and Restoration hosted NOAA Administrator Richard Spinrad, at two project sites in northern New Jersey. Joined by Scott Lundgren, OR&R director, the trip was an opportunity to showcase our work in the fields of restoration and marine debris and describe our multiple roles related to pollution and emergencies. It also provided the opportunity to highlight the various ways OR&R supports equitable delivery of services to underserved communities.

[Disaster Preparedness Program Offers Virtual NOAA ICS 300 Class](#)

On March 21-24, OR&R's Disaster Preparedness Program (DPP) held the second virtual offering of the “NOAA-specific ICS 300: Intermediate Incident Command System for Expanding Incidents” course, also known as ICS 300.

[OR&R Staff Attend Office of Coastal Management Tribal Engagement Workshop](#)

The Assessment and Restoration Division's Megan Ewald and the Marine Debris Program's Peter Murphy attended a multi-day virtual workshop, hosted by the Office for Coastal Management, titled Tribal Workshop: A New Lens for Engagement.

USA: EPA STRATEGIC PLAN

March 28 - FY 2022 – FY 2026 EPA Strategic Plan: The U.S. Environmental Protection Agency's FY 2022-FY 2026 Strategic Plan, required by the Government Performance and Results Act Modernization Act of 2010 (Public Law 11-352), communicates the roadmap for accomplishing EPA's environmental priorities over the next four years. US EPA / [Read more](#)

USA: HAZARDOUS WASTE MANAGEMENT/RULE NO. 23: ARKANSAS DEPARTMENT OF ENERGY & ENVIRONMENT - DIVISION OF ENVIRONMENTAL QUALITY ADDRESSES APPROPRIATE SUBMISSION OF CONTINGENCY PLAN

March 28 - Ms. Penny M. Wilson, CPM, authored a March 25th memorandum submitted to the Arkansas Department to the Arkansas Department of Energy & Environment – Division of Environmental Quality (“DEQ”) Hazardous Waste Generator email list addressing what she described as a: “. . . reoccurring misinterpretation of Arkansas Pollution Control & Ecology Commission (“APC&EC”) Rule No. 23 (Hazardous Waste Management)”. J D Supra / [Read more](#)

VENEZUELAN NGO DOCUMENTS 199 OIL SPILLS IN LAST FIVE YEARS

March 25 - The Venezuelan Observatory for Environmental Human Rights documented 199 oil spills between 2016 and 2021, which, it assured, in the “vast majority” of cases, were not reported by the authorities. “In the 2016-2021 period, reports of 199 oil spills were found, including a gasoline spill. A growing trend is observed in the number of spills, from 12, in the first two years, to 68 in 2021,” the organization said. in the report “Oil Spills in Venezuela”, published on its website. Paris Beacon News / [Read more](#)

YEMEN: FSO SAFER – CONTINGENCY PLANNING WORKSHOPS IN YEMEN

March 25 - As part of United Nations-coordinated efforts to address the risk of an oil spill from the FSO SAFER moored off the coast of Yemen, the International Maritime Organization and United Nations Development Programme (UNDP) Yemen are supporting contingency planning workshops to strengthen Yemen's oil spill response capability.

Following the first workshop in Sana'a in February, the second set of workshops were held in Aden in March, focussing on contingency planning and shorelines response management.

The workshops aimed to address current capacity to respond to a spill from FSO SAFER. They assist in clarifying equipment and resource requirements; developing response strategies; and addressing the topic of waste management. The information gathered will serve to identify further training needs for the respective authorities and will allow for the updating of the country's national oil spill contingency plan.

The workshops were coordinated by UNDP Yemen, funded by IMO's Integrated Technical Cooperation Programme, with technical support provided by IMO. IMO / [Read more](#)

RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS



A NEW COLUMN CREATED BY DR. MERV FINGAS

This is the start of a weekly column which will provide the references and abstracts of new peer-reviewed scientific publications on oil spills. These references are selected on the basis of those papers that provide new insights into the fate, effects and control of oil spills. Readers may choose to obtain the full publications and to do so, one of three methods is suggested; contact your library, search the internet with the DOI (digital object identifier) provided, or search the internet for the exact title. These are given in the order of likely success in obtaining the article. We hope that this provides useful information. Merv Fingas, ISCO colleague

1. DECADAL DIFFERENCES IN POLYCYCLIC AROMATIC COMPOUND (PAC) CONCENTRATIONS IN TWO SEABIRD SPECIES IN ARCTIC CANADA

Provencher, J.F., Thomas, P.J., Braune, B.M., Pauli, B., Tomy, G., Idowu, I., O'Hara, P., Mallory, M.L.
(2022) Science of the Total Environment, 826, art. no. 154088,
DOI: 10.1016/j.scitotenv.2022.154088

ABSTRACT: Seabirds are exposed to a variety of environmental contaminants in the Arctic. While the persistence, bioaccumulation, and toxicity of some groups of contaminants have been well-studied in seabirds since the 1970s, there is less known about polycyclic aromatic compounds (PACs). With increased vessel traffic, and potential oil and gas development in the Arctic region, there is a need to understand existing PAC exposure in biota against which to compare potential effects of anticipated increases of PACs in the marine region. Thick-billed murres (*Uria lomvia*) and northern fulmars (*Fulmarus glacialis*) collected in the Baffin Bay – Davis Strait region during the International Polar Year (IPY; 2007–08), and during a recent Strategic Environmental Assessment (2018; SEA) were examined for hepatic PAC concentrations. We found that fulmars generally had higher concentrations of PACs than the murres, but murres and fulmars sampled in 2007/08 had higher concentrations of most groups of PACs compared to birds from 2018. The one exception to this pattern was that the sum of the alkylated congeners of the heterocyclic aromatic compounds containing a sulfur atom (dibenzothiophene; Σ AHET) was significantly higher in murres in the more recent sampling period (2018) as compared to 2007/08. Σ AHETs likely reflect recent exposure to more refined petroleum products associated with small boats, such

as diesel, gasoline and motor oil. This work highlights the need for longitudinal studies on PAC concentrations in biota for us to gain a better understanding of how Arctic biota are exposed to this group of contaminants, and the potential deleterious effects associated with PACs.

2. EVALUATION OF OFFSHORE OIL SPILL RESPONSE WASTE MANAGEMENT STRATEGIES: A LIFECYCLE ASSESSMENT-BASED FRAMEWORK

Saleem, S., Hu, G., Li, J., Hewage, K., Sadiq, R.
(2022) *Journal of Hazardous Materials*, 432, art. no. 128659,
DOI: 10.1016/j.jhazmat.2022.128659

ABSTRACT: This study presents a novel life cycle assessment-based framework for low-impact offshore oil spill response waste (OSRW) management. The framework consists of design of experiment, life cycle assessment (LCA), multi-criteria decision analysis (MCDA), operational cost analysis, and generation of regression models for impact prediction. The framework is applied to four OSRW management strategies as different combinations of solid and liquid oily waste collection, segregation, transportation, and treatment/disposal technologies. Hypothetical scenarios based on oily waste compositions are developed, and the associated environmental impacts and operational costs are evaluated. The LCA results show that oily waste composition accounts for < 5% of the total environmental impacts.

Chemical demulsification has the highest total impacts due to high marine ecotoxicity and human toxicity, followed by incineration and transportation. The cost analysis reveals that the strategy comprised of centrifugation and landfilling is most preferable while the combination of chemical demulsification and incineration is least favorable. The strategy of combined use of centrifugation and landfilling is ranked as the most suitable in the MCDA. Regression models are developed to predict environmental impacts based on important factors. The framework can help waste management practitioners select low-impact strategies for handling offshore OSRW.

3. CHEMICAL FINGERPRINTING AND CHARACTERIZATION OF SPILLED OILS AND BURNT SOOT PARTICLES – A CASE STUDY ON THE SANCHI OIL TANKER COLLISION IN THE EAST CHINA SEA

Yin, F., Song, Z., He, Z., Qin, B., John, G.F., Zhang, L., Su, P., Zhang, W., Yang, T.
(2022) *Science of the Total Environment*, 824, art. no. 153896,
DOI: 10.1016/j.scitotenv.2022.153896

ABSTRACT: The condensate spill accident from the Sanchi oil tanker collision in the East China Sea is unique in world history. To date, the spilled and burnt amounts of condensate remain unknown. The present study demonstrates the chemical fingerprints of a surrogate condensate (SC) from the same source, and of the carried heavy fuel oil (HFO) of the Sanchi accident. The evaporative features of the condensate are demonstrated by allowing the SC to naturally volatilize in a dark fume hood. In addition, the combustion emission of the SC is characterized by conducting a laboratory-scale combustion experiment. The evaporation experiment suggests that the volatilization process plays a significant role in the weathering of the condensate. The results show that the SC and HFO can be clearly distinguished based on their chemical fingerprints of C27–C35 hopanes and C9–C36 n-alkanes, along with priority polycyclic aromatic hydrocarbons (PAHs) and their alkylated derivatives. The compositional data reveal that the lighter component is predominant in the SC, thereby supporting its high volatility and flammability. The greater amounts of heavier components in the HFO indicate its long-term degradation and potential ecological risks to the environment. Further, the trisnorhopane thermal indicator (Ts/Tm) and C29/C30 ratio of hopanes are validated for identification of the SC and the HFO. More importantly, the changes in the hopane ratios of the soot particles are analyzed for the first time in this study, and the results demonstrate the validity of using hopane ratios to fingerprint the condensate soot particles. The diagnostic ratios of 2-MP/1-MP, 9/4-MP/1-MP, and InP/(InP+BghiP) also show decent performance on source identification after the condensate evaporation and combustion processes.

4. IMPACT OF MIXING AND RESTING TIMES ON THE DROPLET SIZE DISTRIBUTION AND THE PETROLEUM HYDROCARBONS' CONCENTRATION IN DILUTED BITUMEN-BASED WATER-ACCOMMODATED FRACTIONS (WAFS)

Ji, W., Abou Khalil, C., Boufadel, M., Coelho, G., Daskiran, C., Robinson, B., King, T., Lee, K., Galus, M.
(2022) *Chemosphere*, 296, art. no. 133807,
DOI: 10.1016/j.chemosphere.2022.133807

ABSTRACT: The preparation of Water-accommodated Fractions (WAFs) and chemically enhanced WAFs (CEWAFs) are essential for evaluating oil toxicity. The Chemical Response to Oil Spills: Ecological Research Forum (CROSERF) method was widely adopted, with variables (e.g., mixing time, oil loading, etc.) being continuously changed among research groups, which limits the cooperation in this area. Herein, we conducted WAF and CEWAF experiments using two loadings of diluted bitumen (Dilbit): 1 g/L and 10 g/L. For the CEWAF, the dispersant to oil ratio was 1:20. We investigated the impact of three mixing durations (18 h, 42 h, and 66 h) and two resting times (6 h and 24 h) on the droplet size distribution (DSD) and accommodated oil concentration. This would be highly beneficial for analyzing toxicity from oil spills, especially when considering the toxic effect of both suspended oil droplets and

RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS (CONTINUED)

dissolved hydrocarbons. The DSD results and oil chemistry analysis showed that at a low oil loading concentration (1 g/L), both WAFs and CEWAFs had the same DSD, with an average d50 (volume median diameter) of $3.38 \pm 0.70 \mu\text{m}$ and $3.85 \pm 0.63 \mu\text{m}$, respectively. At a high oil loading concentration (10 g/L), the WAFs had an average d50 of $3.69 \pm 0.52 \mu\text{m}$, showing no correlation with mixing and resting time. The DSD of CEWAFs increased significantly at 42 h mixing and 24 h resting time, with oil concentration reaching equilibrium after 42 h mixing. Therefore, WAFs appears to require only 18 h mixing and 6 h resting, while it is recommended to have 42 h mixing and 24 h resting for CEWAFs at high dilbit oil loading concentrations.

5. FATE OF POLYCYCLIC AROMATIC COMPOUNDS FROM DILUTED BITUMEN SPILLED INTO FRESHWATER LIMNOCORRALS

Stoyanovich, S., Yang, Z., Hanson, M., Hollebone, B.P., Orihel, D.M., Palace, V., Rodriguez-Gil, J.R., Mirnaghi, F., Shah, K., Blais, J.M. (2022) *Science of the Total Environment*, 819, art. no. 151993, DOI: 10.1016/j.scitotenv.2021.151993

ABSTRACT: Diluted bitumens (dilbits) are produced by mixing highly viscous bitumen with lighter petroleum products to facilitate transport. The unique physical and chemical properties of dilbit may affect the environmental fate and effects of dilbit-derived chemical compounds when spilled. To further explore this, we monitored experimental spills of Cold Lake Winter Blend (CLWB) dilbit for 70 days in limnocorrals installed in a freshwater boreal lake. A regression design with 2 controls and 7 treatments was used to assess the fate and behaviour of polycyclic aromatic compounds (PACs) as they partitioned from the dilbit into the air, water column and sediments. Treatments ranged from 1.5 to 180 L of CLWB, resulting in oil:water ratios ranging between 1:71000 to 1:500 (v:v). We began to detect elevated concentrations of PACs as early as 6 h post-addition in the air, 12 h post-addition in the water column, and 15–28 d post-addition in the sediments. By the end of the experiment, concentrations of PACs had largely declined in the water column but remained elevated in the sediments. Our results demonstrate that under conditions typical of temperate boreal lakes, only a small proportion of PACs from dilbit enters the aquatic system, but even so, may produce concentrations of ecotoxicological concern, especially in the sediments, which is the ultimate sink for dilbit-derived PACs.

6. A RESPONSE GUIDE FOR SUNKEN OIL MATS (SOMS): FORMATION, BEHAVIOR, DETECTION, AND RECOVERY

Michel, J., Bambach, P. (2022) *Journal of Marine Science and Engineering*, 10 (3), art. no. 368, DOI: 10.3390/jmse10030368

ABSTRACT: Based on past spills, the conditions under which floating oil mixes with enough sand to form sunken oil mats (SOMs) are identified. SOMs form mostly during spills of heavy crudes or heavy fuel oils, but also highly weathered and viscous crude oils. They usually form when oil and sand are both suspended in the water column by breaking waves or by the erosion of heavily oiled sand from the beach. The oil–sand mixture needs an area in the nearshore where it can accumulate into mats, such as in troughs or inside lagoons, where wave energy is reduced. SOMs can be oily (>40% oil) or sandy (<<40% oil), with oily SOMs posing risks of the oil separating from the sand and refloating. Methods are described for SOMs detection and recovery based on their location, in either the surf zone or the open-water environment seaward of the surf zone. A matrix provides guidance on methods based on effectiveness and environmental impacts for different site conditions.

7. OIL DROPLET FORMATION AND VERTICAL TRANSPORT IN THE UPPER OCEAN

Liu, R., Boufadel, M.C., Zhao, L., Nedwed, T., Lee, K., Marcotte, G., Barker, C. (2022) *Marine Pollution Bulletin*, 176, art. no. 113451, DOI: 10.1016/j.marpolbul.2022.113451

ABSTRACT: The dispersion of oil droplets near ocean surface is important for evaluating the impact to the environment. Under breaking wave conditions, the surface oil experiences mainly two processes: the generation of oil droplets at/near the water surface, and the transport of oil droplets due to ocean dynamics. We investigated the vertical behavior by incorporating the transport equation and the VDROD model. The transport equation adopted the ocean dynamics by K-profile parameterization (KPP) and the impact of additional turbulence by imposing the energy dissipation rate on the ocean surface. The oil droplet distribution was obtained, and the entrained distribution and entrainment rate was computed. The results shows that although the entrained distribution and the entrainment rate shares certain consistency with previous studies, divergences are also noticed. Accordingly, the model that describes the physics should be adopted to avoid incorrect qualification of the oil concentration dispersed in the ocean.

TRAINING COURSES

USEFUL LINKS

- AUSTRALIA – AMOSC - <https://amosc.com.au/training/>
- AUSTRALIA & NEW ZEALAND – ALGA - <https://landandgroundwater.com>
- EUROPE – EMSA Academy 2022. [Courses Catalogue](#)
- FRANCE – CEDRE - Click on these links [training catalogue](#) and [2022 calendar](#).

TRAINING COURSES (CONTINUED)

- UK & WORLDWIDE – OIL SPILL RESPONSE LTD. - <https://www.oilspillresponse.com/training/courses/>
- UK & WORLDWIDE – BRIGGS ENVIRONMENTAL SERVICES LTD. - <https://www.briggsmarine.com/services/training/>
- UK – NCEC HAZMAT ACADEMY – [More info](#)
- USA – TEXAS A&M UNIVERSITY – NATIONAL SPILL CONTROL SCHOOL
<http://nscs.tamucc.edu/schedule-2020-2021.html>
- USA – MPC, DETROIT - <https://marinepollutioncontrol.com/services/training-and-compliance>
- USA – ALLIANCE OF HAZARDOUS MATERIALS PROFESSIONALS - https://www.ahmpnet.org/events/event_list.asp

Members who would like to be listed here, please contact your editor – john.mcmurtrie@spillcontrol.org

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Newly added to Upcoming Events page – 44th AMOP Technical Seminar on Environmental Contamination and Response from June 7 to 9, 2022; INTERTANKO AGM 11th May; 2022 UN Ocean Conference, Lisbon, 27th June – 1st July.

UPCOMING WEBINARS & PODCASTS

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Recently added – Informational Webinar on National Resources Canada’s \$10 million Oil Spill Response Challenge

MESSAGES FROM EVENT ORGANISERS

USA: THE CLEAN WATERWAYS CONFERENCE – APRIL 5-7

The 2022 CLEAN WATERWAYS Conference is taking place on **April 5-7** at the David L. Lawrence Convention Center in Pittsburgh, PA. CLEAN WATERWAYS brings together all entities involved in a response in the inland environment and gives attendees the opportunity to network and discuss best practices moving forward. Attendees will walk away with new connections and ideas that can be applied directly to their work and the environment their company operates in. This year’s conference offers 10 sessions that will focus on topics such as swift water response, PFAS, contractor management, unmanned aerial systems, including Indigenous/Tribal communities in response planning, response case studies and much more!

[Register for Clean Waterways](#) [View full Conference Agenda](#)

EUROPE: INTERSPILL DELEGATE REGISTRATION IS NOW OPEN

Please [CLICK HERE](#) to register to attend this event at RAI Exhibition and Convention Centre, Amsterdam on 21-23 June. There is a form to fill in which will prompt a request for payment for the options you select.

USA: CLEAN PACIFIC CONFERENCE & EXHIBITION: AUGUST 23-24 - PRELIMINARY CONFERENCE AGENDA JUST RELEASED

[View the preliminary agenda](#) [Register for Clean Pacific](#) ISCO Members should register with VIP Code ISCO

CANADA: 44th AMOP TECHNICAL SEMINAR ON ENVIRONMENTAL CONTAMINATION AND RESPONSE

The 44th AMOP Technical Seminar on Environmental Contamination and Response will take place from June 7 to 9, 2022. On behalf of Environment and Climate Change Canada, we are announcing that the 44th AMOP Seminar will be a virtual-only format Seminar. The Seminar provides a forum for professionals working in the field of oil and hazardous materials spills. The forum facilitates the

MESSAGES FROM EVENT ORGANISERS (CONTINUED)

transfer of scientific results and is intended to link research and the operational community. All submitted papers are peer-reviewed by scientific and technical experts.

The Technical Seminar features plenary sessions of 20-minute presentations on spill-related topics including Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE). Sessions will begin at 10:00 a.m. Eastern Time each day. The presentations include a 5-minute question and answer period. Sessions may also conclude with Speaker's Corner presentations at which results of more recent research can be discussed without an associated paper. For 2022, the 44th AMOP Technical Seminar will not have a registration fee but will have limited availability. Interested participants may include an international audience of government, industry, and academic scientists, as well as operational specialists involved in the prevention, planning, response, and recovery from the accidental release of oil and chemical spills.

<https://www.canada.ca/en/environment-climate-change/services/science-technology/arctic-marine-oilspill-program.html>
Registration form: [44rd AMOP technical seminar on environmental contamination and response - Canada.ca](#)

CANADA: IOSSC DEADLINE FOR ABSTRACT SUBMISSION

IOSSC 2022 will still be a hybrid event, comprising both in-person and virtual sessions. The abstract submission remains open. Abstracts can be [submitted online](#) before June 17, 2022. We continue to welcome your submissions.

CONTRACTS, TENDERS AND BUSINESS OPPORTUNITIES

INTERNATIONAL OPEN TENDER NOTIFICATION SERVICE

This is a subscription service. [Have a look to see examples of open tenders.](#)

OTHER OPPORTUNITIES: USA & EUROPE

US Government solicitations are frequently posted in Technology Innovation News Survey <https://clu-in.org/products/tins/> US EPA Tech Direct <https://clu-in.org/techdirect/td012022.htm> and USA Federal Contracts Update <https://clu-in.org/Federal-Contract-Opportunities> European Maritime Safety Agency invitations to tender are often posted in The EMSA Newsletter. (Look in "Links for other publications" for the current issue of this publication)

New from EMSA - In order to strengthen its response capacity network EMSA announces the launch of a procurement procedure to contract new stand-by oil spill recovery vessel(s) in the following areas: Lot 1 – Channel and North Sea Lot 2 – Atlantic Middle Lot 3 – Black Sea North [More info](#)

NEWS FROM ISCO MEMBERS

Corporate Members of ISCO can submit news for publication about new products and services in the "News from ISCO Members" section of the ISCO Newsletter.

This is a free facility for Members. Given that the ISCO Newsletter has a large and highly targeted readership in over 50 countries, it's a cost-effective way to promote your company. If you have some news you would like to share with readers of the ISCO Newsletter, send it to John.McMurtrie@spillcontrol.org

LINKS FOR DOWNLOADING AND READING OTHER PUBLICATIONS

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<https://spillcontrol.org/2021/10/19/links-for-downloading-and-reading-other-publications/>

As a service to its Members ISCO provides a listing of publications that may be of interest to our community. This page provides details and links for downloading more than 40 publications most of which can be accessed at no cost.

This page is frequently updated. ISCO depends on regular receipt of updated URL links for listed publications. If these are not received, relevant entries will be discontinued. Publishers are kindly requested to advise the editor john.mcmurtrie@spillcontrol.org if any links are not up-to-date. Readers wishing to recommend the addition of additional publications should contact the editor.

NEW PUBLICATIONS

UK: NCEC MARCH 2022 NEWSLETTER

The first newsletter for 2022 the National Chemical Emergency Centre includes articles on - EU CLP Annex VIII to be adopted in Great Britain; How updates to REACH Annex II impact your safety data sheets (SDS); Four new substances added to ECHA's Candidate List;

NEW PUBLICATIONS (CONTINUED)

Supporting UN Sustainable Development Goals with level 1 telephone emergency response best practice; 5 steps to ensure your telephone emergency response service meets best practice guidelines; Hazmat Academy announces its 2022 emergency response course schedule. [Download the NCEC Newsletter](#)

IPIECA 2021 ANNUAL REVIEW

The theme of the 2021 Review reflects how Ipieca is uniquely positioned to advance environmental and social performance to support the oil, gas and alternative energy industry's contribution to a net-zero future in the context of sustainable development. [Download](#)

IOPC FUNDS ANNUAL REPORT 2021

The Annual Report 2021 is now available to download from the Publications section of the website. Hard copies of the Report are also available on request via the Publications section. This year's report provides details of the main activities and achievements of the IOPC Funds during the year. [Read more](#)

CANADA'S MULTI-PARTNER RESEARCH INITIATIVE WINTER 2022 BULLETIN

In This Issue - Synthesis & Legacy Update; Oil Spill Response Artwork; Canadian/Circumpolar Oil Spill Response Viability Analysis; Intelligent Computational Techniques in Marine Oil Spill Management; New MPRI Projects for 2021/22; Community Engagement in Monitored Natural Attenuation of Hydrocarbons in the Arctic; Fall 2021 Networking Events; Ken Lee Recognized with Legacy Award. No URL found but available on request chunjiangan@concordia.ca

MEDITERRANEAN OIL INDUSTRY GROUP – APRIL 2022 NEWSLETTER

All the latest news from MOIG – Download the Newsletter at http://medoilgroup.org/newsletters/Newsletter_Issue_47.pdf

INCIDENT REPORTS

THAILAND: OIL TANKER EXPLOSION

March 28 - Article In This Weeks' 'Splash' <https://splash247.com> Another Thai tanker explodes in Bangkok. A product tanker, exploded on March 28 while mooring at the Bangchak depot on the Chao Praya River. The ship was carrying 3,000 tons of oil. One crew member was killed and three injured. Oil type and volumes released are not reported. The article provides links to two videos (on YouTube). <https://splash247.com/another-thai-tanker-explodes-in-bangkok/> [Thanks to John Wardrop, Member of ISCO Council for Australia]

UK: NORTHERN IRELAND - MAJOR FISH KILL IN CO TYRONE AFTER SLURRY SPILL

March 30 - The Northern Ireland Environment Agency are investigating the spill in the Claggan River, which is believed to have happened last weekend and killed hundreds of salmon and dolloghan trout. The BBC report that the Department of Agriculture say the "significant" spill came from an above ground tank. The Claggan River is connected to the Killymoon and Ballinderry Rivers near Cookstown. Belfast Telegraph / [Read more](#)

USA: MISSOURI - CHEMICAL SPILL IN JUDEN CREEK

March 31 - An asphalt-like substance was recently found in Juden Creek in the city limits. Hazardous response crews are working to clean up the mess. They were out at Juden Creek on the north side of Cape Girardeau on Wednesday, March 30. [KFVS12 / Read more](#)

MALAYSIA: GLUE SPILL IN KENINGAU'S BARIAWA AND PEGALAN RIVERS

April 2 - "Teams from the Health Department and police have taken river water samples for further action. Reports have been submitted to the Environment (DOE) Department for action. The chemical spill (glue) contains Phenol Formaldehyde Resin, which is categorised as toxic and dangerous to humans. The Star / [Read more](#)

Legal disclaimer: Whilst ISCO takes every care to ensure that information published in this newsletter is accurate unintentional mistakes can occur. No liability for consequences of errors is accepted but, if an error is brought to our attention, a correction will be printed in a following issue of this newsletter. Products and services featured in the ISCO Newsletter and/or the ISCO website, including the International Directory of Spill Response Supplies and Services, have not been tested, approved or endorsed by ISCO. Any claims made by suppliers of products or services are solely those of the suppliers and ISCO does not accept any liability for their accuracy. It should not be assumed that views and opinions expressed in linked reports, articles and other content reflect the views of the organization. Subscription is subject to acceptance of ISCO's Terms and Conditions as published on the website www.spillcontrol.org and your acceptance of ISCO's Data Protection and Privacy Policy.
