



## ISCO & THE ISCO NEWSLETTER

The International Spill Control Organization, a not-for profit organization dedicated to raising worldwide preparedness & co-operation in response to oil and chemical spills, marine & freshwater pollution by plastics. promoting technical development and professional competency, & 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 & Observer Status at the International Oil Pollution Compensation Funds

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PLEASE CLICK ON THE BANNERS BELOW FOR MORE INFORMATION



## INTERNATIONAL NEWS

### ISRAEL AND THE OCCUPIED PALESTINIAN TERRITORY: A CATASTROPHIC HUMANITARIAN CRISIS

More than 29,000 people - including children - have been killed in Israel, Gaza and the West Bank since 7 October, and over 77,000 have been injured.

It is civilians who are paying the highest price. In all communities, families are grieving those killed, treating the injured and yearning to be reunited with loved ones held captive. Thousands more have fled their homes and are desperately seeking safety. The suffering is intolerable, and it must end.

Red Cross and Red Crescent National Societies are working day and night, risking – and losing – their lives while helping others. They are seeing extreme levels of death, danger and destruction. Yet, even amid this chaos, they are still doing all they can to reach and give comfort to people experiencing this horror. Your support makes this possible. Help provide vital aid, donate now. Red Cross / [Read more](#)

### BAHRAIN SIGNS JEDDAH AMENDMENT TO COMBAT ILLICIT MARITIME ACTIVITY

The Kingdom of Bahrain has signed the Jeddah Amendment to the Djibouti Code of Conduct (DCoC-JA), a regional initiative to combat piracy, armed robbery against ships and other illicit maritime activities in the Western Indian Ocean and the Gulf of Aden.

The Ambassador of Bahrain to the United Kingdom, H.E. Mr. Shaikh Fawaz Bin Mohammed Al Khalifa deposited the instrument with IMO Secretary-General Arsenio Dominguez at IMO Headquarters in London on 6 March.

Bahrain joins 17 other Signatory States in working together to develop a common regional maritime security strategy, coordinate a robust information-sharing network and strengthen capacity-building programmes on various thematic areas, from human trafficking to port and ship security. IMO supports the implementation of the DCoC-JA, alongside other partners, with funding from

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## INTERNATIONAL NEWS (CONTINUED)

### IMO WELCOMES 176TH MEMBER STATE

The Kyrgyz Republic has become the latest State to join the International Maritime Organization (IMO). IMO now has 176 Member States. Kyrgyzstan deposited its instrument of acceptance to the IMO Convention with the United Nations with effect from 27 February 2024. IMO / [Read more](#)

## ISCO NEWS

### NEXT MEETING OF ISCO COUNCIL

The next ISCO Council meeting will be on the 21st March 2024 at 1PM UK time. Joining info has been circulated to all members of the ISCO Council.

### ED LEVINE, MEMBER OF ISCO COUNCIL, WILL CHAIR GULF-ALASKA KNOWLEDGE EXCHANGE

The Gulf Research Program (GRP) will host a workshop series to bring together representatives from Alaska and the Gulf of Mexico region to share experiences, knowledge, strategies, and best practices to help prepare for and recover from potential future spills. An ad-hoc committee Chaired by Ed Levine (SS&C, LLC and ISCO) will plan up to three workshops that engage researchers, practitioners, and other stakeholders from both regions.

### RESPONSE TO "FOREVER CHEMICALS" POLLUTION

Note from John McMurtrie, Editor of the ISCO Newsletter – I am not aware of how many ISCO members and readers are involved in mitigation efforts for "Forever Chemicals" pollution and I personally have little knowledge of this activity. Because of this, I have put very little info on this subject in the newsletter. It would be good to hear from those who are active in this field. If some of you are involved, a Contributed Article on the subject would be appreciated also any relevant reports for publication.

## NEWS FOR ISCO STUDENT MEMBERS

Note from John McMurtrie, Editor of the ISCO Newsletter – As some of you will be aware I am trying to reduce my workload but sometimes come across some news that may be of interest to our Student Members. This week I came across: CANADA – ["Tides of Opportunity"](#) from Econext  
GREECE - HELMEPA [Scholarships for the Academic Year 2024-2025](#)  
I apologise if I am duplicating information that has already been sent out by ISCO Student Leader, Peter Balogun Kayode, in his dedicated Whatsapp Page.

## REGIONAL NEWS

The latest News and Press Releases collated from websites of Regional Organisations on ISCO's checking list. To add a website to this list please send the link to [john.mcmurtrie@spillcontrol.org](mailto:john.mcmurtrie@spillcontrol.org)

### EUROPE: MACRO REGULATION OF MICROPLASTICS: NEW EU INITIATIVES AND THEIR GLOBAL BUSINESS IMPACT

As part of its broader zero-pollution action plan, and in response to microplastics' recognised long-term negative impacts on ecosystems, the European Union has recently announced several proposals to reduce microplastics pollution from different sources: plastic waste and litter; accidental and unintentional releases (e.g., plastic pellet loss, tyre degradation, or release from clothing); and intentional use in products. These regulatory measures will impact the use of microplastics in cosmetics and medicines, among other products. The proposals come on the heels of other global regulatory developments involving microplastics, as well as bans on other components in drugs and cosmetics that may be harmful to human health. Collectively, these proposals indicate a potential increased regulatory focus on holding industry financially responsible for potentially harmful components in their products and

## REGIONAL NEWS (CONTINUED)

packaging. The proposals rely on the well-established 'polluter pays' principle, under which those who produce pollution bear the costs of managing such pollution to prevent damage to human health or the environment. Mondaq / [Read more](#)

### EAST ASIA: MARINE PLASTICS PROJECT

The “Reducing Marine Plastics in the East Asian Seas Region” or the Marine Plastics Project is a six-year initiative between Partnership in Environmental Management for the Seas of East Asian and the Republic of Korea through the Ministry of Oceans and Fisheries. It aims to reduce marine plastics in 10 local sites in the Philippines (6) and Timor-Leste (4) through improved governance and management, demonstration of best practices and innovative solutions, marine litter monitoring, and increasing capacity and awareness of the partner communities. PEMSEA / [Read more](#)

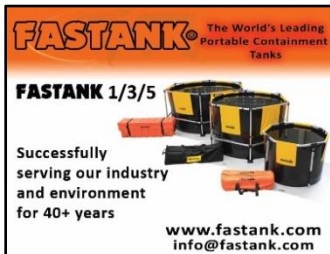
### ADRIATIC: ADRIEX 2024

REMPEC is currently organizing a three-day Sub-Regional Workshop aimed at testing the Adriatic marine pollution incident contingency plan (ADRIEX 2024). The Workshop is being held in Bar, Montenegro and is being attended by representatives from all Contracting Parties in the Adriatic. REMPEC / [Read more](#)

## NEWS FROM AROUND THE WORLD

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### AUSTRALIA: QUEENSLAND INTRODUCES BILL TO STRENGTHEN REGULATORY RESPONSES UNDER THE ENVIRONMENTAL PROTECTION ACT 1994 (QLD)

March 6 - On 13 February 2024, the [Environmental Protection \(Powers and Penalties\) and Other Legislation Amendment Bill 2024 \(Qld\) \(Powers and Penalties Bill\)](#) was introduced to the Queensland Parliament. The Powers and Penalties Bill proposes a suite of amendments to the Environmental Protection Act 1994 (Qld) (EP Act) intended to strengthen and streamline regulatory responses to environmental harm, in response to the recommendations of the Independent Review of the EP Act undertaken in 2022. Mondaq / [Read more](#)

### BRAZIL: A COMPREHENSIVE DATASET OF ENVIRONMENTALLY CONTAMINATED SITES IN THE STATE OF SÃO PAULO

March 2 - In the Brazilian state of São Paulo, contaminated sites (CSs) constitute threats to health, environment and socioeconomic situation of populations. Over the past two decades, the Environmental Agency of São Paulo (CETESB) has monitored these known CSs. This paper discusses the produced dataset through digitising the CETESB reports and making them accessible to the public in English. Nature / [Read more](#)

### CHINA: WHO SHOULD PAY FOR SOIL CONTAMINATION IN CHINA?

March 7 - Soil contamination that threatens public health is extensive in China, yet accountability for polluters is rare. Friends of Nature (FON), a Chinese environmental NGO, has been pivotal in enforcing environmental laws to hold companies responsible. Despite challenges with suing polluters near a newly built middle school in Jiangsu Province, FON's public interest litigation led to the passage of China's Law on Prevention and Control of Soil Contamination. Their story shows the transformative power of Chinese NGOs. News Security / [Read more](#)

### COLOMBIA WILL HOST THE NEXT UNITED NATIONS BIODIVERSITY CONFERENCE

December 15 - The Bureau of the Conference of the Parties to the Convention on Biological Diversity met on 15 December and accepted Colombia's offer to host the next United Nations Biodiversity Conference, to be held from 21 October to 1 November 2024.

The Conference encompasses the Sixteenth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 16), the Eleventh meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety, and the Fifth meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their



Utilization. It will include a high-level ministerial segment. CBD Intl. / [Read more](#)

### INDIA: ACADEMY ON 50 YEARS OF MARPOL ORGANIZED BY CENTRE FOR MARITIME ENVIRONMENTAL LAW, GMU AND SEA AND BEYOND [11TH-19TH MARCH, 2024]

March 4 - Gujarat Maritime University (GMU) is an endeavor of the Gujarat Maritime Board, Government of Gujarat, to provide a fillip to the growth in the Maritime Sector by bridging the knowledge gap between academia and industry. The prime objective of the University is to be a global centre of excellence in Maritime education, research and development, and professional training. It aims to enhance and increase the human capital and capacity of the maritime industry both in India and abroad. The University has established its Centre for Maritime Environmental Law (CMEL) to foster active research on the contemporary issues of the ever-growing legal field and to promote capacity building. The Centre provides new insights, knowledge transfer, and training by organizing International events such as Conferences, Seminars, Webinars, Capacity building, and training programmes for sector professionals and students. Live Law / [Read more](#)

### KUWAIT'S KOC AWARDS KERP CONTRACT TO WORLEY

March 6 - Kuwait Oil Company (KOC) has awarded the Project Management Consultants (PMC) contract for Kuwait Environmental Remediation Programme (KERP) for an additional five years to Australia-based global engineering services firm Worley. KERP, initiated by the United Nations, is one of the largest remediation and restoration programmes in the world, to remediate legacy oil-contamination within KOC oil fields, which were damaged in the 1991 Gulf War. Under the contract, Worley is responsible for the management of the KERP and various aspects of environmental remediation and management, the ASX-listed company said in a statement. Zawya / [Read more](#)

### NIGERIA: 123 Ogonis FOR HYPREP TRAINING

March 6 - Another batch of 123 Ogonis will soon commence a training programme designed to equip them on electricals in preparation for the coming Ogoni power project. The Tide's source reports that the training will commence on Monday at the Skills Development Centre, Ken Saro-Wiwa Polytechnic, Bori, headquarters of Khana local Government Area of Rivers State. According to The Tide's Source, the training programme which is facilitated by the Hydrocarbon Pollution Remediation Project (HYPREP) is for Ogoni citizens drawn from the four Ogoni Local Government areas of Eleme, Gokana, Khana and Tai. The Tide / [Read more](#)

### UK: MARITIME AND COASTGUARD AGENCY LEADS COUNTER-POLLUTION EXERCISE



March 6 - The Maritime and Coastguard Agency's (MCA) counter-pollution response is being practiced this week in an exercise off Portland in Dorset. The 3-day activity, running from Tuesday 5 March to Thursday 7 March, will test the response to a mock scenario in which 300 tons of fuel is spilled in waters east of Portland Harbour.

The practice will include testing MCA operations at sea as well as working with partner agencies to further test their plans along the shoreline.

The UK's counter-pollution response contractor Ambipar is being deployed, with involvement also from the Marine Management Organisation, Portland and Weymouth harbour authorities, and Weymouth and Dorset councils. MCA / [Read more](#)

### USA: NOAA OR&R WEEKLY REPORTS

March 4 – Please click on the links below to read the latest Reports

#### OR&R Celebrates 25th Anniversary

*Photo: Oil spill cleanup demonstration at Clean Pacific 2015 conference, Vancouver B.C. (June 2015 - Vancouver, B.C. credit: Pacific States/B.C. Oil Spill Task Force)*

On February 28, 2024, the Office of Response and Restoration turned 25! NOAA's National Ocean Service (NOS) commemorated [this anniversary](#) by reflecting back to pivotal moments in OR&R's history that established the office's foundation.

OR&R dates back beyond its official inception in 1999. In 1976, the tanker Argo Merchant grounded near Nantucket Shoals in



## NEWS FROM AROUND THE WORLD (CONTINUED)

Massachusetts. When the ship broke apart — ultimately spilling nearly eight million gallons of oil — the U.S. Coast Guard turned to a NOAA research team to provide scientific expertise in support of operational decisions. That team evolved and grew into NOAA's OR&R.

### **Southern New England Marine Debris Action Plan Now Available**

On February 20, the NOAA Marine Debris Program (MDP) released the new [Southern New England Marine Debris Action Plan](#). This document is the result of a collaborative effort between the MDP and partners across Rhode Island and Southern Massachusetts, including federal, state, and nongovernmental organizations, industry, and academia.

### **NOAA Attends USCG Pacific Area-led California Tsunami Workshop**

On February 22, OR&R's Emergency Response Division's Scientific Support Coordinator Jordan Stout and Marine Debris Program's California Regional Coordinator Christy Kehoe participated in a United States Coast Guard (USCG) Pacific Area's tsunami preparation workshop in California.

### **Public Comment Opens on Interagency Marine Debris Coordinating Committee Recommendations to Address Marine Debris**

The NOAA Marine Debris Program, on behalf of the [Interagency Marine Debris Coordinating Committee](#) (IMDCC), is soliciting public comments regarding draft recommendations to address marine debris.

### **Virtual Congressional Briefing Hosted for Marine Debris Removal**

On February 16, the NOAA Marine Debris Program hosted a virtual briefing for congressional staff with speakers from the National Marine Sanctuary Foundation (NMSF) and Port of Neah Bay to discuss upcoming debris removal work. The briefing was attended by nine staff from six congressional offices and committees.

## **USA: CALIFORNIA LEGISLATURE — 2023–2024 REGULAR SESSION**

March 4 - LEGISLATIVE COUNSEL'S DIGEST - SJR 13, as introduced, Newman. Navy North Hangar Fire: contamination cleanup.

This measure would, among other things, urge the United States Congress and President Joseph R. Biden to support a \$100,000,000 supplemental funding request to address the ongoing impacts on public health, the environment, and the local economy caused by cross-jurisdictional pollution from the Navy North Hangar Fire. The measure would also urge President Biden to declare a national emergency due to those ongoing impacts, and would urge President Biden and the United States Congress to include in future federal budgets sufficient ongoing operational and maintenance funding for Navy North Hangar Fire remediation.

Legiscan / [Read more](#)

## **USA: U.S. ARMY CORPS SEEKS CLEANUP OF HISTORIC DUPONT N.J. ATOMIC SITE, EYES MARCH CONTRACT AWARD**

March 6 - The Philadelphia District of the U.S. Army Corps of Engineers made headlines this week with its call for contractors to undertake the cleanup of the DuPont Chambers Works site in Deepwater, N.J., a significant step under the Formerly Utilized Sites Remedial Action Program (FUSRAP). Initially announced in February, the project aims to address longstanding environmental concerns by removing soil contamination linked to uranium, thorium, radium, and other hazardous materials. BNN / [Read more](#)

## PEOPLE IN THE NEWS

### **IMAREST FELLOW AND IMO DELEGATE ANDY WRIGHT HONOURED BY U.S. COAST GUARD**



The U.S. Coast Guard has presented its Meritorious Public Service Award to Andy Wright for his services to the International Maritime Organization (IMO) as a delegate of the Institute of Marine Engineering, Science and Technology (IMarEST).

Andy was honoured for his exemplary leadership, outstanding achievements, and contributions at the IMO to enhance maritime safety and marine environmental protection.



## PEOPLE IN THE NEWS (CONTINUED)

His dedication, professionalism, and unwavering support for the maritime community, the U.S. public, and the protection of the marine environment were commended as being in keeping with the highest traditions of the U.S. Coast Guard.

IMarEST / [Read more.](#)

## NEWS FROM ISCO MEMBERS

Corporate Members of ISCO can submit news 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 60 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](mailto:John.McMurtrie@spillcontrol.org) Members who would like to place a regular advertisement in the ISCO Newsletter can also benefit from preferential discounted rates. For more info please contact Mike Watson at [mike@mwadigital.com](mailto:mike@mwadigital.com) He will be happy to help you.

## LAMOR AFRICA BUSINESS PARTNERS CONFERENCE: UNITING PROFESSIONALS ACROSS THE CONTINENT



The Lamor Africa Business Partners Conference in Cape Town concluded after three inspiring days in mid-February 2024, where professionals from across Africa connected and shared insights.

In the middle of February, we wrapped up an incredible three days at the Lamor Africa Business Partners Conference in Cape Town, South Africa.

It was an inspiring event to connect with professionals from across Africa, sharing insights and experiences in our businesses and deepen our collaboration.

From informative sessions on environmental protection to discussions on service and training excellence, remediation, water business, and effective sales and marketing strategies for Lamor products and services, we’ve gained knowledge to drive our business forward. Lamor / [Read more](#)

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## RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS

### A COLUMN CREATED BY DR. MERV FINGAS, MEMBER OF ISCO COUNCIL FOR CANADA



*This is part of a weekly column which provides 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. Merv Fingas, ISCO Colleague.*

#### 57. Molecular responses of sponge larvae exposed to partially weathered condensate oil

Luter H.M., Laffy P., Flores F., Brinkman D.L., Fisher R., Negri A.P.

(2024) Marine Pollution Bulletin, 199, art. no. 115928,

DOI: 10.1016/j.marpolbul.2023.115928

**ABSTRACT:** Anthropogenic inputs of petroleum hydrocarbons into the marine environment can have long lasting impacts on benthic communities. Sponges form an abundant and diverse component of benthic habitats, contributing a variety of important functional roles; however, their responses to petroleum hydrocarbons are largely unknown. This study combined a traditional ecotoxicological experimental design and endpoint with global gene expression profiling and microbial indicator species analysis to examine the effects of a water accommodated fraction (WAF) of condensate oil on a common Indo-Pacific sponge, *Phyllospongia foliascens*. A no significant effect concentration (N(S)EC) of 2.1 % WAF was obtained for larval settlement, while gene-specific (N(S)EC) thresholds ranged from 3.4 % to 8.8 % WAF. Significant shifts in global gene expression were identified at WAF treatments  $\geq 20$  %, with larvae exposed to 100 % WAF most responsive. Results from this study provide an example on the incorporation of non-conventional molecular and microbiological responses into ecotoxicological studies on petroleum hydrocarbons.

#### 58. Structure-activity relationships for alkyl-phenanthrenes support two independent but interacting synergistic models for PAC mixture potency

Incardona J.P., Linbo T.L., Cameron J.R., Scholz N.L.

(2024) Science of the Total Environment, 918, art. no. 170544

DOI: 10.1016/j.scitotenv.2024.170544

**ABSTRACT:** Multiple lines of evidence at whole animal, cellular and molecular levels implicate polycyclic aromatic compounds (PACs) with three rings as drivers of crude oil toxicity to developing fish. Phenanthrene (P0) and its alkylated homologs (C1- through C4-phenanthrenes) comprise the most prominent subfraction of tricyclic PACs in crude oils. Among this family, P0 has been studied intensively, with more limited detail available for the C4-phenanthrene 1-methyl-7-isopropyl-phenanthrene (1-M,7-IP, or retene). While both compounds are cardiotoxic, P0 impacts embryonic cardiac function and development through direct blockade of K<sup>+</sup> and Ca<sup>2+</sup> currents that regulate cardiomyocyte contractions. In contrast, 1-M,7-IP dysregulates aryl hydrocarbon receptor (AHR) activation in developing ventricular cardiomyocytes. Although no other compounds have been assessed in detail across the larger family of alkylated phenanthrenes, increasing alkylation might be expected to shift phenanthrene family member activity from K<sup>+</sup>/Ca<sup>2+</sup> ion current blockade to AHR activation. Using embryos of two distantly related fish species, zebrafish and Atlantic haddock, we tested 14 alkyl-phenanthrenes in both acute and latent developmental cardiotoxicity assays. All compounds were cardiotoxic, and effects were



resolved into impacts on multiple, highly specific aspects of heart development or function. Craniofacial defects were clearly linked to developmental cardiotoxicity. Based on these findings, we suggest a novel framework to delineate the developmental toxicity of petrogenic PAC mixtures in fish, which incorporates multi-mechanistic pathways that produce interactive synergism at the organ level. In addition, relationships among measured embryo tissue concentrations, cytochrome P4501A mRNA induction, and cardiotoxic responses suggest a two-compartment toxicokinetic model that independently predicts high potency of PAC mixtures through classical metabolic synergism. These two modes of synergism, specific to the sub-fraction of phenanthrenes, are sufficient to explain the high embryotoxic potency of crude oils, independent of as-yet unmeasured compounds in these complex environmental mixtures.

### 59. Discovery of polycyclic aromatic acid metabolites in fish exposed to the petroleum compounds 1-methylphenanthrene and 1,4-dimethylphenanthrene

Nakken C.L., Meier S., Mjøs S.A., Bijlsma L., Rowland S.J., Donald C.E.  
(2024) *Science of the Total Environment*, 918, art. no. 170496,  
DOI: 10.1016/j.scitotenv.2024.170496

**ABSTRACT:** Most of the polycyclic aromatic hydrocarbons (PAHs) in petroleum are alkylated (alkyl PAHs), still the metabolism of these alkyl PAHs to the expected acid products (polycyclic aromatic acids; PAAs) has yet to be demonstrated in oil-exposed fish. Should these compounds be discovered in fish as they have in ragworm, rodents, and humans, they could present an indicative biomarker for assessing oil pollution. In this study, the ability to biotransform alkyl PAHs to PAAs was examined on Atlantic haddock (*Melanogrammus aeglefinus*). Exposure to phenanthrene, 1-methylphenanthrene or 1,4-dimethylphenanthrene was performed via intraperitoneal injection. An Ion Mobility Quadrupole Time-Of-Flight Mass Spectrometer (IMS-Q-TOF MS) was used in exploratory analysis of extracted bile samples. Acquisition of four-dimensional information by coupling liquid chromatography with the IMS-Q-TOF MS and in-silico prediction for feature prioritization in the data processing workflow allowed several tentative identifications with high degree of confidence. This work presents the first detection of PAAs in fish and suggests the importance of investigating alkyl PAHs in ecotoxicological studies of oil-polluted fish environments.

### 60. Transcriptome analysis of *Sparidentex hasta* larvae exposed to water-accommodated fraction of Kuwait crude oil

Kumar V., Karam Q., Shajan A.B., Al-Nuaimi S., Sattari Z., El-Dakour S.  
(2024) *Scientific Reports*, 14 (1), art. no. 3591  
DOI: 10.1038/s41598-024-53408-2

**ABSTRACT:** Anthropogenic activities have been shown to significantly affect marine life. Water pollution and oil spills are particularly deleterious to the fish population, especially during their larval stage. In this study, Sobaity-sea bream *Sparidentex hasta* (Valenciennes, 1830) larvae were exposed to serial dilutions of water-accommodated fraction of Kuwait crude oil (KCO-WAF) for varying durations (3, 6, 24, 48, 72 or 96 h) in acute exposure regime. Gene expression was assessed using RNA sequencing and validated through RT-qPCR. The RNA sequencing data were aligned to the sequenced genome, and differentially expressed genes were identified in response to treatment with or without KCO-WAF at various exposure times. The highest number of differentially expressed genes was observed at the early time point of 6 h of post-exposure to KCO-WAF. The lowest number of differentially expressed genes were noticed at 96 h of treatment indicating early response of the larvae to KCO-WAF contaminant. The acquired information on the differentially expressed genes was then used for functional and pathway analysis. More than 90% of the differentially expressed genes had a significant BLAST match, with the two most common matching species being *Acanthopagrus latus* and *Sparus aurata*. Approximately 65% of the differentially expressed genes had Gene Ontology annotations, whereas > 35% of the genes had KEGG pathway annotations. The differentially expressed genes were found to be enriched for various signaling pathways (e.g., MAPK, cAMP, PI3K-Akt) and nervous system-related pathways (e.g., neurodegeneration, axon guidance, glutamatergic synapse, GABAergic synapse). Early exposure modulated the signaling pathways, while KCO-WAF exposure of larvae for a longer duration affected the neurodegenerative/nervous system-related pathways. RT-qPCR analysis confirmed the differential expression of genes at each time point. These findings provide insights into the underlying molecular mechanisms of the deleterious effects of acute exposure to oil pollution—on marine fish populations, particularly at the early larval stage of *Sparidentex hasta*.

### 61. Metal and metalloid maternal transfer in a newborn West Indian manatee (*Trichechus manatus*) two years after the northeastern oil spill disaster of 2019 in Brazil,

Lemos L.S., Attademo F.L.N., de Paiva L.H., Jr., Costa A.F., Reis L.M.A., de Oliveira Luna F., Hauser-Davis R.A., Siciliano S.  
(2024) *Marine Pollution Bulletin*, 200, art. no. 116147,  
DOI: 10.1016/j.marpolbul.2024.116147

**ABSTRACT:** A large-scale oil spill along the northeastern Brazilian coast in 2019–2020 severely impacted primary manatee habitats in Brazil. This study aimed to assess metal and metalloid contamination in a dead manatee calf found following this oil spill. Several



elements were detected, including chromium, iron, nickel, lead, and vanadium, which are crude oil components, and thallium, a component of dispersants used to degrade and dissipate crude oil. The presence of these contaminants in the manatee calf is indicative of maternal exposure, metabolism, and newborn transference via placenta and lactation. This is the first report of mother-calf metal transfer in manatees, highlighting the species' vulnerability and potential long-term population dynamics effects, and the first report for several metals and metalloids in these animals, laying the foundation for future research efforts. These findings highlight the urgent need for continued environmental monitoring, ecotoxicological assessments, and conservation initiatives.

## **62. Exploring Hydrocarbon Degradation Capacity and Mathematical Modeling of Mixotrophic Growth Kinetics in *Tetradismus obliquus* and *Desmodesmus armatus* for Crude Oil Bioremediation**

Abbas M., Ni L., Du C.

(2024) *Water, Air, and Soil Pollution*, 235 (3), art. no. 165

DOI: 10.1007/s11270-024-06958-0

**ABSTRACT:** Crude oil spills imperil aquatic ecosystems globally, prompting innovative solutions such as microalgae-based bioremediation. The potential of *Tetradismus obliquus* and *Desmodesmus armatus* for crude oil spill bioremediation is investigated in this study. Under mixotrophic conditions and varying crude oil concentrations (0.5 to 2%), both species showed decent resistance, sustaining growth, and adaptation at low crude oil exposure levels below 1%. Both algae exhibited peak growth rates at a 0.5% crude oil concentration. In *T. obliquus*, chlorophyll-a levels increased with 0.5% crude oil exposure, while chlorophyll-b and carotenoid levels remained fairly consistent. Conversely, *D. armatus* exhibited variable chlorophyll-a and carotenoid levels at the 0.5% crude oil concentration, accompanied by an uptick in chlorophyll-b levels. GC/MS analyses revealed that *T. obliquus* efficiently degraded aliphatic compounds like undecane, tridecane, and pentadecane. Additionally, *T. obliquus* outperformed *D. armatus* in degrading both aliphatic and aromatic hydrocarbons. The study identifies the modified Richards model efficacy for *T. obliquus*, while the Baranyi-Roberts model exhibited superiority for *D. armatus* as optimal for representing growth kinetics in response to crude oil exposure. This insight is crucial for tailored bioremediation strategies, emphasizing species-specific adaptability and concentration considerations. Overall, the study provides vital information for designing targeted approaches to address crude oil contamination challenges, contributing to effective environmental restoration in contaminated ecosystems.

## **63 Association between oil spill clean-up work and thyroid cancer: Nine years of follow-up after the Hebei Spirit oil spill accident,**

Choi Y.-H., Kim L., Huh D.-A., Moon K.W., Kang M.-S., Lee Y.-J.

(2024) *Marine Pollution Bulletin*, 199, art. no. 116041,

DOI: 10.1016/j.marpolbul.2024.116041

**ABSTRACT:** In 2007, an unprecedented oil spill occurred in Taean, Korea. Although crude oil contains chemicals that could increase thyroid cancer risk, few studies have examined the long-term effects of oil exposure during clean-up and thyroid cancer incidence. We investigated the long-term thyroid cancer incidence among participants involved in clean-up work. 1798 participants engaged in at least two surveys since the baseline was tracked from 2008 to 2018. Participants reported the days they participated in oil clean-up works and cancer diagnoses. Cox proportional hazard models were used to estimate the hazard ratios between clean-up work duration and thyroid cancer. Over the 9-year follow-up, 30 thyroid cancer cases were diagnosed. A positive association was observed between clean-up duration and thyroid cancer risk. This effect was more pronounced among residents living <50 m from traffic roads. Our results indicate that crude oil clean-up work participation may increase the thyroid cancer risk.

## **64. Automated FerryBox monitoring reveals the first recorded river induced crude oil seep transport to the Strait of Magellan in southern Patagonia**

Giesecke R., Galbán-Malagón C., Salamanca M., Chandia C., Ruiz C., Bahamondes S., Astorga-Gallano D.

(2024) *Science of the Total Environment*, 920, art. no. 170706,

DOI: 10.1016/j.scitotenv.2024.170706

**ABSTRACT:** This study presents the first documented occurrence of a natural crude oil seep plume associated with river discharge along the Strait of Magellan in southern Patagonia in modern times. Between September and December 2022, hydrocarbon signals were detected using a crude oil sensor integrated into a FerryBox system that traversed the Strait of Magellan and several channels of southern Patagonia, covering approximately 510 km. The highest levels of crude oil signals were observed in the mid-basin of the Strait of Magellan. These signals exhibited a strong negative correlation with sea surface salinity, coinciding with the water discharge from the San Juan River. Notably, during periods of high river discharge, typically exceeding 15 m<sup>3</sup> s<sup>-1</sup>, a distinct crude oil plume was detected moving towards the Magellan Strait. Conversely, when river discharge fell below this threshold, no noticeable crude oil signal was observed. As river discharge decreased and winds intensified during the austral summer, the crude oil signal gradually dissipated. This observation suggests that the dispersion of crude oil becomes limited during periods of low river discharge, as buoyant currents

## RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS (CONTINUED)

remain confined close to the coast. Historical records indicate that this seep has been releasing hydrocarbons into the Strait of Magellan for at least the past 120 years, implying a long history of chronic crude oil input into this relatively isolated region of the world. This finding shows the potential contribution to the understanding of marine ecosystems dynamics and potential pollutants in poorly studied regions through the use of automated monitoring FerryBox system, enabling both spatial and temporal high-resolution surveys.

## SCIENCE & TECHNOLOGY (

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### TERRESTRIAL ENVIRONMENTAL SENSITIVITY INDEX MAPPING (TESIM) OF THE COASTAL AREAS OF THE NIGER DELTA REGION OF NIGERIA

It can be argued that despite years of research, the true impacts of oil spill pollution on the environment and human sources of livelihoods are yet to be completely understood. Tools such as environmental sensitivity index (ESI) mapping can provide useful information that can significantly mitigate or help eliminate the known impacts of crude oil pollution, by proactively identifying environmentally sensitive areas. This study adapted the analytical hierarchy process (AHP) and geographic information systems (GIS) based multiple criteria analysis (MCA) approach in the objective determination of sensitive sections of the NDR coastal areas, by combining several competing and or related evaluation criteria. Science Direct / [Read more](#)

### PHYTOREMEDIATION OF POLLUTANTS IN OIL-CONTAMINATED SOILS BY ALHAGI CAMELORUM: EVALUATION AND MODELING

Phytoremediation is a cost-effective and environmentally friendly method, offering a suitable alternative to chemical and physical approaches for the removal of pollutants from soil. This research explored the phytoremediation potential of Alhagi camelorum, a plant species, for total petroleum hydrocarbons (TPHs) and heavy metals (HMs), specifically lead (Pb), chromium (Cr), nickel (Ni), and cadmium (Cd), in oil-contaminated soil. Nature / [Read more](#)

### ALGAL-BASED MEMBRANE REACTOR FOR THE REMEDIATION OF EMERGING CONTAMINANTS FROM WASTEWATER: MECHANISM, SYNTHESIS AND TECHNOLOGICAL ADVANCEMENT

The rapidly evolving bioremediation landscape is a major driver for the development of sustainable solutions that can provide value beyond just environmental remediation. Phycoremediation or algae-mediated remediation is attracting the most attention because of its captivating sustainability characteristics, its ability to eliminate odors, fouling, and toxins, its ability to eliminate many common as well as emerging contaminants from the gaseous and aqueous environment, and its ability to produce biomass for a variety of value-added products. Algae-based wastewater treatment plants like bioreactors are gaining more attention than traditional membrane reactors as they are environmentally friendly and sustainable. Science Direct / [Read more](#)

### HARNESSING PHOTOSYNTHETIC MICROORGANISMS FOR ENHANCED BIOREMEDIATION OF MICROPLASTICS: A COMPREHENSIVE REVIEW

Mismanaged plastics, upon entering the environment, undergo degradation through physicochemical and/or biological processes. This process often results in the formation of microplastics (MPs), the most prevalent form of plastic debris (<1 mm). MPs pose severe threats to aquatic and terrestrial ecosystems, necessitating innovative strategies for effective remediation. Some photosynthetic microorganisms can degrade MPs but there lacks a comprehensive review. Here we examine the specific role of photoautotrophic microorganisms in water and soil environments for the biodegradation of plastics, focussing on their unique ability to grow persistently on diverse polymers under sunlight. Science Direct / [Read more](#)

## TRAINING COURSES

*Training Course Providers – Please check entries below and advise editor on any necessary updates*

### USEFUL LINKS

- INTERNATIONAL – IMO E-LEARNING PLATFORM [e-learning platform](#)
- AUSTRALIA – AMOSC - <https://amosc.com.au/training/>
- AUSTRALIA & NEW ZEALAND – ALGA - <https://landandgroundwater.com>
- CHINA - <http://www.sioetc.com>
- EUROPE – <https://www.emsa.europa.eu/newsroom/latest-news/item/3609-emsa-training-catalogue-2019.html>

## TRAINING COURSES (CONTINUED)

- FRANCE - CEDRE - [https://wwz.cedre.fr/en/content/download/10912/file/CalendrierFormation2023\\_EN.pdf](https://wwz.cedre.fr/en/content/download/10912/file/CalendrierFormation2023_EN.pdf)
- 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 & WORLDWIDE – AMBIPAR GROUP <https://ambipar.com/uk/training/>
- UK & WORLDWIDE – SIGMA ENVIRONMENTAL <http://www.sigma-environmental.com>
- UK – NCEC HAZMAT ACADEMY – [More info](#)
- USA – TEXAS A&M UNIVERSITY – NATIONAL SPILL CONTROL SCHOOL <https://www.tamucc.edu/research/nscs/>
- USA – MPC, DETROIT - <https://marinepollutioncontrol.com/services/training-and-compliance>
- USA – ALLIANCE OF HAZARDOUS MATERIALS PROFESSIONALS - [https://www.ahmpnet.org/events/event\\_list.asp](https://www.ahmpnet.org/events/event_list.asp)
- CANADA - CONTAMINATED SITES HEALTH & SAFETY REFRESHER (8-HOUR HAZWOPER) – FROM ECONEXT – [MORE INFO](#)
- ONLINE - LLOYDS MARITIME ACADEMY – CERTIFICATE IN MARINE POLLUTION PREVENTION & MANAGEMENT. Starts on 14<sup>th</sup> March 2024 - <https://email.informaconnect.com/q/12ErXbQNGaNK08lQrkPeg62v/wv>
- Members who would like to be listed here, please contact your editor – [john.mcmurtrie@spillcontrol.org](mailto:john.mcmurtrie@spillcontrol.org)

## UPCOMING EVENTS

TO VIEW UPCOMING EVENTS CLICK ON [HTTPS://SPILLCONTROL.ORG/UPCOMING-EVENTS/](https://spillcontrol.org/upcoming-events/)

To see ALL of the posted events you will need to click on “LOAD MORE” at the foot of each opened “upcoming events” page. Event organisers are requested to notify ISCO immediately if a listed event is cancelled or postponed. Your Editor does his best to keep the listing up-to-date but it should not be assumed that listed events have not been cancelled or postponed. It is recommended that you check with event organisers before finalising your attendance plans. Please advise the Editor if any of the entries require correction or updating. If you are holding an event you would like to be featured here, please send details to [John.mcmurtrie@spillcontrol.org](mailto:John.mcmurtrie@spillcontrol.org)

The listings below give only very basic details – To get access to all information visit <https://spillcontrol.org/upcoming-events/>

### MARCH & APRIL 2024

- PORTUGAL – Economist – “11th Annual World Ocean Summit & Expo”, Lisbon, 11-13 March 2024
- USA – Conference & Exhibition – Clean Waterways – April 9-11, Cincinnati, Ohio
- TUNISIA – MOIG TRAINING COURSE – IMO Level 3, 22-25 April 2024, South Hammamet
- UK – IOPC Funds Meeting of the Governing Bodies, IMO London. 29 April to 2 May

### MAY 2024 Onwards

- USA – International Oil Spill Conference & Exhibition, 13-16 May 2024, New Orleans, Louisiana
- USA – AHMP – EHS HAZMAT SUMMIT, 14-17 July, 2024, Kansas City, Missouri
- CANADA – International Conference on Environmental Pollution & Remediation, Montreal, 5-6 August 2024
- GERMANY – “14<sup>th</sup> International Conference on Environmental Pollution & Remediation”, Berlin, August 25-27, 2024
- SPAIN & ONLINE – “14<sup>th</sup> International Conference on Environmental Pollution & Remediation, Barcelona, August 25-27, 2024
- UAE - SPE International Health, Safety, Environment, and Sustainability Conference and Exhibition 10–12 September 2024, Abu Dhabi, United Arab Emirates
- USA – Elastec River Spill Workshop, Carmi, Indiana, 8-10 October 2024
- UK – Water, Waste & Environmental Monitoring – 9-10 October 2024, NEC, Birmingham, UK
- CHINA – 8<sup>th</sup> East Asian Seas Congress, Xiamen, 6-8 November 2024

### SOME OTHER INFORMATION

- IOPC Funds has released a calendar of its upcoming events – to view, click on <https://iopcfunds.org/news-events/events/>
- Econext has released a programme of upcoming courses and webinars. This can be viewed at [https://econext.myvirtualcampus.co/product-category/webinars/?orderby=date&mc\\_cid=9c2c758fcd&mc\\_eid=6a430f153](https://econext.myvirtualcampus.co/product-category/webinars/?orderby=date&mc_cid=9c2c758fcd&mc_eid=6a430f153)
- Recordings of past ExxonMobil OSR Knowledge Transfer Webinar Recordings – [Access and Download](#)
- UK & Ireland Spill Association Alternative Marine Fuels and their Implications For Spill Response Webinar is [available to watch on YouTube](#). All six of UK & Ireland Spill Association’s Webinar Series on the Wakashio Spill are also available to watch. [More info](#)

## IG P&I PODCAST

Welcome to the Group's podcast. In this series, we will be exploring some of the topics discussed at the Seatrade Maritime Salvage & Wreck Conference. IG P&I / [Read more](#)



## ANNOUNCEMENT - GULF-ALASKA KNOWLEDGE EXCHANGE: A WORKSHOP SERIES

The Gulf Research Program (GRP) will host a workshop series to bring together representatives from Alaska and the Gulf of Mexico region to share experiences, knowledge, strategies, and best practices to help prepare for and recover from potential future spills. This effort is in accord with GRP's settlement agreement language which refers to reducing risk of future harm to people, the environment, and the economy due to oil spills as a "national priority."

Description: The Exxon Valdez oil spill in Alaska and the Deepwater Horizon oil spill in the Gulf of Mexico are the two spills of record in the United States that resulted in detrimental and long-lasting environmental, economic, and societal impacts for both regions. In recognition of this shared history, the Gulf Research Program (GRP) will host a workshop series to bring together representatives from both regions to share experiences, knowledge, strategies, and best practices to help prepare for and recover from potential future spills. This effort is in accord with GRP's settlement agreement language which refers to reducing risk of future harm to people, the environment, and the economy due to oil spills as a "national priority."

An ad-hoc committee Chaired by Ed Levine (SS&C, LLC and ISCO) will plan up to three workshops that engage researchers, practitioners, and other stakeholders from both regions. The specific workshop topics will be developed by the planning committee to ensure they are relevant and beneficial to stakeholders from the two regions, while also being consistent with GRP's mission and purpose. Topics may include but are not limited to the restoration of oil-afflicted ecosystems, particularly those that support species of commercial, recreational, and cultural value; how climate change impacts could exacerbate oil spills; and potential impacts of oil spills on local communities. Potential questions that could be addressed in these workshops include:

- What strategies are most effective for long-term ecosystem and socioeconomic recovery from the dual effects of oil spills and climate change?
- What strategies can be implemented to increase the resiliency of ecosystems that support species of commercial, recreational, and cultural value?
- In what ways can community-focused research improve the implementation, monitoring, and evaluation of long-term oil spill recovery and climate adaptation efforts?

Workshop proceedings will be published in accordance with NASEM's standard policies and procedures.

The following link will maintain updated information as the project continues:

<https://www.nationalacademies.org/our-work/gulf-alaska-knowledge-exchange-a-workshop-series>

## UPDATES FROM EVENT ORGANISERS

### USA: CLEAN WATERWAYS 2024 – REGISTRATION OPEN - CLICK ON LINKS BELOW

[NEW UPDATED INFORMATION - RECEPTION AND NEW EVENTS JUST ANNOUNCED](#) - [READ MORE](#) [NETWORKING OPPORTUNITIES](#)

Check out the 2024 CLEAN WATERWAYS Digital Conference Program! - A full, printable program is now available for this year's CLEAN WATERWAYS Conference, taking place April 9-11 at the Duke Energy Convention Center in Cincinnati, OH. Check out all that we have planned for the upcoming CLEAN WATERWAYS event! [READ MORE](#)

The exhibit hall at this year's CLEAN WATERWAYS Conference, April 9-11 in Cincinnati, will feature an array of companies showcasing the latest technologies, services, and equipment for incident prevention and response in the inland environment. You will find consulting services, incident management services, new technology for response, equipment for inland response, GIS products, toxicology, remediation, oil spill removal organizations, and containment boom manufacturers... just to name a few! [READ MORE](#)

[CLEAN WATERWAYS Conference](#), April 9-11 in Cincinnati, OH. We are accepting exhibit/ sponsorship applications and registration is open.

[DISCOUNTS](#)    [DIGITAL PROGRAMME](#)

Registration has officially opened for the 2024 CLEAN WATERWAYS Conference, taking place at the Duke Energy Convention Center in Cincinnati, OH, April 9-11.

[Registration information](#) April 9-11, 2024, Cincinnati, OH – "Incident Prevention & Response for Inland Regions & Waterways"

[View the website](#) The CLEAN WATERWAYS program is developed by a government/industry-based committee of approximately 50 professionals, and the committee is looking for leaders to help shape the conference.

All abstracts submitted are reviewed for content and relevance by the committee and are selected by consensus

### USA: REGISTRATION NOW OPEN FOR IOSC 2024

[International Oil Spill Conference \(IOSC\)](#) in New Orleans, May 13-16, 2024

## UPDATES FROM EVENT ORGANISERS (CONTINUED)

Click on links for updated info – [LATEST UPDATED INFO](#) [EMERGING LEADERS PROGRAM](#) [EDUCATIONAL SPONSORSHIPS PROVIDE PRIME VISIBILITY AND IMPACT](#) [COMPLETE PROGRAM](#) [FILM FESTIVAL & PHOTOGRAPHY CONTEST](#)

**Take your 2024 International Oil Spill Conference (IOSC) to the next level by adding access to our day 1 Short Courses\* to your registration! Register today to secure your seat as these sessions will fill up quickly.**

To qualify for a discounted registration rate, you MUST reserve a room at an [IOSC Hosted Hotel](#). Your room must be booked by the Hosted Hotel cutoff date to receive the discounted rate. Please note that each hotel has their own cutoff date. IOSC will perform an audit on the housing block on April 15. Those that have not booked within the block by the respective hotel cutoff date will have their registration rate changed to reflect the difference.

Registration has officially opened for the International Oil Spill Conference (IOSC), May 13-16, 2024 at the New Orleans Convention Center in New Orleans, LA USA.

In order to make it as easy as possible for you to join nearly 2,000 members of the international oil spill response community, IOSC has put together a Justification Toolkit to help you illustrate the value of attending this conference. Use the tools in this kit to explain to your supervisor how attending IOSC will be a smart investment in both your personal career growth and the growth of your organization. [Download the Justification Kit](#)

Meet Dr. Leonard Marcus, IOSC 2024 Keynote Speaker. Join us, May 13 - 16, 2024 in New Orleans, LA for the 2024 International Oil Spill Conference (IOSC) and be inspired by our opening keynote speaker, Dr. Leonard Marcus. [Read about Dr. Marcus](#)

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**IOSC** provides a vital forum for professionals from the international response community, private sector, government, and non-governmental organizations to come together to tackle the greatest challenges facing us with sound science, practical innovation, social engineering and imagination.

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**Learn More about IOSC 2024** Be sure to follow IOSC on [Facebook](#), [Twitter](#), and [LinkedIn](#) for updates and announcements about #IOSC2024. Please contact [registration@iosc.org](mailto:registration@iosc.org) for questions or additional information. Interested in exhibiting or sponsorship? Please reach out to: [exhibits@iosc.org](mailto:exhibits@iosc.org)

### USA: CLEAN GULF CONFERENCE & EXHIBITION 2024

**November 18-20, 2024** George R. Brown Convention Center | Houston, TX

**PAPER SUBMISSION DEADLINE EXTENDED! THERE IS STILL TIME TO SUBMIT AN ABSTRACT FOR CLEAN GULF 2024** [MORE INFO](#)

Registration for the 2024 event will open in April and Exhibit and Sponsorships are already available! Contact Renie Mayfield at 720-289-7008 or [rmayfield@accessintel.com](mailto:rmayfield@accessintel.com) to discuss how you can make an impact on buyers from oil & gas, maritime, rail, environmental companies and regulatory agencies with an Exhibit space or Sponsorship. [More info](#)

Do you have real-world solutions for evolving environmental emergencies? Don't miss your chance to be heard at this year's CLEAN GULF Conference! Submit your abstract for review and your chance to take the stage this November

### INDIA: OIL SPILL INDIA CONFERENCE & EXHIBITION, NEW DELHI, 11-12 SEPTEMBER 2024

In the backdrop of the recent oil spill incident, caused during cyclone Michaung in Chennai's Ennore Creek, it is with a sense of urgency and shared responsibility that we announce that the 7th edition of Oil Spill India (OSI 2024), the region's flagship conference & exhibition on the Oil Spill Prevention, Planning, Preparedness, Response & Restoration industry, will be organised during 11th & 12th September 2024 at Hotel JW Marriott, Aerocity, New Delhi, India. [View the OSI 2024 website](#)

### EUROPE – INTERSPILL CONFERENCE & EXHIBITION – 8-10 APRIL 2025 – ExCeL, LONDON

This internationally respected triennial event (which connects global stakeholders involved in marine oil spill research, prevention, preparedness, response and restoration) will return on 8-10 April 2025 at ExCeL London. <https://www.interspill.org/2025/>

**Preliminary Programme & Call for Papers - Closing deadline 4 June 2024 – [More info](#)**

## CONTRACTS, TENDERS AND BUSINESS OPPORTUNITIES

### INTERNATIONAL OPEN TENDER NOTIFICATIONS

This is a subscription service. <https://www.tender247.com/keyword/oil+spill+tenders+global>

### OTHER OPPORTUNITIES: USA & EUROPE

US Government solicitations are frequently posted in Technology Innovation News Survey <https://clu-in.org/products/tins/> US Federal Contract Opportunities are posted at <https://clu-in.org/Federal-Contract-Opportunities> European Maritime Safety Agency invitations to tender are often posted in The EMSA Newsletter at - <https://www.emsa.europa.eu/newsroom/newsletters.html>

ISCO Members can post requests for submission of invitations to tender for supplies / services in this section.

## LINKS FOR OTHER PUBLICATIONS

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

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## INCIDENT REPORTS

### YEMEN: CARGO SHIP SANK OFF YEMENI COAST, SPARKING ENVIRONMENTAL DISASTER FEARS

March 2 - Yemen's internationally recognised government, announced yesterday, the cargo ship, Rubymar, sank off the coast of Yemen Friday night, amid stormy weather conditions. The British-owned, Belize-flagged ship, carries thousands of tonnes of fertiliser and oil. MENAFN / [Read more](#)



### TRINIDAD & TOBAGO OIL SPILL (CONTINUED)

March 3 - Tobago Oil Spill Tied to Panamanian Firm's Troubled Past. BNN / [Read more](#)

March 4 - Diving operations to assess damage to wreck. Loop / [Read more](#)

March 4 - Govt still verifying info on oil spill vessels. T&T Guardian / [Read more](#)

March 5 - The Trinidad and Tobago oil spill puzzle is unravelling. Safety4Sea / [Read more](#)

March 6 - TEMA: No more oil leaking from vessel. T&T Guardian / [Read more](#)

March 6 - Owner of Tug and Barge Responsible for Trinidad and Tobago Oil Spill Identified Magnetic Media / [Read more](#)

### USA: NORTH DAKOTA - SPILLS PROMPT CLEANUP ACTIONS

March 6 - Clean-up is underway at the site of another crude oil spill in western North Dakota.

The Division of Water Quality reports that 7,560 gallons of oil spilled from a flare pit overflow in Billings County. The release was reported Friday about 14 miles southeast of Grassy Butte. Roughly half the oil impacted nearby pastureland.

State health officials are inspecting the site and will continue to monitor the investigation and remediation.

A tank failure is being blamed for a liquid magnesium chloride release four miles southeast of Alexander (ND). The North Dakota Department of Environmental Quality was notified of the mishap on Friday. Dustbusters Enterprises Inc. estimates that over 312,000 gallons of the dust suppression and roadway deicing solution was released – some impacting agricultural land and the Lonesome Creek watershed. Clean-up efforts are underway. Knox Radio / [Read more](#) See also related report [Inforum](#)

### RED SEA: CORAL REEFS AT RISK FROM ALGAL BLOOM AFTER RUBYMAR SINKING

March 6 - Alongside a slick of leaking fuel, the ammonium phosphate sulfate fertilizers could deliver an extreme pulse of nutrients into waters harboring rare corals, marine mammals and reef fish, creating a spread of foamy scum on the water.

According to a maritime warning circulated to ships in the area, the UK-owned Rubymar, the first vessel lost since Houthi militants began targeting commercial ships in November, sank at the weekend in a narrow area between Yemen and Eritrea at around 100 meters (330 feet) of depth, along the continental slope. gCaptain / [Read more](#)

### USA: CALIFORNIA - OIL SHEEN CONFIRMED OFF HUNTINGTON BEACH; COAST GUARD INVESTIGATING

March 8 - The U.S. Coast Guard is investigating an oil sheen off the coast of Huntington Beach that stretches about two miles long and half a mile wide, officials said Friday. Officials received a report about 6:50 p.m. Thursday of an unknown substance about 1½ miles offshore, and local emergency responders were on site through the night, the agency said. Early Friday, Coast Guard officials flew over the site and confirmed an oil sheen almost three miles offshore that they said was not from natural stated causes.

LA Times / [Read more](#)

### BANGLADESH: S ALAM SUGAR MILL FIRE: DOLPHIN SANCTUARY IN KARNAPHULI UNDER THREAT

March 9 - A huge amount of polluted water has spilled into Karnaphuli and is spreading fast across the river, threatening the endangered dolphin sanctuary and hundreds of fish species.

The contaminated water spread from S Alam Refined Sugar Industries Limited, where a fire broke out on Monday. This would damage aquatic life, including endangered dolphins, said officials of the Department of Environment (DoE) and environmental science experts. The Daily Star / [Read more](#)

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