

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 the International Oil Pollution Compensation Funds

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HEADLINE INTERNATIONAL NEWS

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IMO POLLUTION PREVENTION AND RESPONSE SUB-COMMITTEE: WHAT'S ON THE AGENDA?

April 13 - The IMO Pollution Prevention and Response Sub-Committee (IMO PPR 10) will be held from 24 – 28 April 2023 to discuss measures for the prevention of pollution in the marine environment, prior to agreement by the IMO's Marine Environment Protection Committee (MEPC).

In an article published today Safety4Sea advises "According to LR, the following key items are expected to be discussed at PPR 10." You can download the Safety4Sea article at <https://safety4sea.com/imo-pollution-prevention-and-response-sub-committee-whats-on-the-agenda/>

Agenda items likely to be of particular interest to ISCO Members include –

- Development of an operational guide on the response to spills of Hazardous and Noxious Substances (HNS).
- Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters further considering outcome of NSCR 9.
- Finalisation of the draft 2020 Guidelines for systems for handling oily wastes in machinery spaces of ships incorporating guidance notes for an Integrated Bilge Water Treatment System (IBTS).
- Potential development of a new draft guidelines on clean-up of plastic pellets from ship-source spills.

INTERNATIONAL & REGIONAL NEWS

DELIVERY OF ONLINE LECTURES FOR STUDENTS OF IMLI

April 12 - On 11 April 2023, members of the IOPC Funds' Secretariat were delighted to deliver a set of lectures to students from the International Maritime Law Institute (IMLI) in an online event for those studying IMLI's course on the Protection of the Marine Environment and Ocean Governance and those enrolled in the Institute's Master's programme. IOPC Funds / [Read more](#)

FIRST IMO E-LEARNING COURSE IN SPANISH NOW AVAILABLE

April 12 - Spanish speakers interested in maritime issues can now access the first free to access course in Spanish available on the [IMO e-learning platform](#). The "Introduction to Oil Pollution Preparedness, Response and Co-operation" course is aimed at stakeholders from the maritime industry and individuals new to the oil spill response community. Participants will gain a comprehensive overview of the various aspects of

oil pollution preparedness and response in the marine and coastal environment. IMO / [Read more](#)

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ISCO NEWS

CLEAN WATERWAYS REPORT

Attracting a greater than expected number of attendees and exhibitors to the "Mile High City", Denver Colorado, U.S.A. , the Clean Waterways event was held with great success at the Hilton Denver City Center from April 11-13, 2023. According to the organizer, Clean Events, participation reached pre-COVID levels, similar to those of 2019. Dr. Larissa Montas and Ed Levine welcomed visitors to the ISCO Stand, who inquired about the objectives and services of the organization.

This year comprised 12 sessions and panels featuring government agencies, pipeline operators, and different response organizations in the maritime and inland environment, facilities and rail.

The event opened with welcome remarks by Deidre Rothery, Branch Chief, U.S. EPA and Capt. Trey With, Chief, U.S. Coast Guard, Office of Marine Environmental Response Policy, followed by an insightful Keynote Session delivered by Chris Wright, Chairman and CEO of Liberty Energy, highlighting the vital role oil and gas production plays in lifting people out of poverty and enabling modern human life. Two interesting sessions, "What's the Contingency Plan?" and "It's Boat Time", had wide participation on the first day of the event. Case studies were presented including emergency response plans for rail and pipelines and response vessels safety operations. Clean Waterways has a well-deserved reputation for including the topic of Case Studies, in which professionals from the field relate their experiences in a very transparent manner. Coupled with ensuing discussions, these studies provide valuable information for industry and regulators.

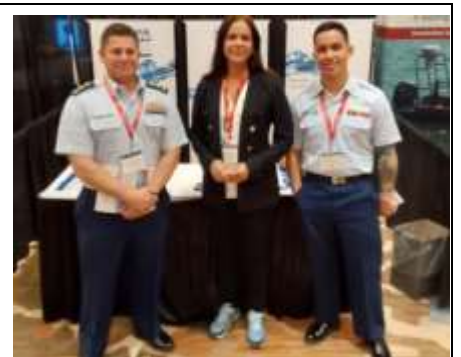
One session focused on complex incidents that occurred during natural disasters and industry resilience to these types of incidents. ISCO member Ed Levine presented during a session focused on Crisis Leadership that explored best practices, including how to effectively gather critical information, adapt to unique circumstances, and prioritize effectively.

ISCO's traditional single-malt Scotch raffle had many entrants and Shell Pipeline Co.'s Pete Ortiz was the lucky recipient (see photo of presentation).

ISCO looks forward to welcoming the prospective members we met at Clean Gulf, as well as all other interested parties. Please visit www.spillcontrol.org for more information. Thanks to Dr Larissa Montas for preparing this report.



Top Left : Texas Boom Company CEO Keith Harrison visiting the ISCO booth and ISCO representative Dr. Larissa Montas.



Top Right: United States Coast Guard representatives visiting the ISCO booth and ISCO representative Dr. Larissa Montas



Bottom Left: The ISCO team were kept busy with many visitors interested to learn more about ISCO



Bottom Right: The winner of the draw was Pete Ortiz , Assistant Fire Chief Emergency Response Coordinator, Shell Pipeline Co., based in Pasadena Texas. Presented by ISCO representative Dr Larissa Montas. Left: Kurt Hansen, Hansen spill Response research LLC. Right: ISCO executive Committee Member Ed Levine.

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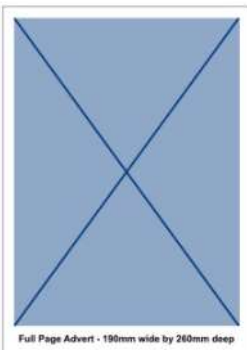
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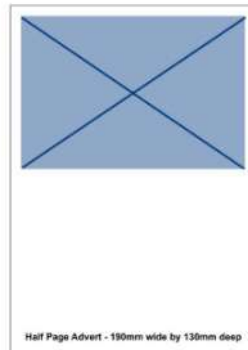
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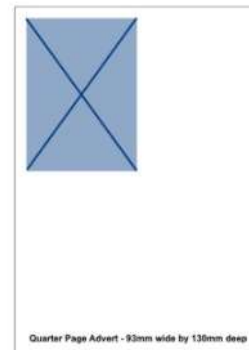
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What is the ISCO Newsletter?

ISCO's weekly newsletter is focused in international, regional and national news that is of interest to professionals, companies and organisations involved in oil and chemical spill control and the emerging field of CBRN incident response.

Through the Newsletter and its other activities, ISCO is disseminating information on new developments – technical advances, legislation, events and other matters that affect the international spill response community.

**To receive a copy of the new media pack please contact
spillcontrol@mwadigital.com**

By advertising in the ISCO Newsletter you will be directly supporting the work of ISCO and helping to ensure the continuation of this publication. ISCO is 100% dependent on the support of the international spill response community it serves.

FRANCE: CEDRE ACTIVITY REPORT FOR MARCH 2023

- Call from the Finistère fire and rescue service ([CODIS 29](#)) following pollution by herbicides in Kernouës;
- Several conversations with [DML 22](#) after a fishing boat sank causing a diesel spill near Paimpol;
- Call from [PNMI](#) following a spill of home heating oil into marshland in Crozon at the beginning of the year;
- Call from Finistère fire brigade ([SDIS 29](#)) for technical advice following a spill of hydraulic oil from a heavy equipment vehicle into Huelgoat Lake;
- Call from [Neodyme](#) for advice following a leak of waste oil contained in big bags stored in a dockside container;
- Requests from MRCCs [Med](#) and [Jobourg](#) for interpretation of photos and drift forecasts;
- Remote participation in an exercise with the Haute-Garonne fire brigade ([SDIS 31](#)) involving a spill of phosphorus oxychloride into a lake;
- Request from [Vigipol](#) for advice after kerosene washed up on Trez-Hir beach in Plougouvelin;
- Mission conducted by Cedre, with support from [Expertise France](#) and the [Agence Française de Développement](#), on Mindoro island in the Philippines, south of Manila, following the sinking of the oil tanker *MT Princess Empress*. An engineer from Cedre provided expertise in pollution response operations for the Philippine Coast Guard, Department of Environment and Natural Resources, local authorities and private operators (including the French company [Le Floch Depollution](#)) during a two-week mission.

IRELAND: EPA'S REVIEW OF 2022 SHOWS THE IMPACT OF ENVIRONMENTAL CHALLENGES AND DESIRE FOR ACTION ACROSS IRELAND

April 5 - In its Review of 2022 the Environmental Protection Agency (EPA) highlights its work in addressing environmental challenges across Ireland.

Launching the report, EPA Director General, Laura Burke said: "The EPA's vision is that we live sustainably in a healthy environment that is valued and protected by all. There is good evidence that people in Ireland place a particularly high value on having a clean, healthy environment. But the EPA Review of 2022 shows that we must do more than express our convictions and aspirations. We must quickly back our values up with actions." EPA / [Read more](#)

ITALY: ISPRA PARTICIPATES AT THE GREEN MED SYMPOSIUM

April 14 - From 3 to 5 May, in the Stazione marittima of Napoli, it will be held the Green Med Symposium, 3 days to talk about circular economy, emissions, drought and instability, soil regeneration and protection, sustainable agriculture. During the event, for the year consecutively, ISPRA will propose training courses addressed to experts, officials of Public Administrations and companies. ISPRA / [Read more](#)

UK: UK NATIONAL STANDARD FOR MARINE OIL SPILL RESPONSE ORGANISATIONS

April 12 - A document outlining standards to be met by organisations delivering Tier 2 response services in the UK. Maritime & Coastguard Agency / [Read more](#)

UK: NORTH SEA OIL SPILLS EXCEED SAFE LEVEL – ACTIVISTS

April 13 - Oil spilled routinely into UK waters over five years has added up to thousands of tonnes of pollution endangering marine life, according to data shown exclusively to BBC News.

Campaigners say the data shows some spills hit areas meant to protect wildlife including porpoises and orcas. While some oil spillage is allowed in production, they say 40% of monitored releases breached permits. An industry representative said it takes all releases very seriously. BBC News / [Read more](#)

USA: LATEST NEWS REPORTS FROM NOAA OR&R

April 17 – Please click on the links below to download and read the latest news from NOAA OR&R

[Marine Debris Program Joins Cleanup on Cuttyhunk Island](#)



From April 3 - April 7, the NOAA Marine Debris Program's Northeast regional coordinator, Demi Fox, joined a marine debris removal effort led by the [Center for Coastal Studies](#) (link is external) on Cuttyhunk Island, Massachusetts, funded by the U.S. Environmental Protection Agency through a collaboration with Restore America's Estuaries.

Lost, abandoned, and discarded lobster pots and other fishing gear have been accumulating on the island's shores for some time, with an especially high influx following a December storm last year.

NEWS REPORTS FROM AROUND THE WORLD (CONTINUED)

Pollution Settlement to Fund Habitat Restoration Along the Lower Duwamish River

The U.S. District Court finalized a settlement between the members of the Elliott Bay Trustee Council and Lynden, Inc. and related companies (collectively, Lynden), which will fund habitat restoration along the Lower Duwamish River in Seattle, Washington.

Gloucester High School Women in STEM Event Highlights Inclusion at NOAA

On March 22, the NOAA Marine Debris Program's Northeast regional coordinator, Demi Fox, joined NOAA Fisheries staff to speak with a dozen students from Gloucester High School's Gender Equity and STEM club. The group was especially interested in hearing from women about the career path that led them to the work they do at NOAA.

Marine Debris Program Staff Featured in The NOAA Ocean Podcast

On March 30, the [NOAA Ocean Podcast](#) featured the NOAA Marine Debris Program's chief scientist, Amy V. Uhrin, who spoke about the importance of seagrasses in coastal environments.

NOAA and Partners Hold Final Heat-Focused Tabletop Exercise

Extreme heat is one of the leading causes of [weather-related illness and death\(link is external\)](#) in the United States, causing more fatalities in a typical year than hurricanes, tornadoes, severe storms, and floods. As climate change continues to increase the likelihood of weather extremes, the impacts of heat on communities—especially on their most vulnerable citizens—is likely to worsen.

NEWS FROM ISCO MEMBERS

Corporate Members of ISCO can by submitting 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

EMTEK CANADA SHOWCASES NEW TECHNOLOGY AND PRODUCTS AT CLEAN WATERWAYS EXHIBITION



April 14 - "Emtek Canada showcases new technology and products at Clean Waterways exhibition

Emtek Canada, Member of ISCO, a Calgary-based supplier of oil spill response and environmental protection products, such like Electric boats and Electric Outboard engine (propellers) participated in the Clean Waterways exhibition held in Denver, Colorado from April 11 to 13, 2023. The exhibition is a premier event for stakeholders involved in improving the prevention, preparedness and response of waterway pollution.

Emtek Canada displayed its innovative solutions for electric boating, oil spill containment and recovery, and solar power generation. Emtek Canada aims to provide clean, efficient and sustainable alternatives for

industry clients and individual users in North America.

Mr. Wu Yue, the Co-founder of Emtek Canada and Ambassador(China) of ISCO, said: “Our goal is to use new technology and new products to protect the ocean and the environment. We believe that electric boating is the future of water transportation and recreation. It can reduce noise, emissions and fuel consumption, while enhancing performance, safety and comfort. We also offer effective solutions for oil spill response and prevention, which can minimize the environmental impact of accidents and incidents. Our solar boats can harness the power of the sun to generate electricity and reduce dependence on fossil fuels.”

Emtek Canada received positive feedback from the visitors and potential customers at the exhibition. The company also established contacts with other exhibitors and partners in the field of waterway protection. Emtek Canada plans to expand its market presence and product portfolio in the coming years.

For more information about Emtek Canada and its products, please visit <http://emtekca.com> Jack Li, Michael Zou, Andy Liu, and Ms. Xia also participated in the exhibition and did excellent work."



The ISCO Executive Committee is looking into how our organisation can assist by co-operating with others in promulgating better prevention and response capabilities that can be adopted on a worldwide basis. Readers of the ISCO Newsletter are invited to contribute information that can be shared within our community and help to improve our capability to counter this pollution in more effective ways.

ISCO Committee Member, Dr Larissa Montas, is now a regular contributor to this section in the ISCO Newsletter.

During last week Dr Montas was representing ISCO at the Clean Waterways Conference & Exhibition held at Denver, Colorado, USA. Her contributions to this column will continue in next week's ISCO Newsletter.

RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS



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

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.

90. Morphological and transcriptional effects of crude oil and dispersant exposure on the marine sponge *Cinachyrella alloclada*

Desplat, Y., Warner, J.F., Blake, E.J., Vijayan, N., Cuvelier, M., Blackwelder, P., Lopez, J.V.
(2023) Science of the Total Environment, 878, art. no. 162832,
DOI: 10.1016/j.scitotenv.2023.162832

ABSTRACT: Marine sponges play important roles in benthic ecosystems. More than providing shelter and food to other species, they help maintain water quality by regulating nitrogen and ammonium levels in the water, and bioaccumulate heavy metals. This system, however, is particularly sensitive to sudden environmental changes including catastrophic pollution event such as oil spills. Hundreds of oil platforms are currently actively extracting oil and gas in the Gulf of Mexico. To test the vulnerability of the benthic ecosystems to oil spills, we utilized the Caribbean reef sponge, *Cinachyrella alloclada*, as a novel experimental indicator. We have exposed organisms to crude oil and oil dispersant for up to 24 h and measured resultant gene expression changes. Our findings indicate that 1-hour exposure to water accommodated fractions (WAF) was enough to elicit massive shifts in gene expression in sponges and host bacterial communities (8052 differentially expressed transcripts) with the up-regulation of stress related pathways, cancer related pathways, and cell integrity pathways. Genes that were upregulated included heat shock proteins, apoptosis, oncogenes (Rab/Ras, Src, CMYC), and several E3 ubiquitin ligases. 24-hour exposure of chemically enhanced WAF (CE-WAF) had the greatest impact to benthic communities, resulting in mostly downregulation of gene expression (4248 differentially expressed transcripts). Gene deregulation from 1-hour treatments follow this decreasing trend of toxicity: WAF > CE-WAF > Dispersant, while the 24-hour treatment showed a shift to CE-WAF > Dispersant > WAF in our experiments. Thus, this study supports the development of *Cinachyrella alloclada* as a research model organism and bioindicator species for Florida reefs and underscores the importance of developing more efficient and safer ways to remove oil in the event of a spill catastrophe.

91 Polycyclic aromatic hydrocarbons in coral reefs with a focus on Scleractinian corals: A systematic overview

Menezes, N., Cruz, I., da Rocha, G.O., de Andrade, J.B., Leão, Z.M.A.N.
(2023) Science of the Total Environment, 877, art. no. 162868,
DOI: 10.1016/j.scitotenv.2023.162868

ABSTRACT: The impact of petroleum exploitation and oil spills in marine ecosystems has increased over time. Among the concerns regarding these events, the impact on coral reefs stand out because this ecosystem has ecological and economic importance and is globally threatened. We performed a systematic review and bibliometric analysis of studies that determine polycyclic aromatic hydrocarbons (PAHs) in coral reefs, attempting to answer how the studies were distributed around the globe, the main environmental matrices and species of coral studied, the main PAHs found and their mean concentrations, and the methodology used. A bibliographic search resulted in 42 studies with worldwide distribution. The bibliometric results presented more explored terms, such as sediments and toxicology, and newly investigated terms, which should encourage a new area of study, such as those related to zooxanthellae and mucus. The main matrices studied in coral reefs are sediments, corals, and water, whereas air and

other invertebrates have rarely been studied. Approximately 45 species of corals with several morphotypes have been reported. PAHs recommended by the United States Environmental Protection Agency (US EPA) were analyzed in all studies, while additional compounds were analyzed in only five. The methods used to determine hydrocarbons are predominantly the most traditional; however, for corals, studies have tended to separate tissue, zooxanthellae, skeleton, and mucus. In the future, we recommend investment in improving the capacity to detect non-conventional PAHs, more studies in regions that are rarely explored in developing countries, and the creation of databases to facilitate management planning on marine coasts.

92. Effect of hydrocarbons on the germination of *Larrea divaricata* and *Pappostipa speciosa* in the Monte Desert of Argentina

Pérez, D.R., Llanos, M.M., Rodríguez Araujo, M.E.
(2023) *Journal of Arid Environments*, 211, art. no. 104939,
DOI: 10.1016/j.jaridenv.2023.104939

ABSTRACT: In Monte Desert, one of the most arid regions in Argentina, there is an important hydrocarbon basin and the main shale oil reservoir in South America. An intense oil activity takes place there through rock fractures, where failures and spills can occur. Loss of hydrocarbons due to high pressure conditions, produce emissions into the air in the form of sprays that can be deposited in large areas on the ground (blow outs). In samples of uncontaminated soil and soils affected by a blow out event we evaluated seed germination under laboratory conditions of keystone species: *Larrea divaricata* Cav. and *Pappostipa speciosa* (Trin. & Rupr.) Romasch. In uncontaminated controls, germination probabilities varied between 0.55 and 0.66 for *L. divaricata* and between 0.76 and 0.86 for *P. speciosa*. In contrast, in contaminated soils, germination probability was significantly lower for both species: 0.01–0.02 for *L. divaricata* and 0.2–0.25 for *P. speciosa*. We conclude that the presence of hydrocarbons significantly decreases germination of the studied species. Therefore, natural regeneration in arid regions can be seriously affected by hydrocarbon spills.

93. Acute and Chronic Effects of Crude Oil Water-Accommodated Fractions on the Early Life Stages of Marine Medaka (*Oryzias melastigma*, McClelland, 1839)

Jin, F., Wang, Y., Yu, F., Liu, X., Zhang, M., Li, Z., Yao, Z., Cong, Y., Wang, J.
(2023) *Toxics*, 11 (3), art. no. 236,
DOI: 10.3390/toxics11030236

ABSTRACT: Oil spill is a major marine environmental pollution issue. Research regarding the long-term effects of oil spills on the early life stage of marine fish is still limited. In this study, the potential adverse impact of crude oil from one oil spill accident which occurred in the Bohai Sea on the early life stages of marine medaka (*Oryzias melastigma*, McClelland, 1839) was evaluated. A 96-h acute test (larvae) and a 21-d chronic test (embryo–larvae) of water-accommodated fractions (WAFs) from crude oil were conducted, respectively. The results of the acute test showed that only the highest concentration of WAFs (100.00%) significantly affected the mortality of larvae ($p < 0.01$) and that the 96 h-LC50 was 68.92% (4.11 mg·L⁻¹ expressed as total petroleum hydrocarbons (TPHs)). Larval heart demonstrated histopathological alterations in all WAF-exposed groups. The chronic test results showed that, except for larval mortality, the total hatching success (%)/hatching time of embryos in WAF treatments was not significantly different from those of the control group ($p > 0.05$), and no malformation was found in surviving larvae after 21 d of exposure. Nevertheless, the exposed embryos and larvae in the highest concentration of WAFs (60.00%) demonstrated significantly reduced heart rate ($p < 0.05$) and increased mortality ($p < 0.01$), respectively. Overall, our results indicated that both acute and chronic WAF exposures had adverse impacts on the survival of marine medaka. In the early life stages, the heart of the marine medaka was the most sensitive organ which showed both structural alteration and cardiac dysfunction.

94. How do microbial communities deal with chronic hydrocarbon presence in oil seep soils? Data from historical hand-dug oil wells

Brzeszcz, J., Skalski, T., Jankowski, L., Kapusta, P.
(2023) *Land Degradation and Development*, 34 (5), pp. 1283-1296.
DOI: 10.1002/ldr.4531

ABSTRACT: Hand-dug oil wells, located in natural crude oil seep sites, are remnants of historical exploitation activities. Hydrocarbon pollution is regarded as the threat to soil ecosystem. On the other hand, there is no common environmental policies regarding these soils. The hypothesis was that natural attenuation processes might occur in seep soils since a diversified and stable bacterial community structure should be a result of its long-term (thousands of years) adaptation to hydrocarbon exposure and should be associated with eventual utilization of these compounds. To obtain this goal, we compared the structure, composition, and hydrocarbon-degrading potential of bacterial communities inhabiting soils with different hydrocarbon contents (seep, hydrocarbon-

impacted, pristine soils), which were collected in two habitats (forest, meadow). 16S rRNA sequencing and isolation of hydrocarbon degraders were performed. The contaminant's presence shaped distinct and unique community structure and composition, and it enhanced physiologically and functionally adapted microorganisms. The most abundant community members were bacteria revealing a strong contribution in genetic potential toward aerobic hydrocarbon transformation (i.e., *Mycobacterium/Mycolicibacterium* and *Pseudomonas*). The strong hydrocarbon degraders population suggests that natural biodegradation occurs in situ in seeps and mitigates the pollution impact on adjacent soils. Seep and hydrocarbon-impacted soils are a great source for remedial bacterial populations. Twenty-four genera of degraders were isolated; however, strains belonging to the *Mycobacterium/Mycolicibacterium*, *Rhodococcus*, and *Pseudomonas* taxa were common. Our results underline the need to include undervalued microbiological aspects in remediation projects' guidelines for chronically polluted environments. The knowledge regarding seep communities should help to evaluate more efficient remediation strategies for anthropogenic spills.

95. Intake of trace contaminants by corals in Abrolhos reef bank (western South Atlantic) during two decades of coastal impacts

Evangelista, H., de Paula, R.L.M., Magalhães, N., de Gois, J.S., Luna, A.S., Cagnin, R.C., Quaresma, V.S., Bezerra, F.F., Dia, J.P., Santos, R.V., Pullen, A., Crivellari, S., Chiessi, C.M., Batista, D.B., Gonçalves, S.J., Jr., de Oliveira, B.V.X., Bizelli, P.A.R., Sodré, E.D., Angonese, M., Oaquim, A.B.J.
(2023) *Continental Shelf Research*, 255, art. no. 104946,
DOI: 10.1016/j.csr.2023.104946

ABSTRACT: Abrolhos is the largest and most diverse coral reef system in the South Atlantic. It is home to several endemic coral species and a site of cetaceous reproduction. Like any other reef ecosystem worldwide, it experiences multiple disturbances associated with increasing sea surface temperatures, El Niño events, and, most recently, oil spill pollution. In addition to these global stressors, the Abrolhos region may have been impacted by coastal human interventions, a large-scale mining disaster, floods, and extra-tropical cyclones that affected the region during the last 20 years. Among these stressors, the Fundão dam collapse (the largest in the Southern Hemisphere) deserves special attention since it delivered significant amounts of iron tailings to the nearby coast. To investigate the region's recent history, we collected, dated, and performed detailed geochemical and isotopic analyses on two coral colonies (i.e., *Siderastrea stellata* and *Mussismilia harttii*), in order to determine if effects of recent human activity on reef systems (and most recent natural impacts) could be detected through bioaccumulation of metals in their skeletons. In this context, we detected an abrupt increase in Fe and Mn concentrations in the coral skeleton, which are among the main constituents of the Fundão dam tailings. We show that a concomitant increase in metal concentrations tracks contaminant dispersion of the Fundão dam tailings released to the western South Atlantic. Besides this event, our data also show that coastal dredging activities in the nearby coral reef site (i.e., at the Tomba channel) and two natural episodes (i.e., the flood of 2013 and the anomalous extra-tropical cyclonic activity in 2008) were also recorded in the coral skeleton based on changes in Rare Earth Elements distribution, Rb and U concentrations.

SCIENCE & TECHNOLOGY

If you are interested in new technology you might find it useful to visit Technology Innovation News Survey at <https://clu-in.org/products/tins/> and Tech Direct at <https://clu-in.org/techdirect/archive/>

SCIENTIST SAYS NATURE'S 'SKELETON KEY' COULD BE SOLUTION TO TOXIC CHEMICAL SPILLS AND SAVE EAST PALESTINE

Mushroom expert says fungi could help clean East Palestine chemical spill — and carve a new path for future toxic waste contamination. Cotter, who published the book "Organic Mushroom Farming and "Mycoremediation," recommended a process called "mycoremediation" to clean up polluted water and soil at the spill site rather than moving toxins to another location. He said the process is both safer and more cost-effective than moving contaminated material.

"True remediation, I have to say, would be not moving the chemicals like most companies do," he said pointing out that many firms tasked with cleaning up chemical spills move the toxins to a disposal site in a different state. Fox News / [Read more](#)

CONTROLLING ENVIRONMENTAL POLLUTION

Scientists from the University of Coimbra (UC) have developed an efficient method to remove insecticides from water, agriculture and veterinary medicine, through a "nanosponge" which has a low environmental impact. The research, developed by a team from the Coimbra Chemistry Centre of the Faculty of Science and Technology of the UC, aims to solve the contamination of the soils caused by the use of the insecticide imidacloprid.

According to a statement from the UC, it is a product "highly soluble in water and persistent in the soil, which can easily contaminate the soil and water resources near agricultural areas reaching non-target organisms, namely birds, bees, earthworms and mammals.

SCIENCE & TECHNOLOGY (CONTINUED)

According to the researchers, the developed method can also "be applied to capture other pesticides and organic pollutants from the water and also contribute to the control of environmental pollution through targeted and controlled remediation processes." The Portugal News / [Read more](#)

ADVANCED ELECTRODE TO HELP REMEDIATION OF STUBBORN NEW 'FOREVER CHEMICALS'

As new environmental regulations are rolling out to mitigate the industry-retired long-chain chemicals known as PFAS in drinking water, there are concerns regarding a new breed of "forever chemicals" called short-chain PFAS. Research from the University of Illinois Urbana-Champaign is helping shift the focus to include mitigation of the chemicals – which researchers say are just as persistent as, more mobile and harder to remove from the environment than their long-chain counterparts.

A study directed by [chemical and biomolecular engineering](#) professor Xiao Su uses electrosorption rather than filters and solvents and combines synthesis, separations testing and computer simulations to help design an electrode that can attract and capture a range of short-chain PFAS from environmental waters. The findings are published in the *Journal of the American Chemical Society*. EurekaAlert / [Read more](#)

MICROPLASTIC POLLUTION PURGED FROM CONTAMINATED WATER USING ULTRASOUND

[Acoustic waves can be used to separate microplastics from contaminated water, and could be a new way to tackle this ubiquitous pollutant.](#) Researchers at the New Mexico Institute of Mining and Technology in the US who carried out the research discussed it at the spring meeting of the American Chemical Society (ACS) on 28 March.

Most plastics in the ocean break down into small microplastic particles less than 5mm across that can harm aquatic life. Filtration is the most common method of getting microplastics out of water, but the New Mexico Tech team instead decided to come up with a method of concentrating plastic particles in flowing water with sound waves.

The New Mexico Tech team built its proof-of-concept device using 8mm wide steel tubes connected to an inlet tube and several outlet tubes, along with a transducer to generate ultrasound. The acoustic forces are applied to microplastics as they pass through, causing them to aggregate and making them easier to capture in a single outlet. The device could be useful for separating most types of microplastic, and doesn't clog as easily as a filter. Chemistry World / [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>
- FRANCE - CEDRE - 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 – 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

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

CERTIFICATE IN ALTERNATIVE FUELS – LLOYDS MARITIME ACADEMY

Online, Starting 25 April 2023 Delivered by digital learning over 14 weeks. [Visit website for more info](#)

USA: Elastec Fall Workshop, New Harmony, Indiana, 3-5 October 2023. [More Info](#)

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

UPCOMING EVENTS (CONTINUED)

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

APRIL 2023

- AUSTRALIA – FROM ALGA “Lessons learnt: Underground Petroleum Storage Systems Contamination Clean-up”, Adelaide, Tuesday 18th April 2023
- WEBINAR FROM UK SPILL & IRELAND ASSOCIATION – “SUSTAINABLE SPILL RESPONSE”, WEDNESDAY 19 APRIL, 1500 BST
- WEBINAR – From HELMEPA – “Accident Prevention: Managing Risks / Sharing Knowledge” 19-20 April 2023
- IMO POLLUTION PREVENTION & RESPONSE (PPR 10) MEETING, 24-28 APRIL, 2023
- MEXICO – Ecomondi Environmental Technology Trade Show, 26-28 April 2023

MAY 2023 & ONWARDS

- WEBINAR – ExxonMobil Oil Spill Response Knowledge Transfer – “Why Science Matters: How Decision Makers use Science during Spill Response, Hosted by Ed Levine, 2nd May 2023
- CROATIA – ADRIASPILLCON Conference & Exhibition, Opatija, 16-18 May 2023
- CANADA – 45th Technical Seminar on Environmental Contamination & Response, Edmonton, Alberta, 4-6 June, 2023
- AUSTRALIA – University of NSW, “Bioremediation Symposium”, 7th June 2023
- TUNISIA – Regional Workshop on Waste Management & Water Treatment, 9-10 May 2023
- FRANCE - European Maritime Day, Brest, France, 24-25 May, 2023
- UK: Hazmat 2023 Conference, 24-25 May 2023
- AUSTRALIA – Risk Assessment Symposium, Adelaide, 22 June 2023
- USA – Elastec Fall Workshop. New Harmony. Indiana, 3-4 October 2023
- UK – Seatrade Maritime Salvage & Wreck Conference, 6-7 December 2023

WHEN YOU OPEN THE UPCOMING EVENTS PAGE YOU WILL SEE MORE UPCOMING EVENTS

SOME OTHER INFO AND UPCOMING EVENTS

Australia – April 26 & 27 – PFAS Training & Workshop, University of Technology, Sydney – [More info](#)

USA: May 8, 2023 - APICOM GM Meeting, Santa Barbara, CA, Location - MSRC's facility at Carpinteria

Recordings of past ExxonMobil OSR Knowledge Transfer Webinar Recordings – [Access and Download](#)

MESSAGES FROM EVENT ORGANISERS

CROATIA: ADRIASPILLCON 2023, OPATIJA, 16th - 18th MAY, 2023

ADRIASPILLCON 2023 will be held in Opatija, Croatia, between 16 and 18 May 2023 and is being organized by ATRAC - Adriatic training and education centre for accidental marine pollution preparedness and response, with the support of the Ministry of Maritime Affairs, Transport and Infrastructure. The Conference, complemented with an exhibition of relevant products and services, aims at providing a forum for exchange of experience and knowledge in the fields of prevention, preparedness for and response to accidental marine pollution by oil and other hazardous and noxious substances (HNS), among the participants from the Adriatic region and their counterparts from other parts of Europe and the Mediterranean.

All the relevant information is now available on the Conference website <https://adriaspillcon.com/>.

CANADA: 45TH AMOP TECHNICAL SEMINAR ON ENVIRONMENTAL CONTAMINATION AND RESPONSE: EDMONTON, 6-8 JUNE 2023

The Seminar provides a forum for professionals working in the field of oil and hazardous materials spills. The forum facilitates the 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 10- or 20-minute presentations on spill-related topics including Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE). Sessions will begin at 8:00 a.m. each day. The presentations are followed by a 5- or 10-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. Government of Canada / [Seminar Information](#)

AUSTRALIA: BRISBANE - SPILLCON 2023: 11-15 SEPTEMBER 2023

The Australian Institute of Petroleum (AIP) and the Australian Marine Oil Spill Centre (AMOSOC) invite you to attend the international oil spill conference for the Asia-Pacific region, Spillcon 2023. Spillcon 2023 will bring together local, regional and global environmental and shipping representatives across industry, government and non-government organisations to provide an avenue to discuss issues including causes and prevention, preparedness, response management and environmental issues. Spillcon

MESSAGES FROM EVENT ORGANISERS (CONTINUED)

2023 has been confirmed for 11 – 15 September 2023 at the Brisbane Convention and Exhibition Centre, Queensland, Australia. This website will be regularly updated with further information for sponsors, exhibitors and delegates. <https://www.spillcon.com/>

USA: CLEAN GULF CONFERENCE & EXHIBITION – SAN ANTONIO, NOVEMBER 7-9, 2023

Now Accepting Reservations for Exhibit Space and Sponsorships for CLEAN GULF 2023 - Make an impact on buyers from oil & gas, maritime, rail, environmental companies and regulatory agencies with an exhibit space or sponsorship at the [CLEAN GULF Conference & Exhibition](#). Attendees at CLEAN GULF are looking for new products, services, and technologies to help them better prepare or respond to a hazardous spill or environmental emergency. Clean Gulf Conference & Exhibition | November 7-9, 2023 | Henry B. Gonzalez Convention Center | San Antonio, TX [Registration Now Open for CLEAN GULF 2023 + Sessions Announced!](#)

USA: IOSC 2024 CALL FOR PAPERS AND POSTERS

The International Oil Spill Conference (IOSC) brings together the broadest range of global oil spill response professionals to discuss the latest research, technology, and resources impacting our community today. Submit a proposal to become a leader at our next convening in New Orleans, Louisiana, May 13 - 16, 2024. The IOSC is looking for technical and policy papers and posters under five general categories: Preparedness, Prevention, Remediation, Response, Restoration. [More info](#)
You are invited to submit a proposal by April 24, 2023 for either a paper or poster presentation. [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 EPA Tech Direct <https://clu-in.org/techdirect/archive/> and USA Federal Contracts Updates <https://clu-in.org/Federal-Contract-Opportunities> European Maritime Safety Agency invitations to tender are often posted in The EMSA Newsletter <https://www.emsa.europa.eu/newsroom/newsletters.html>

TEXAS GENERAL LAND OFFICE (GLO) – OIL SPILL PREVENTION & RESPONSE DIVISION (OSPR) FUNDING OPPORTUNITY

The GLO OSPR Research & Development Program's Request for Applications has been posted to the GLO website here: <https://www.glo.texas.gov/coast/grant-projects/osr/index.html>

Applications are managed through SurveyMonkey Apply (SMA). First time SMA users will need to create an account. Navigate to the Oil Spill R&D portal to get started. If you have any questions, contact me at brent.koza@glo.texas.gov. Brent Koza, State Scientific Support Coordinator, Research & Development, Texas General Land Office. [Thanks to Helena Rowland, ISCO Committee]

NEW PUBLICATIONS

CEDRE NEWSLETTER N° 321, MARCH 2023

- Emergency response
- 27th Cedre Information Day
- Environment and Emergencies Forum
- Seminar on "Maritime Security and Environmental Issues in the South Pacific"
- DBX EU MODEX marine pollution exercise in Finland
- CEGRIM's 5th anniversary
- NOSCA Seminar 2023 and visits to Marfo and Norlense
- Visit from the Yaoundé Architecture
- Visit from Transport Canada
- MANIFESTS project final conference
- New propulsion fuels
 - Discussion meeting with the chemical industry
- EMODnet Chemistry project coordination meeting
- Aquatic litter monitoring in Gironde
- Meeting of Barcelona Convention's CorMon Marine Litter
- "Maritime pollution crisis management" training course
- Second edition of the "Oil spill response at sea and on the shoreline" course in English

[Download the March 2023 CEDRE Newsletter](#)

MARITIME ACCIDENT REPORTS FROM THE MARITIME BULLETIN

In the Maritime Bulletin, Mikhail Voytenko regularly advises on vessel abandonments, groundings and sinkings – several every week – but, unless there is an immediate and significant release of oil or chemicals, spillages are not reported. However, many of Mikhail's reports cover incidents that may have potential to cause pollution. To view all of his reports, visit <https://www.maritimebulletin.net/>

PHILIPPINES: MT PRINCESS EMPRESS OIL SPILL UPDATES

April 6 - South Korea donates equipment to contain oil spill in Mindoro. [Manilla Bulletin](#)

April 10 - How Filipinos are banding together to help fishers after oil spill. [Christian Science Monitor](#)

April 10 - US experts join oil spill response. [The Manila Times](#)

April 10 - French mission assists Mindoro oil spill response. [The Manila Times](#)

April 11 - NOAA Spill Scientists Complete Initial Guidance for Philippines Oil Spill [NOAA OR&R](#)

April 12 - Empress oil leak slows down. [The Philippine Star](#)

USA: PENNSYLVANIA - TRUCK CRASHES IN LINCOLN BOROUGH, LEADING TO A CHEMICAL SPILL IN A STREAM CONNECTED TO THE MON RIVER

April 10 - Allegheny County emergency services said the truck was carrying 80 55-gallon drums of a two-part epoxy chemical, some of which were leaking into a stream along the road. Diesel fuel from the truck itself was also leaking into the stream that connects to the Mon River. Officials say the leaks have been contained and there are no air or fire hazards. [Pittsburg Post Gazete / Read more](#)

GULF OF GUINEA - PIRATES ATTACK TANKER OFF IVORY COAST

April 11 - Pirates assaulted the Singapore-flagged chemical tanker Success 9. According to Praesidium International, the attack occurred on April 10 in the Gulf of Guinea, 300 nautical miles south of Abidjan, Ivory Coast. [Marine Insight / Read more](#)

April 12 - Search Continues for Hijacked Tanker Missing in Gulf of Guinea. [The Maritime Executive / Read more](#)

USA: MICHIGAN - STATE, LOCAL OFFICIALS MONITOR, INVESTIGATE OTTAWA CO. OIL SPILL

April 11 - The Ottawa County Sheriff's Office is keeping an eye on an oil spill in Georgetown Township. Several local agencies responded, along with the Michigan Department of Environmental, Great Lakes and Energy (EGLE). [Fox 17 / Read more](#)

USA: LOUISIANA - STATE, FEDERAL AGENCIES WORKING TO CLEAN OIL SPILL NEAR CAMERON

April 12 - State and federal agencies were surveying an area of marshland near Cameron on Wednesday to determine how to clean up an estimated 3,900 gallons of oil that spilled into the marsh. Currently, the spill, which occurred in a hard-to-access area of the marsh roughly 150 yards off the high tide line, is being contained by 300 feet of hard boom, a floating plastic barrier.

[The Advocate / Read more](#)

USA: WYOMING - PIPELINE ON WIND RIVER RESERVATION LEAKS CRUDE OIL INTO WIND RIVER TRIBUTARY

April 14 - On April 10, a pipeline on the Wind River Reservation started to spill an undetermined amount of crude oil into a tributary of the Wind River. The Wyoming Department of Environmental Quality is continuing to monitor the situation.

[Buckrail / Read more](#)

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