



POLLUTION WITHIN COASTAL AND MARINE SETTINGS IN FRANCE

OVER 80% OF MARINE WASTE DERIVES FROM LAND ACTIVITIES

TO MARK WORLD OCEAN DAY, POLLUTEC HAS FORMALLY LAUNCHED ITS NEW EVENT [POLLUTEC SEA & COASTLINE](#), BRINGING TOGETHER EXPERTS TO SHED LIGHT ON THE ENORMOUS ENVIRONMENTAL CHALLENGES FACING LAND TO SEA ACTIVITY.

WHAT WE KNOW SO FAR

Pollution, biodiversity loss, coastal erosion and climate disruption; these are just some of the defining questions at the heart of our current ecological transition. Coastlines and coastal regions are both showing more widespread ecosystem degradation with one main cause: human activity. In fact 80% of marine waste derives from land activity, with 75% of this pollution resulting from plastic waste (Figures from a study published in December 2020 by the American review *Annals of Global Health*).

OVERVIEW OF AREAS AND ENVIRONMENTS UNDER PRESSURE

The widespread deterioration of terrestrial and marine ecosystems is accelerating with human activities at the centre of it.

➤ **90%** of marine pollution come from plastic waste.

➤ **The cost** of coastal clean-up operations in Europe is estimated at €630 million.

➤ **40%** of the world population live less than 100 km from the coast.

➤ **80%** of marine waste, including plastic pollution, come from land and flows into the sea via waterways.

➤ **20 megacities**, essential for world growth, are located in coastal areas.

➤ **Climate disruption** is triggering extreme events which are set to occur more frequently and with even greater force. Rising sea levels associated with global climate change are already affecting coastal areas, which face the most urgent need to adapt.

➤ **The financial impact** of plastic pollution on the fishing and tourism sectors in the Asia-Pacific region alone is estimated at \$13 billion a year.

➤ **Global Urbanisation** associated with population growth will lead to further increases in the already large numbers of people living near coastal areas, against a backdrop of climate disruption.

Faced with this data, both public authorities and those working in the sector are taking action. This is taking shape through organisational change, exchanging best practices and through the integration of innovative solutions.

Alongside Alexis de Gérard, Director of the **Pollutec** show organised by RX France **Raphaëla le Gouvello**, a renowned windsurfer, scientist and civic activist deeply committed to protecting our oceans and who has accepted the role as **primary sponsor of this first ever Pollutec Sea & Coastline**; **Cyril Mallet**, coastal risk engineer at the **Aquitaine Coast Observatory of the BRGM** (Bureau de Recherches Géologiques et Minières [the French Geological Survey]), and **Caroline Donjon**, Sales Engineer for micro-plastic analysis at **Wessling France**.

FRANCE, 2nd LARGEST MARITIME AREA IN THE WORLD

With a presence in every ocean except the Arctic, France has the 2nd largest maritime area in the world at over 10 million km². It therefore has immense assets in terms of marine natural resources and maritime economic growth (**the ocean economy accounts for 14% of France's GDP**).

Which is why France is particularly concerned about the problems of marine and coastal pollution, whether from plastic waste or other more insidious forms such as agricultural pesticides and herbicides, mercury from gold extraction, coal combustion, or even chemicals and pharmaceuticals. Today many experts are playing their part, whether in corporate industry, start-ups, or as well-known actors in the marine world. They are fully supported by the French government, as was made clear in 2019 by President Emmanuel Macron who stated: *"The 21st century will be maritime"*, several months later appointing a Minister for the Sea - the first for 30 years.

Plastic pollution, pesticide and fertiliser pollution, pollution from mercury, chemicals or pharmaceuticals: the threats menacing the coastlines and oceans are manifold.



WHAT'S IN STORE FOR THIS FIRST EDITION

The new unmissable event for the 29th edition of **Pollutec in 2021**, the stand-out international environmental solutions event organised by RX France, **Pollutec Sea & Coastline** is a show in its own right within Pollutec, **focusing on environmental innovation in maritime activity and coastline management**.

In a dedicated space of 800 m² Pollutec Sea & Coastline will showcase the key challenge of blue growth, putting the spotlight on the sector's leading professionals, established companies and start-ups (with their own dedicated area), who will share their expertise through a number of talks while demonstrating a wide range of effective eco-solutions in the fight to reduce environmental impact and limit the accelerated degradation of marine and coastal environments.

This is how **Pollutec Sea and Coastline** will give a platform to the particular environmental expertise able to address the sustainability needs of human and economic activities at sea and in coastal areas, while fostering the rational transition of marine and maritime activities towards greater sustainability.

- A RECOGNISED GLOBAL SPONSOR

Pollutec Sea & Coastline 2021 is delighted to have the support of a **well-known sponsor** with an amazing story: **Raphaëla le Gouvello**, known particularly as the founder of the RespectOcean organisation and someone known and loved worldwide for her commitment to protecting the ocean.



“It’s a great honour for me to be sponsor of this first Pollutec Sea & Coastline. The show’s ambitions are in absolute accord with my own professional and personal commitments, particularly through the RespectOcean organisation... It’s quite possible to have an ocean economy respectful of marine and coastal ecosystems, and holding such an event is an amazing opportunity to talk about it all, and discuss how to make real progress”

Raphaëla le Gouvello

- THE MEDITERRANEAN AND PROVENCE-ALPES-CÔTE D'AZUR (PACA) REGIONS IN PRIDE OF PLACE THIS YEAR

For its first edition **Pollutec Sea & Coastline** offers an overview of the challenges and solutions in the Mediterranean and Provence-Alpes-Côte d’Azur (PACA) regions, especially by promoting:

- **The reconstruction and protection of marine and coastal ecosystems** (combating plastic waste, ecological reconstruction, biodiversity protection, water quality monitoring etc.)
- **How to rethink coastlines and limit coastal erosion and marine submersions** (monitoring rising sea levels, urban planning, solutions to limit shoreline recession, etc.)
- **The greening of port activities** (water and waste treatment, dry docks, electrification of dockland and port infrastructure, new energies, etc.)

- THE FIRST COMPANIES TO REGISTER AND THEIR EXHIBITION SECTORS

WESSLING France	Analysis of micro-plastics and nano-plastics
TSURUMI France SAS	Submersible site pumps
RANMARINE Technology	A floating ecological waste-collecting drone
H-EXPERTISE SERVICES	Geological expertise
SOB SOLUTIONS	Anti-corrosion expertise
CONSULTANT SEAS	Plastics reduction consultancy
NOVELTIS	Satellite data

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EXHIBITION SECTORS

COASTAL AREAS AND ACTIVITIES

➤ **Managing risk, pollution and power in the marine and coastal environment**

- Tools for monitoring and modelling bathing water quality
- Detection and treatment of accidental marine pollution (clean-up and emergency operations)
- Prevention and treatment of diffuse aquatic/marine pollution, macro and micro-waste (plastics, effluent, debris carried to the sea by waterways, etc.)
- Maintenance and clean-up of beaches, ports and coastal waters
- Management and recovery/recycling of collected marine waste and algae

➤ **Monitoring and protecting biodiversity and marine and coastal ecosystems**

- Monitoring tools (drones, sensors and digital systems)
- Impact analysis of works and business activities
- Environmental and species renaturing and regeneration solutions (ecological engineering)

➤ **Development of coastal areas and infrastructure**

- Climatic risk prevention and management – flooding, submersion and erosion – (warning systems and forecasting & planning tools)
- Coastal protection solutions (seawalls, groynes, breakwaters, etc.)
- Port activities (water and waste treatment, dry docks, electrification of dockland and port infrastructure, tourist areas, etc.)

MARITIME ACTIVITIES

➤ **Integrated recovery of marine resources**

- Thermal/marine energy
- Seawater desalination
- Raw materials
 - Management and recovery of co-products from the sea and fishing activities (marine leathers, shells, sails and nets, etc.)
 - Recovery of marine sediments
 - Sustainable aquaculture, algae and micro-algae, marine biotechnology

➤ **Energy and ecological transition of maritime activities**

- Alternative methods of powering ships and boats (less polluting or recycled fuels, hydrogen propulsion, traction kites, micro water and wind turbines, etc.)
- Onboard systems to reduce fuel consumption of ships and boats
- Shipbuilding and ship-breaking (ship ecodesign, end-of-life, recycling, etc.)
- Eco-products, boat maintenance and upkeep services (anti-fouling paints, maintenance work, etc.)
- Treatment of ballast water and other effluents – autonomous onboard systems

- OTHER POPULAR HIGHLIGHTS RELATED TO SEA/COASTLINE



A “**PLASTICIZED OCEANS**” exhibition with both an educational and scientific purpose, as well as an “archaeology of the future” which offers show visitors an astonishing exhibition. The intention is to retrace the invasion by waste of the world's seas and oceans and present solutions to limit this pollution. The aim? To explain how every day our waste accumulates and evolves into one gigantic soup of ocean plastic (from large pieces of plastic through to nano-plastics).

A 2nd edition, on 14 October, of the **ECOTECH SUSTAINABLE PORT** day organised by PEXE (the network of French companies working in the environmental field) in partnership with Ademe (the French Agency for Environment and Energy Management). The goals: to identify and accelerate the deployment of, innovative French solutions to respond to the environmental challenges of energy and the circular economy, together with the virtuous transition of maritime and river ports. This day will be organised around pitches from solution providers, the actions ports are taking to address their problems, and qualified meetings (B2B format), together with news updates and support tools for the ecological transition.

Additional to Pollutec Sea & Coastline: the **RIVERDATING** event, organised by French waterways, is a real get-together of European players in river transport and multi-modal logistics and closely linked with the challenges addressed at Pollutec Sea & Coastline.

COASTAL AND MARINE POLLUTION, A FAVOURITE TOPIC OF POLLUTEC

While **Pollutec Sea & Coastline** is an all-new show, **Alexis de Gérard, Show Director**, is keen to remind that the challenges and problems related to the pollution of oceans and coastlines have been addressed at Pollutec for over 20 years.



*“Back in 2000, Pollutec looked at **ways to treat marine pollution** following the ERIKA oil spill; 2 years later, the show offered its **first themed village** illustrating a range of solutions for different sectors. In 2004 the focus was on **coastline development**. In 2012, the question of **restoring natural marine environments** and coastlines went hand-in-hand with pollution issues. But it was in 2016 that Pollutec created a **permanent space** with its “**Sea & Coastline Forum**” with an increasingly broad and diversified programme (including plastic pollution, environmental monitoring, climate risks, the land-sea relationship, port development, preserving biodiversity & ecosystems, etc.)”*

Alexis de Gérard, Director of Pollutec

Given our undeniable success with these issues and unwavering support from well-known partners, Pollutec came up with this new innovative event: **Pollutec Sea & Coastline** “to

demonstrate its permanent commitment to coastline areas outside Pollutec, alternating between the Atlantic and Mediterranean regions”, affirms **Alexis de Gérard** adding “In 2022, it’s the Nantes region that will take pride of place.”

EXPERT TESTIMONY



CYRIL MALLET, coastal risk engineer at the **Aquitaine Coast Observatory of the BRGM** (the French Geological Survey): **“THE COASTLINE IS AT RISK, WE CAN SLOW DOWN EROSION BUT WE CAN’T STOP IT”**.

- Can you tell us about the phenomenon of erosion, especially in France?

“Coastal erosion is a natural phenomenon, progressive, slow and regular which applies at global scale. However, at times and in exceptional climate conditions, that erosion may become very rapid. That’s the case at Soulac-sur-Mer where, between the end of 2013 and the start of 2014, following 8 winter storms - 4 of which were exceptional - the coastal dune on which the “Le Signal” building stood had become dangerously eroded, to such an extent that the residents were forced to leave their homes.

These relatively rare phenomena aside, the French coastline is still at risk: 48% of coasts are subject to erosion, 40% are stable and 12% are actually building.

*There are a number of phenomena which serve to increase the erosion-related risks to the coastline (beach erosion or shoreline recession): the greatest of these is **sea level rise** (3.2 mm per year, and potentially as much as 1 m by 2100); but there’s also the*

*availability of coastal sediments which is tending to diminish, and **human activity** (since 1850, with the expansion of seaside tourism and the resulting explosion of urbanisation, the erosion risks have only increased on coastlines, particularly in mainland France).*

What about climate change and its impact... There is little doubt today that it’s affecting the risks to coasts, in particular marine submersion, erosion and shoreline recession, but we don’t know how to quantify these effects because we don’t have enough historical data. We’ll have to wait until 2030 / 2050 for these to be measurable separately from the seasonal effects we already recognise (such as seasonal variation in coastline recession).

*We must **also take into account certain natural and anthropological factors** such as geology, hydrogeology, **changes to ground level** (caused by, for example, the extraction of crude oil or of groundwater from coastal aquifers, or aggregate exploitation in some parts of the world, etc.), and the effects of direct intervention - for example works*

intended to fix shoreline recession can sometimes accelerate erosion in neighbouring areas.”

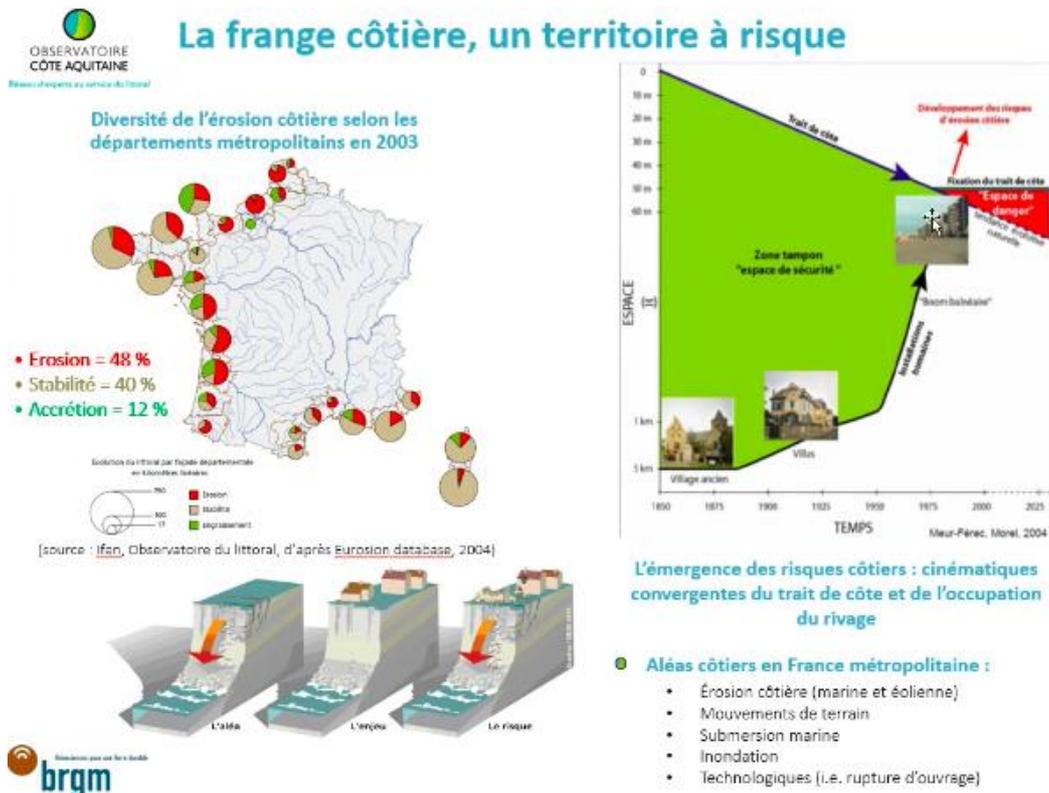
- Can we stop erosion?

“Let’s say we can slow it down, but this phenomenon is inescapable. The main thing is to reduce the risk (taking into account the issues we need to protect) by putting in place a dedicated joined-up management approach with our various experts and management teams.

So for example there is **managing soft engineering**, comprising working with natural processes that favour coastal resilience, such as ecological engineering which relies on planting the dunes, or restoring sand on beaches etc. Then there’s **managing hard engineering**, achieved via heavy geo-technical works such as structuring rocks, stones etc. However, the benefits of these actions remain temporary with respect to the chronic erosion occurring

in the long term. You can also opt for a **strategy of relocating or reorganising** seafronts to “displace” the problems and reduce the risks, or, finally, elect to combine all these different approaches simultaneously in one location.

But as I said, change is inevitable: we have to adapt, it’s possible to lessen the effects of these changes and the acceleration of change globally, but we can’t stop them - which isn’t to say that we should do nothing!”





CAROLINE DONJON, Sales Engineer for micro-plastic analysis at **WESSLING FRANCE**: **“THERE’S PLASTIC, AND THEN THE MORE INSIDIOUS MICRO-PLASTICS”**

- Is there more than one kind of plastic pollution in our seas and oceans?

“When we talk about plastic pollution in the sea we imagine bottles, bags, all sorts of packaging floating on the surface. But we also need to take into account pollution from micro-plastics (microscopic particles and fragments ranging in size from a micrometre up to five millimetres).

There are two families of micro-plastics: primary (“intentionally” produced, for example in industrial or pharmaceutical activity) and secondary, resulting from plastics that have been degraded by time and the conditions they’ve encountered to reduce them to micro-plastics. These micro-plastics are everywhere! They’re in our seas and oceans; they’re in our food, our water and our cosmetics. Their impact on our health and on the world’s flora and fauna remains largely unknown. Although we can’t prove it, they could also carry other chemical or biological contaminants (such as bacteria or viruses) all across the world.

Some of the most common types of plastics are

polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC) and polyethylene terephthalate (PET).

- What methods do you use to identify micro-plastics?

At Wessling, we’re able to analyse pretty much all the matrices, whether water (seas, rivers, streams) or consumer products. We work with companies and different actors to perform analyses that provide a status report on contamination in the environment, identify contaminated locations, analyse the type of pollution or identify the areas requiring urgent attention. We’re also working to monitor the impact of pollution reduction solutions previously implemented.

You can learn more about us at Pollutec, but if I had to mention just 2 of the main forms of analytical methods I’d choose spectroscopic and thermo-analytic; each has its advantages. For example, spectroscopy can determine a micro-plastic’s size while in thermo-analysis the result will be presented as concentration by mass. ”



Check out the complete programme for Pollutec 2021 and keep up-to-date with all the latest news by visiting the website: <https://www.pollutec.com/en-gb.html>

Eagerly awaited by environmental experts in France and around the world, Pollutec will ensure the well-being of participants at the 2021 edition by complying with all the French government's health recommendations as per its full APAVE-certified protocol. This protocol will be adapted as the health situation and government advice evolve. The hygiene measures will be updated on our website regularly: <https://www.pollutec.com/fr-fr/informations-pratiques/regles-sanitaires-covid.html>

About RX FRANCE - www.rxglobal.com

RX France manages a portfolio of world-class, French and international face-to-face, virtual and hybrid events covering 20 industry sectors including MIPIM, MAPIC, Batimat, Pollutec, EquipHotel, SITL, IFTM Top Resa, MIPCOM, MIPTV, FIAC, Paris Photo... and many more. RX France's events take place in France, China, India, Italy, Mexico, Russia and the United States.

We serve our clients as we accompany their strategic business development and roll out the best of physical and digital events.

RX France is part of RX (previously Reed Exhibitions).



About Wessling - <https://fr.wessling-group.com/fr/>

An independent family business founded in 1983, Wessling offers innovative global solutions and extensive analyses for construction, the environmental sector, food products, consumer goods, and pharmaceutical and cosmetic products. It has 26 sites in Europe and China.

About the BRGM (Bureau de Recherches Géologiques et Minières [the French Geological Survey]) - <http://www.brgm.fr>

As France's national geological service, the BRGM is the leading establishment in the application of Earth sciences for managing terrestrial and subterranean resources and risks.

Its work is directed toward scientific research, supporting public policy and international cooperation. The BRGM seeks to respond to the major challenges facing our society, in particular those related to climate change, the energy transition and the development of the circular economy.

It does this by developing geoscience-based expertise to contribute to the harmonised management and controlled use of the land, both above and below ground in towns, cities and the countryside.

The BRGM's activity is organised around 6 key societal challenges:

1. Geology and subterranean knowledge
2. Management of subterranean waters
3. Regional risks and planning
4. Mineral resources and the circular economy
5. Energy transition and underground space
6. Data, services and digital infrastructures