

# Interreg



EUROPEAN UNION

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### MARINEFF

MARine INfrastructures EFFects



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## Project Newsletter

### Edition 12, June 2022

[www.marineff-project.eu](http://www.marineff-project.eu)







**Above and opposite:**  
Photos from the Marineff  
International Conference  
2022.

# The Marineff International Conference 2022

3 - 4 May 2022

## Sign Up

To sign-up to future Marineff mailings, including this quarterly newsletter, [click here](#). Please note, upon sending an email to this address, you will be automatically signed up to the Marineff mailing list and included in future newsletter communications. Information on how your data is handled can be found [here](#).

## Contact Us

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On May 3rd and 4th, Marineff project lead ESITC Caen hosted the Marineff International Conference, welcoming delegates from Italy, the Netherlands etc. Joe Ironside, of Interreg project Ecostructure, and Sylvain Pioch, of Paul Valery University of Montpellier, gave keynote lectures at the beginning of day 1 and day 2 respectively. Twenty-six presentations were given on the latest research in marine eco-engineering and bioreceptivity from a broad spectrum of industries. Jean-Claude Dauvin of project partner University of Caen Normandie gave a grand total of three presentations, including his own and two presentations of his colleagues' who were unable to attend. We are grateful to all delegates who remained an engaged audience throughout, asking questions and providing insightful discussion, which often spilled over into the breaks.

## MARINEFF CONFERENCE, CONTINUED

The conference dinner was held at Le Mancel Restaurant based in the centre of Caen Castle which was built on the ruins of a fortress belonging to William the Conqueror. Since its construction in 1060, the castle has seen centuries of French history, with damage and demolition alternating with rebuilding and fortification. Caen Castle is one of the largest in Western Europe and sits proudly in the centre of Caen. French beer, wine and champagne accompanied a sumptuous three course meal, with conversation running late into the night.

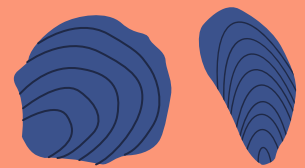
On the third day, a field visit to the Ouistreham artificial rockpool site gave delegates the opportunity to see the Marineff rockpools in-person. Clémentine Fleck, of University of Caen Normandy, gave a talk about progress of the colonisation, followed by a talk from Ports of Normandy. It was lovely to be reunited with colleagues in-person again, with some having not seen each other in over two years! The Marineff project will be hosting an event in early spring 2023 to mark the project end, which is likely to be hosted on the south coast of the UK. We will share more information about this event in due course.





# Boosting native oyster larvae in the waters of the Solent

In the Solent, the area of sea between south coast of mainland UK and the Isle of Wight, the native oyster *Ostrea edulis* is functionally and commercially extinct. This is because there are so few native oysters in the system. As the density of mature native oysters is so low, it means the number of oyster larvae in the plankton are equally sparse. This is why researchers at project partner University of Southampton have not yet seen any new native oyster settlement on our oyster prisms deployed in September 2020. The University of Southampton team is collaborating with the Blue Marine Foundation and the University of Portsmouth to reintroduce hatchery-reared native oysters into the Solent system. PhD students George Kelly and Fiona Woods will be studying and monitoring the success of the reintroduction programme. In September 2021 15,000 oysters from growers in Scotland were laid on the seabed and in February 2022 a further 20,000 were laid from another restoration project, Seawilding, which is funding its own work through the supply to other projects. First, a layer of shell and gravel, known as cultch, was deposited on the seabed before adding the nearly mature oysters. We expect these to be releasing larvae into the Solent waters within the next couple of years, which will circulate for about 3-4 weeks before settling. A further laying of 100,000 oysters is planned for September 2022.



**Below:** PhD student Fiona Woods about to distribute oysters.



**Left:** Oysters being seeded in the Solent.



Above: *Mussels have appeared in an artificial rockpool at Hamble Harbour, UK.*

## Mussels appear in the Hamble Harbour artificial rockpools

During the April monitoring interval of our 24 artificial rockpools at Hamble Harbour, UK, which marked a year and a half since installation, researchers at Bournemouth University recorded mussels for the first time. The mussels were adults and firmly attached to the inside of the pools, so it remains a bit of a mystery as to how they got there, as no mussels were recorded during surveys three months prior. Nevertheless, the small clusters of mussels made excellent additional habitat on the inside of the artificial rockpools for other species to hide amongst. As they were underwater, their shells were slightly open and their filter feeding could be observed, creating currents swirling around the rockpool.

The artificial rockpools at Hamble Harbour are paired with another installation of 24 rockpools in Ouistreham harbour in France. At both sites, the artificial rockpools are arranged in 8 columns of 3 rockpools. The University of Caen Normandie are monitoring the rockpools in Ouistreham and are also using a Diving PAM (pulse amplitude modulated fluorometry) to measure photosynthetic health of the seaweeds growing on them. Although the location of the Marineff rockpools in Ouistreham have made them challenging to survey, the team at University of Caen Normandie have begun to start gathering interesting data.

### DATES FOR YOUR DIARY

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23 June 2022

**Ecostructure Final Project Conference**  
online and in-person, *Aberystwyth*, Wales



5 - 8 September 2022

**ECSA 59 Symposium**  
*San Sebastian*, Spain



8 - 12 January 2023

**International Temperate Reefs Symposium**  
*Hobart*, Tasmania



# Going underwater in Poole Harbour

The Marineff team at Bournemouth University have been surveying the marine species at the Poole Harbour and Bouldnor sites, UK, for almost 2 years now. The two year mark comes next month in July 2022, and formal surveying of these two sites will end. Almost 12,000 quadrats of data will have been collected providing information on the number of species, types of species, and the abundance of each species on the seawall and rockpools over seven survey campaigns. All this data will be analysed over the final year of the project, distilled into meaningful and useful conclusions about the experiment.

All of this data tells us what we can expect to find in and on the artificial rockpools at low tide, when they are exposed to the air, but that is only half of the story. Twice daily, the rockpools are covered by the sea at high tide and becomes part of the underwater world. To find out what species use the rockpools at high tide and how, eighteen GoPros are now being deployed twice a month during high tide. So far, we've recorded crabs and shannies (*Lipophrys pholis*) using the rockpools to feed, and hide in as shelter from the waves. We can't wait to see what further secrets they reveal!

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**Left:** The GoPros mounted above the artificial rockpools for recording species, waiting to be covered by seawater at high tide.







Above: Clémentine Fleck gives a talk to the Marineff conference delegates about the artificial rockpools at Ouistreham, France during the Marineff International Conference 2022.

## Summer Reading List

**1** University of Caen Normandy researcher **Bastien Taormina** and his colleagues have published “A review of methods and indicators used to evaluate the ecological modifications generated by artificial structures on marine ecosystems” in *Journal of Environmental Management*. Authors highlighted a lack of reliable methods for assessing epibenthic colonisation and made recommendations, as well as providing a catalogue of tools for stakeholder use.

**DOI:** [10.1016/j.jenvman.2022.114646](https://doi.org/10.1016/j.jenvman.2022.114646)

**2** **Bone et al.** have published a second paper this year entitled “The intrinsic bioreceptivity of concrete in the coastal environment – a review” in open-access journal *Developments in the Built Environment*. This review synthesises the key outcomes from

bioreceptivity research, identifies the ways which best enhance bioreceptivity, and makes recommendations for further research.

**DOI:** [10.1016/j.dibe.2022.100078](https://doi.org/10.1016/j.dibe.2022.100078)

**3** Our friends at Ecostructure, **Fairchild et al.**, have published “Species diversity enhances perceptions of urban coastlines at multiple scales” in *People and Nature*. This important paper demonstrated that perception of obviously engineered structures to be less natural and therefore less desirable, but structures with a high species richness enhanced aesthetic appeal, interest and calming potential at multiple spatial scales.

**DOI:** [10.1002/pan3.10330](https://doi.org/10.1002/pan3.10330)