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Intelligence

# Successful initiative using solar-powered oyster production technology to expand

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By Responsible Seafood Advocate

## Survival rates higher than 90 percent observed using solar-powered oyster production technology

Solar Oysters and the Chesapeake Bay Foundation (CBF) have placed a second batch of oysters grown using solar energy on the expanding restoration reef off the shores of Fort Carroll, located in the Patapsco River just south of Baltimore.

These tiny oysters, also known as spat, were **first placed on the Solar Oyster Production System** (<https://www.globalseafood.org/advocate/joint-initiative-to-replenish-oyster-population-in-baltimore-harbor/>). (SOPS), a solar-powered platform located in Baltimore Harbor eight months ago, where they reportedly “thrived extraordinarily well.” While survival rates on oyster farms can vary drastically, survival rates of over 90 percent have been observed consistently on SOPS.

The SOPS is an innovative technology that uses clean energy via roof-mounted solar panels to power the rotation of oyster cages. By rotating vertically through the water column, oysters have access to more abundant food sources and exposure to sunlight when out of the water for periods of time to reduce fouling. The current compact design can produce up to 250,000 oysters in a 0.02-acre space



Survival rates of over 90 percent were observed using solar-powered oyster production technology, leading to the placement of a second spat. Photo courtesy of Solar Oyster.

compared to multiple acres used in traditional oyster farming on the Chesapeake Bay.

“This technology has the potential to shift the oyster aquaculture industry by reducing labor while producing healthy oysters for both restoration and consumption,” said Emily Caffrey, SOPS platform manager. “The Solar Oyster Production System’s automatic oyster cage rotation system dramatically increased oyster survival versus oysters sitting stationary. The more oysters that can be grown, the faster we can improve the bay’s water quality, and oyster farmers will have more product to sell at market.”

(<https://www.kvaroyarctic.com/>).

Oysters improve water quality by filtering water as they feed, removing excess harmful nutrients and increasing water clarity. Additionally, their reef systems create a habitat for native fish species. The Chesapeake Bay Foundation and the Chesapeake Oyster Alliance have an ambitious goal of adding 10 billion oysters to the bay by 2025.



## Here comes the sun: Oyster and algae growers harness solar power

A look at three aquaculture companies that are figuring out how to solve their production problems by using solar power in innovative ways.



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“New technologies, such as SOPS, give us the ability to think innovatively and increase oyster production to help us achieve this goal,” said Kellie Fiala, CBF’s Oyster Restoration Coordinator. “Over the past two years, we were able to increase the numbers of oysters grown in Baltimore Harbor by more than 60 percent by working with Solar Oysters.”

More than 356,600 oysters grown on the SOPS platform were transferred and planted at Fort Carroll this month, where they are expected to continue to thrive on the reef and help improve bay water quality.

The first batch of spat was placed on the SOPS in October 2021 and placed at the Fort Carroll restoration reef in November 2022.

The SOPS technology is being marketed to those interested in oyster restoration and aquaculture farming for consumption.

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