



ALLIANCE™

[.https://www.globalseafood.org](https://www.globalseafood.org)

Responsibility

Can Blacklip Rock oysters reduce nutrient pollution near the Great Barrier Reef?

26 April 2024

By Responsible Seafood Advocate

Study finds Blacklip Rock oysters can effectively remove harmful nutrients from tropical waterways

A new study has found that oysters could be very useful in removing nutrient pollution from tropical waterways, including the Great Barrier Reef. The researchers examined the effectiveness of using Blacklip Rock oysters to remove nitrogen, phosphorous, solids and chlorophyll from waterways.

“The problem is the nutrient-rich wastewater (e.g. high in nitrogen and phosphorus) can degrade marine environments and this, in addition to costly water treatment practices, has prompted interest in biological filtration methods,” said Professor Jan Strugnell, co-author of the study and professor at James Cook University.

Strugnell said the organic content of wastewater from aquaculture – such as fecal matter and undigested food – can provide a rich supply of food for oysters. They can also assist in the removal of fine sediments from the water column.

“The tropical Blacklip Rock oyster has several characteristics that suggest it would be well-suited to



Scientists have found Blacklip Rock oysters could be very useful in gobbling up nutrient pollution from tropical waterways, including the Great Barrier Reef. Photo credit: Daniel Pelaez Duque

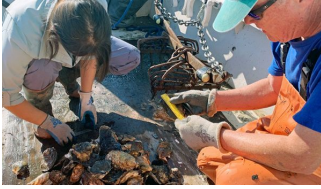
bioremediatory applications,” said Strugnell. “These include a large size and fast growth rate, and resilience to fluctuations in temperature and salinity.”



(<https://www.evahcorp.ca>).

The scientists tested Blacklip Rock oysters’ uptake of waste over different temperature ranges and with different densities of the animal. The findings highlight the effectiveness of the oyster is closely linked to temperature, with 32 °C (89.6 °F) returning the highest filtration rate for much of a five-hour period.

Researchers look at oysters' ability to mitigate nitrogen



Oysters may play a role in removing nitrogen and improving water quality in the Great Bay estuary, near the University of New Hampshire.



Global Seafood Alliance

The Blacklip Rock oyster was found to have a filtration rate three to five times higher than other frequently cultured oyster species, with Strugnell suggesting that it may be well suited to biofiltration roles. The findings indicate that 1.20 kg (2.64 lbs) of nitrogen is removed per ton of harvested oysters.

“In 2020/21, the oyster industry in New South Wales harvested 5,081 tons of oysters,” said Strugnell. “If tropical oyster production in Queensland grew to this scale it would remove approximately 6,098 kg (13,443 lbs) of nitrogen per year and contribute to a 6 percent reduction in total nitrogen per year from aquaculture farms in the Great Barrier Reef catchment

The next step is farm-based trials to build on the findings from the lab studies.

[@GSA_Advocate \(https://twitter.com/GSA_Advocate\)](https://twitter.com/GSA_Advocate)

Author



RESPONSIBLE SEAFOOD ADVOCATE

[editor@globalseafood.org \(mailto:editor@globalseafood.org\)](mailto:editor@globalseafood.org)

Copyright © 2024 Global Seafood Alliance

All rights reserved.