

Coral reefs have an annual estimated value of 2.7 trillion dollars

50% of reef value has already been lost since 1950 from a combination of human impacts to reefs

The last two years of sea temperatures have been the hottest on record, causing unprecedented coral reef loss



UPWELLING brings cold, clean water to shallow ecosystems

Protecting them from overheating [1,2,3]

Providing nutritional subsidies to help them cope with heat stress [4]

Reducing the harmful effects of pollution [5]

Preventing/reversing disease [6]

Removing CO₂ from the atmosphere [7]

Cost: \$0.06/m² (next cheapest alternative: \$6/m²) [8]



Can simulating upwellings be a win-win (win-win-win) solution to protecting CORAL REEFS from climate change?

Help solve the coral reef crisis directly!

We only need 15k more in fast funding to deploy a pilot study before the summer heat wave hits!

entropy@ucsc.edu

upwelling.blue

UPWELLING

[1] Baird et al. 2020. *PLoS One* 15(10). [2] Feng et al. 2020. *Frontiers in Marine Science* 7(2020). [3] Randall et al. 2020. *Ecology* 101(2). [4] Fox et al. 2023. *Science Advances* 9(2023). [5] Spring and Williams. 2023. *Royal Society Proceedings B* 290(2023). [6] Roels et al. 1973. *OTC conference*. [7] Koweek 2022. *Frontiers in Marine Science* 9(2022). [8] Bayraktarov et al. 2019. *Restoration Ecology* 27(5).

DONATION INFORMATION

Tax-deductible 501c3 donations (card, wire, check, crypto)

Fiscal Sponsor: Amber Initiative Foundation EIN 83-1981477
6338 NE 38th Ave. Portland Oregon 97211

Web: <https://www.every.org/amber-initiative-foundation-inc>

Wire: Amber Initiative Foundation
Bank: Beneficial State Bank
Account Number: 82016-795
Routing Number/SWIFT: 12182056

Check: Amber Initiative Foundation, 6338 NE 38th Ave.
Portland Oregon 97211. Write 'Upwelling Institute' in memo field.

Crypto:
Email: pam@amberinitiative.com
Phone: (510) 365-5266

Direct online donations (faster/fewer fees)

<http://spot.fund/79zl7sc>