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Kelp forests capture nearly 5 million tonnes of CO₂ annually

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Kelp forests provide an estimated value of \$500 billion to the world and capture 4.5 million tonnes of carbon dioxide from seawater each year. Most of kelp's economic benefits come from creating habitat for fish and by sequestering nitrogen and phosphorus.

The climate benefits of kelp forests, like forests on land, are numerous. The towering brown algae provide habitat for marine life, protect coastal areas from storms and sequester greenhouse gasses as they grow. But some kelp forests, like those off the coast of California, have been damaged by pollution, human development and an overabundance of hungry grazers like sea urchins.

To estimate the value that kelp forests add to global economies, Aaron Eger at the University of New South Wales in Australia and his colleagues looked at the economic and ecological benefits of different types of kelp across different industries. They limited their assessment to six genera of kelp that commonly form these forests.

The researchers began by assessing kelp's boon to commercial fishing, as the plants host around 1500 species, many of which are harvested commercially. They then estimated how much nitrogen, carbon and phosphorus the kelp absorb from the sea. An abundance of nitrogen and phosphorus from agricultural runoff can lead to harmful algal blooms and nitrogen is particularly expensive to remove from water using current technology.

"Much like a plant on land, [kelp forests] are taking up nutrients, they're taking up carbon dioxide, and using light to fuel their growth," says Eger. By examining the amount of each compound stored in the plant's tissue, they could determine how much the kelp was sequestering.

They found that kelp forests generate a potential value between \$465 billion and \$562 billion per year worldwide, largely due to commercial fish support and the removal of harmful chemical substances. As part of their assessment, the team found that kelp forests absorb around 4.5 million tonnes of carbon dioxide each year, highlighting kelp's potential as a "blue carbon" sponge.

Source: <https://www.newscientist.com/article/2369412-kelp-forests-capture-nearly-5-million-tonnes-of-co2-annually/>