



IF YOU WERE AN ENGINEER WHAT WOULD YOU DO?®

London Leaders Award 2019
 Winner, Year 12

Outboard Algae Collector

Outboard Algae Collector - a sieve tray attached to the side of a boat to gather algae, allowing the everyday person to help protect their local lake or river from the threats of algae blooms.

Side view:

- Adjustable hooks allow for easy attachment to the side of the boat.
- Attachment for hooks on both sides allows to be used on either side of the boat.
- Lightweight aluminium frame helps keep a high fuel efficiency.
- Funnel

Front view:

- Buoyancy aids to hold the collector on the waterline.
- Scoop pushes algae into mesh tray, removing it from the ecosystem.

Why?

- Algae and other invasive species grow rapidly on the surface of lakes and rivers if fertilisers mix with the water. This blocks light from plants on the bed, resulting in plant death. With time this can destroy the entire ecosystem, fish and animals.
- Large scale algae removers are fast but expensive, difficult to operate, and unable to reach smaller areas.
 - This allows boats to continue normal operations whilst also helping the against damage to the environment.
 - Collected algae can be used for biofuel.

Additional notes:

- Fine mesh tray collects algae
 - Biodegradable mesh used to reduce longterm effects on the environment if the tray is lost.
 - Trays are removable, they rest inside an aluminium frame, allowing for quick emptying and replacing.
 - Mesh reduces energy loss from the drag force of the water.
- Mesh could be adapted to filter the water of chemicals whilst removing algae.

Beatrice Hickin

Name:	Beatrice Hickin
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School name:	Wallington High School for Girls
Year group:	Year 12
Which engineer inspired you?	Tom Griffith
From which company?	Network Rail

The '**Outboard Algae Collector**' is a tray attached to the side of a boat to gather algae and other invasive species. The fine mesh tray collects the algae and is removable to clean off the algae. As it is mesh material, it reduces energy loss from the drag force of the water.