

# Unique underwater drone a game changer for mussel and scallop industry

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An autonomous underwater drone developed by a University of Canterbury research team lead by Professor Richard Green assesses mussel ropes. Credit: University of Canterbury

The mussel and scallop industry could be revolutionized by a new

autonomous underwater drone.

Developed by University of Canterbury researchers, the drone can eliminate hours of costly and time-consuming manual work.

Research lead Professor Richard Green says the drone, or [autonomous underwater vehicle](#) (AUV), can survey mussels and scallops so accurately that their size, health, and any pests can all be detected.

"We think this is the first New Zealand developed autonomous underwater drone. It means we're leading the world in getting so close to underwater surfaces."

"Our autonomous artificial intelligence (AI) approach is unique and we believe this drone could be widely used here and internationally. Our collective expertise means we're able to rapidly develop prototypes and novel applications."

Professor Green says manual spot-checks of [mussels](#) are very expensive and more frequent low-cost surveys using the autonomous [drone](#) will help to minimize loss and optimize harvest timing.

Easily operated by novices, the AUV can also remotely scan entire wharf pylons, and ship hulls in the future, to accurately identify invasive marine organisms growing on them. At the moment, these annual inspections are done manually by divers—a dangerous, expensive and time-consuming task. It can also be used in salmon farming to scan nets for holes.

Although there is extensive [research](#) and development into autonomous agriculture robots and aerial drones, Professor Green says the underwater marine environment is much more hostile and challenging, including pressure, visibility, communications, navigation, and

positioning with no GPS underwater.

Provided by University of Canterbury

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