

## **NEWS RELEASE: Plastics from the ocean, back to the ocean**

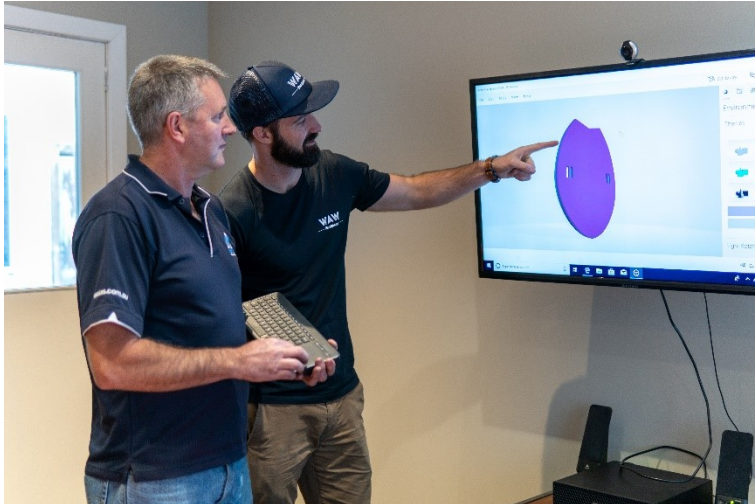
*When Rikki Gilbey of WAW Handplanes and Mark Yates Founder of Replas got together at a Plasticity event held in Sydney, Australia, a plan was hatched to use plastic sourced from the ocean, to manufacture a handplane used by bodysurfers in the ocean.*



Handplanes are designed to enhance the bodysurfing experience by providing extra lift, speed, and control. They're for anyone, of any age, who wants to experience the thrill of riding waves in the purest and most simple way. They can be made from a variety of materials including wood, plastics and fibreglass, and some are even made from carbon fibre.

Rikki made his original handplanes from sustainably sourced timber and, ensuring other components used were also environmentally friendly, he started selling them at markets and online. When demand started building for his product, he saw an opportunity to increase his manufacturing capability and also help clean up the beaches his product was used in.

This led him to approach Mark Yates, Founder and R&D Director of Repeat Plastics Australia (Replas). Contact was made at a Plasticity event which Mark was speaking at in Sydney and included a number of other ocean plastics solutions. Initially the idea was dismissed as too small but after constant hounding by Rikki, Replas decided to give it a shot.



Initial designs were based on the current timber models with adjustments to suit the properties of mixed ocean plastics. First, a prototype was made using an aluminium die bolted to the head of an extruder (intrusion moulding). This gave us something to work with until Rikki was confident in purchasing a production die - a large investment for a one-man business!

The challenges didn't stop there. Next on the to-do list was finding a reliable source of authentic ocean plastic – a challenge because most is currently thrown away due to a lack of processing facilities and demand for onward purchase.

This is where Louise Hardman stepped in, another speaker from the Plasticity event. Louise had been working on a project based in Airlie Beach, Queensland which is the gateway to the Whitsunday Islands. The project used one of Louise's inventions "the Shruder" to process rigid plastics collected from beaches and extrude them into a filament. She suggested we get in touch with their collection partner; not-for-profit organisation Eco Barge Clean Seas. The team at Eco Barge use volunteer labour and equipment donated by the likes of the Queensland Government and Coca-Cola Amatil to clean the beaches of the surrounding islands of all pollutants, not just plastics. A specification was conveyed to Eco Barge that mainly focussed on colour requirements and types of plastics. HDPE, LDPE and PP were targeted a sorting, washing, drying and granulating system was then instigated. Eco Barge has been going for many years now and the idea that the plastic collected could finally be recycled and not sent to landfill sat well with their vision.

To ensure enough plastic was available for the first production run it was decided to use 1/3 ocean plastics and 2/3 post-consumer kerbside plastics. UV stabiliser along with other additives were used to ensure colour fastness and the required finish. As more ocean plastics become available, these ratios will be adjusted.

Plans are in place and machinery is being designed to make the processing of the collected plastics much more economical, as the sorts of organisations that require this type of equipment are usually restricted by funds, space and even an available power supply but they have the motivation to get things done - like Eco Barge.

The manufacturing of the first batch of 1,000 units went well and the second larger run is scheduled shortly. The volumes of material used for this product may not be large but the interest generated should open up more markets for similar products. Rikki is working on releasing this product worldwide and is already getting good results in the bodysurfing market and with early release retail buyers.

