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JUDGES' REPORT

MARINE

S&S MUSSEL FLOATS

INTERVIEWED

Paul Smith

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JUDGES

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INTRODUCTION

S&S Floats is a Tasman-based company on a mission to reduce the amount of plastic waste going into the sea from mussel farms.

Marlborough Sounds marine farms are heavily reliant on polyethylene rope to tie on floats for their mussel farms. The move to more exposed waters has meant traditional floats occasionally come loose due to rough weather and sea conditions. It's estimated between 500 and 2000 mussel floats are lost every year in the Top of the South.

The rope, which breaks down over time through friction or goes overboard when mussel float lashings are cut during harvesting, causes debris to enter the ocean that cannot be recovered. Mussel floats can also wash away if lashings fail during stormy conditions, creating further pollution.



S&S Floats have developed a metal clamp that eliminates the need for rope lashing and ensures the floats stay secure on the farm.

It is estimated that lost floats in the Top of the South cost the industry more than \$500,000 a year. There is also growing public concern about plastic pollution in the sea, on the beaches and the impact it has on fish and birds.

S&S Floats clamps provide a solution to these issues and the company is working to get better uptake from the industry.

GENERAL INFORMATION

Paul Smith and Peter Solly own S&S Floats and have factories in Tasman and Golden Bay employing six people. The clamp-on floats are used across the Top of the South, including a trial in the Marlborough Sounds.

There are nearly 600 mussel farms in the Sounds. Mussels are grown on droplines that are attached to backbone ropes running the length of the mussel farm. The backbones are attached to large egg-shaped plastic floats to hold up the farm.

Traditionally, each float is tied on with polyethylene lashing but Paul, working as an engineer in the industry, recognised many years ago the effect this was having on the environment as plastic rope and floats washed away.

Paul produced his first version of the clamp-on float (called Clamp-it Buoys) in the early 2000s. However, the design needed modifying and the project was put on hold when he joined the family company, Abel Tasman Sea Shuttles.

When Covid-19 hit and tourism dried up, he set up Smith Engineering and embarked on a range of projects including converting a Whale Watch boat into a mussel farming vessel and building a dredge that removes all spoil to land. Paul also revisited his mussel float clamp idea and received \$72,500 research funding from the Ministry for Primary Industries.

Back at the factory he created a metal mould to make a float that attaches to the farm without using any plastic lashings. The S&S clamp is designed to fit on to the float in two parts – a rubber “dogbone” that slips over the backbone rope to reduce friction on the rope and guide it into position. The second part is a marine grade stainless steel plate and bolts, which clamps the dogbone on to the float.

Sanford Ltd are trialling S&S Floats on a farm in Forsyth Bay in the outer Marlborough Sounds, which is a more exposed, high-energy area.



Environmental benefits include:

- Each clamp replaces 12 metres of plastic lashing rope, which is no longer a risk to the marine environment or washing up onshore.
- No floats have been lost. This saves resources and cost of replacement, and saves fuel by not having to go out and pick up lost floats.
- Preparing for climate change by having farms more secure in the face of increasing storms.
- Reduced amount of microplastics being ingested by seabirds, fish and marine animals.

- Floats are manufactured as needed and transported in bulk to reduce carbon emissions.

The Marine Farming Association has been training crews to keep plastic lashings on board during harvesting, but the clamp system removes the risk of human error. Paul is also part of a MFA group to develop a clamp that can be retrofitted on to existing float designs.

THE JUDGES WERE IMPRESSED BY:

- Paul's early understanding of the risk of plastic in the marine environment and his determination to find a solution.
- Ability to combine innovation, ideas and practical engineering skills to find solutions to industry issues. Another example is building a lid for the mussel float oven to stabilise temperatures, making a more consistent product and using less LPG.
- At the end of their life, S&S Floats are fully recyclable and remoulded into plastic piping.
- A resilient approach to business, pivoting from engineering, to tourism, to setting up a new engineering business when Covid-19 hit.
- A commitment to see change in aquaculture and reduce plastic pollution, including sharing his mussel float mould with others in the industry to manufacture from.
- Paul's can-do approach and ability to see opportunities has led to a diverse range of work for his company. Examples include a machine to chop invasive fan worm off ropes; developing a system to seed scallop spat into biodegradable pinus radiata wool; processing dredge spoil into bags for planting with natives.

PROBLEMS AND HOW THEY HAVE BEEN TACKLED

- *Slow uptake of clamps by industry:* Changing the way things have always been done by mussel farmers is taking longer than expected. Reasons include industry business pressures (including rising costs, increasing water temperatures and Covid disruption) and reluctance to pay more up-front for the clamp system. The traditional float using plastic lashings costs \$130. The S&S float with clamp-on attachment costs \$230. Marketing is under way to show how the clamp-on float is more cost-effective in the long run: it stays on the farm, there is no recovery and replacement costs and no plastic pollution cost to the environment. S&S Floats is working with the Marine Farming Association to improve uptake.
- *Adapting to Health and Safety requirements:* During the 18 years Paul was out of the industry, health and safety requirements have increased considerably. Setting up the Tasman factory in a former apple packing shed presented a number of challenges, which are being worked through with the help of a health and safety consultant. The move to a new, purpose-built factory in early 2023 is eagerly awaited.

SUMMARY

Paul is a problem solver and practical engineer. His ability to see a problem, come up with a solution and provide the hardware to make it happen is at the heart of his business.

His frustration at the lack of progress in dealing with the environmental impact of marine farms led to the S&S float and clamp system to challenge the reliance on plastic lashings and polyethylene rope.

The clamp system reduces the amount of plastic pollution entering the marine environment, the harm it causes to ocean wildlife, removes waste from the sea and shore, and saves money for marine farmers in the long run.

With increasing storms from climate change it is more important than ever to ensure marine farms stay intact and in place. S&S Floats are part of the solution.



SUGGESTIONS

- To help with business planning and marketing, consider signing up with a business mentor (one-off registration fee of \$295). Your current strategy of not chasing the market and waiting for the customer to find you may be hindering uptake of S&S Floats. www.businessmentors.org.nz
- You offer a diverse range of products and services. Consider developing a business plan – one year, five year and 10 year — to provide focus for operations.
- Use the Environment Awards video to keep telling your story to mussel farmers and potential funders.
- A Facebook page also helps reach new clients and shows the work you are doing.
- Add more story-telling to your website, such as Paul's long-standing connection with the Marlborough Sounds. Put all your videos on the website along with customer testimonials (eg, Sanford, MacLab and Robin Pauley).
- With the move to the new factory, focus on presenting a tidy, ordered workshop to visitors and potential customers. This is all part of your marketing and professionalism.