Fisheries New Zealand
Tini a Tangaroa

Securing Spat Supply Work Plan

In 2021 MPI published the Accelerate the Aquaculture Strategy: investment roadmap, which outlines the investments needed to reach the Government's Aquaculture Strategy goal of $3 billion in aquaculture revenue by 2035.

To prioritise and progress these investments, MPI established an investment governance group with aquaculture expertise from iwi, industry, government, universities, and research institutes.

The governance group prioritised securing spat supply as one of the key priorities for investment. This recognises that green lipped mussels are currently our most significant aquaculture species and the resilience and growth of the mussel industry is limited by wild spat survival and hatchery spat availability.

This update sets out a plan consisting of three goals and three work streams.

The agreed goals for securing mussel spat supply:

Goal 1: Increase hatchery spat supply to meet the industry's current needs and future growth requirements

Goal 2: Make the best use of existing spat by increasing on farm retention

Goal 3: Ensure fair access to high quality spat for all, and supporting iwi aspirations by supporting iwi led spat developments

These goals will be achieved through the three work streams outlined on the following page:

Goal 1: Increase hatchery spat supply

Workstream 1 – Hatcheries:

Current spat supply is not sufficient for industry's needs. Compared to wild spat, hatchery spat is more productive, meets market needs, and is resilient to changing environmental conditions. More hatcheries are needed to maximise the value of the mussel industry and allow for growth into consented and undeveloped space.

Research Actions

- » Research to identify and test hatchery sites (e.g. flat land, Geotech, with seawater access), and water quality to enable more hatcheries
- » Research to further optimise and de-risk hatchery spat production

Investment actions

- ✓ Industry wide adaptation planning for climate change including an increase hatchery production
- » Capital investment to develop three or more mussel hatcheries to produce enough spat for 100,000 tonnes of mussel production

Goal 2: Increase wild spat survival

Workstream 2 – Land-based nurseries:

The majority of spat deployed to a marine farm doesn't survive to harvest. Land- based nurseries have the potential to improve health and therefore the survival and retention of spat before it is transferred to farms. Increased survivability and retention of spat would mean current wild spat supply can support greater production. These learnings can also be applied to hatchery spat.

Research Actions

- » Research to test and validate cost effective land-based nursery systems
- » Research to test retention of spat on grown in a land-based nursery

Investment actions

- » A business model to understand commercial feasibility of land- based nurseries
- » Establishment of land-based nurseries for on growing wild spat including from the Te Oneroa-a-Tōhe GLM9 fishery

Workstream 3 – Sea-based nurseries:

The majority of spat deployed to a marine farm doesn't survives to harvest. Sea based nurseries offer an opportunity to on-grow spat in an environment that best provides for their needs before deploying to farms. Increased survivability and retention of spat would mean current wild spat supply can support greater production. These learnings can also be applied to hatchery spat.

Research Actions

- ✓ Research to understand the characteristics of a good se-based nursery and how these sites increase production
- ✓ Research to test retention of spat on grown in a sea-based nursery

Investment actions

- » A business model to understand feasibility of new sea-based nurseries for wild and hatchery spat
- » Establishment of new sea-based nurseries – if existing space is not suitable

Regulatory actions

- » Consider regulatory measures to plan for and consent sea-based nursery sites

Regulatory actions

- » Consider regulatory measures to protect existing wild spat supplies from Wainui Bay and the GLM9 fishery

Goal 3: Ensure fair access to high quality spat

Investment actions

- » Explore mechanisms to enable sector wide hatchery ownership and participation
- » Distribution of existing intellectual property held by government to support broader uptake of the hatchery opportunity

Investment actions

- ✓ Contributing to the resilience of Te Oneroa-a-Tōhe through the Future Search workshop
- » Prioritise and enable iwi led spat ventures
- » Te Tai Tokerau iwi opportunities assessment to identify a plan for iwi in Northland

Legend

✓ Underway » Not underway

Regulatory actions

- » Explore an allocation mechanism to ensure fair access to any new sea-based nursery sites

Plan to deliver the research for a secure spat supply

How the sector is organised to deliver research towards a secured spat supply

Aquaculture New Zealand are leading the Ahumoana o Aotearoa Spat Research Collective (AASRC) which brings together research providers, industry, and government to address priority research goals and deliver tangible outcomes to secure spat supply. Aquaculture New Zealand has agreed to be the administrator for the AARSC with additional administrative support offered by lead researchers and government representatives. It is proposed that the AASRC:

1. Review existing spat performance research outcomes against the AQNZ Spat Strategy.
2. Develop overarching goals with measurable industry outcomes and clear timelines to success.
3. Develop collective research projects to deliver the goals within those timelines.

The proposed short-term, medium-term, and long-term goals of AASRC are:

1. By 2025, historic spat performance data has been collated and spat performance data is collected in a consistent way across all of industry. The spat nursery environment is now monitored at relevant temporal frequency to understand the drivers of spat performance.
2. By 2030, spat performance models guide the use of nursery sites and this, and other innovations, consistently deliver 1:4 conversion of primary spat to secondary seed for all of industry.
3. By 2035, the mussel industry consistently achieves 1:6 conversion of primary spat to secondary seed.

AASRC will meet annually and assess research relevance and progress against these goals and in between will use a MS Teams site to coordinate collective research projects.

Research planned and underway to secure spat supply

Workstream	Underway	Planned/identified
Workstream 1 – Hatcheries	• **Evolving and ultimately breeding the best Green shell Mussel with three core research objectives** – TWA Holding Company Limited funded by Callaghan Innovations	• Research to identify and test hatchery sites (e.g. flat land, Geotech, with seawater access), and water quality
Workstream 2 – Land-based nurseries	• Several industry led projects that will progress cost effective land based nurseries are in the Government funding pipeline	• Research to understand the production increases using land-based nurseries for wild spat
Workstream 3- Sea-based nurseries	• **Developing FLUPSY-based nursery culture to reduce spat losses in the Greenshell mussel aquaculture industry** • **Spat Nursery Commercial Pilot Programme**, to develop and refine the growing of spat in Clifford Bay • **Identifying environmental drivers of mussel spat survival and growth**, $750k of MPI funding over 3 years • Several other industry and university led projects are in the Government funding pipeline	