

Tight Microbubble Screens (TMS) for the intensive (24/7) protection of salmon farms.

Aquaculture, and particularly the salmon farming industry, faces constant challenges due to the proliferation of unwanted elements that negatively impact fish health, productivity, and operation sustainability. Events of harmful algal blooms (HABs), the massive presence of jellyfish, parasite infestations (notably *Caligus*) represent threats that demand effective, proactive, and scalable mitigation solutions.

The solution: Tight Microbubble Screens (TMS)

PSP Chile, through its continuous innovation, offers the Tight Microbubble Screen (TMS) technology, a system designed to create an advanced physical barrier around farming centers. Unlike conventional air curtains, our TMS generates a protective column throughout the entire water column; this feature is crucial, as it augments its mitigation capacity. The TMS provides an efficient solution for Chile's dynamic marine environments.

Intensive Uses and Protection Mechanisms

The intensive application of TMS provides a multi-threat defense for salmon farming:

1. Mitigation of Harmful Algal Blooms (HABs) and Jellyfish:

The microbubble screen creates a wall that acts as an effective barrier, deflecting algal particles and planktonic organisms (such as jellyfish) away from the cages due to the radial currents it generates. This minimizes the entry of harmful elements into the cage's water column, reducing the risk of gill damage and mass mortality.

2. Caligus Control

The 24/7 use of TMS generates a constant vertical flow, a barrier, which disrupts the path in which larvae travel, preventing them from attaching to the fish and substantially reducing infestation rates. This, in turn, allows for a protected zone into which both larval and adult staged parasites are barred from entry.

It functions as a key prophylactic measure within a comprehensive health management plan.

Tight Microbubble Screens (TMS) have the capacity to provide intensive protection against the main biological threats in marine environments—algae, jellyfish, and *caligus*—which directly translates into reduced losses, improved animal welfare, and a higher return on investment for our clients.