



BY-PRODUCT – REUSE/DISPOSAL

- Ultimately, Huon would prefer to avoid the creation of any form of waste which is difficult to fully achieve when farming protein.
- Which is why Huon has developed a whole-of-fish philosophy which drives our work in the by-product innovation area. Diverting by-products from landfill is a great way to improve the sustainability of fish farming while also opening up new and potentially lucrative income streams.
- A by-product is what is produced during the various farming and processing stages – essentially, the leftover materials from first-grade products, as well as non-organic materials that are no longer usable. These include (but are not limited to) salmon skins, viscera, salmon heads and frames, offcuts, graded-off smolt and fry, hatchery water and sludge (left over post-water filtration). By-products also include farming equipment such as old ropes, pipes and nets.
- While recognising by-products is one thing, finding a use for them is where innovation comes in, and Huon's innovation is world-class.
- In late 2020, Huon launched the *Omega Treats* range; a line which takes graded off smolt, parr from our hatcheries and salmon skins from our processing plant and through freeze drying, turns them into shelf-stable treats for dogs and cats. Due to the preservation method, no chemicals or preservatives are added which makes these products great for pets with allergies.
- Read below for our collaboration with Tasmanian families in relation to water and sludge innovation.
- At non-closed loop sites, by-products are disposed of safely and in accordance with relevant guidelines and legislation at authorised K100 compost facilities across Tasmania. A K100 facility is one which is licensed to handle animal effluent and residues and fish processing waste.

FRESHWATER BY-PRODUCT

Our Forest Home hatchery by-product, irrigation water, is an excellent example of not just re-use of by-products but also collaboration among farmers. The farmland on which the hatchery is located holds organic certification from the National Association for Sustainable Agriculture Australia (since October 2019). Huon leases the land to Bruny Island Cheese (BIC) for harvesting grass as silage and hay as well as grazing calves and dry cows. Now that this land has also been certified organic, BIC can label all outputs (i.e. cheese, milk) as organic.

In addition to re-using the Forest Home wastewater, all of the solids that the fish produce at this site are collected, dried and used in compost (provided to a Sorell based livestock farmer). This makes Forest Home a fully closed-loop system.

The same waste-capture technology and subsequent composting/reuse of fish waste is also in place at Whale Point. In the Spring of 2020, we announced our partnership with Cherries Tasmania whereby fish by-product (which looks a little bit like brown putty!) is added to CT's house-made compost, and then spread over the base of cherry trees. Adding the salmon waste to the compost has meant an almost exponential improvement in biological diversity. The fish waste enriches the compost by providing calcium, phosphorus and nitrogen while also improving the soil's microbial diversity. Lower ammonia, sodium and chloride levels



in the finished compost are also some of the benefits of using fish waste over other animal-based manures. A better microbial diversity in the soil is the greater benefit.

Fish and fish products have been shown to be beneficial for soil health—a result that has been confirmed through extensive trials conducted by our stakeholders with the relevant permits and authorisations.

Across the industry, whole salmon mortalities are macerated and the liquid waste spread at various approved locations around the State including land spreading at certain nutrient poor farming areas. Huon works with Tasmanian company, Spectran, who use GPS tracked spreaders to ensure proof of placement of the liquid waste. Routine soil, waste and feed quality testing is undertaken and the results have seen improved soil organic matter due to the slow release of nutrients, improved stubble breakdown and feed quality and improved yields, and importantly a reduction in the use of synthetic fertilisers.

Environmental Management Plans are required for all disposal operations (regulated through the EPA, municipal council and DPIPW), and stringent record keeping is required of all deliveries including vehicle, driver and GPS data.

PROCESSING BY-PRODUCT

A variety of by-products are created during processing. Through the filleting process, we end up with excess heads and frames, off-cuts and viscera. Instead of sending these for composting, we collect them and send them to a pet food company for inclusion in their range of raw and freeze-dried lines.

PET TREATS

To ensure that the highest-quality stock is transferred to sea, we conduct smolt grading and culling. We cull in line with our *Veterinary Health Plan* and RSPCA guidelines.

Previously, these graded smolt would go to landfill. In 2020, Huon developed a healthy pet treat product line using freeze-dried fingerlings, smolt (graded off at our Forest Home hatchery) and salmon skins (from Parramatta Creek processing facility) <https://shop.huonaqua.com.au/collections/pet-food-omega-treats>

Salmon is known to be beneficial for pets due to its healthy fats and Omega-3. It is also good for fussy pets and those who have allergies to overly processed foods. The treats are freeze-dried, which removes the water making the products shelf-stable, leaving out the need for refrigeration or preservatives.

