THE FUTURE OF FISH FARMING

We are proud salmon farmers and since we established Huon Aquaculture in 1987, our business has grown to become Australia’s signature producer of salmon. We’re recognised around the world for the quality of our salmon and the ingenuity of our operations.

We are an ethical business, a respected Tasmanian brand, part of a sustainable industry and a company that is focussed on the safety of our employees, the welfare of our fish and the wildlife around our farms.

Being responsible and caring members of our community is important to us because we are part of that community as well – we have raised our family in the Huon and continue to live and work here.

To continue to grow responsibly and remain at the forefront of our industry we must constantly improve. Right now, we are poised to make substantial advances in our farming operations as we grow our business. We hope that this brochure provides you with an understanding of what we’re trying to achieve and how we are working towards achieving it.

The six principles that have guided our planning are:

1. Increasing production responsibly and safely
2. Improving the health and welfare of our fish
3. Improving safety for our workers
4. Reducing our environmental footprint
5. Continuing to positively participate in the community
6. Producing world-class salmon products in Tasmania

We are 100 per cent committed to investing in our business and the communities we are part of to achieve our aims.

WHAT ARE WE CHANGING?

To meet market demand means we need to do things better, more efficiently and with less impact on the environment. New technology, improved information and knowledge, coupled with a strong desire to be a world leader in farming practices as we grow our business sustainability and to reach our goals, we will:

1. Install new seal and bird-proof pens across our entire operations including increasing the size of some pens and reducing the total number needed
2. Change some of our lease locations to more environmentally appropriate farm sites that will also be further away from residences along the river
3. Install new barge-based feed systems that will match our existing world-leading feed technology that will efficiently and safely feed our fish at our off-shore sites
4. New methods of servicing our pens that will significantly reduce the amount of boat traffic in and around our farms
5. Increase our hatchery capacity to provide salmon for our unused leases in Storm Bay

WHAT WE ARE NOT CHANGING?

Equally as important as what we will change, is what we won’t and that is particularly true in the case for the Huon and Channel.

Did you know that for the Huon and Channel:

1. Huon will not grow any more fish than it does currently
2. Huon will not increase its total lease area
3. Huon will not use any more feed than is currently used

Each element of our plan is co-dependant on the others. That means, they must operate simultaneously for the whole farming system to work.

The changes described in this brochure will be implemented throughout 2014 and 2015.

For more information, please visit huonaqua.com.au
phone 03 6295 8111 or email jgallichan@huonaqua.com.au
Huon is well known across the salmon farming world for our focus on feeding our fish adaptively. This means that the fish choose when and how much they want to feed.

Our current Hopper based AQ1 Systems are one of the key technologies we use to deliver feed adaptively to our fish. Whilst these systems are ideal for feeding in inshore pens, the challenge for us in the years to come is to provide the same level of accuracy and flexibility in our offshore leases.

In planning our development of the offshore leases we have developed the most innovative feed delivery and management system anywhere in the world.

The new system is made up of a series of feed barges that will be permanently located at leases and which will each feed up to 16 pens of fish adaptively.

In common with our inshore feed systems, the new state-of-the-art barges are being built here in Tasmania. They will lead the industry in safety, comfort, feeding technology and efficiency.

**WHAT ARE THE BENEFITS OF THE NEW FEED SYSTEM?**

**Reduced noise from reduced feed-boat traffic:** The installation of the new feed barge system is expected to halve the current amount of feed boat traffic. When coupled with the pens being moved further away from shore, this represents a significant reduction in feed boat traffic noise – particularly at key times such as dawn and dusk.

**More Efficient Feeding:** The new barges are filled in a single trip from a large vessel and will hold at least one week’s food. All the machinery to measure and transport the food out to the fish is kept in a stable, dry space below deck rather than exposed to the elements.

**Improved safety for workers:** The new barge system provides a safer work environment and allows our experienced fish feeders to focus on feeding the fish rather than maintaining the feed hoppers. The more robust technology of the new feed system means that there is less physical impact on workers (less strenuous work) and that the skill and experience of older workers can be retained in feed roles.
BENEFITS OF THE FUTURE FARMING SYSTEM

WHAT ARE THE BENEFITS?
The major changes to our farming practices come with significant benefits for the environment, the local community, our workers and our business. We have summarised the key benefits for you here but also encourage you to read the entire brochure that describes the specific benefits of each element of our farming improvements.

ENVIRONMENTAL BENEFITS
Operating responsibly within our environment is paramount to the success of Huon. Our fish are the best indicator of environmental health and if we fail to respect this, then we won’t be able to grow superior and sought-after salmon.
An independent Institute of Marine and Antarctic Studies (IMAS) broad scale environmental monitoring program report recently found that our farms in the HUon and Channel are having “no significant or adverse environmental effects (on) the water quality or sediments” – Colin Buxton, IMAS Director.
However, new technology and improved understanding of the marine environment means that our proposed changes to lease locations places them in more environmentally appropriate sites.

DID YOU KNOW?
The lease amendments seek only to relocate our pre-existing marine farming lease area and do not increase Huon’s total marine farming lease area or the amount of fish we’ll grow.

What that means is;
1. Greater water movement provides better conditions for the fish
2. The coarser grit sediment under the pens is better oxygenated which means that any nutrient load (organic matter) is broken down more quickly. The seabed can easily deal with organic enrichment from our farm operations
3. The different ecology (animals and food webs) of the control sites means that any organic matter is naturally processed more quickly and easily

Overall, this means that the new off-shore sites will better support the same farming activity as the in-shore sites. That’s a great outcome for the environment.
Huon has also been actively working to reduce marine debris at source. From placing bins on all vessels, using stronger or different equipment as well as employee education. Unfortunately, strong winds and sea weather means we will never be able to entirely eliminate debris however the changes we are making on the farm will see marine debris continue to decrease. Please read the sections on the well-boat and feed system for details on how boat traffic and sound will be reduced.

COMMUNITY BENEFITS
A successful salmon industry brings many economic and social benefits to the region through employment, flow on benefits to local businesses as well as local community investment through grants and sponsorships, donations and generally through participation. Like any responsible local company, we want to strengthen and improve what we do and to be active participants and contributors to the communities we’re part of. The changes to our farming practices will deliver significant community benefit in a variety of ways;

INCREASED EMPLOYMENT OPPORTUNITIES FOR LOCAL PEOPLE
Huon currently employs around 460 people which is likely to continue to increase as we grow our operations. Huon will continue to provide attractive salary and benefits to employees to encourage them to live, work and raise their families in the region.
Huon will continue to work with local schools, Registered Training Organisations (particularly Seafood Training Tasmania) and other education institutions as part of its Workforce Development Plan.

DID YOU KNOW?
Huon has set a target of 75 per cent local employment as part of the controlled growth plan in Southern Tasmania.

MORE OPPORTUNITY FOR LOCAL BUSINESSES
Wherever possible, Huon uses local businesses. Huon currently spends more than $20 million each year with local businesses in Southern Tasmania. We remain committed to sourcing goods and services locally, wherever possible and will continue as we grow our operation.

REduced BOAT TRAFFIC AND SOUND FROM THE FARM
The combined effect of our farming changes will result in a substantial reduction in river traffic and therefore sound generated from farm boats. We use a variety of vessels to perform specific functions on the farm. We will always need to travel to and from the pens as well as transport fish and equipment. However, we expect that we will significantly reduce the overall traffic in and around our farms.

DID YOU KNOW?
Tow boat traffic is expected to decrease by almost 90 per cent.

LESS VISIBLE FARMING OPERATIONS AS WE MOVE OFF-SHORE
The Huon and Channel have always been “working” waterways – whether for forestry in the earliest days, or for the transport of apples up until recent times, for commercial fishing as well as for fish farming.
Whilst many local residents enjoy the visual interest of our farms, we also accept that it is not all residents’ preference. By moving our leases off-shore, they will be less visible from the land by the local community and we believe this strikes a happy medium with both views.
Our new seal and bird-proof pens are being rolled out across our farms in Southern Tasmania right now and we expect the roll-out to be completed in 2015.

The new pens are a world first in seal protection that will deliver unparalleled safety improvements – for farm workers, for seals, for sea birds, and for the salmon they protect.

We’re investing over $40 million in the new pen system and we are extremely proud that it has been designed, tested and produced by our employees, and built locally.

Huon will use the new pen design in two standard pen sizes – a 168m circumference pen and a new 240m circumference pen. Existing 120m circumference pens will be phased out and recycled as material for the new pens.

Our new pen sizes mean that fewer are required and the stocking density of salmon will be greatly reduced. The new pen size creates more space and provides more oxygen for the fish.

**WHAT ARE THE BENEFITS OF THE PEN CHANGES?**

**Fish health and welfare:** Stopping seal interaction with our fish eliminates fish stress, injury and loss. Lowering our stocking density provides our fish with maximum oxygen and an ideal environment to thrive.

**Wildlife safety:** Seals are prevented from entering the pens which means that seals are unable to become trapped. The net design and material discourages birds from resting on the pens and prevents them from accessing fish feed reducing the likelihood of bird entanglements.

**Reduced environmental impact:** Waste from the fish in the larger pens is dispersed over a bigger area making it easier for the environment to naturally “process” it.

**Employee Safety:** The flat, enclosed walkway of the new pens provides a safer and more stable work platform for farm workers particularly in bad weather. Seals are also unable to access the walkways, reducing the likelihood of aggressive seals interacting with employees.

**Marine debris:** Marine debris will be reduced through in-situ net cleaning. Pens will not be dismantled for cleaning which in turn reduces the opportunity for marine debris to be created, as well as this less rope used in new pen design reduces potential for rope to be lost from the pen. The new pens also have a greater ability to cope with extreme weather which means that debris caused by weather is expected to reduce.
In the future, Huon will use a large well-boat to undertake a variety of functions around the farm. It will be the only one of its kind in Australia and will provide significant benefits for both local residents and us. Over time, the towing of pens will virtually be eliminated through the use of the new well-boat.

The new well-boat will be operational in September 2014 and it will commence by undertaking two major functions:

1. Bathing fish

Tasmania is a unique environment when it comes to salmon farming. The relatively high water temperatures promote the settlement on the gills of Amoeba, a single celled microscopic animal. The Amoeba multiply and reduce water flow at the gill surface that can limit oxygen supply to the fish causing lethargy and, if untreated, death.

Bathing fish in fresh water cures the salmon of amoeba and the salmon are happy in either freshwater or seawater.

Currently, fresh water to bathe the salmon is towed in a liner within a large pen out to the salmon holding pens. This is typically done by tow boats at very slow speeds so that the water does not spill out of the liner and to stop salt water washing into the liner.

The low pitch of the tow boats and the long duration of the tows can cause annoyance to some residents that live along the shoreline near where we farm.

Currently, a tow boat passing a point is audible for 3 nautical miles or for 2 hours. The new well-boat will be audible for just 1.5 minutes or a reduction of 87.5 per cent of audible sound.

The well-boat will be able to travel in the designated navigation channels which will take it further away from residences, making the sound of the well-boat softer still. In addition, the new well-boat will eliminate 1,125 tows for the purpose of bathing each year whilst being able to bathe more fish more often.

2. Transporting fish to harvest facility

Harvest fish are currently towed in pens from our leases into our harvest facility at Hideaway Bay.

By moving harvest fish in the new well-boat, a further 75 tows per annum should no longer be needed.

The new well-boat will move fish at approximately 12-14 knots compared to the 1-2 knots used by tow boats for a distance of around 7 nautical miles for towing harvest fish. That translates to 30 minutes in the well-boat as opposed to 4.5 hours for a conventional pen tow, which is almost a 90 per cent reduction in time.

**BENEFITS OF THE NEW WELL-BOAT**

- **Reduced noise from tow boats:** It will be quicker at performing a variety of tasks and be out of sight within half an hour of appearing – there will be around 90 per cent reduction in tow sound.
- **The sound will also be less intrusive due to the pitch of the vessel’s engines.**
- **Reduced stress on fish during bathing:** The new well-boat will make the process of bathing far less stressful for fish, thus improving their welfare.
- **Improved safety for workers:** It will provide a safer working platform for workers undertaking bathing operations during adverse weather – particularly as we move to higher energy sites off-shore.
LEASE LOCATIONS

The second phase of our strategic plan is to move leases to more appropriate sites. We are proposing to move leases further out to deeper sites to accommodate the new pen design and reduce the overall impact on the environment by locating them in more environmentally appropriate locations.

WHAT ARE THE BENEFITS OF THE PROPOSED LEASE CHANGES?

Fish health and welfare: The deeper, higher energy (wave and wind) sites mean that pens will be located in areas with stronger currents and greater water movement. This results in more oxygen, less carbon dioxide and reduced ammonia which is much better for the fish and the environment.

Reduced environmental impact: The changes to the proposed leases place them in more environmentally appropriate locations. What that means is:

1. Greater water movement provides better conditions for the fish
2. The coarser grit sediment under the pens is better oxygenated which means that any nutrient load (organic matter) is broken down more quickly
3. The different ecology (animals and food webs) of the sites means that organic matter is processed more quickly and easily

Overall, this means that the new off-shore sites will better support the same farming activity as the in-shore sites. That’s a great outcome for the environment.

Reduced visual and noise impact on the community: By moving our leases off-shore, they will be less visible from the land by the local community and the sound of boats will be less as boat traffic will both decrease and be further away from shore.

Improved biosecurity: By moving individual leases further away from one another and from our leases, we are future-proofing our farms and improving biosecurity.

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