



SANFORD

A public guide to Sanford's

# BIG GLORY BAY RESOURCE CONSENTS CHANGE OF CONDITIONS APPLICATION

## OUR PLANS FOR THE FUTURE OF BIG GLORY BAY

In November 2017 Sanford applied to Environment Southland to update the consent conditions for seven of our approved Big Glory Bay ocean salmon sites. We're not asking for more water space. Instead we want to make better use of our existing consented areas to grow more salmon.

We have asked for this application to be publicly notified.

This document explains what we're planning, the impacts of those plans, and how we'll continue to protect Big Glory Bay's beautiful, healthy environment for future generations.

MAY 2018

## FARMING IN BIG GLORY BAY

Big Glory Bay was home to the first ocean-based salmon farming trials in New Zealand. Their success led to the start of commercial salmon farming in the 1980s. Eight salmon farm licenses (now referred to as resource consents) were issued. Big Glory Bay is also home to more than 20 mussel farm consents.

Sanford began farming salmon in the Bay in the 1990s with the purchase of Big Glory Bay Seafood, which owned five of the eight

original salmon farm consents. Since then we've also converted two of our Greenshell mussel consents to salmon, which gives us more flexibility to move the salmon farms between our different sites and 'rest' the sea floor (much as a land-based farmer leaves pastures fallow).

Sanford's existing consented salmon farming locations are shown in Figure 1. At the moment only three of the sites are actively farmed.

## HOW OUR LICENCES WORK

The three salmon farm sites are:

- **Smolt** – holding pens for small salmon from our freshwater hatcheries
- **Grower** – where mature salmon grow to full market weight, about 4 kg
- **Brood** – stud fish held for breeding

Each site is a series of rectangular floating mesh pens linked by walkways. The size of the pens and their mesh are matched to the size of the fish they hold.

We move our active farm sites around the different licenced sites to rest the sea floor and allow it to recover. We use particular sites for two years and then rest them for five years.

The pens are much smaller than the licenced area, so we can also move farms within the licence area rather than to a different site.

We monitor the sea bed's health under each farm, and at points 50 and 100 metres beyond the site. Independent scientific assessors report on the state of Big Glory Bay's marine environment, including our farms, to Environment Southland.

## CURRENT CONSENT CONDITIONS

Fish need protein to grow. Protein contains nitrogen. Some of the nitrogen the salmon release falls to the sea floor, so the amount of nitrogen we use needs to be kept to appropriate levels.

In 1980s, marine scientists set a 'nitrogen feed cap' for the whole of Big Glory Bay (known as the Bay's 'carrying capacity') at 483 tonnes per year. This was allocated proportionally to each individual farm site.

Sanford's total nitrogen allowance for the Bay is now 443 tonnes per

year following the recent agreement with one of the other consent holders in the Bay. One other Big Glory Bay salmon farm licence holder has a nitrogen allowance of 40 tonnes per year.

Our consents let us allocate our total nitrogen allowance across our different salmon farm sites. The consent is clear that we can only do this '*provided significant adverse effects on the seabed are avoided, and other effects can be remedied or mitigated*'.

Steve, one of our farm crew, talks about salmon at the Sanford Community Day in March 2018



- SITES MODELLED FOR INCREASED NITROGEN
- OTHER SANFORD SALMON SITES (IN FALLOW)

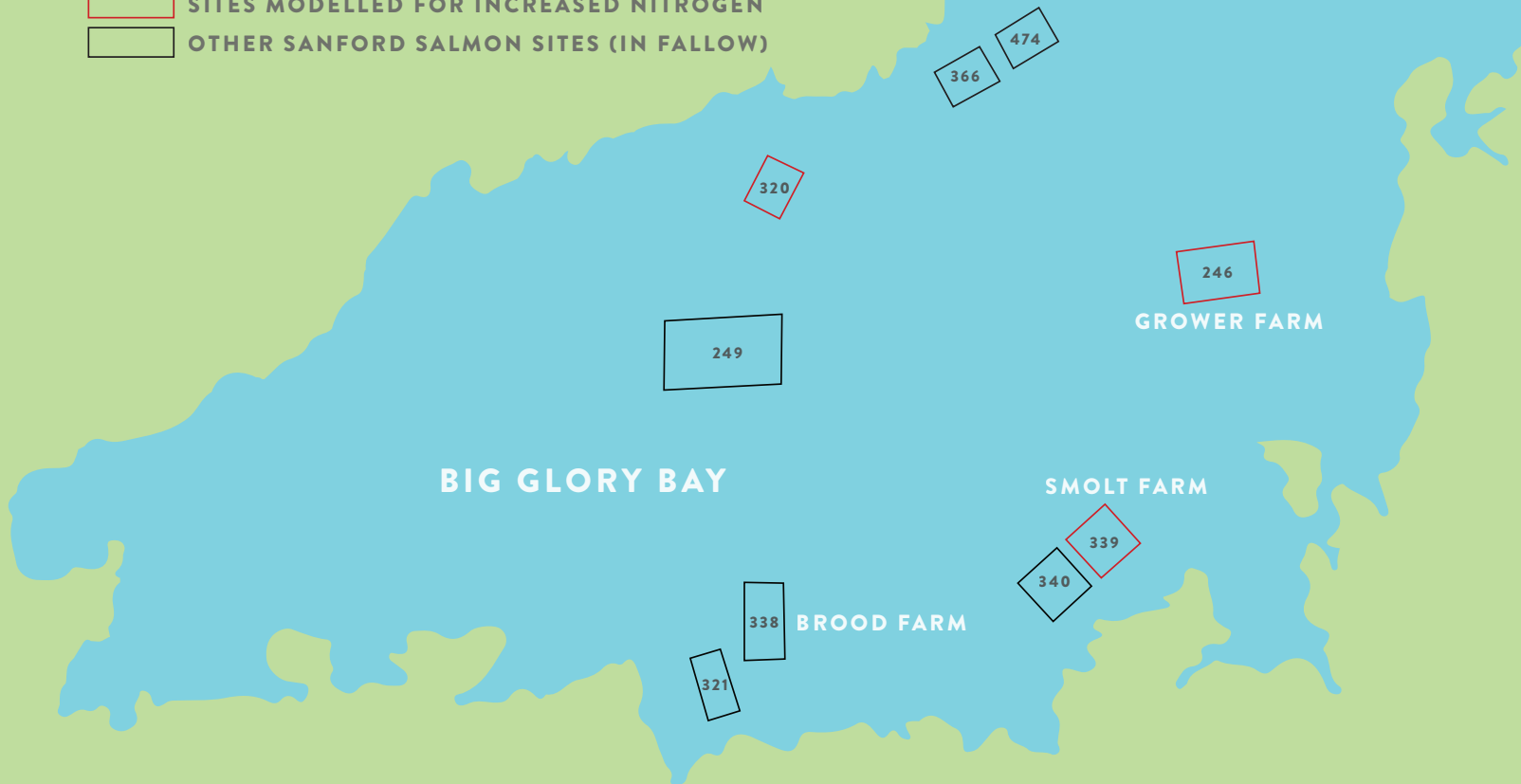


FIGURE 1: SANFORD'S SALMON-FARMING PRESENCE IN BIG GLORY BAY

## SUSTAINABLY FARMING MORE SALMON

The current nitrogen allowance was calculated nearly 40 years ago using the best computer modelling capabilities and environmental information available. Since then a lot has changed:

- Understanding of environmental processes
- Salmon feed ingredients and performance
- Farm management practices
- Computer modelling capability

As a result, we employed international scientists to reassess the nitrogen carrying capacity of the Bay. They used an internationally accepted computer model that used the Bay's actual tide, current, wind and wave data to predict how the farm would perform. To check the model's accuracy, they then compared the new computer model's predictions with the last 25 years of actual monitoring data. The new model closely matched the real world data.

That gave us confidence in the model, so we asked the scientists to see

how the model coped with different salmon stocking densities at three of our sites: 246, 320 and 339, shown in red in **Figure 1**.

It showed Sanford could increase our nitrogen use with no noticeable effects on Big Glory Bay's environment and health. That means we can grow more fish while ensuring sustainability.

Based on the results from the new, more accurate model, we applied to Environment Southland for a variation of our consent conditions. We are not seeking any new space – just to use our existing sites more efficiently. We have proposed higher, sustainable nitrogen allowances for the sites we have modelled, while also increasing the total nitrogen cap for Big Glory Bay to 659 tonnes per year – an increase of 176 tonnes.

Environment Southland will decide the new nitrogen cap after their own robust independent assessment of the science and submissions from the public.

## WHAT ELSE WILL CHANGE?

We've also proposed explicit environmental standards and new more exacting requirements for annual independent monitoring for all our existing salmon farm consents. It is in our interest to manage the environment for a long-term sustainable future.

Together these changes will give Big Glory Bay's environment better protection, and be more specific than the current requirement for no 'significant adverse effects'. The proposed changes require us to:

- Measure both the sea floor and the water column above it
- Ensure there's no accelerated risk of algal blooms

- Ensure chlorophyll-a levels always allow enough light for photosynthesis
- Set a minimum level for dissolved oxygen concentrations to ensure the health of fish, underwater plants and ocean invertebrates
- Limit total organic carbon deposits on the sea floor beneath the farm
- Ensure solid waste deposits don't spread more than 100m from the licence boundary.



The Sanford grower farm before it was moved closer to the mouth of Big Glory Bay.

# MORE FLEXIBILITY – BETTER SUSTAINABILITY

The ability to move our total nitrogen allowance between our salmon farms helps us manage for sustainable production. To maintain this flexibility, we want to continue sharing the new nitrogen allocation between all our sites, as long as:

- Environment Southland is satisfied our model shows that we're complying with the environmental bottom line standards

- Regular monitoring confirms our on-going compliance
- The total nitrogen allowance in Big Glory Bay never exceeds the new maximum decided by Environment Southland

The variation also gives other marine farmers the option to give us written permission to use their nitrogen allowances, provided we meet all the required environmental targets.

# OUR MANAGEMENT PLAN

As a publicly-listed company and good neighbour of the Stewart Island community, Sanford has an obligation to be open and transparent. We've also proposed a Big Glory Bay Salmon Farm Environmental Management Plan. It will bring together all of our existing continuous improvement and environmental management initiatives into one

clear, publicly-available document. We'll keep it up-to-date and have it reviewed every three years.

The Sanford consent was notified on 24 May 2018, and is open for public submissions.

# WHERE WE ARE IN THE PROCESS

