

# Whakatohea 'Mussel Farm'



# Eastern Seafarms Water space

- 3,800 hectares
- 40 meters depth / 8.5 kilometers off the coast of Opotiki
- Ownership - Whakatohea 54%
  - Sealords 26%
  - NZ Seafarms 20%
- Property rights - 20 yrs with the right of renewal
- Consented to farm shellfish, sea cucumber, native seaweed <sup>2</sup>

# Commercial trials

- **3 year commercial trial / start October 2010**
  - **anchoring systems**
  - **long line options**
  - **growth rates / condition**
  - **triploid mussels / oysters**
- **Results to date;**
  - **good natural spat catch**
  - **growing well**
  - **little wear and tear structures**

# Commercial trials – Monitoring

- **longlines are monitored every two weeks;**
  - floatation / wear and tear / spat catch
  - growth rates / water quality
- **Ongoing testing;**
  - longline backbone options
  - floatation (buoy) systems
- **The information received from this commercial trial will largely determine the viability of the project**

# Monitoring data

- **Inputs that most influence the profitability of the farm**

<b>Input variables</b>
Production meters per line
Crop yield
Spat purchase per meter
Cycle length
Price per tone

- **The commercial trials will determine the input variables used in the business plan**

# Business Plan

- **Farming and processing of mussels only**
- **Farm developed over 12 years**
- **Hatchery required - triploid mussels**
- **Processing factory - 6,000 tonnes**
- **Diversify into other products to spread risk**

# Mussel Spat Supply

- **Use natural spat first 4 years**
- **Build a hatchery in Year 4 – triploid mussel**
- **From Year 5 the farm would;**
  - **capture 50% spat from the farm**
  - **50% triploid from the hatchery**
- **Capture natural spat for sale to third parties**

# Hatchery

- **In-house production of triploid mussels**
- **Capability to breed;**
  - **oyster, scallop, goeduck**
  - **sea cucumber juveniles**
- **Reduced reliance on the vagaries of natural spat supply**
- **Supply to third parties**

# Farming

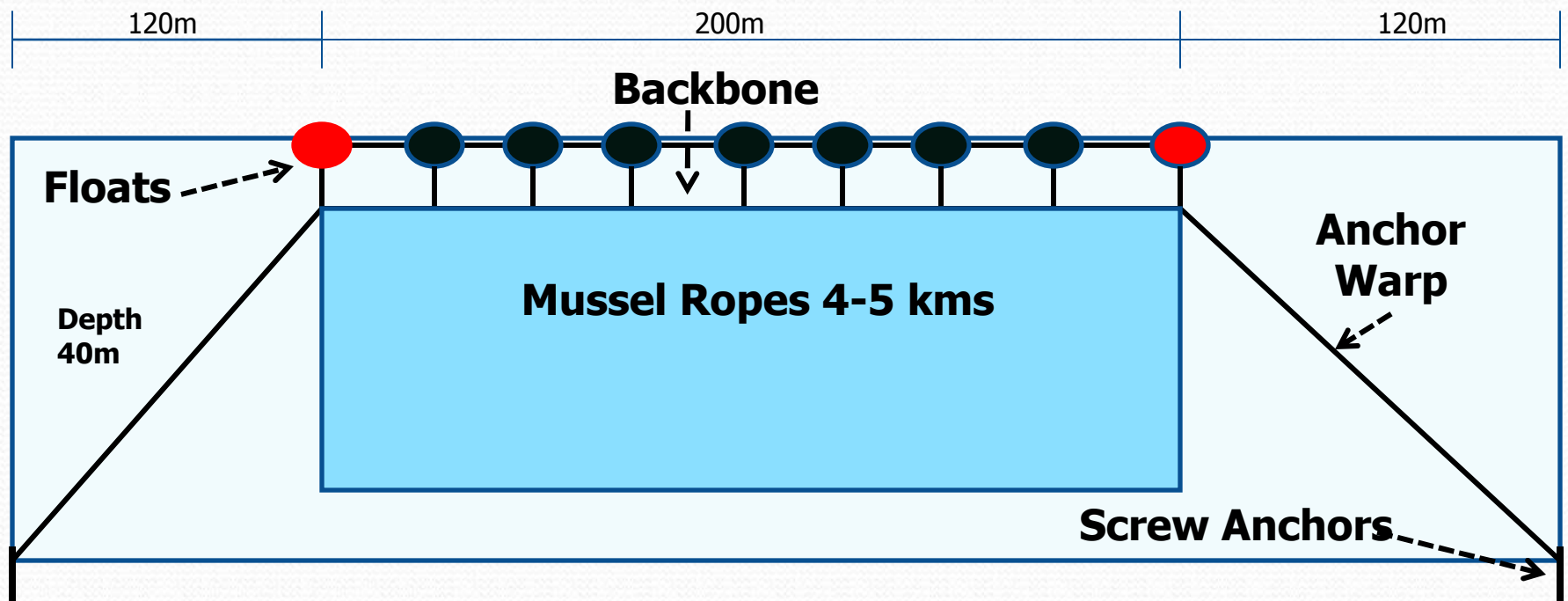
- **Spat management;**
  - ensure continuous supply for production lines
- **Crop management;**
  - supply consistent product to the processing plant
- **Longline maintenance;**
  - maintain the integrity of the equipment

# Farm Structures

- **Fully tested through the current trials**
- **Similar to other open ocean sites**
- **Coastal permit stipulates a staged development**
- **Assumed change to the consent develop over 12 years**
- **Ongoing monitoring from stage 1A**

# Mussel farm structure

## Diagrammatical



# Vessels and Equipment

- **Owned and managed by the company**
- **Harvest vessel (1) – year 1**
  - 30m long, 8m draft, draft 2.5m –100 tonne mussels
- **Spat seeding vessel (1) – year 4**
  - min 20 m long, 8m draft, draft 2.5m – seed 8 lines day
- **Farm servicing vessel (2) – year 8 & 11**
  - similar to the spat vessel /multi-task / dive tender

# Port Facilities

- Wharf owned by 3<sup>rd</sup> party
- Vessels turn around and maneuver in port
- Wharf long enough for more than one mussel vessel
- Mooring / berthing facilities for all mussel vessels (4 or 5)
- Vessel cranes designed to offload / on-loading of product

# Processing Plant

- **Located as close to the wharf as possible**
- **Product offloaded at wharf, forklifted to coolstorage**
- **Manual opening to produce half shell mussels**
- **Viable mussel processing plant, 10,000 tonnes**
- **Additional capacity added in 5,000 tonne modules**

# Packing Capacity

Year of Operation	Forecast GWT	GWT Capacity	Capacity %
5	8,804	10,000	88%
6	11,272		113%
7	11,809	15,000	79%
8	14,107		94%
9	16,675		111%
10	17,842	20,000	89%
11	18,976		95%
12	22,278		111%
13	24,678	25,000	99%

Note; # GWT = greenweight tonnes

- **Construction would start 1 year before processing starts**

# Potential Employment

Year	1	2	3	4	5	6	7	8	9	10	11	12
Hatchery	4	5	6	7	7	7	7	7	7	7	7	7
On-water	10	10	20	20	20	30	30	30	30	40	40	40
Processing					192	288	288	288	384	384	384	480
Admin/Man	1	1	1	1	9	13	13	13	17	17	17	20
<b>Total</b>	<b>15</b>	<b>16</b>	<b>27</b>	<b>28</b>	<b>228</b>	<b>338</b>	<b>338</b>	<b>338</b>	<b>438</b>	<b>448</b>	<b>448</b>	<b>547</b>

**Note;**

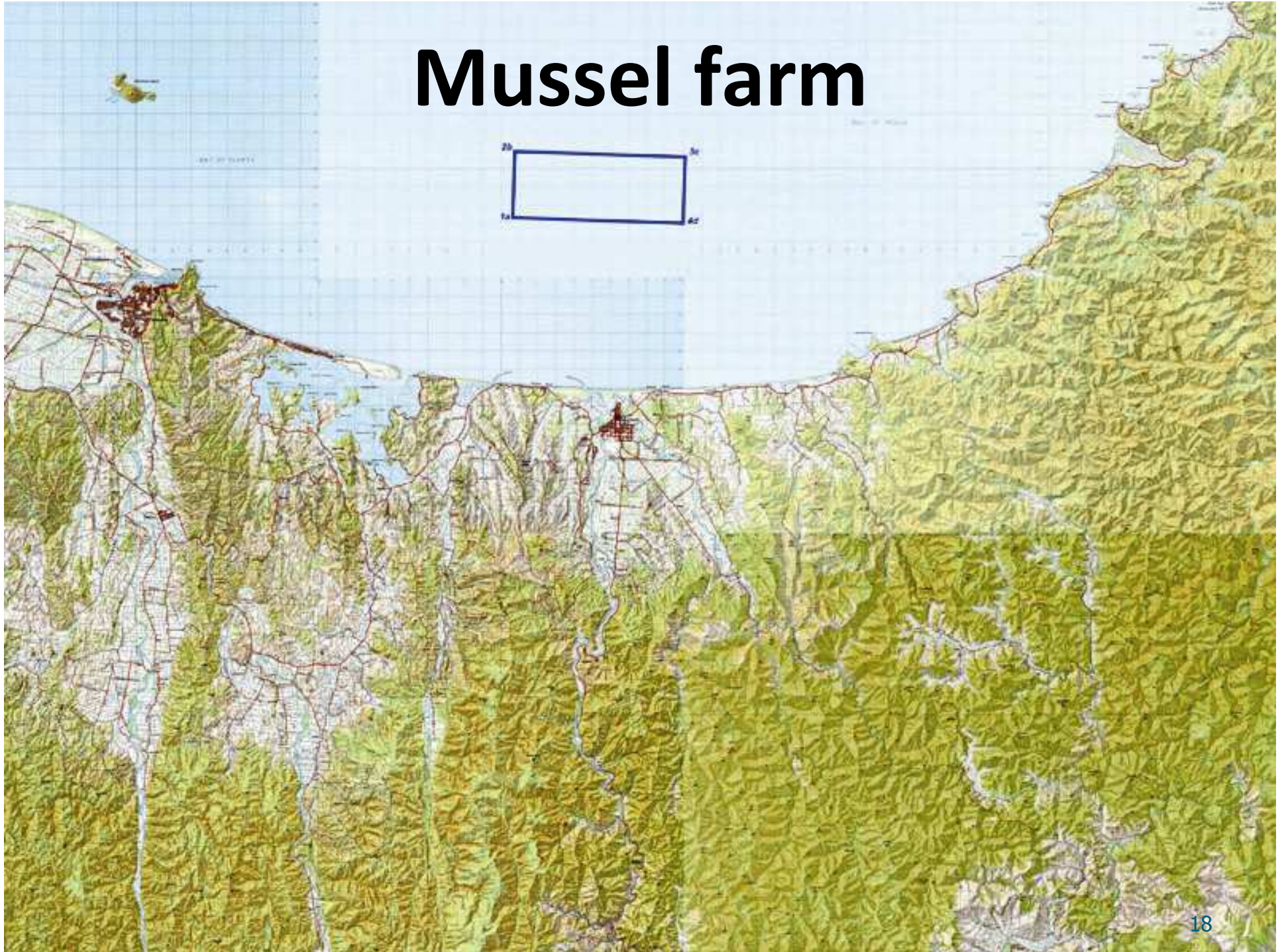
**1.FTE's to operate the core business**

**2. Exclusive of necessary service industries**

# Summary

- **The commercial trial and market forecast will largely determine the viability of the project**
- **Costs and revenues are currently being verified from the ground up using industry participants**
- **If the Opotiki port construction does not go ahead then this venture would need complete reassessment to gauge its viability.**

# Mussel farm



# Opotiki



# Trial Work



# Commercial Trial

