



August 2016

GRIEG NEWFOUNDLAND SALMON LTD.

PLACENTIA BAY ATLANTIC SALMON
AQUACULTURE PROJECT

PROPOSED WORKFORCE AND TIMELINE

For NL Department of Advanced Education, Skills and
Labour

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1.0 Introduction

Demand for quality seafood is increasing as is the concern over food security. Newfoundland, as an island, is very dependent on food importation and as such, risks food shortages should there ever be a disruption in either supply from mainland North America or with current transportation methods such as ferries and roads. As well, there are global concerns with regard to supplies for fresh quality seafood. However, Newfoundland has tremendous resources available that are currently being underutilized that could not only help alleviate concerns with food security but also assist with the increasing demand for high quality seafood products in North America and potentially even globally. Grieg Newfoundland Salmon Ltd. (GNS) realizes this potential for Newfoundland and is pursuing a state-of-the art Recirculating Aquaculture System (RAS) for culturing triploid Atlantic salmon (*Salmo salar*) smolt in Marystown, Newfoundland and Labrador with on-growing marine cage sites in Placentia Bay, NL, and processing into high end quality salmon fillets and other speciality products at a facility in St. Lawrence, Newfoundland and Labrador (hereinafter referred to as the Project).

This project has strong potential in terms of export market opportunities and economic benefit, especially in outport Newfoundland. An operation of this size will provide very significant employment opportunities, resulting in a much needed major boost to the current economy of NL and providing prospects for graduates to utilize their skills and knowledge in their home province. Newfoundland is world renowned for some of its training facilities and the graduates that it produces. The Fisheries and Marine Institute of Memorial University is one such training facility that GNS has already utilized for recruiting skilled employees and will continue to utilize this and other training facilities in the province for its workforce.

The proposed Project was registered for Environmental Assessment (EA) review under the Newfoundland and Labrador *Environmental Protection Act* (NL EPA, Part 10) in February 2016. Following governmental and public review of the EA Registration, the Minister of Environment and Conservation announced on July 22, 2016 that the Project had been released from the EA review process, subject to a number of associated terms and conditions. These included the following:

Prior to the commencement of construction activities, the proponent must submit to the Department of Advanced Education and Skills additional information on workforce and timelines for the project...

The preparation and submission of this document is intended to address the above noted condition of EA release for the Project. Specifically, this report details the proposed workforce for GNS as well as expected timelines for the Placentia Bay Atlantic Salmon Project.

2.0 The Grieg Team

2.1 Description of Proponent

Grieg Newfoundland Salmon Ltd. is a new company created as part of the Grieg Group of companies (Figure 1). It will be chaired by Per Grieg Jr., former CEO of Grieg Seafoods (one of the world's leading fish farming companies) and current Chairman of the Board. Grieg Seafoods employs approximately 700 people in Norway, Canada, and the United Kingdom.

Grieg Newfoundland Salmon Ltd. plans to develop a substantial aquaculture operation in Marystown and Placentia Bay, NL. Construction is slated to begin in 2016 for the creation of both a hatchery and sea cage sites, which will produce 33, 000 metric tonnes of farmed salmon on an annual basis by 2023.

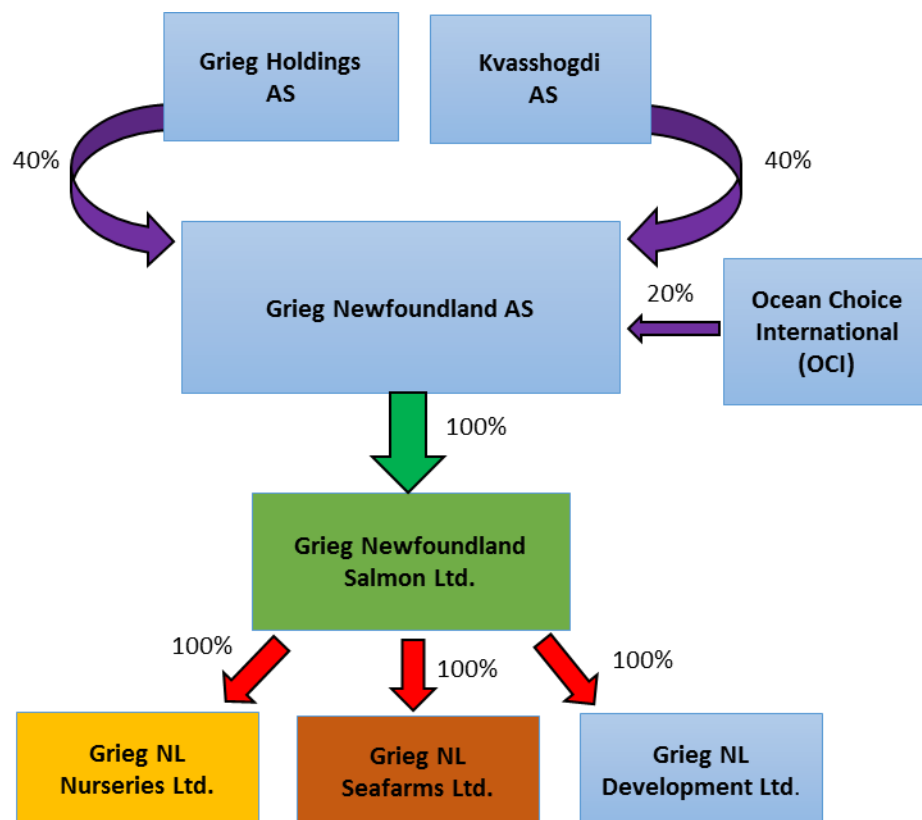


Figure 1. Corporate Structure of the Grieg Group of Companies

2.2 Proponent Track Record

The main farming operations, through Grieg Seafoods, has a solid track record in the salmon farming industry and currently owns and operates four salmon production centers: Rogaland and Finnmark in Norway, Shetland in the UK, and British Columbia in Canada. With a combined capacity of over 100,000 mt. Grieg Seafoods is one of Norway's largest salmon producers. In 2015, Grieg Seafoods harvested a total volume of 65,398 mt. of salmon generating revenues of US\$ 550 million. Grieg Seafoods has been listed on the Oslo Stock Exchange since 2007 and Grieg Seafood's top five shareholders are: Grieg Holdings (55%), DNB Nor Markets (20%), Nordea Bank (6%) and Kontrari (5%). Grieg Newfoundland Salmon Ltd. will contribute to the project through a substantial equity stake combined with industrial competence, management, technology and a sales network.

2.3 Current Management Team

GNS has begun to assemble Highly Qualified Personnel (HQP) that will provide the necessary expertise to hatch, cultivate, and harvest Atlantic salmon. Together, they will form a strong management team to develop this project and provide knowledge as well as insight about optimizing the production of Atlantic salmon (Table 1).

Table 1: The current management team for Grieg Newfoundland Salmon Ltd.

GNS HQP	Position	Hire Date
Knut Skeidsvoll	General Manager	September 1, 2015
Clyde Collier	Project Manager	September 1, 2015
Perry Power	Human Resources Manager	November 1, 2015
Sharon Murray	Administration Officer	September 1, 2015
Shalyn Ryan	Marine Site Manager	September 1, 2015
Candice Way	Hatchery Manager 1	March 22, 2016
Laura Purchase	Assistant Hatchery Manager 1	March 1, 2016
TBD	Hatchery Manager 2	Exact date TBD, Fall 2016
TBD	Hatchery Manager 3	Exact date TBD, Fall 2016

3.0 Proposed Workforce Structure and Schedule

The subsidiaries of GNS will be Grieg NL Nurseries Ltd., a land based hatchery and nursery and Grieg NL Seafarms Ltd., a marine based sea cage grow out site. Each of these subsidiaries will be structured with a senior management team overseeing staff.

Construction of the land based hatchery and nursery is slated to begin in the Fall of 2016 and continue in phases through 2021. At its peak construction period in 2017-2018, it is estimated that upwards of 200 persons will be working on project-related construction activities. Once the land based hatchery and nursery facility is fully operational by 2018, an estimated 36 employees will be working there in permanent, year-round positions. (Table 2)

GNS will also have four marine based areas for continued grow out of the salmon to market size. Once full production is reached in 2021 and all four marine areas are in use, it is expected that 137 employees will be working at these marine sites in Placentia Bay (Table 2).

A lumpfish hatchery is also planned to be used as a cleaner fish in the cages with the salmon as a natural means of controlling sea lice infestations. It is expected that by 2017 the lumpfish hatchery will be employing 10 individuals (not employed directly by GNS).

In 2019, the first salmon are expected to be harvested and subsequent years will see an increase in processing needs as all four marine sites are harvested. By 2022, it is expected that 426 individuals working in the NL seafood processing will be involved in the processing and services needed to bring GNS Atlantic salmon products to market.

Table 2: Estimated Full Time (FT) and Part Time (PT) employees required for GNS Land Based and Marine Based Construction and Operations, 2016-2022

Occupation	NOC Code (2011)	FT/PT	Max # of Positions	GNS or Contractors (CT)	Years Required
LAND BASED HATCHERY AND NURSERY PHASE					
Construction Phase					
Engineering Manager	0211	FT	3	CT	2016-2021
Civil Engineers	2131	FT	2	CT	2016-2021
Civil Engineering Technologists	2231	FT	2	CT	2016-2021
Drafting Technologists/Technicians	2253	FT	1	CT	2016-2021
Land Survey Technologists/Technicians	2254	FT	1	CT	2016-2021
Construction Inspector	2264	FT	4	CT	2016-2021
Electrical Power Line and Cable Workers	7244	FT	5	CT	2016-2021
Telecommunication Line and Cable Workers	7245	FT	5	CT	2016-2021
Steamfitters, Pipefitters and Sprinkler System Installers	7252	FT	20	CT	2016-2021
Welder	7237	FT	10	CT	2016-2021
Carpenters	7271	FT	20	CT	2016-2021
Concrete Finisher	7282	FT	20	CT	2016-2021
Heavy Equipment Mechanics	7312	FT	4	CT	2016-2021
Crane Operators	7371	FT	2	CT	2016-2021
Truck Drivers	7511	FT	5	CT	2016-2021
Heavy Equipment Operators	7521	FT	4	CT	2016-2021
Construction Labourers	7611	FT	92	CT	2016-2021
TOTAL			200		
Operational Phase					
Senior Management	0016	FT	1	GNS	2016-
Maintenance Manager	0714	FT	1	GNS	2016-
Production Manager	0911	FT	1	GNS	2016-
Aquaculture Managers	0823	FT	7	GNS	2016-
Aquaculture Technicians	2221	FT	16	GNS	2017-
Aquaculture Technicians	2221	PT	6	GNS	2017-
Welder	7237	FT	1	GNS	2017-
Heavy Equipment Operators	7521	FT	1	GNS	2017-
Air Conditioning Mechanic	7313	FT	1	GNS	2017-
Power Systems Electrician	7202	FT	1	GNS	2017-
TOTAL			36		

Occupation	NOC Code (2011)	FT/PT	Max # of Positions	GNS or Contractors (CT)	Years Required
MARINE BASED SEA CAGE PHASE					
Installation Phase					
Captains	8261	FT	1	CT	2017
Engineering	0211	FT	1	CT	2017
Deck Hands	8441	FT	6	CT	2017
Electrical Industrial	7242	FT	1	CT	2017
Welder Operator	7237	FT	1	CT	2017
Heavy Equipment Mechanic	7312	FT	1	CT	2017-
Crane Operator	7371	FT	1	CT	2017-
TOTAL			12		
Operational Phase					
Senior Managers	0016	FT	2	GNS	2016-
Supervisor General Officer	1211	FT	1	GNS	2016-
Supervisor Financial	1212	FT	1	GNS	2016-
Human Resources Officer	1223	FT	1	GNS	2016-
Administrative Assistant	1241	FT	1	GNS	2016-
Maintenance Manager	0714	FT	1	GNS	2016-
Production Manager	0911	FT	1	GNS	2016-
Aquaculture Managers	0823	FT	7	GNS	2016-
Aquaculture Technicians	2221	FT	33	GNS	2017-
Crane Operator	7371	FT	2	CT	2017-
Captains	8261	FT	16	GNS & CT	2017-
Deck Hands	8441	FT & PT	36	GNS & CT	2017-
Welder	7237	FT	1	CT	2017-
Heavy Equipment Mechanics	7312	FT	6	CT	2017-
Power Systems Electrician	7202	FT	3	GNS	2017-
Aquaculture Labourers	8613	FT & PT	25	GNS	2017-
TOTAL			137		

3.1 Land Based Hatchery and Nursery Workforce Structure and Schedule

As indicated previously, Grieg NL Nurseries Ltd. will be constructing a land based Recirculating Aquaculture System (RAS) in Marystown, Newfoundland for culturing triploid Atlantic salmon from eyed eggs up to 1.5 kg for continued growth in their marine based sea cages. The RAS will be divided into three facilities: start feeding, smoltification and post-smolt based on culture and development needs of the Atlantic salmon. To expedite the start date, all three facilities will not be completed prior to the arrival of the first batch of Atlantic salmon eggs. The start feeding facility will be the first facility to be constructed

and receive eyed eggs for culture until the young salmon reach the stage of smoltification. The start feeding facility should be completed by August 2017. As the young salmon in the start feeding facility grow, the smoltification facility will continue to be constructed and its completion is planned to coincide with the transfer of the first batch of salmon from start feeding to smoltification – December 2017. The third facility, post-smolt is the largest of the three facilities and its construction will be divided into 3 phases. Phase 1 of the post-smolt unit will have the construction of a portion large enough to handle the first batch of salmon eggs after smoltification and its completion is expected by February 2018. Phase 2 and 3 of construction for the post smolt facility will expand and complete the facility to accommodate maximum production numbers. Both Phase 2 and Phase 3 are expected to be completed by March 2019.

Once operational, each facility within the GNS land based Atlantic salmon RAS will be staffed with managers as well as technicians and other operational staff to ensure a strong management team and workforce responsible for each staffed facility (Figure 2). The senior management team including facility managers for each of the three RAS unit (start feeding, smoltification and post-smolt) is expected to be in place and provided with training prior to the completion of the start feeding facility (August 2017). These senior managers will be expected to be involved in the construction phase to ensure there is a clear awareness and understanding of each units' operational structures including plumbing, machinery and equipment. Technicians for each of the three RAS facilities will be hired as the completion date of construction nears. Therefore, although there will be 22 technicians (permanent and temporary positions) for the Atlantic salmon RAS facility, hiring will occur in phases to reflect the completion of construction and start up of each unit (see later Figures).

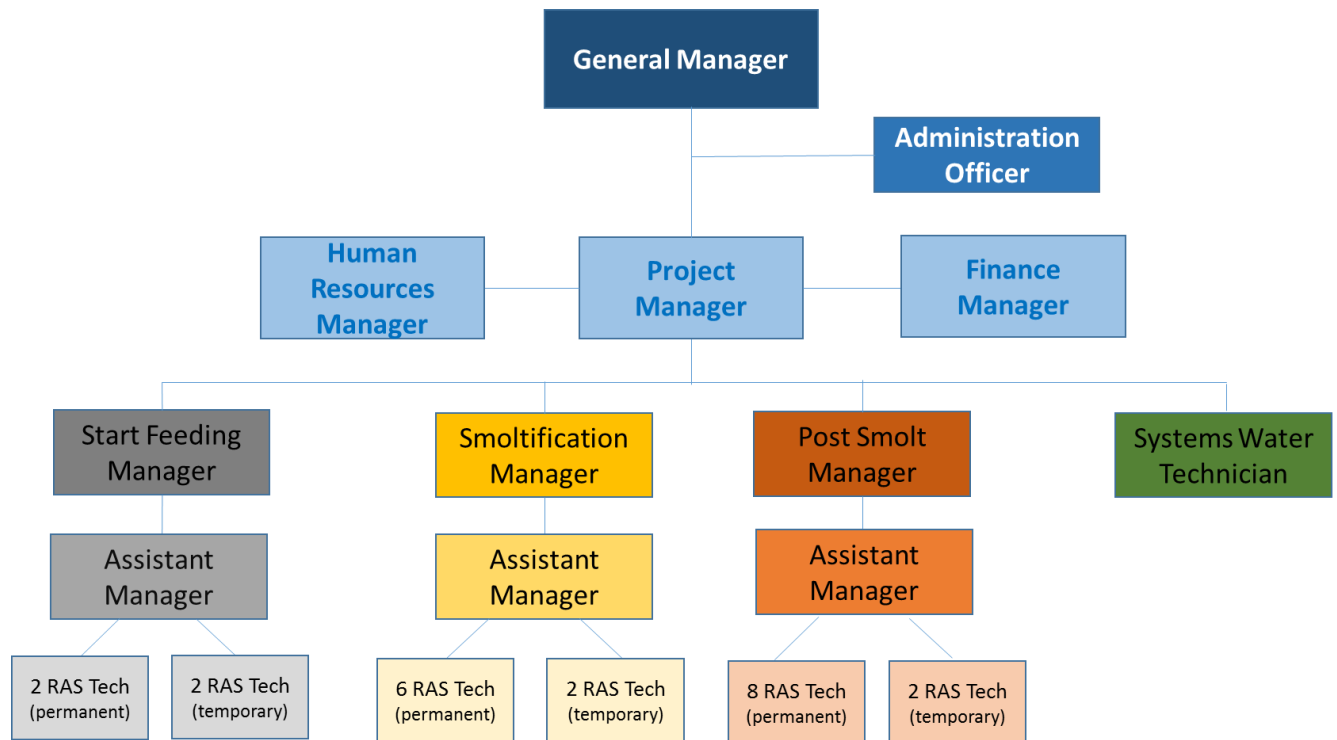


Figure 2: Proposed workforce structure for Grieg NL Nurseries Ltd.

Each technician and assistant manager for each facility within the RAS will report to the respective manager for each facility. The project manager will oversee the three facility managers as well as a system water technician. The reporting structure for Grieg NL Nurseries Ltd is detailed in Figure 3.



Figure 3: Reporting Structure for Grieg NL Nurseries Ltd.

3.2 Marine Based Sea Cage Workforce Structure

There will be four Bay Management Areas (BMAs) in Placentia Bay for the marine based continued growout of the Atlantic salmon to harvest size. These four BMAs will be used in a rotational manner such that each has an opportunity to lie fallow at least once during the cycle. The four BMAs will be as follows:

1. Red Island BMA
2. Merasheen BMA
3. Rushoon BMA
4. Long Harbour Seasonal BMA

Three of the BMAs (Red Island, Merasheen and Rushoon) will have three cage sites with 12 cages in each site. The seasonal Long Harbour BMA will have two sites to be used during fall harvest but not as continued growout.

Each BMA will have an area manager as well as an assistant manager. Feed technicians, net cleaning technicians and service vessels staffed with crew will be assigned to each BMA to ensure that the required culture and husbandry practices will be available and implemented (Figure 4).

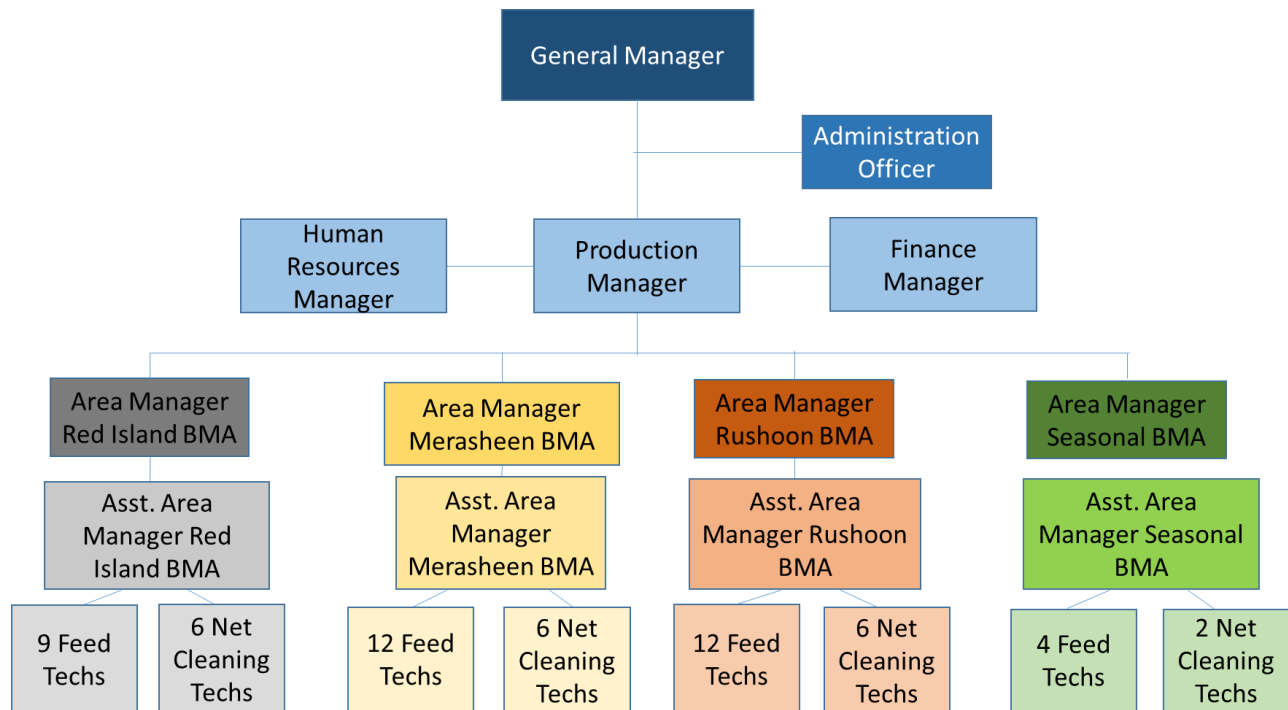


Figure 4: Proposed workforce structure for Grieg NL Seafarms Ltd.

Each BMA will be overseen by the production manager. Feed technicians, net cleaning technicians and assistant area managers will report directly to the area manager. The reporting structure for the Red Island BMA is outlined in Figure 5, Merasheen in Figure 6, Rushoon in Figure 7 and the seasonal BMA in Figure 8.

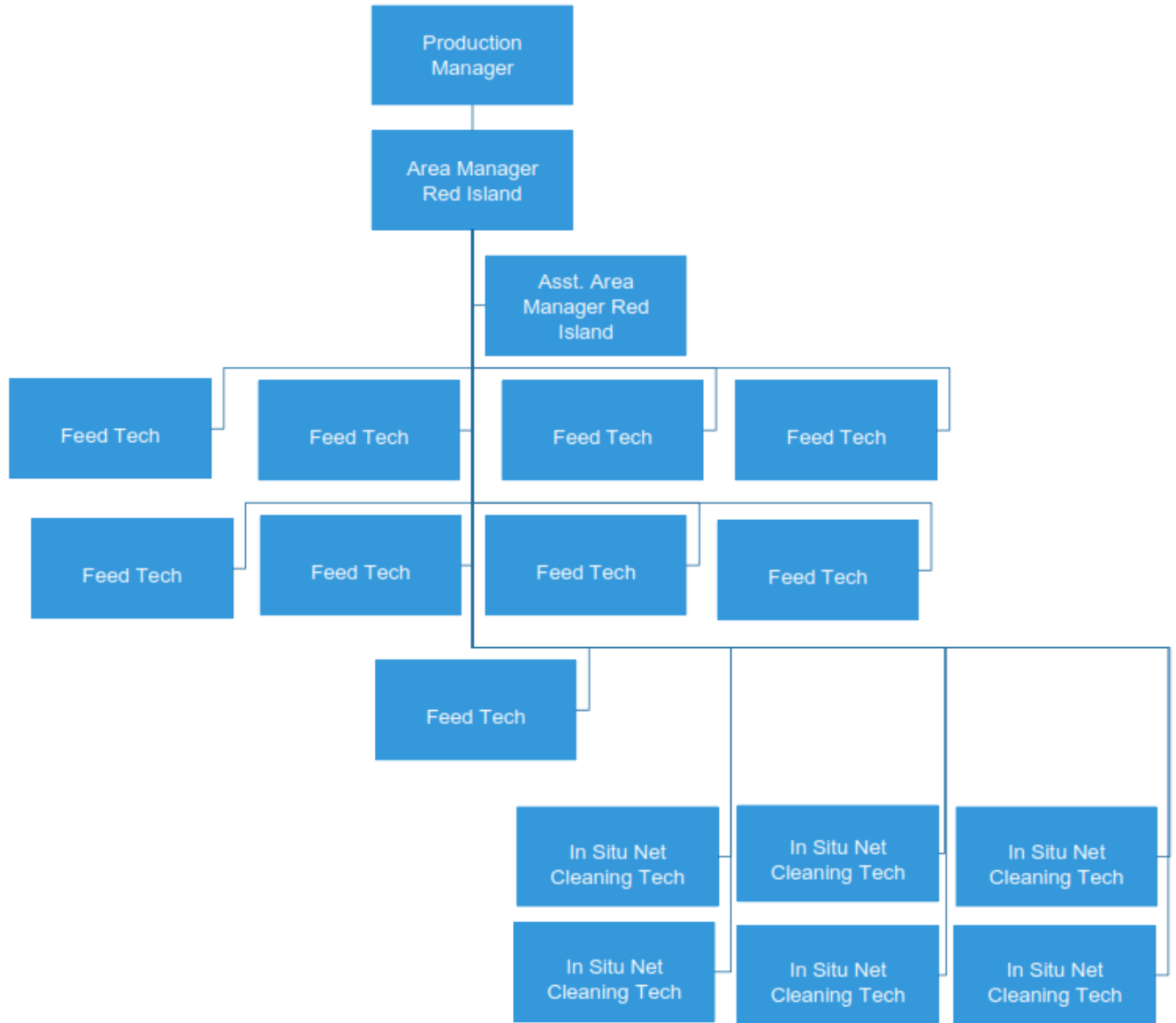


Figure 5: Red Island BMA reporting structure for Grieg NL Seafarms Ltd.

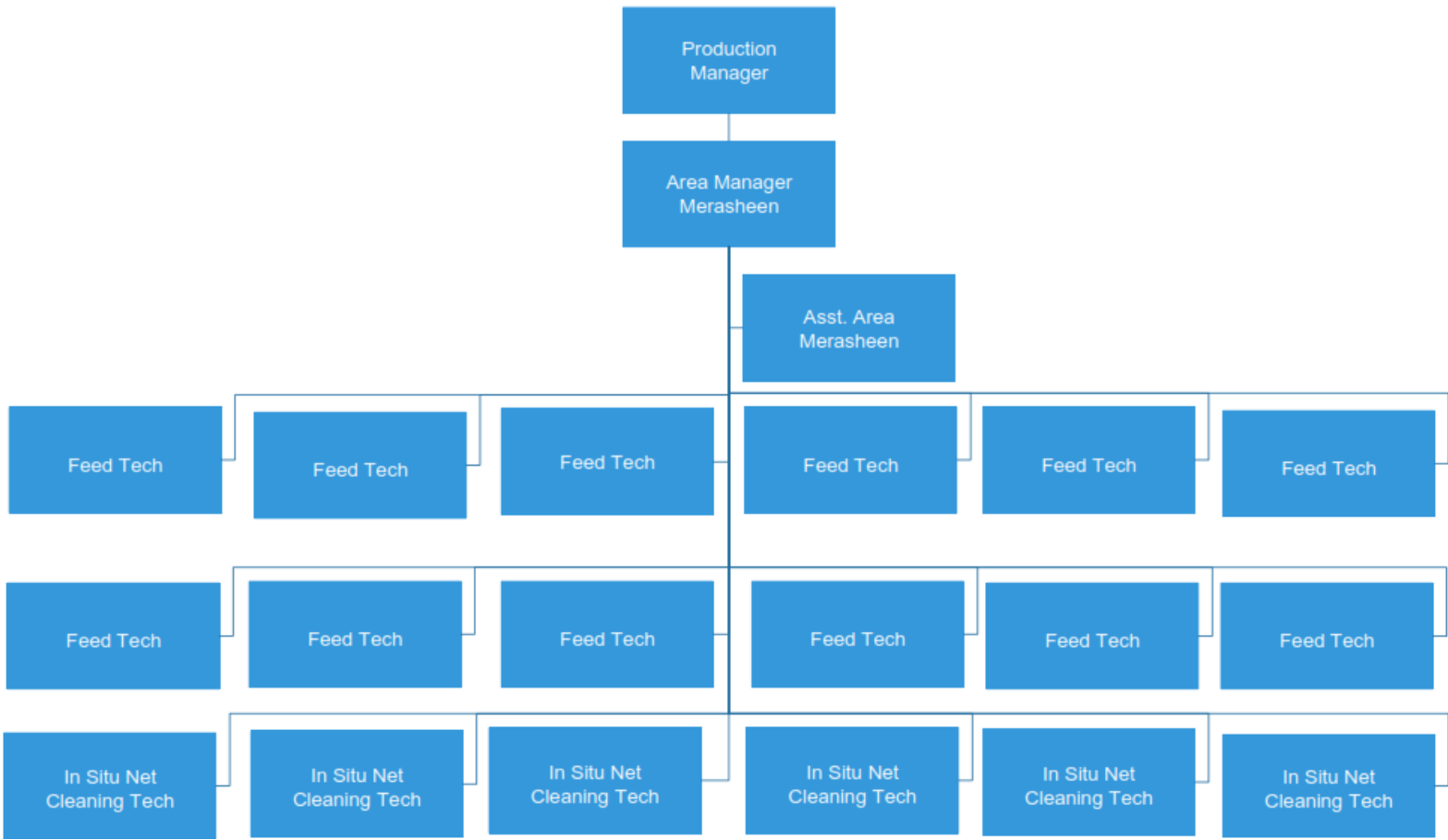


Figure 6: Merasheen BMA reporting structure for Grieg NL Seafarms Ltd.

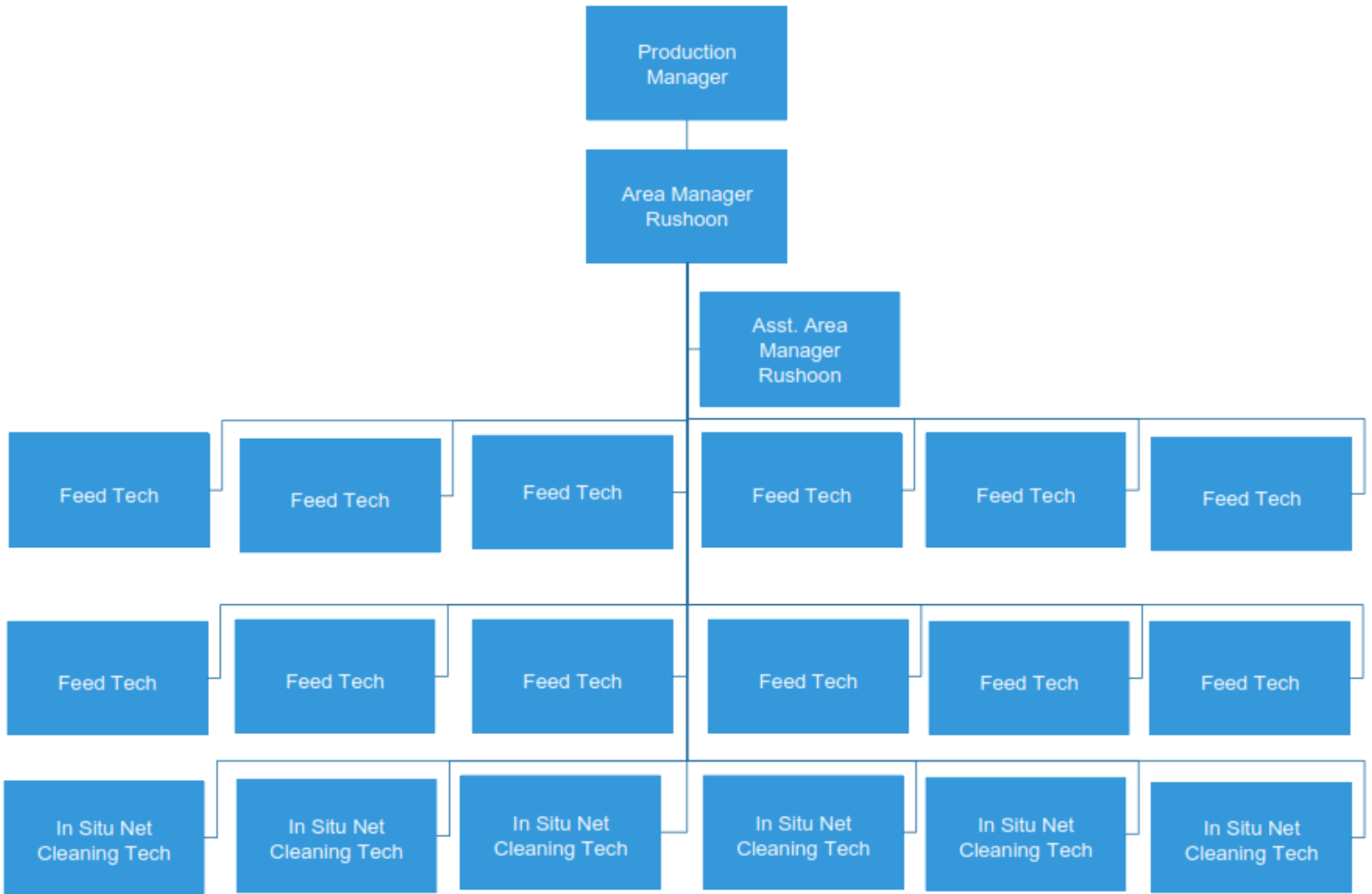


Figure 7: Rushoon BMA reporting structure for Grieg NL Seafarms Ltd.

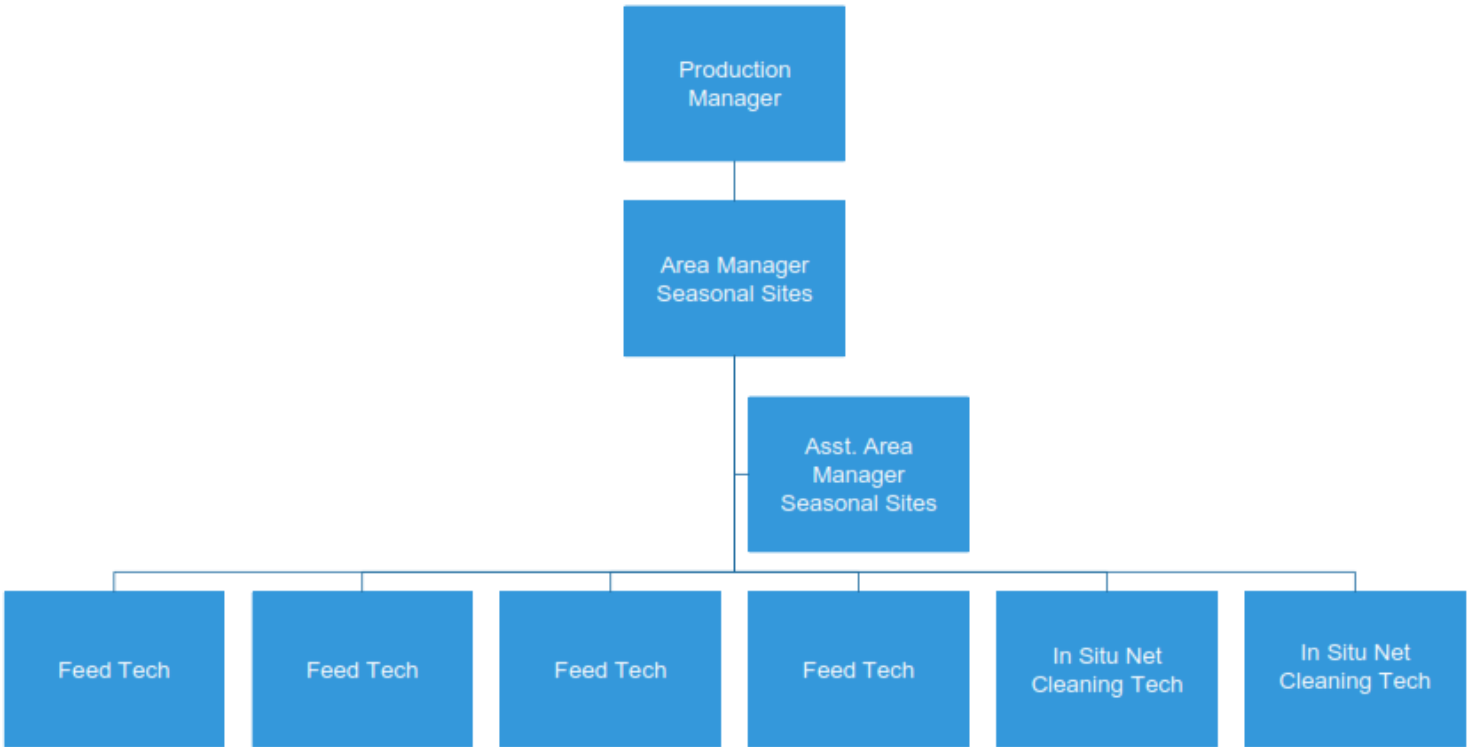


Figure 8: Marine seasonal BMA reporting structure for Grieg NL Seafarms Ltd.

To accommodate the marine sites, each BMA will have a service vessel equipped with crew. Figure 9 outlines the reporting structure for the service vessels.

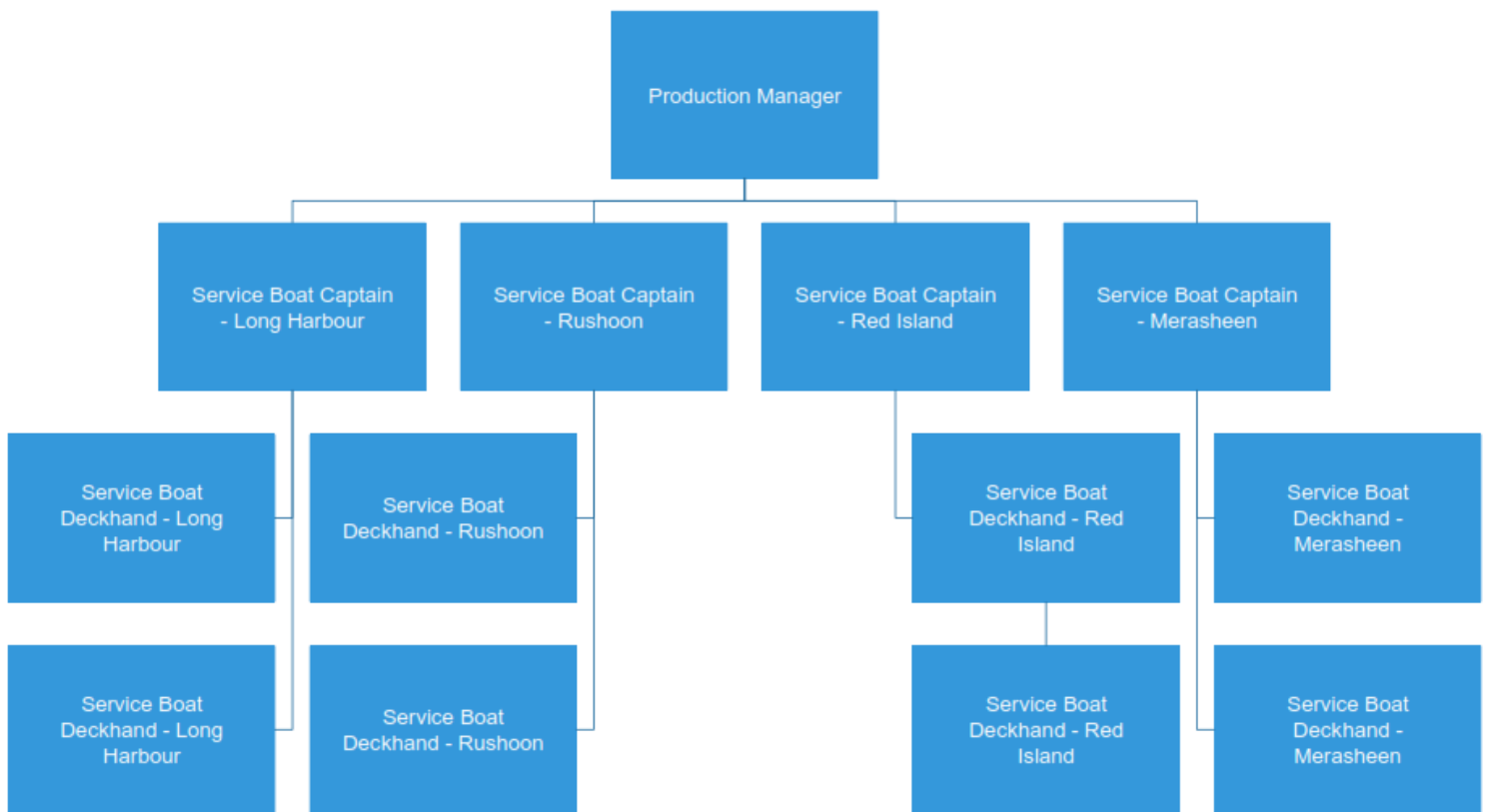


Figure 9: Marine service vessel reporting structure for Grieg NL Seafarms Ltd.

The preceding sections have provided a general indication (current estimate) of the likely numbers and range of occupations that will be required for Project construction and operations, based on the current stage of planning and design. As illustrated, the construction and operations workforce will include a range of occupations over several sub-phases, most of which will be full-time in nature. For the most part, the nature and composition of the Project's workforce (proponent and contractors), including with regard to the associated entry requirements, skill levels and compositions, and the ratio of journeypersons and apprentices (likely 25 percent apprentices for trades positions) will likely be very similar to other similar, recent projects in Newfoundland and Labrador. Information on the general duties and qualifications (training and experience) requirements for each of the occupations listed above can be found at *Human Resources and Skills Development Canada (2011) - 2011 National Occupational Classification (NOC)*. Available at: <http://www5.hrsdc.gc.ca/NOC/English/NOC/2011/Welcome.aspx>

4.0 Recruitment for the Workforce

Wherever possible, Grieg intends to source the required workforce for Project operations from Newfoundland and Labrador, where local personnel are available, qualified and interested in obtaining employment on this Project. Attracting and retaining a local workforce is considered desirable by the Proponent, in order to maintain an adequate and stable labour force for the Project (including persons who are experienced in working with the specific species, conditions, equipment and activities that will comprise this Project), as well as likely being possible given the presence of local training institutions and programs in Newfoundland and Labrador.

The Fisheries and Marine Institute of Memorial University of Newfoundland is a world class center of advanced marine technology, education, and training. The Marine Institute specifically recognizes its integral role within the province. The mission of the institute is to foster economic development in strategic sectors in the Newfoundland and Labrador economy, particularly the fisheries and offshore, and to enable Newfoundlanders and Labradorians to participate in the marine industry nationally and internationally.

The Institute intends to continue moving forward as it has a substantial mandate which encompasses education and training, applied research, and technology transfer, that serves a client base drawn from the St. John's area, Newfoundland and Labrador, Canada, and world-wide. GNS is proud to have aligned themselves with the Marine Institute for recruiting skilled people to become a part of the GNS team but also as a resource for Research and Development. These programs at training institutes such as the Fisheries and Marine Institute offer skills and trades that are very applicable to the Grieg group of companies (Table 3). GNS will commit to coordinating with institutes such as the Fisheries and Marine Institute for recruitment fairs as well as work term placements as a resource for HQP.

Table 3: Enrollment numbers for 2014 and fall 2015 Diploma and Advanced Diploma programs at the Fisheries and Marine Institute of Memorial University of Newfoundland

Marine Institute Program	2014	2015
Advanced Diploma	24	17
Food Safety	12	9
Sustainable Aquaculture	7	3
Water Quality	5	5
Diploma in Technology		
<i>Food Technology</i>	15	14
Year 1	4	
Year 2	2	4
Year 3	5	1
Year 4	4	9
<i>Marine Environmental Technology</i>	35	30
Year 1	16	9
Year 2	11	12
Year 3	8	9
Total Potential Recruits	74	61

Source: Marine Institute, School of Fisheries, 2016

The Burin Peninsula is an area of high Employment Insurance (EI) prevalence and Grieg Newfoundland Salmon Ltd. will have a significant positive impact on the labour force and ultimately the overall economy of the region. The following table depicts the EI beneficiaries reported for the entire Burin Peninsula 2012-2014. As indicated in Table 4, 40% of the local labour force (4,770 individuals) filed EI claims in 2014. Since operations for Grieg Newfoundland Salmon Ltd. will be full time and not seasonal, this project could employ persons in small communities on the Burin Peninsula where employment is often difficult to find and can provide them with long term employment security as opposed to relying on EI benefits for a portion of the year. In addition, the processing plant will create jobs in St. Lawrence and Fortune, two towns where at the present there is very little new employment activity. Many of these potential employees may have skills and knowledge already related to the fishery that can be an asset to GNS or

may be willing to enroll in training programs offered by institutions such as the Fisheries and Marine Institute to enhance their skills and knowledge for employment with GNS.

Table 4: Prevalence of EI beneficiaries - Burin Peninsula, Newfoundland 2012-2014

	2012	2013	2014
Labour force	11,940	11,927 ³	11,925
EI beneficiaries	5,710	5,260	4,770
EI prevalence	47.8%	44.1%	40.0%
<i>Age of Beneficiary</i>			
Youth (less than 25)	430	360	305
Prime labour force (25-54)	3,470	3,150	2,875
Age 55+	1,810	1,740	1,585
<i>Gender of Beneficiary</i>			
Male	3,615	3,380	2,965
Female	2,095	1,880	1,805
% female	36.7%	35.7%	37.8%

Source: Government of Newfoundland Community Accounts

5.0 Employment Timelines

GNS began hiring for the Placentia Bay Atlantic Salmon Project in September 2015. Since this time, other key management personnel have joined the team to assist in establishing the project. Figure 10 below generally illustrates the current and proposed hiring schedule for GNS.

5.1 Grieg NL Nurseries Hiring Timeline

Figure 11 below outlines the proposed hiring timeline for Grieg NL Nurseries Ltd. This includes summary information on the anticipated dates of hiring completion as well as the positions to be hired and anticipated numbers.

5.2 Grieg NL Seafarms Ltd. Hiring Timeline

Figure 12 outlines the hiring timeline for the marine sites for Grieg NL Seafarms Ltd. A Production Manager for the sea cage sites will be hired in September 2017 to allow opportunity and time for training. Each BMA; Red Island, Merasheen, Rushoon and the Seasonal site, will be staffed as production increases and they are brought on-line. All four BMAs should be in full production and completely staffed with managers, assistant managers, feed technicians, net cleaning technicians as well as service vessels and crew by April 2021.

6.0 Monitoring and Reporting

GNS will also report to the Government of Newfoundland and Labrador on the Project's labour force. The reporting will include information on the number of persons employed by occupation (4-digit NOC 2011), including the number of full-time/part-time employees, the number of apprentices (by level) and journeypersons, as well as available information on the gender and source of the workforce.

It is proposed that this reporting will begin upon commencement of Project construction and will extend into the initial 2-3 years of operation, until such time as the entire Project workforce is in place and has largely stabilized. The nature and frequency of this reporting will be determined and developed in consultation with the NL Department of Advanced Education, Skills and Labour.

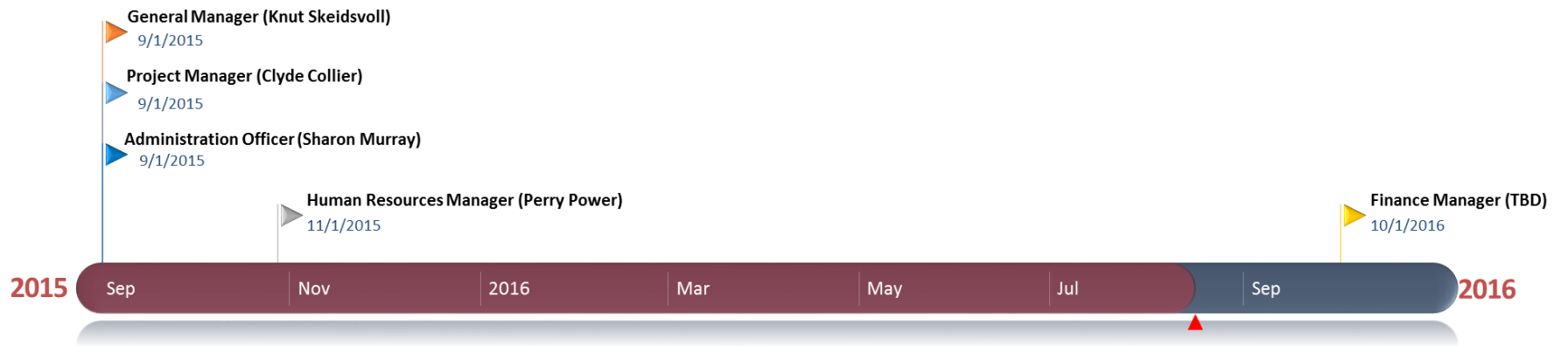


Figure 10: Hiring timeline for Grieg Newfoundland Salmon Ltd. management team indicating date of hire and position (Estimated, Approximate).

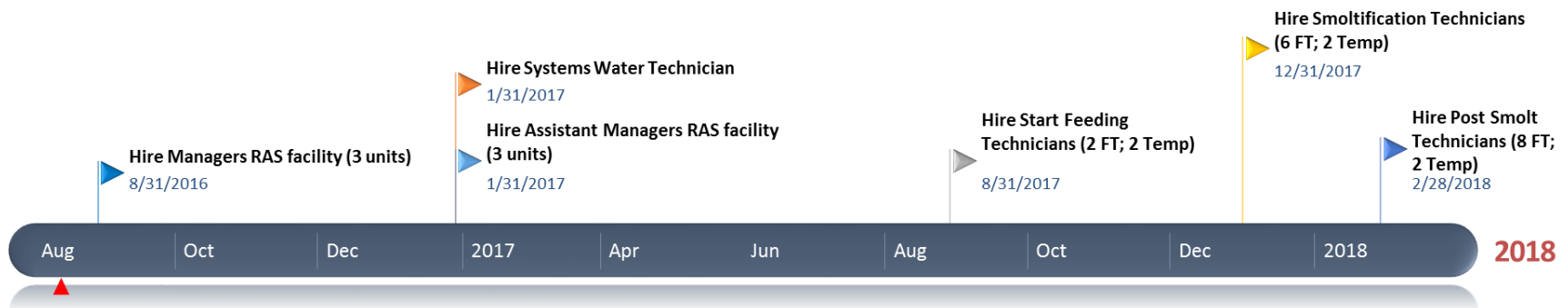


Figure 11: Hiring timeline for Grieg NL Nurseries Ltd. indicating hiring completion date, position and number of positions to be filled (Estimated, Approximate).

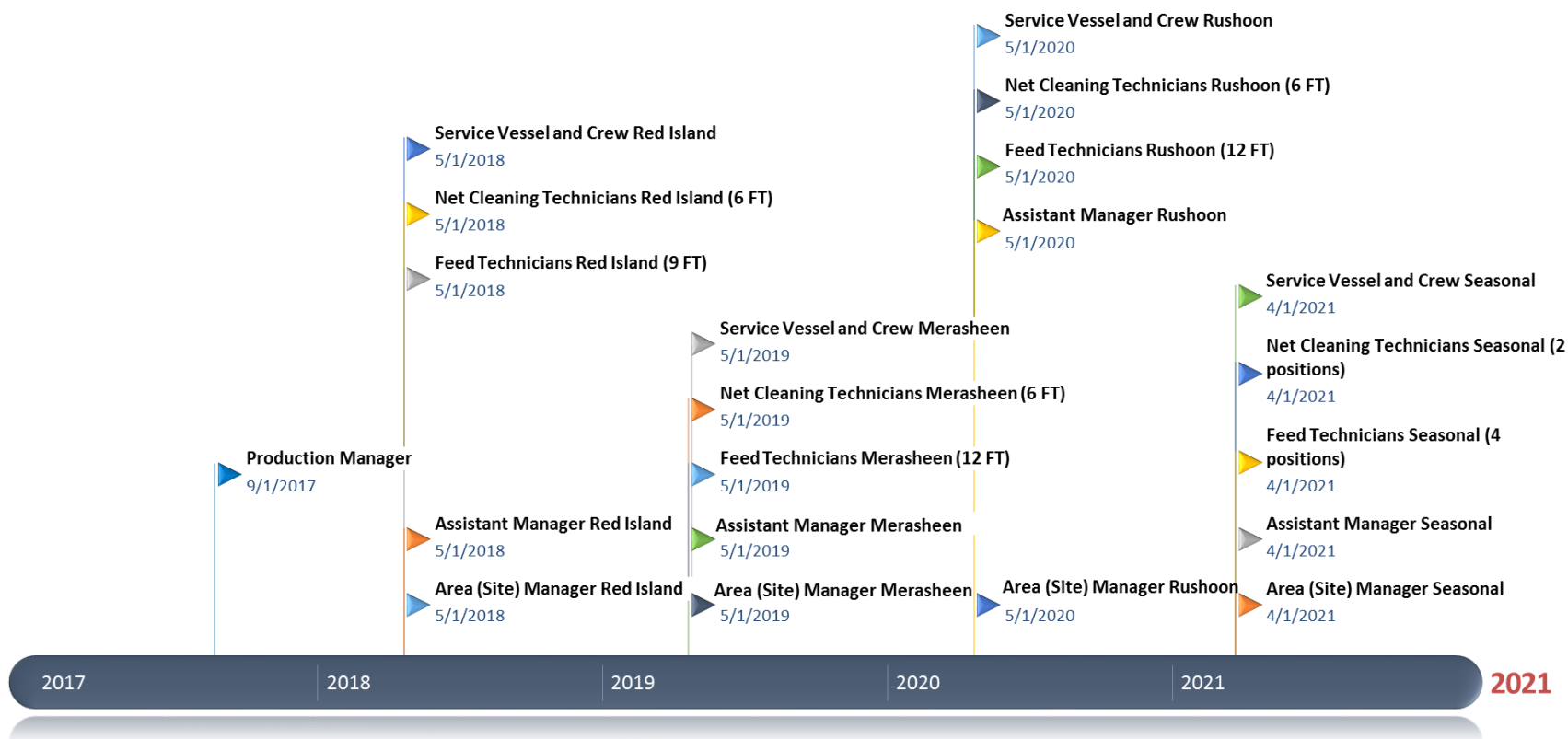


Figure 12: Hiring timeline for Grieg NL Seafarms Ltd. indicating date of hiring, position and number of positions to be filled (Estimated, Approximate).