

## Eelgrass Survey Report



Prepared for:  
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## Executive Summary

Pacific NorthWest LNG Limited Partnership (PNW LNG) is proposing to construct and operate a liquefied natural gas (LNG) facility on Lelu Island, British Columbia (BC). The Pacific NorthWest LNG Project (the Project) would convert approximately 3.2 billion standard cubic feet per day (Bcfd) of pipeline-grade natural gas into LNG for export to Pacific Rim markets in Asia. The objective of this report is to provide a summary of the data collected during the September 8 and 9, 2014 eelgrass surveys at the locations of the pioneer dock and the material offloading facility (MOF). Surveys were completed to describe intertidal beds of eelgrass. Beds were delineated, and percent cover and number of shoots were estimated within quadrats. Twenty-five eelgrass beds or patches were delineated at the MOF site. Both species of eelgrass were found at the site, with *Z. japonica* found higher and *Z. marina* found at or below the low tide line. In 2014, the total area of eelgrass recorded at both sites combined was approximately 1,832 m<sup>2</sup>.

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### Abbreviations

BC	British Columbia
Bcfd	billion standard cubic feet per day
EA	environmental assessment
GPS	global positioning system
LAA	local assessment area
LNG	liquefied natural gas
MOF	materials off-loading facility
MTPA	million tonnes per annum
PNW LNG	Pacific NorthWest LNG Limited Partnership
PRPA	Prince Rupert Port Authority
RAA	regional assessment area
the Project	Pacific NorthWest LNG Project

## EELGRASS SURVEY REPORT

Introduction  
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### 1.0 INTRODUCTION

Pacific NorthWest LNG Limited (PNW LNG) is proposing to construct and operate a liquefied natural gas (LNG) facility within the District of Port Edward, British Columbia (BC) (Figure 1). The Pacific NorthWest LNG Project (the Project) would be located on Lelu Island within the lands and waters under the jurisdiction of the Prince Rupert Port Authority (PRPA). The Project would convert natural gas into LNG for export to Pacific Rim markets in Asia.

At full build-out the facility would receive approximately 3.2 billion standard cubic feet per day (Bcfd), or  $9.1 \times 10^7$  cubic metres ( $m^3$ ) per day, of pipeline-grade natural gas, and produce up to 19.2 million tonnes per annum (MTPA) of LNG. The gas would be transported to the Project via the Prince Rupert Gas Transmission pipeline from northeast BC. The LNG will be shipped to Asia using LNG carriers. The largest ship the marine terminal would be designed to accommodate is the Q-flex LNG carrier. These carriers are 315 m long and can transport up to 217,000  $m^3$  of cargo (~50% more than conventional vessels).

Components of the Project include: a natural gas reception system, gas pretreatment, three 6.4 MTPA liquefaction trains, three full-containment 180,000  $m^3$  LNG storage tanks, a marine terminal with a LNG carrier berths, a materials off-loading facility (MOF), and an access road and bridge. The MOF will be a pipe pile-supported wharf used for berthing roll-on roll-off barges and ships. This facility will be located off Porpoise Channel on the north side of Lelu Island. This will allow prefabricated pieces of equipment and heavy materials to be transported to the island. Dredging will be required to deepen the embayment. The pioneer dock is a temporary facility consisting of floating pontoons secured with piles, rock or gravel ramps to land and a gangway.

This report provides the results of the eelgrass surveys conducted on September 8 and 9, 2014 to confirm the distribution and density of eelgrass at the MOF and pioneer dock to fulfill commitments made during the regulatory review process prior to construction of these project components. Species distribution is highly variable, seasonally and annually. The results of these surveys will inform the final Fish Habitat Offsetting Plan that is required for the Fisheries Act authorization application.

Two types of eelgrass are present in the study area: *Zostera marina*, a native eelgrass and *Z. japonica*, an introduced species. *Z. marina* is a perennial aquatic herb that grows from rhizomes. The leaves of this eelgrass are greater than 2 mm wide and can grow up to 250 cm long (Douglas et al. 2001). *Z. japonica* is a perennial, introduced Asian species that grows from rhizomes. The leaves are less than 2 mm wide and grow up to 300 cm long (Douglas et al. 2001). *Z. japonica* grows higher in the intertidal zone than does *Z. marina* (Green and Short 2003). It is not known if *Z. japonica* negatively affects populations of *Z. marina* (Green and Short 2003).

## EELGRASS SURVEY REPORT

Study Areas  
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## 2.0 STUDY AREAS

### 2.1 REGIONAL SETTING

The marine environment surrounding the Project typifies the nutrient-rich waters of the north coast of BC while also being heavily influenced by freshwater outflow from the Skeena River. The dominant marine habitat types on and around Lelu Island are rocky shorelines, soft sediment in protected bays and channels, and the expansive mudflats of Flora and Agnew Banks. Collectively, these varied environments support a diverse assemblage of fish and their habitats, and marine mammals, which constitute the two key components of local marine resources considered in the EA.

The rocky shorelines of Lelu Island and nearby areas, which comprise a mix of bedrock, large boulders, rocks and gravel areas, support a rich subtidal and intertidal seaweed community. In turn, seaweed communities provide attachment sites, food and shelter for numerous invertebrates and fish. Exposed rocky shorelines, such as those on the west side of Lelu Island, tend to have greater species richness than protected shores, like those within Porpoise Channel.

Soft mud and sand occur within protected areas around Lelu Island. These areas provide suitable habitat for sediment-dwelling ('infaunal') invertebrates, crab and benthic (i.e., living on the seafloor) fish. Eelgrass (primarily *Zostera marina*) also thrives in shallow subtidal and low intertidal soft sediment, where the combination of abundant sunlight and suitable substrate create ideal conditions for vegetative, root and rhizomatic growth. In turn, the eelgrass beds around Lelu Island, most notably on Flora Bank, support a rich invertebrate community and form important rearing and migrating habitat for Skeena River salmon.

### 2.2 STUDY AREA

Eelgrass was surveyed in the pioneer dock and MOF locations. In 2013, field surveys to support the assessment of effects on fish were conducted within 500 m of options considered for the access bridge, MOF, pioneer dock, marine terminal, and Flora Bank (see Figure 2).

## 3.0 FIELD STUDIES

Field studies were conducted at the MOF and pioneer dock in 2014 to supplement the information obtained through incidental observations of eelgrass at these locations in 2013. An eelgrass survey was completed on September 8 and 9, 2014 at the MOF and the pioneer dock foreshore areas of Lelu Island (see Figure 3).

## EELGRASS SURVEY REPORT

Field Studies  
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### 3.1 EELGRASS DENSITY SAMPLING AND BED DELINEATION

#### 3.1.1 Methods

Eelgrass beds were mapped by circumnavigating the perimeter of each bed with a Trimble Geo 7 Series handheld GPS device by foot, beginning approximately one hour before low tide, capturing the deepest eelgrass which will be exposed at low tide. Photos were taken of each eelgrass bed and the photo number was recorded. The edge of each eelgrass bed was defined as the region where shoot density is found to be less than 1 shoot per m<sup>2</sup>. Heterogeneity (patchiness) of each bed was qualitatively described in field notes. For each bed, the species of eelgrass was recorded (*Z. marina* or *Z. japonica*). Voucher specimens of approximately five shoots from each bed were brought back to the Stantec Burnaby office for species confirmation.

Where eelgrass was found in areas that were too small to map (less than approximately 1 m<sup>2</sup>), a GPS point was taken and the length and width of the patch was measured. This data was used to determine the approximate area of the patch.

Percent cover and shoot density of eelgrass was estimated within quadrats placed randomly across each bed. Percent cover was estimated for 0.5 m x 0.5 m quadrats. Within high density beds, shoot density was quantified using a 0.25 m x 0.25 m quadrat and 0.5 m x 0.5 m quadrats were used in low-density beds. The different quadrat sizes were used in order to obtain more accurate counts. In high density beds, the number of shoots can be very high leading to miscounting. The number of reproductive shoots was also recorded.

Average shoot length was estimated by measuring five randomly selected shoots per quadrat located in the centre of the quadrat and at each of the four corners. These five measurements were averaged to provide an estimated average shoot length per quadrat. A qualitative description of sediment grain size was also recorded (e.g., silty sand) and any incidental species within quadrats was recorded. A photo was taken of each quadrat and the photo number was recorded. The number of quadrats used per site depended on bed size, ensuring at least four quadrats per 5 m<sup>2</sup> of eelgrass (qualitatively estimated in the field) and at least three quadrats per bed. Due to safety concerns, staff deviated from methods in the field; where staff could not safely use a minimum of three quadrats, staff conducted as many as conditions allowed.

Field surveys coincided with the lowest low tides in September (8-9), 2014. Table 1 provides the predicted time and heights of low tide applicable to the survey location, and the time of sunrise over the survey period.



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**Table 1** Predicted Low-Tide Heights and Times and Time of Sunrise during Field Surveys on September 8-9, 2014.

Date	Predicted low-tide height (m above 0 chart datum)	Predicted time of low-tide	Time of sunrise
8-September	0.6 m	7:45 am	7:02 am
9-September	0.5 m	8:25 am	7:04 am

### 3.1.2 Results

Eelgrass surveys were completed on September 8, 2014 by two Stantec biologists and a representative from Kitselas First Nation at the pioneer dock site, and on September 9, 2014 at the MOF with a representative from Kitselas First Nation and the Kitsumkalum First Nation.

#### 3.1.2.1 Pioneer Dock

Dominant backshore vegetation near the pioneer dock comprised banks of sedge backed by a forest of western redcedar (*Thuja plicata*), red alder (*Alnus rubra*), shore pine (*Pinus contorta*), western hemlock (*Tsuga heterophylla*), and salal (*Gaultheria shallon*). Backshore substrate ranged from steep to gently sloped bedrock. Other vegetation included false lily-of-the-valley (*Maianthemum dilatatum*), several *Vaccinium* species (blueberry and red huckleberry), grasses, lichen, and moss.

Two eelgrass beds containing *Zostera japonica* were delineated at the pioneer dock site (see Figure 3; Photo 1).



**Photo 1** Left: Patchy eelgrass (*Z. japonica*) at the Pioneer Dock site on September 8, 2014. Right: A 50 cm x 50 cm quadrat showing cover of eelgrass (*Z. japonica*) at the Pioneer Dock site on September 8, 2014.

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Table 2 presents the approximate area of the two beds delineated in the field.

**Table 2 Eelgrass Bed Delineation at the Pioneer Dock**

Eelgrass Bed	Species	Length (m)	Width (m)	Area (m <sup>2</sup> )
EB1	<i>Z. japonica</i>	6	3.2	13.4
EB2	<i>Z. japonica</i>	14.8	6.8, 3.7	63.7
<b>Total</b>				<b>77.1</b>

**Note:** EB2 was an irregular shape; width was measured at the two widest points.

*Z. japonica* was the only eelgrass species identified at the pioneer dock site. Average shoot length ranged from 9 to 14 cm, and percent cover ranged from 5 to 80% cover in 50 cm x 50 cm quadrats (Table 3) (Figure 4).

**Table 3 Pioneer Dock Eelgrass Quadrat Data (to estimate density)**

Eelgrass Bed/Quadrat Number	% Cover	Shoot Count per quadrat (per m <sup>2</sup> )	Average Shoot Length (cm)
EB1 – 1	10	34 (136)	11
EB1 – 2	20	113 (452)	14
EB1 – 3	60	232 <sup>a</sup> (3,712)	12
EB1 – 4	5	52 (208)	10
EB2 – 1	80	73 <sup>a</sup> (1,168)	12
EB2 – 2	5	29 (116)	9
EB2 – 3	50	107 <sup>a</sup> (1,712)	13

<sup>a</sup> A 25 cm x 25 cm quadrat was used instead of a 50 cm x 50 cm quadrat for more accurate counting of shoots.

Incidental observations at the pioneer dock site included barnacles, snail shells, fucus, *polysiphonia* spp., siphon holes, limpets, and hermit crabs.

No reproductive eelgrass shoots were observed, likely due to the late timing of the survey. Reproductive shoots start growing once water temperatures start to warm in the spring; in Alaska these are found as late as June (Green and Short 2003). Samples were collected at both eelgrass beds and species identification was confirmed once in the office (Photo 2).

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**Photo 2:** Left: A sample of *Z. japonica* at the Pioneer Dock site on September 8, 2014. Right: A 50 cm x 50 cm quadrat showing cover of eelgrass (*Z. japonica*) at the Pioneer Dock site on September 8, 2014.

### 3.1.2.2 Materials Offloading Facility

A dense cover of forest vegetation formed the backshore at the north Lelu Island site with species including western redcedar, red alder, western hemlock, Douglas-fir (*Pseudotsuga menziesii*) and salal. The medium to gently sloping backshores at the centre and southwest end of the bay typically had banks of sedge and grasses in front of the forest vegetation; this intermediate assemblage was largely absent from the steeper boulder and bedrock backshores at the northeast end of the bay.

Twenty-five beds or patches of eelgrass were recorded on September 9, 2014 (see Figure 3). These ranged in size from 0.5 m by 0.25 m (0.13 m<sup>2</sup>) to beds approximately 55 m long by 32 m wide (762 m<sup>2</sup>) (see Photo 3, 4).

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Field Studies  
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**Photo 3:** Left: Large, patchy eelgrass bed at the MOF site on September 9, 2014. Right: A 50 cm x 50 cm quadrat containing *Z. marina* on September 9, 2014.



**Photo 4:** Left: Dense eelgrass bed between rock outcrops at the MOF site on September 9, 2014. Right: High cover of eelgrass (*Z. marina*) at the MOF site on September 9, 2014.

Data collection included shoot density, percent cover and average shoot length, where feasible. Where quantitative data could not be collected due to safety concerns, (e.g., crew getting stuck in the deep mud, rising tide) qualitative data (estimated % cover) was recorded (Table 5). Both *Z. marina* and *Z. japonica* were observed at the MOF (Table 4) (Figure 4).

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**Table 4 Eelgrass Bed Delineation at the Materials Offloading Facility**

Eelgrass Bed	Length (m)	Width (m)	Area (m <sup>2</sup> )	Species
EB3	2.7	1.6	4.3	<i>Z. marina</i>
EB4	0.5	0.25	0.1	<i>Z. marina</i>
EB5	1.0	0.6	0.6	<i>Z. marina</i>
EB6	0.6	0.5	0.3	<i>Z. marina</i>
EB7	3.0	0.7	6.6	<i>Z. marina</i>
EB8	1.6	1.8	2.9	<i>Z. marina</i>
EB9	3.4	4.3	7.2	<i>Z. japonica</i>
EB10	55 <sup>b</sup>	32 <sup>b</sup>	761.6	<i>Z. marina</i>
EB11	17 <sup>b</sup>	24 <sup>b</sup>	167.1	<i>Z. marina</i>
EB12	4 <sup>b</sup>	2 <sup>b</sup>	6.8	<i>Z. marina</i>
EB13	24 <sup>b</sup>	14 <sup>b</sup>	139.5	<i>Z. marina</i>
EB14	18 <sup>b</sup>	14 <sup>b</sup>	145.5	<i>Z. marina</i>
EB15	20 <sup>b</sup>	12 <sup>b</sup>	109.5	<i>Z. marina</i>
EB16	18 <sup>b</sup>	8 <sup>b</sup>	93.4	<i>Z. marina</i>
EB17	10 <sup>b</sup>	6 <sup>b</sup>	26.2	<i>Z. marina</i>
EB18	1.1	1.0	1.1	<i>Z. japonica</i>
EB19	13 <sup>b</sup>	14 <sup>b</sup>	124.3	<i>Z. japonica</i>
EB20	11 <sup>b</sup>	7 <sup>b</sup>	27.6	<i>Z. japonica</i>
EB21	0.8	1.1	0.9	<i>Z. marina</i>
EB22	1.5	0.7	1.0	<i>Z. japonica</i>
EB23	1.0	1.0	1.0	<i>Z. japonica</i>
EB24	15 <sup>b</sup>	13 <sup>b</sup>	124.0	<i>Z. japonica</i>
EB25	1.0	0.9	0.9	<i>Z. japonica</i>
EB26	0.8	0.8	0.6	<i>Z. japonica</i>
EB27	1.4	1.0	1.4	<i>Z. japonica</i>
<b>Total</b>			<b>1,754.6</b>	

<sup>b</sup> Length and width were measured on the Trimble instead of a tape measure.

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The average shoot length of the *Z. japonica* measured at the MOF ranged from 6 – 32 cm long, with an average of 16 cm. The average shoot length of *Z. marina* ranged from 13 – 58 cm, with an average of 31 cm (Table 5).

**Table 5 Materials Offloading Facility Eelgrass Quadrat Data (to estimate density)**

Eelgrass Bed/Quadrat Number	% Cover	Shoot Count per quadrat (per m <sup>2</sup> )	Average Shoot Length (cm)
EB3 – 1	15	-	32
EB7 – 1	85	34 <sup>c</sup> (544)	29
EB9-1	20	155 (620)	18
EB10 – 1	70	51 (204)	40
EB10 – 2	5	18 (72)	30
EB10 – 3	-	59 (236)	-
EB10 – 4	5	-	-
EB11 – 1	5	-	24
EB11 - 2	5	-	27
EB11 – 3	60	-	-
EB12 – 1	5	24 (96)	29
EB14 – 1	90	-	-
EB15 – 1	80	-	-
EB16 – 1	30	-	-
EB18 – 1	80	-	19
EB19 – 1	25	-	14
EB20 – 1	85	82 <sup>c</sup> (1,312)	-
EB20 – 2	25	85 (340)	-
EB23 - 1	25	115 (460)	-
EB24 – 1	15	90 (360)	-

### NOTES:

Quantitative information was not collected at all sites due to safety concerns. Qualitative information was collected instead.

- data not collected due to safety concerns

<sup>c</sup> A 25 cm x 25 cm quadrat was used instead of a 50 cm x 50 cm quadrat for more accurate shoot counting.

Where quantitative information could not be safely collected, a qualitative description of the dominant vegetation (presence and relative abundance or density) and substrate was recorded. No reproductive shoots of eelgrass were found while completing surveys.

Samples of both species of eelgrass were collected at several of the beds and species identification was confirmed once back in the office.

## EELGRASS SURVEY REPORT

Summary

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Incidental observations at the MOF included rock weed, *polysiphonia* spp., *laminaria* spp., clam shells, siphon holes, snails, a small octopus, and a sea pen (see Photo 5).



**Photo 5:** Left: Incidental observation of a small octopus (approximately 20 cm across) at the MOF site on September 9, 2014. Right: Incidental observation of an orange sea pen among eelgrass (*Z. marina*) at the MOF site on September 9, 2014.

### 3.1.3 Discussion

At the pioneer dock site, approximately 77.1 m<sup>2</sup> of eelgrass was delineated. An eelgrass bed on the opposite side of the bay from where eelgrass had previously (2013) been observed was delineated in 2014. Surveyors in both years only found *Z. japonica* at the Pioneer Dock site (see Figure 3).

In 2014, approximately 1,754.5 m<sup>2</sup> of eelgrass was delineated at the MOF site. In both 2013 and 2014, *Z. marina* and *Z. japonica* were observed at the MOF site (see Figure 3). *Z. marina* was found in the intertidal zone while *Z. japonica* was found closer to the foreshore.

## 4.0 SUMMARY

The objective of this survey was to delineate and describe eelgrass beds at the MOF and pioneer dock, mapping eelgrass beds in areas where incidental observations were made in 2013. Two small beds of *Z. japonica* were delineated at the pioneer dock site. Twenty-five eelgrass beds or patches were delineated at the MOF site. Both species of eelgrass were found at the site, with *Z. japonica* found higher and *Z. marina* found at or below the low tide line.

In 2014, the total area of eelgrass recorded at both sites combined was approximately 1,832 m<sup>2</sup>.

## EELGRASS SURVEY REPORT

Closure  
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### 5.0 CLOSURE

This report has been prepared for Pacific NorthWest LNG Limited Partnership and is based on eelgrass field studies completed on September 8 and 9, 2014. If there are any questions regarding the content of the report, please contact Andrea Pomeroy by e-mail at [andrea.pomeroy@stantec.com](mailto:andrea.pomeroy@stantec.com).

Respectfully submitted,

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## EELGRASS SURVEY REPORT

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### 6.0 REFERENCES

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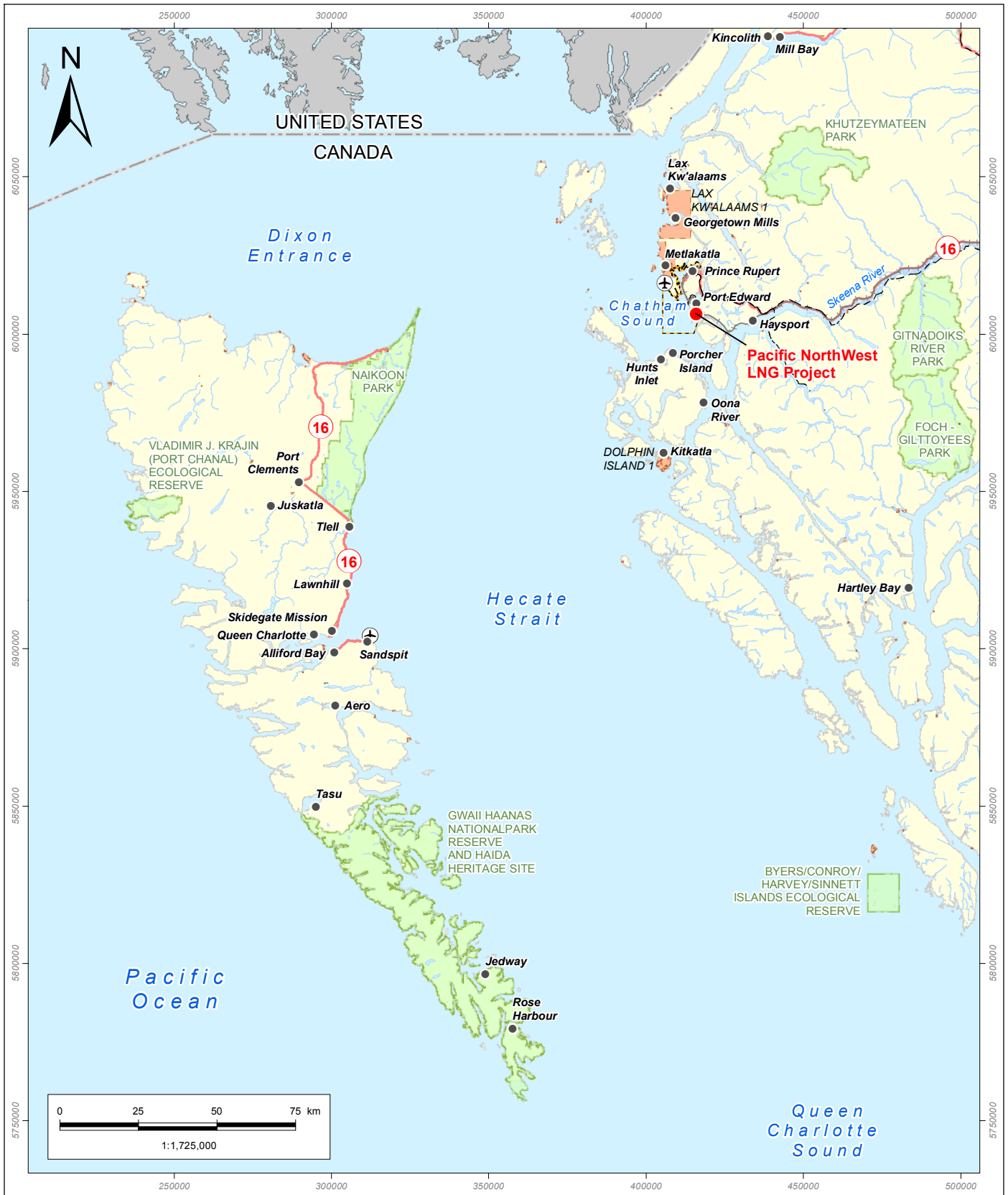
Green, E.P. and F.T. Short. 2003. World Atlas of Seagrasses. University of California Press, San Francisco USA.

## EELGRASS SURVEY REPORT

Figures  
December 12, 2014

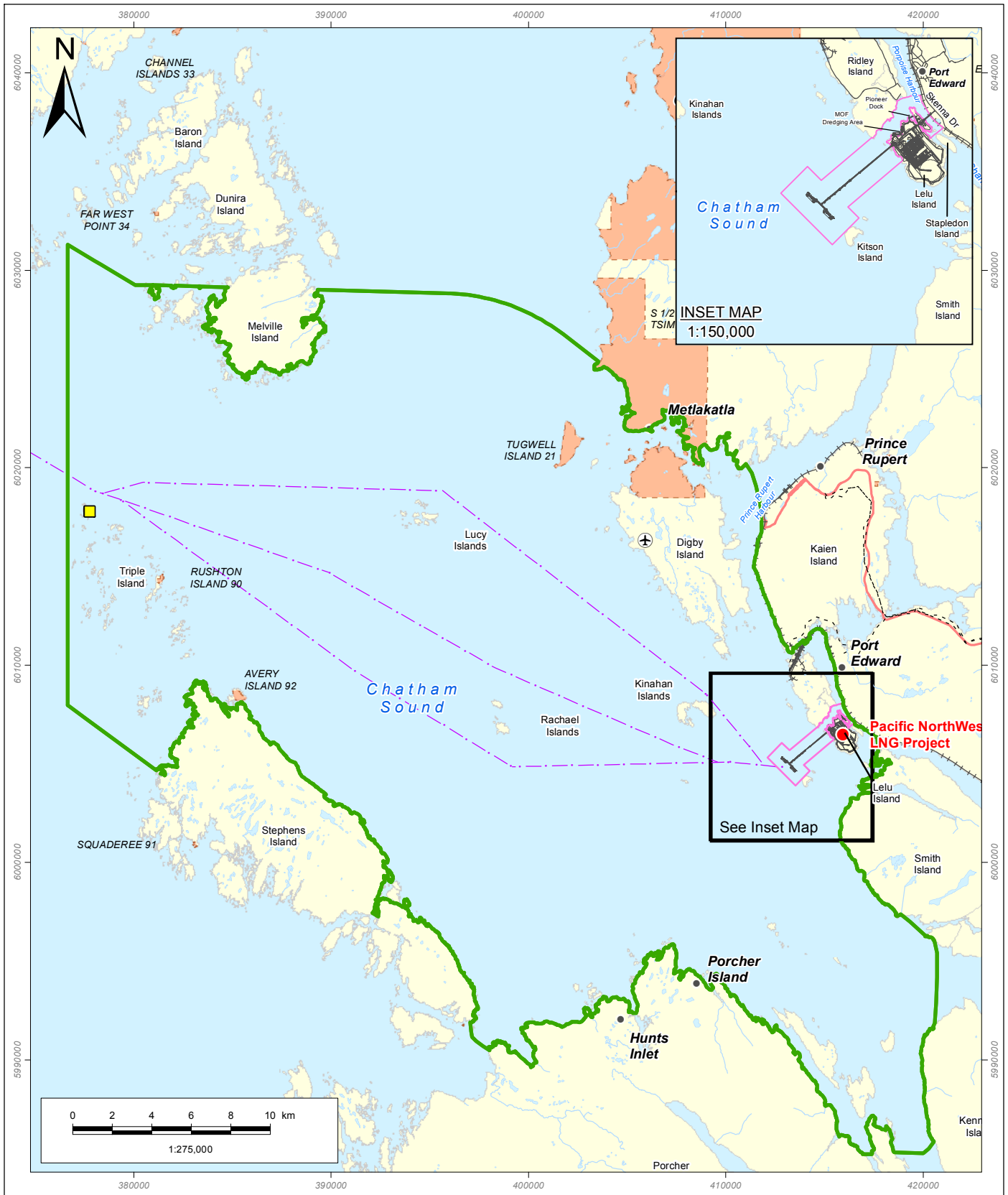
### 7.0 FIGURES

Please see the following pages.

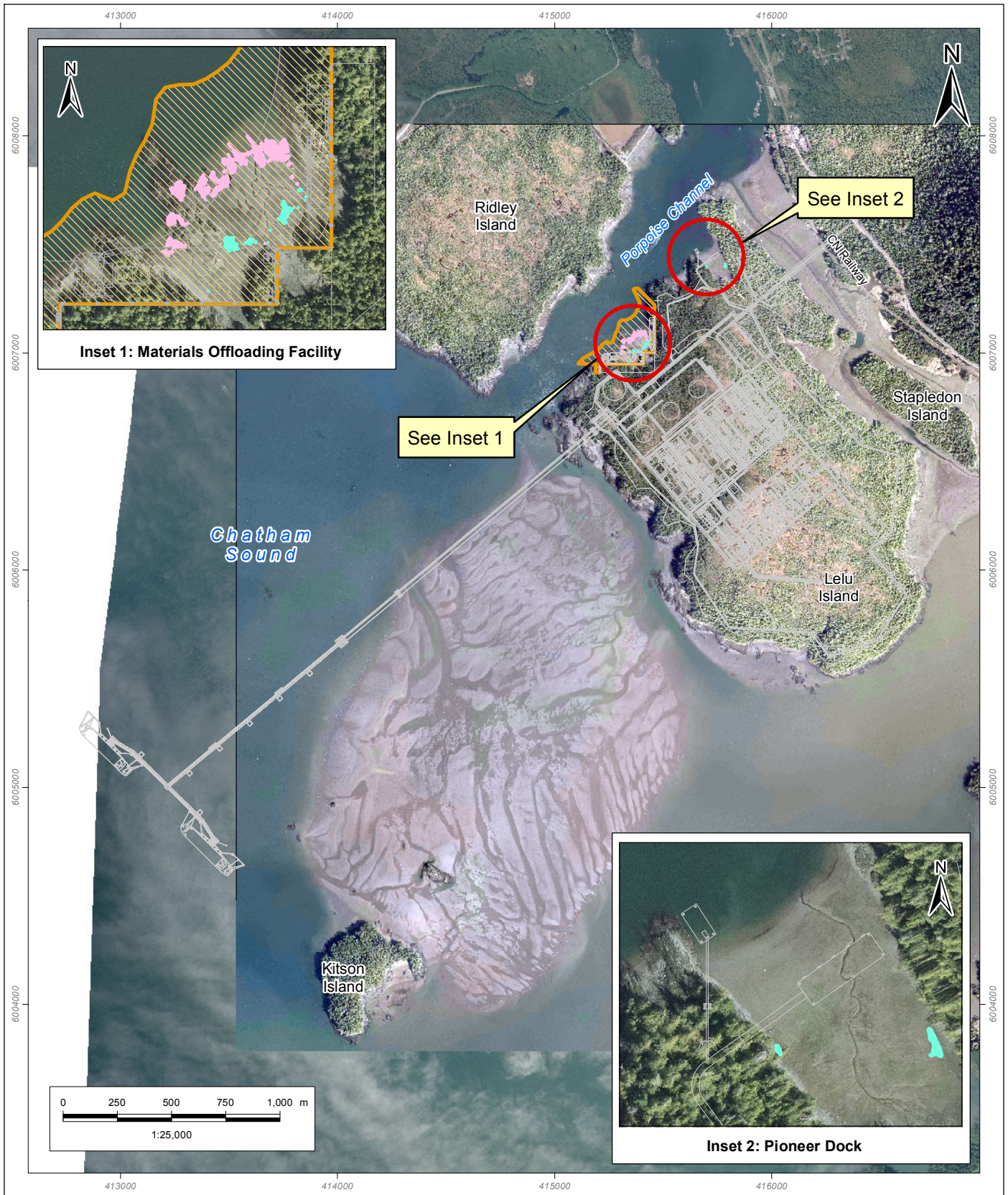


<ul style="list-style-type: none"> <li><span style="color: red;">●</span> Project Location</li> <li> Airport</li> <li><span style="color: grey;">●</span> City or Town</li> <li> Electrical Power Transmission Line</li> <li> Highway</li> <li> International Boundary</li> <li> Railway</li> <li> Watercourse</li> <li> Indian Reserve</li> <li> Prince Rupert Port Authority Boundary</li> <li> Protected Area</li> <li> Waterbody</li> </ul>	<b>Pacific NorthWest LNG</b> <b>Overview - Project Location</b>		PREPARED BY: 
	<small>Sources: Government of British Columbia; Prince Rupert Port Authority; Government of Canada, Natural Resources Canada, Centre for Topographic Information; Progress Energy Canada Ltd.</small>		PREPARED FOR: 
	<small>Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.</small>		FIGURE NO: <div style="font-size: 2em; font-weight: bold; text-align: center;">1</div>
DATE: 31-OCT-14 FIGURE ID: 123110537-842 DRAWN BY: N. PUREWAL	PROJECTION: UTM - ZONE 9 DATUM: NAD 83 CHECKED BY: S. KERR		

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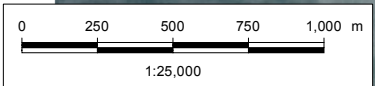


<ul style="list-style-type: none"> <li> Airport</li> <li> City or Town</li> <li> Pilotage Station</li> <li> Project Location</li> <li> Electrical Power Transmission Line</li> <li> Highway or Road</li> <li> Project Component</li> <li> Project Shipping Route</li> </ul>	<ul style="list-style-type: none"> <li> Railway</li> <li> Watercourse</li> <li> Indian Reserve</li> <li> Marine Resources Local and Regional Assessment Area</li> <li> Study Area</li> <li> Waterbody</li> </ul>	<p><b>Pacific NorthWest LNG</b></p> <p><b>Marine Resources Local Assessment Area and Regional Assessment Area</b></p> <p><small>Sources: Government of British Columbia; Government of Canada, Natural Resources Canada, Centre for Topographic Information; Fisheries and Oceans Canada, 2011, Commercial Fisheries Data; 2000-2009. Data derived from Pacific Biological Station Stock Assessment Harvest Log Database.</small></p> <p><small>Metadata available through Mapster: <a href="http://www.pac.dfo-mpo.gc.ca/gis-sig/maps-cartes-eng.htm">http://www.pac.dfo-mpo.gc.ca/gis-sig/maps-cartes-eng.htm</a></small></p> <p><small>Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.</small></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">DATE: 31-OCT-14</td> <td style="width: 50%;">PROJECTION: UTM - ZONE 9</td> </tr> <tr> <td>FIGURE ID: 123110537-841</td> <td>DATUM: NAD 83</td> </tr> <tr> <td>DRAWN BY: N. PUREWAL</td> <td>CHECKED BY: S. KERR</td> </tr> </table>	DATE: 31-OCT-14	PROJECTION: UTM - ZONE 9	FIGURE ID: 123110537-841	DATUM: NAD 83	DRAWN BY: N. PUREWAL	CHECKED BY: S. KERR	<p>PREPARED BY:</p> <p> Stantec</p> <p>PREPARED FOR:</p> <p> Pacific NorthWest LNG</p> <p>FIGURE NO:</p> <p style="font-size: 24pt; text-align: center;"><b>2</b></p>
DATE: 31-OCT-14	PROJECTION: UTM - ZONE 9								
FIGURE ID: 123110537-841	DATUM: NAD 83								
DRAWN BY: N. PUREWAL	CHECKED BY: S. KERR								

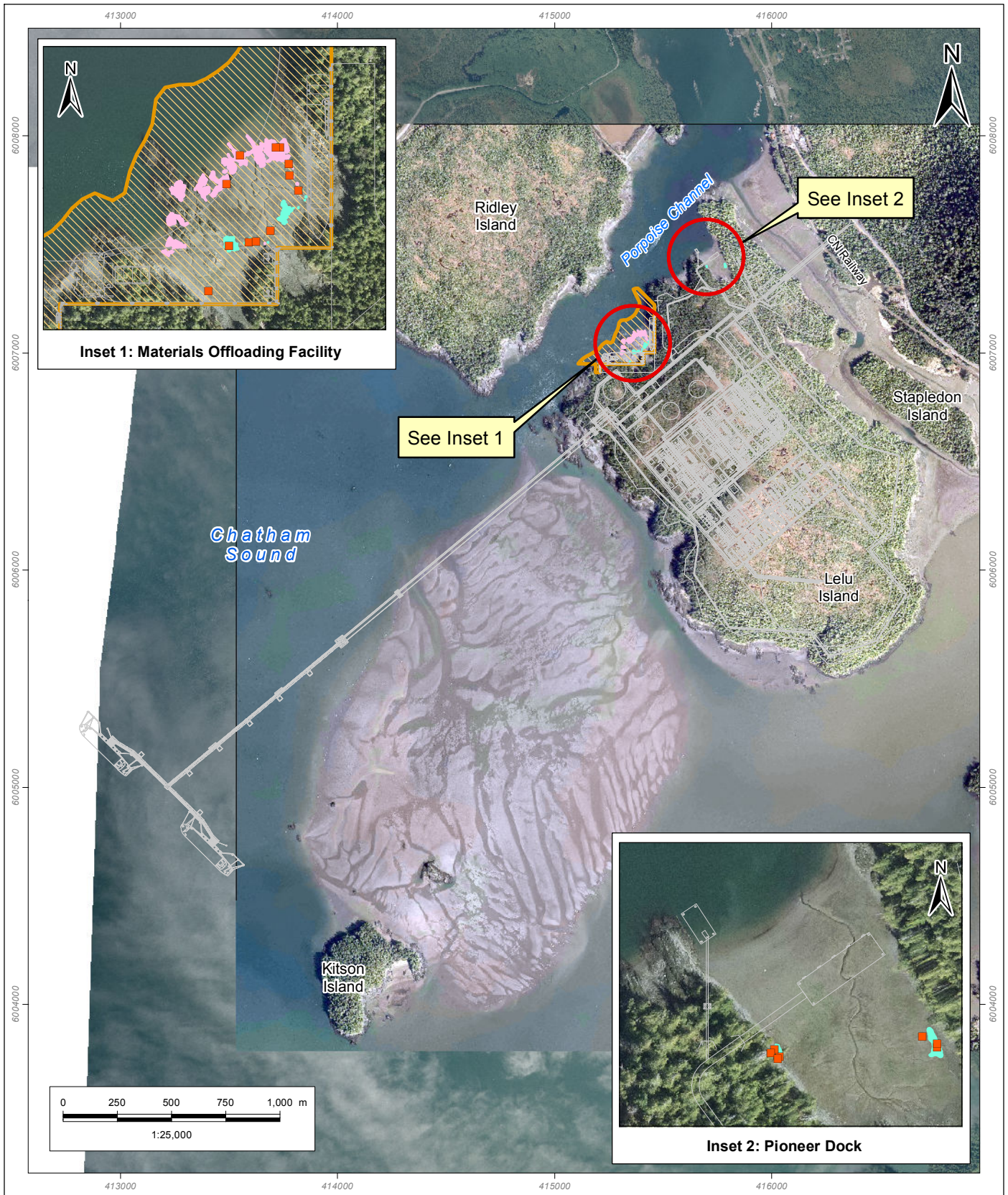


**Inset 1: Materials Offloading Facility**

**Inset 2: Pioneer Dock**



<ul style="list-style-type: none"> <li> Project Component</li> <li> MOF Dredge Boundary</li> <li> Eelgrass Bed (<i>Zostera japonica</i>)</li> <li> Eelgrass Bed (<i>Zostera marina</i>)</li> </ul>	<p><b>Pacific NorthWest LNG</b></p> <p><b>Eelgrass Surveys: 2014 Results</b></p> <p><small>Sources: Government of British Columbia; Government of Canada, Natural Resources Canada, Centre for Topographic Information; Canadian Hydrological Service (CHS), 1995, Progress Energy Canada Ltd. Imagery date: 2009.</small></p> <p><small>Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.</small></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">DATE: 03-NOV-14</td> <td style="width: 50%;">PROJECTION: UTM - ZONE 9</td> </tr> <tr> <td>FIGURE ID: 123110537-839</td> <td>DATUM: NAD 83</td> </tr> <tr> <td>DRAWN BY: N. PUREWAL</td> <td>CHECKED BY: S. KERR</td> </tr> </table>	DATE: 03-NOV-14	PROJECTION: UTM - ZONE 9	FIGURE ID: 123110537-839	DATUM: NAD 83	DRAWN BY: N. PUREWAL	CHECKED BY: S. KERR	<p>PREPARED BY:</p> <p style="text-align: center;"> <b>Stantec</b></p> <p>PREPARED FOR:</p> <p style="text-align: center;"> <b>Pacific NorthWest LNG</b></p> <p>FIGURE NO:</p> <p style="text-align: center; font-size: 24pt; font-weight: bold;">3</p>
DATE: 03-NOV-14	PROJECTION: UTM - ZONE 9							
FIGURE ID: 123110537-839	DATUM: NAD 83							
DRAWN BY: N. PUREWAL	CHECKED BY: S. KERR							



- 2014 Survey Quadrats
- Project Component
- MOF Dredge Boundary
- Eelgrass Bed (*Zostera japonica*)
- Eelgrass Bed (*Zostera marina*)

**Pacific NorthWest LNG  
Eelgrass Surveys:  
2014 Survey Quadrats**

Sources: Government of British Columbia; Government of Canada, Natural Resources Canada, Centre for Topographic Information; Canadian Hydrological Service (CHS), 1995, Progress Energy Canada Ltd. Imagery date: 2009.

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

DATE: 07-NOV-14  
FIGURE ID: 123110537-839  
DRAWN BY: N. PUREWAL

PROJECTION: UTM - ZONE 9  
DATUM: NAD 83  
CHECKED BY: S. KERR

PREPARED BY:  
 **Stantec**

PREPARED FOR:  
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FIGURE NO:  
**4**