MEMORANDUM

DATE: September 15, 2020

TO: Jaclyn Daly (NOAA), Bonnie Easley-Appleyard (NOAA), and Anne Logwood (USACE)

FROM: Paul McLarnon and Leslie Curran (PCT Project Management Office)

CC: Kevin Doyle, Shelle Cover, Anna Kohl, Suzann Speckman, Sim Brubaker, and Steve Lee (PCT Project Management Office)

Subject: Monthly Field Report for August 2020, Petroleum and Cement Terminal Construction Project, Port of Alaska.

THIS REPORT CONTAINS PRELIMINARY DATA – INFORMATION MAY CHANGE AFTER A MORE DETAILED QA/QC IS COMPLETED.

SUBMITTAL COVER SHEET

Project	PCT 2020	Date Submitted:	**9/11/2020**
Contractor	Pacific Pile & Marine	Contract No.	C-2019003209
Subcontractor /Supplier / Manufacturer:	**61 North**		
Submittal No.:	**PCT2020-261E**	Revision:	**00**

Submittal Type: ☐ Action ☑ Informational

Submittal Title: **PCT 2020 - Marine Mammal Monitoring Monthly Report – August 2020**

Drawing Reference(s):

Specification Reference(s): 01 41 00 / 01.03.A.04

Standards Reference(s):

Submittal Description (inclusive of model number, style number, serial number and intended use:

Marine Mammal Monitoring Monthly Report – August 2020

Is this a deviation from Contract Documents (Yes/No)? No

CQCSM Verification:

☐ Review by CQCSM not performed/required

☑ (a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions), and the submittal is required by the Contract Documents.

☐ (b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (list deviations; attach a separate sheet as necessary), and the submittal is required by the Contract Documents

CQCSM Signature: Jim Page - CQCSM 09-11-2020

Owner's Respresentative Review:

☐ No Exceptions Taken
☐ Exceptions Noted
☐ Revise and Resubmit
☐ Rejected
☐ Review Not Required

Notes (additional notes/comments may be attached):

Owner's Representative Signature:

Corrections or Comments made relative to submittals during this review do not relieve the Contractor from compliance with the requirements of the Drawings and Specifications. This submittal is only for review of general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades; and performing his work in a safe and satisfactory manner.

Port of Alaska Modernization Program Petroleum and Cement Terminal - 2020 Construction

Monthly Marine Mammal Monitoring Report

1 August to 31 August 2020

Prepared for

Pacific Pile and Marine
700 South Riverside Drive
Seattle, WA 98108

and

Port of Alaska
2000 Anchorage Port Road
Anchorage, AK 99501

and

National Marine Fisheries Service
Permits and Conservation Division
Office of Protected Resources
1315 East-West Highway
Silver Spring, MD 20910

and

National Marine Fisheries Service
Alaska Region Protected Resources Division
222 W. 7th Ave, #43
Anchorage, AK 99513

Prepared:

September 9, 2020

By:

61 North Environmental
1834 Rogers Park Ct.
Anchorage, AK 99508

61 | N

Table of Contents

1 Introduction 3
2 Monitoring Effort and Environmental Conditions 4
Monitoring Effort 5
Environmental Conditions 6
3 In-Water Operations 10
Other Non-PCT Activity 10
4 Pile Driving Shutdowns, Delays, and Other Mitigation Measures 11
Other Mitigation Measures 14
5 Marine Mammal Observations 15
Marine Mammal Sighting Summary 15
Marine Mammal Exposures 16
6 References 20

Appendices

Appendix A – In-Water Activity Detail
Appendix B – Marine Mammal Sighting Summary
Appendix C – 8/1 – 8/2 Sighting Forms and Maps
Appendix D – Week of 8/3 – 8/9 Sighting Forms and Maps
Appendix E – Week of 8/24 – 8/30 Sighting Forms and Maps
Appendix F – 8/31 Sighting Forms and Maps
Appendix G – Data Field Information for Sighting Reports

Acronyms and Abbreviations

61N	61 North Environmental
ESA	Endangered Species Act
HDR	HDR, Inc.
IHA	Incidental Harassment Authorization
ITS	Incidental Take Statement
MMO	marine mammal observer
MOA	Municipality of Anchorage
NEX	North Expansion
NMFS	National Marine Fisheries Service
PAMP	Port of Alaska Modernization Program
PCT	Petroleum and Cement Terminal
POA	Port of Alaska
PPM	Pacific Pile and Marine
PW	Point Woronzof
SC	Ship Creek

1 Introduction

The National Marine Fisheries Service (NMFS) issued the Port of Alaska (POA) an Incidental Harassment Authorization (IHA) under the Marine Mammal Protection Act on 31 March 2020, effective 1 April 2020 for construction of the Petroleum and Cement Terminal (PCT) (NOAA 2020a) as described in the Federal Register, Volume 85, Number 66, page 19294 (NMFS 2020; 85 FR 19294). NMFS also completed a consultation under Section 7 of the Endangered Species Act (ESA) and issued a biological opinion of the effect the project may have to threatened and endangered species. NMFS issued an incidental take statement (ITS) under the ESA that mirrors and complements the IHA for ESA-listed species.

The PCT is a component of the Port of Alaska (POA) Modernization Program (PAMP). The Municipality of Anchorage (MOA) owns the POA and is the PCT project owner. Pacific Pile and Marine (PPM) is the prime contractor for PCT construction work in 2020 and 61 North Environmental (61N) is a subcontractor to PPM. The MOA contracted with CH2M Hill, Inc. (now a subsidiary of Jacobs Engineering Group) and HDR, Inc. (HDR) to provide permitting and compliance services for the PCT project.

The IHA and ITS require implementation of mitigation measures such as shutdowns and delays of pile installation or removal during construction of the PCT to reduce the impacts to protected marine mammal species. Beginning on 27 April 2020, 61N deployed eleven marine mammal observers (MMO) to four observation locations near the POA to monitor the waters of lower Knik Arm in Upper Cook Inlet. During the month of August 2020, the MMOs monitored for 15 days. The MMOs assist PPM in implementation of the mitigation measures by alerting the construction crew when marine mammals are within or approaching harassment zones. Typically, the MMOs communicate with PPM superintendents and foreman by radio and mobile phone. The MMOs document in-water construction activities including pile installation and removal, vessel traffic, anchor handling, and other relevant activity; sightings of marine mammals, group composition, behaviors, and location; and environmental and visibility conditions. All observation stations are equipped with laptops and high-speed data connections. All data is entered into Microsoft Access forms, and saved instantaneously to a cloud-hosted SQL server.

This report contains descriptions and summaries of the preliminary data collected including monitoring effort and environmental conditions, in-water operations and pile work completed, mitigation measures implemented, marine mammal species present and behavioral observations, and potential exposures or takes of marine mammals.

2 Monitoring Effort and Environmental Conditions

The waters of lower Knik Arm in upper Cook Inlet, Alaska near the PCT are monitored from four observation stations: near Point Woronzof (PW), at Ship Creek (SC), at the PCT, and at the North Expansion (NEX) of the POA (Figure 1).

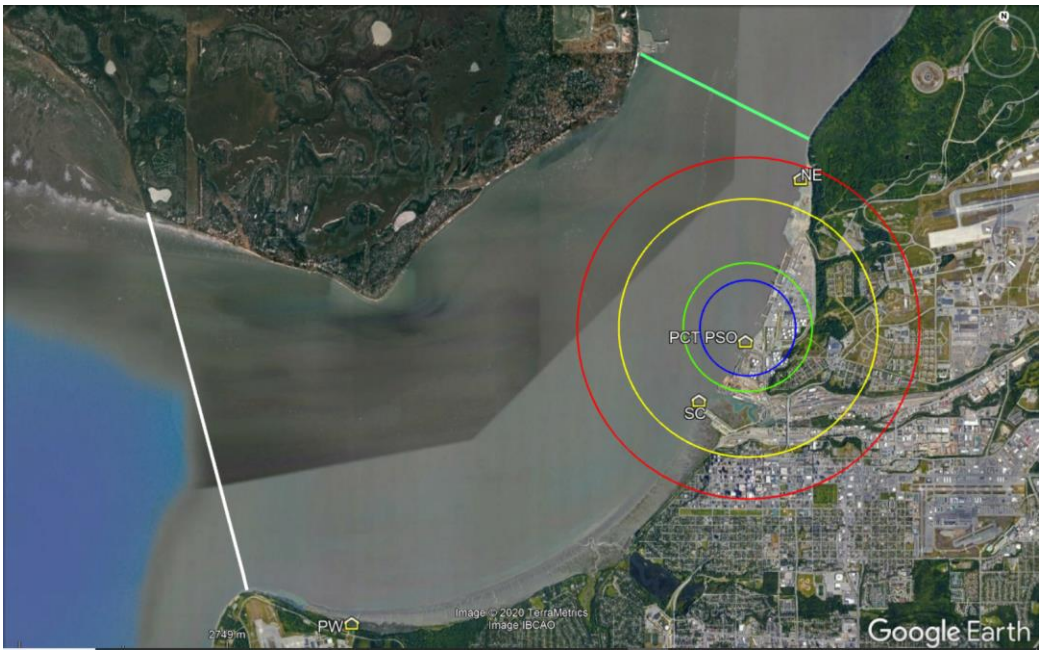


Figure 1 - Observation Stations and the In-bound (white line) and Out-bound (green line) Pre-Pile Driving Clearance Demarcation Lines

The PCT station is staffed by two MMOs including the field lead. The PCT station monitors marine mammal activity near the PCT, pile driving and removal, other in-water activity, and the harassment and shutdown zones near the PCT. The NEX, SC, and PW stations are staffed by three MMOs each, rotating between duties including: scanning with 7X50 binoculars or unaided eye, scanning with the 25X150 “big eye” tripod mounted binoculars (NEX and PW) or 20X/40X tripod mounted binoculars (SC), and a data collection/rest shift in a data shack.

Each morning, pre-clearance monitoring begins when all three of the large binoculars are set up and active scanning has begun at all four stations. The monitoring ends approximately 10 hours after the start time unless additional time is required by construction activities. MMOs are afforded a 15-minute break (or combination of smaller breaks) in the morning and again in the afternoon. They also take an unpaid half-hour lunch break. The lunch breaks typically occur between 11:30 and 13:00 but may be taken earlier or later if there is an active sighting or planned in-water activity, or both.

Monitoring Effort

Observation hours are summarized on a project level, a per-station level, and a per-MMO level. The project-level observation hours are calculated as the duration between the beginning of pre-clearance and the observation end time each day. Observations generally end at a scheduled time (17:15), unless in-water activity occurs late in the day, and the 30-minute post pile driving monitoring period extends past the scheduled shift. The station-level hours are calculated based on the project hours multiplied by four stations. Actual station start times may be a few minutes earlier because pre-clearance does not begin until the last station reports the start of monitoring. The MMO observation duration is calculated by multiplying the project-level hours by seven "on watch" MMOs, subtracting break periods (30-minute lunch, and a 15-minute break each morning and afternoon). In practice, breaks are typically taken during the data collection rotation, and the actual total "on watch" hours may be greater than estimated.

During the month of August 2020, no in-water pile installation or removal occurred on 16 of the 31 days in the month and no marine mammal monitoring was conducted on those days. The monthly observation hours are presented in Table 1.

Table 1 - Observation Effort

Date	Begin Time	End Time	Project Observation Hours	Station Observation Hours[1]	MMO Observation Hours[2]
8/1/2020	7:02	18:04	11.03	44.1	66.7
8/2/2020	7:03	17:15	10.20	40.8	60.9
8/3/2020	7:02	17:40	10.63	42.5	63.9
8/4/2020	7:02	18:07	11.08	44.3	67.1
8/5/2020	7:00	17:15	10.25	41.0	61.3
8/6/2020	7:00	17:33	10.55	42.2	63.4
8/7/2020	7:02	11:45	4.72	18.9	31.3
8/8/2020	n/a	n/a	n/a	n/a	n/a
8/9/2020	n/a	n/a	n/a	n/a	n/a
8/10/2020	n/a	n/a	n/a	n/a	n/a
8/11/2020	n/a	n/a	n/a	n/a	n/a
8/12/2020	n/a	n/a	n/a	n/a	n/a
8/13/2020	n/a	n/a	n/a	n/a	n/a

Date	Begin Time	End Time	Project Observation Hours	Station Observation Hours[1]	MMO Observation Hours[2]
8/14/2020	n/a	n/a	n/a	n/a	n/a
8/15/2020	n/a	n/a	n/a	n/a	n/a
8/16/2020	n/a	n/a	n/a	n/a	n/a
8/17/2020	n/a	n/a	n/a	n/a	n/a
8/18/2020	n/a	n/a	n/a	n/a	n/a
8/19/2020	n/a	n/a	n/a	n/a	n/a
8/20/2020	n/a	n/a	n/a	n/a	n/a
8/21/2020	n/a	n/a	n/a	n/a	n/a
8/22/2020	n/a	n/a	n/a	n/a	n/a
8/23/2020	n/a	n/a	n/a	n/a	n/a
8/24/2020	7:02	17:15	10.22	40.9	61.0
8/25/2020	7:05	17:15	10.17	40.7	60.7
8/26/2020	7:00	17:15	10.25	41.0	61.3
8/27/2020	7:06	17:15	10.15	40.6	60.6
8/28/2020	6:58	17:15	10.28	41.1	61.5
8/29/2020	7:05	17:04	9.98	39.9	59.4
8/30/2020	7:00	18:06	11.10	44.4	67.2
8/31/2020	7:02	17:36	10.57	42.3	63.5
Total Hrs Observation:			**151.18**	**604.73**	**909.53**

Notes: [1] equals project hours X 4 Stations
[2] equals project hours X 7 MMOs "on watch" minus breaks
n/a = No in-water pile installation or removal was conducted, and no marine mammal monitoring occurred.

Environmental Conditions

MMOs at each station typically record the environmental conditions upon station setup and every half hour throughout the day. MMOs also make additional entries for major changes in weather and to record other relevant activity that is not related to PCT construction (i.e. dredge vessel, private vessel, etc.). All observations are conducted during daylight hours. The environmental attributes recorded include general observation conditions (a scale of 1 to 10; 1 = poor, 5 = moderate, 10 = excellent), weather condition (cloudy, sunny, raining, etc.), light conditions (light, dark, twilight),

cloud cover (percent), ice cover (percent), sea state (Beaufort scale), glare (percent), and visibility (distance at which a white beluga could be sighted with optics). During the 15 days of observation in August 2020, MMOs recorded 1,208 observations of environmental conditions.

The overall observation conditions deteriorated some during August but remained good to excellent for most of observation days. The "observation condition" was 7 or greater for 94 percent of the records entered. The average visibility was almost 7,000 meters and was greater than or equal to 5,000 meters for 91 percent of the observations. Thermal distortion was mentioned 19 times as affecting visibility at long distances. Cloud cover averaged 73 percent and exceeded 50 percent about 75 percent of the time. Visibility reduced to less than 3,000 meters on brief occasions on 24 and 25 August due to mist and rain. On the morning of 28 August, visibility was reduced to 600 to 2,500 meters due to fog. The fog rolled in at the end of a delay of in-water work due the presence of belugas. The marine mammal delay transitioned to weather delay for an 18-minute period.

Glare was recorded as less than or equal to 10% for 99 percent of observations. Wind speed, direction, and air temperature are not recorded by the MMOs as these meteorological data are available from the National Oceanic and Atmospheric Administration (NOAA) tide station 9455920 located at the POA, a few hundred meters from the PCT (NOAA 2020b). Weather conditions and sea state in August were similar to observations in July. A summary of the weather conditions observed is presented in Table 2 and a summary of the Beaufort sea state observed is presented in Table 3.

Table 2. Summary of Weather Conditions

Weather Condition	Percent Occurrence[1]
Sun	11.2%
Partly Sunny	9.3%
Partly Cloudy	21.9%
Cloudy	36.4%
Fog	0.7%
Mist	0.2%
Light Rain	9.6%
Rain	10.8%
Note: [1] percentages total to 100.1% due to rounding	

Table 3. Summary of Beaufort Sea State Observations

Beaufort Sea State	Percent of Observations
0	0%
1	29%
2	66%
3	5%
4	0%
>=5	0%

The tidal stages were pre-loaded into the database and are auto-populated based on the time stamp of the observation. The definitions for the tidal stages used are presented in Table 4 and a summary of tidal stages recorded is presented in Table 5.

Table 4. Tidal Stage Definitions

Tide Stage	Definition
Low Slack	Plus or minus one hour from low tide
Low Flood	Begins at the end of low slack, ends half-way between[1] the end of low slack and the start of high slack
High Flood	Begins half-way between[1] the end of low slack and the start of high slack, ends at the start of high slack
High Slack	Plus or minus one hour from high tide
High Ebb	Begins at the end of high slack, ends half-way between[1] the end of high slack and the start of low slack
Low Ebb	Begins half-way between[1] the end of high slack and the start of low slack, ends at the start of low slack

Note: [1] "half-way between" is time-based, and may not represent the actual, physical half-way point between high and low tide on the sinusoidal tidal graph. The time-based half-way point was used to simplify the calculation of tidal stage for over 300,000 tide prediction records.

Table 5. Summary of Tide Stages Recorded

Tide Stage	Percent of Observations[1]
Low Slack	16%
Low Flood	16%
High Flood	14%
High Slack	14%
High Ebb	19%
Low Ebb	20%
Note: [1] percentages total to *99%* due to rounding	

The wind speed and direction for the 15 days worked in August were downloaded in six minute intervals from the NOAA meteorological observations page for the Anchorage, Alaska tide station 9455920 (2020b). The data for 07:00 through 18:00 were selected for each day. These data are summarized and presented in Figure 2.

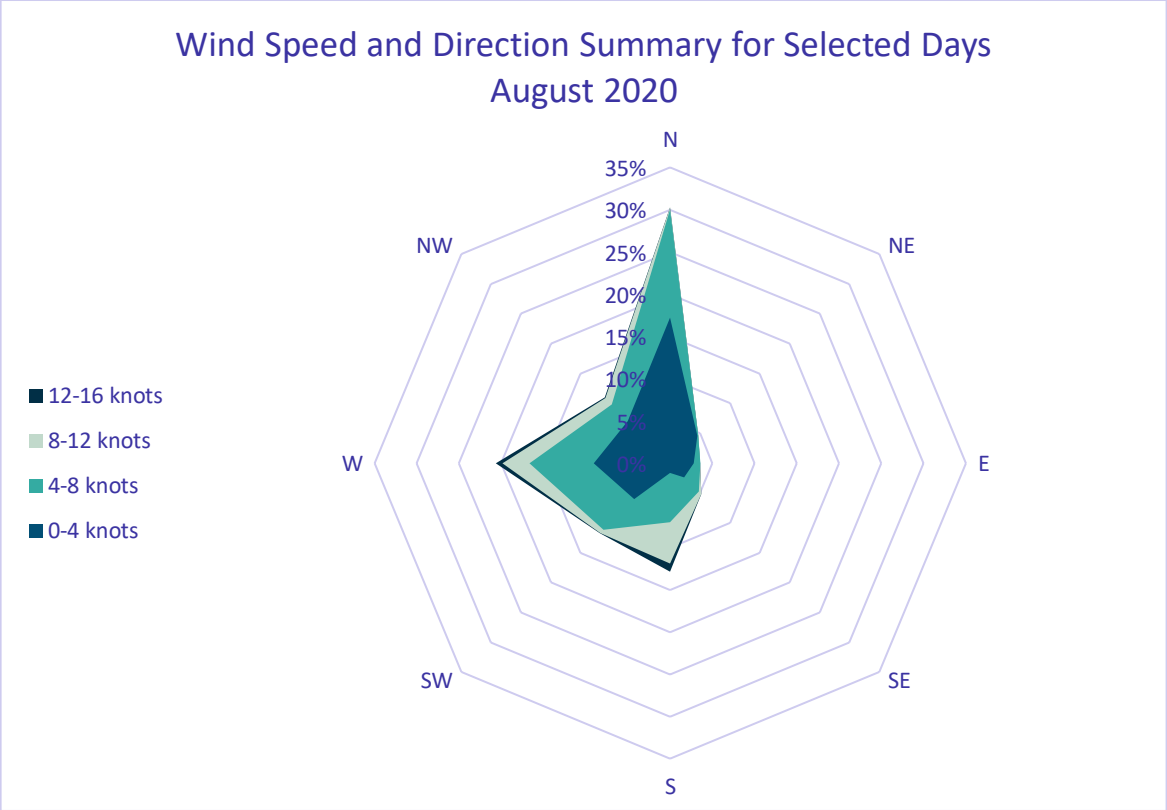


Figure 2. Wind Speed Rose, NOAA Tide Station 9455920, Anchorage Alaska, August 1-7, and 24-31 (07:00 to 18:00 daily)

The wind rose presented in Figure 2 shows that wind was typically out of the north or west, with occasional winds from the south-southwest. It also shows that most (88 percent) of the wind speeds were at or below 8 knots, with only a small fraction between 8 and 16 knots.

3 In-Water Operations

During the month of August 2020, there were 50 in-water activity events, totaling 683.5 minutes of activity. During this time there were 38 in-water pile driving or removal events, totaling 622.2 minutes. An additional 11 instances of in-water vibratory installation of the bubble curtain occurred for a total of 27.7 minutes. One other non-pile driving, in-water activity occurred for a total of 33.6 minutes. A summary of the in-water activity is presented in Table 6. Details of the in-water activity is provided in Appendix A.

Other nearby vessel activity, dredging, and personal watercraft operations are documented in the observation effort notes or sighting notes if interactions with marine mammals occur, but the duration of these other activities is not documented if not related to PCT construction.

Table 6 Monthly Summary of In-Water Activity

Activity	Number of Instances	Total Minutes	In-Water Activity Group Totals					
			#	Mins	#	Mins	#	Mins
Impact Hammer – Attenuated	10	287.3	**38**	**622.2**	**49**	**649.9**	**50**	**683.5**
Impact Hammer – Unattenuated	0	0						
Vibratory Hammer – Attenuated	21	247.7						
Vibratory Hammer – Unattenuated	7	87.2						
Vibratory Installation of Bubble Curtain	11	27.7						
Other In-Water Activity	1	33.6						

Other Non-PCT Activity

The MMOs documented other vessel activity not related to the PCT in lower Knik Arm. Other activities documented include: tug (7 times), barge (10 times), work barge obscuring portion of view (2 times), dredge (7 times), boat (15 times), recreational boat/jet ski/zodiac/skiff/private boat (1 time), survey boat (1 time).

4 Pile Driving Shutdowns, Delays, and Other Mitigation Measures

The IHA requires a delay of pile installation or removal if:

- Belugas are present within the pre-clearance zone and on a trajectory towards a Level B zone or are sighted within a Level B zone
- Any marine mammal is sighted within the 100-meter shutdown zone
- A marine mammal for which no takes have been authorized approaches or enters any harassment zone.

If pile installation or removal is already underway, then a shutdown is required if:

- Belugas are sighted within or about to enter a Level B zone
- Any marine mammal is sighted within the 100-meter shutdown zone
- A marine mammal for which no takes have been authorized approaches or enters any harassment zone.

If visibility of the applicable harassment zone is lost, then installation or removal of the next pile must be delayed until conditions improve such that the zone can be effectively monitored. If the Level B harassment zone cannot be monitored for more than 15 minutes, the entire Level B harassment zone must be cleared again for 30 minutes prior to pile driving.

During the month of August 2020, nine delays of pile installation or removal were required due the presence of belugas within the pre-clearance zone or because they were approaching the Level B zone. There were three shutdowns of active pile installation or removal and one delay of work due to a lack of visibility. The delays and shutdowns are summarized in Table 7.

Table 7 - Monthly Summary of Delay and Shutdown Mitigation Measures

Delay/Shutdown Type	Start Time	End Time	Marine Mammal Group ID	Mitigation Duration (minutes)
Delay, marine mammal	8/4/2020 08:50	8/4/2020 09:09	448	20
Delay, marine mammal	8/6/2020 09:56	8/6/2020 10:20	455	24
Shutdown, marine mammal	8/6/2020 10:40	8/6/2020 12:23	457	103
Delay, marine mammal	8/6/2020 15:18	8/6/2020 16:30	459 and 460	72
Shutdown, marine mammal	08/25/2020 13:58	08/25/2020 14:23	487	24

Delay/Shutdown Type	Start Time	End Time	Marine Mammal Group ID	Mitigation Duration (minutes)
Shutdown, marine mammal	08/26/2020 08:29	08/26/2020 15:43	495	435
Delay, marine mammal	08/27/2020 07:42	08/27/2020 09:24	513	102
Delay, marine mammal	08/28/2020 09:16	08/28/2020 10:41	530 and 533	84
Weather delay	08/28/2020 10:41	08/28/2020 11:00	n/a	18
Delay, marine mammal	08/30/2020 11:38	08/30/2020 12:30	554 and 557	52
Delay, marine mammal	08/30/2020 15:41	08/30/2020 17:18	563	97
Delay, marine mammal	08/31/2020 07:32	08/31/2020 13:38	570 and 572	366
Shutdown, marine mammal	08/31/2020 13:41	08/31/2020 14:32	576 and 570	51
Delay, marine mammal	08/31/2020 16:10	08/31/2020 16:27	577	17
			Total Monthly Mitigation Duration:	**1,465**

The marine mammal delays and shutdowns were described as follows:

Group 448: Seven beluga whales had been inside the northern boundary since 0758 and headed southwest down the far shore. Bo, the crane operator, was radioed after marine side picked up the green vibrating hammer to install a bubble casing (7,888-meter zone) and he indicated to start the delay at 0849. Fix 1988 for this group showed all beluga whales voluntarily leaving the zone and exiting out of the southern boundary line while continually heading in a westward direction. All clear was given at 0909 for work to commence.

Group 455: Three belugas were sighted during the morning pre-clearance and remained in the area until marine side was readying to work. This sighting resulted in a marine mammal delay for a vibe installation of a 72" bubble casing. The delay ended when thirty minutes passed from last sighting of this beluga group.

Group 457: This sighting resulted in a MM shutdown. A group of nine beluga were sighted 100 meters off nearshore at Cairn Point within the Level B zone (7,888 meters) during vibe installation of a 72" bubble casing. The vibe hammer operated from 10:38:38 to 10:38:51 and the initial sighting of this group was at 10:39. The shutdown ended when thirty minutes passed since last sighting of this beluga group.

Groups 459 and 460: This sighting occurred as the marine side was preparing to impact a 48" pile with a bubble curtain (2,900-meter Level B zone). This delay began when group 459 was sighted within the pre-clearance zone and heading toward the Level B zone prior to the beginning of work. The delay continued when group 460 was sighted within the level B zone before the zone was cleared from group 459. The delay ended when 30 minutes had passed since the last sighting of group 459 and group 460 was visually confirmed outside the level B zone and on a path away.

Group 487: A single white whale and calf were sighted within the Level B zone (2635m) at 13:58 during the vibratory removal of a 24" pile with a bubble casing. The hammer operator was alerted, and all work ceased immediately. The first fix, recorded at 14:05, showed the pair at 1,788 meters from the PCT. The shutdown ended at 14:20 when the pair was observed to have traveled over 100 m beyond the Level B zone and on a path continuing away.

Group 495: This beluga group was sighted outside and on a direct path towards the Level B zone (2635 m) for vibratory pile (24") removal during work. A shutdown was called, and all water work stopped before the group entered the zone. The group remained within the Level B zone until it was observed voluntarily leaving the zone and on a path away. Total shutdown time was 435 minutes.

Group 513: A single beluga was sighted during pre-clearance inside the in-bound line and on a path toward the Level B zone (2635 m) during work preparations. Chris and Dan were notified, and a delay was implemented at 07:41. The delay was ended when the beluga was visually verified to have left the Level B zone and was on a path away. Chris and Dan were notified of the "All Clear" at 09:23. Total shutdown time was 102 minutes.

Group 530 and 533: As shore-side was preparing to for template pile removal in-water, a delay was implemented when these beluga whales entered the Level B zone (2635m) for vibratory removal of a 24" pile with a bubble casing. No work occurred. The delay began at 09:16. The delayed ended when observers visually verified the group had voluntarily left the Level B zone by 100m and was on a path away. Total marine mammal delay time was 84 minutes.

28 August Weather Delay: Immediately after the marine mammal delay caused by groups 530 and 533, a fog bank rolled in, reducing visibility of the Level B zone, and continued the delay. Total weather delay was 18 minutes.

Group 554 and 557: These beluga groups were initially sighted outside the Level B zone (3,000 m) during template pile removal (no bub curtain). During a break in in-water work, the groups combined and then entered the Level B zone. A delay was initiated at 11:38 as shore-side was preparing to return to work. The delay was ended when observers visually verified the combined groups to have traveled outside the Level B zone by 100 m and were on a path away. Total delay time was 52 minutes.

Group 563: Beluga group 563 was sighted within 300 m of and heading towards the Level B zone (3,000 m) for vibratory removal of a template pile. A delay was called at 15:41 as shore-side was preparing for in-water work. The beluga group remained inside the Level B zone until 17:18 when they were visually confirmed to have left the Level B zone (3,000 m) and were on a path away. Total delay time 97 minutes.

Groups 570 and 572: Beluga group 570 was sighted inside the Level B zone (2,635m) for 24" vibe with a bubble curtain during pre-clearance. Marine-side was prepared to work at the end of morning pre-clearance and a delay was initiated then at 07:32. At 08:03 a second beluga group (572) entered the Level B zone. The delay was ended at 13:38 when both beluga groups had been observed voluntarily leaving the Level B zone and on a path away. Total delay time: 366 minutes.

Groups 576 and 570: A shutdown was initiated at 13:41 when a single beluga (group 576) was sighted within the Level B zone (2,635 m) for 24" vibe with a bubble curtain. Group 570 then turned around from its path away and began traveling back to within 70m and continuing towards the Level B zone. The shutdown was ended when 30 minutes had passed since the last sighting of group 576, and group 570 was confirmed to be on a path away from the Level B zone. Total shutdown time: 51 minutes.

Group 577: Beluga group sighted within 180 m of Level B zone (2,635 m) for 24" vibe with a bubble curtain and traveling toward it. Delay implemented at 16:10. Delay was ended when group was re-sighted approximately 450 m from the Level B zone and on a path away. Total delay time: 17 minutes.

Other Mitigation Measures

In accordance with the IHA, the MMOs monitored for 30 minutes post-completion of every in-water pile installation or removal. Generally, the post-completion period is within the normally scheduled day. On days when pile driving extends beyond the normal schedule, the MMOs stay on watch for at least another 30 minutes after completion of in-water pile installation or removal.

The PPM operators have used “soft start” techniques when initiating impact pile driving for in-water installation or removal of piles.

On 27 August, PPM removed 24-inch and 36-inch piles with a vibratory hammer without attenuation. The removals were conducted without a bubble curtain either because the water depth was less than 3 meters or because obstructions prevented the installation of the bubble curtain. When PPM requested approval from the POA to remove the obstructed 24-inch piles without attenuation, the POA requested monitoring of a 3,000-meter Level B zone, rather than the 2,247-meter zone in the IHA. On 31 July, NMFS issued a letter to the POA revising the Level B zones for attenuated installation of 48-inch piles with an impact hammer and attenuated installation or removal of 24- and 36-inch

piles with a vibratory hammer. The new Level B zones for attenuated installation or removal of 24- and 36-inch piles with a vibratory hammer were revised to 2,635 meters. Because the new attenuated zone was larger than the unattenuated zone for installation or removal of a 24-inch pile with a vibratory hammer listed in the IHA (2,247-meters), the POA advised PPM to monitor a 3,000 meter Level B zone for these events as a precaution.

5 Marine Mammal Observations

All marine mammal sightings are documented in the database. A parent record is entered for each marine mammal group with group-level attributes such as species, age/color class, primary and secondary behavior, distribution, formation, and pace. Once a group is identified, one or more group position "fixes" are measured and calculated.

Marine Mammal Sighting Summary

During the 15 days of observation in the month of August, 120 groups of marine mammals were sighted totaling 345 individual animals. There were 56 groups of belugas comprised of 274 individuals, 4 groups of harbor porpoises comprised of 5 individuals, and 60 harbor seal groups comprised of 66 individuals.

Due to the high abundance of belugas in Knik Arm during in the latter part of August, and the fluid nature of beluga group dynamics, tracking groups became more challenging. Several groups split or combined with other groups, sometimes multiple times throughout a sighting. For example, belugas in groups 471, 474, 475, 477, 478, 480, and 482 were present along the southeastern shoreline of Knik arm from 12:18 to 17:12 on 24 August, splitting and combining over 7 hours. Beluga groups were often spread out in a long, linear fashion where some animals would travel at slower rates, stop and mill, or reverse direction, causing a split in the group. The MMOs use their best professional judgment when to split or combine groups with guidance from the experienced Lead MMOs. Often, the counts of the total group were maintained under only one of the sighting records, while locations, notes, and behaviors of the sub-groups were tracked under separate records. The total sum of individual animals for the two (or more) groups is equal to the total number sighted. The MMOs are vigilant to not double count animals under separate group IDs.

The number of groups and individuals are presented by species in Table 8 Appendix B. Additional sighting details including group composition, locations, sighting times, behaviors, sighting notes, and location maps are provided in Appendices C through F. The data field information for the sighting reports is presented in Appendix H.

Table 8 - Number of Marine Mammal Groups and Individuals for August 2020

Species	Number of Groups	Number of Individuals
Beluga	56	274
Harbor Porpoise	4	5
Harbor Seal	60	66
Totals:	**120**	**345**

Marine Mammal Exposures

During the month of August, there were nine in-water pile installation or bubble curtain installation events that caused the potential exposure of eight harbor seals to underwater noise exceeding the Level B threshold and the potential exposure of two harbor seals to underwater noise exceeding the Level A threshold. Table 9 contains a summary of the potential exposures for the month of August 2020.

Table 9 - Potential Marine Mammal Exposures from 1 August to 31 August 2020

Date	Species	Number of Marine Mammals	Group ID	Activity
8/1/20	Harbor Seal	1	442	Vibratory installation of a 72-inch bubble curtain
8/1/20	Harbor Seal	1	443	Vibratory installation of a 48-inch pile with a bubble curtain
8/4/20	Harbor Seal	1	453	Impact installation of a 48-inch pile within a bubble curtain
8/6/20	Beluga	9	457	Vibratory installation of a 72-inch bubble curtain
8/25/20	Beluga	2	487	Vibratory removal of a 24-inch pile with bubble curtain
8/27/20	Harbor Seal	1	510	Vibratory removal of a 24-inch pile with bubble curtain
8/27/20	Harbor Seal	1	511	Vibratory removal of a 24-inch pile with bubble curtain
8/27/20	Harbor Seal	1	523	Vibratory removal of a 24-inch pile without a bubble curtain

Date	Species	Number of Marine Mammals	Group ID	Activity
8/27/20	Harbor Seal	1	525	Vibratory removal of a 24-inch pile with bubble curtain
8/28/20	Harbor Seal	1	534	Vibratory removal of a 24-inch pile with bubble curtain
8/30/20	Harbor Seal	1	552	Vibratory removal of a 24-inch pile with bubble curtain
8/30/20	Harbor Seal	2	553	Vibratory removal of a 24-inch pile with bubble curtain
8/31/20	Harbor Seal	3	569	Vibratory removal of a 24-inch pile with bubble curtain
8/31/20	Beluga	1	576	Vibratory removal of a 24-inch pile with bubble curtain

The marine mammal exposures were described as follows:

Group 442: On 1 August, a harbor seal was sighted approximately 1,050 meters from the PCT, within the calculated Level B zone for installation of a 72-inch bubble curtain with a vibratory hammer (7,888 meters) during installation.

Group 443: On 1 August, a harbor seal (one of two seals in group 443) was sighted within the Level B zone (2,635 meters) during vibratory installation of a 48-inch pile within a bubble curtain. Later in the sighting, more than an hour after pile installation ceased, a second seal was added to the sighting but was not believed to be present during pile installation.

Group 453: On 4 August, a harbor seal was present inside the Level B zone while marine operations were impacting 48-inch permanent piles attenuated (2,900-meter zone, piles B6 and B7). Its closest approach was 767 meters, remaining outside of the Level A zone (664 meters) for impact installation of two 48-inch piles.

Group 457: On 6 August, a group of nine beluga were sighted 100 meters off nearshore at Cairn Point within the Level B zone (7,888 meters) during vibe installation of a 72-inch bubble casing. The vibe hammer operated for 13 seconds from 10:38:38 to 10:38:51 and the initial sighting of this group was at 10:39. The sighting resulted in the immediate shutdown of vibratory installation of the bubble curtain.

Group 487: On 25 August, a single white beluga whale and calf were sighted within the Level B zone (2,635m) at 13:58 during the vibratory removal of a 24-inch pile with a bubble casing. The hammer

operator was alerted, and all work ceased immediately. The first fix, recorded at 14:05, showed the pair at 1,788 meters from the PCT. The shutdown ended at 14:20 when the pair was observed to have traveled over 100 m beyond the Level B zone and on a path continuing away.

Groups 510, 511, 523, and 525: On 27 August, four sightings of single seals occurred inside the applicable Level B zones during attenuated and unattenuated removal of 24-inch piles with a vibratory hammer.

Group 534: On 28 August, a single harbor seal was sighted within the Level B zone during vibratory removal of a template pile.

Groups 552 and 553: On 30 August, one of the two seals in Group 552 was inside the Level B zone during in-water work (template pile removal). Group 553 was a sighting of two seals within the Level B zone during in-water work (template pile removal).

Group 569: On 31 August, this group of three harbor seals was present within the Level B zone (2,635 meters) for vibratory removal of a 24-inch pile with a bubble curtain

Group 576: On 31 August, a shutdown was initiated when a single beluga was sighted within the Level B zone (2,635 meters) for vibratory removal of a 24-inch pile with a bubble curtain.

The monthly and cumulative potential Level A and Level B exposures for all marine mammal species are presented in Table 10.

Table 10. Monthly and Cumulative Level B and Level A Exposures

Species:	Beluga	Harbor Seal	Harbor Porpoise	Steller Sea Lion	Killer Whale	Humpback Whale	Pinniped Unidentified
# Level B Takes Authorized	55	711	43	13	12	6	N/A
Monthly Potential Level B Exposures	12	14	0	0	0	0	0
Cumulative Potential Level B Exposures	12	39	1	0	0	0	1
# Level A Takes Authorized	0	305	21	0	0	2	N/A
Monthly Potential Level A Exposures	0	0	0	0	0	0	0
Cumulative Potential Level A Exposures	0	2	0	0	0	0	1

Note: [1] A potential Level B exposure of a harbor seal on 6/28 (Group 330) was reported in the June monthly report but ***was omitted*** in the weekly report for the week of 22 to 28 June. Consequently, the weekly reports since 28 June have reported one less than the actual cumulative potential Level B harbor seal exposure numbers.

6 References

NMFS (National Marine Fisheries Service). 2020 (March 31). *Incidental Harassment Authorization.* Issued to the Port of Alaska for the Construction of the Petroleum and Cement Terminal, by Donna S. Wieting, Director, Office of Protected Resources, National Marine Fisheries Service. Federal Register, Vol. 85, No. 66, page 19294 (85 FR 19294).

NOAA (National Oceanic and Atmospheric Administration). 2020a (April 6). *Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Construction of the Port of Alaska's Petroleum and Cement Terminal, Anchorage, Alaska*. Federal Register, Vol. 85, No. 66, page 19294 (85 FR 19294).

NOAA. 2020b (September 3). *Tides and Currents, Meteorological Obs., NOAA/NOS/CO-OPS, Winds at 9455920, Anchorage, AK.* Accessed 8 September 2020 at: https://tidesandcurrents.noaa.gov/met.html?id=9455920

Appendix A – In-Water Activity Detail

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
714	8/1/2020 7:47:30 AM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Barge is vibing in bubble casing into template position A6.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1255	8/1/2020 8:04:59 AM	8/1/2020 8:05:05 AM	0.1
1256	8/1/2020 8:11:00 AM	8/1/2020 8:12:42 AM	1.7
1257	8/1/2020 8:14:33 AM	8/1/2020 8:15:18 AM	0.7
		Total Duration	**2.5**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
716	8/1/2020 1:05:38 PM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Barge is vibing in bubble casing into template position E6.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1259	8/1/2020 1:17:48 PM	8/1/2020 1:17:53 PM	0.1
1260	8/1/2020 1:18:01 PM	8/1/2020 1:18:21 PM	0.3
1261	8/1/2020 1:19:13 PM	8/1/2020 1:20:22 PM	1.1
1262	8/1/2020 1:21:27 PM	8/1/2020 1:23:02 PM	1.6
1263	8/1/2020 1:24:05 PM	8/1/2020 1:26:12 PM	2.1
		Total Duration	**5.2**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
718	8/1/2020 1:38:23 PM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Barge is vibing in bubble casing into template position C6.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1265	8/1/2020 1:39:56 PM	8/1/2020 1:40:01 PM	0.1
1266	8/1/2020 1:41:41 PM	8/1/2020 1:42:36 PM	0.9
1267	8/1/2020 1:43:34 PM	8/1/2020 1:44:42 PM	1.1
1268	8/1/2020 1:47:07 PM	8/1/2020 1:47:22 PM	0.3
		Total Duration	**2.4**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
720	8/1/2020 3:29:40 PM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
Marineside is vibing in E6 using a bubble curtain.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1270	8/1/2020 3:37:25 PM	8/1/2020 3:37:27 PM	0
1271	8/1/2020 3:37:46 PM	8/1/2020 3:37:49 PM	0.1
1272	8/1/2020 3:38:04 PM	8/1/2020 3:38:08 PM	0.1
1273	8/1/2020 3:38:27 PM	8/1/2020 3:38:31 PM	0.1
1274	8/1/2020 3:45:32 PM	8/1/2020 3:46:36 PM	1.1
1275	8/1/2020 3:47:39 PM	8/1/2020 3:48:40 PM	1
1276	8/1/2020 3:49:33 PM	8/1/2020 3:52:25 PM	2.9
1277	8/1/2020 3:53:59 PM	8/1/2020 3:58:27 PM	4.5
1278	8/1/2020 3:59:08 PM	8/1/2020 4:01:14 PM	2.1
1279	8/1/2020 4:03:32 PM	8/1/2020 4:03:41 PM	0.1
		Total Duration	**12**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
722	8/1/2020 5:08:52 PM	Vibratory hammer with bubble curtain	48

Comments

Water Depth

>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1281	8/1/2020 5:19:10 PM	8/1/2020 5:19:14 PM	0.1
1282	8/1/2020 5:19:33 PM	8/1/2020 5:19:37 PM	0.1
1283	8/1/2020 5:19:55 PM	8/1/2020 5:19:58 PM	0.1
1284	8/1/2020 5:20:50 PM	8/1/2020 5:22:06 PM	1.3
1285	8/1/2020 5:24:00 PM	8/1/2020 5:25:35 PM	1.6
1286	8/1/2020 5:27:00 PM	8/1/2020 5:33:23 PM	6.4
1287	8/1/2020 5:34:26 PM	8/1/2020 5:34:28 PM	0
		Total Duration	**9.6**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
726	8/2/2020 8:48:18 AM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
Marineside is vibing in A6 using a bubble curtain. Shook the hammer to try to get it to seat properly. 0850 Bringing the hammer back down to the deck to adjust the jaws. 0901 lifting hammer off deck.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1291	8/2/2020 8:48:32 AM	8/2/2020 8:48:36 AM	0.1
1292	8/2/2020 8:48:57 AM	8/2/2020 8:48:59 AM	0
1294	8/2/2020 9:06:57 AM	8/2/2020 9:07:02 AM	0.1
1295	8/2/2020 9:07:22 AM	8/2/2020 9:08:11 AM	0.8
1296	8/2/2020 9:08:56 AM	8/2/2020 9:10:11 AM	1.2
1297	8/2/2020 9:10:42 AM	8/2/2020 9:13:16 AM	2.6
1298	8/2/2020 9:13:50 AM	8/2/2020 9:19:17 AM	5.5
		Total Duration	**10.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
727	8/2/2020 9:37:04 AM	Impact hammer with bubble curtain	48

Comments	Water Depth
Marineside is impacting A6 using a bubble curtain. 0943 soft start initiated.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1300	8/2/2020 9:42:51 AM	8/2/2020 10:17:13 AM	34.4
		Total Duration	**34.4**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
729	8/2/2020 10:33:10 AM	Impact hammer with bubble curtain	48

Comments	Water Depth
Marineside is impacting C6 using a bubble curtain. 1102 Had to set an additional three inches	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1302	8/2/2020 10:35:56 AM	8/2/2020 10:57:32 AM	21.6
1303	8/2/2020 11:02:38 AM	8/2/2020 11:09:02 AM	6.4
		Total Duration	**28**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
731	8/2/2020 11:28:54 AM	Impact hammer with bubble curtain	48

Comments	Water Depth
Marineside impacting E6 using a bubble curtain. Some issues keeping hammer running continously.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1305	8/2/2020 11:33:00 AM	8/2/2020 11:49:29 AM	16.5
1306	8/2/2020 11:51:33 AM	8/2/2020 11:51:44 AM	0.2
1307	8/2/2020 11:53:21 AM	8/2/2020 11:55:59 AM	2.6
1308	8/2/2020 11:57:18 AM	8/2/2020 12:09:39 PM	12.4
		Total Duration	**31.7**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
735	8/3/2020 8:09:40 AM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Marineside using green vib hammer (44B) to install bubble casing into template position D6.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1312	8/3/2020 8:17:54 AM	8/3/2020 8:17:59 AM	0.1
1313	8/3/2020 8:19:52 AM	8/3/2020 8:21:37 AM	1.8
		Total Duration	**1.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
737	8/3/2020 9:22:11 AM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
Marineside vibing in pile D6 using a bubble curtain.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1315	8/3/2020 9:33:36 AM	8/3/2020 9:33:39 AM	0.1
1316	8/3/2020 9:34:25 AM	8/3/2020 9:35:03 AM	0.6
1317	8/3/2020 9:35:45 AM	8/3/2020 9:38:17 AM	2.5
1318	8/3/2020 9:38:43 AM	8/3/2020 9:45:24 AM	6.7
1319	8/3/2020 9:47:00 AM	8/3/2020 9:47:02 AM	0
		Total Duration	**9.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
738	8/3/2020 1:07:47 PM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Marineside used the green vib hammer to install the casing into template position A7.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1321	8/3/2020 1:11:58 PM	8/3/2020 1:12:05 PM	0.1
1322	8/3/2020 1:13:20 PM	8/3/2020 1:14:09 PM	0.8
1323	8/3/2020 1:14:59 PM	8/3/2020 1:15:34 PM	0.6
1324	8/3/2020 1:16:54 PM	8/3/2020 1:17:44 PM	0.8
		Total Duration	**2.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
740	8/3/2020 1:32:36 PM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Marineside used the green vib hammer to install the casing into template position B6.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1326	8/3/2020 1:39:02 PM	8/3/2020 1:39:24 PM	0.4
		Total Duration	**0.4**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
742	8/3/2020 3:25:59 PM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
Marineside vibing in pile B6 using a bubble curtain.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1328	8/3/2020 3:27:55 PM	8/3/2020 3:28:05 PM	0.2
1329	8/3/2020 3:28:21 PM	8/3/2020 3:28:59 PM	0.6
1330	8/3/2020 3:29:44 PM	8/3/2020 3:34:23 PM	4.6
1331	8/3/2020 3:34:35 PM	8/3/2020 3:38:37 PM	4
		Total Duration	**9.4**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
743	8/3/2020 3:46:37 PM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
Marineside vibing in pile A7 using a bubble curtain.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1333	8/3/2020 3:52:46 PM	8/3/2020 3:52:48 PM	0
1334	8/3/2020 3:54:06 PM	8/3/2020 3:54:52 PM	0.8
1335	8/3/2020 3:55:25 PM	8/3/2020 3:56:38 PM	1.2
1336	8/3/2020 3:57:58 PM	8/3/2020 4:01:34 PM	3.6
1337	8/3/2020 4:01:57 PM	8/3/2020 4:06:24 PM	4.5
		Total Duration	**10.1**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
745	8/3/2020 4:30:16 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
Impacting A7 using a bubble curtain. Soft start initiated.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1339	8/3/2020 4:36:55 PM	8/3/2020 5:10:04 PM	33.1
		Total Duration	**33.1**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
751	8/4/2020 9:10:51 AM	Vibe Install bubble curtain casing	72

Comments	Water Depth
Barge vibing in a bubble casing using the green vib hammer.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1345	8/4/2020 9:14:55 AM	8/4/2020 9:15:06 AM	0.2
1346	8/4/2020 9:16:14 AM	8/4/2020 9:17:57 AM	1.7
1347	8/4/2020 9:19:04 AM	8/4/2020 9:20:21 AM	1.3
1348	8/4/2020 9:22:04 AM	8/4/2020 9:23:05 AM	1
		Total Duration	**4.2**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
753	8/4/2020 10:41:25 AM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
Vibing in B7 using a bubble curtain.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1350	8/4/2020 11:01:55 AM	8/4/2020 11:01:59 AM	0.1
1351	8/4/2020 11:02:12 AM	8/4/2020 11:02:15 AM	0
1352	8/4/2020 11:03:11 AM	8/4/2020 11:04:08 AM	0.9
1353	8/4/2020 11:05:19 AM	8/4/2020 11:07:55 AM	2.6
1354	8/4/2020 11:08:21 AM	8/4/2020 11:11:14 AM	2.9
1355	8/4/2020 11:11:54 AM	8/4/2020 11:15:41 AM	3.8
1356	8/4/2020 11:17:31 AM	8/4/2020 11:17:32 AM	0
		Total Duration	**10.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
757	8/4/2020 12:45:46 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
Impacting B7 using a bubble curtain. Soft start initiated (three dead blows).	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1358	8/4/2020 12:49:57 PM	8/4/2020 1:15:31 PM	25.6
		Total Duration	**25.6**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
759	8/4/2020 1:27:47 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
Impacting B6 using a bubble curtain.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1360	8/4/2020 1:30:53 PM	8/4/2020 1:59:36 PM	28.7
		Total Duration	**28.7**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
761	8/4/2020 2:24:26 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
Impacting D6 using a bubble curtain. Soft start initiated (three dead blows).	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1362	8/4/2020 5:08:55 PM	8/4/2020 5:37:23 PM	28.5
		Total Duration	**28.5**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
765	8/5/2020 9:50:27 AM	Vibe Install bubble curtain casing	72

Comments	Water Depth
MARINE SIDE: depth greater than 3 meters; Hammer attached to bubble casing at 09:50; hammer detached from bubble casing at 09:56.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1366	8/5/2020 9:51:45 AM	8/5/2020 9:52:52 AM	1.1
1367	8/5/2020 9:53:29 AM	8/5/2020 9:55:04 AM	1.6
		Total Duration	**2.7**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
766	8/5/2020 9:59:44 AM	Vibe Install bubble curtain casing	72

Comments	Water Depth
MARINE SIDE: depth greater than 3 meters; hammer attached to bubble casing 10:10; hammer off the bubble casing at 10:14.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1369	8/5/2020 10:10:38 AM	8/5/2020 10:12:29 AM	1.9
		Total Duration	**1.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
767	8/5/2020 12:44:29 PM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
MARINE-SIDE: depth greater than 3 meters; hammer attached to pile at 12:52; hammer removed from pile at 13:12.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1371	8/5/2020 12:52:43 PM	8/5/2020 12:52:43 PM	0
1372	8/5/2020 12:53:19 PM	8/5/2020 12:53:48 PM	0.5
1373	8/5/2020 12:54:22 PM	8/5/2020 1:04:12 PM	9.8
		Total Duration	**10.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
768	8/5/2020 1:13:06 PM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
MARINE SIDE: depth greater than 3 meters; hammer attached to pile at 13:14; hammer of the pile at 13:30.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1374	8/5/2020 1:14:50 PM	8/5/2020 1:14:55 PM	0.1
1375	8/5/2020 1:16:54 PM	8/5/2020 1:16:56 PM	0
1376	8/5/2020 1:18:16 PM	8/5/2020 1:18:35 PM	0.3
1377	8/5/2020 1:19:16 PM	8/5/2020 1:21:59 PM	2.7
1378	8/5/2020 1:22:17 PM	8/5/2020 1:29:24 PM	7.1
		Total Duration	**10.2**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
770	8/5/2020 1:49:00 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
MARINE SIDE: depth greater than 3 meters; hammer attached to the pile at 13:50; Soft start; hammer detached from pile at 14:32.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1380	8/5/2020 1:52:48 PM	8/5/2020 1:52:56 PM	0.1
1381	8/5/2020 1:53:47 PM	8/5/2020 1:53:49 PM	0
1382	8/5/2020 1:54:37 PM	8/5/2020 1:54:41 PM	0.1
1383	8/5/2020 1:55:28 PM	8/5/2020 2:03:05 PM	7.6
1384	8/5/2020 2:05:22 PM	8/5/2020 2:05:24 PM	0
1385	8/5/2020 2:06:46 PM	8/5/2020 2:25:03 PM	18.3
		Total Duration	**26.1**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
771	8/5/2020 2:33:37 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
MARINE SIDE: depth greater than 3 meters; hammer attached to the pile at 14:37; hammer detached from pile at 15:11	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1386	8/5/2020 2:40:15 PM	8/5/2020 2:40:16 PM	0
1387	8/5/2020 2:43:01 PM	8/5/2020 3:10:54 PM	27.9
		Total Duration	**27.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
772	8/5/2020 4:25:56 PM	Vibe Install bubble curtain casing	72

Comments	Water Depth
MARINE-SIDE: Water depth less than 3 meters; hammer attached to bubble can at 16:33; hammer off bubble can at 16:43.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1389	8/5/2020 4:34:58 PM	8/5/2020 4:34:59 PM	0
1390	8/5/2020 4:35:41 PM	8/5/2020 4:35:44 PM	0.1
1391	8/5/2020 4:37:33 PM	8/5/2020 4:38:05 PM	0.5
1392	8/5/2020 4:38:51 PM	8/5/2020 4:39:35 PM	0.7
1393	8/5/2020 4:40:45 PM	8/5/2020 4:41:51 PM	1.1
		Total Duration	**2.4**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
778	8/6/2020 10:33:37 AM	Vibe Install bubble curtain casing	72

Comments	Water Depth
ammer detached from casing at 12:31.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1399	8/6/2020 10:38:38 AM	8/6/2020 10:38:51 AM	0.2
1402	8/6/2020 12:28:18 PM	8/6/2020 12:29:49 PM	1.5
1403	8/6/2020 12:30:35 PM	8/6/2020 12:30:37 PM	0
		Total Duration	**1.7**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
780	8/6/2020 2:21:21 PM	Vibratory hammer with bubble curtain	48

Comments	Water Depth
hammer attached to pile at 14:28; hammer detached from pile at 14:43	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1405	8/6/2020 2:27:51 PM	8/6/2020 2:27:51 PM	0
1406	8/6/2020 2:27:56 PM	8/6/2020 2:28:00 PM	0.1
1407	8/6/2020 2:29:35 PM	8/6/2020 2:30:18 PM	0.7
1408	8/6/2020 2:30:51 PM	8/6/2020 2:31:04 PM	0.2
1409	8/6/2020 2:31:28 PM	8/6/2020 2:34:06 PM	2.6
1410	8/6/2020 2:34:28 PM	8/6/2020 2:41:01 PM	6.6
		Total Duration	**10.2**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
783	8/6/2020 4:30:21 PM	Impact hammer with bubble curtain	48

Comments	Water Depth
Hammer soft starts at 16:34;	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1413	8/6/2020 4:34:09 PM	8/6/2020 4:34:16 PM	0.1
1414	8/6/2020 4:35:21 PM	8/6/2020 4:35:22 PM	0
1415	8/6/2020 4:36:31 PM	8/6/2020 4:36:36 PM	0.1
1416	8/6/2020 4:37:58 PM	8/6/2020 5:01:05 PM	23.1
		Total Duration	**23.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
794	8/25/2020 9:36:13 AM	In-water activity, no pile driving	n/a

Comments

MARINE-SIDE: 09:36 pulling a bubble casing for temp piles out, to use for pile removal.;
SHORESIDE: 10:14 placing a small bubble casing for temp pile removal

Water Depth: n/a

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1428	8/25/2020 9:36:18 AM	8/25/2020 10:00:37 AM	24.3
1430	8/25/2020 10:14:25 AM	8/25/2020 10:23:42 AM	9.3
		Total Duration	**33.6**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
795	8/25/2020 10:24:47 AM	Vibratory hammer with bubble curtain	24

Comments

SHORE-SIDE: preparing to vib-out a 24" template pile; 13:11 bubble can on;

Water Depth: >3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1431	8/25/2020 1:12:13 PM	8/25/2020 1:12:17 PM	0.1
1432	8/25/2020 1:12:20 PM	8/25/2020 1:14:06 PM	1.8
1433	8/25/2020 1:17:25 PM	8/25/2020 1:17:33 PM	0.1
1434	8/25/2020 1:18:03 PM	8/25/2020 1:32:49 PM	14.8
1435	8/25/2020 1:53:10 PM	8/25/2020 1:53:48 PM	0.6
1436	8/25/2020 1:53:49 PM	8/25/2020 1:57:48 PM	4
1438	8/25/2020 2:22:47 PM	8/25/2020 2:34:00 PM	11.2
		Total Duration	**32.6**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
801	8/26/2020 7:45:13 AM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
SHORE-SIDE: Shutdown at 08:28 for G495;	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1443	8/26/2020 7:53:10 AM	8/26/2020 7:53:12 AM	0
1444	8/26/2020 7:53:43 AM	8/26/2020 8:13:55 AM	20.2
1445	8/26/2020 8:26:39 AM	8/26/2020 8:28:23 AM	1.7
		Total Duration	**21.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
803	8/26/2020 10:19:39 AM	Vibratory hammer, no bubble curtain	24

Comments	Water Depth
**NOTE: per Brian and Chris, authorized hammer shake to attach hammer to pile. (ATL post-processed, changed applicable Level B zone from 2247 to 3000)	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1448	8/26/2020 10:19:46 AM	8/26/2020 10:19:47 AM	0
		Total Duration	**0**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
809	8/27/2020 9:24:59 AM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
MARINE-SIDE: Template pile removal. Pile ID is approx. nearest permanent pile.	>3 Meters

In-Water Duration

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1453	8/27/2020 9:28:39 AM	8/27/2020 9:35:20 AM	6.7
		Total Duration	**6.7**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
811	8/27/2020 11:10:16 AM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
MARINE-SIDE: Template pile removal. Pile ID is approx. nearest permanent pile.	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1455	8/27/2020 11:17:35 AM	8/27/2020 11:29:28 AM	11.9
		Total Duration	**11.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
812	8/27/2020 11:54:43 AM	Vibratory hammer, no bubble curtain	24

Comments	Water Depth
SHORE-SIDE: Template pile removal. Pile ID is approx. nearest permanent pile. Less than 3 meters of water. (ATL post-processed, changed applicable Level B zone from 2247 to 3000)	<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1457	8/27/2020 12:46:49 PM	8/27/2020 12:56:44 PM	9.9
1458	8/27/2020 1:05:37 PM	8/27/2020 1:06:31 PM	0.9
1460	8/27/2020 1:15:54 PM	8/27/2020 1:23:39 PM	7.7
		Total Duration	**18.5**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
814	8/27/2020 1:55:14 PM	Vibratory hammer, no bubble curtain	24

Comments	Water Depth
SHORE-SIDE: Template pile removal. Pile ID is approx. nearest permanent pile. Less than 3 meters of water. (ATL post-processed, changed applicable Level B zone from 2247 to 3000)	<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1462	8/27/2020 1:57:09 PM	8/27/2020 2:03:41 PM	6.5
1464	8/27/2020 2:11:37 PM	8/27/2020 2:14:11 PM	2.6
		Total Duration	**9.1**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
815	8/27/2020 4:05:40 PM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
SHORE-SIDE: Template pile removal. Pile ID is approx. nearest permanent pile. ACTUAL STOP TIME for post statis ID 1469 is 16:33 (ATL post-processed: changed stop time for PSID 1469 to 16:33)	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1467	8/27/2020 4:13:27 PM	8/27/2020 4:13:31 PM	0.1
1468	8/27/2020 4:18:20 PM	8/27/2020 4:20:29 PM	2.1
1469	8/27/2020 4:27:51 PM	8/27/2020 4:33:00 PM	5.1
		Total Duration	**7.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
824	8/28/2020 11:00:24 AM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
SHORE-SIDE: **Template pile removal. Pile ID is approx. nearest permenant pile. Water depth is less than 3 meters.**	<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1476	8/28/2020 11:00:33 AM	8/28/2020 11:11:54 AM	11.4
1477	8/28/2020 11:28:29 AM	8/28/2020 11:35:01 AM	6.5
		Total Duration	**17.9**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
825	8/28/2020 12:21:27 PM	Vibratory hammer, no bubble curtain	36

Comments	Water Depth
SHORE-SIDE Hammer on 1221 **Template pile removal. Pile ID is approx. nearest permenant pile. Water depth is less than 3 meters.**	<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1478	8/28/2020 12:21:34 PM	8/28/2020 12:22:14 PM	0.7
1479	8/28/2020 12:23:17 PM	8/28/2020 12:26:43 PM	3.4
1480	8/28/2020 12:28:57 PM	8/28/2020 12:38:31 PM	9.6
1481	8/28/2020 12:38:45 PM	8/28/2020 12:38:46 PM	0
1482	8/28/2020 12:39:34 PM	8/28/2020 12:42:20 PM	2.8
1483	8/28/2020 12:53:25 PM	8/28/2020 12:57:13 PM	3.8
		Total Duration	**20.3**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
833	8/30/2020 8:12:21 AM	Vibratory hammer, no bubble curtain	24

Comments	Water Depth
SHORE-SIDE: **Template pile removal (19/20). Pile ID is nearest permanent pile. Water depth is greater than 3 meters.** No bubble curtain used okay, per Chris, Sim, and Melanie. (ATL post-processed: changed pile diameter from 36" to 24")	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1491	8/30/2020 8:14:08 AM	8/30/2020 8:14:09 AM	0
1492	8/30/2020 8:14:55 AM	8/30/2020 8:15:12 AM	0.3
1493	8/30/2020 8:15:21 AM	8/30/2020 8:16:59 AM	1.6
1494	8/30/2020 8:17:23 AM	8/30/2020 8:26:17 AM	8.9
1495	8/30/2020 8:29:52 AM	8/30/2020 8:39:11 AM	9.3
		Total Duration	**20.1**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
835	8/30/2020 9:15:40 AM	Vibratory hammer, no bubble curtain	24

Comments	Water Depth
SHORE-SIDE: **Template pile removal (19 or 20). Pile ID is nearest permanent pile. Water depth is greater than 3 meters.** No bubble curtain used okay, per Chris, Sim, and Melanie. This pile was not fully removed, shore-side will continue laster today. (ATL post-processed: changed pile diameter from 36" to 24")	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1497	8/30/2020 9:18:16 AM	8/30/2020 9:18:19 AM	0.1
1498	8/30/2020 9:18:30 AM	8/30/2020 9:18:36 AM	0.1
1499	8/30/2020 9:19:00 AM	8/30/2020 9:23:55 AM	4.9
1500	8/30/2020 9:27:37 AM	8/30/2020 9:28:30 AM	0.9
1501	8/30/2020 9:32:24 AM	8/30/2020 9:32:25 AM	0
		Total Duration	**6**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
839	8/30/2020 12:30:23 PM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
MARINE-SIDE: **Template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 meters.**	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1506	8/30/2020 12:32:41 PM	8/30/2020 12:42:51 PM	10.2
		Total Duration	**10.2**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
842	8/30/2020 5:18:59 PM	Vibratory hammer, no bubble curtain	24

Comments	Water Depth
SHORE-SIDE: **Template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 meters.** No bubble curtain used okay, per Chris, Sim, and Melanie. (ATL post-processed: changed pile diameter from 36" to 24")	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1509	8/30/2020 5:21:02 PM	8/30/2020 5:21:06 PM	0.1
1510	8/30/2020 5:23:13 PM	8/30/2020 5:36:18 PM	13.1
		Total Duration	**13.2**

In-Water Activity Report

Month of August 2020

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
846	8/31/2020 1:39:02 PM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
MARINE-SIDE: **template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 m** Shutdown at 13:41 for G576	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1514	8/31/2020 1:41:09 PM	8/31/2020 1:41:10 PM	0
		Total Duration	**0**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
848	8/31/2020 2:32:50 PM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
MARINE-SIDE: **template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 m**	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1516	8/31/2020 2:34:34 PM	8/31/2020 2:34:43 PM	0.2
1517	8/31/2020 2:34:56 PM	8/31/2020 2:43:48 PM	8.9
		Total Duration	**9.1**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
849	8/31/2020 2:44:35 PM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
SHORE-SIDE: **template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 m**	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1518	8/31/2020 2:45:48 PM	8/31/2020 2:53:53 PM	8.1
1519	8/31/2020 3:16:51 PM	8/31/2020 3:22:46 PM	5.9
		Total Duration	**14**

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
852	8/31/2020 4:27:46 PM	Vibratory hammer with bubble curtain	24

Comments	Water Depth
SHORE-SIDE: **template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 m**	>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1522	8/31/2020 4:31:43 PM	8/31/2020 4:32:02 PM	0.3
1523	8/31/2020 4:32:25 PM	8/31/2020 4:36:12 PM	3.8
1524	8/31/2020 4:36:25 PM	8/31/2020 4:36:51 PM	0.4
1525	8/31/2020 4:56:13 PM	8/31/2020 5:05:36 PM	9.4
		Total Duration	**13.9**

Appendix B – Marine Mammal Sighting Summary

Marine Mammal Group Summary Report

Month of August 2020

Species	Group ID	Initial Sighting Time	Total Individuals
Beluga			
	448	8/4/2020 7:20:40 AM	7
	455	8/6/2020 7:22:02 AM	3
	457	8/6/2020 10:40:03 AM	9
	458	8/6/2020 11:09:12 AM	0
	459	8/6/2020 3:15:03 PM	3
	460	8/6/2020 4:21:11 PM	1
	461	8/6/2020 4:43:08 PM	1
	465	8/24/2020 7:03:51 AM	11
	467	8/24/2020 7:32:08 AM	0
	471	8/24/2020 12:18:27 PM	8
	474	8/24/2020 12:49:23 PM	0
	475	8/24/2020 1:54:48 PM	5
	477	8/24/2020 2:46:49 PM	11
	478	8/24/2020 3:09:38 PM	0
	480	8/24/2020 3:53:32 PM	5
	482	8/24/2020 4:56:41 PM	0
	484	8/25/2020 7:55:02 AM	8
	485	8/25/2020 8:51:23 AM	2
	487	8/25/2020 2:03:18 PM	2
	491	8/25/2020 4:25:52 PM	9
	494	8/26/2020 7:08:44 AM	14
	495	8/26/2020 8:29:33 AM	13
	496	8/26/2020 9:42:20 AM	5
	497	8/26/2020 9:55:40 AM	21
	499	8/26/2020 11:42:07 AM	0
	501	8/26/2020 12:29:18 PM	1
	503	8/26/2020 1:18:27 PM	1
	512	8/27/2020 7:25:01 AM	1
	513	8/27/2020 7:28:29 AM	1
	515	8/27/2020 7:58:54 AM	2
	516	8/27/2020 8:21:15 AM	1
	520	8/27/2020 11:11:37 AM	6
	526	8/27/2020 5:09:42 PM	12
	530	8/28/2020 7:55:17 AM	1
	532	8/28/2020 8:17:24 AM	1
	533	8/28/2020 9:11:50 AM	14
	535	8/28/2020 12:17:45 PM	8

Species	Group ID	Initial Sighting Time	Total Individuals
Beluga	536	8/28/2020 1:19:58 PM	6
	539	8/28/2020 3:02:34 PM	0
	541	8/29/2020 7:25:46 AM	11
	544	8/29/2020 8:45:36 AM	0
	545	8/29/2020 8:52:39 AM	11
	546	8/29/2020 12:57:45 PM	10
	554	8/30/2020 9:16:32 AM	2
	555	8/30/2020 9:28:55 AM	2
	557	8/30/2020 11:05:34 AM	19
	561	8/30/2020 12:10:33 PM	2
	563	8/30/2020 3:38:37 PM	7
	567	8/31/2020 7:09:03 AM	3
	570	8/31/2020 7:30:51 AM	3
	571	8/31/2020 7:41:20 AM	2
	572	8/31/2020 7:58:00 AM	3
	573	8/31/2020 8:16:28 AM	1
	574	8/31/2020 8:56:25 AM	1
	576	8/31/2020 1:41:51 PM	1
	577	8/31/2020 4:05:00 PM	3
Total Groups for Species:	**56**	Total Individuals for Species:	**274**
Harbor Porpoise			
	449	8/4/2020 8:50:34 AM	1
	451	8/4/2020 10:20:31 AM	1
	452	8/4/2020 11:43:07 AM	1
	538	8/28/2020 2:11:18 PM	2
Total Groups for Species:	**4**	Total Individuals for Species:	**5**
Harbor Seal			
	441	8/1/2020 9:01:47 AM	1
	442	8/1/2020 1:24:26 PM	1
	443	8/1/2020 3:41:07 PM	2
	445	8/2/2020 5:16:22 PM	1
	450	8/4/2020 10:08:28 AM	1
	453	8/4/2020 11:52:36 AM	1
	466	8/24/2020 7:18:04 AM	1
	468	8/24/2020 7:42:52 AM	1
	469	8/24/2020 9:50:21 AM	1
	470	8/24/2020 10:12:59 AM	1
	472	8/24/2020 12:28:25 PM	1
	473	8/24/2020 12:43:50 PM	1
	476	8/24/2020 2:34:36 PM	1

Species	Group ID	Initial Sighting Time	Total Individuals
Harbor Seal	479	8/24/2020 3:43:44 PM	1
	481	8/24/2020 4:16:31 PM	1
	486	8/25/2020 12:28:48 PM	1
	488	8/25/2020 3:49:09 PM	1
	489	8/25/2020 3:56:57 PM	1
	490	8/25/2020 4:00:41 PM	1
	493	8/26/2020 7:05:43 AM	1
	498	8/26/2020 11:18:59 AM	1
	500	8/26/2020 12:07:15 PM	1
	502	8/26/2020 12:34:45 PM	1
	504	8/26/2020 1:51:16 PM	1
	506	8/26/2020 3:19:10 PM	1
	507	8/26/2020 3:26:30 PM	1
	508	8/26/2020 3:56:33 PM	1
	510	8/27/2020 7:07:01 AM	1
	511	8/27/2020 7:13:51 AM	1
	514	8/27/2020 7:43:16 AM	1
	517	8/27/2020 8:46:31 AM	1
	518	8/27/2020 9:01:18 AM	1
	519	8/27/2020 10:16:33 AM	1
	521	8/27/2020 11:56:17 AM	2
	522	8/27/2020 1:23:09 PM	1
	523	8/27/2020 1:36:48 PM	1
	524	8/27/2020 2:34:45 PM	1
	525	8/27/2020 4:29:03 PM	1
	529	8/28/2020 7:07:06 AM	1
	531	8/28/2020 8:10:46 AM	1
	534	8/28/2020 10:01:17 AM	1
	537	8/28/2020 1:56:07 PM	1
	542	8/29/2020 7:33:50 AM	1
	543	8/29/2020 8:45:02 AM	1
	547	8/29/2020 1:03:34 PM	1
	548	8/29/2020 4:16:28 PM	1
	550	8/30/2020 7:10:15 AM	1
	551	8/30/2020 7:25:21 AM	1
	552	8/30/2020 8:32:16 AM	2
	553	8/30/2020 8:36:35 AM	2
	556	8/30/2020 10:26:27 AM	1
	558	8/30/2020 11:15:36 AM	1
	559	8/30/2020 11:24:45 AM	1
	560	8/30/2020 11:35:43 AM	1

Species	Group ID	Initial Sighting Time	Total Individuals
Harbor Seal	562	8/30/2020 3:05:32 PM	1
	564	8/30/2020 5:44:12 PM	1
	568	8/31/2020 7:28:55 AM	1
	569	8/31/2020 7:29:49 AM	3
	575	8/31/2020 9:07:37 AM	1
	578	8/31/2020 4:23:34 PM	1
Total Groups for Species:	**60**	Total Individuals for Species:	**66**

Total MM Groups For Period:	**120**	Toal MMs For Period:	**345**

Appendix C – 8/1 – 8/2 Sighting Forms and Maps

MM Group Report

Group ID	Created Date	Last Update	Species Common Name
441	8/1/2020 9:01:47 AM	8/1/2020 9:03:09 AM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW Fix 1948 Seal seen looking and sinking. Last seen: 0902

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
441	1948	8/1/2020 9:01:55 AM	61.202104	-149.985021	6023.64087

Group ID	Created Date	Last Update	Species Common Name
442	8/1/2020 1:24:26 PM	8/1/2020 4:21:29 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: 13:23 F1949 HS looking and sinking; 14:00 suspected feeding behavior near mouth of Ship Creek; last time seen 14:00

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
442	1949	8/1/2020 1:24:43 PM	61.227266	-149.907398	1049.1864

Group ID	Created Date	Last Update	Species Common Name
443	8/1/2020 3:41:07 PM	8/1/2020 5:59:49 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Milling	Looking

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	

Comments

**SC: 15:40 F1950 seal spotted milling at mouth of ship creek; 16:19 seal still milling ; 17:09 second seal spotted along with the first seal and added to total above; Last seen 17:15

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
443	1950	8/1/2020 3:41:20 PM	61.227378	-149.903674	928.1857

Group ID	Created Date	Last Update	Species Common Name
445	8/2/2020 5:16:22 PM		Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC**** 1712 Harbor seal spotted looking and sinking during last 3 minutes of breakdown. Last seen 1714. No fix recorded.

2020 POA PCT
Marine Mammal Sightings Overview
08/01/20 - 08/02/20

PSO Station

Marine Mammal Groups

- Group 441 Harbor Seal
- Group 442 Harbor Seal
- Group 443 Harbor Seal

0 0.75 1.5 km

61|N
61 North Environmental

Map Imagery Source: Google Earth, 2020

Appendix D – Week of 8/3 – 8/9 Sighting Forms and Maps

MM Group Report

Group ID	Created Date	Last Update	Species Common Name
448	8/4/2020 7:20:40 AM	8/4/2020 5:50:49 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
2	Linear	False	Moderate	Travelling	Diving

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 07:20 F1960-F1962 Four whales travelling SW along farshore (F1961 is approx. 1500m S of actual location); 07:31 Five whales confirmed in group by observer, total count five; F1963-F1965 bubbling and fluking observed, group moving slowly SW along farshore; F1967 Six whales counted, total count updated, lead crossed the outbound line; 08:02 One gray in group, total count seven; F1968-F1969 lead travelling SW along farshore; 08:14 hand-off to PCT; ***PCT: 0815 Fix 1970 Lead beluga, traveling SW moderate pace, linear formation, spread has increased. Fix 1971-1973 progression south. **SC takes over from PCT. 0831 Fix 1974 progression SW.*0836 PW takes over for SC. Fixes 1975-1990 animals headed westerly outbound. Last observed at 0917 still traveling outbound. (ATL post-processed: moved fix 1971 from on land approximately 130 meters east/southeast in-line with PCT MMO station to 61.246328 -149.976006 to place fix in water.)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
448	1960	8/4/2020 7:22:06 AM	61.29467	-149.900852	6699.13469
448	1961	8/4/2020 7:24:13 AM	61.283532	-149.899074	5458.41286
448	1962	8/4/2020 7:28:19 AM	61.291495	-149.9087	6382.30987
448	1963	8/4/2020 7:35:46 AM	61.281633	-149.910875	5313.27963
448	1964	8/4/2020 7:45:03 AM	61.277077	-149.915627	4866.55067
448	1965	8/4/2020 7:50:15 AM	61.270147	-149.914869	4110.15556
448	1967	8/4/2020 7:57:10 AM	61.265848	-149.91685	3684.05431
448	1968	8/4/2020 8:02:35 AM	61.26135	-149.922463	3337.10307
448	1969	8/4/2020 8:07:43 AM	61.257543	-149.932688	3272.47927
448	1970	8/4/2020 8:15:09 AM	61.248132	-149.934949	2635.16972
448	1971	8/4/2020 8:24:56 AM	61.246328	-149.976006	4388.41849
448	1972	8/4/2020 8:26:27 AM	61.242743	-149.969587	4109.4869

Group ID	Created Date	Last Update	Species Common Name
448	8/4/2020 7:20:40 AM	8/4/2020 5:50:49 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
2	Linear	False	Moderate	Travelling	Diving

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 07:20 F1960-F1962 Four whales travelling SW along farshore (F1961 is approx. 1500m S of actual location); 07:31 Five whales confirmed in group by observer, total count five; F1963-F1965 bubbling and fluking observed, group moving slowly SW along farshore; F1967 Six whales counted, total count updated, lead crossed the outbound line; 08:02 One gray in group, total count seven; F1968-F1969 lead travelling SW along farshore; 08:14 hand-off to PCT; ***PCT: 0815 Fix 1970 Lead beluga, traveling SW moderate pace, linear formation, spread has increased. Fix 1971-1973 progression south. **SC takes over from PCT. 0831 Fix 1974 progression SW.*0836 PW takes over for SC. Fixes 1975-1990 animals headed westerly outbound. Last observed at 0917 still traveling outbound. (ATL post-processed: moved fix 1971 from on land approximately 130 meters east/southeast in-line with PCT MMO station to 61.246328 -149.976006 to place fix in water.)

448	1973	8/4/2020 8:29:19 AM	61.23825	-149.962905	3672.25728
448	1974	8/4/2020 8:32:19 AM	61.238655	-149.991527	5199.35845
448	1975	8/4/2020 8:37:20 AM	61.234166	-149.989031	5045.37728
448	1976	8/4/2020 8:39:51 AM	61.235616	-149.992872	5252.13066
448	1978	8/4/2020 8:46:26 AM	61.236815	-150.005275	5919.46793
448	1979	8/4/2020 8:48:59 AM	61.237752	-150.00815	6078.34726
448	1983	8/4/2020 8:50:48 AM	61.240207	-150.012877	6352.04346
448	1984	8/4/2020 8:54:19 AM	61.242603	-150.020882	6808.03806
448	1985	8/4/2020 8:58:12 AM	61.24278	-150.028917	7236.52284
448	1986	8/4/2020 9:00:28 AM	61.243599	-150.035159	7579.21032
448	1988	8/4/2020 9:07:45 AM	61.2435	-150.050503	8391.59845
448	1989	8/4/2020 9:11:36 AM	61.245342	-150.05746	8786.57903
448	1990	8/4/2020 9:16:47 AM	61.248896	-150.093212	10734.38378

Group ID	Created Date	Last Update	Species Common Name
449	8/4/2020 8:50:34 AM	8/4/2020 5:48:14 PM	Harbor Porpoise

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Diving

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC 0850 Fix 1980-1982. Harbor Porpoise observed travelling off of station toward NE. Last seen 0858. Fix 1987 and 1993 BAD fix, DELETE. Last seen 0908. (ATL post-processed: deleted fixes 1987 and 1993)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
449	1980	8/4/2020 8:50:44 AM	61.226054	-149.91149	1296.03539
449	1981	8/4/2020 8:51:34 AM	61.226742	-149.909384	1163.17566
449	1982	8/4/2020 8:53:09 AM	61.227535	-149.907418	1027.31519

Group ID	Created Date	Last Update	Species Common Name
450	8/4/2020 10:08:28 AM	8/4/2020 4:34:31 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**NEX: 10:07 F1991 Seal sighted looking and floating in large eddy in front of station; 10:10 Seal sank; 10:12 resighted further N near Cairn Point, looking and sank; Last seen 10:13

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
450	1991	8/4/2020 10:08:59 AM	61.254237	-149.88201	2300.10507

Group ID	Created Date	Last Update	Species Common Name
451	8/4/2020 10:20:31 AM	8/4/2020 10:33:39 AM	Harbor Porpoise

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC 1019 Fix 1992 Harbor Porpoise observed travelling and diving. Last seen 1033

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
451	1992	8/4/2020 10:21:27 AM	61.234928	-149.915951	1138.58108
451	1994	8/4/2020 10:27:56 AM	61.231002	-149.909928	901.15245
451	1995	8/4/2020 10:31:52 AM	61.233594	-149.909927	820.86666

Group ID	Created Date	Last Update	Species Common Name
452	8/4/2020 11:43:07 AM	8/4/2020 11:54:45 AM	Harbor Porpoise

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC 1140 Fix 1996. Harbor Porpoise observed traveling and then milling. Last seen 1153.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
452	1996	8/4/2020 11:43:16 AM	61.218757	-149.919671	2197.64518
452	1997	8/4/2020 11:49:53 AM	61.225878	-149.908997	1222.56911

Group ID	Created Date	Last Update	Species Common Name
453	8/4/2020 11:52:36 AM	8/4/2020 5:14:21 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Sink	Looking

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC 1152 Fix 1998. Harbor Seal observed sinking and looking. 1219 Feeding suspected. Fix 1999-2001 taken at the beginning of impacting a 48" pile. Last seen 1712.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
453	1998	8/4/2020 11:52:48 AM	61.226927	-149.904618	991.10168
453	1999	8/4/2020 12:56:28 PM	61.227357	-149.904941	960.87099
453	2000	8/4/2020 1:34:56 PM	61.229708	-149.9051	767.30917
453	2001	8/4/2020 5:13:50 PM	61.227083	-149.903609	948.22834

Group ID	Created Date	Last Update	Species Common Name
455	8/6/2020 7:22:02 AM	8/6/2020 5:10:05 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: Whales seen at 07:22; Fix 2007; three white belugas across arm, traveling north; Fix 2008 three white belugas milling at Port Mac . Fix 2010-2016; traveling south along opposite shore; **SC: 08:30 SC takes over from NEX. Fix 2017-2020 travelling South along far shore. Fix 2021 whales at point mac travelling SW. Fix 2022-2023 group moving away from shore, still travelling SW. Fix 2024-2028 whales moving S/SW towards center of the inlet. 09:23 handed group over to PW. Last seen 0916*PW: 09:24 Fix 2029-2030 Three white belugas spotted milling. 09:35 Fix 2031-2033 Traveling SW, surfacing frequently. 09:49 Fix 2034 Continuing W, lost behind the trees. Last seen @ 09:49

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
455	2007	8/6/2020 7:22:41 AM	61.263797	-149.910205	3364.33231
455	2008	8/6/2020 7:29:10 AM	61.26971	-149.917201	4098.17559
455	2010	8/6/2020 7:37:30 AM	61.263586	-149.912758	3378.08537
455	2011	8/6/2020 7:45:45 AM	61.260652	-149.91339	3077.9204
455	2012	8/6/2020 7:49:09 AM	61.259883	-149.922059	3181.97016
455	2013	8/6/2020 7:53:35 AM	61.256481	-149.924143	2910.37969
455	2014	8/6/2020 8:21:44 AM	61.248829	-149.943204	3046.36668
455	2015	8/6/2020 8:22:04 AM	61.249637	-149.933038	2655.32216
455	2016	8/6/2020 8:25:49 AM	61.24523	-149.965815	3987.14777
455	2017	8/6/2020 8:32:12 AM	61.244288	-149.966729	4004.02154
455	2018	8/6/2020 8:33:48 AM	61.244239	-149.969355	4137.84046
455	2019	8/6/2020 8:35:54 AM	61.241894	-149.974584	4351.43109
455	2020	8/6/2020 8:39:02 AM	61.241383	-149.977221	4479.86798
455	2021	8/6/2020 8:46:33 AM	61.237223	-149.983921	4781.68797

Group ID	Created Date	Last Update	Species Common Name
455	8/6/2020 7:22:02 AM	8/6/2020 5:10:05 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: Whales seen at 07:22; Fix 2007; three white belugas across arm, traveling north; Fix 2008 three white belugas milling at Port Mac . Fix 2010-2016; traveling south along opposite shore; **SC: 08:30 SC takes over from NEX. Fix 2017-2020 travelling South along far shore. Fix 2021 whales at point mac travelling SW. Fix 2022-2023 group moving away from shore, still travelling SW. Fix 2024-2028 whales moving S/SW towards center of the inlet. 09:23 handed group over to PW. Last seen 0916*PW: 09:24 Fix 2029-2030 Three white belugas spotted milling. 09:35 Fix 2031-2033 Traveling SW, surfacing frequently. 09:49 Fix 2034 Continuing W, lost behind the trees. Last seen @ 09:49

455	2022	8/6/2020 8:47:38 AM	61.236325	-149.98117	4629.41832
455	2023	8/6/2020 8:50:12 AM	61.235228	-149.982776	4711.49612
455	2024	8/6/2020 8:55:22 AM	61.233181	-149.982913	4720.31925
455	2025	8/6/2020 9:01:56 AM	61.232412	-149.985296	4851.00214
455	2026	8/6/2020 9:03:34 AM	61.231868	-149.988519	5026.31052
455	2027	8/6/2020 9:08:52 AM	61.23098	-149.988056	5008.30382
455	2028	8/6/2020 9:16:34 AM	61.227064	-149.980485	4661.73165
455	2029	8/6/2020 9:24:42 AM	61.219991	-149.980822	4879.65809
455	2030	8/6/2020 9:31:32 AM	61.21819	-149.977572	4787.90134
455	2031	8/6/2020 9:35:21 AM	61.213566	-149.981431	5188.58908
455	2032	8/6/2020 9:40:01 AM	61.210039	-149.988234	5692.72301
455	2033	8/6/2020 9:44:22 AM	61.20889	-149.996712	6153.24429
455	2034	8/6/2020 9:49:08 AM	61.213753	-150.015994	6884.907

Group ID	Created Date	Last Update	Species Common Name
457	8/6/2020 10:40:03 AM	8/6/2020 5:30:08 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	2	6	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: Saw whales at 10:38. Fix 2035-2039 two whites, six grays, one calf headed south along near shore passing in front of station; 10:56 Pass group off to SC. ***SC: 10:57 Fix ID 2040 one white surfaced travelling south. 11:02 Ship Crk passed off group to NEX. **NEX: 11:02 Fix 2041,2043,2045-2049 group has changed direction and is headed north along near shore; Group has split (see Group 458) with only 1 white, 5 gray and 1 calf passing NEX station headed North. Last seen 11:53

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
457	2035	8/6/2020 10:40:18 AM	61.257133	-149.882432	2603.58675
457	2036	8/6/2020 10:42:21 AM	61.253558	-149.881946	2229.15606
457	2037	8/6/2020 10:43:26 AM	61.251746	-149.882246	2033.06045
457	2038	8/6/2020 10:47:11 AM	61.245369	-149.887365	1274.21545
457	2039	8/6/2020 10:52:15 AM	61.239891	-149.892045	620.20612
457	2040	8/6/2020 10:57:16 AM	61.240408	-149.892468	671.92775
457	2041	8/6/2020 11:05:47 AM	61.249724	-149.883917	1791.5566
457	2043	8/6/2020 11:09:50 AM	61.253804	-149.882545	2245.74132
457	2045	8/6/2020 11:12:53 AM	61.254352	-149.881786	2315.85591
457	2046	8/6/2020 11:17:28 AM	61.255841	-149.88185	2473.34842
457	2047	8/6/2020 11:24:22 AM	61.262137	-149.881386	3156.97291
457	2048	8/6/2020 11:35:35 AM	61.267116	-149.883023	3682.31716
457	2049	8/6/2020 11:51:10 AM	61.274348	-149.883525	4472.74984

Group ID	Created Date	Last Update	Species Common Name
458	8/6/2020 11:09:12 AM	8/6/2020 5:23:33 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Other

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PCT: 11:08 one white, one gray from G457 split (count recorded with original group), sighted travelling SW approx. 800 m off nearshore; F2042 & F2044 travelling; 11:14 whales dive as small boat passes; 11:50 PW radios for take over; ** PW: 11:53 one white, seen surfacing twice before dissappearing behind trees, heading toward southern boundary line. Last time seen 11:53

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
458	2042	8/6/2020 11:09:23 AM	61.232982	-149.910172	844.40296
458	2044	8/6/2020 11:12:04 AM	61.231448	-149.915204	1147.24595
458	2050	8/6/2020 11:53:03 AM	61.201882	-149.99675	6551.50194

Group ID	Created Date	Last Update	Species Common Name
459	8/6/2020 3:15:03 PM	8/6/2020 5:24:09 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: 15:15 Fix ID# 2051-2055 three white belugas traveling north along the far shore by Little Village towards Bluff Dip. Hand off to PCT; **PCT: 15:29 takes over fixes from SC; F2056-F2057 travelling NE along farshore; 15:37 hand off to SC; **SC: 15:47 Fix ID# 2058 traveling north towards Port Mac. **PCT: 15:51 two whales travelling NE along far shore near Port Mack, within 300 meters of Level B zone; 15:56 PCT takes over fixes from SC; F2059 one white whale travelling SW along farshore; LAST SEEN 15:58

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
459	2051	8/6/2020 3:16:35 PM	61.242265	-149.955531	3367.21159
459	2052	8/6/2020 3:17:47 PM	61.244265	-149.954249	3366.19187
459	2053	8/6/2020 3:21:03 PM	61.245487	-149.951105	3256.2096
459	2054	8/6/2020 3:23:37 PM	61.246697	-149.953751	3438.56935
459	2055	8/6/2020 3:27:10 PM	61.247994	-149.941523	2921.396
459	2056	8/6/2020 3:29:41 PM	61.251607	-149.939839	3075.74356
459	2057	8/6/2020 3:33:49 PM	61.253476	-149.932004	2906.51824
459	2058	8/6/2020 3:47:41 PM	61.261181	-149.91626	3185.84399
459	2059	8/6/2020 3:58:39 PM	61.257781	-149.925799	3079.74383

Group ID	Created Date	Last Update	Species Common Name
460	8/6/2020 4:21:11 PM	8/6/2020 4:51:40 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: 16:20 initial sighting. FIX 2060 one white beluga spotted in Bootlegger Cove*PW: 16:26 Fix 2061 One white beluga traveling west. Last seen 16:28

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
460	2060	8/6/2020 4:24:20 PM	61.217229	-149.928141	2620.5613
460	2061	8/6/2020 4:28:33 PM	61.201619	-149.993033	6403.31382

Group ID	Created Date	Last Update	Species Common Name
461	8/6/2020 4:43:08 PM	8/6/2020 5:25:07 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: Single whale seen at 14:44; Fix 2062, one white beluga sighted on far shore traveling north. Was seen surfacing twice very close to shore moving north away from the zone at a moderate pace. All three PSO's continued to scan the area but the whale was not seen again. Last seen 16:47.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
461	2062	8/6/2020 4:44:49 PM	61.261192	-149.918679	3236.02372

2020 POA PCT Marine Mammal Sightings Overview 08/03/20 - 08/09/20

PSO Station

Marine Mammal Groups

- Group 448 Beluga
- Group 449 Harbor Porpoise
- Group 450 Harbor Seal
- Group 451 Harbor Porpoise
- Group 452 Harbor Porpoise
- Group 453 Harbor Seal
- Group 455 Beluga
- Group 457 Beluga
- Group 458 Beluga
- Group 459 Beluga
- Group 460 Beluga
- Group 461 Beluga

0 1 2 km

61 | N
61 North Environmental

Map Imagery Source: Google Earth, 2020

2020 POA PCT
Beluga Sightings
08/03/20 - 08/09/20
Figure 1

PSO Station

Beluga Track Lines

- Group 448
- Group 455
- Group 457
- Group 458
- Group 459
- Group 460
- Group 461

0 1 2 km

61|N
61 North Environmental

Map Imagery Source:
Google Earth, 2020

Appendix E – Week of 8/24 – 8/30 Sighting Forms and Maps

MM Group Report

Group ID	Created Date	Last Update	Species Common Name
465	8/24/2020 7:03:51 AM	8/24/2020 4:50:20 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Other

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	2	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PCT: 06:46 F2070 approximate location of initial sighting of belugas during station set-up; **NEX: Fix 2071, 2073, 2075 main group traveling north, five white belugas remain milling near Wet Barge Birth. This split group is now recorded under Group 467; Original group continued traveling north and went around Cairn pt and out of sight.; Last seen 07:25

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
465	2070	8/24/2020 7:04:48 AM	61.233512	-149.901403	374.42875
465	2071	8/24/2020 7:11:31 AM	61.250836	-149.88347	1916.32266
465	2073	8/24/2020 7:19:29 AM	61.250877	-149.883149	1926.07451
465	2075	8/24/2020 7:28:53 AM	61.249324	-149.884529	1739.03596

Group ID	Created Date	Last Update	Species Common Name
466	8/24/2020 7:18:04 AM	8/24/2020 4:25:05 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**NEX: 07:18 Fix ID 2072 one harbor seal milling near Wet Barge Birth along shore; 07:50 Fix ID 2080 harbor seal traveling south along shore; 07:58 Fix ID 2082 seal has turned around and traveling north again; Last seen: 07:58

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
466	2072	8/24/2020 7:18:17 AM	61.251466	-149.88264	1996.79458
466	2080	8/24/2020 7:50:36 AM	61.246181	-149.887447	1359.11476
466	2082	8/24/2020 7:58:58 AM	61.251964	-149.882353	2054.12512

Group ID	Created Date	Last Update	Species Common Name
467	8/24/2020 7:32:08 AM	8/24/2020 4:50:10 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Sedate	Milling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 07:34 Fix 2076,2077, 2079 Split group from 465- five white belugas milling near Wet Barge Birth (rest of original group traveled north); 07:55 Fix 2081 group is gradually moving south along shore; **PCT: 08:48 takes over from NEX; F2086 whales slowly traveling SW alongshore. Spread linearly approx. 8-12 bodylengths apart.; F2087-F2089 trailing whale (of 5) traveling SW along nearshore; 09:00 hand-off to SC; **SC: 09:01 Fix 2090 - 2098 Five white belugas slowly made their way along shore toward PW;PW: 09:45 took over from SC; 09:46 Fix 2099 One white beluga seen surfacing in Bootlegger Cove between the floaty and the shoreline.; 10:03 Fix 2101 - 2103 five white belugas seen traveling nearshore through Bootlegger Cove towards PW Station; 10:16 Fix 2105 & 2107 five white belugas passing PW station and heading SW out towards Inbound Line; Last Seen 10:21

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
467	2076	8/24/2020 7:34:14 AM	61.24992	-149.883966	1811.36477
467	2077	8/24/2020 7:41:06 AM	61.249571	-149.88457	1764.45903
467	2079	8/24/2020 7:47:35 AM	61.249579	-149.884664	1763.77292
467	2081	8/24/2020 8:15:35 AM	61.239662	-149.893986	579.72257
467	2084	8/24/2020 8:37:37 AM	61.236271	-149.894493	201.97258
467	2085	8/24/2020 8:45:36 AM	61.234252	-149.898982	231.09196
467	2086	8/24/2020 8:48:51 AM	61.232211	-149.89905	341.75104
467	2087	8/24/2020 8:50:58 AM	61.233088	-149.898055	235.89224
467	2088	8/24/2020 8:51:52 AM	61.232704	-149.897905	260.011
467	2089	8/24/2020 8:55:11 AM	61.232333	-149.901116	417.18424
467	2090	8/24/2020 9:00:54 AM	61.226835	-149.904705	1002.22732
467	2091	8/24/2020 9:06:13 AM	61.226956	-149.905141	1003.69878
467	2092	8/24/2020 9:11:51 AM	61.223664	-149.910815	1477.35409
467	2093	8/24/2020 9:16:59 AM	61.22702	-149.905194	999.39339

Group ID	Created Date	Last Update	Species Common Name
467	8/24/2020 7:32:08 AM	8/24/2020 4:50:10 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Sedate	Milling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 07:34 Fix 2076,2077, 2079 Split group from 465- five white belugas milling near Wet Barge Birth (rest of original group traveled north); 07:55 Fix 2081 group is gradually moving south along shore; **PCT: 08:48 takes over from NEX; F2086 whales slowly traveling SW alongshore. Spread linearly approx. 8-12 bodylengths apart.; F2087-F2089 trailing whale (of 5) traveling SW along nearshore; 09:00 hand-off to SC; **SC: 09:01 Fix 2090 - 2098 Five white belugas slowly made their way along shore toward PW;PW: 09:45 took over from SC; 09:46 Fix 2099 One white beluga seen surfacing in Bootlegger Cove between the floaty and the shoreline.; 10:03 Fix 2101 - 2103 five white belugas seen traveling nearshore through Bootlegger Cove towards PW Station; 10:16 Fix 2105 & 2107 five white belugas passing PW station and heading SW out towards Inbound Line; Last Seen 10:21

467	2094	8/24/2020 9:26:06 AM	61.223776	-149.90965	1431.51413
467	2095	8/24/2020 9:28:49 AM	61.220043	-149.914655	1925.15486
467	2096	8/24/2020 9:31:45 AM	61.220574	-149.913901	1853.68485
467	2097	8/24/2020 9:35:54 AM	61.218155	-149.91811	2202.56773
467	2098	8/24/2020 9:43:39 AM	61.216842	-149.920664	2400.47129
467	2099	8/24/2020 9:47:18 AM	61.213112	-149.934227	3178.02561
467	2101	8/24/2020 10:03:11 AM	61.210737	-149.93704	3475.76985
467	2102	8/24/2020 10:06:13 AM	61.204737	-149.96649	5065.98069
467	2103	8/24/2020 10:09:53 AM	61.201782	-149.975093	5629.43832
467	2105	8/24/2020 10:15:37 AM	61.202112	-149.98855	6175.64712
467	2107	8/24/2020 10:20:34 AM	61.203814	-149.999951	6581.18142

Group ID	Created Date	Last Update	Species Common Name
468	8/24/2020 7:42:52 AM	8/24/2020 4:27:46 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: 07:43 Fix 2078 Harbor seal spotted traveling north in front of station. Last seen 09:07

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
468	2078	8/24/2020 7:43:22 AM	61.22577	-149.909205	1238.89315

Group ID	Created Date	Last Update	Species Common Name
469	8/24/2020 9:50:21 AM	8/24/2020 4:29:14 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: 09:47 Fix 2100 Harbor seal surfaced and looked around. Last seen: 10:08

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
469	2100	8/24/2020 9:50:41 AM	61.201397	-149.97528	5664.75677

Group ID	Created Date	Last Update	Species Common Name
470	8/24/2020 10:12:59 AM	8/24/2020 4:29:26 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

PCT: 10:12 Fix 2104 seal surfaced, looked around and sank;SC: 10:29 Fix 2108 harbor seal spotted at mouth of SC. Fix 2110 travelling south. Last Seen 11:36

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
470	2104	8/24/2020 10:13:20 AM	61.233856	-149.897414	160.60936
470	2106	8/24/2020 10:18:21 AM	61.23185	-149.897544	327.52144
470	2108	8/24/2020 10:29:05 AM	61.22747	-149.904179	927.66418
470	2110	8/24/2020 11:37:20 AM	61.222903	-149.911036	1553.41275

Group ID	Created Date	Last Update	Species Common Name
471	8/24/2020 12:18:27 PM	8/24/2020 4:44:38 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: FIX 2111 initial sighting. FIX 2112-2113, 2115-2117, 2119 beluga traveling NE/E along the shore towards SC station; Five beluga continuing to travel NE towards SC; FIX 2120 beluga milling are new split group 474; 12:56 Passed off group to SC; **SC: Fix 2124, Fix 2127- 2128, Fix 2130 Belugas traveling toward SC, we recombined split group 474 with group 471. **PCT: 13:38 takes over fixes from SC; Fix 2131 five whales traveling NE along nearshore, rest of group spread out along nearshore between Ship Creek and PCT; Fix 2133 whales slowly traveling NE and diving near PCT; 13:45 sight of lead lost behind work barge; 13:48 Fix 2134 two more beluga moving NE along near shore, total seven whales; 13:54 per SC, one whale still near ship creek now traveling with group 475; 14:06 Fix 2136 Presummed lead beluga very nearshore traveling NE; **NEX: 14:18 Fix 2140 3 white belugas milling spread >10. Fixes 2141-2142 three white whales traveling north now closer together; spread is closer to 10, group is approaching Cairn Pt. Last time seen: 14:25

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
471	2111	8/24/2020 12:18:40 PM	61.201166	-149.988677	6242.94203
471	2112	8/24/2020 12:21:32 PM	61.200672	-149.98649	6182.28518
471	2113	8/24/2020 12:27:17 PM	61.201103	-149.975609	5699.37268
471	2115	8/24/2020 12:32:51 PM	61.201851	-149.967026	5301.65947
471	2116	8/24/2020 12:39:32 PM	61.202266	-149.964878	5186.42161
471	2117	8/24/2020 12:41:26 PM	61.205159	-149.949682	4388.17522
471	2119	8/24/2020 12:51:16 PM	61.206726	-149.943116	4025.98136
471	2120	8/24/2020 12:54:42 PM	61.207371	-149.944981	4037.18074
471	2124	8/24/2020 1:06:30 PM	61.214154	-149.924057	2749.23599
471	2127	8/24/2020 1:18:10 PM	61.22079	-149.912981	1806.63314
471	2128	8/24/2020 1:22:42 PM	61.222357	-149.911067	1604.82416
471	2130	8/24/2020 1:34:59 PM	61.22941	-149.901287	662.68455
471	2131	8/24/2020 1:38:13 PM	61.230648	-149.899201	487.27869
471	2132	8/24/2020 1:40:56 PM	61.232383	-149.897067	263.28928

Group ID	Created Date	Last Update	Species Common Name
471	8/24/2020 12:18:27 PM	8/24/2020 4:44:38 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: FIX 2111 initial sighting. FIX 2112-2113, 2115-2117, 2119 beluga traveling NE/E along the shore towards SC station; Five beluga continuing to travel NE towards SC; FIX 2120 beluga milling are new split group 474; 12:56 Passed off group to SC; **SC: Fix 2124, Fix 2127- 2128, Fix 2130 Belugas traveling toward SC, we recombined split group 474 with group 471. **PCT: 13:38 takes over fixes from SC; Fix 2131 five whales traveling NE along nearshore, rest of group spread out along nearshore between Ship Creek and PCT; Fix 2133 whales slowly traveling NE and diving near PCT; 13:45 sight of lead lost behind work barge; 13:48 Fix 2134 two more beluga moving NE along near shore, total seven whales; 13:54 per SC, one whale still near ship creek now traveling with group 475; 14:06 Fix 2136 Presummed lead beluga very nearshore traveling NE; **NEX: 14:18 Fix 2140 3 white belugas milling spread >10. Fixes 2141-2142 three white whales traveling north now closer together; spread is closer to 10, group is approaching Cairn Pt. Last time seen: 14:25

471	2133	8/24/2020 1:44:16 PM	61.23286	-149.896832	211.34499
471	2134	8/24/2020 1:48:48 PM	61.232476	-149.896427	238.96923
471	2136	8/24/2020 2:04:59 PM	61.244121	-149.885981	1170.41925
471	2140	8/24/2020 2:19:28 PM	61.252077	-149.882064	2071.00153
471	2141	8/24/2020 2:21:02 PM	61.253901	-149.881857	2266.91228
471	2142	8/24/2020 2:22:38 PM	61.255533	-149.881406	2447.26184
471	2147	8/24/2020 2:41:14 PM	61.246051	-149.887757	1340.6019
471	2153	8/24/2020 2:43:25 PM	61.248095	-149.886099	1583.53302
471	2154	8/24/2020 2:54:57 PM	61.251677	-149.883039	2012.3035
471	2156	8/24/2020 2:56:17 PM	61.253847	-149.882893	2245.0234

Group ID	Created Date	Last Update	Species Common Name
472	8/24/2020 12:28:25 PM	8/24/2020 4:34:32 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: FIX 2114 one harbor seal looking and sinking. Last seen 12:28

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
472	2114	8/24/2020 12:28:33 PM	61.200526	-149.981877	5998.25759

Group ID	Created Date	Last Update	Species Common Name
473	8/24/2020 12:43:50 PM	8/24/2020 4:34:42 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: 12:43 Fix 2118 Harbor seal surfaced, looked at the station and sunk. Last Seen 13:16

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
473	2118	8/24/2020 12:44:16 PM	61.231942	-149.896546	296.5845
473	2126	8/24/2020 1:17:08 PM	61.230476	-149.898321	483.16114

Group ID	Created Date	Last Update	Species Common Name
474	8/24/2020 12:49:23 PM	8/24/2020 4:44:50 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Milling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

split group from MM Group 471. **PW: FIX 2121 four beluga (2 white, 2 grey) milling in front of PW station; FIX 2122 , 2125 beluga travelling NE along shore; Hand off to SC 13:17. ** SC: Group 474 recombined with MM Group 471.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
474	2121	8/24/2020 12:58:32 PM	61.200438	-149.988739	6293.91108
474	2122	8/24/2020 1:03:58 PM	61.201274	-149.975919	5699.66347
474	2125	8/24/2020 1:13:04 PM	61.202872	-149.963151	5073.07009

Group ID	Created Date	Last Update	Species Common Name
475	8/24/2020 1:54:48 PM	8/24/2020 4:36:40 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
10	Linear	True	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**SC: Fix 2135 Belugas spotted south of tug boat, 4 whites and 1 gray whale, 1 white whale from split group 471 not included in count; **PCT: 14:06 takes over fixes from SC; Fix 2137 lead beluga traveling NE along nearshore, followed by three other whites approx. 10 body lengths apart; Fix 2139 lead whale traveling; Fix 2143 third beluga in group moving past PCT; 14:28 Trailing two beluga passing tug dock near Ship Creek; 14:35 Fix 2146 trailing beluga, traveling NE along nearshore; Last Seen 14:40 (ATL post-processed: changed "CombinedGroup" to "True"/1)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
475	2135	8/24/2020 1:58:18 PM	61.223402	-149.909854	1472.13921
475	2137	8/24/2020 2:10:44 PM	61.230548	-149.899455	503.70437
475	2139	8/24/2020 2:18:36 PM	61.233197	-149.897857	220.00446
475	2143	8/24/2020 2:26:36 PM	61.23197	-149.898896	356.49741
475	2146	8/24/2020 2:35:38 PM	61.23032	-149.90349	658.10185

Group ID	Created Date	Last Update	Species Common Name
476	8/24/2020 2:34:36 PM	8/24/2020 4:37:09 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: 14:46 initial sighting, seal surface looked, swam, and sunk; 16:11 seal surfaces in front of PCT; LAST SEEN 16:13

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
476	2145	8/24/2020 2:34:44 PM	61.227997	-149.909301	1061.30766
476	2148	8/24/2020 2:47:00 PM	61.229213	-149.901127	676.90877
476	2171	8/24/2020 3:45:13 PM	61.226852	-149.906834	1065.97502

Group ID	Created Date	Last Update	Species Common Name
477	8/24/2020 2:46:49 PM	8/24/2020 4:53:12 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	7	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**SC: Fix 2149-2151 2 white and 2 grey belugas spotted at mouth of ship creek heading north; **PCT: 14:52 take over from SC; Fix 2151 lead white traveling NE along nearshore, two small grays traveling within 75m of whites; Fix 2155 all four whales surfacing in front of PCT station, then they dove; Fix 2157 whales surface, and continue milling in front of PCT; Fix 2158 group now headed SW along shore; **SC: took over from PCT at 15:07; Fix 2159-2160 Two whites and two greys near mouth of ship creek. **PCT:15:25 takes over fix from SC; F2165 Group traveling NE along nearshore, additional white, 5 gray, 1 calf and added to the count above; Last Seen 15:29

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
477	2149	8/24/2020 2:48:05 PM	61.226801	-149.90523	1020.66851
477	2150	8/24/2020 2:50:17 PM	61.227847	-149.90438	899.06115
477	2151	8/24/2020 2:53:18 PM	61.231612	-149.900211	432.77451
477	2152	8/24/2020 2:52:40 PM	61.228003	-149.90422	879.97002
477	2155	8/24/2020 2:55:57 PM	61.233011	-149.896849	198.00998
477	2157	8/24/2020 3:01:46 PM	61.232286	-149.898857	328.61802
477	2158	8/24/2020 3:04:52 PM	61.22969	-149.903805	720.06997
477	2159	8/24/2020 3:07:10 PM	61.228131	-149.904121	865.3196
477	2160	8/24/2020 3:09:54 PM	61.227418	-149.908112	1061.83036
477	2165	8/24/2020 3:22:59 PM	61.232981	-149.90174	411.50338
477	2166	8/24/2020 3:26:16 PM	61.23346	-149.899514	281.11911

Group ID	Created Date	Last Update	Species Common Name
478	8/24/2020 3:09:38 PM	8/24/2020 5:08:39 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: Fixes 2161-2164 Five whites, originally from group 471, sedately traveling south. Fix 2172 groups merge. with Groups 477 and 478, total estimated count at eight whites; Fix ID 2177 group continues to travel south; Group 478 and Group 480 of 5 have merged- making an estimated group of 21, further notes for this merged group in Group 480; Last seen 16:12

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
478	2161	8/24/2020 3:09:54 PM	61.248072	-149.885695	1587.48955
478	2162	8/24/2020 3:11:47 PM	61.24976	-149.884506	1785.50141
478	2163	8/24/2020 3:14:40 PM	61.248612	-149.885138	1653.72274
478	2164	8/24/2020 3:19:01 PM	61.247055	-149.886511	1466.59808
478	2167	8/24/2020 3:33:03 PM	61.239617	-149.891893	592.58898
478	2168	8/24/2020 3:40:58 PM	61.23571	-149.89702	187.26533
478	2172	8/24/2020 3:46:11 PM	61.241214	-149.891582	769.0527
478	2176	8/24/2020 4:00:41 PM	61.250895	-149.883315	1925.15008
478	2177	8/24/2020 4:12:32 PM	61.244714	-149.889013	1179.50414

Group ID	Created Date	Last Update	Species Common Name
479	8/24/2020 3:43:44 PM	8/24/2020 4:41:37 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: FIX 2170,2174 one harbor seal looking and sinking. Last seen 15:55

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
479	2170	8/24/2020 3:44:15 PM	61.201046	-149.990333	6322.35999
479	2174	8/24/2020 3:55:10 PM	61.201273	-149.988444	6225.84849

Group ID	Created Date	Last Update	Species Common Name
480	8/24/2020 3:53:32 PM	8/24/2020 4:54:05 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
5	Linear	True	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	5	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 1551 Fix 2173, 1557 Fix ID 2175 five white whales traveling south. *** Group 478 and Group 480 of 5 have merged- making an estimated group of 21; 1623 Fix ID 2179 Group milling between the Corner and 1st crane; 1635 Fix ID 2180 group milling near Little Dock; Last seen 1650 (ATL post-processed: changed "CombinedGroup" to "True"/1)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
480	2173	8/24/2020 3:53:42 PM	61.261339	-149.880786	3078.22212
480	2175	8/24/2020 3:57:48 PM	61.254985	-149.881625	2385.60023
480	2179	8/24/2020 4:23:15 PM	61.243497	-149.889222	1046.21557
480	2180	8/24/2020 4:35:07 PM	61.236873	-149.894144	270.14746

Group ID	Created Date	Last Update	Species Common Name
481	8/24/2020 4:16:31 PM	8/24/2020 4:29:24 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC 1616 Fix 2178 One harbor seal spotted traveling toward mouth of ship creek. Last seen 1628.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
481	2178	8/24/2020 4:16:50 PM	61.225594	-149.910355	1293.18299

Group ID	Created Date	Last Update	Species Common Name
482	8/24/2020 4:56:41 PM	8/24/2020 5:16:19 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PCT: 16:57 Fix 2181-2182 five whales (2 whites, 2 grays, 1 calves) traveling SW along nearshore; 17:00 count up to about fourteen whales (~3 dark, ~5 gray, ~6 white); Whales are likely split from "super" group 480; ** SC 17:04 2183 -2187 Belugas past SC heading toward PW along south shore. Stopped watch at 17:15.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
482	2181	8/24/2020 4:58:22 PM	61.232735	-149.898744	289.41095
482	2182	8/24/2020 4:59:16 PM	61.232737	-149.89875	289.50523
482	2183	8/24/2020 5:03:46 PM	61.230435	-149.904194	677.05437
482	2184	8/24/2020 5:07:37 PM	61.227073	-149.90698	1051.48236
482	2185	8/24/2020 5:10:56 PM	61.225999	-149.908791	1205.18631
482	2186	8/24/2020 5:12:04 PM	61.225436	-149.909413	1274.8673
482	2187	8/24/2020 5:12:57 PM	61.224032	-149.910152	1423.45667

Group ID	Created Date	Last Update	Species Common Name
484	8/25/2020 7:55:02 AM	8/25/2020 3:13:28 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	3	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 07:55 FIX ID# 2191 Two white beluga spotted traveling northeast along the shore. 07:56 FIX ID# 2192-2196 Three white and three gray continuing travel northeast. 08:15 FIX ID # 2197-2198 group is still traveling northeast. 08:22 Handoff to SC. ** SC: Fix 2199-2204 Three whites, three gray, one calf spotted moving along shore toward PCT. Passed to PCT at 08:36. **PCT: 08:38 Take over from ship creek; Fixes 2205-2207; Eight belugas (three gray, one calf, four whites), count updated above; fix taken on lead white beluga traveling past PCT. 08:41 handed off to NEX. **NEX: Took over sighting. Fix 2208, 2210 show group moving north along the shore line and around Cairn point. Last seen at 09:05

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
484	2191	8/25/2020 7:55:53 AM	61.206682	-150.003613	6594.34235
484	2192	8/25/2020 7:56:47 AM	61.206048	-149.996976	6317.71488
484	2193	8/25/2020 7:57:46 AM	61.205311	-149.993039	6178.7527
484	2194	8/25/2020 7:59:25 AM	61.205095	-149.990475	6075.23121
484	2195	8/25/2020 8:04:39 AM	61.208554	-149.970813	4987.10287
484	2196	8/25/2020 8:08:49 AM	61.208115	-149.963268	4693.58612
484	2197	8/25/2020 8:15:49 AM	61.209531	-149.950712	4081.06285
484	2198	8/25/2020 8:18:43 AM	61.210488	-149.950043	3982.93875
484	2199	8/25/2020 8:23:28 AM	61.21292	-149.933883	3181.82601
484	2200	8/25/2020 8:26:32 AM	61.218964	-149.919227	2164.94572
484	2201	8/25/2020 8:29:43 AM	61.221569	-149.914438	1779.63908
484	2202	8/25/2020 8:32:36 AM	61.225577	-149.909085	1251.71422
484	2203	8/25/2020 8:34:07 AM	61.227056	-149.906804	1047.10311
484	2204	8/25/2020 8:36:20 AM	61.229675	-149.905073	768.79079

Group ID	Created Date	Last Update	Species Common Name
484	8/25/2020 7:55:02 AM	8/25/2020 3:13:28 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	3	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 07:55 FIX ID# 2191 Two white beluga spotted traveling northeast along the shore. 07:56 FIX ID# 2192-2196 Three white and three gray continuing travel northeast. 08:15 FIX ID # 2197-2198 group is still traveling northeast. 08:22 Handoff to SC. ** SC: Fix 2199-2204 Three whites, three gray, one calf spotted moving along shore toward PCT. Passed to PCT at 08:36. **PCT: 08:38 Take over from ship creek; Fixes 2205-2207; Eight belugas (three gray, one calf, four whites), count updated above; fix taken on lead white beluga traveling past PCT. 08:41 handed off to NEX. **NEX: Took over sighting. Fix 2208, 2210 show group moving north along the shore line and around Cairn point. Last seen at 09:05

484	2205	8/25/2020 9:01:33 AM	61.232424	-149.901016	407.09063
484	2206	8/25/2020 8:38:40 AM	61.232448	-149.901414	423.55447
484	2207	8/25/2020 8:40:18 AM	61.235237	-149.898423	218.11194
484	2208	8/25/2020 8:50:14 AM	61.241278	-149.891141	781.37363
484	2210	8/25/2020 9:03:17 AM	61.256172	-149.881833	2508.9549

Group ID	Created Date	Last Update	Species Common Name
485	8/25/2020 8:51:23 AM	8/25/2020 1:03:31 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	2	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PCT: 08:51 Fix 2209 Two white beluga surfaced three times in front of PCT before disappearing. **Nex: took over sighting 09:00. Fix 2211 - 2213 show the pair moving north and around Cairn Pt. Last seen at 09:13.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
485	2209	8/25/2020 8:51:31 AM	61.235662	-149.901099	368.4299
485	2211	8/25/2020 9:01:28 AM	61.249527	-149.884636	1758.72498
485	2212	8/25/2020 9:07:04 AM	61.261783	-149.881465	3117.69997
485	2213	8/25/2020 9:12:27 AM	61.261473	-149.879126	3115.17327

Group ID	Created Date	Last Update	Species Common Name
486	8/25/2020 12:28:48 PM	8/25/2020 1:02:34 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: 12:27 HS popped up in front of station; look/sink; Fix 2214; Last seen 12:29.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
486	2214	8/25/2020 12:28:55 PM	61.232742	-149.895795	199.51834

Group ID	Created Date	Last Update	Species Common Name
487	8/25/2020 2:03:18 PM	8/25/2020 3:14:04 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PCT: 13:58 Fix 2215 white whale sighted traveling NW alongshore; 14:00 hand-off to NEX;NEX: Take over sighting from PCT. Fix 2216 - 2219 track one white Beluga and one calf moving North past our station towards Cairn Pt. Last seen at 14:22.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
487	2215	8/25/2020 2:05:08 PM	61.250189	-149.887656	1788.17529
487	2216	8/25/2020 2:05:45 PM	61.254446	-149.881227	2334.86058
487	2217	8/25/2020 2:12:22 PM	61.259174	-149.880277	2852.57682
487	2218	8/25/2020 2:13:57 PM	61.260111	-149.880158	2954.62744
487	2219	8/25/2020 2:21:40 PM	61.261461	-149.878928	3116.7308

Group ID	Created Date	Last Update	Species Common Name
488	8/25/2020 3:49:09 PM	8/25/2020 4:16:06 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

***PCT: 15:47 HS popped up slow traveling to the N along the near coast then sank; Fix 2220; Last seen 15:49

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
488	2220	8/25/2020 3:49:15 PM	61.23076	-149.898646	462.16564

Group ID	Created Date	Last Update	Species Common Name
489	8/25/2020 3:56:57 PM	8/25/2020 4:42:20 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**SC: 15:58 fix 2221 seal near tug dock. Last seen 15:59 (ATL post-processed: changed number of "Other Adults" from 0 to 1)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
489	2221	8/25/2020 3:57:28 PM	61.224452	-149.907571	1308.01693

Group ID	Created Date	Last Update	Species Common Name
490	8/25/2020 4:00:41 PM	8/25/2020 4:33:11 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Feeding Suspected	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

***PCT: 15:59 HS chasing fish; lots of motion on the surface; head popped up and then sank; Fix 2222; 16:31 fix 2225 seal chasing salmon nearshore; Last seen 16:33

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
490	2222	8/25/2020 4:00:48 PM	61.234766	-149.893093	91.66166
490	2225	8/25/2020 4:32:26 PM	61.231853	-149.897485	325.76262

Group ID	Created Date	Last Update	Species Common Name
491	8/25/2020 4:25:52 PM	8/25/2020 5:13:20 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

***NEX: 16:26 Fix ID 2223, 16:27 Fix ID 2224, 16:33 Fix ID 2226 group of belugas traveling south along far shore approximately 4000 m north of Port Mack; 1646 Fix ID 2227, 16:49 Fix ID 2228 group traveling south, approaching Port Mack; 16:55 Fix ID 2229 group traveling south, crossing outbound line; Fix 2230, 2232 track whales continueing to move North along opposite shore. Last seen: 17:15. Sighting terminated due to shift ending.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
491	2223	8/25/2020 4:26:51 PM	61.304067	-149.90865	7771.11619
491	2224	8/25/2020 4:27:51 PM	61.302241	-149.910064	7576.99424
491	2226	8/25/2020 4:33:54 PM	61.291253	-149.915603	6409.53709
491	2227	8/25/2020 4:46:01 PM	61.276332	-149.918092	4818.53553
491	2228	8/25/2020 4:49:35 PM	61.271754	-149.917794	4324.73854
491	2229	8/25/2020 4:55:26 PM	61.265431	-149.914475	3600.89559
491	2230	8/25/2020 5:02:34 PM	61.262183	-149.918872	3341.37917
491	2232	8/25/2020 5:09:56 PM	61.257259	-149.922037	2925.57443

Group ID	Created Date	Last Update	Species Common Name
493	8/26/2020 7:05:43 AM	8/26/2020 4:19:21 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: FIX 2234 is bad fix; **PW: 06:57 FIX 2235 Seal body spotted in a vertical position at the surface of the water; looking and milling close to shore. Last seen 07:23

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
493	2234	8/26/2020 7:06:18 AM	61.231995	-149.897885	322.66901
493	2235	8/26/2020 7:06:10 AM	61.201968	-149.993226	6389.78807

Group ID	Created Date	Last Update	Species Common Name
494	8/26/2020 7:08:44 AM	8/26/2020 4:19:55 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	False	Sedate	Milling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	13	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 07:09 FIX 2236 group of thirteen white, one gray belugas milling 2280 m north of Port Mack along far shore; 07:20 FIX 2238 group headed north; Last time seen: 07:34

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
494	2236	8/26/2020 7:09:12 AM	61.288767	-149.910294	6092.45216
494	2238	8/26/2020 7:20:55 AM	61.296155	-149.904165	6874.72572

Group ID	Created Date	Last Update	Species Common Name
495	8/26/2020 8:29:33 AM	8/26/2020 5:10:25 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	0	3	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 08:28 Fix 2239 whales sighted. Fix 2240 shows whales approaching the zone boundary. Fix 2241 shows whales crossing the zone boundary. Fixes 2240 - 2247 track the whales moving slowly south along the near shore. Moving closer to land as they progress south. Pass off sighting to SC at 09:25. ***SC: 09:25 Fix ID 2248-2252 show the group continuing south along the shoreline. 09:43 Fix ID 2254 group is by the mouth of SC. 09:48 Fix ID 2258 shows trailing beluga of group by PCT. 09:51 Fix ID 2259, 2262 & 2264 The whales are milling off the mouth of SC. 10:17 Group 496(2 whites and 2 greys) joined with group 495. The new combined count is eleven whites, two greys, and two calves. Fix 2269, 2271 shows the belugas spreading out and milling. Fix 2274 shows the furthest south member of the group. Fix 2276 shows the trailing whale milling in the mouth of SC. Fix 2281 and Fix 2285 and Fix 2287 shows one white beluga and 1 gray milling next to tug dock. Fix 2288-Fix 2290, Fix 2292, and Fix 2296 show two white and 3 gray belugas passing SC heading north. Fix 2297 - Fix 2298 are three white and two gray whales milling at SC mouth. **PCT: 12:00 takes over from SC; Fix 2300- 2303 beluga group traveling NE along nearshore, sight lost at PCT when group traveling behind work barge; 12:10 hand-off to PW; **PW take over at 12:10. Fix 2309-2310 Group travelling north. ...Continued next page....

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
495	2239	8/26/2020 8:32:22 AM	61.262103	-149.88015	3168.83425
495	2240	8/26/2020 8:36:44 AM	61.258241	-149.883933	2704.75195
495	2241	8/26/2020 8:41:38 AM	61.257235	-149.88421	2592.38963
495	2242	8/26/2020 8:47:15 AM	61.257187	-149.884494	2583.94013
495	2243	8/26/2020 8:55:07 AM	61.25565	-149.886529	2395.09478
495	2244	8/26/2020 8:58:34 AM	61.252666	-149.883316	2112.77689
495	2245	8/26/2020 9:01:49 AM	61.2504	-149.883533	1869.29107
495	2246	8/26/2020 9:09:25 AM	61.245668	-149.887333	1306.38887
495	2247	8/26/2020 9:20:52 AM	61.24343	-149.889116	1040.67454
495	2248	8/26/2020 9:25:49 AM	61.235996	-149.893482	182.78112
495	2249	8/26/2020 9:35:09 AM	61.231975	-149.901713	466.24387
495	2250	8/26/2020 9:37:54 AM	61.230595	-149.904112	662.1091
495	2251	8/26/2020 9:39:39 AM	61.229263	-149.905727	825.75819
495	2252	8/26/2020 9:42:35 AM	61.228474	-149.907405	951.22079

Group ID	Created Date	Last Update	Species Common Name
495	8/26/2020 8:29:33 AM	8/26/2020 5:10:25 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	0	3	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

Continued from previous page... **NEX: take over at 12:18 fix 2312-2313 whales travelling north slowly. Fix 2315, 2317 - 2320, 2322, 2324 - 2325 show whales milling. 13:43 1 white and 1 gray moving south from cairn point. 13:50 The 2 belugas moving south, (1 gray and 1 white), have joined group 495 and are added to the count. Fix 2326-2327 travelling south towards PCT. 14:40 hand off. **SC: Fix 2330-2331 shows the group now traveling south to SC. Fix 2332-2335 is of the trailing beluga. The group is now spread out to the other side of the small boat launch. Fix 2336-2338 the trailing beluga is now at the mouth of shipcreek and the lead is still aproaching Bootlegger's Cove. Fix 2339, Fix 2341-2343 show the trailing beluga. Fix 2345-Fix 2347 the trailing beluga crossed the zone and still traveling away. At 15:42 we handed off the sighting to PW. Fix 2354 Belugas traveling towards in-bound line. Fix taken of last beluga in group.; **PW: takes over from SC at 15:41. Fixes 2348-2354 Beluga group observed travelling SW and beyond the in-bound line. Last seen 16:20.

495	2254	8/26/2020 9:44:16 AM	61.2272	-149.908398	1090.03138
495	2258	8/26/2020 9:46:58 AM	61.231	-149.906626	745.3033
495	2259	8/26/2020 9:52:27 AM	61.228599	-149.90973	1034.99784
495	2262	8/26/2020 9:57:53 AM	61.228677	-149.91159	1109.05971
495	2264	8/26/2020 10:02:21 AM	61.228147	-149.911283	1131.24104
495	2269	8/26/2020 10:23:19 AM	61.230672	-149.91728	1279.56495
495	2271	8/26/2020 10:28:45 AM	61.23096	-149.907026	765.9608
495	2274	8/26/2020 10:45:33 AM	61.211785	-149.943773	3639.01832
495	2276	8/26/2020 10:48:23 AM	61.227148	-149.903652	943.16244
495	2278	8/26/2020 10:53:28 AM	61.226968	-149.903728	962.47437
495	2281	8/26/2020 11:10:27 AM	61.222746	-149.910991	1566.5204
495	2285	8/26/2020 11:19:43 AM	61.22304	-149.911514	1555.5102
495	2287	8/26/2020 11:28:08 AM	61.224785	-149.918363	1661.00179
495	2288	8/26/2020 11:30:33 AM	61.2263	-149.912284	1306.73521
495	2289	8/26/2020 11:33:21 AM	61.226534	-149.907488	1115.32788

Group ID	Created Date	Last Update	Species Common Name
495	8/26/2020 8:29:33 AM	8/26/2020 5:10:25 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	0	3	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...***See above***

495	2290	8/26/2020 11:35:50 AM	61.227178	-149.906537	1027.61953
495	2292	8/26/2020 11:38:30 AM	61.227721	-149.903906	896.33553
495	2296	8/26/2020 11:44:30 AM	61.227591	-149.903737	903.55515
495	2297	8/26/2020 11:51:33 AM	61.227476	-149.905204	958.23715
495	2298	8/26/2020 11:57:00 AM	61.228764	-149.902632	762.09891
495	2300	8/26/2020 12:00:40 PM	61.231175	-149.899703	452.7829
495	2301	8/26/2020 12:02:00 PM	61.232229	-149.89778	297.79082
495	2302	8/26/2020 12:02:53 PM	61.232671	-149.897951	264.38773
495	2303	8/26/2020 12:08:20 PM	61.23379	-149.896529	123.42836
495	2306	8/26/2020 12:09:11 PM	61.237177	-149.895546	305.91163
495	2310	8/26/2020 12:12:48 PM	61.239792	-149.891547	616.20118
495	2312	8/26/2020 12:21:52 PM	61.243609	-149.889152	1059.21087
495	2313	8/26/2020 12:25:34 PM	61.248581	-149.884714	1657.59391
495	2315	8/26/2020 12:32:08 PM	61.250984	-149.88287	1942.1401
495	2317	8/26/2020 12:51:05 PM	61.25093	-149.883935	1918.65706

Group ID	Created Date	Last Update	Species Common Name
495	8/26/2020 8:29:33 AM	8/26/2020 5:10:25 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	0	3	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...***See above***

495	2318	8/26/2020 1:03:17 PM	61.251636	-149.883309	2003.54467
495	2319	8/26/2020 1:10:52 PM	61.247296	-149.886193	1497.24846
495	2320	8/26/2020 1:23:42 PM	61.252041	-149.882567	2058.60303
495	2322	8/26/2020 1:39:14 PM	61.250198	-149.884553	1831.17255
495	2324	8/26/2020 1:54:46 PM	61.25215	-149.8825	2071.22662
495	2325	8/26/2020 2:09:16 PM	61.246061	-149.886587	1360.25904
495	2326	8/26/2020 2:24:37 PM	61.243736	-149.888875	1076.94472
495	2327	8/26/2020 2:29:43 PM	61.236509	-149.895342	230.88802
495	2328	8/26/2020 3:05:07 PM	61.233464	-149.902236	418.74938
495	2330	8/26/2020 2:45:16 PM	61.230881	-149.905096	684.08695
495	2331	8/26/2020 2:47:11 PM	61.231376	-149.905625	677.94521
495	2332	8/26/2020 2:56:15 PM	61.236383	-149.895822	222.68521
495	2333	8/26/2020 3:00:00 PM	61.230371	-149.901495	582.05546
495	2334	8/26/2020 3:01:18 PM	61.230189	-149.901666	603.57681
495	2335	8/26/2020 3:02:32 PM	61.231979	-149.904444	590.1702

Group ID	Created Date	Last Update	Species Common Name
495	8/26/2020 8:29:33 AM	8/26/2020 5:10:25 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	0	3	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...***See above***

495	2336	8/26/2020 3:06:28 PM	61.227511	-149.90389	915.44852
495	2337	8/26/2020 3:08:04 PM	61.227216	-149.908776	1102.4392
495	2338	8/26/2020 3:11:40 PM	61.226667	-149.906596	1074.74779
495	2339	8/26/2020 3:16:39 PM	61.223397	-149.913171	1577.32532
495	2341	8/26/2020 3:20:06 PM	61.220603	-149.916852	1943.09904
495	2342	8/26/2020 3:23:08 PM	61.218274	-149.919228	2226.43683
495	2343	8/26/2020 3:25:16 PM	61.217266	-149.920611	2360.54131
495	2345	8/26/2020 3:28:51 PM	61.215827	-149.922276	2542.37174
495	2346	8/26/2020 3:32:54 PM	61.215147	-149.925369	2701.48542
495	2347	8/26/2020 3:39:41 PM	61.214175	-149.931995	3010.3979
495	2348	8/26/2020 3:41:25 PM	61.202106	-149.970012	5400.47725
495	2349	8/26/2020 3:45:15 PM	61.202119	-149.970638	5424.55995
495	2351	8/26/2020 3:54:06 PM	61.20142	-149.97768	5761.47421
495	2353	8/26/2020 3:58:02 PM	61.20102	-149.984562	6076.90857
495	2354	8/26/2020 4:02:42 PM	61.201019	-149.990099	6313.99722

Group ID	Created Date	Last Update	Species Common Name
496	8/26/2020 9:42:20 AM	8/26/2020 4:22:55 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 09:42 FIX ID# 2253 & 2255: Belugas seen over inbound line traveling east towards POA; 09:48 FIX ID# 2256-2257, 2260, 2265: Belugas continuing to travel east. 10:15 Handoff to SC to combine with group 495. (ATL post-processed: changed "CombinedGroup" to "1"/True)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
496	2253	8/26/2020 9:42:32 AM	61.20807	-149.99889	6298.78706
496	2255	8/26/2020 9:45:53 AM	61.206244	-149.993981	6168.32951
496	2256	8/26/2020 9:48:16 AM	61.208945	-149.990519	5858.4004
496	2257	8/26/2020 9:49:52 AM	61.208847	-149.988216	5756.27473
496	2260	8/26/2020 9:54:35 AM	61.209017	-149.98073	5401.86575
496	2265	8/26/2020 10:03:01 AM	61.210386	-149.969499	4813.75456

Group ID	Created Date	Last Update	Species Common Name
497	8/26/2020 9:55:40 AM	8/26/2020 5:12:13 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	19	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 09:56 FIX 2261 Belugas seen crossing in-bound line toward far shore. 09:58 FIX 2263, 2266-2268: Belugas traveling along shore line towards the north. Lead and trailing beluga are above 10 body lengths apart; distribution of belugas is uniform along far shore. Additional belugas crossing inbound line adding to group numbers; 10:31 FIX ID# 2270 lead beluga continuing to travel north. 10:33 FIX ID# 2272-2273: 2 trailing belugas passing Pt Mack. 10:46 Handoff to NEX. **NEX: takes over at 10:47. Fix 2275 group is spread out more than 10 body lengths from Point Mac to Port McK. Fix 2277-2280 track whales travelling north. Updated group to 19 white 2 gray. Fix 2282-2284 travelling north slowly. Fix 2286 trailing beluga past out-bound line heading north. Fix 2295, 2299 show single trailing beluga milling at Port McK. That was over looked and is the trailing beluga from this grouptravelling north. Fix 2304, 2308, 2311 show the trailing Beluga moving north along the far shoreline. Last seen at 12:20.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
497	2261	8/26/2020 9:56:01 AM	61.237267	-150.035812	7552.93892
497	2263	8/26/2020 9:58:57 AM	61.230683	-150.003617	5840.63506
497	2266	8/26/2020 10:04:03 AM	61.23269	-149.995462	5392.86336
497	2267	8/26/2020 10:10:36 AM	61.239255	-149.972306	4184.70543
497	2268	8/26/2020 10:14:32 AM	61.245087	-149.964447	3912.62581
497	2270	8/26/2020 10:31:34 AM	61.252241	-149.935232	2933.4509
497	2272	8/26/2020 10:33:21 AM	61.23732	-149.995644	5408.00282
497	2273	8/26/2020 10:43:11 AM	61.231889	-149.98237	4697.91842
497	2275	8/26/2020 10:47:31 AM	61.244917	-149.973325	4362.42504
497	2277	8/26/2020 10:52:25 AM	61.249181	-149.953987	3567.90254
497	2279	8/26/2020 10:56:40 AM	61.2518	-149.93223	2782.77978
497	2280	8/26/2020 11:02:43 AM	61.254459	-149.924636	2739.49773
497	2282	8/26/2020 11:12:39 AM	61.25988	-149.926387	3294.48971
497	2284	8/26/2020 11:19:43 AM	61.263531	-149.912407	3366.90257

Group ID	Created Date	Last Update	Species Common Name
497	8/26/2020 9:55:40 AM	8/26/2020 5:12:13 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	19	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 09:56 FIX 2261 Belugas seen crossing in-bound line toward far shore. 09:58 FIX 2263, 2266-2268: Belugas traveling along shore line towards the north. Lead and trailing beluga are above 10 body lengths apart; distribution of belugas is uniform along far shore. Additional belugas crossing inbound line adding to group numbers; 10:31 FIX ID# 2270 lead beluga continuing to travel north. 10:33 FIX ID# 2272-2273: 2 trailing belugas passing Pt Mack. 10:46 Handoff to NEX. **NEX: takes over at 10:47. Fix 2275 group is spread out more than 10 body lengths from Point Mac to Port McK. Fix 2277-2280 track whales travelling north. Updated group to 19 white 2 gray. Fix 2282-2284 travelling north slowly. Fix 2286 trailing beluga past out-bound line heading north. Fix 2295, 2299 show single trailing beluga milling at Port McK. That was over looked and is the trailing beluga from this grouptravelling north. Fix 2304, 2308, 2311 show the trailing Beluga moving north along the far shoreline. Last seen at 12:20.

497	2286	8/26/2020 11:26:16 AM	61.271448	-149.918997	4311.10644
497	2291	8/26/2020 11:37:01 AM	61.287613	-149.914695	6002.85272
497	2295	8/26/2020 11:43:17 AM	61.267273	-149.916495	3828.49682
497	2299	8/26/2020 11:59:49 AM	61.270451	-149.908623	4068.61081
497	2304	8/26/2020 12:07:32 PM	61.28238	-149.903139	5344.49535
497	2308	8/26/2020 12:10:56 PM	61.287596	-149.908001	5947.68536
497	2311	8/26/2020 12:18:35 PM	61.2957	-149.911369	6863.61494

Group ID	Created Date	Last Update	Species Common Name
498	8/26/2020 11:18:59 AM	8/26/2020 4:19:44 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: 11:19 FIX ID# 2283 Seal seen looking and sinking near bootleggers cove. Last seen time: 13:05.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
498	2283	8/26/2020 11:19:25 AM	61.207086	-149.945507	4079.55338

Group ID	Created Date	Last Update	Species Common Name
499	8/26/2020 11:42:07 AM	8/26/2020 1:47:47 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 11:39 FIX ID# 2293-2294 Single gray beluga traveling south along the near shore. Split off from group 495. Last seen 11:43

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
499	2293	8/26/2020 11:42:22 AM	61.202259	-149.981163	5848.75557
499	2294	8/26/2020 11:42:54 AM	61.202563	-149.993011	6343.08409

Group ID	Created Date	Last Update	Species Common Name
500	8/26/2020 12:07:15 PM	8/26/2020 4:55:39 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: Fix 2305 One harbor seal spotted looking and sinking in the mouth of SC. Last seen at 1233.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
500	2305	8/26/2020 12:08:13 PM	61.227065	-149.904019	961.1647

Group ID	Created Date	Last Update	Species Common Name
501	8/26/2020 12:29:18 PM	8/26/2020 4:20:24 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 12:25 FIX ID# 2314 One beluga whale seen heading NE off Point Mackenzie. Last seen 12:25.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
501	2314	8/26/2020 12:29:28 PM	61.2342	-149.984744	4816.11218

Group ID	Created Date	Last Update	Species Common Name
502	8/26/2020 12:34:45 PM	8/26/2020 4:54:51 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Feeding Suspected

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: 12:30 Fix 2316 One harbor seal spotted looking and sinking. Last seen at 1235.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
502	2316	8/26/2020 12:35:07 PM	61.220418	-149.913155	1846.48035

Group ID	Created Date	Last Update	Species Common Name
503	8/26/2020 1:18:27 PM	8/26/2020 4:54:16 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: 13:10 Fix ID# 2321 One white beluga spotted surfacing. It was last seen at 1310.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
503	2321	8/26/2020 1:23:50 PM	61.247924	-149.897649	1504.99021

Group ID	Created Date	Last Update	Species Common Name
504	8/26/2020 1:51:16 PM	8/26/2020 5:12:59 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: Fix 2323 One harbor seal spotted looking and sinking. Last seen at 13:50.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
504	2323	8/26/2020 1:51:23 PM	61.225561	-149.912877	1387.03989

Group ID	Created Date	Last Update	Species Common Name
506	8/26/2020 3:19:10 PM	8/26/2020 4:21:19 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: 15:19 FIX ID# 2340 One seal seen looking and swimming. Last time seen: 15:35.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
506	2340	8/26/2020 3:19:30 PM	61.200927	-149.995166	6540.95871

Group ID	Created Date	Last Update	Species Common Name
507	8/26/2020 3:26:30 PM	8/26/2020 5:13:20 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: Fix 2344 One harbor seal spotted looking and sinking. Last seen at 15:28.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
507	2344	8/26/2020 3:26:49 PM	61.222945	-149.909572	1506.74478

Group ID	Created Date	Last Update	Species Common Name
508	8/26/2020 3:56:33 PM	8/26/2020 5:16:26 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: 15:57 Fix ID 2352 Harbor seal surfaced near the mouth of SC, looked around and sunk. Last seen at 16:35.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
508	2352	8/26/2020 3:56:57 PM	61.226511	-149.904429	1025.24427

Group ID	Created Date	Last Update	Species Common Name
510	8/27/2020 7:07:01 AM	8/27/2020 2:32:05 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: Fix 2355 One harbor seal spotted looking and sinking at mouth of Ship Creek. 09:28 Fix ID 2393 Harbor Seal spotted looking and sinking. Last seen 09:48.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
510	2355	8/27/2020 7:07:17 AM	61.227736	-149.904061	899.54041
510	2393	8/27/2020 9:34:40 AM	61.2279	-149.905812	931.1545

Group ID	Created Date	Last Update	Species Common Name
511	8/27/2020 7:13:51 AM	8/27/2020 1:48:32 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: Fix 2357 One harbor seal spotted south of tug boat dock looking and sinking. Fix 2358 Harbor seal traveled to mouth of Ship Creek. 09:29 Fix ID 2392 One Harbor Seal spotted at the mouth of Ship Creek, looking and sinking. Last seen 09:28.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
511	2357	8/27/2020 7:14:33 AM	61.221668	-149.913166	1731.06237
511	2358	8/27/2020 7:21:25 AM	61.226477	-149.906933	1102.43818
511	2392	8/27/2020 9:31:57 AM	61.226772	-149.906838	1064.37715

Group ID	Created Date	Last Update	Species Common Name
512	8/27/2020 7:25:01 AM	8/27/2020 8:10:06 AM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**SC: Fix 2360 One white beluga whale spotted across bay between Point Mac and Port Mac heading SW. Fix 2362 One white beluga traveling SW approaching Point Mackensie. Last seen 07:35.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
512	2360	8/27/2020 7:28:39 AM	61.243911	-149.942721	2775.07881
512	2362	8/27/2020 7:35:59 AM	61.237187	-149.953527	3161.18146

Group ID	Created Date	Last Update	Species Common Name
513	8/27/2020 7:28:29 AM	8/27/2020 5:07:51 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW 07:27 Fix 2359 Blow spotted in the glare; surfacing as it traveled northeast towards the zone. 07:35 Fix 2361, 2363, & 2366 Single gray surfaced traveling to the north. 08:01 Fix 2368 Single gray spotted traveling into Bootlegger's Cove. 08:09 Beluga milling in cove. Hand off to SC at 08:18. **SC: Fix 2370-2371 gray beluga traveling NE. Fix 2373-2376 possible milling. Fixes 2377-2380 (recorded under group 515) beluga now traveling N/NE. 08:46 Passed over to PCT. **PCT: 08:46 take over from SC; Fix 2381-2385 traveling NE along nearshore; **NEX: 0905 hand off from PCT. Fix 2387 travelling north near shore. Fix 2388 travelling north past station. Fix 2389-2391 past boundary line travelling north. Last seen 09:30. (ATL post-processed: changed group ID from 515 to 513 for fixes 2377 - 2380)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
513	2359	8/27/2020 7:28:38 AM	61.202239	-149.977909	5713.41865
513	2361	8/27/2020 7:35:52 AM	61.20412	-149.968683	5199.73103
513	2363	8/27/2020 7:43:48 AM	61.20901	-149.967141	4797.95572
513	2366	8/27/2020 7:52:57 AM	61.212217	-149.956363	4122.32185
513	2368	8/27/2020 8:03:55 AM	61.209742	-149.948171	3966.01808
513	2370	8/27/2020 8:20:57 AM	61.218964	-149.921833	2252.20273
513	2371	8/27/2020 8:21:43 AM	61.219704	-149.919712	2116.4582
513	2373	8/27/2020 8:30:11 AM	61.22702	-149.908119	1095.05949
513	2374	8/27/2020 8:32:27 AM	61.226781	-149.907065	1079.77273
513	2375	8/27/2020 8:34:32 AM	61.22595	-149.908734	1207.53728
513	2376	8/27/2020 8:38:31 AM	61.227067	-149.906648	1040.99369
513	2377	8/27/2020 8:43:31 AM	61.228939	-149.906275	871.89811
513	2378	8/27/2020 8:44:12 AM	61.229372	-149.905585	811.86861
513	2379	8/27/2020 8:44:48 AM	61.229925	-149.90474	736.76169

Group ID	Created Date	Last Update	Species Common Name
513	8/27/2020 7:28:29 AM	8/27/2020 5:07:51 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW 07:27 Fix 2359 Blow spotted in the glare; surfacing as it traveled northeast towards the zone. 07:35 Fix 2361, 2363, & 2366 Single gray surfaced traveling to the north. 08:01 Fix 2368 Single gray spotted traveling into Bootlegger's Cove. 08:09 Beluga milling in cove. Hand off to SC at 08:18. **SC: Fix 2370-2371 gray beluga traveling NE. Fix 2373-2376 possible milling. Fixes 2377-2380 (recorded under group 515) beluga now traveling N/NE. 08:46 Passed over to PCT. **PCT: 08:46 take over from SC; Fix 2381-2385 traveling NE along nearshore; **NEX: 0905 hand off from PCT. Fix 2387 travelling north near shore. Fix 2388 travelling north past station. Fix 2389-2391 past boundary line travelling north. Last seen 09:30. (ATL post-processed: changed group ID from 515 to 513 for fixes 2377 - 2380)

513	2380	8/27/2020 8:45:30 AM	61.230503	-149.903848	658.1975
513	2381	8/27/2020 8:46:00 AM	61.231055	-149.902461	562.03354
513	2383	8/27/2020 8:49:08 AM	61.233375	-149.900655	341.27202
513	2385	8/27/2020 8:53:52 AM	61.236302	-149.893163	220.64388
513	2387	8/27/2020 9:05:15 AM	61.248344	-149.885239	1623.73512
513	2388	8/27/2020 9:13:30 AM	61.252869	-149.883147	2136.97997
513	2389	8/27/2020 9:22:36 AM	61.261218	-149.885108	3017.53443
513	2390	8/27/2020 9:25:37 AM	61.262179	-149.882934	3143.95598
513	2391	8/27/2020 9:31:37 AM	61.268332	-149.87755	3872.64135

Group ID	Created Date	Last Update	Species Common Name
514	8/27/2020 7:43:16 AM	8/27/2020 9:13:34 AM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Feeding Suspected	Other

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: 07:43 Fix 2364 footprint visible on water surface very nearshore; seal surfaced and looked then sunk. Last Seen 09:13

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
514	2364	8/27/2020 7:44:12 AM	61.231737	-149.898239	357.01569

Group ID	Created Date	Last Update	Species Common Name
515	8/27/2020 7:58:54 AM	8/27/2020 2:38:25 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	2	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

***SC: Fix 2367 Two white belugas sighted traveling north along far shore heading toward Point Mackensie. Fix 2369 Two white belugas slowly traveling southwest along far shore. Last seen 07:59. ** Fixes 2377-2380 Belong to group 513. (ATL post-processed: changed group ID from 515 to 513 for fixes 2377 - 2380)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
515	2367	8/27/2020 7:59:18 AM	61.245228	-150.055588	8685.71787
515	2369	8/27/2020 8:10:43 AM	61.249189	-150.091199	10632.90296

Group ID	Created Date	Last Update	Species Common Name
516	8/27/2020 8:21:15 AM	8/27/2020 2:38:52 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: Gray beluga seen near far shore traveling west towards inbound line. Time last seen: 08:23

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
516	2372	8/27/2020 8:22:39 AM	61.230228	-150.017988	6610.85031

Group ID	Created Date	Last Update	Species Common Name
517	8/27/2020 8:46:31 AM	8/27/2020 2:39:41 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Travelling	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

NEX: 08:46 Fix ID 2382 one harbor seal traveling north along near shore in front of NEX; Last time seen: 08:52

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
517	2382	8/27/2020 8:46:47 AM	61.253932	-149.884209	2235.44348
517	2384	8/27/2020 8:52:34 AM	61.256989	-149.883352	2576.10077

Group ID	Created Date	Last Update	Species Common Name
518	8/27/2020 9:01:18 AM	8/27/2020 2:35:50 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: FIX ID# 2386 Seal seen swimming in front of station. FIX ID# 2408 & 2422: Fix taken to show seal milling in front of station. Time last seen: 14:35

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
518	2386	8/27/2020 9:01:27 AM	61.201604	-149.990453	6291.34204
518	2408	8/27/2020 11:55:59 AM	61.201045	-149.98903	6266.13053
518	2422	8/27/2020 2:05:18 PM	61.200756	-149.990229	6336.86537

Group ID	Created Date	Last Update	Species Common Name
519	8/27/2020 10:16:33 AM	8/27/2020 2:40:21 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: Fix 2394 One harbor seal spotted looking and sinking around 2000 meters in front of Ship Creek station. Last seen 10:38.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
519	2394	8/27/2020 10:16:45 AM	61.228456	-149.941285	2579.95067

Group ID	Created Date	Last Update	Species Common Name
520	8/27/2020 11:11:37 AM	8/27/2020 2:43:27 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: Fix 2395 Belugas seen traveling on far shore. Fix 2396-2397 Belugas continuing to travel along far shore to Port Mack. Fix 2398 Belugas hugging far shore rounding Port Mack, continuing to travel north. Fix 2399-2402 Fixes show movement of Belugas traveling North. Fix 2403 Fix of the trailing Beluga. Fix 2404-2405 Belugas starting to distribute along far shore. Hand off to NEX at 11:45. **NEX: Fix 2407 - 2417 whales moving north along the far shore. Last seen at 12:48.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
520	2395	8/27/2020 11:14:07 AM	61.23304	-150.001855	5733.28791
520	2396	8/27/2020 11:17:18 AM	61.237433	-150.00142	5717.05009
520	2397	8/27/2020 11:24:16 AM	61.233733	-149.991301	5153.1949
520	2398	8/27/2020 11:27:05 AM	61.237745	-149.980464	4587.25271
520	2399	8/27/2020 11:29:51 AM	61.238364	-149.976151	4377.8321
520	2400	8/27/2020 11:30:49 AM	61.240189	-149.972832	4226.93434
520	2401	8/27/2020 11:33:38 AM	61.241581	-149.968666	4034.26707
520	2402	8/27/2020 11:38:29 AM	61.245088	-149.963438	3861.2658
520	2403	8/27/2020 11:40:01 AM	61.24088	-149.965212	3838.14422
520	2404	8/27/2020 11:41:14 AM	61.247693	-149.956122	3599.09402
520	2405	8/27/2020 11:45:04 AM	61.246517	-149.953814	3433.81525
520	2406	8/27/2020 11:49:08 AM	61.247963	-149.957868	3696.55225
520	2407	8/27/2020 11:54:48 AM	61.253003	-149.936433	3037.98438
520	2410	8/27/2020 12:02:40 PM	61.25831	-149.917314	2913.72857

Group ID	Created Date	Last Update	Species Common Name
520	8/27/2020 11:11:37 AM	8/27/2020 2:43:27 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	2	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: Fix 2395 Belugas seen traveling on far shore. Fix 2396-2397 Belugas continuing to travel along far shore to Port Mack. Fix 2398 Belugas hugging far shore rounding Port Mack, continuing to travel north. Fix 2399-2402 Fixes show movement of Belugas traveling North. Fix 2403 Fix of the trailing Beluga. Fix 2404-2405 Belugas starting to distribute along far shore. Hand off to NEX at 11:45. **NEX: Fix 2407 - 2417 whales moving north along the far shore. Last seen at 12:48.

520	2412	8/27/2020 12:11:33 PM	61.259089	-149.916519	2975.76175
520	2413	8/27/2020 12:13:01 PM	61.261411	-149.913589	3161.18448
520	2414	8/27/2020 12:23:31 PM	61.270347	-149.913779	4116.77556
520	2415	8/27/2020 12:30:02 PM	61.274892	-149.909796	4565.30982
520	2416	8/27/2020 12:41:26 PM	61.278559	-149.901997	4916.3316
520	2417	8/27/2020 12:45:05 PM	61.28425	-149.898798	5537.51877

Group ID	Created Date	Last Update	Species Common Name
521	8/27/2020 11:56:17 AM	8/27/2020 2:44:37 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	

Comments

SC: 11:55 Fix ID 2409 Two Harbor Seals seen at the mouth of Ship Creek, both looking and sinking. Last seen: 12:01

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
521	2409	8/27/2020 11:56:49 AM	61.227417	-149.904315	936.57931

Group ID	Created Date	Last Update	Species Common Name
522	8/27/2020 1:23:09 PM	8/27/2020 2:45:12 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

NEX: 13:23 Fix ID 2418-Fix ID 2419 one seal traveling south; Last seen: 13:33

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
522	2418	8/27/2020 1:23:18 PM	61.255957	-149.881552	2490.17764
522	2419	8/27/2020 1:25:59 PM	61.254149	-149.88205	2290.13087
522	2420	8/27/2020 1:29:13 PM	61.252819	-149.882444	2142.83366

Group ID	Created Date	Last Update	Species Common Name
523	8/27/2020 1:36:48 PM	8/27/2020 2:17:44 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: Fix 2421 One harbor seal spotted looking and sinking between Ship Creek and PCT. Fix 2423 seal spotted looking and sinking. Last seen 14:16.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
523	2421	8/27/2020 1:38:02 PM	61.231519	-149.906788	725.01597
523	2423	8/27/2020 2:16:24 PM	61.227942	-149.903936	876.84027

Group ID	Created Date	Last Update	Species Common Name
524	8/27/2020 2:34:45 PM	8/27/2020 5:03:59 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: Fix 2424 One harbor seal traveling toward Ship Creek. 14:40 Fix 2425 Harbor Seal surfaced and dove directly in front of SC station. 14:43 Fix 2426 Harbor Seal resurfaced at mouth of Ship Creek. Last seen 14:45.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
524	2424	8/27/2020 2:35:11 PM	61.223144	-149.909535	1486.9597
524	2425	8/27/2020 2:39:49 PM	61.224981	-149.90739	1253.16278
524	2426	8/27/2020 2:45:38 PM	61.226769	-149.904902	1014.07182

Group ID	Created Date	Last Update	Species Common Name
525	8/27/2020 4:29:03 PM	8/27/2020 5:04:28 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: 16:24 Fix 2427 Harbor seal spotted between Ship Creek and PCT station traveling west toward Point MacKensie. Last seen 16:43.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
525	2427	8/27/2020 4:29:27 PM	61.231565	-149.913853	1064.17845

Group ID	Created Date	Last Update	Species Common Name
526	8/27/2020 5:09:42 PM	8/27/2020 5:18:02 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	False	Moderate	Travelling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	1	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

***NEX First seen at 1708. Fix 2428 taken three minutes later. Whales moving close to our shore heading south. Fix 2429 shows whales moving south towards the construction site. Last seen at 1717. Sighting terminated at end of work shift.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
526	2428	8/27/2020 5:11:35 PM	61.251183	-149.882714	1965.76252
526	2429	8/27/2020 5:12:14 PM	61.243415	-149.888709	1045.51679

Group ID	Created Date	Last Update	Species Common Name
529	8/28/2020 7:07:06 AM	8/28/2020 4:40:49 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: 07:00 Fix 2433 Seal observed milling near station. Time last seen: 07:08

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
529	2433	8/28/2020 7:07:23 AM	61.201199	-149.98076	5904.7681

Group ID	Created Date	Last Update	Species Common Name
530	8/28/2020 7:55:17 AM	8/28/2020 4:46:17 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

*SC: 07:51 Fix 2435 Initial sighting of one white Beluga surfacing west of PW Station by near shore. 07:59 Passed over to PW. **PW: Fix 2436-2438 Beluga seen crossing inbound line in front of station traveling east. Fix 2439-2443 Beluga traveling east along near shore. Repeated blows and surfacing. Fix 2444-2450 Beluga heading northeast, traveling along shoreline.**SC: 08:51 Took over from PW. Fix 2451,2453 Beluga traveling NE towards Ship Creek. Fix 2451,2453 Beluga traveling NE towards Ship Creek. **PCT: 09:04 fix 2454 one white whale traveling NE along nearshore; Last Seen 09:07

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
530	2435	8/28/2020 7:57:17 AM	61.204898	-150.000728	6555.53522
530	2436	8/28/2020 7:58:53 AM	61.201486	-149.994708	6485.50403
530	2437	8/28/2020 8:01:12 AM	61.201176	-149.99244	6405.59021
530	2438	8/28/2020 8:03:02 AM	61.201244	-149.989411	6269.50854
530	2439	8/28/2020 8:08:33 AM	61.201795	-149.980755	5863.30302
530	2440	8/28/2020 8:10:34 AM	61.201979	-149.97741	5710.86371
530	2443	8/28/2020 8:20:18 AM	61.203994	-149.96225	4952.28804
530	2444	8/28/2020 8:22:15 AM	61.204552	-149.95861	4768.54536
530	2446	8/28/2020 8:31:17 AM	61.208257	-149.944159	3934.58818
530	2447	8/28/2020 8:33:16 AM	61.209271	-149.938833	3662.01335
530	2449	8/28/2020 8:40:50 AM	61.21225	-149.933233	3215.79857
530	2450	8/28/2020 8:45:07 AM	61.213726	-149.934846	3149.91485
530	2451	8/28/2020 8:52:09 AM	61.216798	-149.928498	2668.66077
530	2453	8/28/2020 8:58:21 AM	61.225592	-149.908833	1242.14314

Group ID	Created Date	Last Update	Species Common Name
530	8/28/2020 7:55:17 AM	8/28/2020 4:46:17 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

*SC: 07:51 Fix 2435 Initial sighting of one white Beluga surfacing west of PW Station by near shore. 07:59 Passed over to PW. **PW: Fix 2436-2438 Beluga seen crossing inbound line in front of station traveling east. Fix 2439-2443 Beluga traveling east along near shore. Repeated blows and surfacing. Fix 2444-2450 Beluga heading northeast, traveling along shoreline.**SC: 08:51 Took over from PW. Fix 2451,2453 Beluga traveling NE towards Ship Creek. Fix 2451,2453 Beluga traveling NE towards Ship Creek. **PCT: 09:04 fix 2454 one white whale traveling NE along nearshore; Last Seen 09:07

530	2454	8/28/2020 9:10:25 AM	61.23275	-149.897507	242.39791

Group ID	Created Date	Last Update	Species Common Name
531	8/28/2020 8:10:46 AM	8/28/2020 2:55:17 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**SC: Fix 2441 One Harbor Seal spotted travelling at the surface south of SC station. 08:35 Behavior updated to looking and sinking. Last seen 09:20

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
531	2441	8/28/2020 8:11:11 AM	61.209245	-149.944647	3872.01159

Group ID	Created Date	Last Update	Species Common Name
532	8/28/2020 8:17:24 AM	8/28/2020 11:43:03 AM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: Fix 2442 One white beluga at Point Mac traveling north. Fix 2445 One white beluga changed direction and started heading south along far shore. Fix 2448, 2452 Single beluga milling in front of Port MacKensie. Last seen 09:03.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
532	2442	8/28/2020 8:17:45 AM	61.266145	-149.915017	3685.24367
532	2445	8/28/2020 8:26:10 AM	61.263865	-149.916756	3474.43663
532	2448	8/28/2020 8:36:27 AM	61.266464	-149.915784	3731.31327
532	2452	8/28/2020 8:56:49 AM	61.267398	-149.913328	3793.7918

Group ID	Created Date	Last Update	Species Common Name
533	8/28/2020 9:11:50 AM	8/28/2020 5:08:32 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
3	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	9	4	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 09:13 whales spotted coming around Cairn point. Fix 2455-2458 traveling south near shore. Fix 2459 updated count to 9 white, 4 gray, 1 calf. Fix 2460-2462 traveling south along shore. Fix 2463-2464 group heading into worksite, lost view from infastructure. **PW takes over for NEX at 09:40. Fixes 2465-2466 group traveling along seawall and behind the off shore barge. Hand off to PCT 09:52. **PCT: 09:53 take over from PW; Fix 2467-2469 lead beluga traveling SW along nearshore; Group has passed the work site and continues SW along nearshore; Fix 2471 trailing beluga traveling SW along nearshore; 10:07 hand-off to SC; **SC: Take over sighting at 10:10 from PCT. Fixes 2472-2478 whales moving slowly SW along the shoreline. Fixes 2480 and 2482 in group 534 belong to group 533. Those fixes represent the trailing beluga still traveling SW. **PW: takes group from SC 10:53. Fix 2486-2492, whales traveling SW and beyond in-bound line. Last Seen 11:33 (GHOST FIX on 2496- PW)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
533	2455	8/28/2020 9:13:10 AM	61.26024	-149.880662	2961.5293
533	2456	8/28/2020 9:16:45 AM	61.256791	-149.881825	2575.292
533	2457	8/28/2020 9:18:26 AM	61.256289	-149.881935	2519.98181
533	2458	8/28/2020 9:21:06 AM	61.253831	-149.882095	2255.67192
533	2459	8/28/2020 9:25:47 AM	61.251966	-149.882647	2049.34751
533	2460	8/28/2020 9:27:45 AM	61.251363	-149.882814	1982.96848
533	2461	8/28/2020 9:28:54 AM	61.250347	-149.883509	1864.12086
533	2462	8/28/2020 9:32:59 AM	61.248127	-149.885165	1602.087
533	2463	8/28/2020 9:36:03 AM	61.246703	-149.886556	1428.57376
533	2464	8/28/2020 9:38:13 AM	61.245294	-149.887133	1270.17293
533	2465	8/28/2020 9:41:50 AM	61.240182	-149.895668	638.49584
533	2466	8/28/2020 9:45:23 AM	61.23985	-149.89064	637.17752
533	2467	8/28/2020 9:52:50 AM	61.236109	-149.893586	192.82834
533	2468	8/28/2020 9:55:13 AM	61.234365	-149.896799	113.69429

Group ID	Created Date	Last Update	Species Common Name
533	8/28/2020 9:11:50 AM	8/28/2020 5:08:32 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
3	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	9	4	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 09:13 whales spotted coming around Cairn point. Fix 2455-2458 traveling south near shore. Fix 2459 updated count to 9 white, 4 gray, 1 calf. Fix 2460-2462 traveling south along shore. Fix 2463-2464 group heading into worksite, lost view from infastructure. **PW takes over for NEX at 09:40. Fixes 2465-2466 group traveling along seawall and behind the off shore barge. Hand off to PCT 09:52. **PCT: 09:53 take over from PW; Fix 2467-2469 lead beluga traveling SW along nearshore; Group has passed the work site and continues SW along nearshore; Fix 2471 trailing beluga traveling SW along nearshore; 10:07 hand-off to SC; **SC: Take over sighting at 10:10 from PCT. Fixes 2472-2478 whales moving slowly SW along the shoreline. Fixes 2480 and 2482 in group 534 belong to group 533. Those fixes represent the trailing beluga still traveling SW. **PW: takes group from SC 10:53. Fix 2486-2492, whales traveling SW and beyond in-bound line. Last Seen 11:33 (GHOST FIX on 2496- PW)

533	2469	8/28/2020 9:58:23 AM	61.232843	-149.898528	272.8147
533	2471	8/28/2020 10:02:24 AM	61.232442	-149.8972	261.16982
533	2472	8/28/2020 10:09:29 AM	61.228	-149.906417	953.15517
533	2473	8/28/2020 10:16:15 AM	61.227291	-149.906983	1032.79474
533	2475	8/28/2020 10:19:40 AM	61.222467	-149.912893	1650.29005
533	2476	8/28/2020 10:24:27 AM	61.220074	-149.916329	1973.45405
533	2477	8/28/2020 10:26:05 AM	61.220285	-149.916856	1971.34232
533	2478	8/28/2020 10:30:41 AM	61.218278	-149.92341	2364.91718
533	2485	8/28/2020 10:47:58 AM	61.209306	-149.950557	4092.01873
533	2486	8/28/2020 10:55:38 AM	61.20615	-149.958853	4656.06722
533	2487	8/28/2020 11:09:34 AM	61.203987	-149.976151	5527.25534
533	2490	8/28/2020 11:14:52 AM	61.203478	-149.981698	5799.5607
533	2491	8/28/2020 11:20:05 AM	61.203455	-149.986301	6002.4411
533	2492	8/28/2020 11:29:38 AM	61.203492	-149.999367	6573.14672

Group ID	Created Date	Last Update	Species Common Name
534	8/28/2020 10:01:17 AM	8/28/2020 5:09:53 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: Seal seen in front of the construction zone at 09:58. **PCT: 10:17 fix 2474 seal surfaced, looked and sunk; swimming just under the surface, feeding suspected.SC: 11:08 Took over from PCT. Fix 2488 Harbor seal seen traveling away from the zone. Last seen 11:09 *** Fixes 2480 and 2482 belong to MM Group 533.***

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
534	2470	8/28/2020 10:01:58 AM	61.230893	-149.900545	505.02819
534	2474	8/28/2020 10:18:11 AM	61.232183	-149.898261	316.89334
534	2480	8/28/2020 10:34:48 AM	61.217005	-149.927199	2604.89173
534	2482	8/28/2020 10:37:04 AM	61.21562	-149.930837	2849.73042
534	2488	8/28/2020 11:10:33 AM	61.227985	-149.904658	887.17062
534	2493	8/28/2020 11:42:30 AM	61.227789	-149.90808	1030.65175

Group ID	Created Date	Last Update	Species Common Name
535	8/28/2020 12:17:45 PM	8/28/2020 5:17:07 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW: Fix 2494-2495, & 2497: Belugas traveling east towards in-bound line on far shore. Fix 2498: Belugas milling beyond the in-bound line. Fix 2499-2501: Belugas crossing in-bound line, moving east. Fix 2502-2503: Belugas dispersed along far shore. Fix taken of leading beluga. Fix 2504-2507: Leading beluga crossing Pt. Mackenzie continuing to travel northeast along shore line. Belugas continuing to enter in-bound line adding to total count. Passed to SC at 13:19.SC: takes over sightings. Fixes 2508, 2513, 2515, 2517, 2521: Belugas travelling North along the shoreline. Fix 2524: whales change direction and heading South along the shoreline. Combined group 535* with the 6 whales from group 536* at 13:55. Fixes 2524, 2526, 2527: groups milling inside the zone. Fixes 2529 and 2530: whales moving out of the zone and heading North. NEX takes over at 14:39.**NEX: Fix 2531: The group traveling north close to Port Mackenzie. Fix 2532: Belugas still heading North along far shore. Fix 2533: Belugas are milling behind Port Mackenzie. Fix 2535, 2537: The group split and all but 5 whales heading back south, just crossed the outbound line. Fix 2539,2541,and 2543-2551: group is travelling south along far shore heading toward Point Mackensie.**SC: Took over from NEX at 16:00. Fix 2552: Beluga group still travelling south along far shore approaching Point Mac. Handed off to PW at 16:04. ...Comments continued next page....

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
535	2494	8/28/2020 12:18:25 PM	61.241861	-150.06334	9055.24627
535	2495	8/28/2020 12:19:31 PM	61.239286	-150.059101	8807.86044
535	2497	8/28/2020 12:24:18 PM	61.238758	-150.052723	8525.48227
535	2498	8/28/2020 12:26:05 PM	61.240851	-150.049636	8378.51755
535	2499	8/28/2020 12:34:52 PM	61.235435	-150.034226	7504.95839
535	2500	8/28/2020 12:36:56 PM	61.233542	-150.02593	7060.50676
535	2501	8/28/2020 12:43:33 PM	61.230649	-150.012933	6337.89797
535	2502	8/28/2020 12:50:47 PM	61.228412	-150.000219	5683.87305
535	2503	8/28/2020 12:52:14 PM	61.2288	-149.991562	5219.03578
535	2504	8/28/2020 12:55:12 PM	61.231564	-149.985617	4912.98947
535	2505	8/28/2020 12:56:55 PM	61.233845	-149.981176	4667.06861
535	2506	8/28/2020 12:58:27 PM	61.232203	-149.977579	4479.92056
535	2507	8/28/2020 1:08:54 PM	61.238114	-149.974727	4299.37361
535	2508	8/28/2020 1:19:56 PM	61.241078	-149.968074	3992.58661

Group ID	Created Date	Last Update	Species Common Name
535	8/28/2020 12:17:45 PM	8/28/2020 5:17:07 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

... Comments continued from previous page... **PW: 16:04 Fix 2553-2560: group travelling SW. End of watch at 17:15. Whales continuing to travel outside of in-bound line, still in visual range. Last time seen 17:15.

535	2513	8/28/2020 1:34:03 PM	61.251039	-149.945556	3285.23571
535	2515	8/28/2020 1:38:37 PM	61.252831	-149.93838	3102.64673
535	2517	8/28/2020 1:42:52 PM	61.254857	-149.933507	3073.58961
535	2519	8/28/2020 1:52:03 PM	61.25395	-149.933409	3050.13251
535	2521	8/28/2020 1:54:07 PM	61.256991	-149.928101	3128.3274
535	2524	8/28/2020 2:09:09 PM	61.252456	-149.927799	2724.61836
535	2526	8/28/2020 2:19:34 PM	61.25367	-149.923396	2681.96608
535	2527	8/28/2020 2:25:52 PM	61.254457	-149.924353	2730.50166
535	2529	8/28/2020 2:34:01 PM	61.256829	-149.922157	2887.55103
535	2530	8/28/2020 2:36:19 PM	61.258603	-149.920816	3025.13458
535	2531	8/28/2020 2:39:23 PM	61.264258	-149.917809	3534.82691
535	2532	8/28/2020 2:43:10 PM	61.267347	-149.912766	3780.53354
535	2533	8/28/2020 2:47:04 PM	61.269245	-149.914799	4012.52647
535	2535	8/28/2020 2:56:21 PM	61.265265	-149.916008	3608.30871
535	2537	8/28/2020 3:05:02 PM	61.263944	-149.918168	3508.98047

Group ID	Created Date	Last Update	Species Common Name
535	8/28/2020 12:17:45 PM	8/28/2020 5:17:07 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...***See above***

535	2539	8/28/2020 3:15:00 PM	61.264757	-149.921734	3664.41778
535	2541	8/28/2020 3:20:58 PM	61.260726	-149.923158	3292.16961
535	2543	8/28/2020 3:26:11 PM	61.258187	-149.935656	3427.99271
535	2544	8/28/2020 3:30:10 PM	61.256077	-149.940479	3430.12096
535	2545	8/28/2020 3:33:52 PM	61.253877	-149.946637	3517.30954
535	2546	8/28/2020 3:40:05 PM	61.250934	-149.955621	3737.15418
535	2547	8/28/2020 3:44:51 PM	61.248639	-149.958559	3761.16201
535	2548	8/28/2020 3:48:19 PM	61.246379	-149.964555	3963.70979
535	2549	8/28/2020 3:53:09 PM	61.244088	-149.970834	4209.90153
535	2550	8/28/2020 3:56:40 PM	61.242013	-149.977232	4492.96063
535	2551	8/28/2020 3:59:12 PM	61.240565	-149.974641	4328.90939
535	2552	8/28/2020 4:03:36 PM	61.238959	-149.96412	3746.46769
535	2553	8/28/2020 4:14:36 PM	61.235189	-149.98724	4950.09275
535	2554	8/28/2020 4:19:51 PM	61.235124	-149.991048	5153.58861
535	2555	8/28/2020 4:25:41 PM	61.234463	-149.993874	5304.22486

Group ID	Created Date	Last Update	Species Common Name
535	8/28/2020 12:17:45 PM	8/28/2020 5:17:07 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...***See above***

535	2556	8/28/2020 4:36:35 PM	61.235206	-150.001067	5689.4062
535	2557	8/28/2020 4:41:21 PM	61.236819	-150.006091	5963.07766
535	2558	8/28/2020 4:51:37 PM	61.236737	-150.015563	6468.75518
535	2559	8/28/2020 4:58:33 PM	61.236325	-150.023191	6874.85381
535	2560	8/28/2020 5:02:56 PM	61.24025	-150.032389	7391.19155

Group ID	Created Date	Last Update	Species Common Name
536	8/28/2020 1:19:58 PM	8/28/2020 4:50:46 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	5	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 12:45 Fix 2509 Belugas first seen SE of in-bound line. Belugas milling in general area. Fixes 2511-2516 group traveling NE. Fix 2518 group stops and mills. Fix 2520 group travels NE to join MMG 535. SC takes over combined group at 13:55. Refer to MMG 535 for last seen time.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
536	2509	8/28/2020 1:20:06 PM	61.244532	-150.071613	9525.74927
536	2511	8/28/2020 1:29:09 PM	61.231789	-150.01638	6514.72685
536	2512	8/28/2020 1:31:38 PM	61.235105	-150.011897	6268.3358
536	2514	8/28/2020 1:36:54 PM	61.238247	-150.001927	5749.95969
536	2516	8/28/2020 1:41:40 PM	61.236185	-149.989527	5075.27429
536	2518	8/28/2020 1:47:13 PM	61.237727	-149.971487	4167.62251
536	2520	8/28/2020 1:53:59 PM	61.238873	-149.966488	3916.59267

Group ID	Created Date	Last Update	Species Common Name
537	8/28/2020 1:56:07 PM	8/28/2020 5:11:44 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

***SC: Observed moving NW away from our station. Last seen 1400.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
537	2522	8/28/2020 1:56:49 PM	61.231881	-149.90915	853.35045
537	2523	8/28/2020 1:59:56 PM	61.233573	-149.909169	818.87625

Group ID	Created Date	Last Update	Species Common Name
538	8/28/2020 2:11:18 PM	8/28/2020 4:07:09 PM	Harbor Porpoise

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Porpoising	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	

Comments

**PW: 14:09 Fix 2525 Harbor porpoise observed porpoising. Fix 2526 additional harbor porpoise seen. Last seen 14:55.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
538	2525	8/28/2020 2:11:28 PM	61.213611	-149.999472	6090.70882
538	2528	8/28/2020 2:33:17 PM	61.217019	-149.986456	5277.46137
538	2534	8/28/2020 2:47:45 PM	61.212145	-149.990465	5692.01506

Group ID	Created Date	Last Update	Species Common Name
539	8/28/2020 3:02:34 PM	8/28/2020 4:11:07 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

***NEX: 15:03 Fix 2536 Five belugas split from MMG 535 , continuing north along far bank. Fix 2538 Belugas milling north of Port Mackenzie. Fix 2540 and Fix 542 Belugas continuing to travel north. Last seen 1524.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
539	2536	8/28/2020 3:03:09 PM	61.288481	-149.912744	6080.37097
539	2538	8/28/2020 3:13:20 PM	61.29485	-149.911318	6769.61752
539	2540	8/28/2020 3:18:48 PM	61.294878	-149.901248	6723.29036
539	2542	8/28/2020 3:24:43 PM	61.303438	-149.892333	7666.34488

Group ID	Created Date	Last Update	Species Common Name
541	8/29/2020 7:25:46 AM	8/29/2020 4:10:13 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	No Formation	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	2	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

** PCT Fix 2563. Two whites seen near shore in front of PCT travelling south. Passed offto SC.***SC 0729 FIX 2565, 2567 show whales moving southwest along near shore. Observed 6 whites and 1 grey. Fix 2568 Belugas milling in the mouth of Ship Creek. Fix 2569 trailing beluga traveling SW along the shore. FIX 2570 One whale traveling northeast/milling, followed slowly by rest of group. Fix 2571 Belugas milling south of the tug boat dock. Fix 2572-2574 belugas milling and spread out from south of the tugs north to the PCT. *****PW Take over from ship creek at 0843 **PW 2576 & 2580: Belugas moving out of bootleggers cove headning SW, moving closer to station and traveling along shore line. Fix 2583-2585: Belugas continuing to travel along near shore in front of station. This group of belugas split off from Group #544. Fix 2587-2588: Belugas reverse direction, milling in proximity of station. Fix 2592 Belugas still milling and moving slowly back and forth between Bootlegger Cove and PW station. Fix 2597-2598 Beluga group moving NE along the near shore of Bootlegger Cove. Passing off to SC. ***SC: Fix 2599-2604, 2606 Belugas slowly traveling N along near shore. One whale milling in mouth of Ship Creek until 1041. ***PCT 1047 take over from SC. Fix 2607. Updated count as Beluga swam past to 5 whites, 2 Grey, 1 calf. Passing off to NEX. ....Comments continued next page....

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
541	2563	8/29/2020 7:25:55 AM	61.233052	-149.897602	192.1661
541	2565	8/29/2020 7:29:28 AM	61.230707	-149.90271	569.19734
541	2567	8/29/2020 7:35:23 AM	61.227103	-149.905491	974.57309
541	2568	8/29/2020 7:39:38 AM	61.227121	-149.903641	920.73818
541	2569	8/29/2020 7:43:47 AM	61.223023	-149.911079	1517.5668
541	2570	8/29/2020 7:47:25 AM	61.226161	-149.906904	1103.6386
541	2571	8/29/2020 7:59:36 AM	61.221173	-149.913579	1762.78619
541	2572	8/29/2020 8:08:37 AM	61.227349	-149.905399	949.28013
541	2573	8/29/2020 8:15:36 AM	61.227753	-149.904069	872.33864
541	2574	8/29/2020 8:33:21 AM	61.230816	-149.902235	542.8107
541	2576	8/29/2020 8:46:50 AM	61.202867	-149.967993	5233.95302
541	2580	8/29/2020 8:55:34 AM	61.202052	-149.97567	5603.85445
541	2583	8/29/2020 9:00:51 AM	61.201875	-149.978686	5741.06362
541	2584	8/29/2020 9:01:33 AM	61.201647	-149.980573	5835.6857

Group ID	Created Date	Last Update	Species Common Name
541	8/29/2020 7:25:46 AM	8/29/2020 4:10:13 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	No Formation	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	2	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...Comments continued from previous page... ***NEX: Fix 2608 Group is headed north along near shore, approaching NEX. Fix 2609 - 2615 Group continues to travel north. Fix 2614 - 2615 Whales just passed outbound line. Fix ID 2616 Group continues to travel north. Fix ID 2617 Group is 2000 m north of NEX, about to round Cairn Point. Last time seen 1130 before the group rounded Cairn Point and sightability was lost.

541	2585	8/29/2020 9:02:02 AM	61.201304	-149.989582	6242.43531
541	2587	8/29/2020 9:08:10 AM	61.201766	-149.982327	5901.27159
541	2588	8/29/2020 9:13:27 AM	61.203796	-149.97301	5370.66284
541	2592	8/29/2020 9:21:59 AM	61.203894	-149.971637	5306.99454
541	2597	8/29/2020 9:35:11 AM	61.20518	-149.961959	4822.00945
541	2598	8/29/2020 9:45:22 AM	61.207509	-149.952424	4272.9748
541	2599	8/29/2020 9:52:25 AM	61.208806	-149.948209	4011.23098
541	2600	8/29/2020 10:04:20 AM	61.212428	-149.938921	3375.92407
541	2601	8/29/2020 10:17:10 AM	61.213344	-149.937412	3246.59219
541	2602	8/29/2020 10:23:47 AM	61.219971	-149.921742	2136.38612
541	2603	8/29/2020 10:27:49 AM	61.223892	-149.918787	1714.09771
541	2604	8/29/2020 10:30:58 AM	61.22579	-149.910044	1238.0136
541	2606	8/29/2020 10:41:30 AM	61.229825	-149.903589	672.88806
541	2607	8/29/2020 10:47:58 AM	61.23248	-149.896984	228.05895
541	2608	8/29/2020 10:53:10 AM	61.242424	-149.89064	930.07797

Group ID	Created Date	Last Update	Species Common Name
541	8/29/2020 7:25:46 AM	8/29/2020 4:10:13 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
>10	No Formation	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	8	2	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

...***See above***

541	2609	8/29/2020 10:57:58 AM	61.249665	-149.884408	1797.3899
541	2610	8/29/2020 10:59:45 AM	61.249156	-149.885442	1726.38717
541	2611	8/29/2020 11:02:11 AM	61.251748	-149.88471	2013.33937
541	2612	8/29/2020 11:03:46 AM	61.253033	-149.884426	2154.83228
541	2613	8/29/2020 11:07:31 AM	61.255765	-149.883419	2461.90388
541	2614	8/29/2020 11:12:10 AM	61.260738	-149.887313	2962.5586
541	2615	8/29/2020 11:16:13 AM	61.260941	-149.886343	2992.67547
541	2616	8/29/2020 11:20:17 AM	61.267723	-149.884104	3755.72361
541	2617	8/29/2020 11:24:49 AM	61.271386	-149.879925	4178.78697

Group ID	Created Date	Last Update	Species Common Name
542	8/29/2020 7:33:50 AM	8/29/2020 2:48:11 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SC: Fix 2566 and 2605 One harbor seal, looking and sinking in the mouth of Ship Creek. Fix 2618 seal looking and sinking north of Ship Creek. Last seen 1413.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
542	2566	8/29/2020 7:34:17 AM	61.227358	-149.903697	899.35678
542	2605	8/29/2020 10:39:00 AM	61.226874	-149.906899	1039.11309
542	2618	8/29/2020 12:43:06 PM	61.23283	-149.900867	345.63504
542	2635	8/29/2020 2:12:58 PM	61.227017	-149.90391	937.87653

Group ID	Created Date	Last Update	Species Common Name
543	8/29/2020 8:45:02 AM	8/29/2020 3:56:00 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Resting	Looking

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW 0845 FIX ID # 2575 Seal seen on mudflats, just off water line. Last time seen at 0845

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
543	2575	8/29/2020 8:45:21 AM	61.20279	-149.963428	5060.86108

Group ID	Created Date	Last Update	Species Common Name
544	8/29/2020 8:45:36 AM	8/29/2020 2:56:19 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
7	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX Fix 2577 and Fix 2578 Three white whales heading back North in front of PCT and past construction area. These three whales are part of split group from MMG 541. Last seen 0850.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
544	2577	8/29/2020 8:48:58 AM	61.237169	-149.893963	320.42936
544	2578	8/29/2020 8:50:56 AM	61.241648	-149.889991	857.90023

Group ID	Created Date	Last Update	Species Common Name
545	8/29/2020 8:52:39 AM	8/29/2020 4:11:53 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
8	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	5	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

***NEX: 0850 Fix 2579 5 white and 4 gray whales spotted just north of NEX traveling south. Fix 2581-2582 All 9 whales are continually traveling South along near shoreline. Fix 2586, 2589 Whales are now milling. Fix 2590 show whales travelling north, updated count to 6 white 5 gray. Fix 2591-2593 travelling north. Fix 2594-2596 travelling north around Cairn point. Last seen passing Cairn point at 0933.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
545	2579	8/29/2020 8:52:50 AM	61.254376	-149.881802	2338.13188
545	2581	8/29/2020 8:55:37 AM	61.252144	-149.88249	2091.20906
545	2582	8/29/2020 8:58:25 AM	61.250021	-149.883811	1845.19743
545	2586	8/29/2020 9:04:33 AM	61.249272	-149.884658	1751.74347
545	2589	8/29/2020 9:15:37 AM	61.249949	-149.8838	1837.84475
545	2590	8/29/2020 9:18:09 AM	61.252915	-149.882528	2171.75353
545	2591	8/29/2020 9:20:30 AM	61.254034	-149.881522	2306.70511
545	2593	8/29/2020 9:22:46 AM	61.256694	-149.881162	2594.18326
545	2594	8/29/2020 9:25:39 AM	61.260204	-149.880522	2978.45889
545	2595	8/29/2020 9:28:06 AM	61.261202	-149.879316	3102.60878
545	2596	8/29/2020 9:31:51 AM	61.2613	-149.879116	3116.0201

Group ID	Created Date	Last Update	Species Common Name
546	8/29/2020 12:57:45 PM	8/29/2020 3:49:27 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
9	No Formation	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	3	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW 1258 FIX 2619. Two white seen at the surface traveling northeast along the near shore. FIX 2620, 2623 Show five whites and one gray continuing travel along shore heading into Bootlegger's Cove. Fix 2624 Group appears to be milling in area. Fix 2625 Group traveling out of Bootlegger's Cove heading North along the shore. Handing off to SC. ***SC 1327 Took over sighting from PW. Fix 2626-2632 belugas traveling north along the near shore, diving observed. Handing off to NEX. PCT updated count to 6 white, 3 gray and one calf as they passed in front of our station. ***NEX* Fix 2633 Belugas are heading North toward station. Fix 2634 One white beluga lagging behind others near construction site. Fix 2636 and Fix 2637 At least four whites and 2 greys on the other side of the outbound line still heading North. Fix 2638 Last beluga of group seen turning Cairn Point. Last seen 1426.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
546	2619	8/29/2020 12:58:36 PM	61.20563	-149.99241	6100.44685
546	2620	8/29/2020 1:03:07 PM	61.207044	-149.989882	5903.22785
546	2623	8/29/2020 1:08:46 PM	61.204751	-149.96988	5173.83543
546	2624	8/29/2020 1:14:41 PM	61.206112	-149.955437	4496.80494
546	2625	8/29/2020 1:26:38 PM	61.21346	-149.930549	2993.04693
546	2626	8/29/2020 1:31:24 PM	61.219655	-149.917625	2025.22749
546	2627	8/29/2020 1:34:54 PM	61.222728	-149.912637	1592.11781
546	2628	8/29/2020 1:38:35 PM	61.227404	-149.907419	1010.37182
546	2629	8/29/2020 1:42:06 PM	61.230352	-149.902188	579.59105
546	2630	8/29/2020 1:44:41 PM	61.231922	-149.899303	346.83508
546	2631	8/29/2020 1:49:54 PM	61.236416	-149.895797	231.53735
546	2632	8/29/2020 1:54:21 PM	61.243425	-149.889683	1051.05575
546	2633	8/29/2020 1:59:51 PM	61.249262	-149.885018	1744.57442
546	2634	8/29/2020 2:06:23 PM	61.236752	-149.899995	369.0325

Group ID	Created Date	Last Update	Species Common Name
546	8/29/2020 12:57:45 PM	8/29/2020 3:49:27 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
9	No Formation	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	6	3	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW 1258 FIX 2619. Two white seen at the surface traveling northeast along the near shore. FIX 2620, 2623 Show five whites and one gray continuing travel along shore heading into Bootlegger's Cove. Fix 2624 Group appears to be milling in area. Fix 2625 Group traveling out of Bootlegger's Cove heading North along the shore. Handing off to SC. ***SC 1327 Took over sighting from PW. Fix 2626-2632 belugas traveling north along the near shore, diving observed. Handing off to NEX. PCT updated count to 6 white, 3 gray and one calf as they passed in front of our station. ***NEX* Fix 2633 Belugas are heading North toward station. Fix 2634 One white beluga lagging behind others near construction site. Fix 2636 and Fix 2637 At least four whites and 2 greys on the other side of the outbound line still heading North. Fix 2638 Last beluga of group seen turning Cairn Point. Last seen 1426.

546	2636	8/29/2020 2:16:32 PM	61.26205	-149.883897	3137.00504
546	2637	8/29/2020 2:18:24 PM	61.261275	-149.894278	2992.29492
546	2638	8/29/2020 2:26:22 PM	61.266678	-149.877556	3714.34395

Group ID	Created Date	Last Update	Species Common Name
547	8/29/2020 1:03:34 PM	8/29/2020 3:37:12 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

***NEX: One harbor seal traveling south in front of NEX. Last time Seen 1532.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
547	2621	8/29/2020 1:03:49 PM	61.254954	-149.881512	2404.02019
547	2622	8/29/2020 1:04:59 PM	61.253634	-149.881718	2261.23623

Group ID	Created Date	Last Update	Species Common Name
548	8/29/2020 4:16:28 PM	8/29/2020 5:03:48 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW 1619 FIX 2639 spotted looking and sinking. FIX 2640 taken to show movement. Last time seen 1703

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
548	2639	8/29/2020 4:19:36 PM	61.203299	-149.967383	5177.59158
548	2640	8/29/2020 4:42:01 PM	61.201062	-149.995152	6501.07659

Group ID	Created Date	Last Update	Species Common Name
550	8/30/2020 7:10:15 AM	8/30/2020 2:22:02 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

NEX: Fix 2642 One harbor seal, looking and sinking. Last seen 07:11

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
550	2642	8/30/2020 7:10:58 AM	61.25256	-149.881656	2149.60313

Group ID	Created Date	Last Update	Species Common Name
551	8/30/2020 7:25:21 AM	8/30/2020 7:58:25 AM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: 07:25 Fix 2644 Seal milling; Last Seen 07:48

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
551	2644	8/30/2020 7:25:34 AM	61.230815	-149.898357	426.99665

Group ID	Created Date	Last Update	Species Common Name
552	8/30/2020 8:32:16 AM	8/30/2020 4:03:04 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	

Comments

NEX: Fix 2647 One Harbor Seal spotted looking and sinking directly in front of the NEX station. A second seal has joined the original seal at 12:04. Fix 2710 showing the seal closest to the zone and the other is milling N of the inbound line. Last seen 1602

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
552	2647	8/30/2020 8:32:38 AM	61.25392	-149.882069	2285.52861
552	2708	8/30/2020 3:02:14 PM	61.259662	-149.881348	2908.83879
552	2710	8/30/2020 3:22:41 PM	61.252222	-149.882029	2107.52841

Group ID	Created Date	Last Update	Species Common Name
553	8/30/2020 8:36:35 AM	8/30/2020 5:07:11 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	

Comments

**SC: Fix 2648- Two harbor seals seen looking and traveling. Fix 2649 shows 1 seal travelling north towards mouth of Ship Creek. Fix 2663 Harbor seal from Ship Creek spotted on other side of tug boat barge traveling back toward Bootlegger Cove. Last seen 1005.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
553	2648	8/30/2020 8:37:15 AM	61.21953	-149.915211	1963.27149
553	2649	8/30/2020 9:10:34 AM	61.226348	-149.907374	1101.20475
553	2663	8/30/2020 10:05:23 AM	61.223585	-149.911889	1491.64807

Group ID	Created Date	Last Update	Species Common Name
554	8/30/2020 9:16:32 AM	8/30/2020 2:24:59 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
7	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 09:14 Fix 2650 Whale seen North of Cairn Pt. Fix 2652 - 2657 whales moving south along shoreline heading towards construction zone. Fix 2653 places them inside the boundary line and the level B zone at 09:40. Belugas milling 1100 meters north of the construction barges; **SC: Take over from NEX at 11:34. Fix 2689- Belugas continuing to mill at corner. ***These 2 Belugas are combined with group 557 at 11:40

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
554	2650	8/30/2020 9:18:03 AM	61.268265	-149.87914	3865.43918
554	2652	8/30/2020 9:35:13 AM	61.259408	-149.88129	2882.35743
554	2653	8/30/2020 9:38:56 AM	61.256145	-149.881632	2528.52489
554	2654	8/30/2020 9:40:49 AM	61.255437	-149.88223	2443.99894
554	2655	8/30/2020 9:42:44 AM	61.253305	-149.882093	2220.20305
554	2656	8/30/2020 9:45:12 AM	61.252056	-149.882372	2084.03805
554	2657	8/30/2020 9:51:37 AM	61.249227	-149.887112	1709.08853
554	2659	8/30/2020 9:55:41 AM	61.247587	-149.886111	1549.51723
554	2662	8/30/2020 10:04:20 AM	61.245956	-149.887456	1354.91111
554	2665	8/30/2020 10:13:43 AM	61.246789	-149.887165	1447.84688
554	2667	8/30/2020 10:21:45 AM	61.248185	-149.885736	1618.89985
554	2670	8/30/2020 10:27:18 AM	61.246209	-149.887544	1380.28839
554	2671	8/30/2020 10:33:30 AM	61.246215	-149.887663	1379.04548
554	2674	8/30/2020 10:43:38 AM	61.246171	-149.887545	1376.2419

Group ID	Created Date	Last Update	Species Common Name
554	8/30/2020 9:16:32 AM	8/30/2020 2:24:59 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
7	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 09:14 Fix 2650 Whale seen North of Cairn Pt. Fix 2652 - 2657 whales moving south along shoreline heading towards construction zone. Fix 2653 places them inside the boundary line and the level B zone at 09:40. Belugas milling 1100 meters north of the construction barges; **SC: Take over from NEX at 11:34. Fix 2689- Belugas continuing to mill at corner. ***These 2 Belugas are combined with group 557 at 11:40

554	2677	8/30/2020 10:53:58 AM	61.246499	-149.887418	1413.0607
554	2678	8/30/2020 11:03:26 AM	61.247003	-149.889965	1433.84218
554	2689	8/30/2020 11:34:07 AM	61.246574	-149.88714	1425.46276

Group ID	Created Date	Last Update	Species Common Name
555	8/30/2020 9:28:55 AM	8/30/2020 2:26:22 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW: 09:27 Fix 2651, 2658, 2660, 2664 one white and one grey beluga traveling NE toward port. Hand off to SC at 10:10.SC: Fix 2666, Fix 2668, Fix 2673, and Fix 2675 - Fix 2676 One white and one gray beluga against far shore traveling North toward Port MacKenzie. Fix 2680 Belugas traveling North in front of Port MacKenzie.** NEX: takes over at 11:14. Whales milling in front of Port Mackenzie. Last seen 13:26.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
555	2651	8/30/2020 9:29:49 AM	61.232701	-149.997741	5484.9784
555	2658	8/30/2020 9:54:49 AM	61.233031	-149.977261	4389.16409
555	2660	8/30/2020 10:01:35 AM	61.237086	-149.967563	3879.78994
555	2664	8/30/2020 10:11:30 AM	61.245275	-149.957709	3554.25332
555	2666	8/30/2020 10:19:57 AM	61.246181	-149.967788	4096.02828
555	2668	8/30/2020 10:26:02 AM	61.248406	-149.963992	3994.27708
555	2673	8/30/2020 10:38:58 AM	61.252481	-149.950841	3591.3127
555	2675	8/30/2020 10:47:11 AM	61.253614	-149.936914	3089.97051
555	2676	8/30/2020 10:52:35 AM	61.257477	-149.928097	3113.03629
555	2680	8/30/2020 11:05:55 AM	61.266235	-149.921093	3803.15459
555	2688	8/30/2020 11:30:13 AM	61.265108	-149.911442	3525.93845
555	2693	8/30/2020 11:43:12 AM	61.265777	-149.912938	3618.13152
555	2703	8/30/2020 12:27:06 PM	61.265844	-149.91313	3628.01034
555	2704	8/30/2020 12:37:49 PM	61.265467	-149.912477	3578.46978

Group ID	Created Date	Last Update	Species Common Name
555	8/30/2020 9:28:55 AM	8/30/2020 2:26:22 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW: 09:27 Fix 2651, 2658, 2660, 2664 one white and one grey beluga traveling NE toward port. Hand off to SC at 10:10.SC: Fix 2666, Fix 2668, Fix 2673, and Fix 2675 - Fix 2676 One white and one gray beluga against far shore traveling North toward Port MacKenzie. Fix 2680 Belugas traveling North in front of Port MacKenzie.** NEX: takes over at 11:14. Whales milling in front of Port Mackenzie. Last seen 13:26.

555	2705	8/30/2020 12:55:53 PM	61.26542	-149.912164	3569.14454
555	2706	8/30/2020 1:25:01 PM	61.261907	-149.902359	3085.72085

Group ID	Created Date	Last Update	Species Common Name
556	8/30/2020 10:26:27 AM	8/30/2020 2:26:48 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: 10:24 Fix 2669, 2672 Harbor Seal observed looking and sinking. Last seen: 10:35

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
556	2669	8/30/2020 10:26:37 AM	61.201407	-149.987432	6142.95176
556	2672	8/30/2020 10:35:14 AM	61.20149	-149.979768	5813.00013

Group ID	Created Date	Last Update	Species Common Name
557	8/30/2020 11:05:34 AM	8/30/2020 4:46:37 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	10	8	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 11:05 Whales traveling south, rounding Cairn Pt. Fixes 2681, 2682, 2684, 2685, 2687 whales traveling south over the out-bound line. Whales passed NEX and milled north of the construction site then turned to travel back north towards NEX. **PW: Took over from NEX. Fix 2696. **NEX: takes over from PW. Fix 2698 whales moving north of the out-bound line and level B zone. Whales continued north and around Cairn Pt. Last seen at 12:31. (ATL post-processed: changed "CombinedGroup" to "1"/True)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
557	2681	8/30/2020 11:06:17 AM	61.264545	-149.878944	3466.27845
557	2682	8/30/2020 11:11:40 AM	61.262294	-149.880902	3198.1215
557	2684	8/30/2020 11:20:13 AM	61.2589	-149.880898	2833.45875
557	2685	8/30/2020 11:22:45 AM	61.256738	-149.882214	2583.15375
557	2687	8/30/2020 11:27:41 AM	61.254885	-149.883377	2368.12244
557	2690	8/30/2020 11:35:08 AM	61.251299	-149.883413	1986.43047
557	2694	8/30/2020 11:56:13 AM	61.245885	-149.888867	1326.08205
557	2696	8/30/2020 12:12:46 PM	61.233416	-149.901896	371.36419
557	2698	8/30/2020 12:19:04 PM	61.25958	-149.884274	2864.0096
557	2699	8/30/2020 12:20:21 PM	61.263458	-149.881807	3313.03464
557	2700	8/30/2020 12:21:42 PM	61.263978	-149.880989	3379.04642
557	2701	8/30/2020 12:23:21 PM	61.265416	-149.879971	3547.02286
557	2702	8/30/2020 12:24:47 PM	61.266727	-149.878219	3710.77015

Group ID	Created Date	Last Update	Species Common Name
558	8/30/2020 11:15:36 AM	8/30/2020 2:27:08 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

PW: 11:15 Fix ID 2683 one Harbor Seal traveling southwest approaching inbound line. Last seen 11:13.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
558	2683	8/30/2020 11:15:47 AM	61.214545	-149.99745	5894.20718

Group ID	Created Date	Last Update	Species Common Name
559	8/30/2020 11:24:45 AM	8/30/2020 2:27:21 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**NEX: 11:24 Harbor Seal seen at Port Mac. Last seen at 12:24.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
559	2686	8/30/2020 11:25:18 AM	61.264363	-149.911357	3444.61619

Group ID	Created Date	Last Update	Species Common Name
560	8/30/2020 11:35:43 AM	8/30/2020 2:27:36 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PCT: 11:31 harbor seal spotted; FIX 2691-2692 seal traveling northeast along nearshore. Last Seen 11:40

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
560	2691	8/30/2020 11:35:51 AM	61.232673	-149.89669	202.11678
560	2692	8/30/2020 11:38:04 AM	61.233759	-149.894809	69.43414

Group ID	Created Date	Last Update	Species Common Name
561	8/30/2020 12:10:33 PM	8/30/2020 2:27:51 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**NEX: 12:03 Two whales observed across the inlet north of Port Mac travelling East. They continued travelling East north of Cairn Pt a few hundred meters in front of group 557. Last seen at 12:24.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
561	2695	8/30/2020 12:11:26 PM	61.263855	-149.892744	3281.24117
561	2697	8/30/2020 12:15:40 PM	61.26398	-149.885354	3334.4752

Group ID	Created Date	Last Update	Species Common Name
562	8/30/2020 3:05:32 PM	8/30/2020 4:33:10 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

SCFix 2709 One harbor seal spotted looking and sinking at mouth of Ship Creek. Last seen 1633

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
562	2709	8/30/2020 3:06:02 PM	61.226962	-149.904119	948.74385

Group ID	Created Date	Last Update	Species Common Name
563	8/30/2020 3:38:37 PM	8/30/2020 6:05:21 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	2	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW: 15:38 Fix ID 2711-2712 One white, one gray beluga sighted traveling north along far shore; Fix ID 2713 one white beluga sighted behind original group of two (total of two white, one gray) **SC: Fix 2714 - Fix 2715 Lead whales are along far shore traveling North toward Port MacKenzie. Fix 2717-2718 Belugas continuing to travel northeast along shore line. Pass off to NEX at 16:15.**NEX: Took over group from SC. Fix 2719-2723 show whales inside level B zone. Fix 2724-2725 Belugas traveled north outside of the Level B zone and crossed Outbound Line. Fix 2726 Belugas changed direction and returned south back inside the Outbound line. Fix 2727-2728 Belugas heading north again over the Outbound line and approach Port Mac. Fix 2729 Belugas changed direction again and return south. Last seen: 17:42

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
563	2711	8/30/2020 3:38:54 PM	61.243429	-149.95193	3195.0762
563	2712	8/30/2020 3:42:49 PM	61.239761	-149.949189	2947.22676
563	2713	8/30/2020 3:51:24 PM	61.243667	-149.969555	4106.59843
563	2714	8/30/2020 3:58:43 PM	61.247586	-149.953036	3422.6688
563	2715	8/30/2020 4:00:52 PM	61.249533	-149.947901	3282.65494
563	2717	8/30/2020 4:11:38 PM	61.254762	-149.939134	3263.91208
563	2718	8/30/2020 4:13:23 PM	61.256592	-149.933451	3206.70027
563	2719	8/30/2020 4:17:55 PM	61.256436	-149.914974	2671.51242
563	2720	8/30/2020 4:24:11 PM	61.257691	-149.91625	2826.57219
563	2721	8/30/2020 4:29:55 PM	61.257254	-149.914998	2755.73365
563	2722	8/30/2020 4:44:18 PM	61.256451	-149.912517	2623.95712
563	2723	8/30/2020 4:55:41 PM	61.256541	-149.912542	2633.78829
563	2724	8/30/2020 5:11:17 PM	61.26316	-149.908476	3278.69861
563	2725	8/30/2020 5:12:48 PM	61.265803	-149.914969	3650.80005

Group ID	Created Date	Last Update	Species Common Name
563	8/30/2020 3:38:37 PM	8/30/2020 6:05:21 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	4	2	1	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW: 15:38 Fix ID 2711-2712 One white, one gray beluga sighted traveling north along far shore; Fix ID 2713 one white beluga sighted behind original group of two (total of two white, one gray) **SC: Fix 2714 - Fix 2715 Lead whales are along far shore traveling North toward Port MacKenzie. Fix 2717-2718 Belugas continuing to travel northeast along shore line. Pass off to NEX at 16:15.**NEX: Took over group from SC. Fix 2719-2723 show whales inside level B zone. Fix 2724-2725 Belugas traveled north outside of the Level B zone and crossed Outbound Line. Fix 2726 Belugas changed direction and returned south back inside the Outbound line. Fix 2727-2728 Belugas heading north again over the Outbound line and approach Port Mac. Fix 2729 Belugas changed direction again and return south. Last seen: 17:42

563	2726	8/30/2020 5:17:10 PM	61.265351	-149.914972	3602.79546
563	2727	8/30/2020 5:29:41 PM	61.266254	-149.916208	3718.23404
563	2728	8/30/2020 5:34:44 PM	61.267127	-149.914606	3786.52485
563	2729	8/30/2020 5:40:02 PM	61.265521	-149.91489	3619.58593

Group ID	Created Date	Last Update	Species Common Name
564	8/30/2020 5:44:12 PM	8/30/2020 6:00:29 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

NEX: Fix 2730 One Harbor Seal surfaced, looked and sank. Last seen: 17:45.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
564	2730	8/30/2020 5:44:24 PM	61.252656	-149.881592	2160.79909

2020 POA PCT Marine Mammal Sightings Overview - Beluga 08/24/20 - 08/30/20

PSO Station

Marine Mammal Groups

- Group 465 Beluga
- Group 467 Beluga
- Group 471 Beluga
- Group 474 Beluga
- Group 475 Beluga
- Group 477 Beluga
- Group 478 Beluga
- Group 480 Beluga
- Group 482 Beluga
- Group 484 Beluga
- Group 485 Beluga
- Group 487 Beluga
- Group 491 Beluga
- Group 494 Beluga
- Group 495 Beluga
- Group 496 Beluga
- Group 497 Beluga
- Group 499 Beluga
- Group 501 Beluga
- Group 503 Beluga
- Group 512 Beluga
- Group 513 Beluga
- Group 515 Beluga
- Group 516 Beluga
- Group 520 Beluga
- Group 526 Beluga
- Group 530 Beluga
- Group 532 Beluga
- Group 533 Beluga
- Group 535 Beluga
- Group 536 Beluga
- Group 539 Beluga
- Group 541 Beluga
- Group 544 Beluga
- Group 545 Beluga
- Group 546 Beluga
- Group 554 Beluga
- Group 555 Beluga
- Group 557 Beluga
- Group 561 Beluga
- Group 563 Beluga

0 0.75 1.5 km

61|N
61 North Environmental

Map Imagery Source: Google Earth, 2020

2020 POA PCT
Marine Mammal Sightings
Overview - Non-Beluga Species
08/24/20 - 08/30/20

PSO Station

Marine Mammal Groups

- Group 466 Harbor Seal
- Group 468 Harbor Seal
- Group 469 Harbor Seal
- Group 470 Harbor Seal
- Group 472 Harbor Seal
- Group 473 Harbor Seal
- Group 476 Harbor Seal
- Group 479 Harbor Seal
- Group 481 Harbor Seal
- Group 486 Harbor Seal
- Group 488 Harbor Seal
- Group 489 Harbor Seal
- Group 490 Harbor Seal
- Group 493 Harbor Seal
- Group 498 Harbor Seal
- Group 500 Harbor Seal
- Group 502 Harbor Seal
- Group 504 Harbor Seal
- Group 506 Harbor Seal
- Group 507 Harbor Seal
- Group 508 Harbor Seal
- Group 510 Harbor Seal
- Group 511 Harbor Seal
- Group 514 Harbor Seal
- Group 517 Harbor Seal
- Group 518 Harbor Seal
- Group 519 Harbor Seal
- Group 521 Harbor Seal
- Group 522 Harbor Seal
- Group 523 Harbor Seal
- Group 524 Harbor Seal
- Group 525 Harbor Seal
- Group 529 Harbor Seal
- Group 531 Harbor Seal
- Group 534 Harbor Seal
- Group 537 Harbor Seal
- Group 538 H. Porpoise
- Group 542 Harbor Seal
- Group 543 Harbor Seal
- Group 547 Harbor Seal
- Group 548 Harbor Seal
- Group 550 Harbor Seal
- Group 551 Harbor Seal
- Group 552 Harbor Seal
- Group 553 Harbor Seal
- Group 556 Harbor Seal
- Group 558 Harbor Seal
- Group 559 Harbor Seal
- Group 560 Harbor Seal
- Group 562 Harbor Seal
- Group 564 Harbor Seal

0 0.75 1.5 km

61 | N
61 North Environmental

Map Imagery Source: Google Earth, 2020

2020 POA PCT
Beluga Sightings
08/24/20
Figure 1

PSO Station

Beluga Track Lines

- Group 465 *
- Group 467 *
- Group 471 †
- Group 474 †
- Group 475 †
- Group 477 †
- Group 478 †
- Group 480 †
- Group 482 †

** / † Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

0 0.75 1.5 km

61 North Environmental

Map Imagery Source: Google Earth, 2020

2020 POA PCT
Beluga Sightings
08/25/20
Figure 2

PSO Station

Beluga Track Lines

- Group 484
- Group 485
- Group 487
- Group 491

0 1 2 km

61|N
61 North Environmental

Map Imagery Source:
Google Earth, 2020

2020 POA PCT
Beluga Sightings
08/26/20
Figure 3

PSO Station

Beluga Track Lines

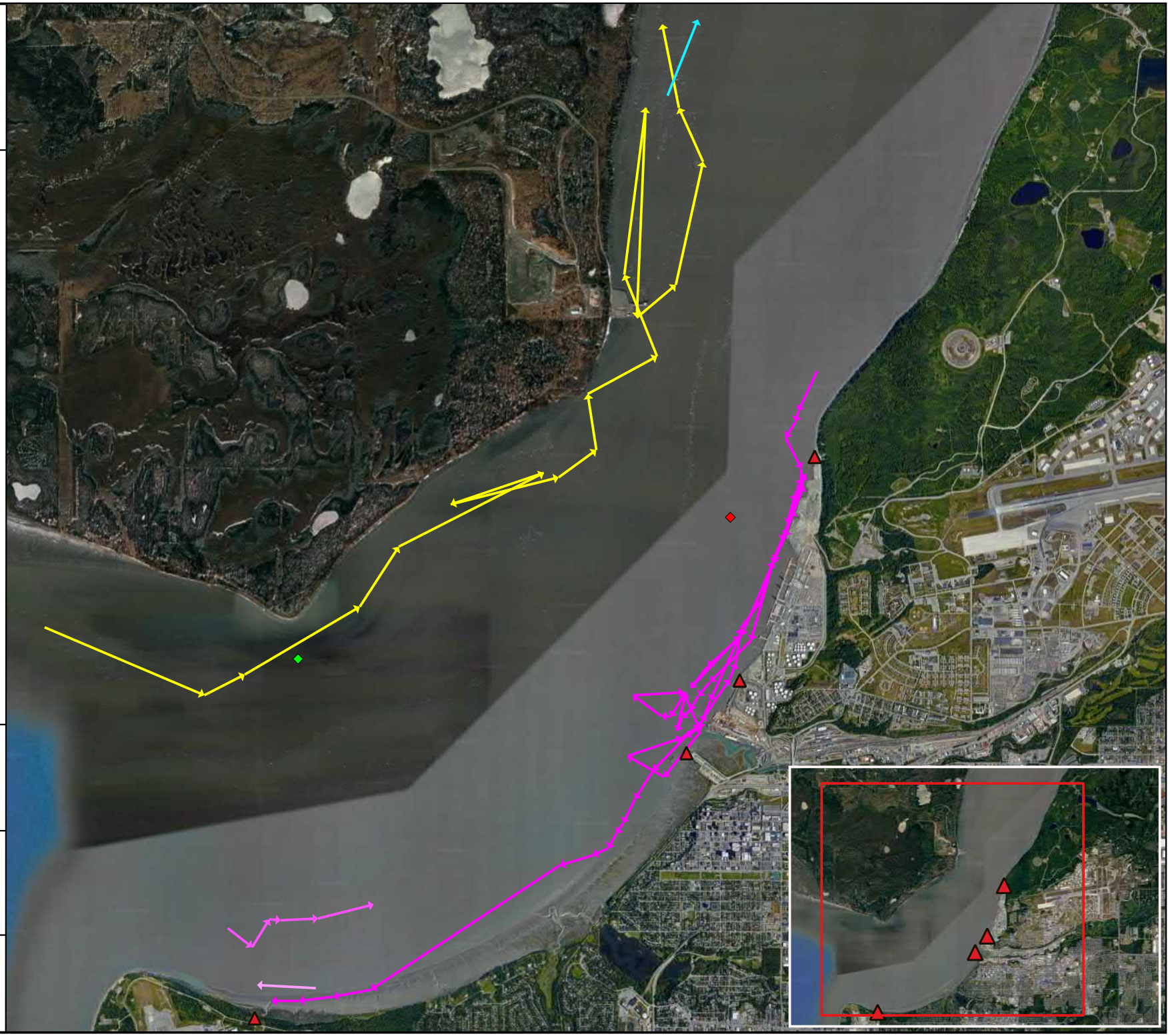
- Group 494
- Group 495 *
- Group 496 *
- Group 499 *
- Group 497
- Group 501
- Group 503

** Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

0 1 2 km

61 | N
61 North Environmental

Map Imagery Source: Google Earth, 2020



2020 POA PCT
Beluga Sightings
08/27/20
Figure 4

PSO Station

Beluga Track Lines

- Group 512
- Group 513
- Group 515
- Group 516
- Group 520
- Group 526

0 1 2 km

61|N
61 North Environmental

Map Imagery Source:
Google Earth, 2020

2020 POA PCT
Beluga Sightings
08/28/20
Figure 5

PSO Station

Beluga Track Lines

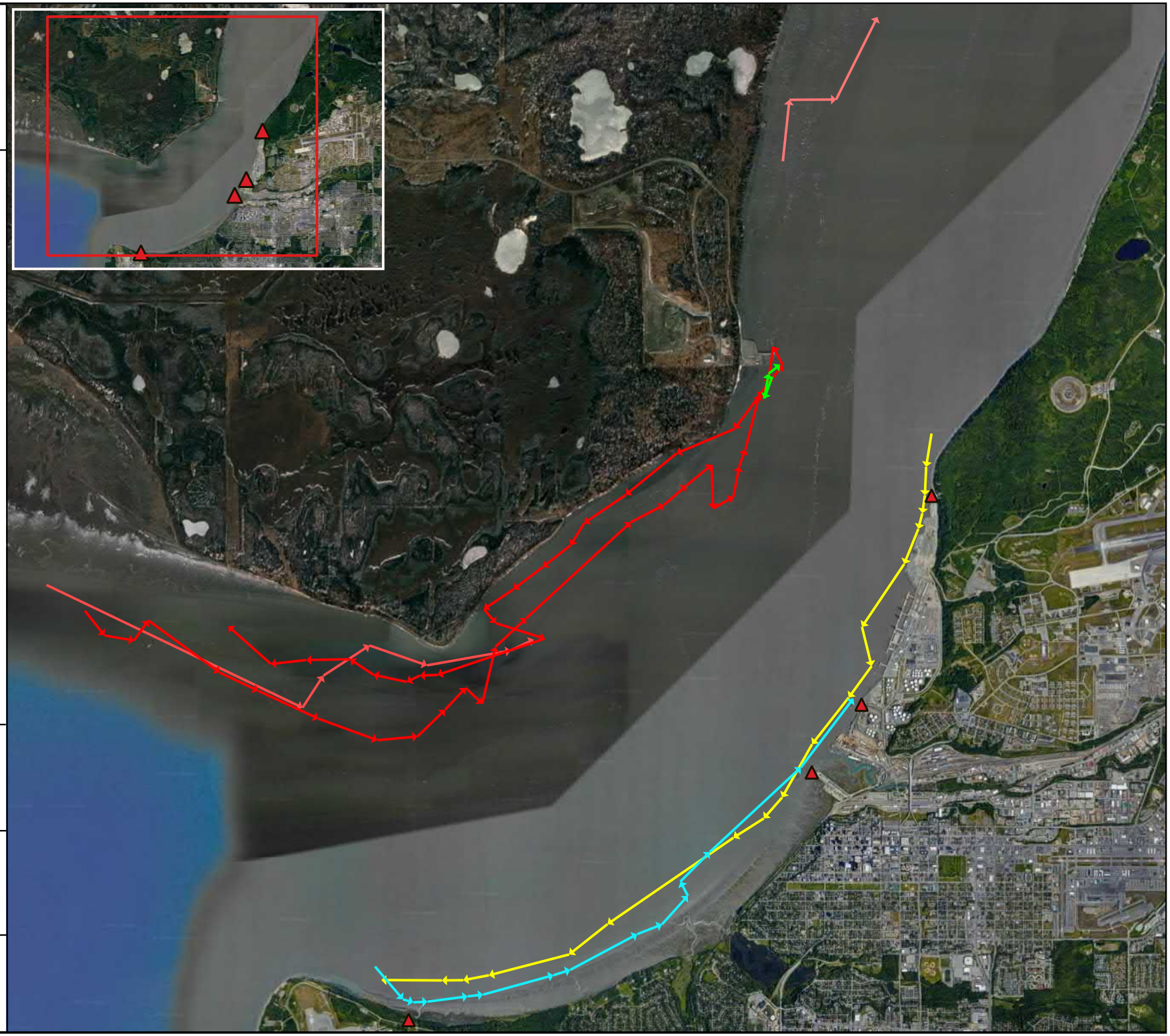
- Group 530
- Group 532
- Group 533
- Group 535 *
- Group 536 *
- Group 539 *

** Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

0 1 2 km

61 | N
61 North Environmental

Map Imagery Source: Google Earth, 2020



2020 POA PCT
Beluga Sightings
08/29/20
Figure 6

PSO Station

Beluga Track Lines

Group 541 *

Group 544 *

Group 545

Group 546

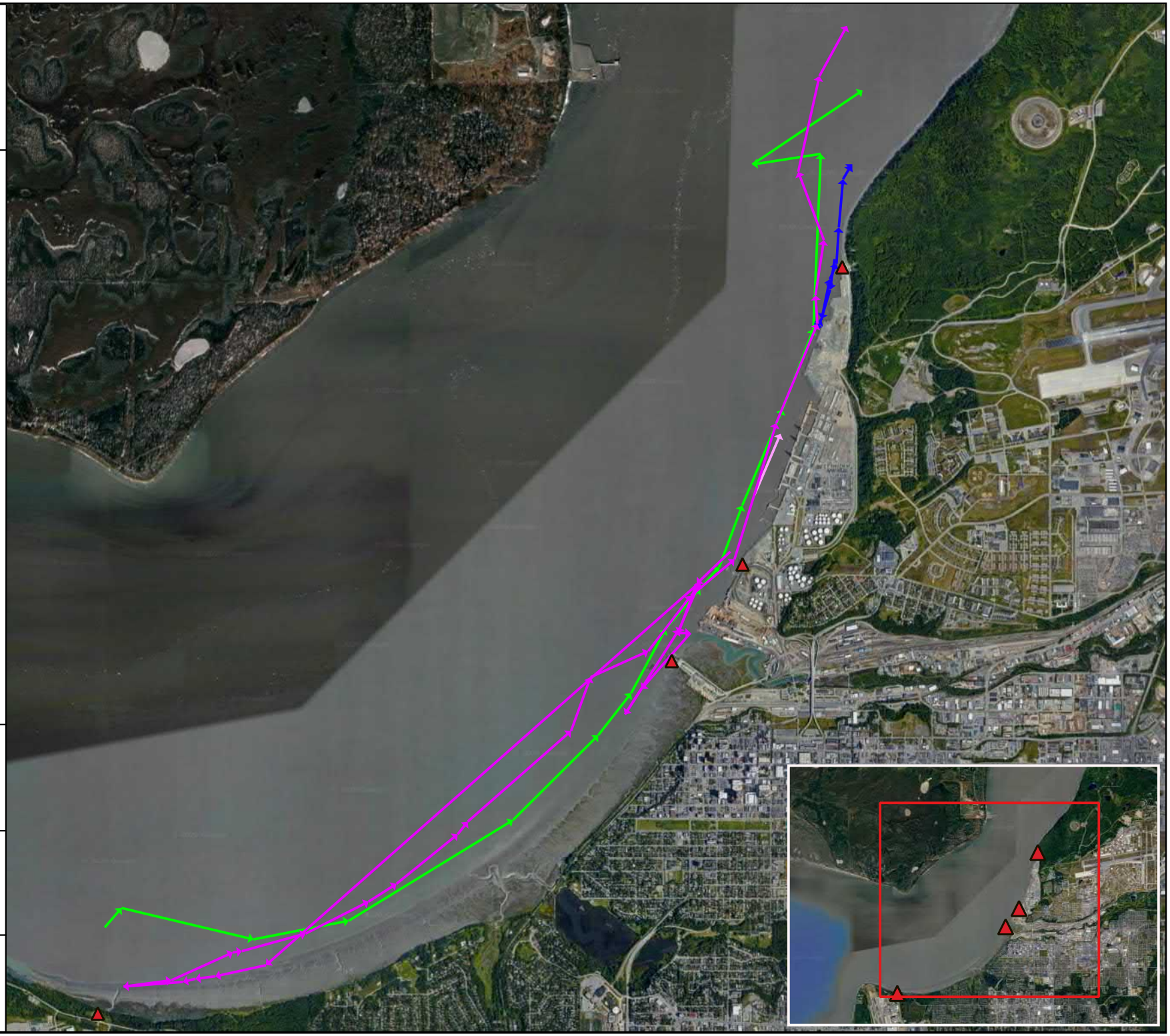
** Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

0 0.75 1.5 km

61 | N

61 North Environmental

Map Imagery Source: Google Earth, 2020



2020 POA PCT Beluga Sightings 08/30/20 Figure 7

PSO Station

Beluga Track Lines

- Group 554 *
- Group 557 *
- Group 555
- Group 561
- Group 563

** Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

0 0.75 1.5 km

61 | N

61 North Environmental

Map Imagery Source: Google Earth, 2020

Appendix F – 8/31 Sighting Forms and Maps

MM Group Report

Group ID	Created Date	Last Update	Species Common Name
567	8/31/2020 7:09:03 AM	8/31/2020 4:54:01 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 07:09 Fix 2733 three white belugas traveling south inside level B zone when our shift started. Last seen 07:10.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
567	2733	8/31/2020 7:09:15 AM	61.24162	-149.890694	843.39672

Group ID	Created Date	Last Update	Species Common Name
568	8/31/2020 7:28:55 AM	8/31/2020 4:54:47 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

NEX: Harbor Seal. Last seen 07:42.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
568	2735	8/31/2020 7:29:05 AM	61.255706	-149.884797	2437.67028

Group ID	Created Date	Last Update	Species Common Name
569	8/31/2020 7:29:49 AM	8/31/2020 5:16:28 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	3	0	

Comments

SCFix 2737 One harbor seal spotted looking and sinking at mouth of Ship Creek. Fix 2788 A second harbor showed up at Ship Creek, so we added it to this group. Fix 2815 Seal in front of station, fix showing presence. 14:19 3 seals at mouth of Ship Creek. Fix 2822 Seal looking and sinking in front of station, fix was taken during in water work. Only one seal was sighted during the fix and it had been over 15 minutes since the sighting of the other two seals in the group. Fix 2830 Two seals spotted looking and sinking during in water work. Last seen 17:16.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
569	2737	8/31/2020 7:32:02 AM	61.226345	-149.90459	1020.77694
569	2788	8/31/2020 10:35:55 AM	61.227309	-149.90362	902.00926
569	2815	8/31/2020 2:09:10 PM	61.225507	-149.908266	1204.92659
569	2822	8/31/2020 2:43:26 PM	61.226281	-149.908552	1145.3225
569	2830	8/31/2020 4:56:57 PM	61.227077	-149.903672	933.41115

Group ID	Created Date	Last Update	Species Common Name
570	8/31/2020 7:30:51 AM	8/31/2020 3:46:01 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: Fix 2736 One white beluga at mouth of Ship Creek. Fix 2738 - Fix 2739,2742, and 2744-2745 Three white belugas slowly traveling and milling near Bootlegger Cove. Fix 2748, 2750, & 2752- Belugas have changed direction and are now heading North. Fix 2755- Belugas swam past station heading north and surfaced at mouth of Ship Creek. Fix 2756-2757 Belugas continuing to travel north along near shore. Fix 2759-2761 & 2766 Belugas milling and slowly moving to PCT. Fix 2774, 2777-2779, 2784-2787, and 2789-2791 Belugas continuing to mill near mouth of Ship Creek.PCT: 11:30 take over from SC; Fix 2792-2798 milling; fix 2799 traveling north; 12:35 hand off to NEX ***NEX: Took over group from PCT at 12:35. Fix 2800-2805 Belugas traveling north. Fix 2806-2809 Belugas continue north outside the Level B zone and cross the Outbound line. Fix 2810-2814 Belugas still north of Outbound line. Fix 2816-2818 Belugas turned around and are travelling south, crossed Outbound line and are approaching Level B zone. Fix 2819-2821 Belugas turned to travel north again. Last seen 14:47.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
570	2736	8/31/2020 7:31:08 AM	61.226436	-149.904954	1021.74797
570	2738	8/31/2020 7:34:34 AM	61.223323	-149.909334	1438.98055
570	2739	8/31/2020 7:39:34 AM	61.214888	-149.920133	2540.03306
570	2742	8/31/2020 7:46:53 AM	61.213389	-149.924735	2813.63733
570	2744	8/31/2020 7:51:49 AM	61.211327	-149.92869	3122.37948
570	2745	8/31/2020 7:57:45 AM	61.21436	-149.922168	2647.80825
570	2748	8/31/2020 8:03:32 AM	61.22071	-149.912709	1780.88951
570	2750	8/31/2020 8:10:19 AM	61.221095	-149.912198	1730.12674
570	2752	8/31/2020 8:11:43 AM	61.221763	-149.911425	1645.24296
570	2753	8/31/2020 8:14:27 AM	61.223744	-149.908825	1384.86951
570	2755	8/31/2020 8:18:22 AM	61.226576	-149.904987	1009.29979
570	2756	8/31/2020 8:21:35 AM	61.227633	-149.902701	846.68558
570	2757	8/31/2020 8:22:33 AM	61.228391	-149.902413	765.60507
570	2759	8/31/2020 8:27:32 AM	61.227943	-149.902786	818.71256

Group ID	Created Date	Last Update	Species Common Name
570	8/31/2020 7:30:51 AM	8/31/2020 3:46:01 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: Fix 2736 One white beluga at mouth of Ship Creek. Fix 2738 - Fix 2739,2742, and 2744-2745 Three white belugas slowly traveling and milling near Bootlegger Cove. Fix 2748, 2750, & 2752- Belugas have changed direction and are now heading North. Fix 2755- Belugas swam past station heading north and surfaced at mouth of Ship Creek. Fix 2756-2757 Belugas continuing to travel north along near shore. Fix 2759-2761 & 2766 Belugas milling and slowly moving to PCT. Fix 2774, 2777-2779, 2784-2787, and 2789-2791 Belugas continuing to mill near mouth of Ship Creek.PCT: 11:30 take over from SC; Fix 2792-2798 milling; fix 2799 traveling north; 12:35 hand off to NEX ***NEX: Took over group from PCT at 12:35. Fix 2800-2805 Belugas traveling north. Fix 2806-2809 Belugas continue north outside the Level B zone and cross the Outbound line. Fix 2810-2814 Belugas still north of Outbound line. Fix 2816-2818 Belugas turned around and are travelling south, crossed Outbound line and are approaching Level B ze. Fix 2819-2821 Belugas turned to travel north again. Last seen 14:47.

570	2760	8/31/2020 8:30:28 AM	61.228222	-149.903101	800.62762
570	2761	8/31/2020 8:34:09 AM	61.228861	-149.901851	705.34706
570	2765	8/31/2020 8:38:41 AM	61.228944	-149.901491	687.80877
570	2766	8/31/2020 8:40:59 AM	61.229377	-149.901088	635.30461
570	2769	8/31/2020 8:42:32 AM	61.229919	-149.899832	550.53149
570	2770	8/31/2020 8:50:29 AM	61.228347	-149.902195	764.08604
570	2774	8/31/2020 8:57:27 AM	61.228471	-149.902284	754.45504
570	2777	8/31/2020 9:08:33 AM	61.229121	-149.901335	666.57094
570	2779	8/31/2020 9:25:05 AM	61.228097	-149.902688	801.25239
570	2780	8/31/2020 9:34:01 AM	61.22806	-149.903029	814.01442
570	2781	8/31/2020 9:45:51 AM	61.227367	-149.903829	902.07191
570	2783	8/31/2020 9:56:21 AM	61.227342	-149.903474	894.9571
570	2784	8/31/2020 10:06:16 AM	61.227386	-149.903747	898.02361
570	2785	8/31/2020 10:09:43 AM	61.227184	-149.902218	879.70034
570	2786	8/31/2020 10:20:34 AM	61.227705	-149.903151	851.35811

Group ID	Created Date	Last Update	Species Common Name
570	8/31/2020 7:30:51 AM	8/31/2020 3:46:01 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: Fix 2736 One white beluga at mouth of Ship Creek. Fix 2738 - Fix 2739,2742, and 2744-2745 Three white belugas slowly traveling and milling near Bootlegger Cove. Fix 2748, 2750, & 2752- Belugas have changed direction and are now heading North. Fix 2755- Belugas swam past station heading north and surfaced at mouth of Ship Creek. Fix 2756-2757 Belugas continuing to travel north along near shore. Fix 2759-2761 & 2766 Belugas milling and slowly moving to PCT. Fix 2774, 2777-2779, 2784-2787, and 2789-2791 Belugas continuing to mill near mouth of Ship Creek.PCT: 11:30 take over from SC; Fix 2792-2798 milling; fix 2799 traveling north; 12:35 hand off to NEX ***NEX: Took over group from PCT at 12:35. Fix 2800-2805 Belugas traveling north. Fix 2806-2809 Belugas continue north outside the Level B zone and cross the Outbound line. Fix 2810-2814 Belugas still north of Outbound line. Fix 2816-2818 Belugas turned around and are travelling south, crossed Outbound line and are approaching Level B zone. Fix 2819-2821 Belugas turned to travel north again. Last seen 14:47.

570	2787	8/31/2020 10:32:35 AM	61.227132	-149.903438	914.4098
570	2789	8/31/2020 10:47:13 AM	61.227254	-149.903572	906.04899
570	2790	8/31/2020 11:01:14 AM	61.228095	-149.902849	805.76568
570	2791	8/31/2020 11:15:26 AM	61.227576	-149.904796	910.20699
570	2792	8/31/2020 11:30:37 AM	61.231441	-149.904473	590.697
570	2793	8/31/2020 11:47:00 AM	61.231543	-149.90501	609.04886
570	2794	8/31/2020 11:55:55 AM	61.230991	-149.904396	616.20126
570	2795	8/31/2020 12:06:37 PM	61.228579	-149.903407	776.26971
570	2796	8/31/2020 12:10:23 PM	61.228073	-149.903748	833.16438
570	2797	8/31/2020 12:21:52 PM	61.23599	-149.904358	521.07958
570	2798	8/31/2020 12:23:24 PM	61.23484	-149.90007	264.55823
570	2799	8/31/2020 12:29:18 PM	61.235409	-149.897983	188.50935
570	2800	8/31/2020 12:36:58 PM	61.238914	-149.897465	521.02149
570	2801	8/31/2020 12:44:22 PM	61.248165	-149.890008	1560.24462
570	2802	8/31/2020 12:53:37 PM	61.2562	-149.893364	2429.97418

Group ID	Created Date	Last Update	Species Common Name
570	8/31/2020 7:30:51 AM	8/31/2020 3:46:01 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: Fix 2736 One white beluga at mouth of Ship Creek. Fix 2738 - Fix 2739,2742, and 2744-2745 Three white belugas slowly traveling and milling near Bootlegger Cove. Fix 2748, 2750, & 2752- Belugas have changed direction and are now heading North. Fix 2755- Belugas swam past station heading north and surfaced at mouth of Ship Creek. Fix 2756-2757 Belugas continuing to travel north along near shore. Fix 2759-2761 & 2766 Belugas milling and slowly moving to PCT. Fix 2774, 2777-2779, 2784-2787, and 2789-2791 Belugas continuing to mill near mouth of Ship Creek.PCT: 11:30 take over from SC; Fix 2792-2798 milling; fix 2799 traveling north; 12:35 hand off to NEX ***NEX: Took over group from PCT at 12:35. Fix 2800-2805 Belugas traveling north. Fix 2806-2809 Belugas continue north outside the Level B zone and cross the Outbound line. Fix 2810-2814 Belugas still north of Outbound line. Fix 2816-2818 Belugas turned around and are travelling south, crossed Outbound line and are approaching Level B zone. Fix 2819-2821 Belugas turned to travel north again. Last seen 14:47.

570	2803	8/31/2020 12:55:25 PM	61.256897	-149.89463	2505.58453
570	2804	8/31/2020 1:00:35 PM	61.256195	-149.90004	2440.9636
570	2805	8/31/2020 1:02:50 PM	61.256135	-149.906981	2500.90317
570	2806	8/31/2020 1:14:11 PM	61.260742	-149.898178	2936.87203
570	2807	8/31/2020 1:22:45 PM	61.258251	-149.893586	2657.28737
570	2808	8/31/2020 1:26:23 PM	61.260079	-149.893898	2859.8484
570	2809	8/31/2020 1:33:01 PM	61.260672	-149.892245	2929.20211
570	2810	8/31/2020 1:39:57 PM	61.26743	-149.892699	3678.29222
570	2812	8/31/2020 1:51:25 PM	61.265774	-149.890954	3499.25783
570	2813	8/31/2020 1:54:42 PM	61.265574	-149.892797	3472.00127
570	2814	8/31/2020 1:58:31 PM	61.263955	-149.885704	3328.82018
570	2816	8/31/2020 2:11:25 PM	61.261689	-149.894623	3038.03973
570	2817	8/31/2020 2:12:50 PM	61.261029	-149.895917	2964.7568
570	2818	8/31/2020 2:20:47 PM	61.258643	-149.897346	2701.76836
570	2819	8/31/2020 2:27:04 PM	61.26032	-149.894634	2885.91901

Group ID	Created Date	Last Update	Species Common Name
570	8/31/2020 7:30:51 AM	8/31/2020 3:46:01 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

SC: Fix 2736 One white beluga at mouth of Ship Creek. Fix 2738 - Fix 2739,2742, and 2744-2745 Three white belugas slowly traveling and milling near Bootlegger Cove. Fix 2748, 2750, & 2752- Belugas have changed direction and are now heading North. Fix 2755- Belugas swam past station heading north and surfaced at mouth of Ship Creek. Fix 2756-2757 Belugas continuing to travel north along near shore. Fix 2759-2761 & 2766 Belugas milling and slowly moving to PCT. Fix 2774, 2777-2779, 2784-2787, and 2789-2791 Belugas continuing to mill near mouth of Ship Creek.PCT: 11:30 take over from SC; Fix 2792-2798 milling; fix 2799 traveling north; 12:35 hand off to NEX ***NEX: Took over group from PCT at 12:35. Fix 2800-2805 Belugas traveling north. Fix 2806-2809 Belugas continue north outside the Level B zone and cross the Outbound line. Fix 2810-2814 Belugas still north of Outbound line. Fix 2816-2818 Belugas turned around and are travelling south, crossed Outbound line and are approaching Level B zone. Fix 2819-2821 Belugas turned to travel north again. Last seen 14:47.

570	2820	8/31/2020 2:37:07 PM	61.261843	-149.888673	3075.00769
570	2821	8/31/2020 2:41:49 PM	61.263023	-149.89022	3197.32733

Group ID	Created Date	Last Update	Species Common Name
571	8/31/2020 7:41:20 AM	8/31/2020 5:27:54 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
5	Linear	False	Moderate	Travelling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	2	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

PW: Fix 2740, 2743 belugas traveling NE. Fix 2741, bad fix. Last seen 07:50

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
571	2740	8/31/2020 7:42:07 AM	61.235678	-149.976516	4349.19567
571	2743	8/31/2020 7:49:50 AM	61.242341	-149.970634	4128.35424

Group ID	Created Date	Last Update	Species Common Name
572	8/31/2020 7:58:00 AM	8/31/2020 3:39:00 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
8	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	2	1	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 07:57 Fix 2746 Whales coming around Cairn Point moving South. Fix 2747 shows whales crossing the Level B Zone. Fix 2749, 2751, 2758 track whales traveling slowly south. Fix 2762, 2763 show whales travelling North. Fix 2768 shows whales travelling north across the Level B Zone. Last seen 08:46.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
572	2746	8/31/2020 7:59:05 AM	61.261553	-149.880425	3124.60011
572	2747	8/31/2020 8:02:45 AM	61.256842	-149.88055	2619.53918
572	2749	8/31/2020 8:07:29 AM	61.255296	-149.882086	2431.19532
572	2751	8/31/2020 8:11:02 AM	61.252279	-149.882244	2109.68806
572	2758	8/31/2020 8:25:43 AM	61.243334	-149.892384	1009.77692
572	2762	8/31/2020 8:34:39 AM	61.253117	-149.882994	2185.50156
572	2763	8/31/2020 8:36:31 AM	61.255096	-149.882749	2399.8362
572	2768	8/31/2020 8:42:17 AM	61.256807	-149.880977	2609.07326

Group ID	Created Date	Last Update	Species Common Name
573	8/31/2020 8:16:28 AM	8/31/2020 3:39:17 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 08:14 Fixes 2754 &2764 One beluga traveling SW along far shore. Last seen 08:38.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
573	2754	8/31/2020 8:17:36 AM	61.242591	-150.020374	6753.54007
573	2764	8/31/2020 8:38:35 AM	61.243236	-150.056329	8669.89927

Group ID	Created Date	Last Update	Species Common Name
574	8/31/2020 8:56:25 AM	8/31/2020 3:47:13 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

**PW: 08:55 Fixes 2771-2773. One beluga traveling SW toward inbound line. Last seen 08:57.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
574	2771	8/31/2020 8:56:33 AM	61.201412	-149.99347	6404.94858
574	2772	8/31/2020 8:56:49 AM	61.201412	-149.99347	6404.94858
574	2773	8/31/2020 8:57:20 AM	61.201271	-149.996061	6528.00904

Group ID	Created Date	Last Update	Species Common Name
575	8/31/2020 9:07:37 AM	8/31/2020 3:47:04 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

**PW: 09:08 F2776, 2778, 2782; Harbor Seal observed traveling and sinking. Last seen: 10:22

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
575	2776	8/31/2020 9:08:09 AM	61.200856	-149.987008	6161.57391
575	2778	8/31/2020 9:16:55 AM	61.200946	-149.983965	6026.45579
575	2782	8/31/2020 9:46:25 AM	61.204339	-149.961938	4884.5328

Group ID	Created Date	Last Update	Species Common Name
576	8/31/2020 1:41:51 PM	8/31/2020 1:48:15 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	1	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: 13:42 Fix 2811 One white beluga surfaced inside Level B zone. Last seen 13:42

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
576	2811	8/31/2020 1:42:19 PM	61.253117	-149.90237	2120.00678

Group ID	Created Date	Last Update	Species Common Name
577	8/31/2020 4:05:00 PM	8/31/2020 5:33:51 PM	Beluga

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
7	Circular	False	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	3	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	

Comments

NEX: Whales seen coming around Cairn Pt and heading south. Approached the boundary line before changing direction and heading north. Last seen 17:23.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
577	2823	8/31/2020 4:08:56 PM	61.258726	-149.879966	2828.81254
577	2825	8/31/2020 4:25:49 PM	61.260838	-149.880182	3051.20558
577	2827	8/31/2020 4:36:42 PM	61.25846	-149.879855	2802.25869
577	2828	8/31/2020 4:41:37 PM	61.260728	-149.880206	3039.07752
577	2829	8/31/2020 4:56:44 PM	61.258411	-149.879957	2799.80549
577	2831	8/31/2020 5:04:18 PM	61.258997	-149.881071	2846.98727

Group ID	Created Date	Last Update	Species Common Name
578	8/31/2020 4:23:34 PM	8/31/2020 5:34:01 PM	Harbor Seal

Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Sedate	Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown
	0	0	0	0	0

Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

NEX: Seal seen north of the boundary line. Last seen 17:21.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
578	2824	8/31/2020 4:23:45 PM	61.259062	-149.88123	2846.07646

2020 POA PCT Marine Mammal Sightings Overview 08/31/20

PSO Station

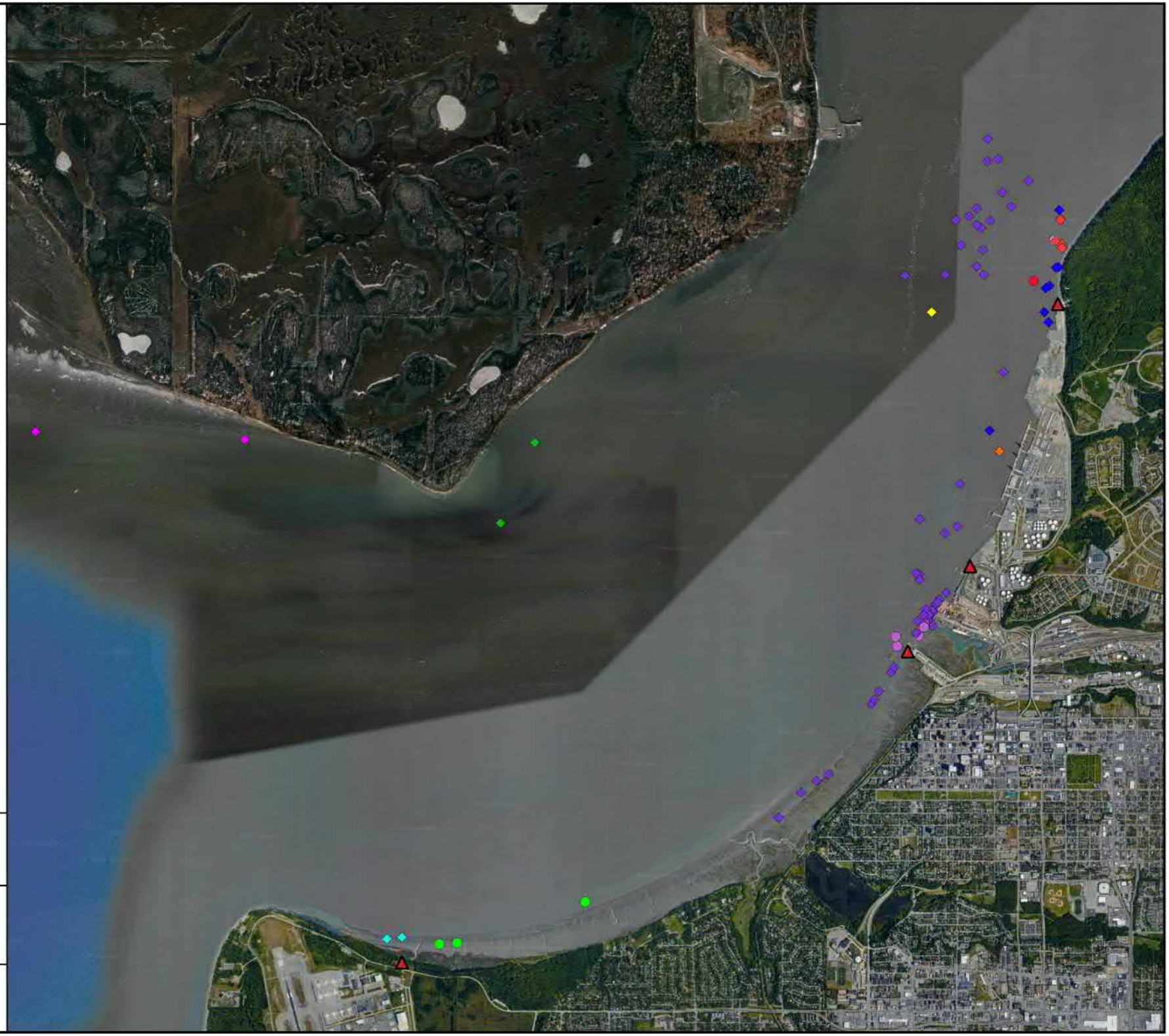
Marine Mammal Groups

- Group 567 Beluga
- Group 568 Harbor Seal
- Group 569 Harbor Seal
- Group 570 Beluga
- Group 571 Beluga
- Group 572 Beluga
- Group 573 Beluga
- Group 574 Beluga
- Group 575 Harbor Seal
- Group 576 Beluga
- Group 577 Beluga
- Group 578 Harbor Seal

0 0.75 1.5 km

61|N
61 North Environmental

Map Imagery Source: Google Earth, 2020



2020 POA PCT
Beluga Sightings
08/31/20
Figure 1

PSO Station

Beluga Track Lines

- Group 567
- Group 577
- Group 573
- Group 574
- Group 576
- Group 572
- Group 571
- Group 570

0 0.75 1.5 km

61 | N
61 North Environmental

Map Imagery Source: Google Earth, 2020

Appendix G – Data Field Information for Sighting Reports

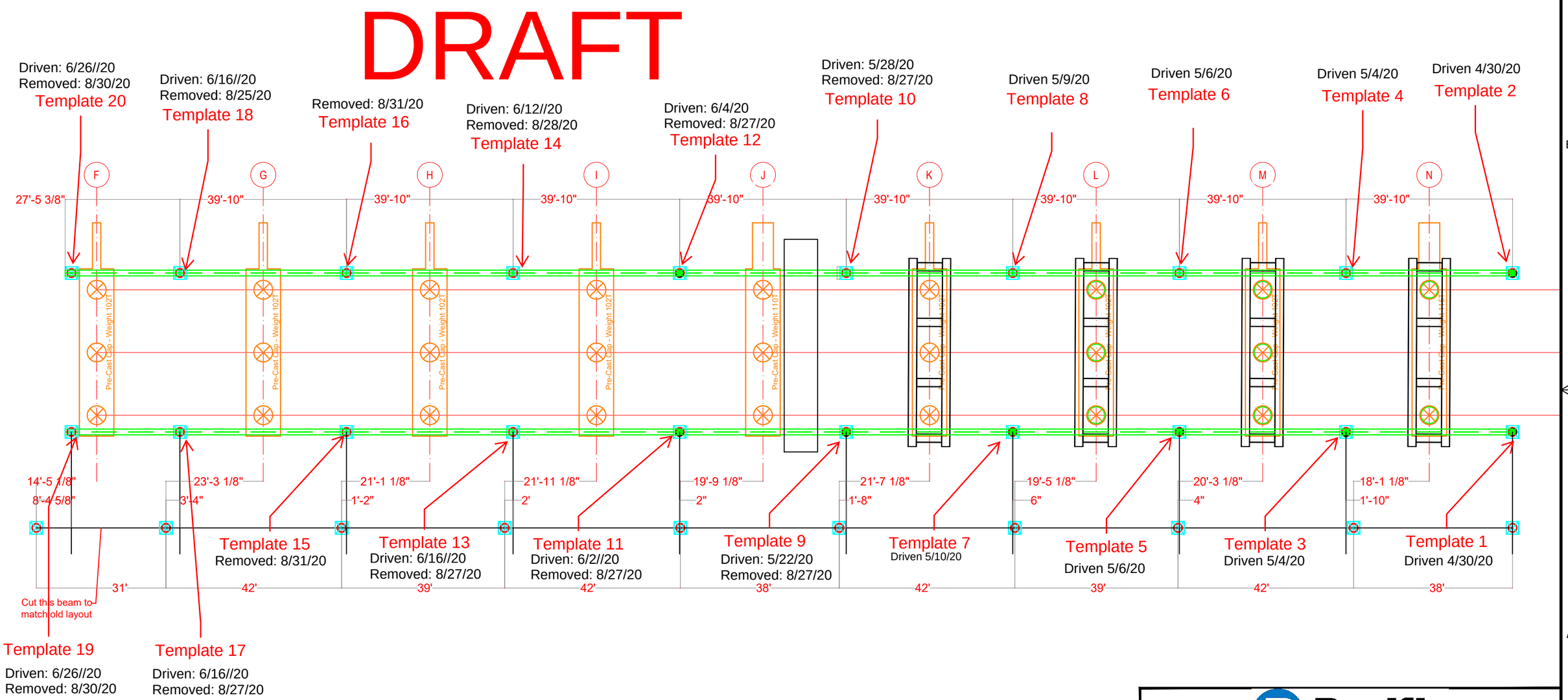
Port of Alaska, PCT Construction 2020
Marine Mammal Monitoring
Data Field Information for Sighting Reports

Marine Mammal Group Sighting - Parent Record Information	
Group ID	The marine mammal group identification number generated by the database upon entry. **Note:** The marine mammal sighting form is used test the theodolites each morning to ensure they are functioning properly. The database assigns a Group ID number to the test record , therefore some group ID numbers are missing from the sequence of marine mammal group sightings.
Created Date	The date and time the parent record of the marine mammal sighting was first created.
Last Update	The date and time any field within the parent record of the marine mammal sighting was last edited.
Species Common Name	The common name of the marine mammal sighted, selected from the list: Beluga, Harbor Seal, Harbor Porpoise, Steller Sea Lion, Pinniped Unid., Humpback Whale, Gray Whale, Fin Whale, Minke Whale, Dall's Porpoise, Cetacean Unid., Mysticetes Unid., Unknown.
Spread	The spread of the whales is defined as the mean distance between beluga whales in body lengths (e.g., a spread of 2 indicates that the whales are spaced out, on average, 2 body lengths apart). One selection is made from a dropdown for each sighting from 1 - 10, or >10. Additional notes on spread may be located in the Comments field.
Formation	The formation of the group references how the individual marine mammals are distributed within the group. The formation code that best reflects the distribution pattern of the group is entered: Circular (C) – arranged in a circular group while moving in one direction Parallel (P) – alongside each other, spread perpendicular to direction of movement Linear (L) – forming a line, spread along direction of movement Echelon (E) – Arranged diagonally, each marine mammal to the side and behind animal ahead of it; also includes “V” formation No Formation (NF) – Random or un-patterned formation
Combined Group	A field to indicate if the parent record of the sighting is related to another sighting. The default setting is "False" meaning the group did not combine with or split from another group. "True" means the group either combined with or split from another group and the comments of each sighting should be reviewed for behavior.
Pace	Sedate, moderate, or vigorous.
Primary and Secondary Behavior	The primary and secondary behaviors represent the most common and second most common behavior exhibited by the group throughout the sighting. Additional behaviors are presented in the Comments field. Behaviors are selected from a dropdown and include: Unknown, Avoiding Predation, Bubbling, Calving, Diving, Feeding Observed, Feeding Suspected, Mating Suspected, Milling, Other, Resting, Side Scanning, Snorkeling, Socializing, Spyhopping, Startling, Tail Slapping, Tail Waving, Travelling, Vocalizing, Multiple-see comments, Breach, Porpoising, Sink, None, Looking.
Beluga Counts White, Gray, Calf, Neonate, and Unknown	The MMOs best count of the number of each category of belugas present in the group. Often multiple MMOs observe the group and reach consensus on the best count. The addition of animals to the overall counts throughout the sighting are often documented in the Comments field.
Other MM Counts: Adult, Calf, Total	The MMOs best count of the number of adults and calf/pup present in the group if it can be discerned. Often multiple MMOs observe the group and reach consensus on the "best" count. The addition of animals to the overall counts throughout the sighting are often documented in the Comments field.
Comments	MMO comments on behaviors, fix details, counts, sighting progression, which station is has "control" of the parent record and is entering fixes, and other sighting details.
Marine Mammal Position Table	
Group ID	Corresponds to the Group ID of the sighting parent record in the database.
Fix ID	The sequential identification number given to a marine mammal position (or theodolite check shot) measured through entry of a horizontal and vertical angle.
Fix Time	The initial time the fix is entered. Updates can be made to the horizontal or vertical angles of a fix and that time is also captured, but not displayed on the report form.
MM Latitude	The latitude in decimal degrees of the marine mammal group position. In a group that is spread out, generallly the animal closest to the PCT is selected for measurement of the position.
MM Longitude	The longitude in decimal degress of the marine mammal group position.
Distance To PCT	The distance of the marine mammal group from either a specific pile if there is a pile driving activity selected in the database, or from a the generalized PCT location 61.23445565°, -149.8946812° if no pile-driving activity is selected in the database.

Pile Driving Activity

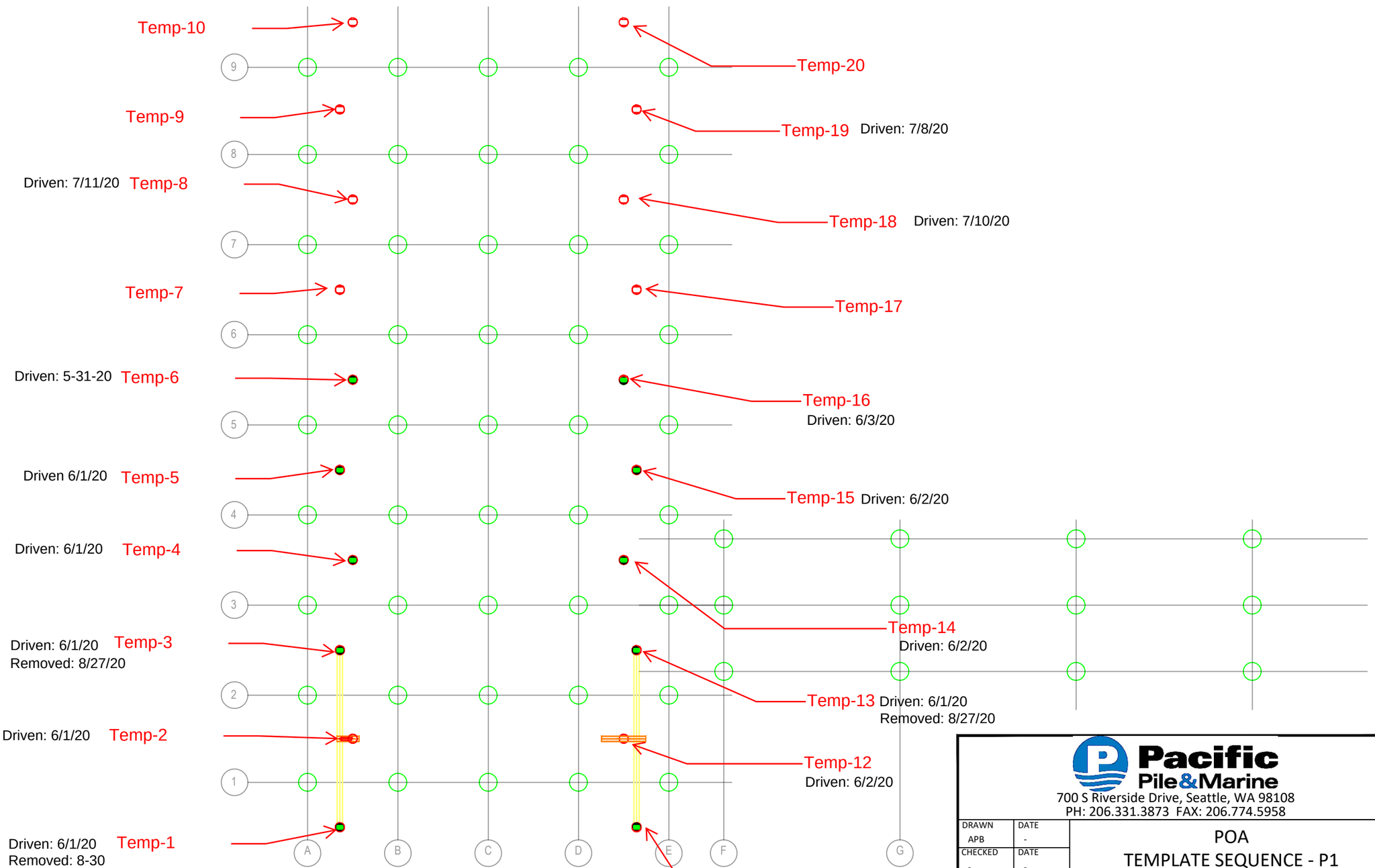
Drive Date	Pile Type	Pile Location Name	Pile Diameter (inches)	Hammer Type	Total time (minutes)
1-Aug	Bubble Curtain	A6-BC	72	Vibratory	2
1-Aug	Permanent	C-6	48	Vibratory	10
1-Aug	Bubble Curtain	C6-BC	72	Vibratory	2
1-Aug	Permanent	E-6	48	Vibratory	12
1-Aug	Bubble Curtain	E6-BC	72	Vibratory	6
2-Aug	Permanent	A-6	48	Impact	35
2-Aug	Permanent	A-6	48	Vibratory	12
2-Aug	Permanent	C-6	48	Impact	33
2-Aug	Permanent	E-6	48	Impact	34
3-Aug	Permanent	B-6	48	Vibratory	10
3-Aug	Bubble Curtain	B6-BC	72	Vibratory	1
3-Aug	Permanent	A-7	48	Impact	28
3-Aug	Permanent	A-7	48	Vibratory	11
3-Aug	Bubble Curtain	A7-BC	72	Vibratory	3
3-Aug	Permanent	D-6	48	Vibratory	11
4-Aug	Permanent	B-6	48	Impact	23
4-Aug	Permanent	B-7	48	Impact	21
4-Aug	Permanent	B-7	48	Vibratory	10
4-Aug	Bubble Curtain	B7-BC	72	Vibratory	4
4-Aug	Permanent	D-6	48	Impact	25
5-Aug	Permanent	C-7	48	Impact	28
5-Aug	Permanent	C-7	48	Vibratory	11
5-Aug	Bubble Curtain	C7-BC	72	Vibratory	2
5-Aug	Permanent	D-7	48	Impact	27
5-Aug	Permanent	D-7	48	Vibratory	10
5-Aug	Bubble Curtain	D7-BC	72	Vibratory	2
6-Aug	Permanent	E-7	48	Impact	23
6-Aug	Permanent	E-7	48	Vibratory	12
7-Aug	No Pile Driving				
8-Aug	No Pile Driving				
9-Aug	No Pile Driving				
10-Aug	No Pile Driving				
11-Aug	No Pile Driving				
12-Aug	No Pile Driving				
13-Aug	No Pile Driving				
14-Aug	No Pile Driving				
15-Aug	No Pile Driving				
16-Aug	No Pile Driving				
17-Aug	No Pile Driving				
18-Aug	No Pile Driving				
19-Aug	No Pile Driving				
20-Aug	No Pile Driving				
21-Aug	No Pile Driving				
22-Aug	No Pile Driving				

23-Aug	No Pile Driving
24-Aug	No Pile Driving
29-Aug	No Pile Driving



Pacific Pile&Marine
700 S Riverside Drive, Seattle, WA 98108
PH: 206.331.3873 FAX: 206.774.5958

DRAWN JTW	DATE 9/18/19	Port of Alaska - PCT Pile Layout with Beam Lengths				
CHECKED -	DATE -					
CHECKED -	DATE -					
APPROVED -	DATE -	DWG NO. -	SHEET -OF-	SIZE 11x17	SCALE: AS NOTED	REV -



Pacific Pile&Marine
700 S Riverside Drive, Seattle, WA 98108
PH: 206.331.3873 FAX: 206.774.5958

DRAWN APB	DATE -	POA TEMPLATE SEQUENCE - P1				
CHECKED -	DATE -					
CHECKED -	DATE -					
APPROVED -	DATE -	DWG NO. -	SHEET -OF-	SIZE 11x17	SCALE: AS NOTED	REV -