



MEMORANDUM

DATE: October 19, 2020

TO: Jaclyn Daly (NOAA), Bonnie Easley-Appleyard (NOAA), Barb Mahoney (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 September 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: 10/12/2020
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 – September 2020

Drawing Reference(s):

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

Marine Mammal Monitoring Monthly Report – September 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 10-12-2020

Owner's Representative 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 September to 30 September 2020

Prepared for

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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	13
5	Marine Mammal Observations	13
	Marine Mammal Sighting Summary.....	13
	Marine Mammal Exposures.....	14
6	References.....	16

Appendices

Appendix A – In-Water Activity Detail

Appendix B – Marine Mammal Sighting Summary

Appendix C – 9/1 – 9/6 Sighting Forms and Maps

Appendix D – Week of 9/7 – 9/13 Sighting Forms and Maps

Appendix E – 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 September 2020, the MMOs monitored for 9 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 end of observations 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 September 2020, no observation effort was conducted on 21 of the 30 days in the month and no in-water work 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
9/1/2020	7:00	17:15	10.25	41.0	61.3
9/2/2020	7:14	17:30	10.27	41.1	61.4
9/3/2020	7:13	17:30	10.28	41.1	61.5
9/4/2020	7:12	17:30	10.30	41.2	61.6
9/5/2020	n/a	n/a	n/a	n/a	n/a
9/6/2020	n/a	n/a	n/a	n/a	n/a
9/7/2020	n/a	n/a	n/a	n/a	n/a
9/8/2020	7:16	17:30	10.23	40.9	61.1
9/9/2020	7:15	17:30	10.25	41.0	61.3
9/10/2020	7:18	19:10	11.87	47.5	72.6
9/11/2020	7:18	19:15	11.95	47.8	73.2
9/12/2020 ³	7:19	7:31	0.20	0.8	1.4
9/13/2020	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
9/14/2020	n/a	n/a	n/a	n/a	n/a
9/15/2020	n/a	n/a	n/a	n/a	n/a
9/16/2020	n/a	n/a	n/a	n/a	n/a
9/17/2020	n/a	n/a	n/a	n/a	n/a
9/18/2020	n/a	n/a	n/a	n/a	n/a
9/19/2020	n/a	n/a	n/a	n/a	n/a
9/20/2020	n/a	n/a	n/a	n/a	n/a
9/21/2020	n/a	n/a	n/a	n/a	n/a
9/22/2020	n/a	n/a	n/a	n/a	n/a
9/23/2020	n/a	n/a	n/a	n/a	n/a
9/24/2020	n/a	n/a	n/a	n/a	n/a
9/25/2020	n/a	n/a	n/a	n/a	n/a
9/26/2020	n/a	n/a	n/a	n/a	n/a
9/27/2020	n/a	n/a	n/a	n/a	n/a
9/28/2020	n/a	n/a	n/a	n/a	n/a
9/29/2020	n/a	n/a	n/a	n/a	n/a
9/30/2020	n/a	n/a	n/a	n/a	n/a
Total Hrs Observation:			85.60	342.40	515.20
Notes: ¹ equals project hours X 4 Stations ² equals project hours X 7 MMOs “on watch” minus breaks ³ A last-minute decision was made to cut template piles rather than removing them; observations ended early the morning of 12 Sept. 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 9 days of observation in September 2020, MMOs recorded 667 observations of environmental conditions.

The overall observation conditions were good to excellent for most of observation days in September. The average observation condition was 8.3 on a scale of 1 to 10 and was 7 or greater for 98 percent of the records entered. The average visibility was over 7,000 meters, the median was 6,500 meters, and was greater than or equal to 5,000 meters for 93 percent of the observations. Thermal distortion was mentioned 20 times as affecting visibility at long distances. Cloud cover averaged 52 percent and exceeded 50 percent about 53 percent of the time. On the morning of 1 September, visibility was reduced to 3,000 to 3,500 meters north of the project due to fog. No in-water work was planned or conducted during this period. Belugas were present in the project area for the entire day during this period. Glare was recorded as 0 percent for 90 percent of observations and less than or equal to 10 percent for 97 percent of observations.

Weather conditions in early September were slightly better than observations in August. A sea state of 2 or higher was recorded more often in early September than in August. 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	26.2%
Partly Sunny	10.8%
Partly Cloudy	26.7%
Cloudy	27.1%
Fog	0.0%
Mist	1.8%
Light Rain	4.9%
Rain	2.4%
Note: ¹ percentages total to 99.9% due to rounding	

Table 3. Summary of Beaufort Sea State Observations

Beaufort Sea State	Percent of Observations
0	0%
1	8%
2	80%
3	11%
4	1%
>=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	15%
Low Flood	17%
High Flood	12%
High Slack	17%
High Ebb	19%
Low Ebb	20%

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). The wind speed and direction for the 9 days worked in September 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.

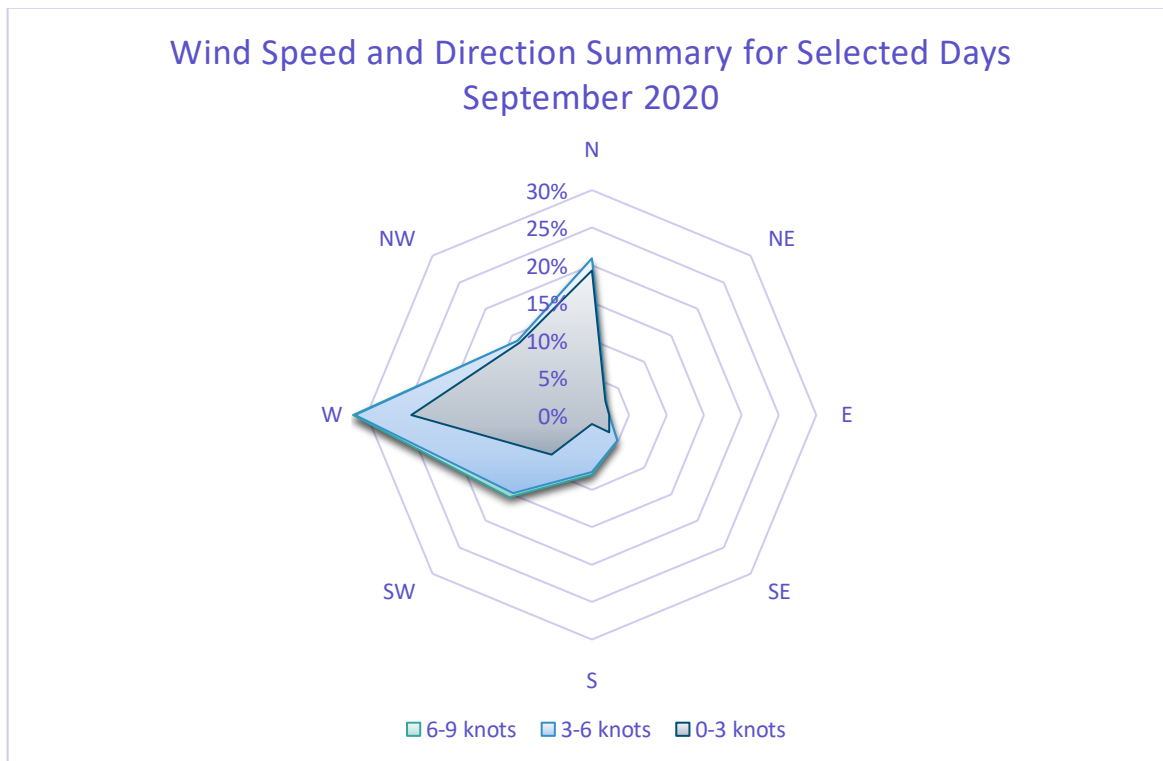


Figure 2. Wind Speed Rose, NOAA Tide Station 9455920, Anchorage Alaska, September 1-4, and 8-12 (07:00 to 18:00 daily)

The wind rose presented in Figure 2 shows that wind was typically out of the north or west, with occasional winds from the southwest. Winds were generally lower in September given that most (99 percent) of the wind speeds were at or below 6 knots, with only a small fraction between 6 and 9 knots.

3 In-Water Operations

During the month of September 2020, there were 7 in-water activity events, totaling 69.8 minutes of activity, all of which were in-water pile removal events. 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	0	0	7	69.8	7	69.8	7	69.8
Impact Hammer – Unattenuated	0	0						
Vibratory Hammer – Attenuated	4	37.7						
Vibratory Hammer – Unattenuated	3	32.1						
Vibratory Installation of Bubble Curtain	0	0						
Other In-Water Activity	0	0						

Other Non-PCT Activity

The MMOs documented other vessel activity not related to the PCT in lower Knik Arm. Other activities documented include: tug (4 times), barge (5 times), dredge (3 times), boat (6 times), and recreational boat/jet ski/zodiac/skiff/private boat (4 times).

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 September 2020, pile removal was delayed four times due the presence of belugas within the pre-clearance zone or because they were approaching the Level B zone. There were two shutdowns of active pile removal. 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	9/3/2020 13:52	9/3/2020 17:30	626	218
Shutdown, marine mammal	9/4/2020 13:23	9/4/2020 14:29	642	66
Shutdown, marine mammal	9/4/2020 14:31	9/4/2020 16:41	642	130
Delay, marine mammal	9/9/2020 8:03	9/9/2020 17:30	659	567
Delay, marine mammal	9/10/2020 11:06	9/10/2020 18:52	681, 676, 683, 694, 693	466

Delay/Shutdown Type	Start Time	End Time	Marine Mammal Group ID	Mitigation Duration (minutes)
Delay, marine mammal	9/11/2020 08:02	9/11/2020 16:57	698, 699, 701	535
Total Monthly Mitigation Duration:				1,982

The marine mammal delays and shutdowns were described as follows:

Group 626: This beluga group was sighted traveling towards the Level B zone (2,635 meters) as marine-side prepared to remove a template pile. A delay was called at 13:52, the beluga group was still within the Level B zone at 17:30 when the delay and workday were ended. Total delay time: 218 minutes.

Group 642a: This beluga group was sighted at 13:24 within the Level B zone (2,635 meters) during template pile removal. A shutdown was called at 13:24 and all in-water work stopped. The shutdown was ended at 14:29 when the group was observed to have voluntarily left the Level B zone by over 100 m and was on a path away from the zone. Total shutdown time: 66 minutes.

Group 642b: The group then abruptly turned around and traveled directly back towards the Level B zone. A shutdown was called at 14:31 and all in-water work ceased prior to the group crossing the Level B zone. The shutdown was ended at 16:41 when in-water work plans were cancelled for the day. Total shutdown time: 130 minutes.

Group 659: A delay was initiated at 08:03, as marine-side was preparing to remove a 24" template pile and beluga group 659 was sighted traveling into the Level B zone. The delay ended at 17:30 when the workday ended. Beluga group 659 was still within the Level B zone (2,635 meters) at the end of work. Total delay time: 567 minutes.

Groups 681, 676, 683, 684, and 693: As marine-side prepared for template pile removal, group 681 was sighted just outside the Level B zone (2,635 meters). A delay was initiated at 11:07, when group 681 was observed entering the Level B zone. In-water work did not begin. During the delay, belugas in groups 676, 683, 684, 693, and 694 entered the Level B zone. The delay ended at 18:52 when the workday ended. Belugas from group 693 were still in the Level B zone at the end of the day. Total delay time: 466 minutes.

Groups 698, 699, and 701: A delay was initiated at 08:02, with group 698 inside the Level B zone (2,635 meters) at the mouth of Ship Creek and marine-side prepared for in-water work. During the delay, groups 699 and 701 also entered the Level B zone. The delay was ended at 16:57 when all three groups were either visually confirmed to have voluntarily left the Level B zone by at least 100 m

and were on a path away, or had not been seen within the zone for 30 minutes. Total delay time: 535 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.

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 nine days of observation in the month of September, 119 groups of marine mammals were sighted totaling 323 individual animals. There were 73 groups of belugas comprised of 276 individuals, 2 groups of harbor porpoises comprised of 2 individuals, 43 harbor seal groups comprised of 44 individuals, and one unidentified pinniped.

Due to the abundance of belugas in Knik Arm during in the early part of September, and the fluid nature of beluga group dynamics, tracking split and combined groups remained challenging. Several groups split or combined with other groups, sometimes multiple times throughout a sighting. 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 and D. The data field information for the sighting reports is presented in Appendix E.

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

Species	Number of Groups	Number of Individuals
Beluga	73	276
Harbor Porpoise	2	2
Harbor Seal	43	44
Pinniped Unid.	1	1
Totals:	119	323

Marine Mammal Exposures

During the month of September, there was one in-water pile removal event that caused the potential exposure of 3 belugas to underwater noise exceeding the Level B threshold. Table 9 contains a summary of the potential exposures for the month of September 2020.

Table 9 - Potential Marine Mammal Exposures from 1 September to 30 September 2020

Date	Species	Number of Marine Mammals	Group ID	Activity
9/4/20	Beluga	3	642	Vibratory removal of a 24-inch pile with bubble curtain

The marine mammal exposures were described as follows:

Group 642: On 4 September, a group of three belugas was sighted at 13:24 within the Level B zone (2,635 meters) during template pile removal. A shutdown was called at 13:24 and all in-water work stopped. The shutdown was ended at 14:29 when the group was observed to have voluntarily left the Level B zone by over 100 m and was on a path away from the zone.

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	3	0	0	0	0	0	0
Cumulative Potential Level B Exposures	15	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

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 Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
868	9/4/2020 1:19:00 PM	Vibratory hammer with bubble curtain	24

Comments

MARINE-SIDE: **Template pile removal. Pile ID is nearest permanent pile. Water depth is greater than 3 m** Shutdown at 13:23 for group 642, restart work at 14:31; Vibe on continuous from 14:31:13-14:31:50.

Water Depth

>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1555	9/4/2020 1:22:28 PM	9/4/2020 1:23:03 PM	0.6
1557	9/4/2020 2:31:13 PM	9/4/2020 2:31:28 PM	0.3
1558	9/4/2020 2:31:29 PM	9/4/2020 2:31:36 PM	0.1
1559	9/4/2020 2:31:43 PM	9/4/2020 2:31:50 PM	0.1
Total Duration			1.1

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
872	9/8/2020 8:59:54 AM	Vibratory hammer with bubble curtain	24

Comments

MARINE-SIDE: **Template pile removal. Pile ID is nearest permanent pile.** Water depth is greater than 3 m.

Water Depth

>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1565	9/8/2020 9:03:48 AM	9/8/2020 9:15:20 AM	11.5
Total Duration			11.5

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
873	9/8/2020 9:17:15 AM	Vibratory hammer, no bubble curtain	24
Comments			Water Depth
SHORE-SIDE: **Template pile removal. Pile ID is nearest permanent pile.** Water depth is less than 3 m.			<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1566	9/8/2020 9:19:54 AM	9/8/2020 9:19:55 AM	0
1567	9/8/2020 9:20:47 AM	9/8/2020 9:25:00 AM	4.2
1568	9/8/2020 9:32:39 AM	9/8/2020 9:35:58 AM	3.3
Total Duration			7.5

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
875	9/8/2020 10:25:41 AM	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
1570	9/8/2020 10:30:02 AM	9/8/2020 10:41:56 AM	11.9
Total Duration			11.9

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
876	9/8/2020 10:38:11 AM	Vibratory hammer, no bubble curtain	24
Comments			Water Depth
SHORE-SIDE: **Template pile removal. Pile ID is nearest permanent pile.** Water depth is less than 3 m.			<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1572	9/8/2020 10:51:29 AM	9/8/2020 10:54:01 AM	2.5
1574	9/8/2020 11:02:39 AM	9/8/2020 11:02:41 AM	0
1575	9/8/2020 11:02:59 AM	9/8/2020 11:07:17 AM	4.3
1576	9/8/2020 11:12:12 AM	9/8/2020 11:17:43 AM	5.5
Total Duration			12.3

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
877	9/8/2020 11:48:52 AM	Vibratory hammer, no bubble curtain	24
Comments			Water Depth
SHORE-SIDE: **Template pile removal. Pile ID is nearest permanent pile.** Water depth is less than 3 m.			<3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1578	9/8/2020 11:52:33 AM	9/8/2020 11:59:47 AM	7.2
1579	9/8/2020 12:03:32 PM	9/8/2020 12:08:07 PM	4.6
1580	9/8/2020 12:09:00 PM	9/8/2020 12:09:23 PM	0.4
Total Duration			12.2

In-Water Construction Activity

Port Activity ID	Record Date and Time	In-water Activity	Pile Diameter
897	9/11/2020 4:59:37 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 3m.			>3 Meters

Activity Time and Duration

Port Status ID	Activity Start Time	Activity Stop Time	Activity Minutes
1602	9/11/2020 5:01:16 PM	9/11/2020 5:12:22 PM	11.1
1603	9/11/2020 5:12:50 PM	9/11/2020 5:12:58 PM	0.1
1604	9/11/2020 5:13:56 PM	9/11/2020 5:15:51 PM	1.9
Total Duration			13.1

Appendix B – Marine Mammal Sighting Summary

Marine Mammal Group Summary Report

Month of September 2020

Species	Group ID	Initial Sighting Time	Total Individuals
Beluga			
	580	9/1/2020 7:09:58 AM	3
	582	9/1/2020 7:52:52 AM	3
	583	9/1/2020 8:00:16 AM	3
	584	9/1/2020 8:13:36 AM	5
	585	9/1/2020 8:25:11 AM	2
	586	9/1/2020 9:07:58 AM	2
	587	9/1/2020 9:19:17 AM	1
	588	9/1/2020 9:45:55 AM	0
	591	9/1/2020 10:20:00 AM	2
	592	9/1/2020 11:19:38 AM	1
	593	9/1/2020 12:11:40 PM	2
	595	9/1/2020 1:54:36 PM	1
	596	9/1/2020 2:02:32 PM	1
	598	9/1/2020 3:13:07 PM	1
	599	9/1/2020 3:38:15 PM	1
	600	9/1/2020 4:06:03 PM	2
	603	9/2/2020 7:33:15 AM	2
	606	9/2/2020 10:00:15 AM	2
	607	9/2/2020 10:24:10 AM	2
	609	9/2/2020 10:58:22 AM	2
	610	9/2/2020 11:58:35 AM	1
	611	9/2/2020 12:08:33 PM	1
	612	9/2/2020 1:11:07 PM	4
	613	9/2/2020 1:36:14 PM	2
	616	9/2/2020 3:29:42 PM	0
	617	9/2/2020 3:41:01 PM	4
	622	9/3/2020 8:12:04 AM	4
	623	9/3/2020 8:53:11 AM	3
	625	9/3/2020 10:15:55 AM	2
	626	9/3/2020 1:23:38 PM	3
	629	9/3/2020 2:51:39 PM	3
	630	9/3/2020 3:59:46 PM	5
	632	9/4/2020 7:30:16 AM	2
	635	9/4/2020 7:53:40 AM	2
	638	9/4/2020 9:22:52 AM	2
	641	9/4/2020 1:12:30 PM	3
	642	9/4/2020 1:24:00 PM	3

Species	Group ID	Initial Sighting Time	Total Individuals
Beluga	643	9/4/2020 2:11:01 PM	5
	644	9/4/2020 3:23:29 PM	3
	645	9/4/2020 5:13:03 PM	3
	649	9/8/2020 10:52:44 AM	1
	652	9/8/2020 1:01:14 PM	2
	655	9/8/2020 2:31:14 PM	2
	656	9/8/2020 2:52:02 PM	9
	659	9/9/2020 8:00:49 AM	5
	662	9/9/2020 11:55:05 AM	1
	663	9/9/2020 12:37:40 PM	0
	665	9/9/2020 1:40:58 PM	2
	668	9/9/2020 2:57:42 PM	2
	669	9/9/2020 3:26:12 PM	3
	670	9/9/2020 5:21:05 PM	1
	672	9/10/2020 7:16:32 AM	4
	673	9/10/2020 7:24:02 AM	20
	674	9/10/2020 8:35:35 AM	13
	676	9/10/2020 9:39:18 AM	0
	677	9/10/2020 9:58:56 AM	7
	681	9/10/2020 11:01:49 AM	9
	682	9/10/2020 11:06:10 AM	6
	683	9/10/2020 12:02:34 PM	3
	684	9/10/2020 12:25:09 PM	4
	688	9/10/2020 2:04:07 PM	1
	689	9/10/2020 2:25:42 PM	0
	690	9/10/2020 3:26:55 PM	0
	691	9/10/2020 3:56:38 PM	0
	693	9/10/2020 4:24:31 PM	53
	694	9/10/2020 4:30:31 PM	11
	695	9/10/2020 5:00:09 PM	0
	697	9/11/2020 7:48:11 AM	1
	698	9/11/2020 7:50:40 AM	3
	699	9/11/2020 9:05:36 AM	10
	700	9/11/2020 10:49:03 AM	0
	701	9/11/2020 12:24:49 PM	2
	706	9/11/2020 6:38:20 PM	8
Total Groups for Species:		Total Individuals for Species:	276
Harbor Porpoise			
	654	9/8/2020 2:18:03 PM	1
	685	9/10/2020 1:18:39 PM	1

Species	Group ID	Initial Sighting Time	Total Individuals
Total Groups for Species:	2	Total Individuals for Species:	2
Harbor Seal			
	581	9/1/2020 7:36:40 AM	1
	590	9/1/2020 9:52:57 AM	1
	594	9/1/2020 1:26:30 PM	1
	597	9/1/2020 3:01:47 PM	1
	601	9/1/2020 4:41:25 PM	1
	604	9/2/2020 8:27:54 AM	1
	605	9/2/2020 8:30:14 AM	1
	608	9/2/2020 10:47:28 AM	1
	614	9/2/2020 2:37:11 PM	1
	615	9/2/2020 2:51:26 PM	1
	618	9/2/2020 3:57:14 PM	1
	619	9/2/2020 4:37:31 PM	1
	624	9/3/2020 9:50:01 AM	1
	627	9/3/2020 2:38:17 PM	1
	628	9/3/2020 2:39:45 PM	1
	633	9/4/2020 7:31:20 AM	1
	634	9/4/2020 7:42:37 AM	1
	636	9/4/2020 8:08:23 AM	1
	637	9/4/2020 8:41:32 AM	1
	639	9/4/2020 9:41:14 AM	1
	640	9/4/2020 1:07:34 PM	1
	647	9/8/2020 7:22:24 AM	1
	648	9/8/2020 8:24:34 AM	1
	650	9/8/2020 11:43:21 AM	1
	651	9/8/2020 12:24:58 PM	1
	653	9/8/2020 1:52:58 PM	1
	658	9/9/2020 7:19:03 AM	1
	660	9/9/2020 9:17:27 AM	1
	661	9/9/2020 10:03:35 AM	1
	664	9/9/2020 12:49:33 PM	1
	666	9/9/2020 2:16:40 PM	1
	675	9/10/2020 8:47:26 AM	1
	678	9/10/2020 10:04:15 AM	2
	679	9/10/2020 10:55:23 AM	1
	680	9/10/2020 10:58:59 AM	1
	686	9/10/2020 1:53:41 PM	1
	687	9/10/2020 2:02:28 PM	1
	692	9/10/2020 4:09:33 PM	1

Species	Group ID	Initial Sighting Time	Total Individuals
Harbor Seal	703	9/11/2020 4:38:28 PM	1
	704	9/11/2020 4:48:55 PM	1
	705	9/11/2020 5:30:30 PM	1
	707	9/11/2020 6:47:52 PM	1
	709	9/12/2020 7:20:14 AM	1
Total Groups for Species:	43	Total Individuals for Species:	44
Pinniped Unid.			
	702	9/11/2020 3:46:31 PM	1
Total Groups for Species:	1	Total Individuals for Species:	1
Total MM Groups For Period:	119	Toal MMs For Period:	323

Appendix C – 9/1 – 9/6 Sighting Forms and Maps

MM Group Report

Group ID	Created Date	Last Update	Species Common Name
580	9/1/2020 7:09:58 AM	9/1/2020 4:38:24 PM	Beluga

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

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	3	0	0	0	0		0	0	

Comments

***NEX: Three white belugas seen outside of outbound line, heading northeast. Time last seen: 07:18

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
580	2833	9/1/2020 7:10:09 AM	61.260951	-149.895605	2955.92947
580	2834	9/1/2020 7:11:18 AM	61.26148	-149.891108	3022.67725
580	2836	9/1/2020 7:18:52 AM	61.264115	-149.883933	3362.0927

Group ID	Created Date	Last Update	Species Common Name		
581	9/1/2020 7:36:40 AM	9/1/2020 4:37:46 PM	Harbor Seal		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Feeding Suspected

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW 07:33 Fix 2841; Harbor Seal observed traveling, milling with feeding suspected. Last seen 08:08.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
581	2841	9/1/2020 7:36:57 AM	61.200147	-149.986502	6218.4218

Group ID	Created Date	Last Update	Species Common Name
582	9/1/2020 7:52:52 AM	9/1/2020 4:38:10 PM	Beluga
Spread	Formation	Combined Group	Pace
2	No Formation	False	Sedate
			Primary Behavior
			Milling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 2842 three white belugas, milling approximately 1500 m north of outbound line. Last time seen: 07:57

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
582	2842	9/1/2020 7:53:01 AM	61.27288	-149.880953	4332.28585

Group ID	Created Date	Last Update	Species Common Name
583	9/1/2020 8:00:16 AM	9/1/2020 4:52:32 PM	Beluga
Spread	Formation	Combined Group	Pace
9	Linear	False	Moderate
			Primary Behavior
			Milling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 2843 single beluga milling south of Port MacKenzie; Added one beluga 08:04. Added one whale to group at 08:37. Total of three beluga. Last seen: 08:37

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
583	2843	9/1/2020 8:02:30 AM	61.257118	-149.931351	3191.20718
583	2844	9/1/2020 8:05:53 AM	61.256174	-149.918134	2719.54725
583	2848	9/1/2020 8:21:50 AM	61.262842	-149.912626	3296.89441
583	2850	9/1/2020 8:34:38 AM	61.264344	-149.91753	3538.60676
583	2851	9/1/2020 8:37:57 AM	61.259007	-149.925811	3195.56202

Group ID	Created Date	Last Update	Species Common Name
584	9/1/2020 8:13:36 AM	9/1/2020 4:53:36 PM	Beluga
Spread	Formation	Combined Group	Pace
7	Circular	True	Moderate
Primary Behavior		Secondary Behavior	
Milling		Travelling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	1	0	0	0		0	0		

Comments

NEX: 08:13 Fix 2845 One gray, one white beluga traveling south. Added three more whites to group at 08:20. **PCT: 08:46 group travel; 08:51 hand-off to SC; *SC: Took over from PCT at 08:52. Belugas continuing to travel south to mouth of Ship Creek. Fix 2856 Belugas milling in mouth of Ship Creek. 09:15 One beluga moved past station towards Bootleggers Cove. 09:32 MMG 587 has joined MMG 584. 09:40 1 white and 1 gray slowly moving south. 13:22 Belugas moving North; **PCT: 13:25 take over from SC; group travel near worksite; 13:44 hand-off to NEX; ***NEX: Took over at 1344. Fix 2913 Whales seen sedately traveling north. Fix 2920 turned back south. Fix 2925 milling. Last time seen: 16:47

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
584	2845	9/1/2020 8:13:44 AM	61.253553	-149.883972	2197.963
584	2846	9/1/2020 8:15:21 AM	61.251857	-149.884789	2004.64839
584	2847	9/1/2020 8:20:47 AM	61.244593	-149.887989	1181.92152
584	2853	9/1/2020 8:46:40 AM	61.234029	-149.89759	162.61056
584	2854	9/1/2020 8:48:02 AM	61.232309	-149.899011	332.42999
584	2855	9/1/2020 8:52:07 AM	61.228409	-149.902024	778.23958
584	2856	9/1/2020 8:53:44 AM	61.227361	-149.903551	920.066
584	2857	9/1/2020 8:59:39 AM	61.226886	-149.900802	902.59001
584	2859	9/1/2020 9:12:12 AM	61.227361	-149.903403	916.01037
584	2864	9/1/2020 9:27:23 AM	61.227232	-149.903595	933.57764
584	2865	9/1/2020 9:33:23 AM	61.227398	-149.903966	928.22624
584	2868	9/1/2020 9:44:55 AM	61.227191	-149.903375	931.57023
584	2873	9/1/2020 9:56:30 AM	61.227065	-149.901107	890.25126
584	2874	9/1/2020 10:04:24 AM	61.227965	-149.902623	837.00544

Group ID	Created Date	Last Update	Species Common Name
584	9/1/2020 8:13:36 AM	9/1/2020 4:53:36 PM	Beluga
Spread	Formation	Combined Group	Pace
7	Circular	True	Moderate
Primary Behavior		Secondary Behavior	
Milling		Travelling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	1	0	0	0		0	0		

Comments

NEX: 08:13 Fix 2845 One gray, one white beluga traveling south. Added three more whites to group at 08:20. **PCT: 08:46 group travel; 08:51 hand-off to SC; *SC: Took over from PCT at 08:52. Belugas continuing to travel south to mouth of Ship Creek. Fix 2856 Belugas milling in mouth of Ship Creek. 09:15 One beluga moved past station towards Bootleggers Cove. 09:32 MMG 587 has joined MMG 584. 09:40 1 white and 1 gray slowly moving south. 13:22 Belugas moving North; **PCT: 13:25 take over from SC; group travel near worksite; 13:44 hand-off to NEX; ***NEX: Took over at 1344. Fix 2913 Whales seen sedately traveling north. Fix 2920 turned back south. Fix 2925 milling. Last time seen: 16:47

584	2876	9/1/2020 10:20:31 AM	61.227403	-149.903696	920.10941
584	2880	9/1/2020 10:31:47 AM	61.227262	-149.904348	951.96784
584	2882	9/1/2020 10:41:10 AM	61.22709	-149.903985	957.84626
584	2885	9/1/2020 10:53:49 AM	61.227011	-149.903071	941.09672
584	2888	9/1/2020 11:12:43 AM	61.227678	-149.9043	912.04514
584	2892	9/1/2020 11:23:12 AM	61.227021	-149.904046	966.09355
584	2896	9/1/2020 11:39:43 AM	61.227204	-149.903883	944.18965
584	2897	9/1/2020 11:56:35 AM	61.227247	-149.904258	950.76649
584	2898	9/1/2020 12:09:42 PM	61.227049	-149.903933	960.30651
584	2901	9/1/2020 12:30:51 PM	61.227415	-149.904123	931.157
584	2903	9/1/2020 12:49:28 PM	61.227129	-149.904411	966.22188
584	2904	9/1/2020 1:00:33 PM	61.230572	-149.90372	647.98358
584	2906	9/1/2020 1:13:13 PM	61.227204	-149.904142	951.48242
584	2907	9/1/2020 1:21:27 PM	61.228621	-149.907409	940.03307
584	2908	9/1/2020 1:25:51 PM	61.233101	-149.906344	641.57752

Group ID	Created Date	Last Update	Species Common Name
584	9/1/2020 8:13:36 AM	9/1/2020 4:53:36 PM	Beluga
Spread	Formation	Combined Group	Pace
7	Circular	True	Moderate
Primary Behavior		Secondary Behavior	
Milling		Travelling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	1	0	0	0		0	0		

Comments

NEX: 08:13 Fix 2845 One gray, one white beluga traveling south. Added three more whites to group at 08:20. **PCT: 08:46 group travel; 08:51 hand-off to SC; *SC: Took over from PCT at 08:52. Belugas continuing to travel south to mouth of Ship Creek. Fix 2856 Belugas milling in mouth of Ship Creek. 09:15 One beluga moved past station towards Bootleggers Cove. 09:32 MMG 587 has joined MMG 584. 09:40 1 white and 1 gray slowly moving south. 13:22 Belugas moving North; **PCT: 13:25 take over from SC; group travel near worksite; 13:44 hand-off to NEX; ***NEX: Took over at 1344. Fix 2913 Whales seen sedately traveling north. Fix 2920 turned back south. Fix 2925 milling. Last time seen: 16:47

584	2910	9/1/2020 1:28:48 PM	61.234426	-149.902893	439.12954
584	2911	9/1/2020 1:34:54 PM	61.235856	-149.901886	415.49839
584	2912	9/1/2020 1:42:50 PM	61.238161	-149.898215	453.026
584	2913	9/1/2020 1:44:19 PM	61.23932	-149.89547	542.1696
584	2915	9/1/2020 1:49:41 PM	61.239513	-149.892628	572.59569
584	2916	9/1/2020 1:53:37 PM	61.244375	-149.888958	1143.92353
584	2919	9/1/2020 2:07:45 PM	61.249668	-149.884552	1775.01556
584	2920	9/1/2020 2:18:13 PM	61.251112	-149.883741	1941.06171
584	2925	9/1/2020 2:44:58 PM	61.247533	-149.886654	1515.20134
584	2932	9/1/2020 3:16:19 PM	61.249346	-149.88568	1723.17186
584	2934	9/1/2020 3:28:07 PM	61.251158	-149.882922	1959.5405
584	2942	9/1/2020 4:05:01 PM	61.251845	-149.882505	2038.99715
584	2949	9/1/2020 4:19:10 PM	61.249684	-149.883999	1785.94141
584	2952	9/1/2020 4:30:03 PM	61.250691	-149.883543	1899.79891
584	2957	9/1/2020 4:46:17 PM	61.251816	-149.882492	2036.16594

Group ID	Created Date	Last Update	Species Common Name
585	9/1/2020 8:25:11 AM	9/1/2020 4:39:34 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	0	0	0		0	0	

Comments

NEX: 08:24 One white beluga traveling south on far shore. **PW: Took over sighting from NEX at 08:42. Fix 2852 Two white belugas on far shore. Last seen: 08:48

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
585	2849	9/1/2020 8:25:56 AM	61.248083	-149.955637	3593.47222
585	2852	9/1/2020 8:43:42 AM	61.247893	-149.96058	3826.46656

Group ID	Created Date	Last Update	Species Common Name
586	9/1/2020 9:07:58 AM	9/1/2020 5:10:18 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
	Primary Behavior	Secondary Behavior	
	Travelling	None	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	0	0	0		0	0	

Comments

**PW: 09:05 Fix 2858 one white beluga traveling west. 09:25 Fix 2863 second white beluga spotted. Last seen 09:41.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
586	2858	9/1/2020 9:10:57 AM	61.239339	-149.999604	5636.37704
586	2860	9/1/2020 9:19:02 AM	61.243794	-150.02538	7064.56102
586	2863	9/1/2020 9:24:59 AM	61.244479	-150.028528	7242.3262
586	2866	9/1/2020 9:35:18 AM	61.243762	-150.023699	6975.14751
586	2867	9/1/2020 9:39:04 AM	61.240374	-150.013062	6363.75934

Group ID	Created Date	Last Update	Species Common Name
587	9/1/2020 9:19:17 AM	9/1/2020 9:33:53 AM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	True	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			Other

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

**PCT: 09:18 single whale traveling towards SC and group 584; 09:32 group 587 combines with group 584, further notes are recorded in group 584.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
587	2861	9/1/2020 9:19:49 AM	61.232747	-149.898118	264.24493
587	2862	9/1/2020 9:25:27 AM	61.230475	-149.898626	490.05981

Group ID	Created Date	Last Update	Species Common Name
588	9/1/2020 9:45:55 AM	9/1/2020 5:09:19 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		None	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	0	0	0	

Comments

**PW: one white and one grey Beluga, split from group 584, traveling west. Last seen 09:50.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
588	2869	9/1/2020 9:47:06 AM	61.201482	-149.982452	5956.22889
588	2870	9/1/2020 9:49:32 AM	61.203159	-149.985372	5969.60721
588	2871	9/1/2020 9:50:09 AM	61.200963	-149.990695	6343.45953

Group ID	Created Date	Last Update	Species Common Name
590	9/1/2020 9:52:57 AM	9/1/2020 5:08:35 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		1	0	

Comments

**PW: 09:46 Fix 2872 Harbor seal swimming to the shore. 11:06 Fix 2887; three seals in vicinity of the fix. All observed swimming in the general area and milling. Last seen 11:27.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
590	2872	9/1/2020 9:53:40 AM	61.201098	-149.985162	6097.06492
590	2887	9/1/2020 11:07:40 AM	61.204952	-149.951457	4469.26041

Group ID	Created Date	Last Update	Species Common Name
591	9/1/2020 10:20:00 AM	9/1/2020 4:55:23 PM	Beluga
Spread	Formation	Combined Group	Pace
7	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	2	0	0	0	0		0	0	

Comments

NEX: Fix 2875 One white beluga heading south along near shore. Added one more white at 10:25 (total of two white). Fix 2889 turned around and heading north again. Fix 2895 crossed outbound line. Last time seen: 11:37

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
591	2875	9/1/2020 10:20:10 AM	61.25662	-149.881298	2564.69994
591	2877	9/1/2020 10:25:32 AM	61.254617	-149.881511	2348.34877
591	2878	9/1/2020 10:28:01 AM	61.25355	-149.88189	2229.22605
591	2879	9/1/2020 10:31:34 AM	61.251809	-149.882452	2036.11463
591	2881	9/1/2020 10:35:25 AM	61.25051	-149.883347	1884.05446
591	2883	9/1/2020 10:37:12 AM	61.250463	-149.882988	1885.38636
591	2884	9/1/2020 10:43:24 AM	61.249882	-149.884055	1805.85712
591	2886	9/1/2020 10:56:29 AM	61.246591	-149.886513	1417.42955
591	2889	9/1/2020 11:19:53 AM	61.253249	-149.88187	2197.74919
591	2891	9/1/2020 11:22:07 AM	61.255125	-149.881854	2396.94964
591	2893	9/1/2020 11:27:25 AM	61.255772	-149.88179	2466.87702
591	2895	9/1/2020 11:35:48 AM	61.258615	-149.879835	2799.42409

Group ID	Created Date	Last Update	Species Common Name		
592	9/1/2020 11:19:38 AM	9/1/2020 4:56:33 PM	Beluga		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Unknown

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 2890 one beluga on opposite shore. Appears to be heading south. Last seen 11:33

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
592	2890	9/1/2020 11:20:46 AM	61.239107	-149.976493	4404.90068
592	2894	9/1/2020 11:33:11 AM	61.241048	-149.978723	4552.88953

Group ID	Created Date	Last Update	Species Common Name
593	9/1/2020 12:11:40 PM	9/1/2020 4:57:17 PM	Beluga
Spread	Formation	Combined Group	Pace
3	Circular	False	Sedate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	0	0	0		0	0		

Comments

**PW: 12:04 Fix 2899 One Beluga observed traveling NE. **NEX: Fix 2902 Whale milling just north of the boundary line. Added one grey 14:36. Last seen 16:03

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
593	2899	9/1/2020 12:11:59 PM	61.25251	-149.931467	2809.27379
593	2900	9/1/2020 12:21:36 PM	61.259172	-149.921457	3097.03334
593	2902	9/1/2020 12:48:08 PM	61.265895	-149.912709	3623.97917
593	2905	9/1/2020 1:10:15 PM	61.267129	-149.91475	3785.78668
593	2914	9/1/2020 1:47:33 PM	61.268081	-149.916005	3906.38816
593	2922	9/1/2020 2:36:17 PM	61.268266	-149.913887	3894.70261
593	2927	9/1/2020 2:47:54 PM	61.26664	-149.915157	3740.01674
593	2931	9/1/2020 3:14:18 PM	61.266967	-149.915491	3779.9898
593	2936	9/1/2020 3:42:52 PM	61.265495	-149.911569	3565.24134
593	2941	9/1/2020 4:03:17 PM	61.265634	-149.911571	3580.21241

Group ID	Created Date	Last Update	Species Common Name
594	9/1/2020 1:26:30 PM	9/1/2020 5:10:59 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: 13:26 One Harbor seal spotted looking and sinking at mouth of Ship Creek. Last seen 17:15.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
594	2909	9/1/2020 1:26:43 PM	61.227241	-149.906682	1026.94753

Group ID	Created Date	Last Update	Species Common Name
595	9/1/2020 1:54:36 PM	9/1/2020 4:59:14 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 2917 One white beluga opposite shore . Last seen 14:53

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
595	2917	9/1/2020 1:59:57 PM	61.350254	-149.89759	12868.44928
595	2921	9/1/2020 2:22:18 PM	61.316332	-149.875709	9154.34267
595	2924	9/1/2020 2:39:28 PM	61.322917	-149.873676	9893.61208
595	2928	9/1/2020 2:53:09 PM	61.301698	-149.902696	7484.22507

Group ID	Created Date	Last Update	Species Common Name
596	9/1/2020 2:02:32 PM	9/1/2020 2:16:11 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0		

Comments

NEX: Fix 2918 One white beluga traveling due east. Last seen: 14:03

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
596	2918	9/1/2020 2:03:58 PM	61.269988	-149.877162	4057.84982

Group ID	Created Date	Last Update	Species Common Name
597	9/1/2020 3:01:47 PM	9/1/2020 5:06:42 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW: 15:01 Fix 2929 One Harbor seal observed looking and sinking. Last seen 15:03

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
597	2929	9/1/2020 3:02:10 PM	61.209013	-149.965516	4727.80274

Group ID	Created Date	Last Update	Species Common Name
598	9/1/2020 3:13:07 PM	9/1/2020 4:42:15 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

NEX: 15:12 one white beluga milling/traveling south. Last seen 16:42

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
598	2930	9/1/2020 3:13:17 PM	61.262491	-149.889137	3129.35073
598	2933	9/1/2020 3:18:22 PM	61.261448	-149.885171	3042.16017
598	2938	9/1/2020 3:44:07 PM	61.262241	-149.885603	3125.40502
598	2939	9/1/2020 3:55:23 PM	61.257534	-149.881423	2660.59269
598	2948	9/1/2020 4:16:57 PM	61.258083	-149.88223	2708.51882
598	2956	9/1/2020 4:43:48 PM	61.259816	-149.879986	2925.4675

Group ID	Created Date	Last Update	Species Common Name
599	9/1/2020 3:38:15 PM	9/1/2020 5:11:58 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

***PW 15:37 Fix 2935, bad fix. Fixes 2937, 2940, 2944, 2950, 2951, 2953, 2958; one white beluga traveling NE. Last seen milling north of outbound line at 17:10.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
599	2935	9/1/2020 3:38:26 PM	61.216865	-150.022787	7125.57468
599	2937	9/1/2020 3:42:52 PM	61.226379	-150.027275	7147.78426
599	2940	9/1/2020 3:59:38 PM	61.227775	-149.983006	4781.55088
599	2944	9/1/2020 4:08:59 PM	61.236108	-149.970056	4034.65847
599	2950	9/1/2020 4:19:57 PM	61.237936	-149.960783	3555.62015
599	2951	9/1/2020 4:26:40 PM	61.244707	-149.944357	2889.9064
599	2953	9/1/2020 4:30:49 PM	61.247423	-149.936985	2681.69607
599	2958	9/1/2020 4:50:30 PM	61.264525	-149.919777	3600.48461
599	2960	9/1/2020 4:56:17 PM	61.266085	-149.918501	3738.12308

Group ID	Created Date	Last Update	Species Common Name
600	9/1/2020 4:06:03 PM	9/1/2020 5:13:45 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Parallel	False	Sedate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	1	1	0	0	0		0	0	

Comments

**PW: 16:04 Fixes 2943 One white and one grey Beluga traveling NE toward port. Last seen 16:10.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
600	2943	9/1/2020 4:06:30 PM	61.202248	-149.989447	6206.00026
600	2945	9/1/2020 4:10:39 PM	61.202686	-149.988814	6150.26962
600	2946	9/1/2020 4:13:01 PM	61.201757	-149.985598	6071.45707
600	2947	9/1/2020 4:15:29 PM	61.202343	-149.982412	5896.1014

Group ID	Created Date	Last Update	Species Common Name
601	9/1/2020 4:41:25 PM	9/1/2020 5:11:12 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink
Beluga Counts	White	Gray	Calf
0	0	0	0
	Neonate	Unknown	
	0	0	
Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	

Comments

***SC 16:43 One harbor seal spotted looking and sinking at Bootleggers Cove. Last seen 17:15.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
601	2955	9/1/2020 4:42:45 PM	61.216563	-149.922034	2468.53345

Group ID	Created Date	Last Update	Species Common Name
603	9/2/2020 7:33:15 AM	9/2/2020 5:16:11 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 2964 one white whale traveling south along near shore inside the boundary and level B zone. One more white whale added to count. ** SC: Taken over for NEX at 08:24. Fix 2971 Belugas surfaced past barge heading south. 08:29 Belugas milling in mouth of Ship Creek. **PW: 09:42 Take over for SC; Fix 2980 Beluga traveling SW and exiting the Level B zone. Fix 2994 heading towards the In-Bound Line. Last seen 10:35

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
603	2964	9/2/2020 7:33:24 AM	61.256663	-149.880356	2603.71706
603	2965	9/2/2020 7:38:22 AM	61.254795	-149.880682	2401.19982
603	2966	9/2/2020 7:42:29 AM	61.253141	-149.881327	2216.3154
603	2967	9/2/2020 7:47:14 AM	61.252235	-149.881755	2113.8357
603	2968	9/2/2020 7:49:40 AM	61.250746	-149.883	1914.87263
603	2969	9/2/2020 7:55:45 AM	61.24786	-149.885223	1572.98303
603	2970	9/2/2020 8:06:33 AM	61.241575	-149.889631	835.91581
603	2971	9/2/2020 8:24:59 AM	61.229431	-149.901606	669.98779
603	2973	9/2/2020 8:29:15 AM	61.225316	-149.912806	1403.94728
603	2975	9/2/2020 8:43:36 AM	61.227989	-149.902533	832.26967
603	2976	9/2/2020 8:54:17 AM	61.22735	-149.903309	914.51593
603	2977	9/2/2020 9:08:10 AM	61.22917	-149.901136	681.26918
603	2978	9/2/2020 9:21:58 AM	61.227342	-149.90338	917.20364
603	2979	9/2/2020 9:46:04 AM	61.228409	-149.904721	860.07936

Group ID	Created Date	Last Update	Species Common Name
603	9/2/2020 7:33:15 AM	9/2/2020 5:16:11 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0		

Comments

NEX: Fix 2964 one white whale traveling south along near shore inside the boundary and level B zone. One more white whale added to count. ** SC: Taken over for NEX at 08:24. Fix 2971 Belugas surfaced past barge heading south. 08:29 Belugas milling in mouth of Ship Creek. **PW: 09:42 Take over for SC; Fix 2980 Beluga traveling SW and exiting the Level B zone. Fix 2994 heading towards the In-Bound Line. Last seen 10:35

603	2980	9/2/2020 9:54:02 AM	61.214132	-149.924946	2778.67664
603	2981	9/2/2020 9:56:05 AM	61.213236	-149.927443	2937.86494
603	2982	9/2/2020 9:58:31 AM	61.211292	-149.930696	3215.09379
603	2985	9/2/2020 10:04:19 AM	61.207851	-149.940818	3851.1769
603	2986	9/2/2020 10:08:35 AM	61.20635	-149.945804	4151.35391
603	2987	9/2/2020 10:19:04 AM	61.202851	-149.962757	5059.49043
603	2988	9/2/2020 10:23:14 AM	61.201742	-149.973649	5573.51979
603	2991	9/2/2020 10:30:05 AM	61.200993	-149.987582	6207.3538
603	2992	9/2/2020 10:32:34 AM	61.201086	-149.991551	6372.63281
603	2994	9/2/2020 10:34:31 AM	61.201415	-149.995799	6538.18481

Group ID	Created Date	Last Update	Species Common Name
604	9/2/2020 8:27:54 AM	9/2/2020 5:06:12 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW: 08:27 Fix 2972 One Harbor seal observed looking and sinking. Last seen: 11:29.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
604	2972	9/2/2020 8:28:17 AM	61.200325	-149.98977	6345.60652

Group ID	Created Date	Last Update	Species Common Name		
605	9/2/2020 8:30:14 AM	9/2/2020 2:27:05 PM	Harbor Seal		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
1	Linear	False	Moderate	Travelling	Looking

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: Seal seen traveling south past tug dock. Last seen: 08:30

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
605	2974	9/2/2020 8:30:21 AM	61.22489	-149.909477	1325.14206

Group ID	Created Date	Last Update	Species Common Name
606	9/2/2020 10:00:15 AM	9/2/2020 5:08:06 PM	Beluga
Spread	Formation	Combined Group	Pace
3	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0	0	

Comments

**PW: 09:59 Fix 2983 two Beluga traveling SW. Last seen 10:02.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
606	2983	9/2/2020 10:00:26 AM	61.235942	-149.970938	4080.99551
606	2984	9/2/2020 10:00:58 AM	61.235081	-149.973453	4212.76641

Group ID	Created Date	Last Update	Species Common Name
607	9/2/2020 10:24:10 AM	9/2/2020 5:10:37 PM	Beluga
Spread	Formation	Combined Group	Pace
10	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 2989 One white beluga traveling south along shore inside the boundary and Level B zone. 10:35 one more white beluga added to count. **PCT: 10:57 fix 2999 and 3002 trailing white traveling SW. **SC: Fix 3001 lead beluga entering Ship Creek. Last seen: 11:20

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
607	2989	9/2/2020 10:24:18 AM	61.252729	-149.881526	2148.86929
607	2990	9/2/2020 10:26:59 AM	61.250337	-149.883315	1866.41905
607	2993	9/2/2020 10:33:19 AM	61.250058	-149.883512	1833.67771
607	2995	9/2/2020 10:35:10 AM	61.246467	-149.886996	1396.51315
607	2996	9/2/2020 10:44:04 AM	61.246293	-149.887104	1376.33557
607	2997	9/2/2020 10:45:10 AM	61.240234	-149.892428	653.29506
607	2999	9/2/2020 10:58:56 AM	61.233738	-149.895907	103.22789
607	3001	9/2/2020 10:58:02 AM	61.228237	-149.902527	808.42866
607	3002	9/2/2020 11:00:43 AM	61.231874	-149.898216	343.55117
607	3003	9/2/2020 11:05:07 AM	61.2274	-149.903937	927.20958
607	3005	9/2/2020 11:15:38 AM	61.226017	-149.908876	1206.48249

Group ID	Created Date	Last Update	Species Common Name
608	9/2/2020 10:47:28 AM	9/2/2020 5:11:21 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW: 10:47 Harbor seal observed traveling to the NE. Last seen 10:47.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
608	2998	9/2/2020 10:47:36 AM	61.23934	-149.978027	4489.40736

Group ID	Created Date	Last Update	Species Common Name
609	9/2/2020 10:58:22 AM	9/2/2020 5:12:30 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0	0	

Comments

***PW: 10:58 Two Beluga traveling west. Last seen 11:18.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
609	3000	9/2/2020 10:59:06 AM	61.239119	-150.003699	5852.16145
609	3004	9/2/2020 11:10:40 AM	61.237218	-149.991903	5207.65424
609	3006	9/2/2020 11:19:11 AM	61.236431	-149.980958	4618.63066

Group ID	Created Date	Last Update	Species Common Name
610	9/2/2020 11:58:35 AM	9/2/2020 5:13:19 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0		

Comments

**PW: 11:58 One Beluga observed in the middle of the inlet traveling NW. Last seen 11:59

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
610	3007	9/2/2020 11:58:52 AM	61.229131	-149.961868	3641.4346

Group ID	Created Date	Last Update	Species Common Name
611	9/2/2020 12:08:33 PM	9/2/2020 5:13:59 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0		

Comments

**SC: 12:09 1 white beluga spotted near mouth of Ship Creek. Last seen 12:09

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
611	3008	9/2/2020 12:09:29 PM	61.228373	-149.904554	857.68164

Group ID	Created Date	Last Update	Species Common Name
612	9/2/2020 1:11:07 PM	9/2/2020 5:22:00 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	No Formation	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	1	0	0		0	0		

Comments

**PW 13:10 Fix 3010 One Beluga traveling west along outbound line. **13:22 Hand off to NEX. Fix 3012 Beluga is traveling toward outbound line. 13:56 Fix 3021 Beluga has crossed outbound line. Fix 3023 reversed back outside the outbound line. 14:15 Added one more white. Fix 3027 sighted just inside the Level B zone. 14:50 Sighted a calf swimming very close to one adult. Fix 3034 they are outside the Level B zone. 15:47 Added single beluga from MM Group 616. 16:29 Fix 3058 Lead beluga has changed direction, heading north. Sighting ended at the end of work shift.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
612	3010	9/2/2020 1:11:18 PM	61.262465	-149.898684	3119.74389
612	3011	9/2/2020 1:14:59 PM	61.267377	-149.883392	3707.64368
612	3012	9/2/2020 1:22:03 PM	61.263778	-149.891054	3264.0621
612	3013	9/2/2020 1:31:05 PM	61.262696	-149.893233	3139.02222
612	3015	9/2/2020 1:38:33 PM	61.264259	-149.895662	3312.16312
612	3018	9/2/2020 1:43:57 PM	61.261565	-149.893851	3012.71779
612	3020	9/2/2020 1:52:47 PM	61.263482	-149.895474	3225.68635
612	3021	9/2/2020 1:56:31 PM	61.259798	-149.895055	2816.11281
612	3023	9/2/2020 2:07:05 PM	61.261533	-149.895396	3009.0777
612	3026	9/2/2020 2:22:56 PM	61.258121	-149.892195	2633.04965
612	3027	9/2/2020 2:32:37 PM	61.257567	-149.890463	2578.01275
612	3034	9/2/2020 2:51:30 PM	61.259196	-149.895231	2749.30476
612	3037	9/2/2020 3:04:10 PM	61.260036	-149.894949	2842.52453
612	3038	9/2/2020 3:13:43 PM	61.260064	-149.895534	2845.96493

Group ID	Created Date	Last Update	Species Common Name
612	9/2/2020 1:11:07 PM	9/2/2020 5:22:00 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	No Formation	True	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	1	0	0		0	0		

Comments

**PW 13:10 Fix 3010 One Beluga traveling west along outbound line. **13:22 Hand off to NEX. Fix 3012 Beluga is traveling toward outbound line. 13:56 Fix 3021 Beluga has crossed outbound line. Fix 3023 reversed back outside the outbound line. 14:15 Added one more white. Fix 3027 sighted just inside the Level B zone. 14:50 Sighted a calf swimming very close to one adult. Fix 3034 they are outside the Level B zone. 15:47 Added single beluga from MM Group 616. 16:29 Fix 3058 Lead beluga has changed direction, heading north. Sighting ended at the end of work shift.

612	3051	9/2/2020 4:00:36 PM	61.266063	-149.904906	3554.46988
612	3058	9/2/2020 4:29:39 PM	61.272567	-149.915972	4385.11979
612	3063	9/2/2020 4:43:18 PM	61.269912	-149.910658	4031.37257
612	3069	9/2/2020 5:00:55 PM	61.26538	-149.912792	3570.04698

Group ID	Created Date	Last Update	Species Common Name
613	9/2/2020 1:36:14 PM	9/2/2020 5:18:23 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	1	1	0	0	0		0	0	

Comments

NEX: 13:36 Fix 3014 One white beluga approaching outbound line. Fix ID 3016 Beluga has changed directions, now moving NW. ***BAD Fix 3017 ***BAD Fix 3022*** Fix 3025 has traveled considerably south along the beach. **PW takes group from NEX at 14:30. At 14:39 additional Beluga sighted and added to group. Group changed from two whites to one white and one grey at 14:52. Fix 3048 Group travels SW beyond in-bound line. Last seen 15:50.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
613	3014	9/2/2020 1:36:23 PM	61.261481	-149.89744	3006.67511
613	3016	9/2/2020 1:40:32 PM	61.264277	-149.903569	3347.62475
613	3017	9/2/2020 1:42:34 PM	61.259739	-149.899496	2821.24906
613	3019	9/2/2020 1:50:48 PM	61.256585	-149.9162	2714.75822
613	3022	9/2/2020 1:58:27 PM	61.25641	-149.900341	2458.25609
613	3024	9/2/2020 2:08:23 PM	61.25811	-149.91854	2921.5342
613	3025	9/2/2020 2:17:54 PM	61.248762	-149.951715	3438.66019
613	3028	9/2/2020 2:32:03 PM	61.24729	-149.948465	3209.68576
613	3030	9/2/2020 2:37:11 PM	61.242197	-149.95391	3281.55919
613	3031	9/2/2020 2:42:06 PM	61.240354	-149.95759	3426.92466
613	3032	9/2/2020 2:46:58 PM	61.239055	-149.962379	3655.70222
613	3033	9/2/2020 2:51:17 PM	61.238354	-149.966781	3879.47908
613	3036	9/2/2020 3:01:55 PM	61.234879	-149.977699	4439.50465
613	3039	9/2/2020 3:15:28 PM	61.235121	-149.99714	5479.312

Group ID	Created Date	Last Update	Species Common Name
613	9/2/2020 1:36:14 PM	9/2/2020 5:18:23 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	0	0	0		0	0		

Comments

NEX: 13:36 Fix 3014 One white beluga approaching outbound line. Fix ID 3016 Beluga has changed directions, now moving NW. ***BAD Fix 3017 ***BAD Fix 3022*** Fix 3025 has traveled considerably south along the beach. **PW takes group from NEX at 14:30. At 14:39 additional Beluga sighted and added to group. Group changed from two whites to one white and one grey at 14:52. Fix 3048 Group travels SW beyond in-bound line. Last seen 15:50.

613	3040	9/2/2020 3:20:13 PM	61.233247	-150.000902	5681.73658
613	3041	9/2/2020 3:25:56 PM	61.237512	-150.010612	6208.26647
613	3043	9/2/2020 3:31:26 PM	61.235411	-150.015685	6471.31677
613	3044	9/2/2020 3:38:33 PM	61.23359	-150.024559	6945.83308
613	3046	9/2/2020 3:46:23 PM	61.243974	-150.039388	7808.82561
613	3048	9/2/2020 3:49:37 PM	61.243703	-150.041547	7919.27979

Group ID	Created Date	Last Update	Species Common Name
614	9/2/2020 2:37:11 PM	9/2/2020 3:27:05 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: 14:37 Seal looking and sinking in front of station. Last seen: 15:26

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
614	3029	9/2/2020 2:37:26 PM	61.225138	-149.908954	1286.34633

Group ID	Created Date	Last Update	Species Common Name
615	9/2/2020 2:51:26 PM	9/2/2020 4:33:11 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Feeding Observed		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PCT: Last Seen: 16:32

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
615	3035	9/2/2020 2:51:43 PM	61.231956	-149.903542	549.25033
615	3054	9/2/2020 4:16:30 PM	61.231528	-149.900281	442.16281
615	3060	9/2/2020 4:32:57 PM	61.231292	-149.899795	445.38613

Group ID	Created Date	Last Update	Species Common Name
616	9/2/2020 3:29:42 PM	9/2/2020 5:19:22 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

NEX** 15:29 Fix ID 3042 One white beluga traveling south approaching outbound line. 15:47 Fix ID 3047 Beluga has joined Group 612. ****Fixes 3049, 3052 should be in MMG 617.****

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
616	3042	9/2/2020 3:29:56 PM	61.27091	-149.89814	4055.02272
616	3047	9/2/2020 3:47:44 PM	61.262509	-149.891514	3121.8815
616	3049	9/2/2020 3:57:02 PM	61.215997	-149.974016	4713.29316
616	3052	9/2/2020 4:03:32 PM	61.219017	-149.962553	4015.20569

Group ID	Created Date	Last Update	Species Common Name
617	9/2/2020 3:41:01 PM	9/2/2020 5:33:58 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Parallel	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	
Beluga Counts	White	Gray	Calf
3	0	1	0
Neonate	Unknown	Other MM Counts	Other Adult
0	0	0	0
		Other Calf	Total Other
		0	

Comments

PW: 15:39 Fix 3045 Four Beluga (including one calf) traveling NE. Fix3055; Group crossing into level B zone. PW hand off to SC at 16:25. **Fixes 3049, 3052 were taken in MMG 616 but belong in this group***. **SC: 16:26 Took over whales from PW. Two belugas quickly traveling North. 16:47 Belugas spotted North of worksite. 16:53 Belugas milling immediately south of NEX. Last seen 17:20 Sighted ended at end of work shift.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
617	3045	9/2/2020 3:41:19 PM	61.211815	-150.004901	6410.32313
617	3053	9/2/2020 4:11:23 PM	61.224841	-149.947765	3033.40334
617	3055	9/2/2020 4:23:59 PM	61.228202	-149.922645	1649.04835
617	3056	9/2/2020 4:27:15 PM	61.228011	-149.914555	1281.58771
617	3057	9/2/2020 4:27:48 PM	61.228622	-149.915499	1288.28292
617	3061	9/2/2020 4:35:56 PM	61.235435	-149.902605	437.46204
617	3065	9/2/2020 4:47:59 PM	61.24334	-149.888361	1043.4604
617	3066	9/2/2020 4:53:00 PM	61.251764	-149.882817	2025.18427
617	3067	9/2/2020 4:53:42 PM	61.249942	-149.883838	1815.85697
617	3068	9/2/2020 4:57:23 PM	61.251077	-149.883437	1942.32169
617	3070	9/2/2020 5:03:30 PM	61.250348	-149.883769	1859.81948
617	3071	9/2/2020 5:08:59 PM	61.251137	-149.883684	1944.62979

Group ID	Created Date	Last Update	Species Common Name
618	9/2/2020 3:57:14 PM	9/2/2020 3:58:41 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

NEX: 15:57 Fix ID 3050 One harbor seal looking and sinking. Last time seen: 1557

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
618	3050	9/2/2020 3:57:22 PM	61.262301	-149.90885	3185.50823

Group ID	Created Date	Last Update	Species Common Name
619	9/2/2020 4:37:31 PM	9/2/2020 5:33:21 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: One harbor seal spotted looking and sinking at mouth of SC. Last seen 16:38.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
619	3062	9/2/2020 4:38:15 PM	61.227077	-149.903773	953.24823

Group ID	Created Date	Last Update	Species Common Name
622	9/3/2020 8:12:04 AM	9/3/2020 5:21:45 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Echelon	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	4	0	0	0		0	0		

Comments

*PW: Fix 3076 Initial sighting of 4 grey belugas in front of PW station. Fix 3077 Whales last seen traveling SW along near shore heading towards In-bound Line. Lost sight of group behind trees. Last seen: 08:15. **Fix 3080 belongs to group 623.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
622	3076	9/3/2020 8:12:23 AM	61.203205	-149.988478	6102.52399
622	3077	9/3/2020 8:14:20 AM	61.201462	-149.995491	6521.61544
622	3080	9/3/2020 9:26:37 AM	61.238921	-149.995753	5427.04985

Group ID	Created Date	Last Update	Species Common Name
623	9/3/2020 8:53:11 AM	9/3/2020 5:22:13 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

*PW: Three white belugas traveling SW along far shore just outside Level B Zone. Last seen 08:58. ** Fix 3080 under group 622 belongs in this group.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
623	3078	9/3/2020 8:56:47 AM	61.257318	-149.937428	3416.90162
623	3079	9/3/2020 8:58:37 AM	61.251926	-149.949627	3520.89355
623	3081	9/3/2020 9:36:34 AM	61.236319	-150.013808	6373.34935
623	3082	9/3/2020 9:45:29 AM	61.241898	-150.034601	7526.74136

Group ID	Created Date	Last Update	Species Common Name
624	9/3/2020 9:50:01 AM	9/3/2020 1:44:38 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

***PW: Fix 3083 Harbor seal looking and sinking. Last seen 11:11.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
624	3083	9/3/2020 9:50:34 AM	61.200718	-149.98926	6297.63179
624	3085	9/3/2020 10:24:55 AM	61.20057	-149.988325	6267.38321
624	3088	9/3/2020 11:12:48 AM	61.201138	-149.975812	5705.10167

Group ID	Created Date	Last Update	Species Common Name
625	9/3/2020 10:15:55 AM	9/3/2020 5:23:58 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0	0	

Comments

NEX: 10:16 Two white belugas, inside Level B Zone, traveling south along shore. **SC: 10:45 One white beluga spotted South of the tug boat dock, traveling South. **PW: Took over from ship creek at 10:58. One white beluga passing PW station on near shore heading towards In-bound line. Lost visual behind trees. Last seen 11:27.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
625	3084	9/3/2020 10:16:11 AM	61.254163	-149.883265	2273.32712
625	3086	9/3/2020 10:45:19 AM	61.223349	-149.914002	1609.64946
625	3087	9/3/2020 10:58:27 AM	61.205377	-149.973608	5316.96019
625	3089	9/3/2020 11:19:59 AM	61.201296	-149.979747	5855.80118
625	3090	9/3/2020 11:26:26 AM	61.201135	-149.992254	6400.10464

Group ID	Created Date	Last Update	Species Common Name
626	9/3/2020 1:23:38 PM	9/3/2020 5:28:47 PM	Beluga
Spread	Formation	Combined Group	Pace
6	No Formation	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

NEX: 13:23 Fix 3091 Three belugas sighted north of outbound line, traveling south. 13:59 Fix 3097 MM Group 626 is now inside outbound line/ Level B zone. 14:08 Fix 3098 MM Group 626 is now milling in same area. 14:21 Fix 3100 MM Group 626 is traveling south along near shore. Last seen: 14:40 ***SC***14:49 Whales spotted traveling South behind the barge. 15:29 Three white belugas milling near mouth of ship creek. 16:27 Whales traveling south. 14:34 Whales turned back to north in front of station and began milling. End of watch at 17:30. Belugas continue to mill in mouth of Ship Creek. Last seen 17:30

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
626	3091	9/3/2020 1:26:55 PM	61.284438	-149.881965	5595.44374
626	3092	9/3/2020 1:32:35 PM	61.264029	-149.879937	3379.36179
626	3093	9/3/2020 1:41:41 PM	61.261855	-149.880625	3135.9457
626	3094	9/3/2020 1:46:28 PM	61.260947	-149.880803	3035.74716
626	3095	9/3/2020 1:50:05 PM	61.2593	-149.880503	2862.83872
626	3096	9/3/2020 1:55:27 PM	61.258137	-149.881092	2729.88845
626	3097	9/3/2020 1:59:17 PM	61.256811	-149.88211	2573.41366
626	3098	9/3/2020 2:08:27 PM	61.25712	-149.881358	2617.22441
626	3099	9/3/2020 2:15:33 PM	61.256785	-149.882252	2568.65114
626	3100	9/3/2020 2:21:13 PM	61.254238	-149.881883	2302.21964
626	3101	9/3/2020 2:24:14 PM	61.253333	-149.882253	2200.35167
626	3102	9/3/2020 2:26:09 PM	61.251656	-149.882535	2018.5897
626	3103	9/3/2020 2:28:29 PM	61.250429	-149.883199	1878.10551
626	3104	9/3/2020 2:33:52 PM	61.249048	-149.884651	1707.86725

Group ID	Created Date	Last Update	Species Common Name
626	9/3/2020 1:23:38 PM	9/3/2020 5:28:47 PM	Beluga
Spread	Formation	Combined Group	Pace
6	No Formation	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

NEX: 13:23 Fix 3091 Three belugas sighted north of outbound line, traveling south. 13:59 Fix 3097 MM Group 626 is now inside outbound line/ Level B zone. 14:08 Fix 3098 MM Group 626 is now milling in same area. 14:21 Fix 3100 MM Group 626 is traveling south along near shore. Last seen: 14:40 ***SC***14:49 Whales spotted traveling South behind the barge. 15:29 Three white belugas milling near mouth of ship creek. 16:27 Whales traveling south. 14:34 Whales turned back to north in front of station and began milling. End of watch at 17:30. Belugas continue to mill in mouth of Ship Creek. Last seen 17:30

626	3105	9/3/2020 2:38:23 PM	61.246786	-149.886429	1439.42913
626	3108	9/3/2020 2:49:22 PM	61.243162	-149.88802	1030.92304
626	3110	9/3/2020 3:01:27 PM	61.2389	-149.890785	535.99946
626	3113	9/3/2020 3:07:01 PM	61.235307	-149.893742	107.10649
626	3115	9/3/2020 3:10:12 PM	61.232896	-149.897018	213.66095
626	3116	9/3/2020 3:15:58 PM	61.230831	-149.902703	588.42997
626	3117	9/3/2020 3:17:32 PM	61.230181	-149.903825	681.7135
626	3118	9/3/2020 3:20:38 PM	61.229507	-149.904355	754.997
626	3119	9/3/2020 3:24:09 PM	61.228274	-149.906197	922.55953
626	3120	9/3/2020 3:25:51 PM	61.226732	-149.907368	1094.05359
626	3122	9/3/2020 3:29:23 PM	61.227688	-149.906888	995.84334
626	3124	9/3/2020 3:31:29 PM	61.225709	-149.908646	1225.73963
626	3125	9/3/2020 3:39:12 PM	61.226986	-149.907539	1077.86463
626	3126	9/3/2020 3:49:04 PM	61.227261	-149.907597	1056.53648
626	3131	9/3/2020 4:00:18 PM	61.227094	-149.908266	1094.07255

Group ID	Created Date	Last Update	Species Common Name
626	9/3/2020 1:23:38 PM	9/3/2020 5:28:47 PM	Beluga
Spread	Formation	Combined Group	Pace
6	No Formation	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

NEX: 13:23 Fix 3091 Three belugas sighted north of outbound line, traveling south. 13:59 Fix 3097 MM Group 626 is now inside outbound line/ Level B zone. 14:08 Fix 3098 MM Group 626 is now milling in same area. 14:21 Fix 3100 MM Group 626 is traveling south along near shore. Last seen: 14:40 ***SC***14:49 Whales spotted traveling South behind the barge. 15:29 Three white belugas milling near mouth of ship creek. 16:27 Whales traveling south. 14:34 Whales turned back to north in front of station and began milling. End of watch at 17:30. Belugas continue to mill in mouth of Ship Creek. Last seen 17:30

626	3135	9/3/2020 4:08:52 PM	61.225157	-149.909216	1293.0226
626	3137	9/3/2020 4:17:59 PM	61.227548	-149.908128	1051.82062
626	3140	9/3/2020 4:27:26 PM	61.223489	-149.914066	1599.96717
626	3142	9/3/2020 4:34:15 PM	61.226423	-149.907805	1135.48909
626	3144	9/3/2020 4:46:01 PM	61.227223	-149.904406	957.2915
626	3150	9/3/2020 5:11:30 PM	61.227073	-149.903651	950.32044
626	3152	9/3/2020 5:20:27 PM	61.226919	-149.904087	976.93116

Group ID	Created Date	Last Update	Species Common Name
627	9/3/2020 2:38:17 PM	9/3/2020 5:24:20 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: Harbor seal looking and sinking. Last seen 14:39

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
627	3106	9/3/2020 2:39:09 PM	61.204019	-149.968488	5199.09089

Group ID	Created Date	Last Update	Species Common Name
628	9/3/2020 2:39:45 PM	9/3/2020 5:28:15 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Looking		Sink	
Beluga Counts	White	Gray	Calf
0	0	0	0
Neonate	Unknown	Other MM Counts	Other Adult
0		1	0
		Other Calf	Total Other

Comments

**SC: 14:39 Seal seen looking and sinking in front of boat launch. 17:27 End of watch, seal continues to be in mouth of Ship Creek. Last Seen: 17:30

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
628	3107	9/3/2020 2:39:55 PM	61.226523	-149.907691	1122.98681
628	3112	9/3/2020 3:04:55 PM	61.226444	-149.906974	1106.6907
628	3130	9/3/2020 3:59:27 PM	61.227231	-149.905305	983.51413
628	3146	9/3/2020 4:50:06 PM	61.227143	-149.904291	961.46571
628	3153	9/3/2020 5:27:05 PM	61.226957	-149.903932	969.0555

Group ID	Created Date	Last Update	Species Common Name
629	9/3/2020 2:51:39 PM	9/3/2020 5:31:27 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	1	0	0		0	0		

Comments

NEX: 14:51 Two white belugas traveled around Cairn Pt moving south. **DISREGARD F3121 ** 15:30 Fix 3123 One calf added to Group 629. 15:51 Fix 3128 Group 629 is milling immediately north of outbound line. 16:50 Fix 3147 Group 629 has passed the outbound line and moved towards Port MacKenzie. Combined with MMG 630 at 17:00.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
629	3109	9/3/2020 2:51:47 PM	61.268061	-149.880178	3813.82632
629	3114	9/3/2020 3:06:49 PM	61.267922	-149.884372	3759.37619
629	3123	9/3/2020 3:30:22 PM	61.267184	-149.886807	3661.04322
629	3127	9/3/2020 3:49:48 PM	61.261235	-149.885958	3012.02932
629	3128	9/3/2020 3:51:32 PM	61.262497	-149.888789	3131.83023
629	3129	9/3/2020 3:55:35 PM	61.261255	-149.887275	3004.14078
629	3133	9/3/2020 4:02:05 PM	61.259766	-149.887334	2839.77309
629	3136	9/3/2020 4:13:51 PM	61.260276	-149.888206	2889.95797
629	3147	9/3/2020 4:50:11 PM	61.262726	-149.906863	3208.1698

Group ID	Created Date	Last Update	Species Common Name
630	9/3/2020 3:59:46 PM	9/3/2020 5:32:13 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	4	0	0	0		0	0		

Comments

PW: Fix 3132 One white and one grey beluga seen rounding Point Mac heading NE. Fix 3141 belugas enter the Level B zone(3000m). **16:45 Hand off to NEX. 16:46 Fix 3145 MM Group 630 traveling north, approaching outbound line. Fix 3148 group crossed outbound line. Combined MMG 629 with this group at 1700. Last seen 17:15

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
630	3132	9/3/2020 4:00:14 PM	61.232687	-149.98794	4990.9226
630	3134	9/3/2020 4:07:33 PM	61.237089	-149.975462	4329.38353
630	3138	9/3/2020 4:19:35 PM	61.244832	-149.956218	3486.26078
630	3139	9/3/2020 4:26:53 PM	61.248014	-149.945413	3102.59793
630	3141	9/3/2020 4:32:19 PM	61.251969	-149.935593	2927.56999
630	3143	9/3/2020 4:40:46 PM	61.260319	-149.923329	3256.42782
630	3145	9/3/2020 4:46:10 PM	61.263243	-149.914614	3371.60398
630	3148	9/3/2020 4:55:59 PM	61.269031	-149.907818	3905.63605
630	3149	9/3/2020 5:01:25 PM	61.284556	-149.914129	5663.29776
630	3151	9/3/2020 5:15:32 PM	61.2999	-149.908298	7308.46329

Group ID	Created Date	Last Update	Species Common Name
632	9/4/2020 7:30:16 AM	9/4/2020 4:43:00 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Milling		Travelling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

NEX: 07:30 Fix 3156 Belugas sighted near Port Mackenzie, milling. 08:43 Fix 3169 Group 632 has crossed the outbound line, now traveling south. 09:31 Fix 3182 Group 632 has entered Level B zone moving East towards the construction site. **SC: 10:11 Took over from PCT. Whales spotted in mouth of Ship Creek. 10:17 One white and 1 calf past tug boat dock heading South. Fix 3197 The belugas are approaching the 2635 meter zone. Fix 3198 The whales passed the level B zone and are still heading South. 10:42 Passed whales to PW. **PW: 10:41 Fix 3200 Took over from SC. *Fix 3205 Bad Fix* Fix 3209 Whales (1 white and 1 grey) passing PW station heading SW towards Inbound Line. Lost visual behind trees. Last seen 11:19

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
632	3156	9/4/2020 7:30:26 AM	61.26457	-149.915402	3524.81274
632	3158	9/4/2020 7:38:21 AM	61.267	-149.918633	3836.21829
632	3160	9/4/2020 7:49:09 AM	61.265535	-149.913266	3593.54787
632	3163	9/4/2020 8:01:47 AM	61.265001	-149.911326	3508.8503
632	3168	9/4/2020 8:12:49 AM	61.266437	-149.915299	3720.69425
632	3169	9/4/2020 8:43:15 AM	61.266287	-149.915303	3704.84171
632	3173	9/4/2020 8:47:08 AM	61.263683	-149.914785	3420.88409
632	3175	9/4/2020 8:53:17 AM	61.263074	-149.915213	3364.10067
632	3177	9/4/2020 9:00:49 AM	61.263188	-149.918801	3443.19513
632	3178	9/4/2020 9:08:22 AM	61.261607	-149.917491	3254.08872
632	3180	9/4/2020 9:20:37 AM	61.2579	-149.916418	2852.50562
632	3182	9/4/2020 9:31:08 AM	61.255711	-149.905254	2428.57396
632	3183	9/4/2020 9:38:27 AM	61.252301	-149.885802	2038.99566
632	3189	9/4/2020 10:06:21 AM	61.232446	-149.897566	271.41577

Group ID	Created Date		Last Update		Species Common Name				
632	9/4/2020 7:30:16 AM		9/4/2020 4:43:00 PM		Beluga				
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior				
1	Linear	False	Moderate	Milling	Travelling				
Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0	0	0	0	0	

Comments

NEX: 07:30 Fix 3156 Belugas sighted near Port Mackenzie, milling. 08:43 Fix 3169 Group 632 has crossed the outbound line, now traveling south. 09:31 Fix 3182 Group 632 has entered Level B zone moving East towards the construction site. **SC: 10:11 Took over from PCT. Whales spotted in mouth of Ship Creek. 10:17 One white and 1 calf past tug boat dock heading South. Fix 3197 The belugas are approaching the 2635 meter zone. Fix 3198 The whales passed the level B zone and are still heading South. 10:42 Passed whales to PW. **PW: 10:41 Fix 3200 Took over from SC. *Fix 3205 Bad Fix* Fix 3209 Whales (1 white and 1 grey) passing PW station heading SW towards Inbound Line. Lost visual behind trees. Last seen 11:19

632	3190	9/4/2020 10:11:47 AM	61.227205	-149.904009	947.62472
632	3191	9/4/2020 10:14:50 AM	61.224456	-149.909528	1365.71683
632	3192	9/4/2020 10:17:01 AM	61.222698	-149.911079	1573.5722
632	3194	9/4/2020 10:20:17 AM	61.22027	-149.914166	1889.67073
632	3195	9/4/2020 10:23:54 AM	61.21737	-149.918639	2290.56163
632	3197	9/4/2020 10:27:06 AM	61.215292	-149.922488	2597.48956
632	3198	9/4/2020 10:30:17 AM	61.212911	-149.927454	2967.28115
632	3199	9/4/2020 10:38:58 AM	61.209992	-149.937243	3545.93554
632	3200	9/4/2020 10:42:30 AM	61.205779	-149.948201	4283.9358
632	3201	9/4/2020 10:46:42 AM	61.204082	-149.956617	4729.80235
632	3203	9/4/2020 10:57:15 AM	61.201178	-149.978597	5816.44419
632	3204	9/4/2020 11:00:45 AM	61.201221	-149.982851	5990.92348
632	3206	9/4/2020 11:08:53 AM	61.200955	-149.986647	6169.9195
632	3207	9/4/2020 11:13:46 AM	61.201132	-149.985692	6117.31357
632	3208	9/4/2020 11:17:14 AM	61.200902	-149.991818	6396.16531

Group ID	Created Date	Last Update	Species Common Name
632	9/4/2020 7:30:16 AM	9/4/2020 4:43:00 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Milling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

NEX: 07:30 Fix 3156 Belugas sighted near Port Mackenzie, milling. 08:43 Fix 3169 Group 632 has crossed the outbound line, now traveling south. 09:31 Fix 3182 Group 632 has entered Level B zone moving East towards the construction site. **SC: 10:11 Took over from PCT. Whales spotted in mouth of Ship Creek. 10:17 One white and 1 calf past tug boat dock heading South. Fix 3197 The belugas are approaching the 2635 meter zone. Fix 3198 The whales passed the level B zone and are still heading South. 10:42 Passed whales to PW. **PW: 10:41 Fix 3200 Took over from SC. *Fix 3205 Bad Fix* Fix 3209 Whales (1 white and 1 grey) passing PW station heading SW towards Inbound Line. Lost visual behind trees. Last seen 11:19

632	3209	9/4/2020 11:18:59 AM	61.201396	-149.99541	6522.16452
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Group ID	Created Date	Last Update	Species Common Name
633	9/4/2020 7:31:20 AM	9/4/2020 8:00:25 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

NEX: 07:31 one harbor seal looking and sinking. Last seen: 07:31

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
633	3157	9/4/2020 7:31:28 AM	61.255106	-149.883891	2366.0515

Group ID	Created Date	Last Update	Species Common Name
634	9/4/2020 7:42:37 AM	9/4/2020 5:05:52 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

** SC: 07:42 Harbor seal spotted looking and sinking near tug boat dock. Last seen: 10:47.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
634	3159	9/4/2020 7:42:53 AM	61.22347	-149.909079	1443.3065
634	3165	9/4/2020 8:06:11 AM	61.22216	-149.910254	1600.14992
634	3171	9/4/2020 8:38:49 AM	61.219879	-149.913885	1917.97561
634	3176	9/4/2020 8:59:18 AM	61.21833	-149.915513	2110.06625
634	3184	9/4/2020 9:39:53 AM	61.216528	-149.91888	2375.69888
634	3196	9/4/2020 10:26:12 AM	61.220533	-149.912188	1808.38303
634	3202	9/4/2020 10:47:33 AM	61.220261	-149.912879	1853.44827

Group ID	Created Date	Last Update	Species Common Name
635	9/4/2020 7:53:40 AM	9/4/2020 11:03:51 AM	Beluga
Spread	Formation	Combined Group	Pace
3	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	0	0	0	0	0	0	0	

Comments

NEX: 07:53 Fix 3161 Single beluga heading south. Added one gray to sighting at 08:00. Moving south along far shore. Last seen: 08:12

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
635	3161	9/4/2020 7:55:34 AM	61.257747	-149.913462	2776.01846
635	3162	9/4/2020 7:58:50 AM	61.257414	-149.91369	2746.04083
635	3164	9/4/2020 8:04:43 AM	61.25625	-149.917048	2700.84772
635	3167	9/4/2020 8:10:27 AM	61.256031	-149.918735	2720.49367

Group ID	Created Date	Last Update	Species Common Name
636	9/4/2020 8:08:23 AM	9/4/2020 2:40:09 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: One Harbor seal just east of PW station. Last seen: 08:58

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
636	3166	9/4/2020 8:09:52 AM	61.200517	-149.974389	5692.90007
636	3170	9/4/2020 8:30:43 AM	61.200374	-149.982788	6046.81716
636	3174	9/4/2020 8:51:32 AM	61.200129	-149.989473	6345.95349

Group ID	Created Date	Last Update	Species Common Name
637	9/4/2020 8:41:32 AM	9/4/2020 5:23:34 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Looking

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

NEX: 08:41 One harbor seal. Last seen at 08:42.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
637	3172	9/4/2020 8:41:46 AM	61.256213	-149.886092	2460.88795

Group ID	Created Date	Last Update	Species Common Name
638	9/4/2020 9:22:52 AM	9/4/2020 2:39:35 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	False	Moderate
			Primary Behavior
			Milling
			Secondary Behavior
			Unknown

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	0	0	0		0	0		

Comments

PW: Observed two belugas at 09:08. Delayed making entry to verify the animal was not one that NEX was tracking to the north. **NEX: is taking over Group 638 at 10:23. Last seen at 10:23

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
638	3181	9/4/2020 9:23:01 AM	61.252487	-149.943477	3289.24608
638	3188	9/4/2020 9:58:28 AM	61.253771	-149.937261	3128.54963
638	3193	9/4/2020 10:19:01 AM	61.255287	-149.931303	3031.60757

Group ID	Created Date	Last Update	Species Common Name		
639	9/4/2020 9:41:14 AM	9/4/2020 12:08:02 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	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

NEX: 09:41 Fix 3185 One harbor seal traveling north of outbound line. Last seen: 09:49

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
639	3185	9/4/2020 9:41:57 AM	61.258317	-149.884293	2708.99495
639	3187	9/4/2020 9:49:29 AM	61.259815	-149.885988	2855.9858

Group ID	Created Date	Last Update	Species Common Name
640	9/4/2020 1:07:34 PM	9/4/2020 5:05:07 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: 13:07 One harbor seal spotted looking and sinking South of tug dock. Last seen: 14:02.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
640	3210	9/4/2020 1:07:51 PM	61.222981	-149.910561	1532.02902
640	3226	9/4/2020 2:02:10 PM	61.21913	-149.917021	2080.36476

Group ID	Created Date	Last Update	Species Common Name
641	9/4/2020 1:12:30 PM	9/4/2020 3:02:30 PM	Beluga
Spread	Formation	Combined Group	Pace
5	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

***PW: Initial sighting of three white belugas N of Cairn Point at 13:16. Fix 3218 belugas traveling S. Fix 3224 belugas traveling N. Last seen 14:55. **Disregard Fix 3211 and 3212**

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
641	3218	9/4/2020 1:38:25 PM	61.275425	-149.85836	4949.01532
641	3224	9/4/2020 1:57:43 PM	61.284145	-149.856985	5877.3827
641	3245	9/4/2020 2:54:06 PM	61.283441	-149.860269	5745.42319

Group ID	Created Date	Last Update	Species Common Name
642	9/4/2020 1:24:00 PM	9/4/2020 5:27:50 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

PCT: 13:23 three whales surfaced within the level B zone traveling NNE; 13:31 hand-off to NEX; ** NEX: Fix 3217 13:38, Fix 3223 crossed Level B zone going north. Fix 3230 crossed outbound line going north. *DISREGARD fix 3240***Fix 3244 crossed Level B zone going south. 15:19 Fix 3249 Jet skis/barge within 400 m of aforementioned fix. 15:27 Fix 3251 Group 642 is milling. **PW: Took over from SC at 15:56. Fix 3258 and 3259 group inside Level B zone. Handed off to PCT at 16:13; **PCT: 16:13 take over from PW; group traveling SW along nearshore; Hand-off to SC at 16:19; **SC** 16:19 Took over sighting from PCT. Whales approaching mouth of Ship Creek. 16:25 Belugas milling at mouth of Ship Creek. 16:41 PCT took over whales as they turned and started traveling north. **PCT: 16:41 take over from SC; group traveling NE along nearshore; **NEX: 5:00 take over from PCT. Fix 3274 shows whales north of the boundary line and level B zone. Last seen 17:25

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
642	3213	9/4/2020 1:24:37 PM	61.245017	-149.90089	1219.62136
642	3214	9/4/2020 1:26:23 PM	61.249203	-149.903483	1704.94707
642	3216	9/4/2020 1:30:17 PM	61.250227	-149.902579	1802.65629
642	3217	9/4/2020 1:37:43 PM	61.249546	-149.924541	2315.18525
642	3219	9/4/2020 1:42:56 PM	61.250881	-149.895032	1825.28123
642	3220	9/4/2020 1:48:32 PM	61.254303	-149.898062	2212.83011
642	3222	9/4/2020 1:54:26 PM	61.257906	-149.896358	2607.34396
642	3223	9/4/2020 1:55:35 PM	61.260106	-149.896197	2851.41824
642	3225	9/4/2020 1:57:55 PM	61.259696	-149.897278	2808.14033
642	3227	9/4/2020 2:04:28 PM	61.259327	-149.897779	2768.66046
642	3228	9/4/2020 2:06:00 PM	61.260007	-149.896397	2840.74687
642	3230	9/4/2020 2:15:13 PM	61.262919	-149.889918	3173.07751
642	3232	9/4/2020 2:22:52 PM	61.262702	-149.892371	3141.16236
642	3237	9/4/2020 2:31:51 PM	61.26046	-149.897262	2892.89429

Group ID	Created Date	Last Update	Species Common Name
642	9/4/2020 1:24:00 PM	9/4/2020 5:27:50 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0		

Comments

PCT: 13:23 three whales surfaced within the level B zone traveling NNE; 13:31 hand-off to NEX; ** NEX: Fix 3217 13:38, Fix 3223 crossed Level B zone going north. Fix 3230 crossed outbound line going north. *DISREGARD fix 3240***Fix 3244 crossed Level B zone going south. 15:19 Fix 3249 Jet skis/barge within 400 m of aforementioned fix. 15:27 Fix 3251 Group 642 is milling. **PW: Took over from SC at 15:56. Fix 3258 and 3259 group inside Level B zone. Handed off to PCT at 16:13; **PCT: 16:13 take over from PW; group traveling SW along nearshore; Hand-off to SC at 16:19; **SC** 16:19 Took over sighting from PCT. Whales approaching mouth of Ship Creek. 16:25 Belugas milling at mouth of Ship Creek. 16:41 PCT took over whales as they turned and started traveling north. **PCT: 16:41 take over from SC; group traveling NE along nearshore; **NEX: 5:00 take over from PCT. Fix 3274 shows whales north of the boundary line and level B zone. Last seen 17:25

642	3238	9/4/2020 2:37:02 PM	61.261664	-149.892838	3024.99662
642	3240	9/4/2020 2:43:46 PM	61.258829	-149.89149	2713.7331
642	3243	9/4/2020 2:51:39 PM	61.258056	-149.897346	2626.33657
642	3244	9/4/2020 2:52:46 PM	61.257621	-149.895641	2574.64492
642	3247	9/4/2020 3:01:43 PM	61.255145	-149.892191	2302.85121
642	3249	9/4/2020 3:19:26 PM	61.246088	-149.896561	1296.48796
642	3251	9/4/2020 3:27:59 PM	61.248231	-149.885468	1608.0135
642	3253	9/4/2020 3:34:09 PM	61.247397	-149.886192	1507.96337
642	3255	9/4/2020 3:40:42 PM	61.247788	-149.885813	1555.50681
642	3257	9/4/2020 3:46:41 PM	61.242097	-149.888899	903.6381
642	3258	9/4/2020 3:58:07 PM	61.242795	-149.886913	1015.49135
642	3259	9/4/2020 4:02:36 PM	61.238489	-149.892016	470.29726
642	3260	9/4/2020 4:12:30 PM	61.233173	-149.896627	176.46811
642	3261	9/4/2020 4:15:33 PM	61.23235	-149.900269	379.51923
642	3262	9/4/2020 4:19:25 PM	61.230877	-149.902113	562.21322

Group ID	Created Date	Last Update	Species Common Name
642	9/4/2020 1:24:00 PM	9/4/2020 5:27:50 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0		

Comments

PCT: 13:23 three whales surfaced within the level B zone traveling NNE; 13:31 hand-off to NEX; ** NEX: Fix 3217 13:38, Fix 3223 crossed Level B zone going north. Fix 3230 crossed outbound line going north. *DISREGARD fix 3240***Fix 3244 crossed Level B zone going south. 15:19 Fix 3249 Jet skis/barge within 400 m of aforementioned fix. 15:27 Fix 3251 Group 642 is milling. **PW: Took over from SC at 15:56. Fix 3258 and 3259 group inside Level B zone. Handed off to PCT at 16:13; **PCT: 16:13 take over from PW; group traveling SW along nearshore; Hand-off to SC at 16:19; **SC** 16:19 Took over sighting from PCT. Whales approaching mouth of Ship Creek. 16:25 Belugas milling at mouth of Ship Creek. 16:41 PCT took over whales as they turned and started traveling north. **PCT: 16:41 take over from SC; group traveling NE along nearshore; **NEX: 5:00 take over from PCT. Fix 3274 shows whales north of the boundary line and level B zone. Last seen 17:25

642	3263	9/4/2020 4:20:49 PM	61.229912	-149.903751	700.12209
642	3264	9/4/2020 4:25:03 PM	61.228363	-149.906363	921.21639
642	3265	9/4/2020 4:31:54 PM	61.226481	-149.908774	1163.31509
642	3266	9/4/2020 4:37:24 PM	61.229225	-149.90557	822.75081
642	3267	9/4/2020 4:41:13 PM	61.232582	-149.900867	390.85599
642	3268	9/4/2020 4:48:37 PM	61.235192	-149.89668	134.60643
642	3269	9/4/2020 5:03:09 PM	61.248179	-149.887463	1573.00907
642	3270	9/4/2020 5:04:13 PM	61.250924	-149.885731	1891.48217
642	3271	9/4/2020 5:08:17 PM	61.251399	-149.883375	1977.3864
642	3274	9/4/2020 5:24:51 PM	61.262449	-149.887845	3132.0085

Group ID	Created Date	Last Update	Species Common Name
643	9/4/2020 2:11:01 PM	9/4/2020 5:28:09 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
5	0	0	0	0	0	0	0	0	

Comments

NEX: Fix 3229 Belugas sighted on far shore moving towards Port Mackenzie. Fix 3231 crossed outbound line going south. Fix 3239 crossed outbound line going north. 14:56 Added two whites to group. Last seen: 15:09

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
643	3229	9/4/2020 2:11:08 PM	61.27636	-149.919233	4837.71903
643	3231	9/4/2020 2:18:53 PM	61.26374	-149.910383	3360.55798
643	3234	9/4/2020 2:25:58 PM	61.265551	-149.913977	3605.94053
643	3235	9/4/2020 2:28:41 PM	61.264239	-149.91575	3495.86278
643	3236	9/4/2020 2:30:42 PM	61.263852	-149.919573	3527.07212
643	3239	9/4/2020 2:38:52 PM	61.265214	-149.912474	3547.70252
643	3241	9/4/2020 2:44:51 PM	61.269322	-149.912096	3984.57277
643	3242	9/4/2020 2:50:05 PM	61.272443	-149.907912	4279.96484
643	3246	9/4/2020 2:57:56 PM	61.280685	-149.911613	5216.06991
643	3248	9/4/2020 3:09:13 PM	61.29236	-149.90479	6456.95625

Group ID	Created Date	Last Update	Species Common Name
644	9/4/2020 3:23:29 PM	9/4/2020 5:28:57 PM	Beluga
Spread	Formation	Combined Group	Pace
4	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	0	0	0	0	0	0	0	

Comments

PCT: 15:20 initial sighting time; 3 whales N of the outbound line; 15:42 hand-off to NEX; *NEX: 15:42 Fix 3256 MM Group 644 milling. Last seen: 15:42

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
644	3250	9/4/2020 3:24:00 PM	61.282822	-149.896916	5375.7952
644	3252	9/4/2020 3:31:59 PM	61.285785	-149.887578	5716.33025
644	3256	9/4/2020 3:42:11 PM	61.28441	-149.881816	5593.32829

Group ID	Created Date	Last Update	Species Common Name
645	9/4/2020 5:13:03 PM	9/4/2020 5:28:23 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	1	0	0	0	0	0	0		

Comments

PW: Fix 3272 and 3273 Belugas observed rounding Point Mackenzie heading NE along far shore. Last seen 17:21. Shift End.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
645	3272	9/4/2020 5:13:14 PM	61.234987	-149.97902	4510.27268
645	3273	9/4/2020 5:20:47 PM	61.241451	-149.961441	3653.1673

2020 POA PCT
Marine Mammal Sightings
Overview - Beluga
09/01/20 - 09/06/20

▲ PSO Station

Marine Mammal Groups

◆ Group 580 Beluga
◆ Group 582 Beluga
◆ Group 583 Beluga
◆ Group 584 Beluga
◆ Group 585 Beluga
◆ Group 586 Beluga
◆ Group 587 Beluga
◆ Group 588 Beluga
◆ Group 591 Beluga
◆ Group 592 Beluga
◆ Group 593 Beluga
◆ Group 595 Beluga
◆ Group 596 Beluga
◆ Group 598 Beluga
◆ Group 599 Beluga
◆ Group 600 Beluga
◆ Group 603 Beluga
◆ Group 606 Beluga
◆ Group 607 Beluga
◆ Group 609 Beluga
◆ Group 610 Beluga
◆ Group 611 Beluga
◆ Group 612 Beluga
◆ Group 613 Beluga
◆ Group 616 Beluga
◆ Group 617 Beluga
◆ Group 622 Beluga
◆ Group 623 Beluga
◆ Group 625 Beluga
◆ Group 626 Beluga
◆ Group 629 Beluga
◆ Group 630 Beluga
◆ Group 632 Beluga
◆ Group 635 Beluga
◆ Group 638 Beluga
◆ Group 641 Beluga
◆ Group 642 Beluga
◆ Group 643 Beluga
◆ Group 644 Beluga
◆ Group 645 Beluga

0 1 2 3 km

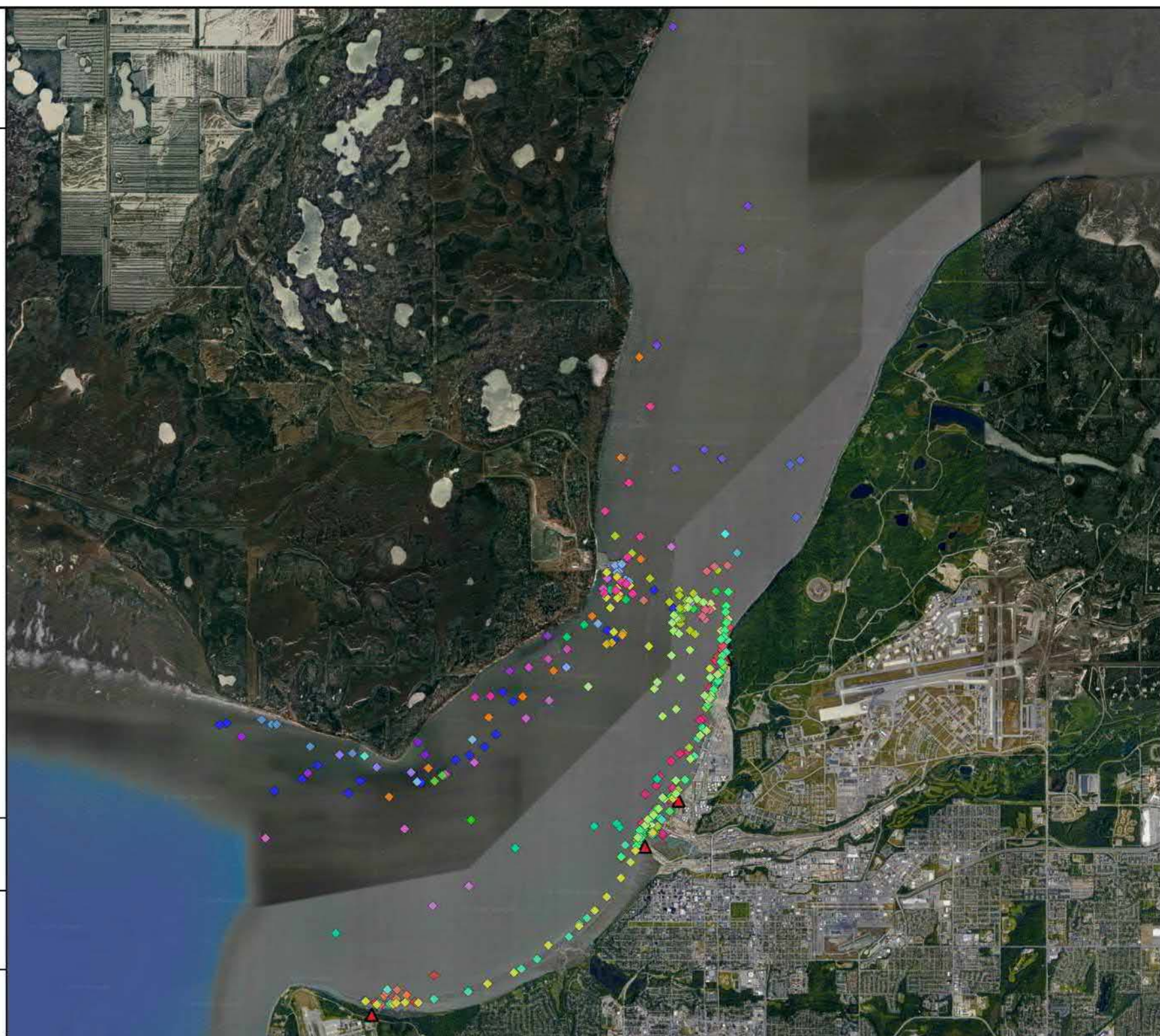


61°N

61 North Environmental



Map Imagery Source:
Google Earth, 2020



2020 POA PCT
Marine Mammal Sightings
Overview - Non-Beluga Species
09/01/20 - 09/06/20

▲ PSO Station

Marine Mammal Groups

- Group 581 Harbor Seal
- Group 590 Harbor Seal
- Group 594 Harbor Seal
- Group 597 Harbor Seal
- Group 601 Harbor Seal
- Group 604 Harbor Seal
- Group 605 Harbor Seal
- Group 608 Harbor Seal
- Group 614 Harbor Seal
- Group 615 Harbor Seal
- Group 618 Harbor Seal
- Group 619 Harbor Seal
- Group 624 Harbor Seal
- Group 627 Harbor Seal
- Group 628 Harbor Seal
- Group 633 Harbor Seal
- Group 634 Harbor Seal
- Group 636 Harbor Seal
- Group 637 Harbor Seal
- Group 639 Harbor Seal
- Group 640 Harbor Seal

0 0.75 1.5 km



61 | N
61 North Environmental



Map Imagery Source:
Google Earth, 2020



**2020 POA PCT
Beluga Sightings
09/01/20
Figure 1**

- ▲ PSO Station
- Beluga Track Lines**
- Group 580
 - Group 582
 - Group 583
 - Group 584 *
 - Group 587 *
 - Group 585
 - Group 586
 - Group 588
 - Group 591
 - Group 592
 - Group 593
 - Group 595
 - Group 596
 - Group 598
 - Group 599
 - Group 600

* Beluga group associated with other group(s) in same color scheme indicate a combined or split composition

0 1 2 3 km

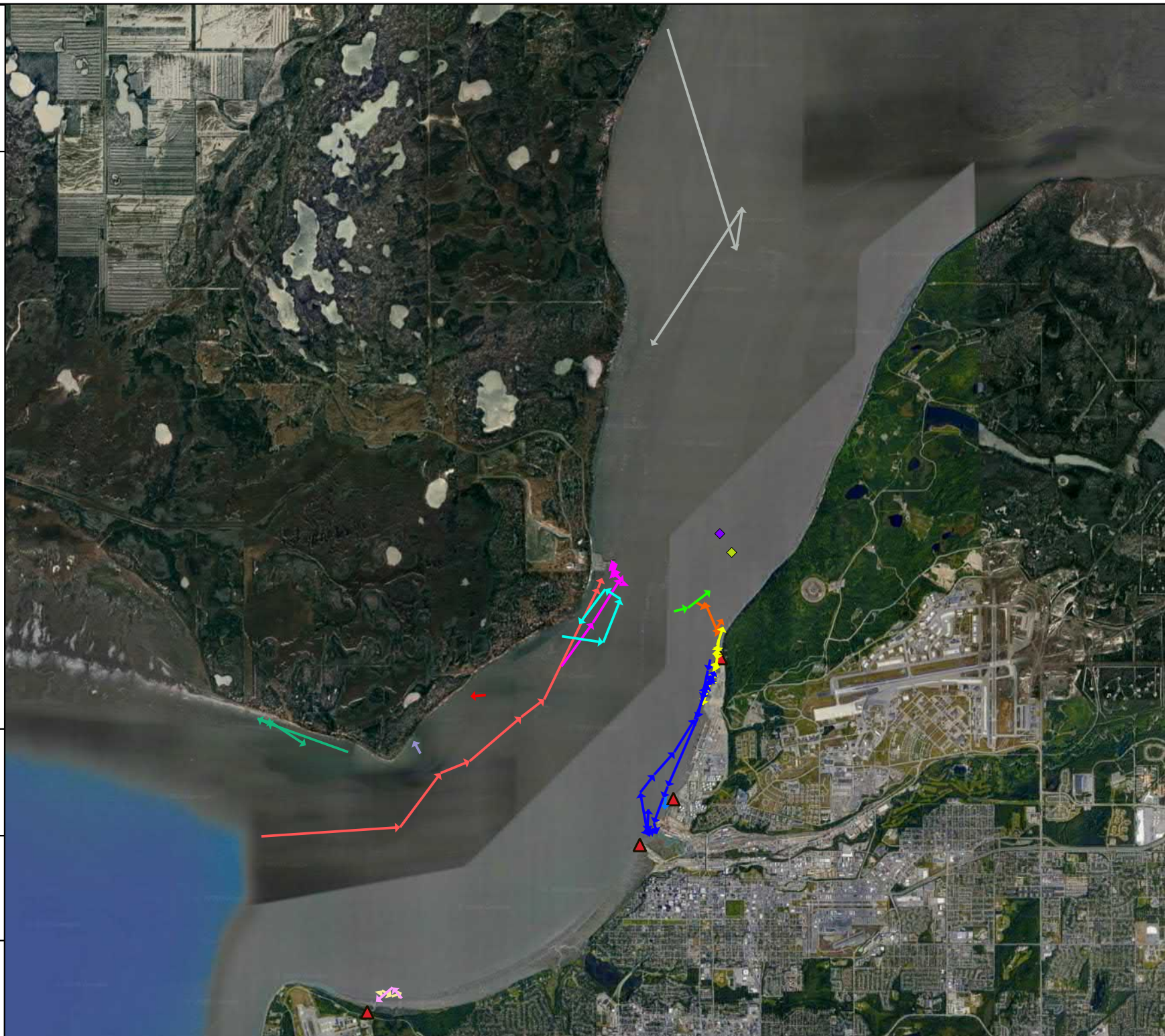


61 | N

61 North Environmental



Map Imagery Source:
Google Earth, 2020



**2020 POA PCT
Beluga Sightings
09/02/20
Figure 2**

▲ PSO Station

Beluga Track Lines

→ Group 603

→ Group 606

→ Group 607

→ Group 609

→ Group 610

→ Group 611

→ Group 612 *

→ Group 616 *

→ Group 613

→ Group 617

* Beluga group associated with other group(s) in same color scheme indicate a combined or split composition

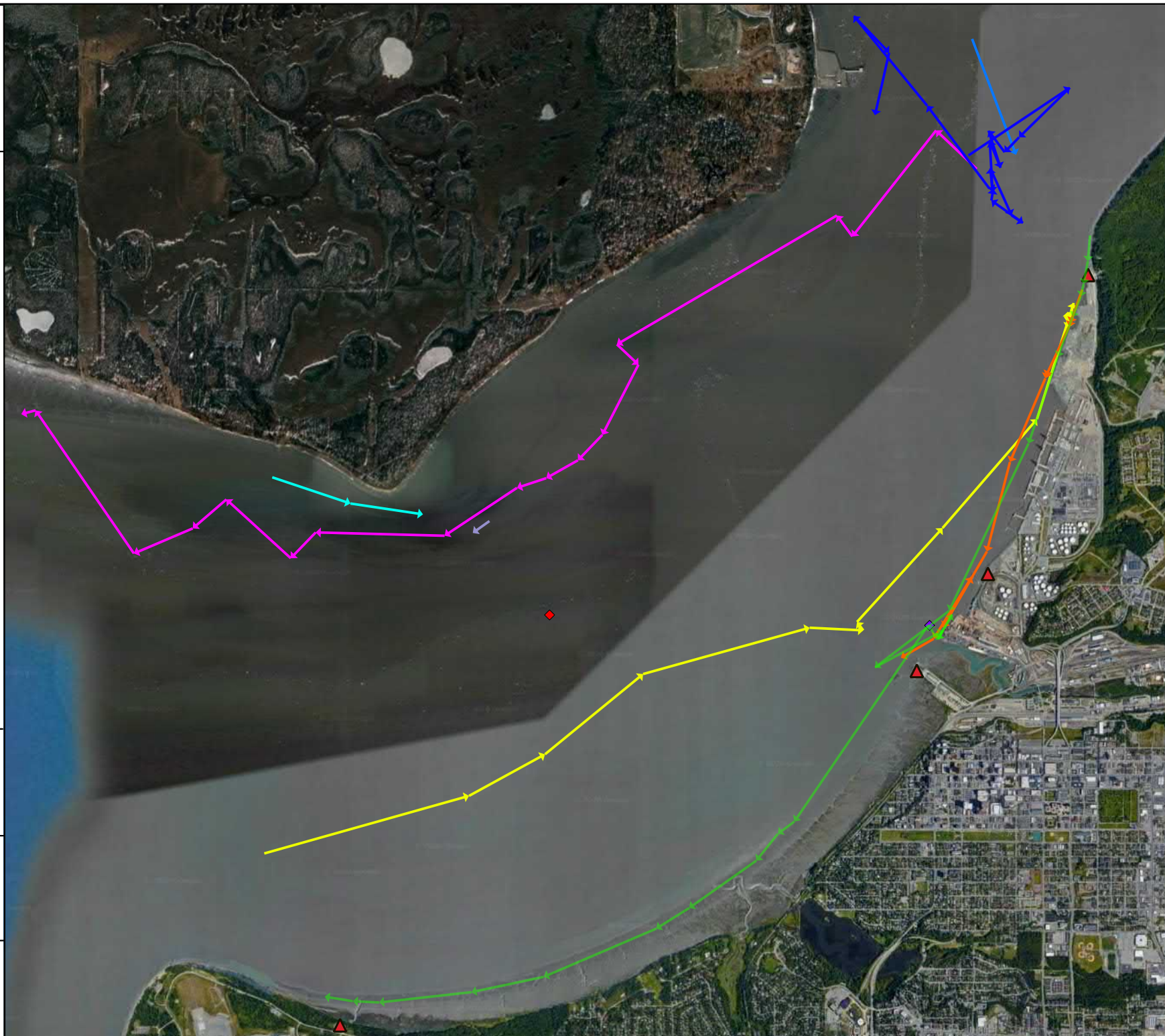
0 0.75 1.5 km



61 | N
61 North Environmental



Map Imagery Source:
Google Earth, 2020



**2020 POA PCT
Beluga Sightings
09/03/20
Figure 3**

▲ PSO Station

Beluga Track Lines

→ Group 622

→ Group 623

→ Group 625

→ Group 626

→ Group 629 *

→ Group 630 *

** 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
09/04/20
Figure 4

▲ PSO Station

Beluga Track Lines

→ Group 632

→ Group 635

→ Group 638

→ Group 641

→ Group 642

→ Group 643

→ Group 644

→ Group 645

0 1 2 km

61 | N

61 North Environmental



Map Imagery Source:
Google Earth, 2020



Appendix D – Week of 9/7 – 9/13 Sighting Forms and Maps

MM Group Report

Group ID		Created Date		Last Update		Species Common Name					
<input type="text" value="647"/>		<input type="text" value="9/8/2020 7:22:24 AM"/>		<input type="text" value="9/8/2020 4:10:17 PM"/>		<input type="text" value="Harbor Seal"/>					
Spread		Formation		Combined Group		Pace		Primary Behavior		Secondary Behavior	
<input type="text" value="1"/>		<input type="text" value="Linear"/>		<input type="text" value="False"/>		<input type="text" value="Sedate"/>		<input type="text" value="Looking"/>		<input type="text" value="Sink"/>	
Beluga Counts		White	Gray	Calf	Neonate	Unknown	Other MM Counts		Other Adult	Other Calf	Total Other
<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>		<input type="text" value="0"/>	<input type="text"/>	

Comments

NEX: Last seen 07:44

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
647	3276	9/8/2020 7:22:43 AM	61.262284	-149.887708	3114.66753
647	3278	9/8/2020 7:40:03 AM	61.254593	-149.881877	2340.00719

Group ID	Created Date	Last Update	Species Common Name
648	9/8/2020 8:24:34 AM	9/8/2020 8:45:13 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: 08:24 Fix 3282 seal spotted behind tug boat dock. Last seen 08:34

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
648	3282	9/8/2020 8:24:49 AM	61.225036	-149.910453	1344.28689

Group ID	Created Date	Last Update	Species Common Name
649	9/8/2020 10:52:44 AM	9/8/2020 4:14:45 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

PW: 10:51 one white beluga traveling North; Fix 3284 shows beluga on out bound line. ***NEX and PW show milling near Port Mckenzie. Last seen 12:20

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
649	3284	9/8/2020 11:00:23 AM	61.265635	-149.919047	3701.31736
649	3285	9/8/2020 11:20:02 AM	61.266577	-149.915656	3741.22817
649	3286	9/8/2020 11:33:33 AM	61.266379	-149.91838	3766.67415
649	3287	9/8/2020 11:34:41 AM	61.266826	-149.915968	3772.62868
649	3288	9/8/2020 11:35:10 AM	61.266251	-149.91591	3710.81348
649	3289	9/8/2020 11:41:36 AM	61.264691	-149.911326	3475.54075
649	3291	9/8/2020 11:45:31 AM	61.267391	-149.919228	3887.81558
649	3292	9/8/2020 11:49:18 AM	61.267158	-149.919138	3861.82403
649	3293	9/8/2020 11:53:11 AM	61.266533	-149.917429	3766.07895
649	3294	9/8/2020 12:02:39 PM	61.2659	-149.915455	3666.2618
649	3295	9/8/2020 12:11:16 PM	61.26659	-149.914917	3730.96599
649	3297	9/8/2020 12:20:39 PM	61.2643	-149.915901	3504.88346

Group ID	Created Date	Last Update	Species Common Name
650	9/8/2020 11:43:21 AM	9/8/2020 4:09:09 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW: 11:42 Seal seen close to near shore looking and sinking; (Fix 3303 is for MM Group 650 but was taken in MM Group 651); Last seen: 13:16

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
650	3290	9/8/2020 11:43:32 AM	61.201145	-149.973172	5597.87172
650	3296	9/8/2020 12:12:19 PM	61.200634	-149.987836	6242.19986
650	3300	9/8/2020 12:49:02 PM	61.200841	-149.983103	6027.64313

Group ID	Created Date	Last Update	Species Common Name
651	9/8/2020 12:24:58 PM	9/8/2020 1:29:31 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Looking	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: 12:25 Seal seen in front of station traveling and looking. (Fix 3303 is for MM Group 650) Last seen: 13:33

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
651	3298	9/8/2020 12:25:14 PM	61.210766	-149.997384	6092.07548
651	3299	9/8/2020 12:43:41 PM	61.208232	-149.996163	6161.49855
651	3303	9/8/2020 1:14:54 PM	61.202219	-149.965126	5199.63622
651	3307	9/8/2020 1:34:06 PM	61.20943	-149.997381	6157.64008

Group ID	Created Date	Last Update	Species Common Name
652	9/8/2020 1:01:14 PM	9/8/2020 4:22:29 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Travelling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

NEX: 13:01 Fix 3301 one white beluga sighted inside the Level B zone. **SC: 13:14 One white beluga spotted traveling toward mouth of Ship Creek. 13:22 One white beluga and one calf traveling past tug dock heading South toward Bootlegger Cove. Fix 3306 Belugas just passed over the Level B zone (2635 m), still traveling South. 13:44 Belugas traveling South near Bootlegger Cove. Passed off to PW at 13:45. **PW: 13:46 Took over from SC. 14:13 Belugas passed in front of station heading southeast towards inbound line. Last seen 14:19.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
652	3301	9/8/2020 1:01:29 PM	61.243304	-149.888879	1031.00759
652	3302	9/8/2020 1:14:50 PM	61.229556	-149.901203	646.58148
652	3304	9/8/2020 1:22:19 PM	61.222697	-149.9114	1583.29671
652	3305	9/8/2020 1:27:25 PM	61.218401	-149.917203	2152.62104
652	3306	9/8/2020 1:34:08 PM	61.214797	-149.923876	2685.26512
652	3308	9/8/2020 1:44:55 PM	61.212058	-149.932229	3198.20263
652	3309	9/8/2020 1:48:07 PM	61.205834	-149.948528	4291.1144
652	3310	9/8/2020 1:52:57 PM	61.203977	-149.957936	4787.75434
652	3313	9/8/2020 2:00:29 PM	61.202228	-149.969866	5385.62064
652	3314	9/8/2020 2:12:50 PM	61.201177	-149.988629	6240.14836
652	3318	9/8/2020 2:19:18 PM	61.201422	-149.994662	6487.49907

Group ID	Created Date		Last Update		Species Common Name				
653	9/8/2020 1:52:58 PM		9/8/2020 5:27:55 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	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		1	0	

Comments

NEX: one harbor seal Fix 3311. Last seen 17:12. Sighting terminated due to end of shift.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
653	3311	9/8/2020 1:53:05 PM	61.247902	-149.885253	1576.88955
653	3312	9/8/2020 1:58:12 PM	61.251884	-149.882092	2050.24541
653	3315	9/8/2020 2:12:47 PM	61.252032	-149.882018	2067.07861
653	3316	9/8/2020 2:16:28 PM	61.251907	-149.882005	2054.18925
653	3320	9/8/2020 2:32:04 PM	61.251919	-149.882424	2048.17241
653	3325	9/8/2020 2:44:51 PM	61.251948	-149.88224	2054.38907
653	3330	9/8/2020 2:58:52 PM	61.252342	-149.882232	2095.99486
653	3332	9/8/2020 3:06:40 PM	61.251744	-149.882403	2030.12124
653	3335	9/8/2020 3:20:30 PM	61.251716	-149.882391	2027.38515
653	3340	9/8/2020 3:44:44 PM	61.251558	-149.882567	2007.72965
653	3342	9/8/2020 4:12:26 PM	61.251025	-149.883117	1942.20556
653	3343	9/8/2020 4:35:03 PM	61.251361	-149.882765	1983.59764
653	3344	9/8/2020 4:55:07 PM	61.251074	-149.883204	1945.89633
653	3345	9/8/2020 5:11:05 PM	61.251704	-149.882857	2018.18297

Group ID	Created Date	Last Update	Species Common Name
654	9/8/2020 2:18:03 PM	9/8/2020 4:48:08 PM	Harbor Porpoise
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW: 14:18 Harbor Porpoise seen traveling SE 100m in front of mother/calf (MMGroup 652) and our station Last seen: 14:19.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
654	3317	9/8/2020 2:18:10 PM	61.201871	-149.995257	6485.755

Group ID	Created Date	Last Update	Species Common Name
655	9/8/2020 2:31:14 PM	9/8/2020 4:24:33 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	0	0	0	0	0	0	0	0	

Comments

**NEX: FIX 3319 two white beluga travelling south. 14:50 tugboats moving towards barge. Fix 3327; turned around, heading north again as Midnight Sun moving off dock. 15:11 Combined with MMG 655.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
655	3319	9/8/2020 2:31:22 PM	61.250014	-149.884179	1817.72726
655	3321	9/8/2020 2:34:30 PM	61.251891	-149.88246	2044.60913
655	3322	9/8/2020 2:35:51 PM	61.251062	-149.883117	1946.10348
655	3323	9/8/2020 2:37:17 PM	61.250051	-149.884401	1818.0151
655	3324	9/8/2020 2:40:57 PM	61.24881	-149.884955	1677.67099
655	3326	9/8/2020 2:49:36 PM	61.246861	-149.886542	1445.53401
655	3327	9/8/2020 2:51:04 PM	61.246689	-149.886897	1421.64846
655	3333	9/8/2020 3:11:15 PM	61.251539	-149.88258	2005.50711

Group ID	Created Date	Last Update	Species Common Name
656	9/8/2020 2:52:02 PM	9/8/2020 4:24:45 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Parallel	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	3	2	0	0		0	0		

Comments

**NEX: FIX 3328 nine belugas heading south. Fix 3336 moving north. Changed direction as Midnite Sun moved off the dock and leaving port. Combined with MMG 655 at 15:11. Fix 3338 passing the Outbound Line. Last seen: 15:49

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
656	3328	9/8/2020 2:52:17 PM	61.256199	-149.881706	2513.70533
656	3329	9/8/2020 2:55:52 PM	61.252526	-149.882123	2117.23268
656	3331	9/8/2020 3:04:10 PM	61.243819	-149.889825	1072.36241
656	3334	9/8/2020 3:19:03 PM	61.240542	-149.89321	680.87455
656	3336	9/8/2020 3:28:10 PM	61.251714	-149.883108	2015.07803
656	3337	9/8/2020 3:38:10 PM	61.255895	-149.883288	2458.95619
656	3338	9/8/2020 3:40:44 PM	61.257406	-149.882946	2626.25998
656	3339	9/8/2020 3:42:38 PM	61.258371	-149.881618	2747.68154
656	3341	9/8/2020 3:46:06 PM	61.262873	-149.882019	3229.44927

Group ID	Created Date	Last Update	Species Common Name
658	9/9/2020 7:19:03 AM	9/9/2020 7:45:29 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
Primary Behavior		Secondary Behavior	
Looking		Sink	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW: 07:18 First sighting of seal (setting up theodolite) swimming and looking. Last seen: 07:45

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
658	3346	9/9/2020 7:21:33 AM	61.201507	-149.98397	6018.77523
658	3349	9/9/2020 7:49:18 AM	61.201826	-149.976717	5692.99753

Group ID	Created Date	Last Update	Species Common Name
659	9/9/2020 8:00:49 AM	9/9/2020 5:19:25 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	1	0	0		0	0		

Comments

NEX: 08:00 Fix 3351 white beluga seen inside the boundary line and moving south towards Level B Zone. Fix 3354 shows whales inside the Level B zone. Fix 3355 shows whales outside the level B zone. Fix 3361 whales travelling south approaching Level B zone. At 09:30 a fourth white whale was added to the count. Fix 3362 whales inside Level B zone. At 09:46 a calf was added to the count. 10:20 the dredge barge is working just north of construction site. **PCT: 10:43 take over from NEX. Three beluga travel SW along nearshore. 10:54 hand-off to SC. ***SC 10:54 Took sighting over from PCT. 10:57 Beluga whales traveled to mouth of Ship Creek. 11:01 Whales milling at Ship Creek. 11:30 tugs moving barges in sighting area. 11:57 freighter leaving port. 12:06 personal boat pulling into boat launch. 12:47 Three white belugas milling at Ship Creek, and personal boat also being launched at SC boat launch. 14:35 Fix 3454 belongs in this group but was made in MM Group 665 by mistake. 16:09 Three white belugas still milling at Ship Creek. Last seen: 17:10. (ATL post-processed: moved fix 3454 from G665 to G659)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
659	3351	9/9/2020 8:00:58 AM	61.259951	-149.894875	2833.06223
659	3352	9/9/2020 8:07:44 AM	61.261636	-149.896375	3021.63711
659	3353	9/9/2020 8:14:25 AM	61.259806	-149.894164	2817.06654
659	3354	9/9/2020 8:17:37 AM	61.257522	-149.894186	2563.26949
659	3355	9/9/2020 8:26:59 AM	61.260239	-149.89437	2865.09414
659	3356	9/9/2020 8:36:58 AM	61.261179	-149.89513	2969.59554
659	3357	9/9/2020 8:47:25 AM	61.26349	-149.891696	3230.24
659	3358	9/9/2020 9:11:30 AM	61.261395	-149.880221	3091.67248
659	3360	9/9/2020 9:25:24 AM	61.266579	-149.877257	3689.02641
659	3361	9/9/2020 9:26:56 AM	61.258044	-149.879995	2736.17245
659	3362	9/9/2020 9:34:50 AM	61.256454	-149.881165	2548.99796
659	3363	9/9/2020 9:40:02 AM	61.255893	-149.881743	2480.48911
659	3364	9/9/2020 9:46:51 AM	61.25616	-149.881977	2505.57516
659	3365	9/9/2020 9:48:17 AM	61.254586	-149.881615	2343.39975

Group ID	Created Date	Last Update	Species Common Name
659	9/9/2020 8:00:49 AM	9/9/2020 5:19:25 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	1	0	0		0	0		

Comments

NEX: 08:00 Fix 3351 white beluga seen inside the boundary line and moving south towards Level B Zone. Fix 3354 shows whales inside the Level B zone. Fix 3355 shows whales outside the level B zone. Fix 3361 whales travelling south approaching Level B zone. At 09:30 a fourth white whale was added to the count. Fix 3362 whales inside Level B zone. At 09:46 a calf was added to the count. 10:20 the dredge barge is working just north of construction site. **PCT: 10:43 take over from NEX. Three beluga travel SW along nearshore. 10:54 hand-off to SC. ***SC 10:54 Took sighting over from PCT. 10:57 Beluga whales traveled to mouth of Ship Creek. 11:01 Whales milling at Ship Creek. 11:30 tugs moving barges in sighting area. 11:57 freighter leaving port. 12:06 personal boat pulling into boat launch. 12:47 Three white belugas milling at Ship Creek, and personal boat also being launched at SC boat launch. 14:35 Fix 3454 belongs in this group but was made in MM Group 665 by mistake. 16:09 Three white belugas still milling at Ship Creek. Last seen: 17:10. (ATL post-processed: moved fix 3454 from G665 to G659)

659	3366	9/9/2020 9:51:21 AM	61.253133	-149.881922	2184.63568
659	3367	9/9/2020 9:54:55 AM	61.251732	-149.882475	2027.61752
659	3368	9/9/2020 9:57:57 AM	61.250829	-149.883025	1923.15997
659	3369	9/9/2020 10:02:31 AM	61.249737	-149.884149	1788.9823
659	3371	9/9/2020 10:11:10 AM	61.248496	-149.885462	1636.16564
659	3372	9/9/2020 10:19:58 AM	61.24747	-149.885949	1519.64149
659	3373	9/9/2020 10:31:22 AM	61.245568	-149.886892	1303.13792
659	3374	9/9/2020 10:44:24 AM	61.232333	-149.897779	288.22974
659	3375	9/9/2020 10:50:39 AM	61.230322	-149.90041	552.12539
659	3376	9/9/2020 10:57:01 AM	61.226815	-149.903759	978.03135
659	3377	9/9/2020 11:01:25 AM	61.227973	-149.90321	852.61255
659	3378	9/9/2020 11:07:51 AM	61.228223	-149.902789	817.107
659	3379	9/9/2020 11:14:39 AM	61.226847	-149.904463	994.23054
659	3380	9/9/2020 11:26:13 AM	61.22817	-149.902965	827.10787
659	3381	9/9/2020 11:33:26 AM	61.228074	-149.903017	837.61281

Group ID	Created Date	Last Update	Species Common Name
659	9/9/2020 8:00:49 AM	9/9/2020 5:19:25 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	1	0	0		0	0		

Comments

NEX: 08:00 Fix 3351 white beluga seen inside the boundary line and moving south towards Level B Zone. Fix 3354 shows whales inside the Level B zone. Fix 3355 shows whales outside the level B zone. Fix 3361 whales travelling south approaching Level B zone. At 09:30 a fourth white whale was added to the count. Fix 3362 whales inside Level B zone. At 09:46 a calf was added to the count. 10:20 the dredge barge is working just north of construction site. **PCT: 10:43 take over from NEX. Three beluga travel SW along nearshore. 10:54 hand-off to SC. ***SC 10:54 Took sighting over from PCT. 10:57 Beluga whales traveled to mouth of Ship Creek. 11:01 Whales milling at Ship Creek. 11:30 tugs moving barges in sighting area. 11:57 freighter leaving port. 12:06 personal boat pulling into boat launch. 12:47 Three white belugas milling at Ship Creek, and personal boat also being launched at SC boat launch. 14:35 Fix 3454 belongs in this group but was made in MM Group 665 by mistake. 16:09 Three white belugas still milling at Ship Creek. Last seen: 17:10. (ATL post-processed: moved fix 3454 from G665 to G659)

659	3382	9/9/2020 11:40:43 AM	61.227061	-149.903653	951.52574
659	3383	9/9/2020 11:47:29 AM	61.228705	-149.902135	753.14984
659	3385	9/9/2020 11:58:26 AM	61.227836	-149.902884	856.45379
659	3387	9/9/2020 12:13:13 PM	61.228137	-149.903047	832.55525
659	3388	9/9/2020 12:22:27 PM	61.227573	-149.903468	897.63025
659	3391	9/9/2020 12:31:54 PM	61.229033	-149.901755	711.47206
659	3393	9/9/2020 12:37:32 PM	61.227898	-149.903213	859.75074
659	3398	9/9/2020 12:46:58 PM	61.227384	-149.903407	913.92082
659	3400	9/9/2020 1:01:22 PM	61.227553	-149.903386	897.24148
659	3402	9/9/2020 1:10:13 PM	61.228861	-149.901329	716.1523
659	3405	9/9/2020 1:25:26 PM	61.228687	-149.901506	737.63734
659	3406	9/9/2020 1:33:39 PM	61.228772	-149.901483	728.82945
659	3409	9/9/2020 1:45:37 PM	61.228692	-149.901507	737.18104
659	3413	9/9/2020 1:59:32 PM	61.227101	-149.903659	947.85242
659	3416	9/9/2020 2:12:45 PM	61.228288	-149.902089	791.61138

Group ID	Created Date	Last Update	Species Common Name
659	9/9/2020 8:00:49 AM	9/9/2020 5:19:25 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	1	0	0		0	0		

Comments

NEX: 08:00 Fix 3351 white beluga seen inside the boundary line and moving south towards Level B Zone. Fix 3354 shows whales inside the Level B zone. Fix 3355 shows whales outside the level B zone. Fix 3361 whales travelling south approaching Level B zone. At 09:30 a fourth white whale was added to the count. Fix 3362 whales inside Level B zone. At 09:46 a calf was added to the count. 10:20 the dredge barge is working just north of construction site. **PCT: 10:43 take over from NEX. Three beluga travel SW along nearshore. 10:54 hand-off to SC. ***SC 10:54 Took sighting over from PCT. 10:57 Beluga whales traveled to mouth of Ship Creek. 11:01 Whales milling at Ship Creek. 11:30 tugs moving barges in sighting area. 11:57 freighter leaving port. 12:06 personal boat pulling into boat launch. 12:47 Three white belugas milling at Ship Creek, and personal boat also being launched at SC boat launch. 14:35 Fix 3454 belongs in this group but was made in MM Group 665 by mistake. 16:09 Three white belugas still milling at Ship Creek. Last seen: 17:10. (ATL post-processed: moved fix 3454 from G665 to G659)

659	3418	9/9/2020 2:23:24 PM	61.227347	-149.903288	914.23783
659	3422	9/9/2020 2:37:56 PM	61.22778	-149.902842	860.66317
659	3423	9/9/2020 2:48:54 PM	61.22872	-149.901538	735.3048
659	3425	9/9/2020 3:02:11 PM	61.227304	-149.904273	945.87092
659	3428	9/9/2020 3:14:40 PM	61.227642	-149.903879	902.89049
659	3433	9/9/2020 3:29:25 PM	61.228394	-149.903055	808.85266
659	3437	9/9/2020 3:44:44 PM	61.227875	-149.903935	882.96618
659	3439	9/9/2020 3:52:59 PM	61.227552	-149.904008	915.03578
659	3441	9/9/2020 3:58:35 PM	61.228894	-149.902809	755.55904
659	3443	9/9/2020 4:09:58 PM	61.227338	-149.904245	941.88478
659	3445	9/9/2020 4:18:51 PM	61.227239	-149.90452	959.13035
659	3450	9/9/2020 4:36:04 PM	61.226957	-149.903899	968.15568
659	3454	9/9/2020 4:51:34 PM	61.226981	-149.903617	958.25156
659	3456	9/9/2020 4:53:33 PM	61.226981	-149.903616	958.22489
659	3457	9/9/2020 5:10:20 PM	61.227017	-149.903705	957.15039

Group ID	Created Date	Last Update	Species Common Name
659	9/9/2020 8:00:49 AM	9/9/2020 5:19:25 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	1	0	0		0	0		

Comments

NEX: 08:00 Fix 3351 white beluga seen inside the boundary line and moving south towards Level B Zone. Fix 3354 shows whales inside the Level B zone. Fix 3355 shows whales outside the level B zone. Fix 3361 whales travelling south approaching Level B zone. At 09:30 a fourth white whale was added to the count. Fix 3362 whales inside Level B zone. At 09:46 a calf was added to the count. 10:20 the dredge barge is working just north of construction site. **PCT: 10:43 take over from NEX. Three beluga travel SW along nearshore. 10:54 hand-off to SC. ***SC 10:54 Took sighting over from PCT. 10:57 Beluga whales traveled to mouth of Ship Creek. 11:01 Whales milling at Ship Creek. 11:30 tugs moving barges in sighting area. 11:57 freighter leaving port. 12:06 personal boat pulling into boat launch. 12:47 Three white belugas milling at Ship Creek, and personal boat also being launched at SC boat launch. 14:35 Fix 3454 belongs in this group but was made in MM Group 665 by mistake. 16:09 Three white belugas still milling at Ship Creek. Last seen: 17:10. (ATL post-processed: moved fix 3454 from G665 to G659)

659	3458	9/9/2020 5:17:56 PM	61.227072	-149.903959	958.83573
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Group ID	Created Date	Last Update	Species Common Name
660	9/9/2020 9:17:27 AM	9/9/2020 9:30:42 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: Last seen 09:22.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
660	3359	9/9/2020 9:17:38 AM	61.201216	-149.991434	6359.13288

Group ID	Created Date	Last Update	Species Common Name
661	9/9/2020 10:03:35 AM	9/9/2020 11:15:28 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**SC: 10:03 One harbor seal spotted looking and sinking at mouth of Ship Creek. Last seen: 10:03.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
661	3370	9/9/2020 10:03:50 AM	61.22757	-149.902745	878.29707

Group ID	Created Date	Last Update	Species Common Name
662	9/9/2020 11:55:05 AM	9/9/2020 2:51:29 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Milling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

**NEX 11:55 Whale seen on the boundary line in front of Port Mackenzie. **PCT: fix 3415 (in test group 657) one whale traveling NW. Last seen 14:05 (ATL post-processed: moved fix 3415 to G662).

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
662	3384	9/9/2020 11:56:59 AM	61.266356	-149.917712	3752.40472
662	3386	9/9/2020 12:07:17 PM	61.266347	-149.916516	3730.97463
662	3389	9/9/2020 12:24:01 PM	61.265495	-149.91344	3591.86143
662	3390	9/9/2020 12:30:55 PM	61.265797	-149.915664	3658.76458
662	3392	9/9/2020 12:33:33 PM	61.266852	-149.918999	3827.31857
662	3396	9/9/2020 12:42:18 PM	61.266942	-149.918659	3830.60841
662	3401	9/9/2020 1:09:08 PM	61.266662	-149.916012	3755.97146
662	3403	9/9/2020 1:23:11 PM	61.266325	-149.917776	3750.27542
662	3408	9/9/2020 1:45:01 PM	61.266074	-149.914414	3668.31076
662	3415	9/9/2020 2:05:38 PM	61.263955	-149.906369	3336.96293

Group ID	Created Date	Last Update	Species Common Name
663	9/9/2020 12:37:40 PM	9/9/2020 4:39:49 PM	Beluga
Spread	Formation	Combined Group	Pace
<1	Parallel	True	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

PW: One white beluga and calf traveling W, SPLIT from Group 659; Fix 3397 Belugas seen traveling west towards in-bound line, lost behind trees. Last seen 12:44.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
663	3394	9/9/2020 12:38:23 PM	61.200642	-149.986931	6203.06894
663	3395	9/9/2020 12:39:37 PM	61.200561	-149.990212	6348.97465
663	3397	9/9/2020 12:43:47 PM	61.201191	-149.993147	6435.55454

Group ID	Created Date	Last Update	Species Common Name
664	9/9/2020 12:49:33 PM	9/9/2020 2:09:13 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: 12:49 Seal seen looking and sinking. Last seen 15:17.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
664	3399	9/9/2020 12:49:41 PM	61.200602	-149.987928	6248.27288
664	3404	9/9/2020 1:25:10 PM	61.202713	-149.976451	5619.60232
664	3412	9/9/2020 2:09:19 PM	61.209986	-149.933213	3412.04729
664	3430	9/9/2020 3:17:22 PM	61.205913	-149.951847	4405.95117

Group ID	Created Date	Last Update	Species Common Name
665	9/9/2020 1:40:58 PM	9/9/2020 5:09:32 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	0	0	0		0	0		

Comments

NEX: Sighted beluga at 13:40 near Cairn Point, moving south. Last seen: 14:35 fix 3454 belongs in MMG 659 (ATL post-processed: moved fix 3454 from G665 to G659)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
665	3407	9/9/2020 1:41:23 PM	61.261125	-149.879328	3075.02576
665	3410	9/9/2020 1:47:57 PM	61.25413	-149.886877	2225.66361
665	3411	9/9/2020 1:50:13 PM	61.252175	-149.887104	2010.20884
665	3414	9/9/2020 2:01:52 PM	61.245401	-149.904173	1317.87275
665	3419	9/9/2020 2:23:39 PM	61.250208	-149.888145	1784.93822
665	3421	9/9/2020 2:32:30 PM	61.252571	-149.88514	2076.59302

Group ID	Created Date	Last Update	Species Common Name
666	9/9/2020 2:16:40 PM	9/9/2020 4:50:31 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: 14:17 One Harbor seal at the mouth of Ship Creek. Last seen: 16:50.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
666	3417	9/9/2020 2:17:06 PM	61.226673	-149.904223	1004.14116
666	3420	9/9/2020 2:28:38 PM	61.226788	-149.904001	987.10847
666	3426	9/9/2020 3:07:33 PM	61.227113	-149.903488	942.09781
666	3446	9/9/2020 4:19:53 PM	61.226899	-149.904106	979.35963
666	3452	9/9/2020 4:41:18 PM	61.226864	-149.903888	976.7677
666	3453	9/9/2020 4:50:52 PM	61.226964	-149.903944	968.71475

Group ID	Created Date	Last Update	Species Common Name
668	9/9/2020 2:57:42 PM	9/9/2020 3:36:39 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	0	0	0		0	0		

Comments

**PW: 14:55 Belugas surfacing in bootleggers cove heading southwest. Last seen: 15:22

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
668	3424	9/9/2020 2:57:52 PM	61.205587	-149.95106	4403.16339
668	3427	9/9/2020 3:09:15 PM	61.203202	-149.973094	5446.10953
668	3429	9/9/2020 3:15:47 PM	61.200448	-149.988308	6274.81886
668	3431	9/9/2020 3:22:56 PM	61.201468	-149.993033	6412.90027

Group ID	Created Date	Last Update	Species Common Name
669	9/9/2020 3:26:12 PM	9/9/2020 4:55:52 PM	Beluga
Spread	Formation	Combined Group	Pace
3	Parallel	False	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
2	1	0	0	0	0	0	0	0	

Comments

***SC: 15:22 one white and one gray spotted heading towards bootlegger cove. Fix 3432 shows whales approaching edge of Level B zone. Fix 3434 shows whales past Level B zone. 15:48 SC hands off to PW. ***PW: Fix 3438 took over group from SC. Second white beluga spotted. 16:27 30 minutes since sighting of second beluga. 16:51 Belugas traveling towards in bound line, out of sightability through trees. Last seen 16:52.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
669	3432	9/9/2020 3:26:38 PM	61.215899	-149.922201	2533.52785
669	3434	9/9/2020 3:31:25 PM	61.214476	-149.925484	2764.74747
669	3435	9/9/2020 3:37:43 PM	61.212454	-149.930872	3118.49715
669	3436	9/9/2020 3:43:47 PM	61.212443	-149.931863	3152.6286
669	3438	9/9/2020 3:49:22 PM	61.205389	-149.954418	4543.73485
669	3440	9/9/2020 3:54:33 PM	61.20466	-149.956607	4683.78679
669	3442	9/9/2020 4:00:39 PM	61.202298	-149.973746	5537.35721
669	3444	9/9/2020 4:13:23 PM	61.201979	-149.980958	5859.21122
669	3447	9/9/2020 4:21:23 PM	61.204518	-149.986012	5911.09809
669	3448	9/9/2020 4:28:41 PM	61.206576	-149.993444	6124.83871
669	3449	9/9/2020 4:34:20 PM	61.211415	-150.001591	6265.91678
669	3451	9/9/2020 4:38:45 PM	61.213454	-150.007209	6455.8687
669	3455	9/9/2020 4:51:39 PM	61.217167	-150.022438	7098.43792

Group ID	Created Date	Last Update	Species Common Name
670	9/9/2020 5:21:05 PM	9/9/2020 5:32:56 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

NEX: Whale seen north of Port Mackenzie.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
670	3459	9/9/2020 5:21:19 PM	61.271874	-149.903431	4184.1384
670	3460	9/9/2020 5:27:31 PM	61.260613	-149.891596	2911.27911

Group ID	Created Date	Last Update	Species Common Name
672	9/10/2020 7:16:32 AM	9/10/2020 2:39:59 PM	Beluga
Spread	Formation	Combined Group	Pace
8	No Formation	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
3	0	1	0	0		0	0		

Comments

PCT: 07:16 Fix 3462 One white beluga traveling NE along near shore in front of work site barge. Passed to NEX at 07:43. Mason survey boat out by port of Anchorage. Fix 3468 crossed back into Level B zone going south. 07:50 added two whites to the count. Fix 3470 shows whales north of level B zone. Fix 3472 shows whales north of the boundary line. At 09:58 a calf was added to the count. ***Fix 3474 in MMG 673 belongs in MMG 672**. MMG 672 combined into MMG 677 at 10:30. (ATL post-processed: moved fix 3474 from G673 to G672)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
672	3462	9/10/2020 7:16:41 AM	61.235088	-149.899231	253.23695
672	3467	9/10/2020 7:43:05 AM	61.259914	-149.897503	2832.94998
672	3468	9/10/2020 7:47:24 AM	61.256716	-149.89652	2475.52227
672	3469	9/10/2020 7:50:59 AM	61.255555	-149.894394	2344.61003
672	3470	9/10/2020 7:58:15 AM	61.258134	-149.893749	2631.61005
672	3471	9/10/2020 8:11:16 AM	61.259728	-149.891841	2812.36413
672	3472	9/10/2020 8:14:21 AM	61.262313	-149.890202	3104.75336
672	3473	9/10/2020 8:28:00 AM	61.263501	-149.890029	3237.08368
672	3475	9/10/2020 8:33:56 AM	61.262598	-149.892245	3129.88781
672	3476	9/10/2020 8:35:12 AM	61.260624	-149.897151	2910.82223
672	3481	9/10/2020 8:54:13 AM	61.259585	-149.894158	2792.51341
672	3486	9/10/2020 9:12:47 AM	61.261382	-149.894176	2992.17786
672	3489	9/10/2020 9:20:19 AM	61.261324	-149.894849	2985.62452
672	3493	9/10/2020 9:27:15 AM	61.258926	-149.89064	2727.71212

Group ID	Created Date	Last Update	Species Common Name
672	9/10/2020 7:16:32 AM	9/10/2020 2:39:59 PM	Beluga
Spread	Formation	Combined Group	Pace
8	No Formation	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	3	0	1	0	0		0	0	

Comments

PCT: 07:16 Fix 3462 One white beluga traveling NE along near shore in front of work site barge. Passed to NEX at 07:43. Mason survey boat out by port of Anchorage. Fix 3468 crossed back into Level B zone going south. 07:50 added two whites to the count. Fix 3470 shows whales north of level B zone. Fix 3472 shows whales north of the boundary line. At 09:58 a calf was added to the count. ***Fix 3474 in MMG 673 belongs in MMG 672**. MMG 672 combined into MMG 677 at 10:30. (ATL post-processed: moved fix 3474 from G673 to G672)

672	3499	9/10/2020 9:49:36 AM	61.263327	-149.889811	3218.7277
672	3503	9/10/2020 9:57:57 AM	61.262802	-149.889803	3160.61974
672	3511	9/10/2020 10:09:22 AM	61.262507	-149.888971	3131.97285

Group ID	Created Date	Last Update	Species Common Name		
<input type="text" value="673"/>	<input type="text" value="9/10/2020 7:24:02 AM"/>	<input type="text" value="9/10/2020 6:58:25 PM"/>	<input type="text" value="Beluga"/>		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
<input type="text" value="5"/>	<input type="text" value="Linear"/>	<input type="text" value="False"/>	<input type="text" value="Moderate"/>	<input type="text" value="Travelling"/>	<input type="text" value="Travelling"/>

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
<input type="text" value="11"/>	<input type="text" value="5"/>	<input type="text" value="4"/>	<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value=""/>	

Comments

NEX: Sighted 07:00 right in front of us, moving north. Fix 3463 traveling north past outbound line. Last seen 07:27 *****Fix 3474 belongs in group 672*****

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
673	3463	9/10/2020 7:25:52 AM	61.263446	-149.883188	3279.4566
673	3465	9/10/2020 7:27:43 AM	61.267598	-149.880384	3761.21509
673	3474	9/10/2020 8:31:00 AM	61.262413	-149.892001	3109.92201

Group ID	Created Date		Last Update		Species Common Name				
674	9/10/2020 8:35:35 AM		9/10/2020 10:56:52 AM		Beluga				
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior				
4	Echelon	True	Moderate	Travelling	None				
Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
7	4	2	0	0	0	0	0		

Comments

PW: 08:34 five whites one gray and one calf, popped up in front of PW on near shore; Surfacing very regularly; Fixes taken on the lead; 09:04 passed off to SC. ***SC: 09:04 PW hand off to SC. 09:06 fix 3484 whales cross into level B zone. 09:25 PCT takes over from SC. **PCT: 09:25 take over from SC; group travel NE along nearshore. Fix 3492 lead two beluga passing PCT observer port. Group is spread out in a linear formation along nearshore over ~1500 m. Fix 3494 two trailing whales, appearing to be milling near Ship Creek. 09:40 Group 676 (four beluga, milling at Ship Creek) splits from 674 (two beluga, travel NE). 09:50 fix 3501 Pass off to SC as group 674 and 676 re-combine. Further notes on this group are under Group 676. (PW edited group count at 10:56)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
674	3477	9/10/2020 8:35:42 AM	61.201719	-149.990918	6304.23066
674	3478	9/10/2020 8:40:32 AM	61.201935	-149.980002	5822.03809
674	3480	9/10/2020 8:48:28 AM	61.203569	-149.965909	5128.43978
674	3482	9/10/2020 8:55:16 AM	61.204208	-149.958826	4803.52273
674	3483	9/10/2020 9:02:35 AM	61.209722	-149.939015	3630.20154
674	3484	9/10/2020 9:06:03 AM	61.21661	-149.922291	2472.51445
674	3485	9/10/2020 9:09:42 AM	61.219155	-149.917372	2088.94236
674	3488	9/10/2020 9:15:19 AM	61.222483	-149.912772	1645.04031
674	3490	9/10/2020 9:21:47 AM	61.22816	-149.904704	881.31184
674	3491	9/10/2020 9:24:39 AM	61.230511	-149.902511	606.1815
674	3492	9/10/2020 9:25:45 AM	61.232474	-149.898278	292.37563
674	3494	9/10/2020 9:36:26 AM	61.231339	-149.899809	441.73976
674	3501	9/10/2020 9:56:00 AM	61.223446	-149.910717	1494.07055

Group ID	Created Date	Last Update	Species Common Name
675	9/10/2020 8:47:26 AM	9/10/2020 8:58:46 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: 08:48 Fix 3479 One Harbor seal in front of SC station. Last seen: 08:53

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
675	3479	9/10/2020 8:47:38 AM	61.225015	-149.908333	1278.11474
675	3487	9/10/2020 9:13:04 AM	61.218715	-149.917104	2120.79177

Group ID	Created Date		Last Update		Species Common Name				
676	9/10/2020 9:39:18 AM		9/10/2020 6:59:10 PM		Beluga				
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior				
6	No Formation	True	Moderate	Travelling	Milling				
Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

***SC: 09:35 four white whales have split from MMG 674 travelling south past mouth of Ship creek. 09:52 two more whales from MMG 674 have joined with MMG 676. Fix 3506 shows whales crossing level B zone travelling south. 10:09 SC hand off to PW. **PW: Fix 3512 Trailing beluga milling in Level B Zone. Spread of belugas is 500 m along bootleggers cove. Fix 3518 Belugas exiting Level B zone, continuing to travel southwest. 11:13 Belugas milling in front of station. 11:19 belugas switch directions back to the NE. Fixes following this time are on lead beluga. 11:48 Passed off to SC. **SC: 11:48 Took over from PW. 11:59 Fix 3554 Group traveling north through Bootlegger Cove approaching Level B Zone. Fix 3556 Group has crossed into Level B Zone. 12:14 two personal boats leaving from small boat launch. 12:30 SC hand off to PCT. **PCT: 12:30 take over from SC. Fix 3572 Group 676 combines with 681. Further notes and fixes on this combined group are recorded under group 681.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
676	3495	9/10/2020 9:39:53 AM	61.22534	-149.908394	1250.55192
676	3496	9/10/2020 9:42:06 AM	61.224283	-149.909538	1381.71145
676	3497	9/10/2020 9:46:32 AM	61.222018	-149.913361	1705.3684
676	3498	9/10/2020 9:47:47 AM	61.220867	-149.914269	1837.82699
676	3500	9/10/2020 9:49:47 AM	61.219428	-149.916458	2035.96657
676	3502	9/10/2020 9:57:56 AM	61.218592	-149.918133	2163.5183
676	3505	9/10/2020 10:01:03 AM	61.217234	-149.920834	2370.43944
676	3506	9/10/2020 10:01:50 AM	61.214257	-149.925994	2800.56028
676	3507	9/10/2020 10:03:58 AM	61.213221	-149.928549	2974.85754
676	3510	9/10/2020 10:07:09 AM	61.212178	-149.930985	3146.3312
676	3512	9/10/2020 10:09:41 AM	61.217129	-149.924233	2491.08199
676	3514	9/10/2020 10:19:17 AM	61.217671	-149.919576	2291.66625
676	3517	9/10/2020 10:25:31 AM	61.212174	-149.929818	3108.54244
676	3518	9/10/2020 10:32:55 AM	61.208375	-149.939177	3750.32597

Group ID	Created Date	Last Update	Species Common Name
676	9/10/2020 9:39:18 AM	9/10/2020 6:59:10 PM	Beluga
Spread	Formation	Combined Group	Pace
6	No Formation	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

***SC: 09:35 four white whales have split from MMG 674 travelling south past mouth of Ship creek. 09:52 two more whales from MMG 674 have joined with MMG 676. Fix 3506 shows whales crossing level B zone travelling south. 10:09 SC hand off to PW. **PW: Fix 3512 Trailing beluga milling in Level B Zone. Spread of belugas is 500 m along bootleggers cove. Fix 3518 Belugas exiting Level B zone, continuing to travel southwest. 11:13 Belugas milling in front of station. 11:19 belugas switch directions back to the NE. Fixes following this time are on lead beluga.11:48 Passed off to SC. **SC: 11:48 Took over from PW. 11:59 Fix 3554 Group traveling north through Bootlegger Cove approaching Level B Zone. Fix 3556 Group has crossed into Level B Zone. 12:14 two personal boats leaving from small boat launch. 12:30 SC hand off to PCT. **PCT: 12:30 take over from SC. Fix 3572 Group 676 combines with 681. Further notes and fixes on this combined group are recorded under group 681.

676	3519	9/10/2020 10:37:38 AM	61.204439	-149.959128	4797.18709
676	3521	9/10/2020 10:42:21 AM	61.203807	-149.967228	5163.59765
676	3523	9/10/2020 10:50:44 AM	61.202365	-149.982695	5906.68416
676	3526	9/10/2020 10:57:22 AM	61.203723	-149.985008	5917.36571
676	3532	9/10/2020 11:13:19 AM	61.201307	-149.993068	6424.68825
676	3535	9/10/2020 11:18:28 AM	61.200858	-149.987627	6218.28526
676	3537	9/10/2020 11:20:09 AM	61.201464	-149.980188	5862.45627
676	3542	9/10/2020 11:29:18 AM	61.201734	-149.973235	5557.33035
676	3544	9/10/2020 11:35:59 AM	61.202575	-149.967014	5246.50359
676	3547	9/10/2020 11:43:26 AM	61.204872	-149.952781	4524.15719
676	3549	9/10/2020 11:49:14 AM	61.210315	-149.937234	3518.17643
676	3551	9/10/2020 11:51:18 AM	61.210871	-149.934972	3393.1672
676	3552	9/10/2020 11:54:17 AM	61.209959	-149.934857	3468.23927
676	3554	9/10/2020 11:59:25 AM	61.213608	-149.926572	2876.91771
676	3556	9/10/2020 12:04:31 PM	61.216153	-149.921325	2483.42331

Group ID	Created Date	Last Update	Species Common Name
676	9/10/2020 9:39:18 AM	9/10/2020 6:59:10 PM	Beluga
Spread	Formation	Combined Group	Pace
6	No Formation	True	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

***SC: 09:35 four white whales have split from MMG 674 travelling south past mouth of Ship creek. 09:52 two more whales from MMG 674 have joined with MMG 676. Fix 3506 shows whales crossing level B zone travelling south. 10:09 SC hand off to PW. **PW: Fix 3512 Trailing beluga milling in Level B Zone. Spread of belugas is 500 m along bootleggers cove. Fix 3518 Belugas exiting Level B zone, continuing to travel southwest. 11:13 Belugas milling in front of station. 11:19 belugas switch directions back to the NE. Fixes following this time are on lead beluga.11:48 Passed off to SC. **SC: 11:48 Took over from PW. 11:59 Fix 3554 Group traveling north through Bootlegger Cove approaching Level B Zone. Fix 3556 Group has crossed into Level B Zone. 12:14 two personal boats leaving from small boat launch. 12:30 SC hand off to PCT. **PCT: 12:30 take over from SC. Fix 3572 Group 676 combines with 681. Further notes and fixes on this combined group are recorded under group 681.

676	3558	9/10/2020 12:09:25 PM	61.218608	-149.917224	2134.22916
676	3559	9/10/2020 12:11:57 PM	61.219654	-149.914979	1970.75781
676	3560	9/10/2020 12:14:07 PM	61.221255	-149.91274	1756.29887
676	3562	9/10/2020 12:18:28 PM	61.224375	-149.90912	1360.54781
676	3565	9/10/2020 12:20:47 PM	61.226005	-149.907258	1155.07917
676	3566	9/10/2020 12:22:51 PM	61.227225	-149.905955	1004.5299
676	3568	9/10/2020 12:23:59 PM	61.230577	-149.903882	654.10524
676	3570	9/10/2020 12:26:57 PM	61.229752	-149.901905	649.93979
676	3572	9/10/2020 12:31:38 PM	61.232295	-149.899652	358.19362

Group ID	Created Date	Last Update	Species Common Name		
677	9/10/2020 9:58:56 AM	9/10/2020 6:59:34 PM	Beluga		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
7	Circular	True	Moderate	Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	5	2	0	0	0		0	0	

Comments

**NEX: Fix 3504 three white belugas rounding Cairn Point. Added two more and two grays at 10:15. Moved towards the middle of the inlet and combined MMG 672 into MMG 677 at 10:30. Last seen 10:52

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
677	3504	9/10/2020 9:59:07 AM	61.260628	-149.879586	3018.12386
677	3508	9/10/2020 10:04:03 AM	61.260708	-149.880082	3019.73105
677	3513	9/10/2020 10:10:28 AM	61.25905	-149.883039	2802.8815
677	3515	9/10/2020 10:20:08 AM	61.25995	-149.885478	2875.32629
677	3520	9/10/2020 10:37:40 AM	61.260703	-149.884822	2963.83301
677	3522	9/10/2020 10:47:01 AM	61.26189	-149.881634	3127.25468
677	3524	9/10/2020 10:52:21 AM	61.260868	-149.879097	3050.86223

Group ID	Created Date	Last Update	Species Common Name
678	9/10/2020 10:04:15 AM	9/10/2020 11:37:39 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	2	0		

Comments

PW: 10:22 Second seal added to count. Last seen 11:50.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
678	3509	9/10/2020 10:04:24 AM	61.210974	-149.932541	3303.03679
678	3516	9/10/2020 10:22:53 AM	61.214999	-149.924667	2692.02712
678	3546	9/10/2020 11:37:56 AM	61.20192	-149.968248	5344.38411
678	3550	9/10/2020 11:50:29 AM	61.201419	-149.972499	5550.71399

Group ID	Created Date	Last Update	Species Common Name
679	9/10/2020 10:55:23 AM	9/10/2020 11:03:02 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: 10:56 Fix 3525 One Harbor Seal at the mouth of Ship Creek. Last seen: 11:02

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
679	3525	9/10/2020 10:55:33 AM	61.226956	-149.904176	975.87696

Group ID	Created Date	Last Update	Species Common Name
680	9/10/2020 10:58:59 AM	9/10/2020 12:50:18 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: 10:59 Fix 3527 One Harbor Seal south of Ship Creek station. Last seen: 12:50.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
680	3527	9/10/2020 10:59:28 AM	61.221048	-149.913226	1789.82997
680	3581	9/10/2020 12:49:44 PM	61.220751	-149.916374	1914.49414

Group ID	Created Date	Last Update	Species Common Name
681	9/10/2020 11:01:49 AM	9/10/2020 2:55:25 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	True	Sedate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	5	1	3	0	0		0	0	

Comments

NEX: Whales travelling south along our shoreline. Fix 3529 shows whales inside the Level B Zone. 12:00 SPLIT GROUP (four white, one calf) to GROUP 683.**PCT: 12:14 take over from NEX. Fix 3561 Leading two whales traveling SW within 300 m of nearshore. Group 676 (a split from 674) combines with group 681. Fix 3574 combined group traveling NE along nearshore. ***NEX: Fix 3578. Fix 3588 crossing the outbound line north. Last seen: 13:16

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
681	3528	9/10/2020 11:01:56 AM	61.2573	-149.88086	2643.79144
681	3529	9/10/2020 11:06:22 AM	61.256715	-149.882636	2555.89033
681	3531	9/10/2020 11:09:58 AM	61.254912	-149.881863	2374.14164
681	3533	9/10/2020 11:13:18 AM	61.253581	-149.882105	2229.01144
681	3538	9/10/2020 11:20:07 AM	61.25088	-149.883646	1918.05233
681	3540	9/10/2020 11:27:47 AM	61.247976	-149.885351	1583.02428
681	3548	9/10/2020 11:44:38 AM	61.245854	-149.887566	1322.47773
681	3553	9/10/2020 11:54:55 AM	61.241955	-149.890589	861.57329
681	3561	9/10/2020 12:14:47 PM	61.234591	-149.900118	291.11506
681	3564	9/10/2020 12:22:12 PM	61.233628	-149.901723	387.62576
681	3574	9/10/2020 12:35:37 PM	61.237048	-149.897982	337.83385
681	3578	9/10/2020 12:41:19 PM	61.24109	-149.891507	756.49295
681	3579	9/10/2020 12:45:17 PM	61.242519	-149.890132	928.42714
681	3583	9/10/2020 12:54:31 PM	61.25025	-149.884524	1837.15071

Group ID	Created Date	Last Update	Species Common Name
681	9/10/2020 11:01:49 AM	9/10/2020 2:55:25 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	True	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
5	1	3	0	0		0	0		

Comments

NEX: Whales travelling south along our shoreline. Fix 3529 shows whales inside the Level B Zone. 12:00 SPLIT GROUP (four white, one calf) to GROUP 683. **PCT: 12:14 take over from NEX. Fix 3561 Leading two whales traveling SW within 300 m of nearshore. Group 676 (a split from 674) combines with group 681. Fix 3574 combined group traveling NE along nearshore. ***NEX: Fix 3578. Fix 3588 crossing the outbound line north. Last seen: 13:16

681	3584	9/10/2020 12:59:24 PM	61.252477	-149.883587	2088.51146
681	3588	9/10/2020 1:09:40 PM	61.2575	-149.88342	2630.49032
681	3590	9/10/2020 1:16:40 PM	61.26056	-149.881889	2980.21544

Group ID	Created Date	Last Update	Species Common Name
682	9/10/2020 11:06:10 AM	9/10/2020 2:32:56 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	5	0	1	0	0		0	0	

Comments

SC: 11:02 Fix 3530 Five white belugas traveling north along far shore. ***NEX: 11:25. Fix 3545 shows whales north of the boundary line. Last seen: 11:37

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
682	3530	9/10/2020 11:07:39 AM	61.254607	-149.931217	2971.30294
682	3534	9/10/2020 11:14:00 AM	61.254606	-149.925284	2773.05897
682	3536	9/10/2020 11:20:00 AM	61.256993	-149.917784	2792.28978
682	3539	9/10/2020 11:24:16 AM	61.260842	-149.911612	3068.53482
682	3545	9/10/2020 11:36:37 AM	61.269383	-149.901748	3899.46016

Group ID	Created Date		Last Update		Species Common Name				
683	9/10/2020 12:02:34 PM		9/10/2020 7:00:54 PM		Beluga				
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior				
8	No Formation	True	Moderate	Travelling	Milling				
Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	1	2	0	0	0		0	0	

Comments

**NEX: at 12:00 SPLIT GROUP from MMG 681 (4 white, 1 calf). FIX 3555 whales inside Level B zone. At 12:14 dredge barge pulling out in front of the MMG. At 12:48 survey boat near group. At 13:15 survey boat close to group. Last seen 13:34 **SC: 13:40 Took over from PCT (five whites, two greys, one calf) Additional whales joined group. Fix 3607 Whales have a spread of approx. 2000 meters with four whales (and calf) traveling SW towards Bootlegger Cove, and three remaining to mill by the mouth of Ship Creek. *Split Group at 14:27 - MM Group 689 will now include the two whites, two grey, and one calf that traveled SW towards Bootlegger Cove. Fix 3608 Three white whales milling by the mouth of Ship Creek. Last seen: 14:40

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
683	3555	9/10/2020 12:04:15 PM	61.254592	-149.881897	2339.58841
683	3557	9/10/2020 12:08:52 PM	61.249764	-149.883828	1797.2967
683	3563	9/10/2020 12:18:28 PM	61.248782	-149.885195	1670.77389
683	3567	9/10/2020 12:23:33 PM	61.247093	-149.88644	1471.76138
683	3571	9/10/2020 12:28:15 PM	61.247419	-149.886702	1502.32619
683	3573	9/10/2020 12:31:41 PM	61.245965	-149.88716	1340.64523
683	3576	9/10/2020 12:38:11 PM	61.245183	-149.887818	1247.2224
683	3580	9/10/2020 12:47:59 PM	61.244424	-149.888133	1161.69418
683	3585	9/10/2020 1:01:06 PM	61.247759	-149.885849	1551.85134
683	3587	9/10/2020 1:07:12 PM	61.245091	-149.888374	1228.96885
683	3589	9/10/2020 1:14:58 PM	61.247478	-149.886567	1510.6702
683	3593	9/10/2020 1:25:37 PM	61.241916	-149.892422	837.74839
683	3595	9/10/2020 1:32:08 PM	61.241728	-149.890013	845.77212
683	3596	9/10/2020 1:34:46 PM	61.237185	-149.89489	303.49082

Group ID	Created Date	Last Update	Species Common Name
683	9/10/2020 12:02:34 PM	9/10/2020 7:00:54 PM	Beluga
Spread	Formation	Combined Group	Pace
8	No Formation	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	1	2	0	0	0		0	0	

Comments

**NEX: at 12:00 SPLIT GROUP from MMG 681 (4 white, 1 calf). FIX 3555 whales inside Level B zone. At 12:14 dredge barge pulling ourt in front of the MMG. At 12:48 survey boat near group. At 13:15 survey boat close to group. Last seen 13:34 **SC: 13:40 Took over from PCT (five whites, two greys, one calf) Additional whales joined group. Fix 3607 Whales have a spread of approx. 2000 meters with four whales (and calf) traveling SW towards Bootlegger Cove, and three remaining to mill by the mouth of Ship Creek. *Split Group at 14:27 - MM Group 689 will now include the two whites, two grey, and one calf that traveled SW towards Bootlegger Cove. Fix 3608 Three white whales milling by the mouth of Ship Creek. Last seen: 14:40

683	3598	9/10/2020 1:37:51 PM	61.23493	-149.897147	142.00016
683	3600	9/10/2020 1:40:10 PM	61.22993	-149.901683	626.98027
683	3601	9/10/2020 1:43:41 PM	61.230079	-149.90457	718.45721
683	3603	9/10/2020 1:46:37 PM	61.229547	-149.904419	754.12501
683	3604	9/10/2020 1:51:18 PM	61.227232	-149.90448	958.60971
683	3607	9/10/2020 1:58:32 PM	61.223082	-149.913003	1599.22648
683	3611	9/10/2020 2:09:27 PM	61.22951	-149.901461	658.38781
683	3613	9/10/2020 2:16:42 PM	61.228259	-149.902479	805.00721
683	3619	9/10/2020 2:33:55 PM	61.227166	-149.903456	936.14262
683	3622	9/10/2020 2:40:34 PM	61.22827	-149.902618	807.84275
683	3625	9/10/2020 2:49:00 PM	61.228977	-149.902343	733.83298
683	3629	9/10/2020 2:59:16 PM	61.229121	-149.901086	684.62738
683	3636	9/10/2020 3:08:28 PM	61.229019	-149.901104	694.93987
683	3639	9/10/2020 3:13:33 PM	61.229193	-149.901284	683.12432
683	3644	9/10/2020 3:22:49 PM	61.227903	-149.903044	854.51501

Group ID	Created Date	Last Update	Species Common Name
684	9/10/2020 12:25:09 PM	9/10/2020 6:54:41 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	No Formation	False	Moderate
			Primary Behavior
			Milling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	0	0	0	0	0	0	0	

Comments

PW: 12:23 Fix 3569 Belugas traveling. *NEX: Fix 3577. 14:56 Fix 3626 two whales inside Level B zone travelling South. ***PW: Took over from NEX 15:11. Passed off to PCT at 15:18 Last seen 15:18. *DISREGARD FIX 3575* (ATL post-processed: moved fix 3575 to G671 (theodolite test group).)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
684	3569	9/10/2020 12:26:03 PM	61.256836	-149.925946	2996.29606
684	3577	9/10/2020 12:39:41 PM	61.261159	-149.912772	3120.86026
684	3582	9/10/2020 12:50:04 PM	61.263288	-149.908237	3284.75737
684	3586	9/10/2020 1:04:31 PM	61.264224	-149.910433	3413.31897
684	3591	9/10/2020 1:17:56 PM	61.266074	-149.907984	3584.64943
684	3594	9/10/2020 1:28:47 PM	61.264717	-149.908684	3444.92299
684	3599	9/10/2020 1:38:14 PM	61.264354	-149.910509	3428.31977
684	3602	9/10/2020 1:44:09 PM	61.265041	-149.91207	3523.4296
684	3605	9/10/2020 1:53:15 PM	61.263858	-149.894623	3267.19061
684	3609	9/10/2020 2:03:06 PM	61.264091	-149.913544	3443.95527
684	3612	9/10/2020 2:11:55 PM	61.261841	-149.910899	3164.11852
684	3615	9/10/2020 2:21:25 PM	61.264311	-149.910595	3424.8284
684	3623	9/10/2020 2:41:22 PM	61.26288	-149.912866	3304.68457
684	3626	9/10/2020 2:56:55 PM	61.253513	-149.898132	2125.67235

Group ID	Created Date	Last Update	Species Common Name
684	9/10/2020 12:25:09 PM	9/10/2020 6:54:41 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	No Formation	False	Moderate
			Primary Behavior
			Milling
			Secondary Behavior
			Travelling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
4	0	0	0	0	0	0	0	0	

Comments

PW: 12:23 Fix 3569 Belugas traveling. *NEX: Fix 3577. 14:56 Fix 3626 two whales inside Level B zone travelling South. ***PW: Took over from NEX 15:11. Passed off to PCT at 15:18 Last seen 15:18. *DISREGARD FIX 3575* (ATL post-processed: moved fix 3575 to G671 (theodolite test group).)

684	3627	9/10/2020 2:57:47 PM	61.251919	-149.89356	1941.4529
684	3630	9/10/2020 3:01:26 PM	61.24969	-149.889165	1718.33562
684	3633	9/10/2020 3:03:54 PM	61.245458	-149.893035	1225.74506
684	3634	9/10/2020 3:05:30 PM	61.244306	-149.891848	1105.0028
684	3635	9/10/2020 3:06:24 PM	61.244295	-149.89071	1113.77371
684	3638	9/10/2020 3:12:23 PM	61.241796	-149.892673	822.69669
684	3641	9/10/2020 3:18:00 PM	61.232481	-149.904788	583.31043
684	3642	9/10/2020 3:19:06 PM	61.233404	-149.89735	184.45394
684	3643	9/10/2020 3:20:42 PM	61.232341	-149.89914	334.76554

Group ID	Created Date	Last Update	Species Common Name
685	9/10/2020 1:18:39 PM	9/10/2020 1:36:54 PM	Harbor Porpoise
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

**PW 13:19 Harbor porpoise seen surfacing. Last seen: 13:35.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
685	3592	9/10/2020 1:18:49 PM	61.213578	-150.000534	6119.06911
685	3597	9/10/2020 1:35:36 PM	61.203139	-149.997437	6506.31336

Group ID	Created Date	Last Update	Species Common Name
686	9/10/2020 1:53:41 PM	9/10/2020 3:02:43 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Diving	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: 13:50 Saw rolling HS; Last seen 14:49

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
686	3606	9/10/2020 1:53:55 PM	61.201185	-149.972358	5562.31791
686	3620	9/10/2020 2:34:13 PM	61.200758	-149.985579	6137.79046

Group ID	Created Date	Last Update	Species Common Name
687	9/10/2020 2:02:28 PM	9/10/2020 3:04:26 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: Fix 3608 One Harbor Seal looking and sinking. Last seen: 15:04

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
687	3608	9/10/2020 2:02:40 PM	61.221362	-149.913912	1781.81442
687	3632	9/10/2020 3:03:50 PM	61.218406	-149.917661	2165.96764

Group ID	Created Date	Last Update	Species Common Name
688	9/10/2020 2:04:07 PM	9/10/2020 2:42:05 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	True	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	0	0	0	0	0	0	0	

Comments

PW: Fix 3610 one white beluga traveling E. Last seen 14:25. (Combined with MM Group 689 at 14:30)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
688	3610	9/10/2020 2:04:17 PM	61.204545	-149.986881	5947.9064
688	3614	9/10/2020 2:16:54 PM	61.202448	-149.980723	5817.27564
688	3616	9/10/2020 2:24:13 PM	61.204293	-149.962506	4939.67782

Group ID	Created Date	Last Update	Species Common Name
689	9/10/2020 2:25:42 PM	9/10/2020 7:01:51 PM	Beluga
Spread	Formation	Combined Group	Pace
3	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

SC: 14:27 Split Group from MM Group 683 (two whites, two greys & one calf) heading SW towards Bootlegger Cove. Passed off to PW at 14:30. ***PW: Fix 3618 Belugas combined with MM Group 688 (one white) and changed direction. All began traveling to NE; 1459 Passed off to SC; Last seen 14:57

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
689	3617	9/10/2020 2:27:47 PM	61.213937	-149.928088	2896.86473
689	3618	9/10/2020 2:32:06 PM	61.206665	-149.945643	4119.37091
689	3621	9/10/2020 2:40:31 PM	61.206765	-149.94508	4091.1325
689	3624	9/10/2020 2:47:42 PM	61.208131	-149.939514	3782.72776
689	3628	9/10/2020 2:57:45 PM	61.212869	-149.930934	3084.55323
689	3631	9/10/2020 3:02:10 PM	61.215484	-149.923783	2620.57032
689	3637	9/10/2020 3:09:37 PM	61.216597	-149.920964	2431.96386
689	3640	9/10/2020 3:17:28 PM	61.21922	-149.921302	2212.14481
689	3645	9/10/2020 3:24:35 PM	61.218894	-149.920191	2202.69873
689	3646	9/10/2020 3:29:53 PM	61.220185	-149.917718	2008.18422
689	3647	9/10/2020 3:34:23 PM	61.222683	-149.917328	1782.81446

Group ID	Created Date	Last Update	Species Common Name
690	9/10/2020 3:26:55 PM	9/10/2020 7:02:42 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

***SC: 15:30 MMG 683, 684 and 689 have combined. Whales are spread more than 1,000 meters. Fixes are taken on whale closest to work site. 15:56 Four white and two gray whales split from group and are now a new group MMG 691. Fix 3663 shows two white and a calf are milling in the mouth of Ship creek. 18:02 Belugas still milling at mouth of Ship Creek. Last seen heading west across the inlet towards far shore: Last seen: 18:21.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
690	3648	9/10/2020 3:36:15 PM	61.2275	-149.904141	923.76183
690	3649	9/10/2020 3:50:39 PM	61.228742	-149.912232	1133.1635
690	3650	9/10/2020 3:51:37 PM	61.227257	-149.904811	966.09868
690	3655	9/10/2020 4:11:32 PM	61.226838	-149.904098	984.95891
690	3656	9/10/2020 4:15:26 PM	61.227437	-149.904563	942.09959
690	3662	9/10/2020 4:28:03 PM	61.227335	-149.904634	953.61847
690	3663	9/10/2020 4:29:07 PM	61.227339	-149.904083	937.11456
690	3673	9/10/2020 4:39:23 PM	61.227375	-149.90408	933.65474
690	3678	9/10/2020 4:46:13 PM	61.227636	-149.903925	904.79145
690	3689	9/10/2020 5:04:17 PM	61.228034	-149.903987	869.97767
690	3696	9/10/2020 5:18:31 PM	61.22722	-149.90407	947.93188
690	3703	9/10/2020 5:35:48 PM	61.22755	-149.904275	923.08186
690	3708	9/10/2020 5:41:53 PM	61.227103	-149.904439	969.46285
690	3714	9/10/2020 5:52:25 PM	61.227367	-149.905226	968.75156

Group ID	Created Date	Last Update	Species Common Name
690	9/10/2020 3:26:55 PM	9/10/2020 7:02:42 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	True	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

***SC: 15:30 MMG 683, 684 and 689 have combined. Whales are spread more than 1,000 meters. Fixes are taken on whale closest to work site. 15:56 Four white and two gray whales split from group and are now a new group MMG 691. Fix 3663 shows two white and a calf are milling in the mouth of Ship creek. 18:02 Belugas still milling at mouth of Ship Creek. Last seen heading west across the inlet towards far shore: Last seen: 18:21.

690	3716	9/10/2020 5:57:27 PM	61.229838	-149.9081	882.18298
690	3719	9/10/2020 6:02:06 PM	61.229816	-149.910125	973.60805
690	3721	9/10/2020 6:13:54 PM	61.233363	-149.919763	1346.72927
690	3724	9/10/2020 6:21:16 PM	61.239155	-149.927767	1844.55412

Group ID	Created Date	Last Update	Species Common Name
691	9/10/2020 3:56:38 PM	9/10/2020 7:03:10 PM	Beluga
Spread	Formation	Combined Group	Pace
7	No Formation	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

***SC: 15:56 Four white and two gray split from MMG 690 and are crossing the inlet. **PW Took over SC split belugas from MM Group 690 at 16:05. 16:24 Belugas milling in Level B Zone. Fixes show belugas surfacing in zone, no formation on belugas. Fix 3687 Six belugas (others joined from MM Group 690) split from MMG 695, traveling southwest along far shore. 1746 passed off to NE. **NEX: at 17:45 MMG 691 joined MMG 693, changed direction and started travelling SW along far shoreline..

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
691	3651	9/10/2020 4:00:01 PM	61.22859	-149.927055	1849.94116
691	3652	9/10/2020 4:04:31 PM	61.234534	-149.936626	2242.96613
691	3653	9/10/2020 4:09:20 PM	61.238141	-149.921688	1501.01768
691	3657	9/10/2020 4:15:30 PM	61.230876	-149.924907	1664.60708
691	3658	9/10/2020 4:24:07 PM	61.23388	-149.940205	2435.19763
691	3660	9/10/2020 4:26:36 PM	61.247716	-149.915086	1833.36391
691	3665	9/10/2020 4:31:19 PM	61.228025	-149.948463	2963.65267
691	3666	9/10/2020 4:32:53 PM	61.232244	-149.945854	2747.51866
691	3670	9/10/2020 4:38:11 PM	61.213549	-149.952797	3880.86274
691	3674	9/10/2020 4:40:52 PM	61.234784	-149.94389	2631.62562
691	3677	9/10/2020 4:45:41 PM	61.239979	-149.959032	3495.09699
691	3681	9/10/2020 4:49:49 PM	61.218462	-149.952518	3567.70428
691	3683	9/10/2020 4:53:21 PM	61.220279	-149.951274	3412.30735
691	3687	9/10/2020 5:02:36 PM	61.238551	-149.96784	3938.21269

Group ID	Created Date	Last Update	Species Common Name
691	9/10/2020 3:56:38 PM	9/10/2020 7:03:10 PM	Beluga
Spread	Formation	Combined Group	Pace
7	No Formation	True	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	0	0	0	

Comments

***SC: 15:56 Four white and two gray split from MMG 690 and are crossing the inlet. **PW Took over SC split belugas from MM Group 690 at 16:05. 16:24 Belugas milling in Level B Zone. Fixes show belugas surfacing in zone, no formation on belugas. Fix 3687 Six belugas (others joined from MM Group 690) split from MMG 695, traveling southwest along far shore. 1746 passed off to NE. **NEX: at 17:45 MMG 691 joined MMG 693, changed direction and started travelling SW along far shoreline..

691	3693	9/10/2020 5:15:47 PM	61.243493	-149.960857	3677.92367
691	3699	9/10/2020 5:22:52 PM	61.242924	-149.959234	3577.4044
691	3704	9/10/2020 5:36:06 PM	61.246326	-149.956214	3544.3598
691	3705	9/10/2020 5:37:48 PM	61.250219	-149.943885	3160.30102
691	3710	9/10/2020 5:42:17 PM	61.245091	-149.944439	2910.98162

Group ID	Created Date	Last Update	Species Common Name
692	9/10/2020 4:09:33 PM	9/10/2020 5:24:09 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

***SC: 16:10 Fix 3654 One harbor seal spotted by mouth of Ship creek looking and sinking. Last seen: 17:23.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
692	3654	9/10/2020 4:09:57 PM	61.225945	-149.907414	1165.36163
692	3698	9/10/2020 5:22:50 PM	61.226838	-149.904105	985.15038

Group ID	Created Date		Last Update		Species Common Name				
693	9/10/2020 4:24:31 PM		9/10/2020 7:04:48 PM		Beluga				
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior				
8	Linear	True	Moderate	Travelling	Milling				
Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
44	5	4	0	0		0	0		

Comments

NEX: Belugas sighted on far shore 16:24. Counted forty-nine adults, and at least four calves. ***BAD FIX: 3671*** 17:45 Group 691 joined up with group 693. Last seen: 18:26 ***PW: 18:31 Took over from NEX. Fixes are of belugas closest to the zone. Ended watch 18:53. (ATL post-processed: moved fix 3671 to G671 (theodolite test group).)

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
693	3659	9/10/2020 4:25:50 PM	61.314148	-149.893108	8855.81249
693	3661	9/10/2020 4:27:56 PM	61.314017	-149.894875	8840.86327
693	3672	9/10/2020 4:39:25 PM	61.300822	-149.897927	7376.66669
693	3676	9/10/2020 4:43:51 PM	61.312393	-149.911569	8707.23774
693	3682	9/10/2020 4:53:09 PM	61.303144	-149.906261	7657.67131
693	3688	9/10/2020 5:00:21 PM	61.301725	-149.909093	7514.50716
693	3690	9/10/2020 5:04:36 PM	61.285681	-149.905959	5723.96664
693	3691	9/10/2020 5:11:00 PM	61.280229	-149.908212	5137.46582
693	3695	9/10/2020 5:17:26 PM	61.278549	-149.914234	5009.8176
693	3701	9/10/2020 5:32:19 PM	61.270409	-149.915106	4141.57423
693	3709	9/10/2020 5:42:34 PM	61.25747	-149.915603	2791.19927
693	3715	9/10/2020 5:53:42 PM	61.247999	-149.941889	2938.47101
693	3720	9/10/2020 6:09:03 PM	61.253478	-149.939715	3203.68428
693	3722	9/10/2020 6:18:03 PM	61.251737	-149.94827	3448.87363

Group ID	Created Date	Last Update	Species Common Name
693	9/10/2020 4:24:31 PM	9/10/2020 7:04:48 PM	Beluga
Spread	Formation	Combined Group	Pace
8	Linear	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
44	5	4	0	0	0	0	0	0	

Comments

NEX: Belugas sighted on far shore 16:24. Counted forty-nine adults, and at least four calves. ***BAD FIX: 3671*** 17:45 Group 691 joined up with group 693. Last seen: 18:26 ***PW: 18:31 Took over from NEX. Fixes are of belugas closest to the zone. Ended watch 18:53. (ATL post-processed: moved fix 3671 to G671 (theodolite test group).)

693	3723	9/10/2020 6:19:42 PM	61.246161	-149.943906	2935.63212
693	3725	9/10/2020 6:25:52 PM	61.246534	-149.942477	2886.36515
693	3726	9/10/2020 6:35:52 PM	61.237801	-149.919122	1358.71646
693	3727	9/10/2020 6:37:38 PM	61.254174	-149.936374	3125.44113
693	3729	9/10/2020 6:43:12 PM	61.248071	-149.935515	2656.08254
693	3730	9/10/2020 6:43:08 PM	61.232012	-149.931856	2006.41797
693	3731	9/10/2020 6:44:52 PM	61.25623	-149.925292	2920.92724
693	3732	9/10/2020 6:48:15 PM	61.257501	-149.917878	2845.20926
693	3733	9/10/2020 6:48:40 PM	61.253243	-149.928835	2773.40907
693	3734	9/10/2020 6:48:34 PM	61.248053	-149.906034	1628.28658

Group ID	Created Date		Last Update		Species Common Name				
694	9/10/2020 4:30:31 PM		9/10/2020 7:05:25 PM		Beluga				
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior				
5	Linear	False	Moderate	Travelling	Milling				
Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
11	0	0	0	0	0	0	0	0	

Comments

NEX: Belugas sighted rounding Carin Point fix 3664. Fix 3667 inside outbound line. They all look grey in the light. Added four more at 16:38. Dredge barge moving around at 16:55. **SC** 1700 Took over group from NEX. Belugas spotted traveling South by crane dock. 17:28 Whales spotted north of work site near corner. Passed whales back to NEX at 17:38. ***NEX Fix 3713 shows whales north of Level B Zone. Last seen 17:59

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
694	3664	9/10/2020 4:30:40 PM	61.258865	-149.883213	2780.77642
694	3667	9/10/2020 4:32:58 PM	61.255688	-149.882735	2444.23441
694	3668	9/10/2020 4:34:29 PM	61.253813	-149.883178	2237.16192
694	3669	9/10/2020 4:36:21 PM	61.251748	-149.883071	2019.28096
694	3675	9/10/2020 4:40:58 PM	61.247436	-149.886507	1507.12742
694	3679	9/10/2020 4:47:47 PM	61.24467	-149.88759	1196.66563
694	3684	9/10/2020 4:58:03 PM	61.239295	-149.890342	585.66628
694	3686	9/10/2020 5:00:44 PM	61.240505	-149.890468	708.94749
694	3692	9/10/2020 5:12:38 PM	61.236639	-149.895334	245.11213
694	3694	9/10/2020 5:16:10 PM	61.239344	-149.893847	545.02173
694	3706	9/10/2020 5:39:24 PM	61.25107	-149.883764	1936.24122
694	3711	9/10/2020 5:43:43 PM	61.255649	-149.88651	2395.17053
694	3713	9/10/2020 5:50:37 PM	61.257809	-149.886166	2634.64083
694	3717	9/10/2020 5:59:38 PM	61.266691	-149.880147	3665.25424

Group ID	Created Date	Last Update	Species Common Name
695	9/10/2020 5:00:09 PM	9/10/2020 6:08:55 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	0	0	0	0	0		0	0	

Comments

**PW Three belugas split from MM Group 691 (one white, one gray, one calf), out of Level B Zone. Fix 3683 (G691) is of belugas splitting. Group combined at 16:05 with Mega MM Group 693.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
695	3685	9/10/2020 5:00:33 PM	61.220984	-149.961023	3851.16249
695	3697	9/10/2020 5:28:03 PM	61.227025	-149.973731	4307.47877
695	3702	9/10/2020 5:34:35 PM	61.22594	-149.974032	4347.98773
695	3707	9/10/2020 5:40:14 PM	61.225997	-149.97449	4370.52793
695	3712	9/10/2020 5:49:08 PM	61.226118	-149.974181	4351.49992
695	3718	9/10/2020 6:00:58 PM	61.22938	-149.965791	3844.42204

Group ID	Created Date	Last Update	Species Common Name
697	9/11/2020 7:48:11 AM	9/11/2020 6:13:51 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Linear	True	Moderate
	Primary Behavior	Secondary Behavior	
	Travelling	Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	1	0	0	0	0		0	0	

Comments

PW: 07:47 One white spotted traveling S; fix 3744 appears to be milling; 09:29 Joined belugas from MM Group 699. Comments continue in MM Group 699.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
697	3738	9/11/2020 7:49:36 AM	61.244432	-149.962436	3788.36614
697	3740	9/11/2020 7:52:05 AM	61.244792	-149.962711	3814.26272
697	3743	9/11/2020 8:00:27 AM	61.240127	-149.9635	3733.25335
697	3744	9/11/2020 8:04:41 AM	61.240593	-149.966539	3902.1985
697	3749	9/11/2020 8:51:25 AM	61.237882	-149.980085	4582.46941
697	3757	9/11/2020 8:59:27 AM	61.230266	-149.975782	4361.98008
697	3767	9/11/2020 9:24:26 AM	61.236218	-149.966692	3855.56686

Group ID	Created Date	Last Update	Species Common Name
698	9/11/2020 7:50:40 AM	9/11/2020 6:36:30 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Parallel	True	Sedate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	1	0	0		0	0		

Comments

**SC: 07:51 One white beluga, one gray, and one calf spotted inside Level B Zone, South of tug boat barge, heading South. Fix 3745 Beluga and calf changed direction and are now heading NE along near shore inside Level B Zone. Fix 3753 Beluga and calf milling by PCT station. Last seen 08:49. Handed off to PCT at 8:50. **PCT: 08:50 take over from SC. One white beluga and one calf milling nearshore. 08:59 hand-off to SC. **SC: 08:59 Belugas traveling back toward Ship Creek. 09:16 Belugas milling back and forth between mouth of Ship Creek and just south of tug boat dock. 12:45 Belugas still milling. 13:18 Belugas now South of tug boat dock. Fix 3827 belugas heading NW across inlet towards far shore. **PCT: group traveling towards farshore. Last seen 14:19. **NEX: 14:45 combined group with group 701.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
698	3739	9/11/2020 7:50:54 AM	61.223517	-149.910921	1493.9335
698	3741	9/11/2020 7:53:19 AM	61.222607	-149.912106	1613.07768
698	3742	9/11/2020 7:58:44 AM	61.221678	-149.913574	1742.71183
698	3745	9/11/2020 8:05:46 AM	61.224026	-149.910063	1421.23877
698	3746	9/11/2020 8:10:19 AM	61.226054	-149.907324	1152.72363
698	3747	9/11/2020 8:17:08 AM	61.227812	-149.905844	949.41493
698	3748	9/11/2020 8:22:55 AM	61.227755	-149.905274	935.58243
698	3750	9/11/2020 8:28:21 AM	61.230165	-149.903148	657.51762
698	3751	9/11/2020 8:32:49 AM	61.232011	-149.898482	339.27073
698	3752	9/11/2020 8:38:19 AM	61.231783	-149.899144	380.99277
698	3753	9/11/2020 8:45:42 AM	61.231611	-149.899684	414.1143
698	3754	9/11/2020 8:49:50 AM	61.231767	-149.899374	390.17513
698	3755	9/11/2020 8:50:26 AM	61.231964	-149.899313	371.49513
698	3756	9/11/2020 8:57:16 AM	61.230511	-149.901524	570.99961

Group ID	Created Date	Last Update	Species Common Name
698	9/11/2020 7:50:40 AM	9/11/2020 6:36:30 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Parallel	True	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	1	0	0		0	0		

Comments

**SC: 07:51 One white beluga, one gray, and one calf spotted inside Level B Zone, South of tug boat barge, heading South. Fix 3745 Beluga and calf changed direction and are now heading NE along near shore inside Level B Zone. Fix 3753 Beluga and calf milling by PCT station. Last seen 08:49. Handed off to PCT at 8:50. **PCT: 08:50 take over from SC. One white beluga and one calf milling nearshore. 08:59 hand-off to SC. **SC: 08:59 Belugas traveling back toward Ship Creek. 09:16 Belugas milling back and forth between mouth of Ship Creek and just south of tug boat dock. 12:45 Belugas still milling. 13:18 Belugas now South of tug boat dock. Fix 3827 belugas heading NW across inlet towards far shore. **PCT: group traveling towards farshore. Last seen 14:19. **NEX: 14:45 combined group with group 701.

698	3758	9/11/2020 8:59:12 AM	61.229049	-149.90388	776.49723
698	3759	9/11/2020 9:00:56 AM	61.228413	-149.904648	857.29947
698	3761	9/11/2020 9:08:39 AM	61.227679	-149.905842	960.88598
698	3764	9/11/2020 9:15:33 AM	61.224263	-149.909621	1386.08451
698	3765	9/11/2020 9:19:44 AM	61.223652	-149.910487	1468.26724
698	3768	9/11/2020 9:26:07 AM	61.225434	-149.90835	1240.71788
698	3770	9/11/2020 9:29:04 AM	61.226212	-149.907548	1145.70473
698	3772	9/11/2020 9:36:41 AM	61.226293	-149.906923	1118.63507
698	3776	9/11/2020 9:57:38 AM	61.226904	-149.906806	1060.48428
698	3778	9/11/2020 10:01:01 AM	61.225204	-149.909227	1289.20752
698	3781	9/11/2020 10:22:44 AM	61.226195	-149.907639	1150.14156
698	3784	9/11/2020 10:39:05 AM	61.222715	-149.911229	1576.49382
698	3785	9/11/2020 10:49:04 AM	61.220384	-149.914578	1891.42584
698	3788	9/11/2020 10:57:20 AM	61.224882	-149.908238	1287.40519
698	3791	9/11/2020 11:11:24 AM	61.225198	-149.907923	1248.91329

Group ID	Created Date	Last Update	Species Common Name
698	9/11/2020 7:50:40 AM	9/11/2020 6:36:30 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Parallel	True	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	1	1	0	0		0	0		

Comments

**SC: 07:51 One white beluga, one gray, and one calf spotted inside Level B Zone, South of tug boat barge, heading South. Fix 3745 Beluga and calf changed direction and are now heading NE along near shore inside Level B Zone. Fix 3753 Beluga and calf milling by PCT station. Last seen 08:49. Handed off to PCT at 8:50. **PCT: 08:50 take over from SC. One white beluga and one calf milling nearshore. 08:59 hand-off to SC. **SC: 08:59 Belugas traveling back toward Ship Creek. 09:16 Belugas milling back and forth between mouth of Ship Creek and just south of tug boat dock. 12:45 Belugas still milling. 13:18 Belugas now South of tug boat dock. Fix 3827 belugas heading NW across inlet towards far shore. **PCT: group traveling towards farshore. Last seen 14:19. **NEX: 14:45 combined group with group 701.

698	3793	9/11/2020 11:15:57 AM	61.223086	-149.910615	1523.94453
698	3795	9/11/2020 11:20:54 AM	61.221813	-149.912335	1692.67079
698	3796	9/11/2020 11:26:04 AM	61.221332	-149.912734	1748.98121
698	3798	9/11/2020 11:30:38 AM	61.222951	-149.910701	1538.9609
698	3799	9/11/2020 11:40:06 AM	61.225116	-149.908055	1260.4224
698	3800	9/11/2020 11:55:56 AM	61.226831	-149.90443	994.81688
698	3801	9/11/2020 12:16:29 PM	61.221051	-149.913085	1785.3836
698	3802	9/11/2020 12:27:06 PM	61.223497	-149.909641	1457.05585
698	3808	9/11/2020 12:43:30 PM	61.229577	-149.900168	616.4305
698	3809	9/11/2020 12:45:14 PM	61.229526	-149.900375	626.7234
698	3811	9/11/2020 12:52:00 PM	61.230049	-149.899714	558.75871
698	3812	9/11/2020 12:58:13 PM	61.228349	-149.902321	792.07803
698	3813	9/11/2020 1:04:42 PM	61.227134	-149.904115	957.31734
698	3815	9/11/2020 1:15:15 PM	61.224224	-149.908346	1351.57158
698	3816	9/11/2020 1:20:07 PM	61.222145	-149.911483	1636.7209

Group ID	Created Date	Last Update	Species Common Name
698	9/11/2020 7:50:40 AM	9/11/2020 6:36:30 PM	Beluga
Spread	Formation	Combined Group	Pace
2	Parallel	True	Sedate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
	1	1	1	0	0		0	0	

Comments

**SC: 07:51 One white beluga, one gray, and one calf spotted inside Level B Zone, South of tug boat barge, heading South. Fix 3745 Beluga and calf changed direction and are now heading NE along near shore inside Level B Zone. Fix 3753 Beluga and calf milling by PCT station. Last seen 08:49. Handed off to PCT at 8:50. **PCT: 08:50 take over from SC. One white beluga and one calf milling nearshore. 08:59 hand-off to SC. **SC: 08:59 Belugas traveling back toward Ship Creek. 09:16 Belugas milling back and forth between mouth of Ship Creek and just south of tug boat dock. 12:45 Belugas still milling. 13:18 Belugas now South of tug boat dock. Fix 3827 belugas heading NW across inlet towards far shore. **PCT: group traveling towards farshore. Last seen 14:19. **NEX: 14:45 combined group with group 701.

698	3818	9/11/2020 1:29:00 PM	61.221745	-149.911992	1688.8212
698	3819	9/11/2020 1:34:16 PM	61.223553	-149.909795	1456.41405
698	3820	9/11/2020 1:38:59 PM	61.224827	-149.908007	1285.57046
698	3822	9/11/2020 1:50:20 PM	61.227921	-149.911605	1160.35644
698	3823	9/11/2020 1:52:17 PM	61.232394	-149.916929	1211.5716
698	3827	9/11/2020 2:08:25 PM	61.246745	-149.922107	2003.7001
698	3829	9/11/2020 2:19:03 PM	61.251977	-149.912488	2167.22853

Group ID	Created Date	Last Update	Species Common Name
699	9/11/2020 9:05:36 AM	9/11/2020 6:37:37 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		None	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
6	4	0	0	0		0	0		

Comments

**PW: 09:06 Four belugas seen close to far shore inside inbound line; 09:13 More belugas continue to fill in from in-bound line; 09:29 Belugas from MM Group 699 and solo beluga from MM Group 697 combined; 09:49 Handed off to NEX. **NEX: Fix 3783 six whales are passed the out-bound line and continuing north. Four whales stayed behind. Split group to create group 700. Last seen: 10:53

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
699	3760	9/11/2020 9:05:44 AM	61.235639	-150.014453	6405.89368
699	3762	9/11/2020 9:12:01 AM	61.234921	-150.001465	5710.33756
699	3763	9/11/2020 9:15:46 AM	61.234563	-149.994944	5361.44659
699	3766	9/11/2020 9:21:01 AM	61.234762	-149.988311	5006.84153
699	3769	9/11/2020 9:28:45 AM	61.237865	-149.971413	4120.37947
699	3771	9/11/2020 9:34:46 AM	61.246177	-149.955067	3481.29492
699	3773	9/11/2020 9:45:47 AM	61.250234	-149.945832	3248.34905
699	3774	9/11/2020 9:53:30 AM	61.252774	-149.942456	3265.90242
699	3775	9/11/2020 9:55:20 AM	61.254233	-149.927065	2797.59962
699	3777	9/11/2020 9:58:13 AM	61.255932	-149.929142	3014.72626
699	3779	9/11/2020 10:07:20 AM	61.25592	-149.91536	2628.82044
699	3780	9/11/2020 10:17:09 AM	61.264847	-149.91547	3555.18004
699	3782	9/11/2020 10:25:40 AM	61.265242	-149.914836	3586.57486
699	3783	9/11/2020 10:37:26 AM	61.27115	-149.910955	4169.19865

Group ID	Created Date	Last Update	Species Common Name
699	9/11/2020 9:05:36 AM	9/11/2020 6:37:37 PM	Beluga
Spread	Formation	Combined Group	Pace
>10	Linear	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
6	4	0	0	0		0	0		

Comments

**PW: 09:06 Four belugas seen close to far shore inside inbound line; 09:13 More belugas continue to fill in from in-bound line; 09:29 Belugas from MM Group 699 and solo beluga from MM Group 697 combined; 09:49 Handed off to NEX. **NEX: Fix 3783 six whales are passed the out-bound line and continuing north. Four whales stayed behind. Split group to create group 700. Last seen: 10:53

699	3787	9/11/2020 10:52:54 AM	61.302718	-149.906475	7611.42775
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Group ID	Created Date	Last Update	Species Common Name		
<input type="text" value="700"/>	<input type="text" value="9/11/2020 10:49:03 AM"/>	<input type="text" value="9/11/2020 11:20:46 AM"/>	<input type="text" value="Beluga"/>		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
<input type="text" value="8"/>	<input type="text" value="No Formation"/>	<input type="text" value="True"/>	<input type="text" value="Moderate"/>	<input type="text" value="Milling"/>	<input type="text" value="Milling"/>

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value=""/>

Comments

NEX: Split group from 699 at 10:40. Four whales are milling. Fix 3786. Fix 3789 in the Level B zone. Last seen: 11:28

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
700	3786	9/11/2020 10:51:14 AM	61.252401	-149.938983	3096.01287
700	3789	9/11/2020 10:58:54 AM	61.252576	-149.919138	2400.76509
700	3790	9/11/2020 11:03:52 AM	61.252156	-149.925618	2569.77732
700	3792	9/11/2020 11:13:53 AM	61.252451	-149.925979	2607.28964
700	3794	9/11/2020 11:21:00 AM	61.252671	-149.91858	2393.5706
700	3797	9/11/2020 11:28:29 AM	61.252684	-149.916183	2328.9544

Group ID	Created Date	Last Update	Species Common Name
701	9/11/2020 12:24:49 PM	9/11/2020 6:42:14 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

**PCT: 12:27 fix 3803 one white whale traveling. 12:31 passed to NEX. **NEX: Fix 3806 shows animals north of the boundary line. 14:45 combined this group with group 698. Fix 3851 is inside Level B Zone. **SC: 16:09 Took over sighting from NEX. Fix 3862 Belugas milling at the mouth of Ship Creek. Last seen 16:29. **PW: 16:44 take over from SC. Fix 3870 calf observed, fix 3872 Mom/calf changed direction to E then changed back 4 minutes later; all other fixes on trailing beluga; 17:21 fix 3874 second calf observed with trailing beluga; 17:51 Fix 3879 Last seen surface of beluga, sightability lost due to foliage, belugas traveling west towards in-bound line. Last seen: 17:54

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
701	3803	9/11/2020 12:28:29 PM	61.262305	-149.915952	3296.85895
701	3804	9/11/2020 12:29:54 PM	61.25897	-149.915037	2933.30561
701	3805	9/11/2020 12:33:47 PM	61.262786	-149.912918	3295.52418
701	3806	9/11/2020 12:36:24 PM	61.26668	-149.91649	3765.70642
701	3807	9/11/2020 12:43:11 PM	61.265465	-149.918245	3668.70701
701	3810	9/11/2020 12:49:50 PM	61.265808	-149.917521	3691.54977
701	3814	9/11/2020 1:12:40 PM	61.265619	-149.911951	3583.77671
701	3817	9/11/2020 1:26:17 PM	61.263892	-149.909627	3367.10048
701	3821	9/11/2020 1:45:21 PM	61.264895	-149.919127	3626.00592
701	3824	9/11/2020 1:56:48 PM	61.260812	-149.893947	2928.98053
701	3825	9/11/2020 2:00:14 PM	61.260902	-149.896213	2939.85879
701	3826	9/11/2020 2:03:56 PM	61.264694	-149.905412	3408.68368
701	3831	9/11/2020 2:20:28 PM	61.26496	-149.906083	3443.98812
701	3833	9/11/2020 2:28:23 PM	61.261068	-149.912734	3110.61729

Group ID	Created Date	Last Update	Species Common Name
701	9/11/2020 12:24:49 PM	9/11/2020 6:42:14 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

**PCT: 12:27 fix 3803 one white whale traveling. 12:31 passed to NEX. **NEX: Fix 3806 shows animals north of the boundary line. 14:45 combined this group with group 698. Fix 3851 is inside Level B Zone. **SC: 16:09 Took over sighting from NEX. Fix 3862 Belugas milling at the mouth of Ship Creek. Last seen 16:29. **PW: 16:44 take over from SC. Fix 3870 calf observed, fix 3872 Mom/calf changed direction to E then changed back 4 minutes later; all other fixes on trailing beluga; 17:21 fix 3874 second calf observed with trailing beluga; 17:51 Fix 3879 Last seen surface of beluga, sightability lost due to foliage, belugas traveling west towards in-bound line. Last seen: 17:54

701	3835	9/11/2020 2:32:31 PM	61.263711	-149.904746	3295.06436
701	3836	9/11/2020 2:42:14 PM	61.262335	-149.905413	3150.61126
701	3837	9/11/2020 2:43:46 PM	61.260216	-149.900531	2879.5174
701	3838	9/11/2020 2:45:02 PM	61.252247	-149.926337	2602.35313
701	3840	9/11/2020 2:47:08 PM	61.265371	-149.910517	3538.04309
701	3841	9/11/2020 2:50:57 PM	61.259921	-149.901548	2853.41543
701	3843	9/11/2020 2:58:31 PM	61.266091	-149.919564	3758.47557
701	3844	9/11/2020 3:00:42 PM	61.266089	-149.908262	3589.25835
701	3845	9/11/2020 3:05:04 PM	61.263155	-149.918221	3428.29724
701	3846	9/11/2020 3:12:18 PM	61.261416	-149.919696	3280.66548
701	3847	9/11/2020 3:14:29 PM	61.261656	-149.919428	3299.26553
701	3849	9/11/2020 3:17:31 PM	61.261789	-149.919723	3319.13621
701	3850	9/11/2020 3:19:30 PM	61.260093	-149.91944	3141.21034
701	3851	9/11/2020 3:25:45 PM	61.256198	-149.909291	2539.09879
701	3852	9/11/2020 3:41:31 PM	61.252799	-149.921312	2486.25493

Group ID	Created Date	Last Update	Species Common Name
701	9/11/2020 12:24:49 PM	9/11/2020 6:42:14 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	True	Moderate
Primary Behavior		Secondary Behavior	
Travelling		Milling	

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

**PCT: 12:27 fix 3803 one white whale traveling. 12:31 passed to NEX. **NEX: Fix 3806 shows animals north of the boundary line. 14:45 combined this group with group 698. Fix 3851 is inside Level B Zone. **SC: 16:09 Took over sighting from NEX. Fix 3862 Belugas milling at the mouth of Ship Creek. Last seen 16:29. **PW: 16:44 take over from SC. Fix 3870 calf observed, fix 3872 Mom/calf changed direction to E then changed back 4 minutes later; all other fixes on trailing beluga; 17:21 fix 3874 second calf observed with trailing beluga; 17:51 Fix 3879 Last seen surface of beluga, sightability lost due to foliage, belugas traveling west towards in-bound line. Last seen: 17:54

701	3854	9/11/2020 3:52:54 PM	61.247579	-149.920403	2004.39545
701	3855	9/11/2020 3:58:05 PM	61.242602	-149.927179	1959.21899
701	3857	9/11/2020 4:04:07 PM	61.241912	-149.915894	1404.59837
701	3858	9/11/2020 4:05:36 PM	61.238113	-149.923679	1602.91127
701	3859	9/11/2020 4:09:06 PM	61.236575	-149.917338	1234.18379
701	3860	9/11/2020 4:16:17 PM	61.230873	-149.912647	1039.97074
701	3861	9/11/2020 4:25:11 PM	61.231164	-149.910573	925.21135
701	3862	9/11/2020 4:28:55 PM	61.226923	-149.90475	995.27853
701	3865	9/11/2020 4:45:30 PM	61.218301	-149.917414	2168.14923
701	3868	9/11/2020 4:50:32 PM	61.215385	-149.921698	2564.97949
701	3869	9/11/2020 4:54:29 PM	61.213311	-149.925203	2861.15272
701	3870	9/11/2020 5:01:45 PM	61.206261	-149.948006	4237.20162
701	3871	9/11/2020 5:02:53 PM	61.209898	-149.933481	3428.50689
701	3872	9/11/2020 5:10:48 PM	61.20303	-149.964498	5113.33699
701	3873	9/11/2020 5:14:00 PM	61.206396	-149.945456	4135.25562

Group ID	Created Date	Last Update	Species Common Name
701	9/11/2020 12:24:49 PM	9/11/2020 6:42:14 PM	Beluga
Spread	Formation	Combined Group	Pace
1	Parallel	True	Moderate
		Primary Behavior	Secondary Behavior
		Travelling	Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
1	0	1	0	0		0	0		

Comments

**PCT: 12:27 fix 3803 one white whale traveling. 12:31 passed to NEX. **NEX: Fix 3806 shows animals north of the boundary line. 14:45 combined this group with group 698. Fix 3851 is inside Level B Zone. **SC: 16:09 Took over sighting from NEX. Fix 3862 Belugas milling at the mouth of Ship Creek. Last seen 16:29. **PW: 16:44 take over from SC. Fix 3870 calf observed, fix 3872 Mom/calf changed direction to E then changed back 4 minutes later; all other fixes on trailing beluga; 17:21 fix 3874 second calf observed with trailing beluga; 17:51 Fix 3879 Last seen surface of beluga, sightability lost due to foliage, belugas traveling west towards in-bound line. Last seen: 17:54

701	3874	9/11/2020 5:21:05 PM	61.204921	-149.951345	4467.72112
701	3876	9/11/2020 5:32:55 PM	61.201967	-149.971226	5459.32893
701	3877	9/11/2020 5:44:15 PM	61.201132	-149.984496	6066.50334
701	3878	9/11/2020 5:49:13 PM	61.201298	-149.991966	6377.04952
701	3879	9/11/2020 5:53:21 PM	61.201257	-149.994547	6492.83813

Group ID	Created Date	Last Update	Species Common Name
702	9/11/2020 3:46:31 PM	9/11/2020 4:57:44 PM	Pinniped Unid.
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			Milling

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

NEX: One pinniped sighted 15:40. Last time seen 15:47

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
702	3853	9/11/2020 3:46:38 PM	61.255205	-149.915062	2550.11243

Group ID	Created Date	Last Update	Species Common Name		
<input type="text" value="703"/>	<input type="text" value="9/11/2020 4:38:28 PM"/>	<input type="text" value="9/11/2020 6:01:57 PM"/>	<input type="text" value="Harbor Seal"/>		
Spread	Formation	Combined Group	Pace	Primary Behavior	Secondary Behavior
<input type="text" value="1"/>	<input type="text" value="Linear"/>	<input type="text" value="False"/>	<input type="text" value="Moderate"/>	<input type="text" value="Looking"/>	<input type="text" value="Sink"/>

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value=""/>	<input type="text" value=""/>

Comments

**NEX: Last seen at 16:46

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
703	3863	9/11/2020 4:38:44 PM	61.252408	-149.8815	2115.65996
703	3864	9/11/2020 4:44:09 PM	61.254691	-149.882146	2346.27526
703	3866	9/11/2020 4:46:49 PM	61.255906	-149.881144	2490.98914

Group ID	Created Date	Last Update	Species Common Name		
704	9/11/2020 4:48:55 PM	9/11/2020 6:10:33 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	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

PW: 16:47 HS popped up look/sink; Last seen 1647

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
704	3867	9/11/2020 4:49:20 PM	61.211916	-149.929788	3130.46673

Group ID	Created Date	Last Update	Species Common Name
705	9/11/2020 5:30:30 PM	9/11/2020 5:54:04 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: Fix 3875 One Harbor seal south of Ship Creek station. Last seen 17:53.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
705	3875	9/11/2020 5:30:43 PM	61.221067	-149.914287	1820.16426
705	3880	9/11/2020 5:54:24 PM	61.22084	-149.91329	1810.9954

Group ID	Created Date	Last Update	Species Common Name
706	9/11/2020 6:38:20 PM	9/11/2020 7:15:23 PM	Beluga
Spread	Formation	Combined Group	Pace
10	Parallel	False	Moderate
			Primary Behavior
			Travelling
			Secondary Behavior
			None

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
8	0	0	0	0	0	0	0	0	

Comments

PW: 18:36 Spotted eight blows and bodies to the N of the out bound line; appear to be traveling to the SE; 19:14 Belugas still traveling south towards inbound line, watch over at 19:15. Last time seen: 19:15.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
706	3881	9/11/2020 6:38:54 PM	61.324974	-149.796018	11354.5781
706	3883	9/11/2020 6:49:18 PM	61.315509	-149.813005	10007.2969
706	3884	9/11/2020 7:01:28 PM	61.297698	-149.835027	7716.27403
706	3885	9/11/2020 7:13:26 PM	61.288157	-149.842352	6589.79587

Group ID	Created Date	Last Update	Species Common Name
707	9/11/2020 6:47:52 PM	9/11/2020 6:49:11 PM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Sedate
			Primary Behavior
			Looking
			Secondary Behavior
			Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

SC: Fix 3882 One Harbor seal south of Ship Creek station. Last seen: 18:48

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
707	3882	9/11/2020 6:48:03 PM	61.218586	-149.917856	2155.50749

Group ID	Created Date	Last Update	Species Common Name
709	9/12/2020 7:20:14 AM	9/12/2020 7:29:44 AM	Harbor Seal
Spread	Formation	Combined Group	Pace
1	Linear	False	Moderate
		Primary Behavior	Secondary Behavior
		Looking	Sink

Beluga Counts	White	Gray	Calf	Neonate	Unknown	Other MM Counts	Other Adult	Other Calf	Total Other
0	0	0	0	0	0	1	0		

Comments

NEX: one harbor seal. Last seen 07:20. Sighting ended because shift ended.

Group ID	Fix ID	Fix Time	MM Latitude	MM Longitude	Distance To PCT
709	3886	9/12/2020 7:20:27 AM	61.254535	-149.884124	2301.48362

2020 POA PCT
Marine Mammal Sightings
Overview - Beluga
09/07/20 - 09/13/20

▲ PSO Station

Marine Mammal Groups

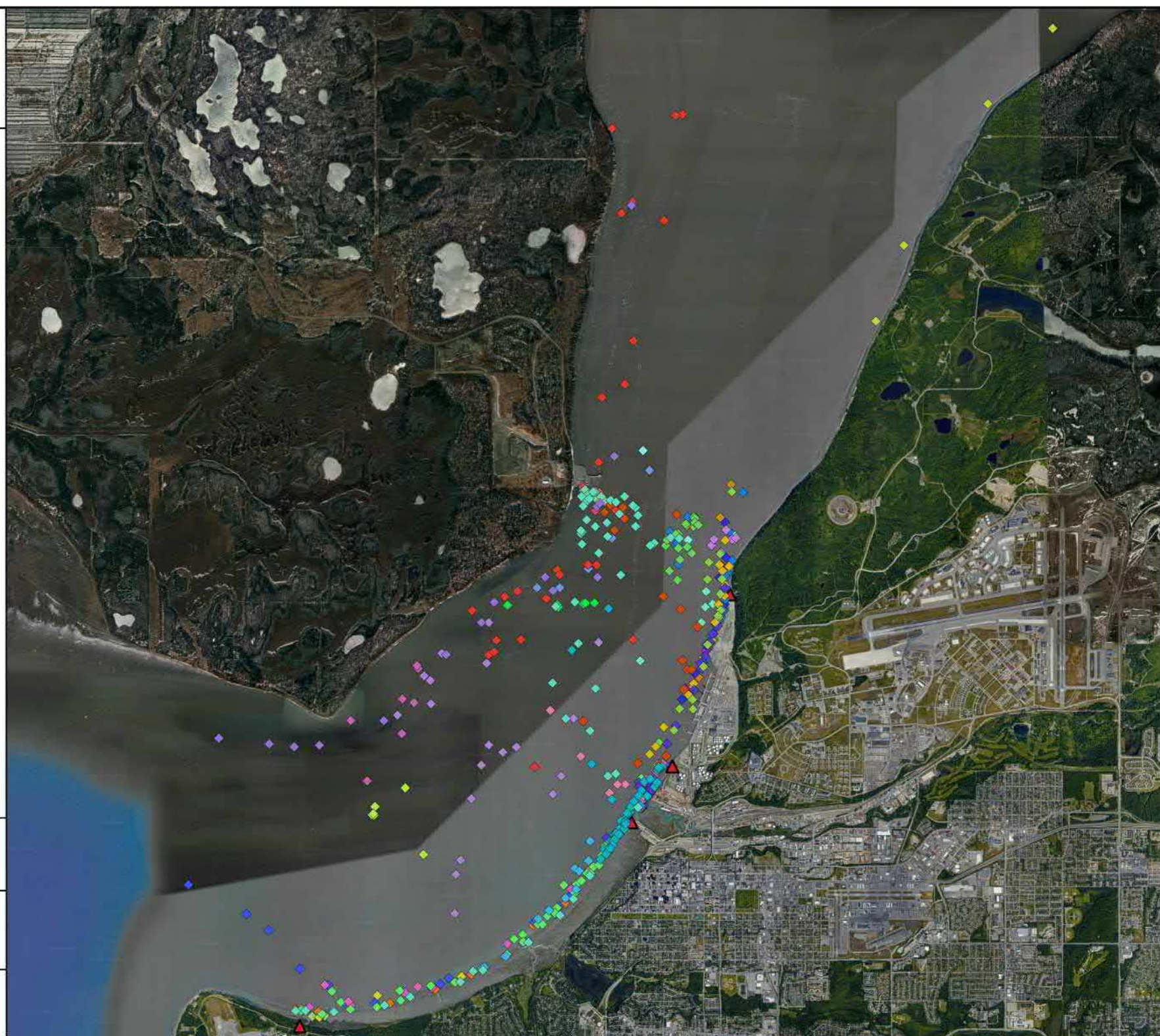
- ◆ Group 649 Beluga
- ◆ Group 652 Beluga
- ◆ Group 655 Beluga
- ◆ Group 656 Beluga
- ◆ Group 659 Beluga
- ◆ Group 662 Beluga
- ◆ Group 663 Beluga
- ◆ Group 665 Beluga
- ◆ Group 668 Beluga
- ◆ Group 669 Beluga
- ◆ Group 670 Beluga
- ◆ Group 672 Beluga
- ◆ Group 673 Beluga
- ◆ Group 674 Beluga
- ◆ Group 676 Beluga
- ◆ Group 677 Beluga
- ◆ Group 681 Beluga
- ◆ Group 682 Beluga
- ◆ Group 683 Beluga
- ◆ Group 684 Beluga
- ◆ Group 688 Beluga
- ◆ Group 689 Beluga
- ◆ Group 690 Beluga
- ◆ Group 691 Beluga
- ◆ Group 693 Beluga
- ◆ Group 694 Beluga
- ◆ Group 695 Beluga
- ◆ Group 697 Beluga
- ◆ Group 698 Beluga
- ◆ Group 699 Beluga
- ◆ Group 700 Beluga
- ◆ Group 701 Beluga
- ◆ Group 706 Beluga

0 1 2 km

61 | N
61 North Environmental



Map Imagery Source:
Google Earth, 2020



2020 POA PCT
Marine Mammal Sightings
Overview - Non-Beluga Species
09/07/20 - 09/13/20

▲ PSO Station

Marine Mammal Groups

- Group 647 Harbor Seal
- Group 648 Harbor Seal
- Group 650 Harbor Seal
- Group 651 Harbor Seal
- Group 653 Harbor Seal
- ★ Group 654 Harbor Porpoise
- Group 658 Harbor Seal
- Group 660 Harbor Seal
- Group 661 Harbor Seal
- Group 664 Harbor Seal
- Group 666 Harbor Seal
- Group 675 Harbor Seal
- Group 678 Harbor Seal
- Group 679 Harbor Seal
- Group 680 Harbor Seal
- ★ Group 685 Harbor Porpoise
- Group 686 Harbor Seal
- Group 687 Harbor Seal
- Group 692 Harbor Seal
- Group 702 Pinniped Unid.
- Group 703 Harbor Seal
- Group 704 Harbor Seal
- Group 705 Harbor Seal
- Group 707 Harbor Seal
- Group 709 Harbor Seal

0 0.75 1.5 km



61 | N
 61 North Environmental



Map Imagery Source:
 Google Earth, 2020



**2020 POA PCT
Beluga Sightings
09/08/20
Figure 1**

▲ PSO Station

Beluga Track Lines

→ Group 649

→ Group 652

→ Group 655 *

→ Group 656 *

** 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
09/09/20
Figure 2**

▲ PSO Station

Beluga Track Lines

- Group 659 *
- Group 663 *
- Group 662
- Group 665
- Group 668
- Group 669
- Group 670

** 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



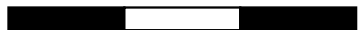
2020 POA PCT Beluga Sightings 09/10/20 Figure 3

- ▲ PSO Station
- Beluga Track Lines**
- Group 672 *
 - Group 677 *
 - Group 673
 - Group 674 †
 - Group 676 †
 - Group 681 †
 - Group 683 †
 - Group 682
 - Group 684 ‡
 - Group 688 ‡
 - Group 689 ‡
 - Group 690 §
 - Group 691 §
 - Group 693 §
 - Group 695 §
 - Group 694

** / † / ‡ / § Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

Note: Group 683 is also combined with Groups 684, 688 and 689

0 1 2 3 km



61 | N

61 North Environmental



Map Imagery Source:
Google Earth, 2020



**2020 POA PCT
Beluga Sightings
09/11/20
Figure 4**

▲ PSO Station

Beluga Track Lines

→ Group 697 *

→ Group 699 *

→ Group 700 *

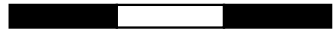
→ Group 698 †

→ Group 701 †

→ Group 706

** / † Beluga group associated with other group(s) in same color scheme indicate a combined or split composition*

0 1 2 3 km



61 | N

61 North Environmental



Map Imagery Source:
Google Earth, 2020



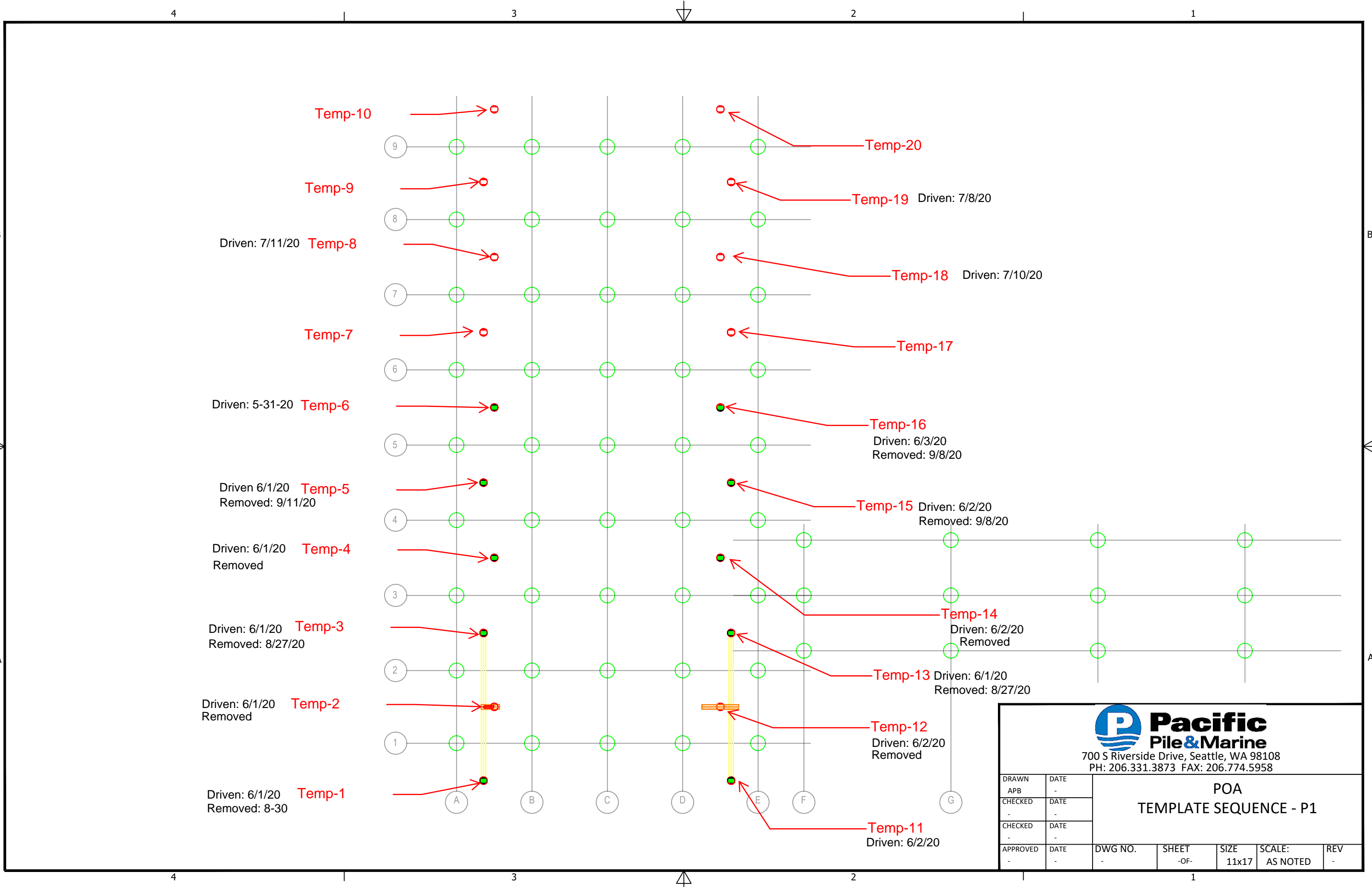
Appendix E – Data Field Information for Sighting Reports


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, generally 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-Sep	No Pile Driving				
2-Sep	No Pile Driving				
3-Sep	No Pile Driving				
5-Sep	No Pile Driving- Holiday weekend				
6-Sep	No Pile Driving- Holiday weekend				
7-Sep	No Pile Driving- Holiday weekend				
8-Sep	Removal- Access Trestle Template	T-3	24	Vibratory	8
8-Sep	Removal- Access Trestle Template	T-5	24	Vibratory	17
8-Sep	Removal- Access Trestle Template	T-6	24	Vibratory	14
8-Sep	Removal- Access Trestle Template	T-7	24	Vibratory	11
8-Sep	Removal- Access Trestle Template	T-8	24	Vibratory	14
8-Sep	Removal- Loading Platform Template	Temp-6	24	Vibratory	18
8-Sep	Removal- Loading Platform Template	Temp-15	24	Vibratory	19
9-Sep	No Pile Driving				
10-Sep	No Pile Driving				
12-Sep	No Pile Driving				
13-Sep	No Pile Driving				
14-Sep	No Pile Driving				
15-Sep	No Pile Driving				
16-Sep	No Pile Driving				
17-Sep	No Pile Driving				
18-Sep	No Pile Driving				
19-Sep	No Pile Driving				
20-Sep	No Pile Driving				
21-Sep	No Pile Driving				
22-Sep	No Pile Driving				
23-Sep	No Pile Driving				
24-Sep	No Pile Driving				
25-Sep	No Pile Driving				
26-Sep	No Pile Driving				
27-Sep	No Pile Driving				
28-Sep	No Pile Driving				
29-Sep	No Pile Driving				
30-Sep	No Pile Driving				





Pacific
Pile & Marine
700 S Riverside Drive, Seattle, WA 98108
PH: 206.331.3873 FAX: 206.774.5958

DRAWN		DATE		POA TEMPLATE SEQUENCE - P1									
APB		-											
CHECKED		DATE											
-		-											
CHECKED		DATE		DWG NO.		SHEET		SIZE		SCALE:		REV	
-		-		-		-OF-		11x17		AS NOTED		-	
APPROVED		DATE		-		-		-		-		-	

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