

Walrus Islands State Game Sanctuary Annual Management Report 2021

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Executive Summary

Established in 1960, the Walrus Islands State Game Sanctuary (WISGS) is comprised of a group of 7 islands and their adjacent waters in northern Bristol Bay. This sanctuary protects one of the largest terrestrial haulout sites in North America for Pacific walrus (*Odobenus rosmarus divergens*). Important habitats for numerous species of seabirds, Steller sea lions (*Eumetopias jubatus*) and other marine and terrestrial birds and mammals are also protected. The Alaska Department of Fish and Game (ADF&G) staffs a camp at Round Island from May through August to protect and monitor walruses and other terrestrial and marine wildlife. ADF&G also operates a visitor-use program on the island.

Walrus began returning to Round Island for the 2021 season on 12 April, with numbers larger than 100 animals beginning 4 May. Walrus counts were conducted from 3 May through 3 August 2021. The maximum inseason count of 2,418 walruses is 13.5% less than the 2011–2020 mean high count of 2,756. The daily mean for all beaches was 509 walruses, which is below the 2011–2020 mean of 619. Walruses were present on the island every day of the May–August 2021 season, except 23–24 June.

Steller sea lions were present at East Cape throughout the winter of 2020–2021, with larger numbers returning in early May. Steller sea lion counts were conducted from 3 May through 3 August 2021. The maximum count of individuals was 591 on 23 July, and the minimum count was 164 individuals on 1 June. The mean number of sea lions on Round Island during the 2021 season was 368, which is above the 2011–2020 mean of 182 sea lions. Two hundred and ninety-one photos confirmed sightings of 35 branded individuals from 5 natal rookeries, which were recorded during the 2021 field season.

Black-legged kittiwake (*Rissa tridactyla*), common murre (*Uria aalge*), and pelagic cormorant (*Phalacrocorax pelagicus*) phenology and productivity were monitored again in 2021. While some nesting success was observed in monitoring plot, populations and nesting efforts for all 3 species remain depressed compared to pre-2016 numbers.

While commercial transport from Togiak to Round Island was available throughout most of the summer, continued COVID-19 travel concerns along with several weather delays resulted in fewer visitors than expected. During the 2021 field season 16 total visitors (11 campers and 5 day-users) visited the island for a total of 74 visitor-use days. Eleven of the 16 visitors were Alaska residents.

The ADF&G and explore live internet streaming of walrus at Round Island did not occur during the 2021 season due to COVID-19 safety and logistical concerns. Staff hosted the Bristol Bay Native Association Round Island intern and her mentor on 16–28 June. None of the 9 Qayassiq Walrus Commission (QWC) communities hunted at Round Island during the annual QWC walrus hunt.

Staff maintenance projects included repair and replacement of 360 feet of plank and run boardwalk, repainting the interior of the cabin, upgrades to the shower house, replacement of the water storage tank, leveling of buildings, installation of 4 interpretive panels, and removal of 800 pounds of junk materials.

There was 1 infringement of the 3-mile restricted zone around the island (Alaska State Regulation 5AAC 92.066) by a vessel and 1 infraction of the requested 5,000 foot Above Ground Level FAA flight advisory.

Introduction

The Walrus Islands State Game Sanctuary (WISGS) was created in 1960 by the Alaska State Legislature. The sanctuary protects a group of 7 craggy islands and rock islets: Round Island (Qayassiq, “place to go in a kayak”), Summit Island (Qilkeq, named after a person in a legend concerning the island), Crooked Island (Nunalukaq, “land big enough to live on awhile”), High Island (Ingriqvak, “big island”) Black Rock (Ingriquar, “small island”), The Twins (Nunevragak, “temporary camping place”), and their adjacent waters in northern Bristol Bay, approximately 65 miles southwest of Dillingham, Alaska (Fig. 1). The sanctuary was created to protect the last remaining terrestrial haulout for Pacific walruses (*Odobenus rosmarus divergens*) in North America (Alaska Statute 16.20.090–098). At the time all other haulouts had been abandoned due to anthropogenic disturbances, mostly related to commercial hunting.

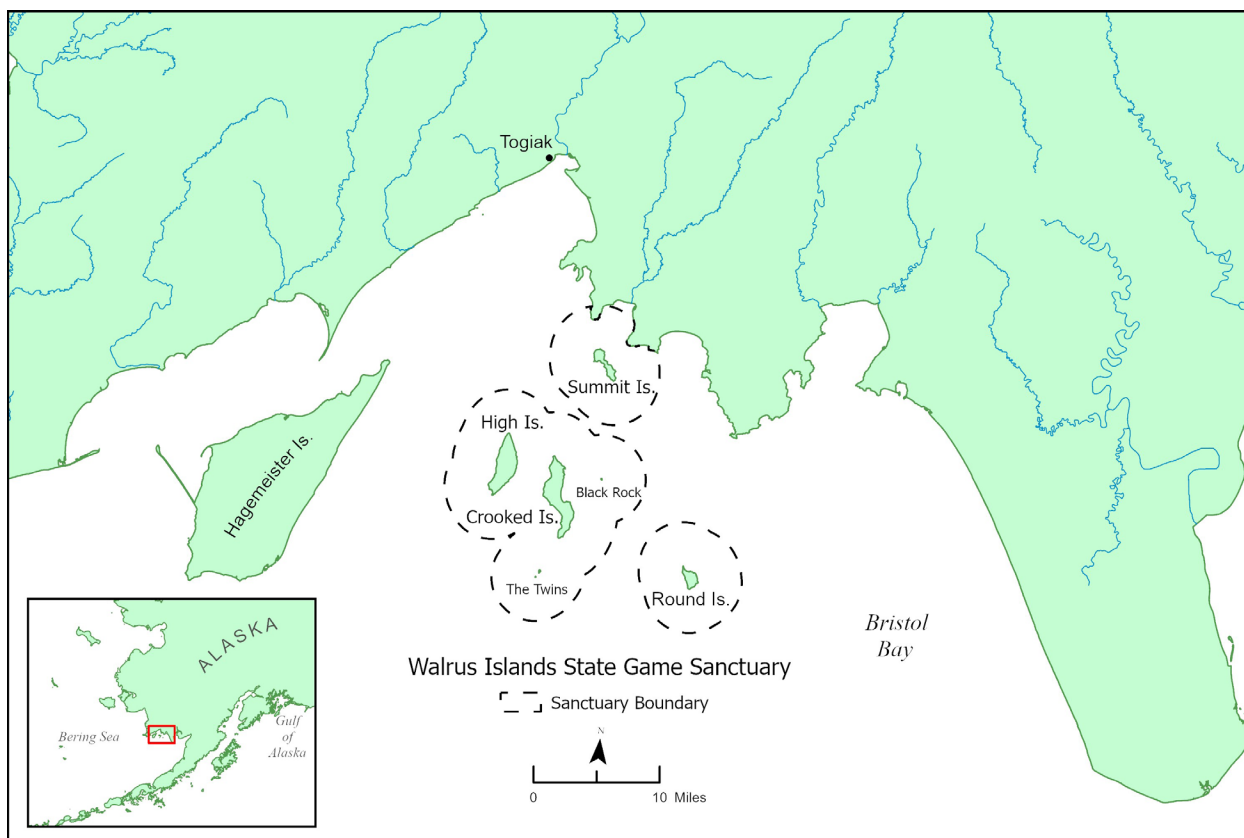


Figure 1. Map of Bristol Bay showing the locations of the Walrus Islands State Game Sanctuary, Round Island, Alaska in Bristol Bay.

The sanctuary provides important habitat for walruses. In particular, Round Island is an important and active haulout in Bristol Bay. The sanctuary also protects important habitats for many species of seabirds, the endangered western population of Steller sea lions (*Eumetopias*

jubatus), and other marine and terrestrial wildlife species. Additionally, Round Island is a traditional walrus hunting ground for the people of Togiak and other communities (Fall et al. 1991).

The Alaska Department of Fish and Game (ADF&G) manages the sanctuary primarily to protect these habitats and wildlife species, and secondarily to provide for public use and enjoyment of these resources including the opportunity for scientific and educational study, viewing, and photography. All access to Round Island and its surrounding waters within a 3-mile radius requires an access permit issued by ADF&G, Division of Wildlife Conservation (DWC). In addition, restrictions have been placed on visitor numbers and their activities in order to preserve the important resources at Round Island (Alaska Administrative Code 5 AAC 92.066).

ADF&G staffs the Round Island field camp with 2 technicians throughout the spring and summer seasons. Staff duties consist primarily of the protection of sanctuary resources, enforcement of sanctuary regulations and policies, management of visitor use and access, monitoring the sanctuary habitat and wildlife including walruses, seabirds, Steller sea lions, and other species. Staff stationed on Round Island are also responsible for maintaining island trails, buildings, and facilities.

Wildlife Research and Monitoring

WALRUS MONITORING SURVEYS

Walrus monitoring protocols used in collecting daily walrus observations on Round Island were established in 1997 jointly by the U.S. Geological Survey-Biological Resources Division, U.S. Fish and Wildlife Service (USFWS), and ADF&G staff; and refined in 2002. Nine beaches are counted daily on the east side of the island: Second Prime, Second Beach, First Prime, First Beach, Campground, Boat Cove, Flat Rock, North Boat Cove, and Main Beach (Fig. 2). Ground surveys of the west side of the island regularly include West Main Beach as trail conditions and weather allow. Counts of West, Main, and First Beaches are generated for pre- and postseason and nonsurvey days from time-lapse, game-camera photos. The remainder of the west side, south of West Cape, is only observable by boat and surveyed opportunistically as weather allows, or via game cameras that are periodically set up on westside beaches to monitor haulout attendance.

Weather data (max/min temperature, barometric pressure, wind speed and direction, and cloud cover) were collected at the time of survey using a Davis (Davis Instruments, Hayward, California) weather station mounted on top of the staff cabin located on the northeast side of the island.

In addition to normal haulout census surveys, 2 boat counts of west side beaches and 7 opportunistic counts of various east side beaches were conducted in 2021. Game cameras monitored Main Beach, First Beach, East Cape, Boat Cove, and West Main Beach during 12 August 2020–12 August 2021. No data was captured 21 November–12 May 2020 or 22 July–1 August 2021 at West Main Beach due to battery failure. Data was also not captured at Boat Cove 14 February–12 May 2021 due to the camera having shifted.

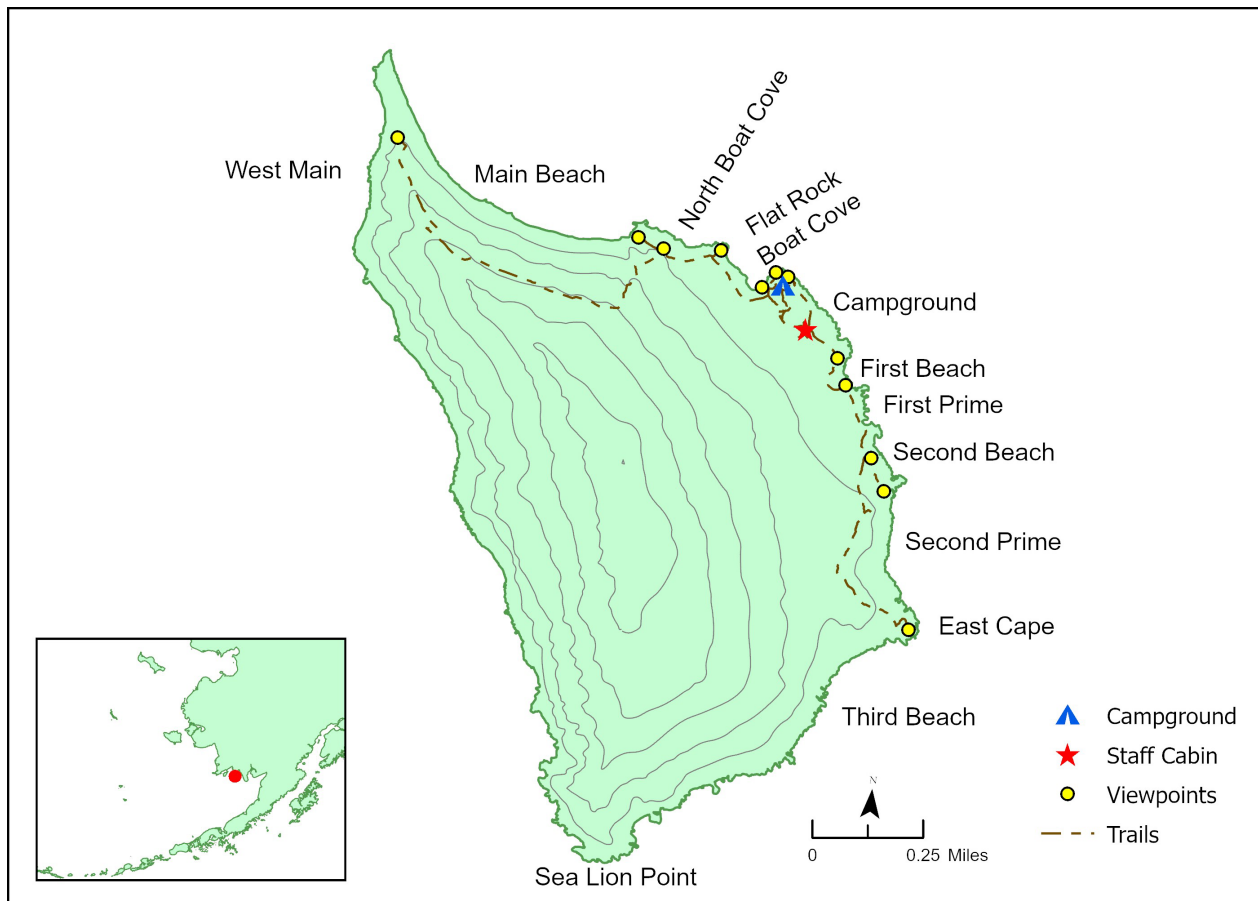


Figure 2. Round Island, Alaska, Pacific walrus, seabird, and Steller sea lion monitoring locations.

The game cameras overlooking Main Beach, First Beach, and West Main Beach show that Pacific walrus seasonal use at Round Island dropped to fewer than approximately 100 individuals after 21 August 2020. Walrus numbers stayed low until mid-September when a group of approximately 150 hauled out. An apparent disturbance cleared the beach on 14 September. From 15 September through 29 October the monitored beaches were used only sporadically by a few walrus. After 29 October, none were observed until they started to arrive in small numbers (<75) the second week of April 2021. Pacific walrus began to haul out in significant numbers (>200) beginning on 4 May.

Regular walrus surveys for the 2021 field season began when staff arrived on the island 3 May and continued through 3 August. The nine eastside beaches were counted 95 out of the total 95 days that staff occupied the island. West Main Beach was physically surveyed 16 times during the season, beginning on 12 May. West Main Beach game camera, photo data provided counts on the remaining days up until 1 August and during the pre- and post-season. West Main Beach was monitored a total of 78 of the 95 days that staff were on the island. Daily counts are summarized in Figure 3 and Appendix A. Additional West Main, Main, and First Beach counts 4 August 2021–spring 2022 will be added after game cameras are downloaded in spring 2022.

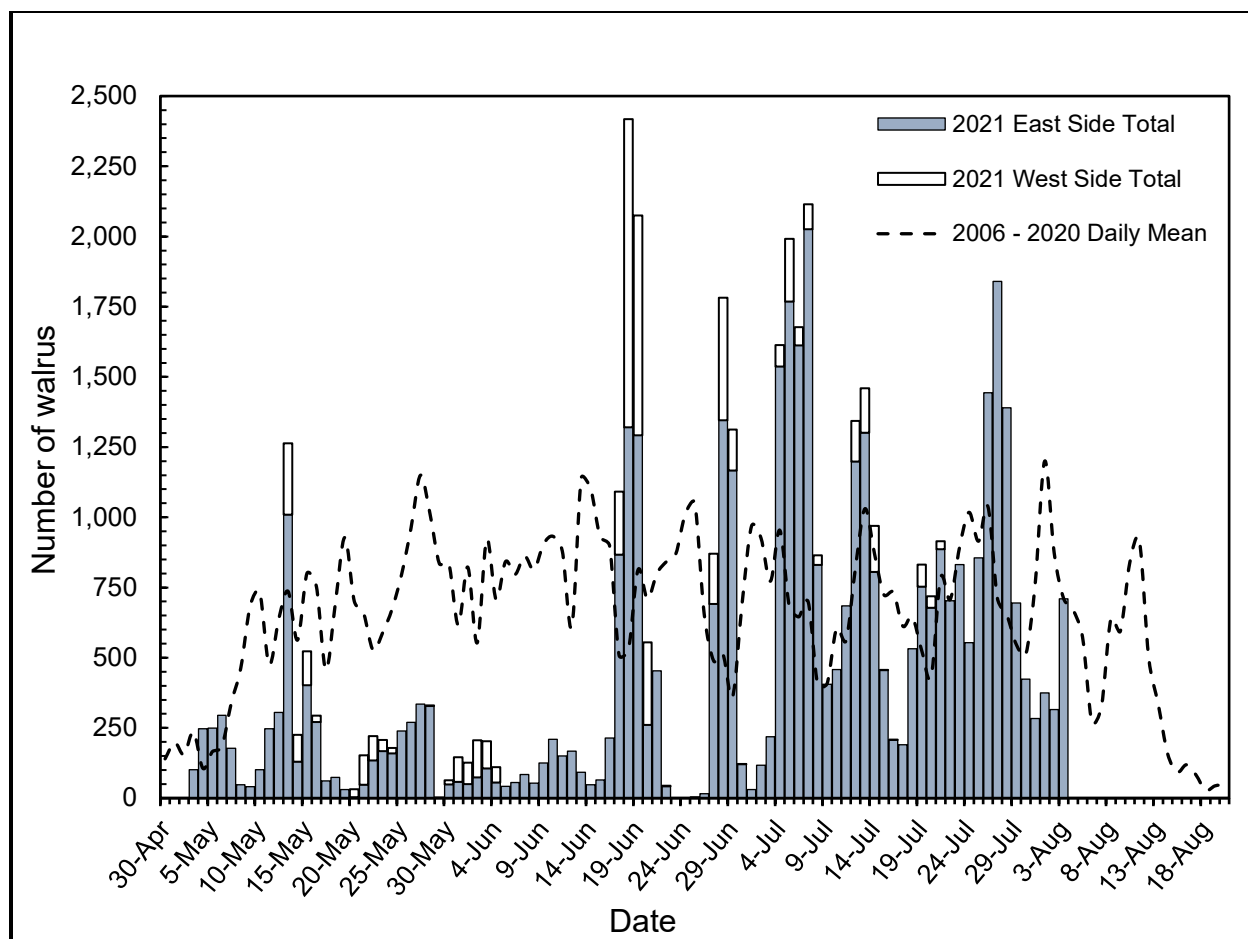


Figure 3. 2021 Pacific walrus daily counts at east and west haulouts at Round Island, Alaska, compared to 2006–2020 mean. *Note* that counts generally occur between 1 May – 15 August. East side counts are based on daily ground-based surveys of 9 beaches (Second Prime, Second Beach, First Prime, First Beach, Campground, Boat Cove, Flat Rock, North Boat Cove, Main Beach). West side counts based on daily ground survey or photo count of one beach (West Main). Pre 1 May and Post 15 August data are considered minimal counts based on limited ground based surveys or photo counts from West Main, First Beach and/or Main Beach, as well as other selected sites.

For the period 1 May–15 August 2021 (normal season), the maximum walrus count of 2,418 occurred on 18 June (Fig. 3) from combined counts of eastside and westside beaches. The 2,418 maximum decreased 9% from the 2020 maximum count of 2,645 and was 13.5% less than the 2011–2020 mean high count of 2,756. The mean number of walruses hauled out at Round Island during the 2021 season was 509. Monthly mean numbers were 123, 422, 865, and 467 for May, June, July, and August, respectively. Walruses were present on the island every day of the 2021 season, except 23–24 June. Numbers fell below 100 animals for only 21 of the 95 days that staff were on the island. Two boat trips to the west side south of West Cape to Sea Lion Point were made this season, on 11 July and 3 August, with no walrus observed.

The annual use of Round Island by Pacific walrus varies significantly from one year to another with the largest estimate documented at 15,000 walrus during a 1978 aerial survey. Peak walrus numbers have generally declined over the past several decades, ranging from 4,000–8,000 in the 1990s, 4,000–6,000 prior to 2012, and between 1,000 and 4,000 since 2012 (Fig. 4). Other Bristol Bay haulout sites, such as nearby Cape Peirce, have also seen a decline in use. It is unknown if Round Island and other Bristol Bay haulout counts reflect fluctuations in the broader Pacific walrus population, or movements within Bristol Bay, the Bering Sea, and between the United States and Russia. Additional factors may include changes in food availability or changes in winter, sea ice extent in the southern Bering Sea.

Historically, major walrus haulout sites within Bristol Bay included Amak Island, Port Moller, Cape Seniavin (located between Port Moller and Port Heiden), Cape Peirce, Cape Newenham, and 2 islands within Walrus Islands State Game Sanctuary (Round and Big Twin islands; Frost et al. 1982). The southwestern shoreline of Hagemeister Island has also reemerged as a significant walrus haulout in this region (MacDonald and Winfree 2008). Between 2016 and 2021, several thousand walrus have also sporadically hauled out on the Alaska Peninsula at Cape Greig (north of Pilot Point) and Cinder River State Critical Habitat Area. It is not well understood why specific haulout sites are used by walrus versus other coastal locations within Bristol Bay. Walrus abundance and distribution, prey availability, physical terrain, remoteness from disturbances, and social dynamics may influence haul out selection and use (MacCracken et al. 2017).

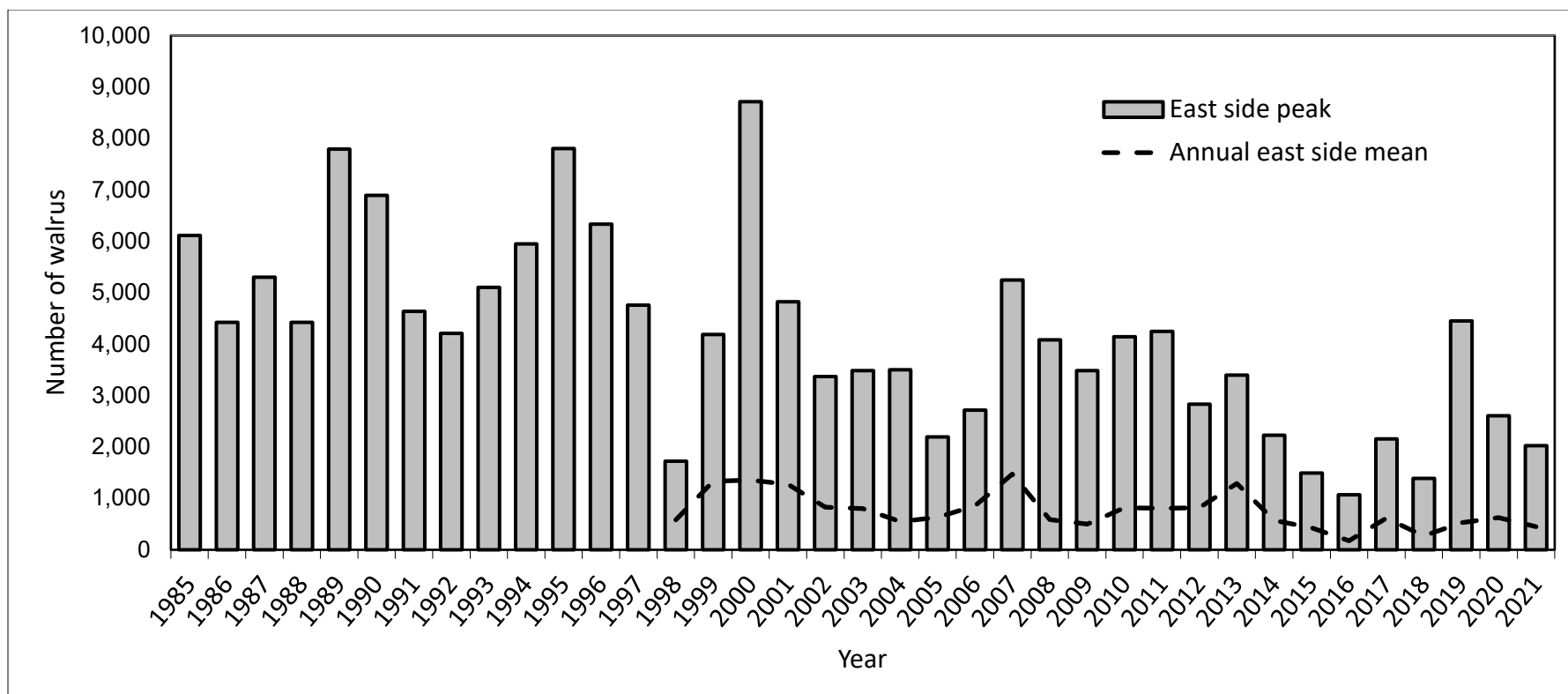


Figure 4. Peak (1985–2021) and annual mean (1998–2021) Pacific walrus counts, Round Island, Alaska, eastside beaches.

WALRUS DISTURBANCE MONITORING

ADF&G staff also monitor and document the response of walruses to anthropogenic activities around the island, including authorized and unauthorized access. Potential sources of anthropogenic events may include ingress and egress of island transport, transits of vessels and planes, staff maintenance and monitoring work, and visitor wildlife viewing. To qualify levels of disturbance, the number of affected walruses and the degree of their response to the event is recorded using 3 distinct behaviors: head raising, reorienting, and dispersing (Salter 1979, Kruse 1997). Walruses' responses to disturbance events are supplemented when possible with data from ADF&G time lapse cameras at First Beach, Main Beach, and West Main Beach. Responses to events captured from time-lapse imagery are limited to displacement-level effects because lower-level responses such as head raises or reorientation may not be observable.

Details of observations vary, ranging from well-documented observations to opportunistic observations during normal duties, to events occurring outside 3 nautical miles (nm) that may be related to a disturbance. Activities greater than 1 hour apart, such as boat arrivals and departures, were counted and documented as 2 separate events. In addition to ground-based radar and automated identification system (AIS), publicly available flight and vessel tracking websites were also used to gain information on vessel and airplane names, types, headings, altitudes, and locations.

During the 2021 season, anthropogenic events that were visually or audibly observed at Round Island were recorded. During the 3 May through 3 August season, 111 anthropogenic events were recorded as well as 6 disturbances from unknown sources for a total of 117 events. Of the known 111 events, 78 were sourced outside the 3-nm restricted area and 33 were sourced inside the 3-nm restricted area (Table 1).

Dispersal-type disturbances of 1–525 animals occurred during 20 of the 117 events; however, only 14 of these dispersal events were from determinable sources (Table 1). Of the 14 known sources, 6 were attributed to ADF&G management operations, including transporting crew and supplies throughout the season and facility maintenance, which caused a total of 231 walrus to disperse. Three dispersal events, totaling 8 walruses were associated with small boat operations associated with authorized visitor and crew transports to, from, or around the island. Two dispersal events were associated with high-altitude aircraft overflights, resulting in the dispersal of 157 walruses.

Table 1. Summary of anthropogenic events and walrus response for the 2021 season.

Event source	Number of events	No. events with dispersal-level response	Sum of all walrus dispersed	Range of all walrus with response ^a
Helicopter	3	2	96	3–130
Jet	37	2	157	24–150
Large boat	7	2	38	4–34
Large plane	5	1	24	66
Maintenance	10	1	109	209
Ship	36	0	0	–
Skiff	3	1	1	1–2
Small boat	9	4	39	1–31
Small plane	1	1	150	156
Unknown	6	6	525	28–825
Grand total	117	20	1,139	0–825

^a Responses include head raises, reorientations towards the disturbance sources, or dispersal from the beach.

Two events involved infractions of either the 3-nm restricted area or the 5,000-foot AGL flight advisory at Round Island. On 22 May, a large plane transited over the island from southeast to northwest at about 4,400 feet as determined via AIS, dispersing about 24 walrus. On 30 May, a ship transited the east side of the island inside the 3-nm limit. No walrus were dispersed during this event. The largest dispersal event was from an unknown source on 3 August in which 255 walrus dispersed from Main Beach.

WALRUS DISEASE AND MORTALITY

Observations of injured, diseased, or dead walrus are also recorded annually. Recorded observations are usually limited to injuries that are more substantial than normal “poke and jab” associated sores. A summary of Pacific walrus injuries and mortalities observed during 2021 is presented below in Table 2.

Table 2. 2021 Walrus injury and mortality observations, Round Island, Walrus Islands State Game Sanctuary.

Date	Comments
4 May	Mortality. Bloody head. Continuing daily. Still present on Main Beach upon staff departure on 3 August 2021.
15 May	Mortality. Noticed in photo count. Not a fresh carcass. Remained until 29 May 2021.
31 May	Mortality. Still pink in color. Remained until 22 June 2021.
17 June	Very old looking walrus, pale and thin looking. Blind in left eye, 2 nubs for tusks, and a large hematoma under left eye, hanging out in water at First Beach. Seen for several days around island. Won't haul out but rests in water. Last seen June 2019. Looks close to death.
21 June	Mortality. Noticed tusk/head under water during counts. Partially under another live walrus, never surfaced to breathe. Present on First Beach until 23 June 2021. Fresh mortality.
30 June	Mortality. Both tusks are mostly broken off, just nubs. Remained until staff departure on 3 August 2021.
19 July	Mortality. Observed floating in the water floating off of Round Island.
21 July	Mortality. Carcass mid-way down MB observed with 2 tusks. Present until 22 July 2021. Carcass black color so an older mortality.

STELLER SEA LION MONITORING

Steller sea lions haul out at East Cape, located on the eastern tip of Round Island, and the adjacent beach known as Third Beach (Fig. 2). Use of Third Beach has historically been more common during winter and spring, when the East Cape rocks and ledges are iced up or Steller sea lion numbers are highest.

ADF&G staff visit East Cape viewpoints daily for data collection. Steller sea lion numbers are recorded; branded animals are photographed; and injuries, entanglements, or interesting behavior are photographed and noted. Data are compiled with other ADF&G-DWC Marine Mammal program data and forwarded to the National Marine Fisheries Service-National Marine Mammal Laboratory.

Beginning in 2008, 4 standardized count locations were established for Steller sea lion following protocols established by the ADF&G-DWC Marine Mammals Program. Since 2014, additional viewpoints were added to increase visibility of sea lions not observable from previous viewpoints. For a full description of methods refer to the 2016 Walrus Islands State Game Sanctuary Annual Management Report (Weiss and Morrill 2017).

In 2021 viewpoint-based haulout counts were conducted at East Cape every day from 4 May through 2 August. The mean number of Steller sea lions counted during surveys was 368; the maximum count of 591 individuals was on 23 July and the minimum count of 164 individuals occurred on 1 June (Fig. 5).

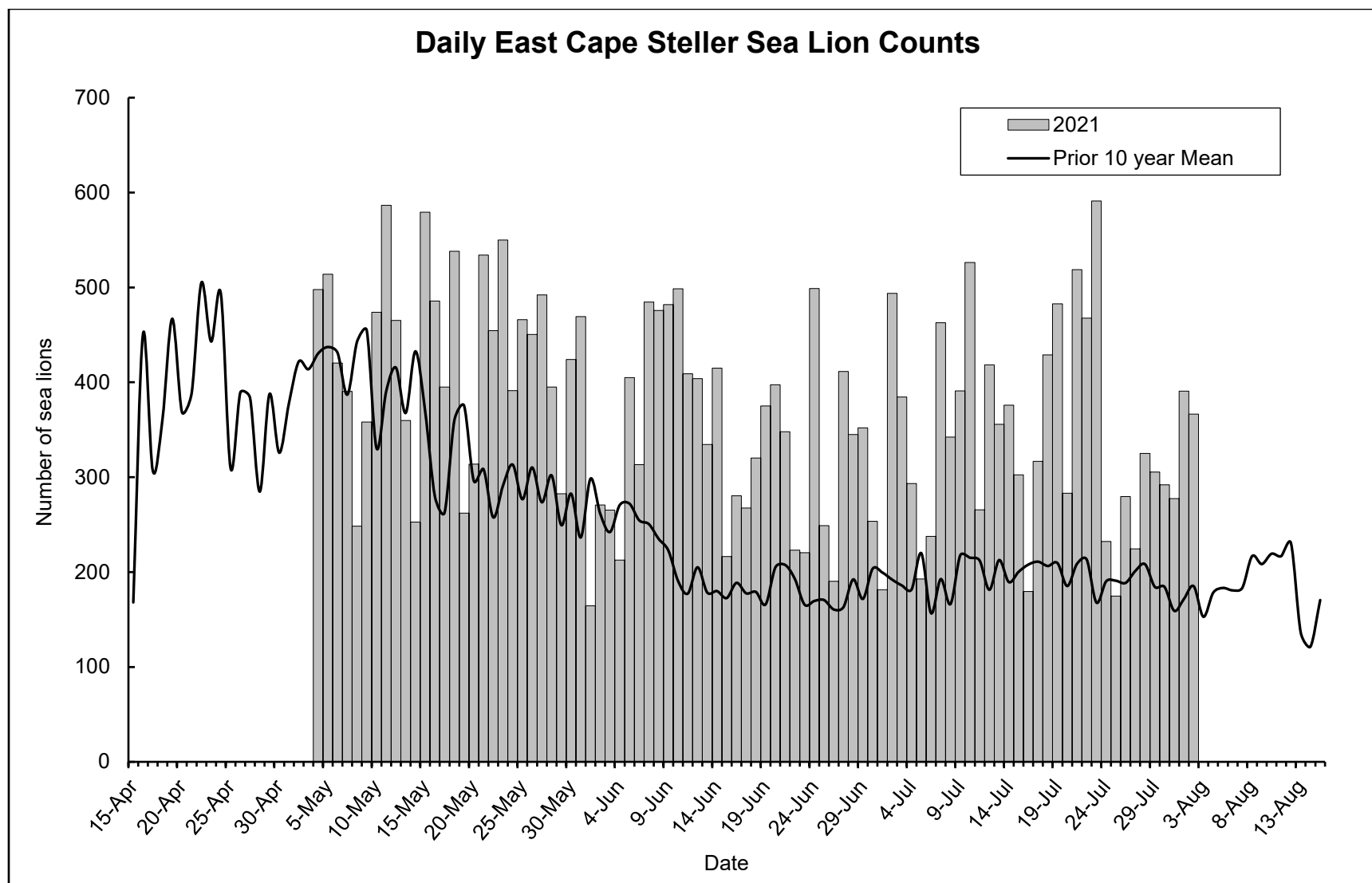


Figure 5. Steller sea lions hauled out at East Cape, Round Island, Alaska, 2021; daily numbers compared to 2011–2020 daily mean.

Most years, at the end of May or beginning of June there is a drop in the number of sea lions using the island as many of the breeding age adults leave for rookeries at Ugamak island or elsewhere. During the summer, the remaining Steller sea lions tend to use the rocky outcroppings on East Cape more than Third beach; however, sea lion haul out area-usage does change from year to year as well as potentially over sea lion generations. The 2021 mean is about 4% lower than the 2020 mean of 382 and about 53% higher than the 2011–2020 mean of 240 (Fig. 6).

A portion of the East Cape Steller sea lion haulout is also monitored by time lapsed camera(s). In cooperation with ADF&G-DWC Marine Mammal program, a remote camera set-up was introduced in 2015 to capture high-resolution images of Steller sea lions at East Cape in order to opportunistically capture brand resights during offseason and nonsurvey hours. A Canon DSLR camera was placed in a customized pelican case along with a 12-volt battery connected to a solar panel. The camera is wired into a light sensor and timer which takes a photograph every 15 minutes during daylight hours. Additionally, a broader view of East Cape ledges and Third Beach is monitored using a RECONYX game camera.

In recent years, low sea lion numbers at East Cape have occasionally been confirmed to be due to groups of sea lions choosing to haul out at the south end where they are not visible or countable from the East cape viewpoints or during regular survey duties. Additional sea lions were observed from the boat on 11 July that were hauled out at the south end of the island beyond the view from the normal viewpoints. Most sea lions that were out of sight were on rocky outcroppings between the south point of Third Beach and Sea Lion Point at the southernmost tip of the island. Staff boat trips in 2020 and 2019 also recorded sea lions using these areas, with 200–300 sea lions using the south end rocks and pocket beaches documented in 2019. There were no boat trips to the south end of the island in 2018; therefore, it was not possible to establish whether these areas were being used in that year.

During 2021, field surveys captured 291 photo-confirmed sightings of branded Steller sea lions at East Cape, representing 35 individuals. Branded individuals originated from 5 natal rookeries. Most branded Steller sea lions observed at Round Island originate from the Ugamak Island rookery. However, Steller sea lions branded at rookeries in Southcentral Alaska, Russia, and the Aleutians are observed. In 2021, 28 of the branded individuals originated from Ugamak Island in the eastern Aleutians (A brands), 2 from Marmot Island near Kodiak, Alaska (T brand), 1 from Prince William Sound (E brand), 1 from Kozlov Cape, Russia (K brand), and 1 branded at Agattu island (“~” brand) in 2015.

One animal entanglement was observed this year: a subadult was observed repeatedly 28 May–1 July with a constricting band around its neck that was causing open wounds. There was another adult male Steller sea lion with an ocular protrusion present during 16 May–3 July.

One Steller sea lion pup was born on Third Beach at Round Island on or about 13 June and was still alive and present on 2 August just prior to staff leaving. Yearlings and subadults presumed to be born at Ugamak were present and suckling on most days at the haul outs. The pups born on Round Island in 2020 and 2019 were not specifically recognized.

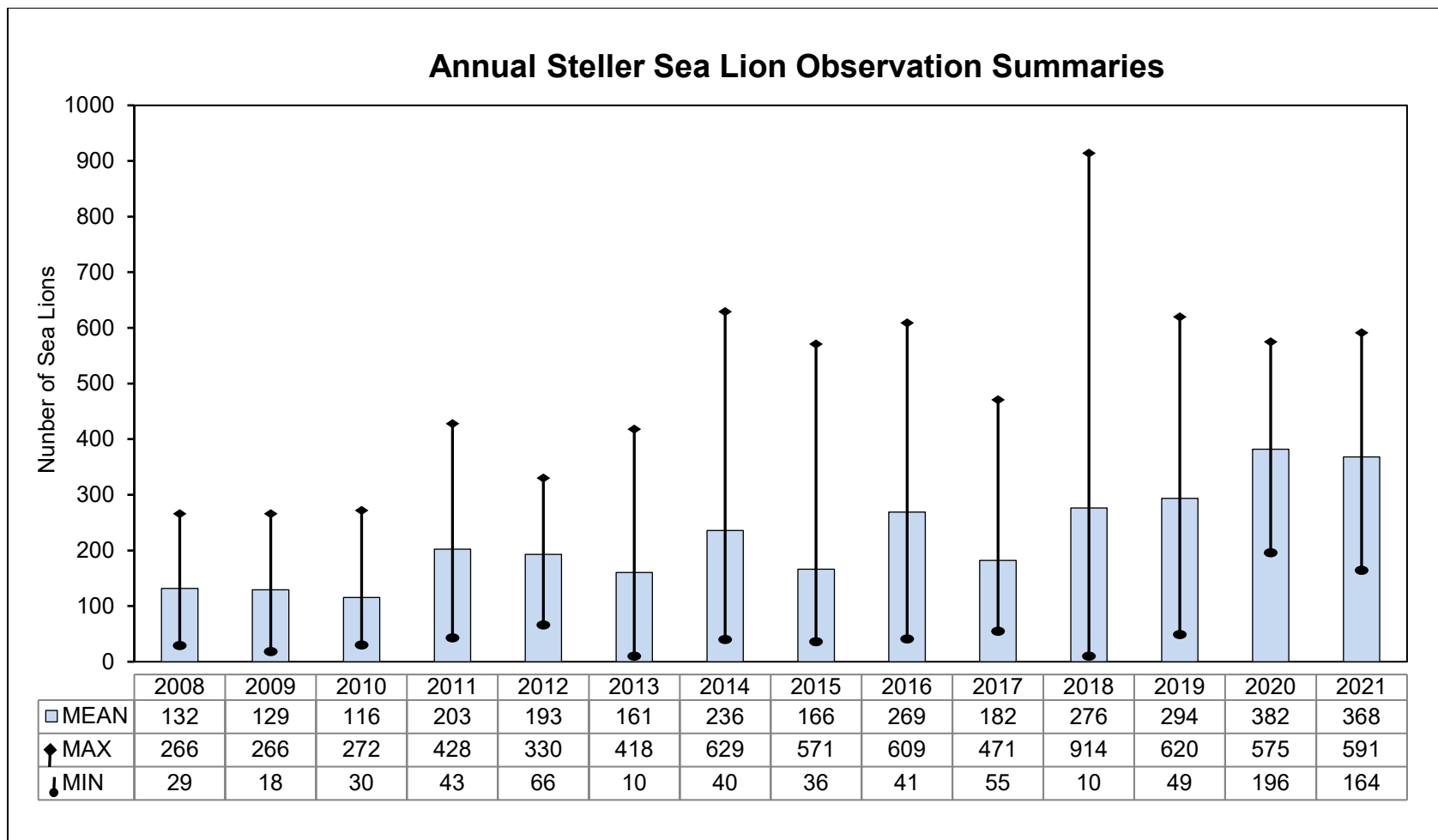


Figure 6. Mean number of Steller sea lions hauled out at East Cape, Round Island, Alaska, 1999–2021.

SEABIRD MONITORING

Three species of colonial nesting seabirds were monitored at the 5 survey plots that were delineated at Observation Point in 1998. Pelagic cormorants were also monitored at 2 colonies that were visually accessible from the traverse trail on the northwest side of the island. Nesting chronology and nest productivity data were collected for black-legged kittiwakes (*Rissa tridactyla*; hereafter kittiwakes) on plots 1, 2, 3, and 4; and common murres (*Uria aalge*; hereafter murres) on plots 1, 2, 3, and 4. Data was collected on pelagic cormorants (*Phalacrocorax pelagicus*; hereafter cormorants) at plot 1 and the 2 areas near West Main overlook. Population index counts for all 3 species were conducted on plots 1–5 at Observation Point (Fig. 7). Seabird population and productivity monitoring data are provided to the USFWS Maritime National Wildlife Refuge for inclusion in USFWS’s statewide seabird-monitoring program.

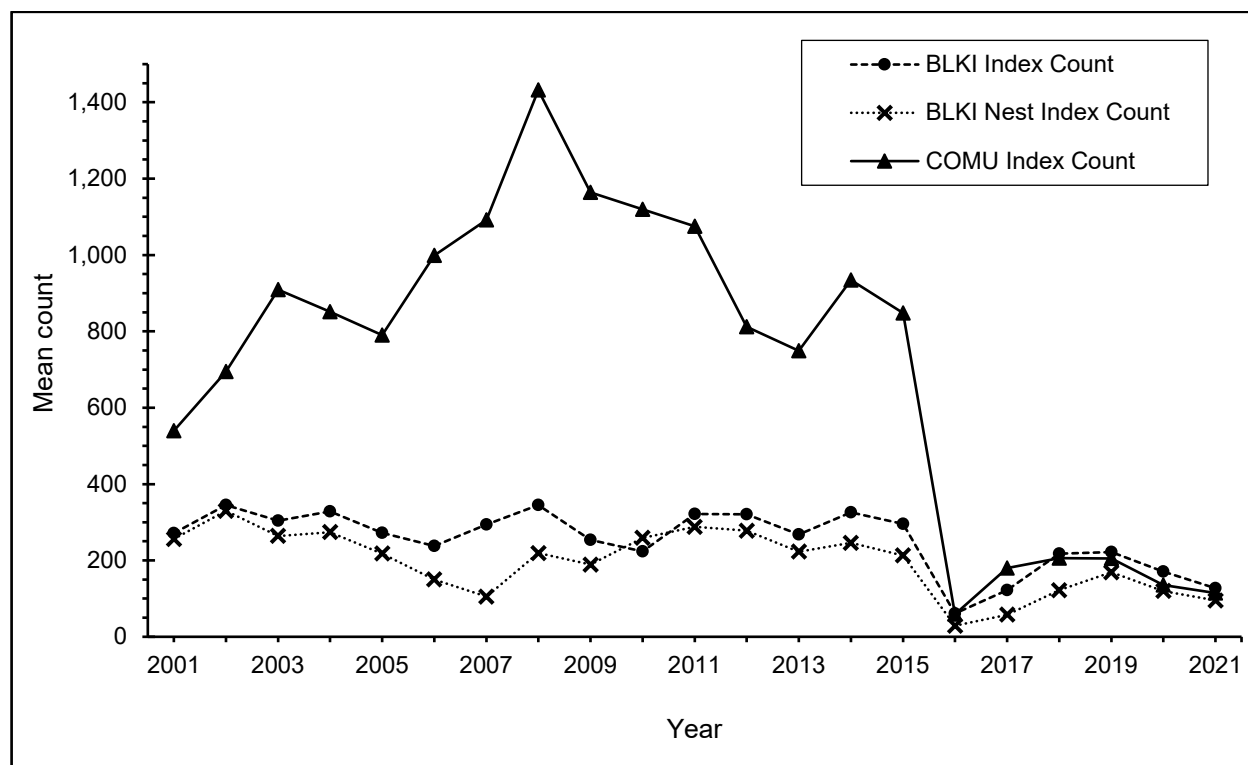


Figure 7. Historic common murre (COMU) and black-legged kittiwake (BLKI) index counts from Observation Point Round Island, Alaska, 2001–2021.

According to remote camera observations, most of the nesting seabirds (kittiwakes, murres, and cormorants) appeared to have left Round Island by about 30 August 2020. Seabirds first returned for the 2021 season around 23 April, arriving en masse on 27 April.

Kittiwakes and murres successfully laid 125 and 33 eggs, respectively (Tables 3a and 3b). BLKI hatched 33 chicks; however, all chicks observed on the plots eventually succumbed to fox and raven predation. At the time that staff left the island, only 2 murre chicks had hatched. Cormorants were more successful in nesting, which is typical, and may have fledged at least 11 chicks from monitored nests (Table 3c).

Table 3a. Common murre phenology and productivity summary, Round Island, Alaska 2016–2021.

Year	Nests or pairs	Eggs laid	Chicks hatched	Chicks fledged	Nesting success ^a	Date of 1st egg	Date of 1st chick	Date of 1st fledge
2021	34	33	2	—	—	21 June	29 July	—
2020	39	33	6	1	3	22 June	30 July	—
2019	33	33	4	—	0	22 June	23 July	—
2018	6	6	0	0	0	23 June	—	—
2017	36	36	0	0	0	22 June	—	—
2016	7	6	0	0	0	26 June	—	—

Note: En dashes represent data unavailable.

^a Nesting success = Percentage of nests where ≥ 1 chick fledges.

Table 3b. Black-legged kittiwake phenology and productivity summary, Round Island, Alaska 2016–2021.

Year	Nests or pairs	Eggs laid	Chicks hatched	Chicks fledged	Nesting success ^a	Date of 1st egg	Date of 1st chick	Date of 1st fledge
2021	119	125	33	0	0	4 June	30 June	—
2020	118	155	68	5	4	5 June	27 June	4 August
2019	101	181	88	26	26	3 June	26 June	7 August
2018	112	106	16	0	0	24 June	1 July	—
2017	29	35	0	0	0	15 June	—	—
2016	9	9	0	0	0	21 June	—	—

Note: En dashes represent data unavailable.

^a Nesting success = Percentage of nests where ≥ 1 chick fledges.

Table 3c. Pelagic cormorant phenology and productivity summary, Round Island, Alaska 2016–2021.

Year	Nests or pairs	Eggs laid	Chicks hatched	Chicks fledged	Nesting success ^a	Date of 1st egg	Date of 1st chick	Date of 1st fledge
2021	15	39	16	11	40	23 May	22 June	30 July
2020	2	2	2	2	50	—	18 June	8 August
2019	—	—	—	—	—	—	—	—
2018	25	25	7	5	12	17 May	17 June	29 July
2017	31	106	21	5	10	18 May	16 June	5 August
2016	2	2	0	0	0	7 May	—	—

Note: En dashes represent data unavailable.

^a Nesting success = Percentage of nests where ≥ 1 chick fledges.

The poor reproductive success at the Observation Point seabird monitoring plots may not have been an accurate representation of nesting success on the rest of island, due to these plots being peripheral to the densest colonies and subject to higher predation pressure from ravens. Kittiwake chicks were observed elsewhere on the island reaching fledgling-stage plumage. Murre attendance on the nesting cliffs on the southwest side of the island seemed to have increased from recent years. Cormorant nests with very large chicks were also noted along the Main Beach cliffs and on the southwest side of the island on the last day of the season.

Pelagic Cormorant Productivity Monitoring

Cormorant were present at Round Island when staff arrived 3 May. Their date of first arrival was unclear from remote camera images. Cormorants did not nest on their historic east side plots again this year and had already established nest sites with eggs at West Main when staff started monitoring there 12 May. Two nests were started later and monitored at Observation Point and 12 nests were monitored near the West Main overlook. Cormorants fledged 11 chicks from 14 nests (Table 3c).

Black-legged Kittiwake Productivity Monitoring

Kittiwakes were first recorded by game cameras at Round Island late in the evening of 22 April and the following days, with large numbers showing up 27 April. When staff arrived on 3 May kittiwakes were present on the cliffs along Main Beach and the Observation Point plots; however, nest building had not yet begun. Kittiwake productivity monitoring started following the first eggs laid 1 June and continued through 1 August on plots 1, 2, 3, and 4 at Observation Point. One hundred nineteen individual nests were identified and tracked on the plots. Egg laying was observed 1 June–20 June, and 4 June was the average date of first egg. Kittiwake egg production was drawn out over many days and egg production was less than normal. The mean number of eggs per nest was 1, with a maximum of 2 eggs in some nests. As with previous years, predation from raven and fox was substantial. Of the 125 eggs laid, only 33 survived to produce chicks, and all these chicks were depredated. Lower densities of all nesting seabirds at the Observation Point survey plots may contribute to vulnerability to ravens.

Common Murre Productivity Monitoring

Murre productivity monitoring was conducted from 11 June through 1 August on plots 1, 2, 3, and 4, at Observation Point. Murre nesting was still low compared to pre-2016 activity, with only 34 nests across all plots. Egg laying commenced at Observation Point plots primarily on 14 June, with 1 egg observed on 11 June. Egg laying continued through 12 July, and 21 June was the mean date of first egg. This is slightly later than the normal early to mid-June first egg dates. Of the 34 nest sites that had an egg present for 3 or more days, only 2 were successful at hatching a chick. Most laid eggs fell prey to common ravens. While there were more murrees present on the west side of the island (Fig. 2), murre colony attendance on the Observation Point plots remained low. Lower densities of all nesting seabirds at the Observation Point survey plots may contribute to the rate at which ravens take murre eggs there.

Population Counts

Population index counts of the 5 Observation Point plots commenced 1 June and continued through 1 August for kittiwakes, murres, and cormorants. In all, 10 population index counts were conducted. Generally, numbers decreased slightly from 2020 but represented an increase from what was recorded in 2016 (Fig. 7). Based on 10 total counts, there were an average of 126 kittiwake individuals (standard deviation [SD] ± 56), 94 kittiwake nests (SD ± 39), and 115 murre individuals (SD ± 74) across all plots.

Short-tailed shearwaters

In 2021 several incidental short-tailed shearwater (*Puffinus tenuirostris*) observations were made on Round Island in July. This is noteworthy because prior to 2016 shearwaters were seldom seen in nearshore waters around Round Island. Prior to 2016, 1 mortality was noted in 1997, and a few live birds were observed in 1974, 1986, and 1997, which coincided with reports of widespread seabird die-offs in the Bering Sea. The 1986 observation followed a large die-off event in 1983–1984, which was associated with high sea-surface temperatures and other El Niño–Southern Oscillation (ENSO)-like conditions.

Since 2016 sightings of both live and dead shearwaters were nearly annual on Round Island, with carcasses being found on the island in 2016, 2017, 2019, and 2021. Live birds were also observed resting in water near the island in each of these years, which were noted to be in apparent poor condition. In 2021 several live but lethargic short-tailed shearwaters were observed resting in near shore waters around the island. Shearwater carcasses were spotted floating off second beach on 30 July and within the sanctuary waters by staff on a boat departing the island on 4 August. Anecdotal reports from around Bristol Bay suggests that shearwater carcasses were common elsewhere both on beaches and floating in tide lines.

In September 2021 the U.S. Fish and Wildlife Service Alaska Region issued information regarding a widespread, multi-species seabird die-off. This had been reported by multiple entities between May and September and was occurring in the northern Bering Sea (USFWS 2021), primarily north of the Walrus Islands State Game Sanctuary. The main species affected were shearwaters, but also included kittiwakes, murres, and puffins. Also noted was that while historically these die-offs are not uncommon, since 2015 they have become an annual occurrence, are more widespread, and involve more species.

OTHER OBSERVATIONS

During the monitoring season, 3 May to 3 August, ADF&G staff also record incidental or opportunistic observations of other plants, animals, weather, environmental or operational information. These data do not typically reflect species or conditions that occur daily nor include every observation of a particular species or condition that occurred during the season. These data primarily record more noteworthy observations such as species not regularly encountered, first plant blooms, first sightings of birds, dates of first egg laying, tagged animal notations, offshore marine mammal sightings or migrations, nesting notes on species, and dates of operational significance such as date of arrival, snow conditions, timing of spring thaw, etc. Daily

observations for the 2021 season along with observations from offseason, game-camera data are summarized in Appendix B. Some of the more noteworthy observations are summarized below.

Marine Mammals

Gray whales (*Eschrichtius robustus*) are typically observed along the eastern shores of Round Island from April through May, and sometimes into mid-June. In 2021 most observations of gray whales were between 3 May and 6 June. Humpback whales (*Megaptera novaeangliae*) were observed on 4, 5, 6, and 18 May 2021. One minke whale (*Balaenoptera acutorostrata*) was observed on 4 May, 1 harbor porpoise (*Phocoena phocoena*) on 23 May, and 1 beluga whale (*Delphinapterus leucas*) carcass was observed floating inside sanctuary boundaries on 11 and 19 July. A harbor seal (*Phoca vitulina*) was recorded visiting the island several times in June and July, though positive identification of harbor versus spotted seals can be challenging at a distance. A possible spotted seal (*Phoca largha*) pup with lanugo was seen on 8 and 25 May; the timing of this observation was too early in the season to be a harbor seal pup.

A sea otter (*Enhydra lutris*) adult male was first spotted at Round Island 7 July 2020. This was the first instance of a sea otter being reported at Round Island. A sea otter carcass was anecdotally reported in Togiak in 2019. In 2021 an adult male sea otter was again present around East Cape throughout the early part of the summer, occasionally hauling out on the rocks near Steller sea lions. The otter was seldom observed in June and early July, but returned to the area in late July, occasionally hauling out with the Steller sea lions at Third Beach.

Terrestrial Mammals

Throughout the 2021 season, red foxes left many montane dusky shrew (*Sorex monticolus*) carcasses along the trail system. Typically, shrew bodies are punctured or crunched but uneaten. When possible, staff threw shrew carcasses into the grass to avoid noting the same shrew twice.

No lemmings (*Lemmus trimucronatus*) or tundra voles (*Microtus oeconomus*) were seen alive or dead. Vole remains were not seen near fox dens or at raven predation sites. No vole trails or caches were noticed in spring. A cursory investigation of dried winter fox scat turned up what appeared to be a shrew jawbone, feathers, bird claws, berry seeds, and bones (bird and fish but no recognizable vole bones). One small raptor pellet was found on the First Prime (FP) trail that included reddish fur and small mammal bones, but staff were unsure whether these remains came from a vole on Round Island or the mainland, as it appeared to have been deposited by a bird. Based on anecdotal observations from staff, the small mammal population appears to remain low in numbers for around 6 years.

The red fox (*Vulpes vulpes*) population on Round Island during the summer of 2021 supported 3 known productive dens. The den at the cabin began with a series of holes between the cabin and the staff outhouse and later moved or expanded to include areas under the cabin, sheds, and platforms. The matriarch in this den is an adult female known to the staff as “Bump-lip” due to the scar on her lower left lip. Bump lip has had dens at or near the cabin in 2016, 2017 (though kits were killed by another fox), 2019, and 2020. Photos suggest that this matriarch may be 7-years old, and is showing her age in scars, stiffness, and missing teeth (she appears to be missing most of her lower incisors). Staff believe that during the lowest fox population years (2017–

2018) she may have been the only breeding female on the island. There was no evidence that her mate from 2020 was present on the island or still alive. It seems likely that the male fox most seen at the cabin den in 2021 was the helper fox in 2020. In 2021, the cabin den produced 5 kits that were first seen outside of the den on 7 July. These kits appeared to be much younger than the 6 kits at East Cape.

Another female and male fox with no fur on his tail renovated and reopened a den site at East Cape that has not been used since 2015 or prior. The mother appeared to be young, but not inexperienced, the male was witnessed limping on several occasions. This den produced 6 kits that are thought to have been born in late May or June and were already much larger when they were first witnessed being active outside of the den on 8 July.

The third den at West Ridge was at a site that is thought to have been used intermittently in the past few years but was documented in the 1980s (Taggart and Zabel 1980). This den also showed evidence of renovation at several of its many entrances early in the season. The mother fox was seen a few times throughout the summer and on 16 July she was seen outside the den playing with at least 3 kits smaller than those at East Cape but possibly larger than those near the staff cabin.

Apart from dens, there were other lone adult foxes observed on several occasions at East Cape, the Summit, and the Traverse Trail. One elder fox referred to as “unattached male” was seen regularly around Second Beach and Second Prime. This fox had a distinct scar on his chin, and he is missing 1 lower incisor. We believe there are pictures of this fox taken in 2020 and 2019. He is now showing his age and has very long toenails.

Based on these observations, staff estimates that there were greater than 8 adult foxes on the island during summer 2021. There were at least 3 adult females and 14 young-of-year kits. Most or all of the kits born in 2020 are suspected to have either died or dispersed onto the ice during the winter. Based on casual observations at the cabin and East Cape, fox predation in 2021 seems to have focused first on parakeet auklets and later on tufted puffins. Kittiwake adult and chick carcasses were frequently seen near fox dens; pelagic cormorant chicks were also observed near fox dens later in the season.

Plants

Work continued in identifying, photographing, and pressing samples of Round Island plant life. In 2020 and 2021 more plant specimen samples were submitted to the University of Alaska Anchorage (UAA) - Herbarium, cataloged by UAA Herbarium staff, and added to their herbarium database. These and other historic submittals to University of Alaska Fairbanks – Museum of the North are available digitally through the Consortium of Pacific Northwest Herbaria website at: <http://www.pnwherbaria.org/data/search.php>.

Updates and additions to the 1996 Round Island plant survey (Hasselbach and Neitlich 1996) are ongoing, based on the new herbarium samples taken since 2017. New additions include:

- Pygmy pussytoes (*Antennaria monocephala*),
- Snow whitlowgrass (*Draba nivalis*),
- Sea pea (*Lathyrus japonicus*),
- Snow saxifrage (*Micranthes nivalis*),
- Arctic cinquefoil (*Potentilla hyparctica*),
- Villous cinquefoil (*Potentilla villosula*),
- Bract saxifrage (*Saxifraga bracteata*),
- Arctic catchfly (*Silene involucrate*),
- Fleshy starwort (*Stellaria crassifolia*),
- Saltmarsh stichwort (*Stellaria humifusa*),
- Chickweed (*Stellaria media*),
- Horned dandelion (*Taraxacum ceratophorum*),
- Harp dandelion (*Taraxacum kamtschaticum*),
- Dwarf marsh violet (*Viola epipsila*),
- Merckia (*Wilhelmsia physodes*).

In 2020, in an effort to make more quantitative observations concerning the year-to-year phenology and first bloom dates on Round Island, a 10-meter by 10-meter quadrant was marked in a meadow on the trail between the Flat Rock viewpoint and the trail that ascends to the north Boat Cove viewpoint. This meadow has an exceptional diversity of flowering plants throughout the summer. Beginning in 2020 and throughout the summer of 2021, surveys of flowering plants within and around this quadrant were completed and added to daily observation notes.

To streamline the documentation of phenological observations in the future, 13 easily identifiable and representative plant species that bloom and then go to seed along the trail system throughout the summer have been selected to monitor. Focusing future first bloom and phenological observations of these noticeable species along the trail system should provide sufficient datapoints for future comparison with historic field notes from the island while using staff time efficiently.

Invasive plants

Stellaria media (STME2; invasive European chickweed) was first noticed on the island in 2020 in 2 patches on the trail at the top of the Boat Cove stairs. There were few visitors in 2020, and staff landed at the alternate boat landing south of Boat Cove that year leading staff to presume that some (STME2) seeds likely arrived with visitors using the Boat Cove stairs in 2018 or 2019 and were able to establish in 2 small areas before being noticed. The patch on the slope above the stairs was nearly 10-feet long in intermittent clumps restricted to the trail with leaves and stems around the old step rocks. The invasive plant was growing mixed with yarrow, mustards, and grass. The second patch, about 30 feet away, is a 4-foot section of the campground trail directly to the east of the trail intersection at a landmark on the island known as “the whale bones.” In 2020 attempts were made to burn all chickweed and scorch the earth beneath it. Unfortunately, burning days were restricted due to heavy use of Boat Cove by walruses throughout the season. Some chickweed was carried to camp in buckets and burned there; this was mostly done before the plants could have gone to seed.

Despite these efforts, European chickweed sparsely appeared again in 2021, in the same area near the alternate boat launch. In 2021, the area near the whale bones was covered in snow well into May, and the vegetation underneath did not begin to green-up until late May with the first sprouts of European chickweed not appearing until well into June, with only 1 small area of expansion in the disturbed ground near the new interpretive panel. Attempts were again made to pull and burn the plants but due to disruption in the late season and the decision to pull camp early, some plants may have managed to flower and be fertilized in August after staff left. In 2022 staff will continue to pull and burn the chickweed, install a boot brush at the Boat Cove stairs, and encourage campers to screen luggage and tents for seeds before visiting the island. No other invasive plants were found in 2020 or 2021. The *Plantago major* found in 2019 at Boat Cove did not return.

Birds

In addition to the seabird monitoring information summarized above, first observance and notable daily observations of other bird species are summarized in Appendix B. Passerines known to be nesting on the island from recent nest or fledgling observations include American pipit (*Anthus rubescens*), common raven (*Corvus corax*), common redpoll (*Acanthis flammea*), golden-crowned sparrow (*Zonotrichia atricapilla*), gray-crowned rosy-finch (*Leucosticte tephrocotis*), orange-crowned warbler (*Leiothlypis celata*), Savannah sparrow (*Passerculus sandwichensis*), Wilson’s warbler (*Cardellina pusilla*), and yellow warbler (*Setophaga petechia*).

Raven presence on the island was less extreme this year than in several preceding years. There was 1 nest with 3 chicks at Second Beach and 1 or more unconfirmed nests thought to be on the west side of the island. Despite lower overall numbers of ravens on the island this summer, predation impact on nesting seabirds was deleterious.

Nesting was confirmed for 1 pair of bald eagles which hatched 1 chick at a nest on the west side of the island which was also used in 2020. This nest site is at a lower altitude and to the north of the historically used nest area last used in 2016 on the southwest side of the island.

Species seen only during migration in early spring or end of season included: American tree sparrow (*Spizelloides arborea*), Canada goose (*Branta canadensis*), fox sparrow (*Passerella iliaca*), green-winged teal (*Anas crecca*), horned grebe (*Podiceps auritus*), king eider (*Somateria spectabilis*), Lapland longspur (*Calcarius lapponicus*), long-tailed duck (*Clangula hyemalis*), red-breasted merganser (*Mergus serrator*), red-necked grebe (*Podiceps grisegena*), sandhill crane (*Antigone canadensis*), and white-crowned sparrow (*Zonotrichia leucophrys*).

Less common birds observed on Round Island throughout the 2021 season included alder flycatcher (*Empidonax alnorum*), American robin (*Turdus migratorius*), bank swallow (*Riparia riparia*), dark-eyed junco (*Junco hyemalis*), double-crested cormorant (*Phalacrocorax auritus*), gray-cheeked thrush (*Catharus minimus*), hermit thrush (*Catharus guttatus*), merlin (*Falco columbarius*), northern harrier (*Circus hudsonius*), Pacific loon (*Gavia pacifica*), peregrine falcon (*Falco peregrinus*), rough-legged hawk (*Buteo lagopus*), short-eared owl (*Asio flammeus*), tree swallow (*Tachycineta bicolor*), wandering tattler (*Tringa incana*), whimbrel (*Numenius phaeopus*), and least and/or western sandpipers (*Calidris*).

Nesting Alcids

In most years staff observed a small group of crested auklets (*Aethia cristatella*) aggregated with parakeet auklets at North Boat Cove throughout the breeding season. The crested auklet's behavior suggests that they may sometimes nest beneath the talus. In 2021 only a single crested auklet was recorded at North Boat Cove on 2 June; no nesting behavior was noted.

Most years parakeet auklets (*Aethia psittacula*) are seen aggregating in the nearshore waters off the eastside pocket beaches at Boat Cove, Campground, North Boat Cove, Second Beach, East Cape and elsewhere, and were assumed to be nesting among the talus. In 2021 nesting behavior was observed in several places on Round Island but no nests were located and confirmed. No adult auklets were seen delivering fish to hidden nestlings. Anecdotal observations by staff suggest that auklet presence has been declining recently, over the past few years.

Pigeon guillemots (*Cepphus columba*) are also typically seen in pairs at pocket beaches at First Beach, Second Beach, North Boat Cove and elsewhere; and have been assumed to be nesting among the talus there. In 2020 and 2021 nesting behavior was observed at First Beach and North Boat Cove, as adults were seen delivering fish into rock crevices in the talus. Anecdotal observations by staff suggest pigeon guillemot presence was also lower in 2021 than in previous years.

Horned puffins (*Fratercula corniculata*) and tufted puffins (*Fratercula cirrhata*) typically nest higher on the cliffs than the smaller auklets. The slightly more abundant horned puffin selects rock cracks and gaps for nest sites, and tufted puffin dig burrows into the sod at cliff edges. Horned puffins were seen attending the porch ledges outside presumed nest cracks at most of the pocket beaches and some of the rock spires higher on the island. There were at least 2 known horned puffin nests near the alternate boat landing where staff could look in at incubating adults from the beach below. At least one of these nests also had an incubating bird and a live chick at the end of the 2020 season. Tufted puffins were observed attending burrow entrances at Second Prime, East Cape, and First Prime. Based on anecdotal observations, adult foxes at the East Cape den seemed to be targeting tufted puffins as a food source. While population counts do not

include these puffin nesting areas, staff believe (anecdotally) that horned and tufted puffin numbers have decreased from historic levels.

Remote Camera Observations

Game cameras and other remote camera systems are used at select sites across Round Island, both in season and over winter. Review of photos from these cameras provides a wealth of information that complements routine ADF&G wildlife monitoring and law enforcement. These remote monitoring devices allow ADF&G staff to acquire walrus numbers for West Main beach (WM) on days where weather or other duties prohibit travel to that side of the island, allowing for coverage of WM throughout the season. Additionally, they provide data on species presence and timing, weather, sea and sea ice conditions, and violations. Photos are also reviewed for disturbances that are correlated with known anthropogenic events recorded by staff. Photos are downloaded and archived. Temperature and camera data associated with the photos are imported into a database and additional attributes describing basic weather, sea and ice conditions, species presence, disturbances, etc. are added.

Cameras were stationed at West Main Beach, First Beach, Main Beach, East Cape and overlooking camp throughout the summer. The West Main Beach camera lost power and data from 22 July but was repowered before staff left the island on 3 August.

In addition to pertinent observations noted in other sections of this report, other relevant observations include

- The majority of the nesting seabirds (black-legged kittiwakes, common murre, and pelagic cormorants) appeared to have left Round Island by 30 August 2020. Black-legged kittiwakes and presumably many other seabirds had returned to Round Island for the 2021 season by 27 April.
- Small groups of Pacific walrus were still using Round Island intermittently into mid-September and sporadically until use ceased after 28 October 2020. The first walrus returned to Round Island the second week of April; large numbers of walrus returned on 4 May 2021.
- Sea and shoreline ice was largely present at Round Island from late December through mid-April.
- Steller sea lions were present at East Cape throughout winter 2020–2021. Sea lions were captured with remote cameras almost every day throughout the winter. Shoreline icing appeared to limit access to some favored haulout areas in late winter. It is likely that Steller sea lions were using areas not captured by cameras during periods when the ledges that were visible to the camera iced up.
- Cameras were placed at the usual sites (West Main beach, Main Beach, Camp Overlook, East Cape, and First Beach) for 2021–2022 winter monitoring.

Other Portions of Walrus Islands State Game Sanctuary

Staff did not visit any other parts of the sanctuary during the main season but heard reports of a moose photographed on a beach at High Island in April as well as continuing reports from Togiak residents of brown bears using Summit Island. Further reports indicate that Togiak residents were able to successfully practice subsistence eggging of common murre eggs at Black Rock with an estimated 30, 5-gallon buckets of eggs harvested. On 4 August, staff anchored overnight on the south side of Crooked Island but did not go ashore. A red fox was observed on the beach at dusk.

Weather

A Davis weather station and data logger at the cabin are used to capture basic weather data (temperature min/max, precipitation, wind speed and direction, barometric pressure) at 10-minute intervals. Daily weather data, and additional environmental conditions such as tides, storms, wind, and wave state are manually recorded daily. Daily minimum and maximum temperature, precipitation, wind speed, barometric pressure, and cloud cover recorded manually in conjunction with Pacific walrus and Steller sea lion surveys, as well as electronic data from the Davis weather station are archived into the Walrus Islands State Game Sanctuary (WISGS) database. Additional temperature, precipitation and cloud cover data from game cameras placed at various locations around the island are also archived with RECONYX image data in the WISGS database. Weather data from these 3 data sources are compiled to provide the weather summaries presented in Table 4.

Table 3. Weather summary, Round Island, Alaska, 2020–2021.

Year	Month	Temperatures °F		Wind speed (kph)		% Days with precipitation	% Days <25% overcast	% Days >50% overcast
		Average	Range	Average	Range			
2020	Aug ^a	69	42–91	–	–	19	36	36
	Sep	58	37–79	–	–	37	27	55
	Oct	48	25–73	–	–	45	16	58
	Nov	37	16–55	–	–	43	23	64
	Dec	28	9–46	–	–	16	16	76
2021	Jan	29	2–49	–	–	52	9	84
	Feb	30	–2–55	–	–	29	5	84
	Mar	35	2–60	–	–	29	16	75
	Apr	44	4–78	–	–	27	26	67
	May	58	29–82	–	–	5	34	38
	Jun	60	37–80	15	0–50	10	10	77
	Jul	64	41–85	17	2–53	18	29	64
	Aug ^b	66	54–66	18	10–66	–	33	–

Note: En dashes indicate that data is unavailable.

^a16–31 August 2020.

^b1–3 August 2021.

Public Use and Land Management

To protect sanctuary wildlife and other resources, access to Round Island and the waters within 3 geographical miles of the island are restricted. The 3-mile restriction has been in place since 1989, varying only slightly in the use of nautical versus geographical miles. Three geographical miles is about 10 meters (10.9 yards) more than 3 nautical miles. Prior to 1989, restrictions applied to Round Island and waters within 2 miles (5 AAC 83.250, 1985). Visitors and transporters must possess authorization from ADF&G in the form of a sanctuary access permit for the day(s) they plan to visit Round Island (5AAC 92.066). All vessels approaching the island must contact ADF&G Round Island staff via marine very-high frequency (VHF) radio (channel 7) prior to 9:00 a.m. on the day of their visit and again prior to entering the restricted 3-mile area. Vessels are required to maintain course through a designated access corridor to Boat Cove on the northeast side of the island (Fig. 8). Because low-flying aircraft can cause major disturbances at walrus haulouts (Fay 1982), all aircraft access to the island is prohibited unless authorized by ADF&G. ADF&G policy requests that all aircraft avoid overflights below 5,000 ft above ground level within 3 miles of the island. Notices regarding access restrictions are published as a flight advisory on Federal Aviation Administration charts and as an advisory on National Oceanic and Atmospheric Administration (NOAA) nautical charts. Although ADF&G does not have the authority to regulate airspace, pilots who cause a disturbance can be prosecuted by USFWS under the Marine Mammals Protection Act for harassment of walrus. All vessel or plane traffic observed within the restricted area is documented and those without authorization are hailed by marine VHF or avionics radio and notified of restrictions and advisories. Violations are reported to appropriate authorities for investigation and prosecution.

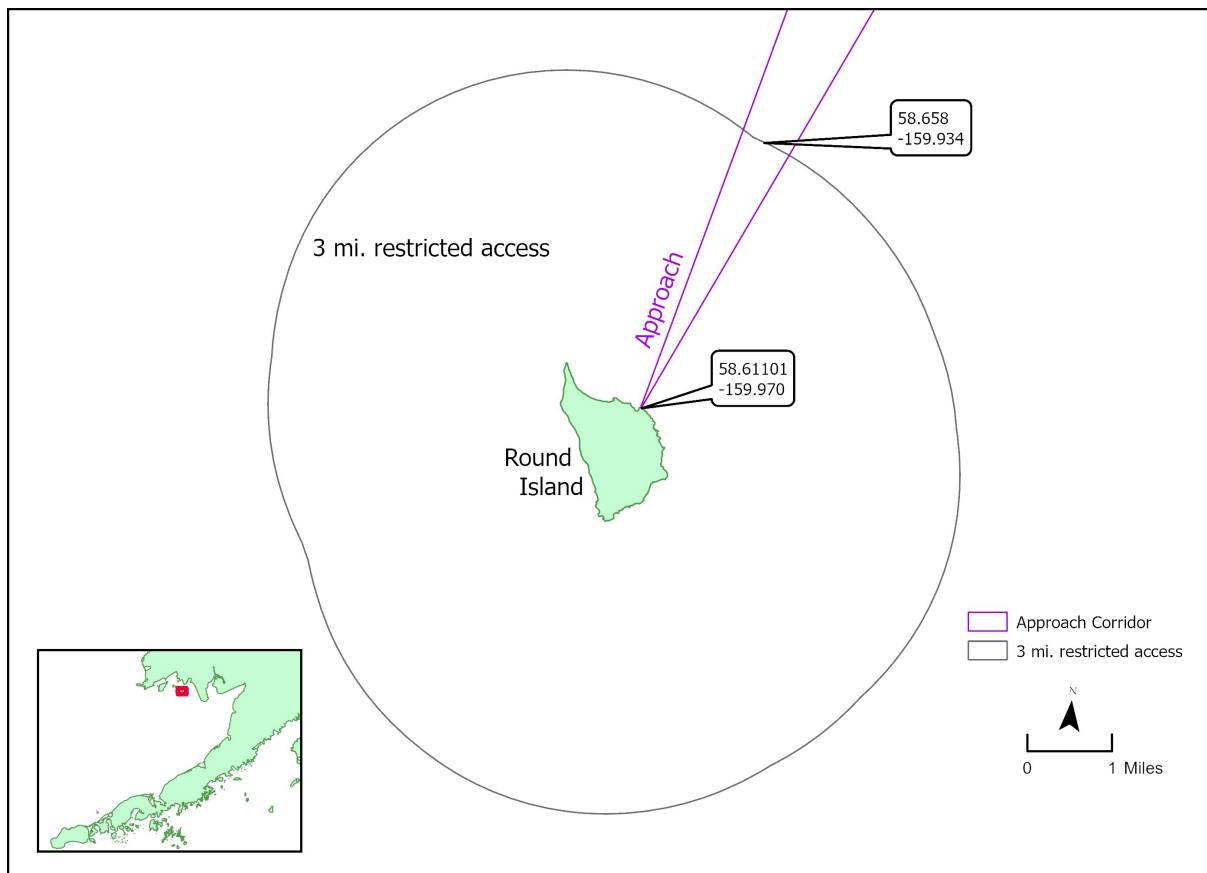


Figure 8. Round Island, Walrus Islands State Game Sanctuary, Alaska, showing 3 nautical miles restricted waters and access corridor.

VISITOR USE

Campers arrive on Round Island after obtaining a permit through the ADF&G website (<https://www.adfg.alaska.gov/index.cfm?adfg=viewingpermits.roundisland>) or from the ADF&G Dillingham office. The cost of a 5-day camping permit is \$100. Day-use visitors are issued permits for \$20 per person upon arrival on the island after obtaining access authorization from staff through morning marine VHF radio contact.

One of the primary goals of the sanctuary staff in managing the visitor program is to balance the quality of the experience for the visitors while protecting wildlife and other resources. When visitors arrive on Round Island, they are given an orientation that includes the visitation regulations and policies, a brief history of the sanctuary, a safety briefing, and a demonstration on how to approach walrus viewpoints without disturbing the animals. All visitors are required to remain on established trails apart from going to the summit from East Cape. To avoid disturbance, visitors are not permitted on the beaches except for staff monitored arrivals and departures from Boat Cove or the Campground. As part of the safety briefing, the precipitous and slippery nature of the trails is stressed. Staff duties associated with the visitor program include monitoring the VHF marine radio, authorizing access to sanctuary waters, issuing permits, collecting user fees, reviewing sanctuary rules and safety procedures, answering visitor

questions, maintaining campground facilities, collecting visitor use data, and aiding visitors when needed.

Visitor-use data for the 2021 season are summarized in Table 5. Commercial access was available via Togiak Outfitters during the early season only. Access by authorized private vessels was also available throughout the summer; however, only 2 private vessels visited the island during the season: the F/V Okuma on 13 June, and the F/V Cloudbreak which assisted with camp break down on 3 August. Preseason permit sales totaled 40 permits for a potential 174 user days. Actual public visitation was considerably less due to concerns about travel during the COVID-19 pandemic and challenges surrounding transportation. During the 2021 field season 16 total visitors (11 campers and 5 day-users) visited the island for a total of 74 visitor-use days. There were 188 staff-use days between 3 May and 3 August. Public visitor-use days included the 5 day-use visitors arriving on F/V Okuma and F/V Cloudbreak. Eleven of the 16 visitors were Alaska residents; the remaining 5 hailed from North Carolina, Colorado, Kansas, Washington, and Texas.

Table 4. Visitor-use summary, Round Island, Walrus Islands State Game Sanctuary, Alaska, 2021.

State	Visitor numbers				User days			
	Admin	Campers	Day users	Total	Admin	Campers	Day users	Total
Alaska	4	7	2	13	188	47	2	237
Colorado	0	1	0	1	—	3	0	3
Kansas	0	1	0	1	—	8	0	8
Texas	0	1	0	1	—	8	0	8
North Carolina	0	0	1	2	—	0	1	1
Washington	0	1	0	1	—	3	0	3
Illinois	0	0	1	1	—	0	1	1
Florida	0	0	1	1	—	0	1	1
Grand total	4	11	5	20	188	69	5	262

Note: En dashes indicate not applicable.

Historically, visitation to Round Island has been variable. Fluctuations in visitation are generally attributed to several social and economic factors including the availability of transportation to the island, national and international travel restrictions, periods of opportunistic day visitation, and national and international publicity. Transport to Round Island was challenging during the 2021 season due to long periods of rough weather. Additionally, after 12 July the normal public transporter was unavailable for transport.

A record number of visitors (303) to Round Island occurred in 1977. However, the inflated visitation that year was due to the approximately 250 day-visitors from a small cruise ship. In the 1980s and early 1990s, many members of the herring fishing fleet visited Round Island opportunistically during breaks in the fishery. Also, during this time, there was national and international publicity of the sanctuary through television programs and magazine articles (Rice 2002). In 1987 a record number of 131 campers visited the island and the number of campers on

the island remained high during the late 1980s and early 1990s. After the decline of the fishery in Bristol Bay, visitation decreased. Visitation generally declined between 1990 (110 campers, 58 day-users) and 2004 (19 campers, 55 day-users). Between 2005 and 2007, visitation to Round Island rose slightly, and then dipped again from 2008 to 2011 due to complications with commercial transport charters. Since 2011 visitation has been somewhat variable due to transport difficulties, weather, and the COVID-19 pandemic.

WALRUS INTERNET CAM

The explore.org and ADF&G partnership to stream the live internet walrus cam did not happen during the 2021 season due to COVID-19 travel and logistic issues.

ACCESS VIOLATIONS

There were 2 violations of access regulations or policies in 2021. One was an overflight by a plane on 22 May, which was below the 5,000 foot above ground level FAA flight advisory. The second was a transiting landing craft that strayed one-half mile inside the 3-mile restricted area on 30 May. The vessel corrected course after being notified by Round Island staff.

SUBSISTENCE HUNT

Round (Qayassiq) Island is a traditional walrus hunting ground for Alaska Natives and in the early 1990s hunters, mainly from the village of Togiak, petitioned the Alaska Board of Game for access to the island for subsistence hunting. This resulted in the formation of the Qayassiq Walrus Commission (QWC) in 1995, which helped to reestablish the Round Island subsistence hunt. The Board of Game agreed to allow island access between 1 October and 31 October for the hunt. The harvest limit was set at 10 (including struck and lost animals) by the cooperative agreement (ADF&G, Eskimo Walrus Commission, QWC, and USFWS). Dates and harvest numbers were revised in 2003, extending the dates from 10 September through 20 October with a limit of 20 walrus. (Subsistence Walrus Hunting on Round Island, Bristol Bay, Alaska Cooperative Agreement). The fall hunt has been intermittently monitored by USFWS and ADF&G staff over the years. State and federal agencies monitored the hunt during 1995–1998 and 2003–2006 but at the present time agencies rely on self-monitoring and reporting by hunt captains and the QWC.

The 2021 QWC prehunt meeting was canceled due to COVID-19 concerns. QWC and ADF&G made permits available to hunt captains via mail or email. However, none of the 9 QWC communities applied for or notified ADF&G that they would be hunting at Round Island; and none filed posthunt reports indicating they had hunted at Round Island in 2021. No ADF&G hunt access permits were requested or assigned for the 2021 hunt. Information provided by Bristol Bay Native Association (BBNA) and ADF&G area staff indicated that no hunting occurred at Round Island during the 2021 QWC hunt season.

Sanctuary Administration and Management

STAFFING

ADF&G staff were present on Round Island from 3 May through 3 August. Four brailer bags of supplies, a net containing a new cistern, and 3 loads of pressure treated lumber for trail work were loaded on the fishing vessel *Farrar Sea* in Homer, Alaska on 26 April for transport to Round Island. Sanctuary staff Margaret Archibald and Amber Stephens flew out to the island on 3 May in a Jet Ranger helicopter operated by Egli Air Haul out of King Salmon. The *F/V Farrar Sea* was waiting, anchored off the island, and the brailer bags of supplies and lumber were slung from the *F/V Farrar Sea* to Round Island over a 1.5-hour period.

Heidi Kritz, Bristol Bay Native Association (BBNA) Program Activities Coordinator for natural resources, and BBNA Round Island Intern Ashlyn Christiansen, were scheduled to be on the island from 15 to 25 June, but due to weather were on the island 16–28 June. During this time Heidi and Ashlyn learned and participated in walrus, Steller sea lion, and seabird monitoring; and camp operations. Heidi and Ashlyn traveled to the island from Togiak aboard the *Lindsey Mary* with Paul Markoff of Togiak Outfitters, Inc.

A staff crew-change was accomplished on 7 July with Paul Markoff and the *Lindsay Mary*. Amber Stephens departed the island for her break with Matthew Lohrstorfer arriving to fill in. Amber Stephens returned on 19 July with John Skinner via Pollux aviation R44 helicopter to relieve Margaret Archibald and Matthew Lohrstorfer. Staff took the opportunity to send one sling-load of approximately 720 pounds of bulky trash and the old cistern in 3 brailer bags to the dump in Togiak. Margaret and Matthew flew to Dillingham. Due to transport complications, the decision was made to close camp early. Camp shut down procedures began on 28 July and transport of staff and gear off island occurred on 3 August via the *F/V Cloudbreak* out of Egigik.

FACILITIES

In addition to annual maintenance of facilities, Round Island staff are responsible for several repairs or construction projects each year in support of the Round Island facility and visitor safety. This work often includes such things as building repairs and trail improvements. During the 2021 season, staff members replaced joists and decking on tent platform #8, completing conversion of all tent platforms to plastic wood decking. Broken frames were repaired on tent platform #7 where heaving during the winter resulted in broken joists. The inside of the staff cabin was painted with mold-suppressant paint. The old, cracked fiberglass cistern was replaced with a 550-gallon black poly tank; ball valves and inline strainers were added to the water system. Approximately 360 feet of pressure treated plank and run boardwalk was replaced in wet and damaged areas along the trail system around first beach and second beach. Elsewhere, trails were straightened and widened with aggressive weed whacking. Boards were replaced on several small bridges. A length of rope and an orange stake was placed at the campers' spring to keep campers from walking onto the rotten boards of the old creek platform. A hose was also added to the creek for ease of filling water jugs from the trail. The tool shed, cabin, and campground outhouse were leveled to correct for settling and guy wires were also tightened. The old shower shack was stood up after having blown down over winter and anchored to the ground.

An antechamber for changing and hanging clothes and towels was added to the staff cabin and the paloma water heater was remounted inside the antechamber.

During the summer staff also installed the four Round Island interpretive panels which were developed in 2020 in coordination with ADF&G, the Alaska Department of Natural Resources (ADNR), the National Park Service (NPS), USFWS, and BBNA; and produced with NPS National Natural Landmark grant funds. Staff framed 4" × 4" pressure treated lumber bases which interpretive panels were mounted on. Panels were installed in the campground area. The 2 panels highlighting the sanctuary's natural history, viewing guidelines, and regulations were placed at the top of the Boat Cove access stairs. The 2 panels featuring the cultural and anthropological history of the sanctuary were installed at the kitchen tent in the middle of the campground. A museum display shadow box to showcase small natural history treasures such as eggs, skulls, and archeological artifacts was installed in the campground composting toilet building.

PROJECT FUNDING

Funding for field staff and camp operations at Round Island were graciously provided by several private and federal grantors. Generous grants from Explore.org, the Alaska SeaLife Center, as well as sanctuary program receipts, were matched against U.S. Fish and Wildlife Service grant funds to fully fund operations in 2021.

IVORY COLLECTION

Staff also had limited opportunities to collect beach cast or mortality ivory due to consistent usage of the haulouts by walrus throughout the season and concern about disturbing nesting seabirds. One small, polished tusk tip was found at Second Beach and one full length beach-cast tusk surfaced and was collected at low tide in Boat Cove. This tusk appears to have loosened from the skull of a dead walrus, rather than having been broken off.

Collected ivory was transferred to the ADF&G area biologist in Dillingham for tagging by USFWS. The walrus ivory collected on Round Island is auctioned off through the Eskimo Walrus Commission at local events such as the Beaver Roundup Festival. Proceeds are then deposited into the Pacific Walrus Conservation Fund to further walrus conservation and research projects.

Acknowledgments

Very special thanks are extended to explore.org, the Alaska SeaLife Center, and the U.S. Fish and Wildlife Service for financial support and a remarkable interest in Pacific walrus and the Walrus Islands State Game Sanctuary. Thank you to USFWS staff at the Togiak National Wildlife Refuge for welcoming staff and volunteers at the bunkhouse in Dillingham and Togiak. We would also like to thank Lauri Jemison with the ADF&G, DWC Marine Mammals program for supporting Steller sea lion monitoring efforts at Round Island. We are grateful to Eunice Dyasuk and Bryan Riley with ADF&G, DWC in Dillingham for their continued support and participation in the Round Island program. We appreciate the staff and crews at Togiak Outfitters, Egli Air Haul and Pollux Aviation for their continued transport support. Thank you to

Justin Fulkerson at the University of Alaska, Anchorage – Herbarium for his continued support and assistance in the collection and cataloging of Round Island plant life. Thank you to Dave Bendinger and staff at Iccicle Seafoods for their continued coordination and assistance in deploying gear to Round Island. Thank you Sky Guritz (ADF&G, DWC) for providing final formatting and editing changes and processing this document for publishing.

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Appendix A. Daily summary of Pacific walrus hauled out at Round Island, Alaska, 11 August 2020–3 August 2021.

Date	Land count	Water count	Total	Beaches monitored / counted
11 Aug 2020	4	0	4	4
12 Aug 2020	252	6	258	4
13 Aug 2020	104	3	107	4
14 Aug 2020	166	3	169	4
15 Aug 2020	30	1	31	4
16 Aug 2020	13	7	20	4
17 Aug 2020	187	9	196	4
18 Aug 2020	280	20	300	4
19 Aug 2020	678	90	768	4
20 Aug 2020	721	40	761	4
21 Aug 2020	795	100	895	4
22 Aug 2020	251	22	273	4
23 Aug 2020	222	11	233	4
24 Aug 2020	103	7	110	4
25 Aug 2020	68	10	78	4
26 Aug 2020	90	19	109	4
27 Aug 2020	198	10	208	4
28 Aug 2020	154	7	161	4
29 Aug 2020	151	0	151	4
30 Aug 2020	57	0	57	4
31 Aug 2020	0	0	0	4
1 Sep 2020	64	2	66	4
2 Sep 2020	170	3	173	4
3 Sep 2020	145	5	150	4
4 Sep 2020	151	20	171	4
5 Sep 2020	269	14	283	4
6 Sep 2020	133	1	134	4
7 Sep 2020	6	0	6	4
8 Sep 2020	20	5	25	4
9 Sep 2020	18	2	20	4
10 Sep 2020	54	13	67	4
11 Sep 2020	30	14	44	4
12 Sep 2020	115	17	132	4
13 Sep 2020	150	3	153	4
14 Sep 2020	3	0	3	4
15 Sep 2020	0	0	0	4
16 Sep 2020	6	0	6	4
17 Sep 2020	1	0	1	4
18 Sep 2020	0	0	0	4

Date	Land count	Water count	Total	Beaches monitored / counted
19 Sep 2020	0	0	0	4
20 Sep 2020	0	0	0	4
21 Sep 2020	0	0	0	4
22 Sep 2020	0	0	0	4
23 Sep 2020	0	0	0	4
24 Sep 2020	0	0	0	4
25 Sep 2020	0	0	0	4
26 Sep 2020	0	0	0	4
27 Sep 2020	1	0	1	4
28 Sep 2020	1	2	3	4
29 Sep 2020	3	0	3	4
30 Sep 2020	0	0	0	4
1 Oct 2020	22	1	23	4
2 Oct 2020	37	1	38	4
3 Oct 2020	40	0	40	4
4 Oct 2020	10	1	11	4
5 Oct 2020	0	0	0	4
6 Oct 2020	0	0	0	4
7 Oct 2020	0	0	0	4
8 Oct 2020	0	0	0	4
9 Oct 2020	0	0	0	4
10 Oct 2020	0	0	0	4
11 Oct 2020	0	0	0	4
12 Oct 2020	0	0	0	4
13 Oct 2020	0	0	0	4
14 Oct 2020	0	0	0	4
15 Oct 2020	0	0	0	4
16 Oct 2020	0	0	0	4
17 Oct 2020	0	0	0	4
18 Oct 2020	0	0	0	4
19 Oct 2020	0	0	0	4
20 Oct 2020	0	0	0	4
21 Oct 2020	0	0	0	4
22 Oct 2020	0	0	0	4
23 Oct 2020	0	0	0	4
24 Oct 2020	0	0	0	4
25 Oct 2020	0	0	0	4
26 Oct 2020	2	0	2	4
27 Oct 2020	0	0	0	4
28 Oct 2020	5	0	5	4
29 Oct 2020	1	0	1	4
30 Oct 2020	0	0	0	4

Date	Land count	Water count	Total	Beaches monitored / counted
31 Oct 2020	0	0	0	4
1 Nov 2020	0	0	0	4
2 Nov 2020	0	0	0	4
3 Nov 2020	0	0	0	4
4 Nov 2020	0	0	0	4
5 Nov 2020	0	0	0	4
6 Nov 2020	0	0	0	4
7 Nov 2020	0	0	0	4
8 Nov 2020	0	0	0	4
9 Nov 2020	0	0	0	4
10 Nov 2020	0	0	0	4
11 Nov 2020	0	0	0	4
12 Nov 2020	0	0	0	4
13 Nov 2020	0	0	0	4
14 Nov 2020	0	0	0	4
15 Nov 2020	0	0	0	4
16 Nov 2020	0	0	0	4
17 Nov 2020	0	0	0	4
18 Nov 2020			0	4
19 Nov 2020	0	0	0	4
20 Nov 2020	0	0	0	4
21 Nov 2020	0	0	0	4
22 Nov 2020	0	0	0	3
23 Nov 2020	0	0	0	3
24 Nov 2020	0	0	0	3
25 Nov 2020	0	0	0	3
26 Nov 2020	0	0	0	3
27 Nov 2020	0	0	0	3
28 Nov 2020			0	3
29 Nov 2020	0	0	0	3
30 Nov 2020	0	0	0	3
1 Dec 2020	0	0	0	3
2 Dec 2020	0	0	0	3
3 Dec 2020	0	0	0	3
4 Dec 2020	0	0	0	3
5 Dec 2020	0	0	0	3
6 Dec 2020	0	0	0	3
7 Dec 2020	0	0	0	3
8 Dec 2020	0	0	0	3
9 Dec 2020	0	0	0	3
10 Dec 2020	0	0	0	3
11 Dec 2020	0	0	0	3

Date	Land count	Water count	Total	Beaches monitored / counted
12 Dec 2020	0	0	0	3
13 Dec 2020			0	3
14 Dec 2020			0	3
15 Dec 2020			0	3
16 Dec 2020			0	3
17 Dec 2020			0	3
18 Dec 2020			0	3
19 Dec 2020			0	3
20 Dec 2020	0	0	0	3
21 Dec 2020	0	0	0	3
22 Dec 2020	0	0	0	3
23 Dec 2020	0	0	0	3
24 Dec 2020	0	0	0	3
25 Dec 2020			0	3
26 Dec 2020			0	3
27 Dec 2020	0	0	0	3
28 Dec 2020	0	0	0	3
29 Dec 2020	0	0	0	3
30 Dec 2020	0	0	0	3
31 Dec 2020			0	3
1 Jan 2021	0	0	0	3
2 Jan 2021	0	0	0	3
3 Jan 2021	0	0	0	3
4 Jan 2021	0	0	0	3
5 Jan 2021	0	0	0	3
6 Jan 2021	0	0	0	3
7 Jan 2021	0	0	0	3
8 Jan 2021	0	0	0	3
9 Jan 2021	0	0	0	3
10 Jan 2021	0	0	0	3
11 Jan 2021	0	0	0	3
12 Jan 2021	0	0	0	3
13 Jan 2021	0	0	0	3
14 Jan 2021	0	0	0	3
15 Jan 2021	0	0	0	3
16 Jan 2021	0	0	0	3
17 Jan 2021	0	0	0	3
18 Jan 2021	0	0	0	3
19 Jan 2021	0	0	0	3
20 Jan 2021	0	0	0	3
21 Jan 2021	0	0	0	3
22 Jan 2021	0	0	0	3

Date	Land count	Water count	Total	Beaches monitored / counted
23 Jan 2021	0	0	0	3
24 Jan 2021	0	0	0	3
25 Jan 2021	0	0	0	3
26 Jan 2021	0	0	0	3
27 Jan 2021	0	0	0	3
28 Jan 2021	0	0	0	3
29 Jan 2021	0	0	0	3
30 Jan 2021	0	0	0	3
31 Jan 2021	0	0	0	3
1 Feb 2021	0	0	0	3
2 Feb 2021	0	0	0	3
3 Feb 2021	0	0	0	3
4 Feb 2021	0	0	0	3
5 Feb 2021	0	0	0	3
6 Feb 2021	0	0	0	3
7 Feb 2021	0	0	0	3
8 Feb 2021	0	0	0	3
9 Feb 2021	0	0	0	3
10 Feb 2021	0	0	0	3
11 Feb 2021	0	0	0	3
12 Feb 2021	0	0	0	3
13 Feb 2021	0	0	0	3
14 Feb 2021	0	0	0	3
15 Feb 2021	0	0	0	3
16 Feb 2021	0	0	0	3
17 Feb 2021	0	0	0	3
18 Feb 2021	0	0	0	3
19 Feb 2021	0	0	0	3
20 Feb 2021	0	0	0	3
21 Feb 2021	0	0	0	3
22 Feb 2021	0	0	0	3
23 Feb 2021	0	0	0	3
24 Feb 2021	0	0	0	3
25 Feb 2021	0	0	0	3
26 Feb 2021	0	0	0	3
27 Feb 2021	0	0	0	3
28 Feb 2021	0	0	0	3
1 Mar 2021	0	0	0	3
2 Mar 2021	0	0	0	3
3 Mar 2021	0	0	0	3
4 Mar 2021	0	0	0	3
5 Mar 2021	0	0	0	3

Date	Land count	Water count	Total	Beaches monitored / counted
6 Mar 2021	0	0	0	3
7 Mar 2021	0	0	0	3
8 Mar 2021	0	0	0	3
9 Mar 2021	0	0	0	3
10 Mar 2021	0	0	0	3
11 Mar 2021	0	0	0	3
12 Mar 2021	0	0	0	3
13 Mar 2021	0	0	0	3
14 Mar 2021	0	0	0	3
15 Mar 2021	0	0	0	3
16 Mar 2021	0	0	0	3
17 Mar 2021	0	0	0	3
18 Mar 2021	0	0	0	3
19 Mar 2021	0	0	0	3
20 Mar 2021	0	0	0	3
21 Mar 2021	0	0	0	3
22 Mar 2021	0	0	0	3
23 Mar 2021	0	0	0	3
24 Mar 2021	0	0	0	3
25 Mar 2021	0	0	0	3
26 Mar 2021	0	0	0	3
27 Mar 2021	0	0	0	3
28 Mar 2021	0	0	0	3
29 Mar 2021	0	0	0	3
30 Mar 2021	0	0	0	3
31 Mar 2021	0	0	0	3
1 Apr 2021	0	0	0	3
2 Apr 2021	0	0	0	3
3 Apr 2021	0	0	0	3
4 Apr 2021	0	0	0	3
5 Apr 2021	0	0	0	3
6 Apr 2021	0	0	0	3
7 Apr 2021	0	0	0	3
8 Apr 2021	0	0	0	3
9 Apr 2021	0	0	0	3
10 Apr 2021	0	0	0	3
11 Apr 2021	0	0	0	3
12 Apr 2021	12	0	12	3
13 Apr 2021	75	14	89	3
14 Apr 2021	55	4	59	3
15 Apr 2021	30	3	33	3
16 Apr 2021	55	2	57	3

Date	Land count	Water count	Total	Beaches monitored / counted
17 Apr 2021	35	0	35	3
18 Apr 2021	10	0	10	3
19 Apr 2021	5	0	5	3
20 Apr 2021	0	0	0	3
21 Apr 2021	0	0	0	3
22 Apr 2021	1	0	1	3
23 Apr 2021	0	0	0	3
24 Apr 2021	35	6	41	3
25 Apr 2021	0	0	0	3
26 Apr 2021	0	0	0	3
27 Apr 2021	2	5	7	3
28 Apr 2021	20	7	27	3
29 Apr 2021	30	2	32	3
30 Apr 2021	25	10	35	3
1 May 2021	0	0	0	3
2 May 2021	15	3	18	3
3 May 2021	65	36	101	9
4 May 2021	232	15	247	9
5 May 2021	238	11	249	9
6 May 2021	284	11	295	9
7 May 2021	167	11	178	9
8 May 2021	48	0	48	9
9 May 2021	38	3	41	9
10 May 2021	96	5	101	9
11 May 2021	233	14	247	9
12 May 2021	289	16	305	10
13 May 2021	1160	104	1264	10
14 May 2021	211	14	225	10
15 May 2021	492	31	523	10
16 May 2021	276	18	294	10
17 May 2021	54	7	61	10
18 May 2021	73	1	74	10
19 May 2021	29	1	30	10
20 May 2021	31	1	32	10
21 May 2021	142	10	152	10
22 May 2021	205	16	221	10
23 May 2021	202	5	207	10
24 May 2021	177	2	179	10
25 May 2021	231	8	239	10
26 May 2021	268	2	270	10
27 May 2021	328	7	335	10
28 May 2021	323	7	330	10

Date	Land count	Water count	Total	Beaches monitored / counted
29 May 2021	0	3	3	10
30 May 2021	64	0	64	10
31 May 2021	143	3	146	10
1 Jun 2021	108	18	126	10
2 Jun 2021	178	28	206	10
3 Jun 2021	168	34	202	10
4 Jun 2021	101	9	110	10
5 Jun 2021	36	6	42	10
6 Jun 2021	39	16	55	10
7 Jun 2021	50	34	84	10
8 Jun 2021	48	5	53	10
9 Jun 2021	117	8	125	10
10 Jun 2021	202	7	209	10
11 Jun 2021	146	4	150	10
12 Jun 2021	159	8	167	10
13 Jun 2021	90	2	92	10
14 Jun 2021	43	4	47	10
15 Jun 2021	46	19	65	10
16 Jun 2021	209	5	214	10
17 Jun 2021	1076	15	1091	10
18 Jun 2021	2340	78	2418	10
19 Jun 2021	1989	86	2075	10
20 Jun 2021	497	58	555	10
21 Jun 2021	448	5	453	10
22 Jun 2021	41	3	44	10
23 Jun 2021	0	0	0	10
24 Jun 2021	0	0	0	10
25 Jun 2021	0	4	4	10
26 Jun 2021	0	16	16	10
27 Jun 2021	850	20	870	10
28 Jun 2021	1757	25	1782	10
29 Jun 2021	1299	14	1313	10
30 Jun 2021	118	4	122	10
1 Jul 2021	30	1	31	10
2 Jul 2021	114	3	117	10
3 Jul 2021	183	36	219	10
4 Jul 2021	1588	25	1613	10
5 Jul 2021	1948	44	1992	10
6 Jul 2021	1606	71	1677	10
7 Jul 2021	2093	22	2115	10
8 Jul 2021	852	13	865	10
9 Jul 2021	390	15	405	10

Date	Land count	Water count	Total	Beaches monitored / counted
10 Jul 2021	455	3	458	10
11 Jul 2021	642	42	684	10
12 Jul 2021	1296	47	1343	10
13 Jul 2021	1309	150	1459	10
14 Jul 2021	940	30	970	10
15 Jul 2021	443	14	457	10
16 Jul 2021	177	31	208	10
17 Jul 2021	185	5	190	10
18 Jul 2021	504	28	532	10
19 Jul 2021	803	29	832	10
20 Jul 2021	711	8	719	10
21 Jul 2021	895	20	915	10
22 Jul 2021	688	15	703	10
23 Jul 2021	783	48	831	10
24 Jul 2021	535	18	553	9
25 Jul 2021	815	40	855	9
26 Jul 2021	1409	35	1444	9
27 Jul 2021	1604	236	1840	9
28 Jul 2021	1347	43	1390	9
29 Jul 2021	666	29	695	9
30 Jul 2021	399	25	424	9
31 Jul 2021	247	36	283	9
1 Aug 2021	362	13	375	10
2 Aug 2021	302	13	315	9
3 Aug 2021	701	9	710	10

Appendix B. Daily Wildlife Observations, Round Island, AK, 11 August 2020 – 3 August 2021.

Date	Number	Location ^a	Comments
3 May 2021	–	FP	Gray whale. Spout off first prime beach while slinging loads. Close to shore
3 May 2021	–	RI	Pelagic cormorant. Looks like they are possibly on nests on the cliffs above OP.
3 May 2021	–	RI	Golden-crowned sparrow. Heard call
3 May 2021	10	SB	American pipit. Flock flying around SB area.
3 May 2021	1	SB	Gray-crowned rosy-finch.
3 May 2021	>1,000	OP	Black-legged kittiwake. Checking out plots and ledges at OP.
3 May 2021	2	SB	Common raven.
3 May 2021	15	SB	Common redpoll.
3 May 2021	>1,000	OP	Common murre. Thousands on the cliffs off of OP—most I have seen on our plots.
3 May 2021	1	SB	Glaucous-winged gull.
3 May 2021	–		Weather observation. Quite a bit of snow still in the BC area and patches along trail to OP. Melting quickly at cabin and East side of island with the exception of a large patch at the top of the EC approach trail.
3 May 2021	–	RI	Pelagic cormorant. Coming and going from north end of the island, white brood patches evident but not nesting on sites near cabin
3 May 2021	–	RI	Weather observation. sloppy snow in the heli meadow, cabin dry and relatively less moldy than usual
4 May 2021	4	FB, EC	Harlequin duck. Breeding plumage.
4 May 2021	–	FB	Pigeon guillemot; 6–10 in the water at First Beach.
4 May 2021	–	RI	Golden-crowned sparrow. Heard song
4 May 2021	–	RI	American pipit picking at muck in trails
4 May 2021	–		Red fox. Possibly "brother bear" seen at Second Prime Pass
4 May 2021	14	OSE	King eider. 4 females, mix of breeding and non-breeding plumage offshore of cabin. Larger mixed sex flock off of BC.
4 May 2021	–	MB	Pacific walrus. Mort on south end of main beach
4 May 2021	–	RI	Common raven. Calling, flyby cabin a few times.
4 May 2021	10	OSE	Red-necked grebe. Many heard and seen offshore between BC and FP.
4 May 2021	–	MB	Black-legged kittiwake. Hundreds on the main beach cliffs, hanging out at nest sites, not really much new nesting material. Some material appears to be left over from last year.

4 May 2021	–	MB	Pelagic cormorant. Some appear to be starting nesting colonies further down the main beach cliffs, but none close enough to monitor. Possibly as many as 50 nests. Mixed nesting material, and some in incubating position. Probably practicing.
4 May 2021	>4	OSE	Gray whale. Several seen throughout the day from cabin and EC.
4 May 2021	2	EC	Humpback whale.
4 May 2021	1	SP	Peregrine falcon.
4 May 2021	1	NBC	Bald eagle. Adult flyover.
4 May 2021	1	OSS	Minke whale. About 1 1/2 NM offshore of EC.
4 May 2021	2	ECP	Wooly bear. In trail.
4 May 2021	–	CAB	Flies. Waking up and buzzing at the windows.
4 May 2021	–	CG	Red fox. Mostly bald tail with a puff at the end. Eating a white breasted black legged bird at campground.
4 May 2021	–	CAB	Red fox. Older red fox, stiff looking, with a limp visiting and vocalizing at the cabin in the afternoon.
4 May 2021	–		Common murre. No COMU on the cliffs at OP.
4 May 2021	–		Moths. At least two species.
4 May 2021	2	FB, EC	American tree sparrow. Feeding in trails.
5 May 2021	–	EC	Bald eagle. Immature, likely first year with buffy blonde breast and small head. Flyby at EC, departed towards right hand point.
5 May 2021	2	EC	Glaucous-winged gull. Nonbreeding plumage, hanging out.
5 May 2021	–	EC	Steller sea lion. Adult female nursing large juvenile.
5 May 2021	–	EC	Steller sea lion. Adult Male with large bleeding popeye swimming off V5
5 May 2021	–	EC	Red fox. Youngish, puffy, handsome and unshy, followed me from ECP
5 May 2021	–	CAB	Red fox. also with mostly bald trail, but no puff on the end. Second bald tail fox.
5 May 2021	–		Black-legged kittiwake. Checking out plots and ledges at OP.
5 May 2021	1	CG	Pigeon guillemot.
5 May 2021	12	CAB	Red-necked grebe. Heard and seen offshore from cabin.
5 May 2021	~25	CAB	Long-tailed duck. Heard and seen offshore from cabin.
5 May 2021	5	OSE	Glaucous-winged gull. Flying along East side of island.
5 May 2021	1	OP	Gray-crowned rosy-finch.
5 May 2021	1	CAB	Canada goose. Flew by cabin.
5 May 2021	4	OP, BC	American pipit.
5 May 2021	~15	BC	King eider. Mixed flock of non-breeding plumage males and females, and some breeding plumage females. Offshore of BC.
5 May 2021	20	CG, BC	Harlequin duck.
5 May 2021	–	OP	Common murre. No common murre on the rocks at OP.

5 May 2021	2	CAB	Golden-crowned sparrow. Song heard from cabin.
5 May 2021	2	CG, BC	Humpback whale.
5 May 2021	2	CG, BC	Gray whale.
5 May 2021	–	CAB	Parakeet auklet. Songs heard from cabin.
5 May 2021	1	CAB	Bald eagle. Adult flyover.
6 May 2021	1	NBC	Horned puffin. I caught a brief glimpse of just one do a flyby off the NBC viewpoint. Did not approach or land on the cliffs to my knowledge
6 May 2021	2	RI	Humpback whale. At least two out front off the cabin.
6 May 2021	–	RI	Common murre. Flying back and forth out front over the ocean.
6 May 2021	1	MB	Pacific walrus. Mort on south end of main beach
6 May 2021	–		Black-legged kittiwake.
6 May 2021	1	FB	Savannah sparrow. FOS.
6 May 2021	10	SB, SP	Harlequin duck. Males and females.
6 May 2021	1	EC	Red fox. Male.
6 May 2021	2	OSS	Gray whale. Off of EC.
6 May 2021	2	SP	Sandhill crane. Flew over and then headed out towards mainland.
6 May 2021	2	SP	Golden-crowned sparrow.
6 May 2021	–	FB	Chocolate lily. Coming up, not yet blooming
6 May 2021	–	SP	Wooly lousewort. Coming up, not yet blooming
6 May 2021	2	SP	American pipit.
6 May 2021	–	CAB	Red fox. An older fox with a bump on lower lip looked at me in the shed and then headed across the heli-meadow towards the old den site, but then past it and on past on up the hillside.
6 May 2021	–	RI	Pacific walrus. Moving North and south more than 10 meters offshore.
6 May 2021	3	SP	King eider. 1 male in breeding plumage and 2 females.
7 May 2021	1	CAB	Gray whale. Swimming off the cabin and TB out front several times through the day
7 May 2021	–		Golden-crowned sparrow.
7 May 2021	–		Black-legged kittiwake.
7 May 2021	1	FR	Red fox. Male "pufftail" playing around and sliding down grass hill and running around.
7 May 2021	1	BC	Savannah sparrow.
7 May 2021	1	BC	Gray-crowned rosy-finch.
7 May 2021	~100	OP	Common murre. Back on plots.
7 May 2021		SPP	Wooly lousewort. Small fuzzy bud coming up in the middle of the trail up to second prime pass.
7 May 2021	–	RI	American pipit. Calling from rock tops.

7 May 2021	–	TB	Steller sea lion. Many adult male, (large breeding size) Hanging out at third beach and south end of third beach. A cursory clicker count showed more than 80 adult male Steller sea lions out of 250 sea lions on third beach.
7 May 2021	–	RI	Golden-crowned sparrow. Songs becoming incessant.
7 May 2021	–	TB	Glaucous-winged gull. Nonbreeding plumage, hanging out.
7 May 2021	–	EC	Steller sea lion. Nursing yearlings at TB
7 May 2021	1	OP	Tufted puffin.
7 May 2021	1	OP	King eider. 1 male in breeding plumage.
8 May 2021	1	BC	Spotted seal. Seal pup in lanugo, likely spotted seal based on age and timing.
8 May 2021	–	OP	Black-legged kittiwake. Many on cliffs at main beach but no Common murre
8 May 2021	–	OP	Black-legged kittiwake. Many on cliffs at main beach but no Common murre
8 May 2021	–		Red fox. Bump lip adult female. Visited at the shed while crew were working out back. Called a little and allowed me to fetch a phone to photograph her lip/smile. I suspect she is the same matriarch as the last few seasons around the cabin.
8 May 2021	1	TB	Northern sea otter. Seen swimming right along shore of TB. Appears to be a male based on photos.
8 May 2021	3	SP	King eider. Females.
8 May 2021	4	SP	Harlequin duck.
8 May 2021	–	BC	Caterpillar. In the middle of snowfield on BC trail. Must have been dropped there by a bird.
8 May 2021	1	MB	Pacific walrus. Mort on south end of main beach
8 May 2021	–	BC	Stellaria Media. The parts of BC trail that had European chickweed are now beginning to be exposed, so far some green grass tips but no visible chickweed
8 May 2021	2	SB	Glaucous-winged gull.
9 May 2021	1	BC	Green-winged teal. Spooked in trail at BC.
9 May 2021	2	NBC	King eider. 2 males, one in breeding plumage.
9 May 2021	1	BC	Montane "Dusky" shrew. Dead in trail.
9 May 2021	2	BC	Harlequin duck.
9 May 2021	–	BC	Snow melting around camp. Creeks and waterfalls rushing around camp.
9 May 2021	–	FB	SOIL, soil falling out of the creek at first beach is bright orange.
9 May 2021	–	TB	Sea otter. 300 meters off TB, floating, munching.
9 May 2021	–	EC	Hermit thrush. Hopping in rocks, not calling.
9 May 2021	–	CAB	Worm. On the outhouse bench. Lots in puddles. Might be a wormy year.
9 May 2021	–	SP	American tree sparrow.

9 May 2021	–	EC	American pipit. Many around and calling from rock tops
9 May 2021	–	EC	Steller sea lion. 3+ Yearlings nursing
10 May 2021	–	RI	American pipit. Lots of bird song this morning.
10 May 2021	–	RI	Golden-crowned sparrow. Lots of bird song this morning.
10 May 2021	–	RI	Parakeet auklet. Lots of bird song this morning.
10 May 2021	1	CAB	Unidentified sandpiper. Unk peep between cabin and FB meadow.
10 May 2021	1	SB	Short-eared owl. Flying between SB and BC.
10 May 2021	1	FB	American tree sparrow.
10 May 2021	3	EC	Tufted puffin.
10 May 2021	–	MB	Black-legged kittiwake. Many on cliffs at main beach, nests show some new work
10 May 2021	1	MB	Pacific walrus. Mort on south end of main beach
10 May 2021	1	MB	Common raven. Calling, flyby main beach and upsetting the kittiwakes on the wall.
10 May 2021	1	MB	Pelagic cormorant. One swimming off the beach with nesting materials in bill.
10 May 2021	1	NBC	Common redpoll. Photographed him hopping and foraging on the ground.
10 May 2021	1	BC	Montane "Dusky" shrew. Dead on trail at Boat Cove. Threw him into the grass.
10 May 2021	–	RI	Harlequin duck. In pairs in breeding plumage
10 May 2021	–	BC	King eider. Group of more than 20 NBP eiders off Boat Cove, one breeding plumage adult male.
10 May 2021	–	RI	Fog. Thick low fog, coming and going throughout the day
10 May 2021	–	BC, NBC	Parakeet auklet. Aggregating. TWITTERING
10 May 2021	1	BC	Green-winged teal. In breeding plumage, Swimming in Boat Cove. Cute.
10 May 2021	3	NBC	Tufted puffin. Flew by at NBC
10 May 2021	–	RI	Pelagic cormorant. Glossy iridescent green and bright red face skin. In breeding finery
10 May 2021	–	RI	Caterpillar. Hairless beige kind.
11 May 2021	1	EC	Gray-crowned rosy-finch. Landed BRIEFLY at the usual tall GCRF calling rock with the yellow lichen
11 May 2021	–	EC, FP	Tufted puffin. A few beginning to aggregate in the water off SP and TB. One disturbed from rocks near nesting area at first prime.
11 May 2021	–	TB	Sea otter. off TB, floating, rolling in waves.
11 May 2021	–	TB	Steller sea lion. Many large lions spread south to and around the spire at the south end of third beach.

11 May 2021	–	EC	Steller sea lion. Nursing, one two year old and several yearlings nursing at EC.
11 May 2021	1	EC	Unidentified swallow. Flyby at EC
11 May 2021	1	FP	Hermit thrush. Hopping in rocks, not calling.
11 May 2021	–	FB	Savannah sparrow. Calling, singing at first beach.
11 May 2021	–	FB	Fox sparrow. Heard a new song at FB
11 May 2021	–	EC	Steller sea lion. Adult male with Popeye- his eye looked better, smaller, less bloody.
11 May 2021	–	RI	Parakeet auklet, tufted puffin, pigeon guillemot, sparrows. All very prevalent today. Very birdy on the island.
11 May 2021	2	FR, MB	Horned grebe.
11 May 2021	2	FR, MB	King eider. 1 male in breeding plumage at FR and one female viewed off of OP.
11 May 2021	–	OP	Common murre. Present on plots. Copulation on Plot 4.
11 May 2021	75	BC,CG	Parakeet auklet. 32 in BC, 43 off of CG.
11 May 2021	20	OP	Tufted puffin. In water off OP.
11 May 2021	3	CAB	Sandhill crane. Flyover.
11 May 2021	1	FP	Horned puffin.
11 May 2021	55	CAB	Lapland longspur. In meadow behind cabin.
11 May 2021	–	RI	White-crowned sparrow, American tree sparrow, savannah sparrow, golden-crowned sparrow, fox sparrow. All on East side of the island.
12 May 2021	–	MB	Pacific walrus. Mort on south end of main beach
12 May 2021	–	MB	Black-legged kittiwake. Many on cliffs at main beach, nests show some new work
12 May 2021	–	WM	Black-legged kittiwake. wings of one mort BLKI at WM viewpoint. Looks like a raven kill, but is the only one I have seen like this this spring.
12 May 2021	–	WM	Pelagic cormorant. 2 small nesting colonies on the west ridge. Moved somewhat from 2021, setup two cameras covering only 5 and 7 nests. In the southwest-facing group of 5 nests one nest had 1 egg, and another nest has 2 eggs.
12 May 2021	–		Coltsfoot. NOT SURE WHICH SP. Budding along traverse trail and traverse trail approach, one near the main beach overlook cam, beginning to flower.
12 May 2021	–	RI, MB	Pacific walrus. many coming in from the west through the afternoon, mostly landing on the point or on MB.
12 May 2021	–	MB	Horned puffin. In water off campground and coming and going from main beach.
12 May 2021	–	BC	King eider. Adult male in breeding plumage hauled out at Boat Cove.
12 May 2021	–	RI	Pelagic cormorant. Flying with nesting material.

12 May 2021	–	MB	Tufted puffin. Coming and going from MB cliffs.
12 May 2021	–	MB	Common murre. On cliffs at MB and WM.
12 May 2021	–	WM, TT	Red fox. Did not see red foxes on traverse trail or trip to WM viewpoint. However, there were fox tracks on the snow behind me on the traverse trail.
12 May 2021	–	TT	Unidentified geese. Abundant dried goose droppings on the traverse trail approach
12 May 2021	1	TB	Sea otter. Swimming near South Point.
12 May 2021	6	RI	Sandhill crane. Flyover.
12 May 2021	1	CAB	Merlin. Heard from cabin but never seen.
12 May 2021	1	CAB	Northern harrier. Flyover.
12 May 2021	1	FB	Green-winged teal. Flew into water from FB creek.
12 May 2021	22	FB, SB	Harlequin duck. 12 at FB, 10 at SB.
12 May 2021	6	FP	Tree swallow.
12 May 2021		RI	Lapland longspur. Seen and heard all over East side of island.
13 May 2021	2	ECP	Wooly bear. In trail.
13 May 2021	2	TB	Pacific walrus. 2 older male walrus approach the south end of third beach where all the large adult male Steller sea lion are hanging out. One walrus looks interested in hauling out, one sea lion approaches and they interact. Walrus leaves.
13 May 2021	–	EC	Steller sea lions nursing yearlings and one nursing a two year old.
13 May 2021	1	EC	Sea otter. surfing, shredding the knar, at EC. Near ledges.
13 May 2021	3	FR	King eider. 2 male, 1 female.
13 May 2021	–	RI	Lapland longspur.
13 May 2021	1	OP	Bald eagle.
13 May 2021	–	SP	Steller sea lion. Sub adult disturbing 2 rafts of parakeet auklet at SP
14 May 2021	6	BC	Harlequin duck.
14 May 2021	1	FR	King eider. Male in breeding plumage.
14 May 2021	–	NBC	American tree sparrow.
14 May 2021	–	NBC	Lapland longspur.
14 May 2021	1	FR	Unidentified sandpiper (least?) on NBC trail. Alone, disturbed by staff.
14 May 2021	–	NBC, CG, BC	White-crowned sparrow.
14 May 2021	–	MB	Black-legged kittiwake. Group of kittiwakes mobbing a seep spot on cliffs to gather wet nesting material.
14 May 2021	2	SB	Common raven. 1 nest located. 2 Adults present, 1 already on nest.
14 May 2021	4	ECP, FR, NBC	White-crowned sparrow.

14 May 2021	8	FB	Pigeon guillemot.
14 May 2021	~30	SP	Unidentified sandpiper.
14 May 2021	–	RI	Harlequin duck. in breeding plumage pairs.
14 May 2021	1	NBC	Unidentified sandpiper. 1 small peep in the grass at NBC. See photos.
15 May 2021	1	FR, FP	King eider. Male breeding plumage.
15 May 2021	4	CG	Horned puffin.
15 May 2021	2	FR	Glaucous-winged gull.
15 May 2021	1	NBC	Rough-legged hawk. Flyover. Dark-morph
15 May 2021	–	OP	Black-legged kittiwake. Some with nesting material at plots.
15 May 2021	–	OP	Common murre. Present on plots.
15 May 2021	15	OP	King eider.
15 May 2021	2	OP	Red-necked grebe.
15 May 2021	3	CAB	Least sandpiper. Flyover.
15 May 2021	–	RI	Lapland longspur. Flying all over East side of island.
15 May 2021	–	RI	Harlequin duck.
15 May 2021	–	RI	American tree sparrow. got photographed.
15 May 2021	–	RI	White-crowned sparrow.
15 May 2021	1	RI	Bald eagle. Adult. Flyby at cabin
15 May 2021	1	EC	Red fox. Adult female fox at EC eating adult kittiwake. Hides one wing under a big rock and acknowledges staff. Belly looks big and round. Maybe pregnant.
15 May 2021	–	RI	Bumblebees. Becoming more and more common along trails
15 May 2021	–	ECP, SPP	Alpine bearberry. Flowers Blooming along the trails going up over second prime and east cape pass and
15 May 2021	1	OP	Bald eagle. Juvenile flew past cliffs at OP and cleared most of them. Mobbed by common raven at NBC.
16 May 2021	1	CAB	American robin. Heard at cabin.
16 May 2021	4	CAB, FP	Fox sparrow.
16 May 2021	1	CAB	Tree swallow.
16 May 2021	1	CAB	American tree sparrow.
16 May 2021	1	CAB	Dark-eyed junco. Female slate-colored.
16 May 2021	2	EC	Gray whale.
16 May 2021	2	SB	Common raven. 1 adult on nest.
16 May 2021	1	FP	Hermit thrush.
16 May 2021	5	FB	Pigeon guillemot.
16 May 2021	2	FB	Harlequin duck.
16 May 2021	6	ECP	Savannah sparrow.

16 May 2021	5	ECP	Common redpoll.
16 May 2021	3	ECP	Lapland longspur. Flying all over East side of island.
16 May 2021	1	EC	Sea otter.
16 May 2021	1	RI	Common raven. Flying south with one white egg in beak. Probably pelagic cormorant egg.
16 May 2021	1	BC, CG	Northern harrier. Flying low over trails.
16 May 2021	–	CAB	Fox sparrow. Behind ADF&G shed
16 May 2021	1	FR	King eider. In breeding plumage on flat rock.
16 May 2021	–	BC	Pigeon guillemot.
16 May 2021	–	BC, CG	Parakeet auklet.
16 May 2021	–	RI	White-crowned sparrow. photographed. still around.
16 May 2021	–	BC	Harlequin duck. In breeding plumage pairs
16 May 2021	–	RI	Common raven. At least two adults hanging out on east side of island likely nesting
16 May 2021	–	MB	Pacific walrus. 2 mortalities on main beach. Two tusks each
17 May 2021	1	CAB	Red fox. Female bump lip at the cabin napping.
17 May 2021	1	FR	Steller sea lion. Adult male sea lion sleeping on FR while a walrus was asleep in the water.
17 May 2021	1	FR	King eider. Male in breeding plumage resting on FR with STSL.
17 May 2021	–	OP	Common murre, Black-legged kittiwakes. No Common murre on the plots and very few black-legged kittiwakes either.
17 May 2021	8	FR	Parakeet auklet.
17 May 2021	1	RI	Gray whale. Lazily travelling south, half mile offshore
17 May 2021	1	SPP	Hermit thrush. Silent, hops down into the trail above second prime and pics up a worm or caterpillar.
17 May 2021	1	TB	Sea otter. Hauled out at Third beach south end on the big rocks.
17 May 2021	–		Steller sea lion. Many yearlings and many pregnant looking afs
17 May 2021	–		Unidentified swan. Alone, offshore by second prime. See photos
17 May 2021	–		Nootka lupine. One early bloomer at EC viewpoint
18 May 2021	1	TB	Sea otter.
18 May 2021	8	EC, SP, FB, FR	Gray whale.
18 May 2021	1	SP	Humpback whale.
18 May 2021	~50	EC	Horned puffin, tufted puffin. Flying around EC.
18 May 2021	3	CG, BC	Wandering tattler.
18 May 2021	1	SPP	Wooly lousewort. Fuzzy and starting to bloom.
18 May 2021	1	CG	King eider. Adult male in breeding plumage.
18 May 2021	2	MB	Pacific walrus.

18 May 2021	0	MB	Common murre. None seem to be hanging out on MB cliffs today.
18 May 2021	–	OP	Black-legged kittiwake. Present on nest sites, some nests show recent material added.
18 May 2021	–	OP	Tufted puffins. Standing on MB cliffs in pairs and coming and going.
18 May 2021	–	OP	Horned puffin. Coming and going from MB cliffs.
18 May 2021	–	MB	Pelagic cormorant. Nests far down main beach show new material and some individuals in Incubating position.
18 May 2021	1	BC	Steller sea lion. One youngster with a few fungal spots has been hanging out in Boat Cove. Today is thrashing a flatfish.
18 May 2021	–	RI	Harlequin ducks. Hanging out in male and female breeding plumage pairs in each bay.
18 May 2021	–	SB	Common raven. Incubating on nest at SB.
18 May 2021	–	RI	Gray whale. Two groups headed south slowly during walrus survey.
19 May 2021	1	NBC	Gray-crowned rosy-finch.
19 May 2021	–	OP	Common murre, black-legged kittiwake. All on plots
19 May 2021	–	NBC	King eider. Male breeding plumage
19 May 2021	–	OP	Black-legged kittiwake. Nests coming along at OP.
19 May 2021	1	TB	Sea otter. Steller sea lion, interacting. Playing? Fighting? Play fighting? With more than one individual, including large males, (see photos).
19 May 2021	1	SPP	Woolly lousewort. Fuzzy bud on second prime pass trail has a few closed inflorescences.
19 May 2021	–	SP	Gray whale. Close in at Second Prime beach.
19 May 2021	–	RI	Marsh violets. Blooming along trails.
19 May 2021	–	EC	Very cold.
20 May 2021	1	CAB	White-crowned sparrow. At cabin in a.m.
20 May 2021	1	CAB	Red fox. “Puff tail” male fox at cabin.
20 May 2021	1	FB	Wandering tattler.
20 May 2021	1	SB	Common raven. Flying with something white in its bill. Did not look like an egg.
20 May 2021		RI	Pelagic cormorant. Many on all the rocks along the East side of the island.
20 May 2021	2	EC	Red fox. Male and female at EC. Female looks pregnant. Female was eating a black-legged kitt wing. Male arrived with a dead parakeet auklet and gave it to the female. The female took the auklet into a rock hole above VIT. Came back out without it and then greeted male and both interacted and groomed themselves. Female followed me along the trail until ECP and then both took off towards the cabin.
20 May 2021	–		Pacific walrus. 2 Mortalities on main beach.

20 May 2021	–		Few-flowered corydalis. Blooming at Boat Cove.
20 May 2021	–	MB	Pelagic cormorant. Some nesting far down MB cliffs. Birds in incubating position and others flying in with nesting material.
20 May 2021	–	RI	Rain. Melting snow.
20 May 2021	–	RI	White-crowned sparrow. Song, still around.
20 May 2021	–	RI	Black-legged kittiwake. Flying with wet nesting material. Group of 20 mobbing a wet seep near plot three for muddy moss.
20 May 2021	4+	OP	Pelagic cormorant. Pairs of cormorants Standing on plot one and working on 3+ nests. This is new. Pecos have been acting nesty on west ridge and mb cliffs, but this is a late start at plot 1 at OP.
20 May 2021	–	MB	Common murre. a few small groups of murres sitting on mb cliffs.
21 May 2021	–	OP	Pelagic cormorant. Collecting nesting material at OP.
21 May 2021	1	TB	Sea otter. Hauled out on TB rock near Steller sea lion
21 May 2021	1	CG	Red fox. Adult female with bump lip, sleeping in the sun at campground
21 May 2021	–	RI	Cold hole full of water
21 May 2021	1	FB	Bald eagle. Takes off from First Beach as I come around.
21 May 2021	1	SB	Common raven. Incubating on the nest at second beach.
21 May 2021	–	BC	Unidentified flat fish. Dead on the beach in BC.
21 May 2021	1	BC	Glaucous-winged gull or glaucous gull or hybrid. Very pale large gull hanging out .25 mile off flat rock.
21 May 2021	–	EC	Steller sea lion. AM popeye hanging out at V4
21 May 2021	2	RIE	Red fox. Adult female at EC appears pregnant. Very round, smooth puffy coat and pretty face. Adult male at SPP has all the fur pulled out of his tail, no puff on the tip.
21 May 2021	–	SPP	Blackish oxytrope. beginning to bloom, 3 florescences. Along the trail at second prime pass.
21 May 2021	–	SB	Richardson's anemone. A few blooming along the second beach trail.
21 May 2021	–		Nootka lupine. One blooming at EC, third beach viewpoint (V1W)
22 May 2021	>100	EC	Tufted puffin, horned puffin. Mostly horned puffin seen in water between V2 and TB.
22 May 2021	1	TB	Sea otter. Hauled out at TB.
22 May 2021	3	EC	Unidentified swallow Species. Probably bank swallows.
22 May 2021	1	EC	Butterfly. Orange butterfly flying around EC.
22 May 2021	0	SB	Common raven. Raven not on nest at SB.
22 May 2021	1	SP	Bald eagle. Adult.
22 May 2021	1	SP	Merlin. Flew by kecking and then caught a thermal and went up, up and away.

22 May 2021	–	RI	Marsh violet, Alpine bearberry, Woolly lousewort. Blooming.
22 May 2021	–	OP	Peregrine falcon. Flyby. See photos.
22 May 2021	2	RI	Common raven. Flying south from main beach with white eggs in beak. X2, likely pelagic cormorant eggs.
22 May 2021	–	OP	Pelagic cormorant. Flying with nesting material
22 May 2021	–	OP	Black- legged kittiwake. Flying with nesting material.
22 May 2021	1	FR	King eider. Adult male in breeding plumage hanging around flat rock.
22 May 2021	–	OP	Common murre. Standing on the cliff with a fish in its bill.
22 May 2021	–	RI	White mustard. <i>arabys lyrata</i> or <i>cardamine umbelata</i> , or <i>Draba spp.</i> maybe. Blooming at north Boat Cove trail, still very small.
23 May 2021	20	CG	Tufted puffin, horned puffin.
23 May 2021	1	BC	Wandering tattler.
23 May 2021	15	BC	Steller sea lion. Feeding/frolicking off BC.
23 May 2021	1	FR	King eider. Male breeding plumage.
23 May 2021	–	BC,FR	Parakeet Auklet. Calling
23 May 2021	–	BC,FR	Pigeon guillemot. Calling
23 May 2021	1	OP	Peregrine falcon. Hunting along cliffs off of MB. Clearing lots of birds off the cliffs.
23 May 2021	1	OP	Common raven. Seen flying with an egg in bill.
23 May 2021	1	CAB	Harbor porpoise. Seen in the rip line in water off cabin.
23 May 2021	–	RI	White mustard. Small white one, <i>arabys lyrate</i> or <i>cardamine umbelata</i> , or <i>draba</i> Blooming east cape and second prime trail.
23 May 2021	–	EC	Pelagic cormorant in nonbreeding plumage, hanging out around V2, V4
23 May 2021	–	EC	Bumblebee, lupine. Bee feeding at first blooming lupine at the TB overlook, (V1W)
23 May 2021	–	SPP, RI	Narcissus anemone. 3 blooming at second prime pass along the trail, buds about to open along the trail system everywhere.
23 May 2021	–	RI	Garden sorrel. Budding out.
23 May 2021	–	EC	Sea otter. no sign of sea otter at EC or TB
23 May 2021	–	RI	Unidentified whale. spouts nearshore
23 May 2021	–	RI	Horned and tufted puffins. Aggregating in pairs off each beach.
23 May 2021	–	RIE	Pacific walrus. Moving north to south off east side of the island
23 May 2021	–	RIE	Few flower corydalis. blooming along Boat Cove trails and elsewhere.
23 May 2021	–	SPP	American pipits. Pair flying and playing together at second prime pass around the trail.
23 May 2021	–	EC	Fiddleheads. Are eating-size.

23 May 2021	–	EC	Forget me nots. Budding everywhere, first flower at East Cape.
23 May 2021	–	OP	Common murre, pelagic cormorant, black-legged kittiwake. All present on plots.
24 May 2021	–	TB	Black-legged kittiwake. Many using the waterfall at the end of TB. Collecting nesting material.
24 May 2021	0	SB	Common raven. Not present on nest
24 May 2021	1	SP	Gray-crowned rosy-finch.
24 May 2021	8	SP	American pipit.
24 May 2021	1	SP	Pelagic cormorant. Taking nesting material to rocky point between SB and SP.
24 May 2021	1	SP	Gray whale.
24 May 2021	–	FB,FP	Parakeet auklet. Calling
24 May 2021	–	FB,FP	Pigeon guillemot. Calling
24 May 2021	–	RI	Forget me not. Beginning to bloom
24 May 2021	–	RI	Narcissus anemone. Beginning to bloom.
24 May 2021	–	OP	Common murre. Present on plots 1,2 &4
24 May 2021	–	OP	Black-legged kittiwake. On plots, nests still under construction a few settled in incubating position, but no eggs seen.
24 May 2021	–	OP	Pelagic cormorant. on plots 1,2 and near 3, acting like they might nest even though, backside cormorants already have eggs.
25 May 2021	1	CAB	Red fox. Making a very sorrowful sound. Couldn't locate it.
25 May 2021	6	RI	Common raven. Flying by throughout the day. All with eggs.
25 May 2021	–	OP	Common murre, pelagic cormorant, black-legged Kittiwake. On nests on plots.
25 May 2021	–	OP	Black-legged kittiwake. Getting serious with nests. No eggs seen yet.
25 May 2021	1	NBC	Unidentified seal. Most likely a spotted seal.
25 May 2021	2	CAB	Northern harrier.
25 May 2021	1	BC	White-crowned sparrow.
25 May 2021	–	EC	Unidentified whale. Small spout off TB
25 May 2021	–		Forget me not. Blooming along trails at EC
25 May 2021	–	RI	Alaska violet. Blooming on the trail system.
25 May 2021	–	TB	Snow saxifrage. Blooming off trails at east cape V1W.
25 May 2021	–	RI	Nootka lupine. Bases of lupine spears blooming all along trails.
25 May 2021	–	TB	Black-legged kittiwake. mobbing the wet seep at third beach for nesting materials.
25 May 2021	–	ECP	Common raven. Agitated raven yelling flying and circling adult bald eagle, Also northern harrier seen leaving the area.
26 May 2021	2	CAB	Tree swallow. Checking out nest box at cabin the am.
26 May 2021	1	CAB	Merlin. Flyby.

26 May 2021	3	CAB	Orange-crowned warbler.
26 May 2021	2	CAB	Red fox. Bump lip mama seen in den at cabin. Puff tail male also present.
26 May 2021	1	EC	Bald eagle. Juvenile at EC.
26 May 2021	1	FP	Hermit thrush.
26 May 2021	5	OP	Pelagic cormorant. 2 nests at OP plot one have birds in incubating posture with partners attending, three additional Pecos also roosting nearby as though scouting the spot for nesting. the two nests at this site were not started until the first pelagic cormorant at west ridge was already incubating an egg in a finished nest.
26 May 2021	–	BC	Red fox, Tundra vole, Dusky shrew. I stopped to check out a desiccated winter fox turd on the trail at boat cove because it appeared to have small mammal bones in it. I believe I found the very small lower jaw of a dusky shrew, some other tiny mammal bones, bird bones, a tiny passerine toenail, sm fish vertebra and crowberry seeds.
26 May 2021	–	RIE	Red fox. Inspected some other dried out fox turds from the winter, found feathers, berry skins and seeds, herring eggs, another passerine toenail, chips of bird bones and chalky white Lyme or idk what it is.
26 May 2021	0	OP	Common murre. No common murre present on plots at OP
26 May 2021	–	MB	Debris. some debris at high tide line on MB may be desiccated Steller sea lion carcass. see photos.
26 May 2021	–	BC	Fox sparrow. heard song I think.
26 May 2021	–	FRM	Purple bitter cress. First bloom along trail. inside quadrant in flat rock meadow
26 May 2021	–	FRM	Narcissus anemone. Blooming in flat rock meadow
26 May 2021	–	FRM	Richardson's yellow anemone. Blooming in flat rock meadow
26 May 2021	1	FRM	Mountain avens. blooming in flat rock meadow near quadrant.
26 May 2021	–	MB	Pacific walrus. 2 morts still present on OP. closer one has two full size tusks
26 May 2021	1	SP	King eider. Male in breeding plumage.
27 May 2021	4	CAB	Tree swallow. Female seen taking nesting material into the box.
27 May 2021	1	CAB	Red fox.
27 May 2021	1	CAB	White-crowned sparrow.
27 May 2021	6	RI	Common raven. Flybys with pelagic cormorant and black-legged kittiwake eggs
27 May 2021		FRM	Purple bittercress. Blooming
27 May 2021	1	OP	Pelagic cormorant. 1 egg present on Plot 1.
27 May 2021	4	OP	Black-legged kittiwake. First eggs present on Plot 2,3 and 4.
27 May 2021	–		Parakeet auklet. disembodied wing in trail at ECP
27 May 2021	–		Northern harrier. Flying at ECP. see photos.

27 May 2021	–	RIE	Bumblebees. many. flying around, visiting flowers.
27 May 2021	–	EC	Blueberries. many budding at east cape
27 May 2021	–	RIE	Wildflowers. wafts of flower smells around east cape and east cape pass.
27 May 2021	–	RIE/TB	Seabirds. Huge aggregation of seabirds sitting on the water south of the island, visible off third beach and around the corner. see photos.
27 May 2021	–	TB	Sea otter. not around today.
27 May 2021	–	FB	Bog rosemary. blooming at first beach
27 May 2021	–	CAB	Tree swallows. flying around, twittering.
27 May 2021	–	RIE	White-crowned sparrow. around
27 May 2021	–	EC	Lingonberry flowers. budding at EC
27 May 2021	–	RIE	Cloudberry flowers. blooming
27 May 2021	2+	RIE	Cocoons. new brown and grey cocoons seen along trail system in vegetation
27 May 2021	–	CAB	Red fox. Adult female "bump lip" sleeping under radar tower.
27 May 2021	–	Summit	Wooly lousewort. Snow just recently melted from the top of the island. Wooly lousewort only plant blooming.
27 May 2021	–	Summit	Wooly lousewort, bumblebees.
27 May 2021	–	OP	Common murre. No common murre present on plots at OP
27 May 2021	1	RIW	Bald eagle. One adult on nest on West side of Island.
28 May 2021	1	CAB	Tree swallow. Checking out nest box.
28 May 2021	1	SB	King eider. Male breeding plumage.
28 May 2021	1	FB	American robin.
28 May 2021	2	SB	Common raven. Both adults tending to nest and caching eggs. Chicks? Couldn't see in nest.
28 May 2021		RIE	Orange-crowned warbler. Seen around East side of island
28 May 2021	2	SB	Wilson's warbler. Seen in willow patch behind SB.
28 May 2021	1	FR	Bald eagle. Juvenile eagle trying to grab something out of the water off flat rock. unsuccessful.
28 May 2021	1	RIW	Black-legged kittiwake. flying around with non-breeding plumage on its head.
28 May 2021	–	WR	Black-legged kittiwake. many nests at west ridge have at one egg in them.
28 May 2021	–	WR	Pelagic Cormorant. most west ridge pelagic cormorant nests have 3+ eggs in them. very first egg has disappeared.
28 May 2021	–	TT	Common raven. flying with black-legged kittiwake egg in bill.
28 May 2021	–	TT	Black-legged kittiwake. Empty eggs on trail system. it starts
28 May 2021	–	WR	Red fox. Traditional west ridge den site has recent modification done on 2 or 3 of the entrance holes. tuft of fur in one of the

			doors. many other/older doors present but seem sort of abandoned.
28 May 2021	–	RIN	Common murre. Few Present on plots, not many on west ridge, very few on spire.
28 May 2021	–		Wedge leaved primrose.
28 May 2021	–		Bering chickweed
28 May 2021	–	MB	Pacific walrus. far mort present, near mort moved out of sight.
28 May 2021	–		Bering chickweed. (or mouse-ear) first bloom photographed.
28 May 2021	1	BC	Pacific walrus. sleeping face down in the water in Boat Cove. turns out to be alive afterall.
28 May 2021	–	RI	Red fox. summary so far: Round island red fox population seems to include 1 very pretty pregnant female at east cape, and an associated male at the same den with mostly naked tail. At the cabin den there is the adult female with the bump on her lower lip (bump-lip) who also appears to be pregnant and a male associated with her den, who is not the presumed father from last year (who also had a bump on his lower left lip). the cabin den male also has a mostly naked tail, except he has retained a puff on his tail tip. we call him puff tail. there is at least one more male with a nice coat and full tail who likes to hang out around second prime, we refer to him as "unattached male". there is also evidence of use at the west ridge den.
29 May 2021	1	CAB	American robin.
29 May 2021		RI	lots of new little flowers popping up in trails. Seen during weed whacking.
29 May 2021	1	EC	Nagoon berry. one is blooming at east cape along the trail.
29 May 2021	2	SB	Common raven. Nest at second beach has 2+ chicks in it.
29 May 2021		RIE	Chocolate lily. budding along trail system.
29 May 2021	0	EC/TB	Sea Otter. Did not see him.
29 May 2021	–	RIE	Tundra vole. I found a small raptor pellet, with reddish fur and mammal bones on the trail at first prime. it is tundra vole remains in a raptor pellet it may be from NOHA or SEOW, but it may have eaten the actual vole off island. not hard evidence of voles on the island.
29 May 2021	–	RIE	seas. Super rough on beaches.
29 May 2021	–	EC	Unknown warblers. displaying and calling at willows on the way down to east cape.
29 May 2021	–	EC	Yellow two flower violet. one blooming on trail at EC
29 May 2021	–	EC	Labrador tea. one or two blooming on trail at East Cape. not sure which species, I believe we have two.
29 May 2021	–	EC	Blueberries. flowers blooming
29 May 2021	–	EC	Lingonberries. Flowers blooming
29 May 2021	–	SB	Nelsons brook saxifrage. budding at second beach.
29 May 2021	–	EC	Nagoon berry. flower blooming

30 May 2021	2	RI	Red fox. Puff tail male followed staff to OP from FR. Possible new male seen at EC. Fluffy coat and tail.
30 May 2021	6	RIE	Orange-crowned warbler.
30 May 2021	2	SB	Common raven. At least 2 chicks in SB nest.
30 May 2021	2	SB	Steller sea lion. Hauled out on rocks at SB.
30 May 2021	–	EC	Sedges. Blooming along trail.
30 May 2021	1	EC	Hermit thrush.
30 May 2021	1	EC	Glaucous-winged gull.
30 May 2021	5	EC	Wooly bear. in the trail at EC.
30 May 2021	–	OP	Pelagic cormorant. Two nests definitely being maintained and attended at OPP1
30 May 2021	–	RI	Forget me not. Blooming
30 May 2021	–	FRM	Narcissus anemone, Purple bittercress, mountain avens, forget me nots, Rock cress, Richardson's yellow anemone, rock jasmine and two alp lilies blooming in Flat rock meadow quadrant.
30 May 2021	–	FRM	Cuckoo flowers, yellow two flower violets and cloudberry blooming in flat rock meadow outside the quadrant.
30 May 2021	2	FRM	Alpine lily. First bloom I think.
31 May 2021	–	RI	Red fox. Lots of fur in the trails. Shedding their beautiful winter coats.
31 May 2021	–	OP	Common murre. Present on plots.
31 May 2021	–	OP	Black-legged kittiwake. Birds with 2 eggs on plots 1,2 and 3.
31 May 2021	1	CG	Merlin. Flyby
31 May 2021	–	CG, CAB	Mosquitos. Grrr!
31 May 2021	–	RIE	Jacobs ladder. blooming off trail
31 May 2021	–	RIE	Valerian. budding
31 May 2021	–	RIE	Horned puffins. present on cliffs, in pairs and near cracks.
31 May 2021	–	SP	Rock jasmine. blooming, smells amazing.
31 May 2021	–	EC	Steller sea lions. Nursing yearlings, one older juv also nursing at V3. older adults porpoising off TB
31 May 2021	–	EC	Labrador tea. blooming
31 May 2021	–	EC	Nagoon berry. blooming flowers
31 May 2021	–	EC	Chocolate lily. blooming
31 May 2021	–	EC	unk warb. song at EC
31 May 2021	–	EC	Hermit thrush. song at EC
31 May 2021	2	SPP	Alp lily. blooming at second prime pass.
31 May 2021	–	EC	Red fox. Unrecognized red fox with a full tail. seen at east cape.
31 May 2021	–		cochlearia. blooming

1 Jun 2021	—	FRM	Hairy milk vetch. blooming near Flat rock meadow flower quadrant.
1 Jun 2021	—	OP	Black-legged kittiwake. one in non breeding plumage hanging around
1 Jun 2021	—		Black-legged kittiwake. many taking advantage of light rain to collect damp moss and vegetation for nesting material.
1 Jun 2021	—	RI	Chocolate lilies. blooming
1 Jun 2021	—	BC	King Eider. Male in breeding plumage hauled on rock.
1 Jun 2021	—	CAB	Red Fox. adult female "BL" sleeping in back yard with big belly every morning this week.
1 Jun 2021	—	RI	Tide very high. flat rock submerged at 9:45am
1 Jun 2021	—	RIE	nelsons brook saxifrage. blooming
1 Jun 2021	—	RIE	maydells oxytrope. blooming
1 Jun 2021	—	OP	Common Murres. present on OP on plots 1, 2, 3L,4
1 Jun 2021	1	EC	Red Fox. Male with nice coat entered EC den by VIT
2 Jun 2021	1	NBC	Crested auklet.
2 Jun 2021	1	NBC	King eider. Male in breeding plumage resting in water.
2 Jun 2021	—	EC	Steller sea lion. many lions absent from TB, long blood streaks on the rocks at the south end of TB. no obvious source.
2 Jun 2021	—	TB	Common Raven. drinking fresh water out of trickle on the beach
2 Jun 2021	—	TB	Glaucus winged gull. pale-winged juvenile at third beach.
2 Jun 2021	—	EC	Jacobs ladder. blooming along trails.
2 Jun 2021	—	RIE	Wooly bear. quite a few on trails
2 Jun 2021	—	RIE	Common redpoll. been flying around, got some cute pics.
2 Jun 2021	—	RIE	Bumblebees. the ones with the orange butts flying around, pollinating
2 Jun 2021	—	RIE	Dwarf Dogwood. one at least, blooming along the trails
2 Jun 2021	—	RIE	Valerian. budding
2 Jun 2021	—	SP	Roseroot. blooming along second prime trails
2 Jun 2021	—	EC	Starflower. first bloom at east cape
2 Jun 2021	—	FB	Grove sandwort. first bloom at first beach.
2 Jun 2021	1	FB	Pacific loon. heard it calling in mist in the evening off first beach. but I couldn't see it.
2 Jun 2021	—	SB	Common raven. brings food to the nest to feed at least 3 chicks.
2 Jun 2021	—	RIE	Nelsons brook saxifrage. blooming abundantly along trails.
2 Jun 2021	—	RIE	flies that look like bees. flying around too.
2 Jun 2021	—	RI	Cuckoo Flower. blooming
2 Jun 2021	—	FB	Bog rosemary. blooming at FB in usual spot on the trail. labeled and photographed with phone.

2 Jun 2021	3	OP	Common Raven. 2 seen eating dead BLKI and 1 stole an egg from an un-numbered nest on plot 2.
2 Jun 2021	–	OP	Black-legged kittiwake. Copulation seen on all plots.
3 Jun 2021	2	CG, SB, EC	Gray Whale. 2 whales swimming from CG to EC. Surfacing very close to shore.
3 Jun 2021	1	FB	Common Raven. Eating a dead seabird at FB.
3 Jun 2021	1	SB	Common Raven. Delivered common murre egg to nest at SB. First COMU egg seen.
3 Jun 2021	–	RI	Tide. very High.
3 Jun 2021	–	MB	Pacific Walrus. Closest mort lying at strand line, newest mort floating. farthest mort out of sight.
3 Jun 2021	–	EC/RI	Steller sea lion. many out hunting / roving in gangs. fewer at EC/TB lately.
3 Jun 2021	–	FB/CG	Parakeet auklet. many around. noisy in the morning. they have a wide variation in the amount of whit/vs grey visible above the water when swimming.
3 Jun 2021	1	SB	Common Murre. First common murre egg of the season seen. Carried by common raven and delivered to common raven nest at SB.
4 Jun 2021	1	CAB	Yellow warbler. Singing at cabin.
4 Jun 2021	1	CAB	Gray-cheeked Thrush. Calling from willows behind cabin.
4 Jun 2021	–	ECP	Alpine milk vetch. blooming at the same spot just above the geo-block steps at east cape pass.
4 Jun 2021	–	ECP	Willows. leafing-out at east cape pass.
4 Jun 2021	–	SPP	Common redpoll. Flocks flying around East side of island. squeaking and chipping.
4 Jun 2021	1	SPP	American pipit. making a racket at second prime pass.
4 Jun 2021	1	CAB	Red Fox. Bump lip mama hanging out behind cabin.
4 Jun 2021	1	CG	Gray-crowned rosy-finch.
5 Jun 2021	1	CAB	Red fox. Male puff-tail seen going in and out of den behind cabin. Fresh digging at hole in trail.
5 Jun 2021	10	RI	Common redpoll. Flocks flying around East side of island.
5 Jun 2021	1	CAB	Gray-cheeked thrush.
5 Jun 2021		RI	wind. very cold and windy from the northeast.
5 Jun 2021	0	OP	Common murres. not present on survey plots at OP
5 Jun 2021	–	OP	Black-legged kittiwake. hunkered down on nests. don't want to move.
5 Jun 2021	–	OP	Common raven. Takes an egg from an unnamed black-legged kittiwake nest on OP plot3 while I watch.
6 Jun 2021	1	CAB	Gray Whale. Seen offshore of cabin.
6 Jun 2021	1	CAB	Gray-cheeked thrush.

6 Jun 2021	1	CAB	Hermit thrush.
6 Jun 2021	1	CAB	Red fox. Female bump-lip napping by cabin den.
6 Jun 2021	–	OP	Common murre. No common murre present at OP plots.
6 Jun 2021	–	RIE	garden sorrel. beginning to bloom
6 Jun 2021	–	RI	Richardson's anemones. blooming much more abundantly this year than in some other years.
6 Jun 2021	–	RIE	Grove sandwort. blooming along trails
6 Jun 2021	–	SP	Steller sea lion. 1 sleeping on second prime beach at the south end
6 Jun 2021	–	SPP, ECP, EC	Blueberries flowers. blooming abundantly and thickly. looks like there will be lots of berries.
6 Jun 2021	–	CAB	Hermit thrush. song heard near cabin I think. I'm still learning the difference with GCTH
6 Jun 2021	–	RIE	Pacific walrus. many individuals and groups traveling north and south just off the east side of the island.
6 Jun 2021	–	ECP	Alpine milk vetch. blooming at ECP
6 Jun 2021	–	SP	Pigeon guillemot. cute pair hanging out at talus at second prime.
6 Jun 2021	–	SP	Horned puffins. Pair hanging out high on the cliffs at second prime.
6 Jun 2021	–	SPP	Arctic sandwort. blooming at second prime pass.
7 Jun 2021	3	EC	Glaucous-winged Gull.
7 Jun 2021	1	EC	Red fox. Possible sighting of female. Didn't look pregnant but couldn't see underside to verify sex or if lactating.
7 Jun 2021	1	FP	Red fox. Male puff-tail followed me for a bit on trail.
7 Jun 2021	–	SB	Red fox. Terrible sounding sounds coming from hillside. Couldn't locate source but sounded like fox.
7 Jun 2021	–	SB	Gray-cheeked thrush. Songs coming from willows behind SB.
7 Jun 2021	~30	CAB	Common redpoll. Large flock flying around Cabin.
7 Jun 2021	–	OP	Black-legged kittiwake, common murre. the egg situation on the survey plots is pretty depressing.
7 Jun 2021	–		Pacific walrus. unknown disturbance at main beach in afternoon.
8 Jun 2021	1	FR	Montane "Dusky" shrew. Dead in trail between BC and FR.
8 Jun 2021	25	OP	Canada goose. Flock of what looked like cackling geese flying over OP. Looked like they may have landed on the Traverse Trail.
8 Jun 2021	2	RI	Common raven. Two flybys carrying common murre eggs.
8 Jun 2021	1	CAB	Hermit thrush. Heard singing behind the cabin.
8 Jun 2021	–	RIE	Leinsdorf's lousewort. blooming, first bloom observed.
9 Jun 2021	4	CAB	Tree swallow. Flying around cabin and checking out nest box.
9 Jun 2021	30	CAB	Common redpoll.

9 Jun 2021	1	EC	Tufted puffin. Seen entering burrow with nesting material near VIT.
9 Jun 2021	–	TT	Grey crowned rosy finch. Pair at TT
9 Jun 2021	–	NBC	Glaucus-winged gulls. mob of juvenile glaucus-winged gulls messing with a Steller sea lion and his pollock .25m off the beach at north Boat Cove.
9 Jun 2021	–	TT	alpine milk vetch. big bloom of these along the top edge of the cliff face just north of the steep traverse trail approach. this area is typical for rock jasmine, spotted sax, potentillas and poppies, in general has interesting plant community
9 Jun 2021	–	TT	snow saxifrage. blooming along with brook sax on the cliff edge next to traverse trail approach.
9 Jun 2021	–	TT	nelsons brook saxifrage. blooming along with snow sax on the cliff edge next to traverse trail approach.
9 Jun 2021	–	TT	Alaska spring beauty. blooming on traverse trail approach and traverse trail
9 Jun 2021	–	TT	Villous cinquefoil. Potentilla, blooming on traverse trail.
9 Jun 2021	–	WR	Common murre. at least 3 common murre eggs around the west ridge pelagic cormorants plots. though one is completely unattended.
9 Jun 2021	–		Pelagic cormorant. at least one nest on the west ridge now has four eggs
10 Jun 2021	1	CAB	Fox sparrow.
10 Jun 2021	1	CAB	Hermit thrush.
10 Jun 2021	1	CAB	Yellow warbler.
10 Jun 2021	1	FR	Pacific loon.
10 Jun 2021	5	EC	Glaucus-winged gull. sitting on sealion rock at EC viewpoint two along with 34 roosting cormorants.
10 Jun 2021	34	EC	Pelagic cormorant. sitting on sealion rock at EC viewpoint two along with 5 juv gulls.
10 Jun 2021	1	SPP	Black-legged kittiwake. 1 egg on the trail at second prime is very greenish. more like a murre color than the usual bigish kittiwake eggs.
10 Jun 2021	–	RIE	Warblers. singing in the willows.
10 Jun 2021	–	FB	Pigeon guillemots.
10 Jun 2021	–	FB	Pelagic cormorants. rooting and loafing non the big white rock at the corner of first beach. this rock popular this year, despite no nests on these east side beaches.
10 Jun 2021	–	FB	Horned puffin.
10 Jun 2021	1	FP	Common murre. 1 INJURED murre sitting on a rock on the beach at first prime with leg pointing backwards. see photos.
10 Jun 2021	3	SB	Common raven chicks. big and hungry in nest at second beach.

10 Jun 2021	1	SP	Dusky shrew. dead on trail. this is so common now I forget to note it. I do pick them up and throw them off the trail.
10 Jun 2021	2	EC	Red fox. Adult male and adult female interacting at the EC den. female hides an auklet body in the grass.
10 Jun 2021	1	EC	parakeet auklet. killed by foxes.
10 Jun 2021	1	EC	Red fox. Adult male with scrappy tail is limping hard on his right front paw.
10 Jun 2021	–	SB	Steller sea lion. One Adult male on the rocks between second beach and second prime.
10 Jun 2021	–	FB	Pacific walrus. elder male alone on first beach appears to have rust stains on his tusks
11 Jun 2021	1	SP	Horned puffin with non-breeding plumage at SP point. Have seen one here the past few seasons. Same individual or just returning juveniles hatched here last year?
11 Jun 2021	1	EC	Harbor seal. In water off V4.
11 Jun 2021	2	EC	Red fox. Male and female present at EC dens. Both going in and out. Female had an auklet and male had a tufted puffin.
11 Jun 2021	–	SB	Mushrooms. Small orange mushrooms along trail behind SB.
11 Jun 2021	1	BC	King eider. Male in breeding plumage resting on rocks in BC. Departed during visitor departing island.
11 Jun 2021	3	CAB	Red fox. Male puff tail and female bump lip present at cabin den. Third fox sleeping behind SB.
11 Jun 2021	–	CG	Bracted saxifrage. Blooming on cg trail.
11 Jun 2021	–	ECP	Star flower. Blooming along trail to EC.
11 Jun 2021	1	OP	Common murre. one individual on plot 3 left may have an egg.
12 Jun 2021	1	OP	White-crowned sparrow. Heard from OP
12 Jun 2021	2	RI	Common raven. Flybys with kittiwake egg and murre head.
12 Jun 2021	2	CAB	Red fox. adult male and adult female hanging around outside cabin den in the morning, making noises.
12 Jun 2021	–	EC	Pelagic cormorants. 29 roosting/drying on favorite rock at EC vpt 2.
12 Jun 2021	1	EC	Common murre. injured individual. swimming around off V2 at EC. leg mangled and trailing, may not be able to take off.
12 Jun 2021	–	EC	Wild geraniums. budding, soon to bloom
12 Jun 2021	–	RIE	Bald eagle. juvenile, seen several times on the east side of the island.
12 Jun 2021	–		King eider. adult male in breeding plumage sitting on a rock at second beach. both wings dropped but right side wing sticking out sort of awkwardly, possibly injured or feathers damaged. still there two hours later.
12 Jun 2021	–	SB	Landslide. at second beach, small, is that new?
12 Jun 2021	3	SB	Common raven. three chicks in second beach nest have some adult feathers and are screaming horribly.

12 Jun 2021	—	RI	Common raven. The east side nest at second beach appears to be the only one on the east side. additional adult ravens are seen on the west side from WM and the summit, assume there is at least one more nest on that side. but fewer adult ravens this spring than in some previous years.
13 Jun 2021	1	SB	King eider.
13 Jun 2021	4	SB	Harlequin duck.
13 Jun 2021	3	RI	Common raven. Flyby with eggs.
13 Jun 2021	1	EC, WM	Bald eagle. Juvenile seen at both EC and WM. Flyover clearing plots.
13 Jun 2021	8	WM	Black-legged kittiwake. Several fights seen at WM where birds locked and rolled/tumbled down to beach in fights.
13 Jun 2021	3	WM	Pelagic cormorant. Chicks on WM plots!!!
13 Jun 2021	—		Bracted saxifrage. blooming at campground in the trail. maybe for a few days.
13 Jun 2021	—	BC	Steller Sea Lion. many came to checkout Okuma at anchor.
13 Jun 2021	—	OP	Common murre. eggs on op bird plots 2 and 1
13 Jun 2021	—	RI	Lingon berries. Thick clusters of flower bells blooming
13 Jun 2021	—	TT	Pink plumes. Blooming
13 Jun 2021	—	RI	Wilson's warbler. landing on pushki around cabin and campground.
13 Jun 2021	—	RI	Common raven. Flyby with murre eggs.
14 Jun 2021	1	CAB	Yellow warbler. Heard and seen at cabin.
14 Jun 2021	2	FR	Bank swallow.
14 Jun 2021	1	NBC	King eider.
14 Jun 2021	—	RI	Common raven. Flyby with murre eggs.
14 Jun 2021	—	RI	Wilson's warbler. busy around camp, FB, cabin and second prime trail
14 Jun 2021	—	EC	Steller Sea Lion. Two year old nursing on V3
14 Jun 2021	—	EC	Forget me not. Blooming blue, pink, purple AND WHITE in a patch at EC V3.
14 Jun 2021	2	SP	Horned puffin. Pair in crack low on wall at second prime beach
14 Jun 2021	1	cab	Red fox. Adult Female bump lip lets staff see lactating teats behind shower. clearly nursing.
14 Jun 2021	—	RI	Wild geranium. Blooming on FB trail.
15 Jun 2021	—		King eider. Adult male in breeding plumage, sitting on a rock in Boat Cove with wings dropped, right wing still poking out further, awkwardly.
15 Jun 2021	—	FRM	Flat rock meadow Quadrant blooming census: MYALA2, ANCHL, CAPU5, ANNAV3, MIAR3, ASUM2, RUARS, DROCA2, CAPRA, SAPUN, RUACA2, CEAL, VIBI2. also blooming nearby: POAC, RHINI, RUCH, MOLA6,

			FRCA5, TREU, VACA3, COSU4, LEGR or LEPAD, COPA11, ARKA6
15 Jun 2021	–	RI	Hairy milk vetch. blooming.
15 Jun 2021	–	RI	Tide noticeably high in the AM, Overcast, clearing during walrus counts.
15 Jun 2021	–	MB	Pacific walrus. 2+ morts on MB.
15 Jun 2021	–	RIE	Wilson's warbler. Heard and seen daily around East side of Island.
15 Jun 2021	–	RIE	Orange-crowned warbler. Heard and seen daily on East side of island.
15 Jun 2021	–	RIE	Yellow warbler. Heard and seen daily on East side of island.
16 Jun 2021	4	RI	Common raven. Flybys with 2 murre eggs and 2 kittiwake eggs.
16 Jun 2021	1	OP	Common raven. Landed by murre on Plot 1. Tried to scare murre by hopping up and down. Eventually pulled murre off rocks by grabbing its wing and pulling it off. Flew back and stole murre egg.
16 Jun 2021	1	OP	Common murre. Common raven flew in and tried to scare murre off. murre held tight but was eventually pulled off the rock by the raven grabbing its wing and pulling it off. Egg was stolen by raven.
16 Jun 2021	1	OP	White-crowned sparrow.
16 Jun 2021	1	OP	Gray-crowned rosy-finch.
16 Jun 2021	–	RI	Unidentified Gull. Calling at EC.
16 Jun 2021	–	TB	Steller sea lion. YOY pup, Present with mom on third beach
17 Jun 2021	–	CAB	Savannah sparrow.
17 Jun 2021	–	CAB	Golden-crowned sparrow.
17 Jun 2021	–	CAB	Gray-Checked thrush.
17 Jun 2021	–	CAB	Orange-crowned warbler.
17 Jun 2021	–	CAB	Yellow warbler.
17 Jun 2021	–	CAB	Wilson's warbler.
17 Jun 2021	–	CAB	Common redpoll.
17 Jun 2021	3	SB	Common raven. Chicks at the Second Beach nest are almost full grown.
17 Jun 2021	~2,500	RI	Pacific walrus. Walrus have returned to the island in high numbers!
17 Jun 2021	3	EC	Harlequin duck. Near South Point of EC.
17 Jun 2021	–	RI	Capitate Valerian. A few blooming, many budding along the trail system.
17 Jun 2021	–	TB	Steller sea lion. YOY pup, Present with mom on third beach
17 Jun 2021	–	OP	Black-legged kittiwake. nesting at OP, comparatively many on survey plots have eggs, possible EGG PEAK.

17 Jun 2021	–	OP	Common murre.
18 Jun 2021	1	CAB	Hermit thrush. Heard from cabin. Doesn't seem to be as many around this year.
18 Jun 2021	1	BC	King eider.
18 Jun 2021	1	WM	Gray-crowned rosy-finch.
18 Jun 2021	–	RI	Mosquitos. Lots.
18 Jun 2021	–	ECP	Viburnums. high bush cranberries. blooming on east cape pass trail.
18 Jun 2021	–	RI	Iris. blooming
18 Jun 2021	2	SB	Horned puffins. 1 pair of horned puffins sitting on a cliff ledge at second beach near common raven nest. No tufted puffins or parakeet auklets acting nesty at this beach.
18 Jun 2021	1	SB	Pacific walrus. Hole-head with two broken tusks sleeping on second beach. If this is one of the same hole-heads we have been seeing for the last few years, then his head hole appears to have scarred up somewhat and is not oozing anything or attracting flies.
18 Jun 2021	2,200	RI	pacific walrus. Big group of walrus hauled out. More than 2000, first big day this summer.
19 Jun 2021	1	CAB	Alder flycatcher. Heard but not seen.
19 Jun 2021		RIE	Common redpoll. More numerous by the day.
19 Jun 2021	4	SB	Common raven. Adult feeding chicks small fish. Chicks getting close to fledge.
19 Jun 2021	1	SP	King eider. Roosting on rocks off point.
19 Jun 2021	4	FP	Double-crested cormorant. Possible 4 flyover. Seemed bigger than pelagic cormorant but didn't get a positive ID.
19 Jun 2021		RI	Mosquitos. Lots.
19 Jun 2021	10+	MB	Pelagic cormorant. 10 to 15 Nests visible with adults in them along the cliffs behind main beach. Too far away to establish presence of eggs or chicks
19 Jun 2021	100+	RI	Pelagic cormorant. Many standing on rocks at the waters edge
19 Jun 2021	2	CAB	Tree swallow. Male showing box to another swallow
19 Jun 2021	–	RI	Goldenrod. First bloom
19 Jun 2021	–	FRM	FLAT ROCK MEADOW QUADRANT BLOOMING CENSUS : MYALA2, ANCHL, CAPU5, ANNAV3, RHINI, MIAR3, ASUM2, RUCH, RUARS, DROCA2, CAPRA, RUACA2, FRCA5, TREU, SOMU, CEAL, COSU4, VIBI2. ALL BLOOMING INSIDE QUADRANT. Other species blooming in meadow but not in quadrant include: CLSA2, VACA3, POAC, GEER2, MOLA6, and LEGR or LEPAD
19 Jun 2021	–	TT	Alaska Poppy. First blooms on traverse trail approach
19 Jun 2021	–	TT	Dandelions. Blooming on MB cliffs, traverse trail and traverse trail approach

19 Jun 2021	–	TT	maydell's oxytrope. Blooming on traverse trail approach.
19 Jun 2021	–	TT	pink plumes. blooming on traverse trail approach.
19 Jun 2021	–	TT	Red fox. AM "pufftail" on traverse trail.
19 Jun 2021	–	MB	Pacific walrus. Old' three tusk walrus as seen in previous years was in the water at MB. See photos. 0R0A3715 - 0R0A3724
19 Jun 2021	–	RI	Pelagic cormorant. Many have lost their brood patches altogether.
20 Jun 2021	–	SP	Maydells Oxytrope. Blooming at SP viewpoint.
20 Jun 2021	–	RI	Arctic Artemisia. Budding
20 Jun 2021	–	FB, EC	Northern yarrow. beginning to bloom.
20 Jun 2021	–		Mosquitos. Lots.
20 Jun 2021	–	RI, EC	Irises. Blooming.
20 Jun 2021	–	EC	Pushki. Blooming.
20 Jun 2021	–	EC	Steller sea lion. Visible around TB south and around the corner towards south beach
20 Jun 2021	–	EC	Sea otter.
20 Jun 2021	–	EC	Steller sea lion. YOY pup seen on TB
20 Jun 2021	–	EC	Steller sea lion. ringneck with band present and open wounds on rock between TB and ledges.
20 Jun 2021	–	RI	Common raven. Flyovers with kittiwake chicks and eggs.
20 Jun 2021	3	CAB, CG, WM	Red fox. Pufftail male at cabin with BLKI, bump lip female at CG with kittiwake, handsome male on TT.
20 Jun 2021	1	MB	Bald eagle. Adult flushing cliffs along MB.
20 Jun 2021	–	TT	Alaska poppy. Blooming on cliffs at photo count spot.
20 Jun 2021	–	RI	beetles. 3 types seen around island, carrion, small black ones and iridescent green.
20 Jun 2021	–	RI	Mosquitos, flies, and other flying insects. Large hatch.
21 Jun 2021	–	BC CG	Epilobium. Blooming along CG and BC trails. I still do not know if these are swamp willow herb or hornemans willow herb.
21 Jun 2021	–	BC	Parakeet auklet. Acting nesty on the boulders at BC.
21 Jun 2021	–	BC	Spiders. long thick strings of spiderwebs from grass top to grass top, across trails. sticky
21 Jun 2021	1	FB	Alder flycatcher. Heard and seen in willows behind FB. Photos and video taken.
21 Jun 2021	1	SPP	Nootka lupine. The white lupine in the trail to SPP blooming.
21 Jun 2021	2	SB, CAB	Red fox.
21 Jun 2021	–	RIE	Horned puffin, Tufted puffin. Many in water on East side of island.
21 Jun 2021	1	RIE	Common Raven. Flyover with kittiwake chick.

21 Jun 2021	2	EC	Bald eagle. Adult and subadult flyover/fighting spooked sea lions at the end of TB.
21 Jun 2021	–	RI	Dandelions. blooming
22 Jun 2021	1	RI	Morel fruiting body on summit trail 100m from where it leaves the EC trail
22 Jun 2021	–	RI	Alaska spirea. Blooming, here and there, possibly for a few days
22 Jun 2021	1	CAB	Arctic daisy. Slightly munched and very short. First one seen blooming, in cut disturbed area around ADFG shed.
22 Jun 2021	–	RI	Spotted saxifrage. Blooming on summit approach and summit,
22 Jun 2021	–	summit	Lapland diapensia. Blooming on the summit in several places. Herbarium sample taken
22 Jun 2021	–	summit	Pussytoe. First time I have found it on the island. Growing off a west facing cliff face at the summit. Herbarium sample taken. 1 patch of around 13 individuals.
22 Jun 2021	3	RIW	Bald eagle. Two Adults with one grey fluffy chick in 2020 nest. This nest is further north and at lower altitude than 2016 nest.
22 Jun 2021	–	RIW	Hermit thrush. SONG HEARD FROM THE ROCK SPIRES ON THE WEST SIDE Around the old eagle spire.
22 Jun 2021	–	TB	Steller sea lion. Lions moved up third beach away from waves and YOY pup was not seen.
22 Jun 2021	–	summit	American pipit. Seen in trails and on the ground at summit
22 Jun 2021	–	RI	Whorled lousewort. Blooming along trail system.
22 Jun 2021	2	BC	Red fox. Male puff tail with kittiwake chick, Bump lip on trail.
22 Jun 2021	–	RI	Common raven. Flying by with eggs. At least 2 adults on east side and two adults on west side.
22 Jun 2021	–	RI	Montane "Dusky" shrew. Dead shrews appearing along the trails. Several every day. Trying to throw each new one into the tall grass.
23 Jun 2021	–	RI	Really bad weather, satellite dishes tugging at the cabin.
23 Jun 2021	2	MB	Pacific walrus. Two morts still on MB
23 Jun 2021	1	EC	Arctic daisy. Blooming at V2.
24 Jun 2021	–	MB	Pacific walrus. Only one mort left on MB
24 Jun 2021	–	OP	Black-legged kittiwake. Sex and fighting on plot 2 & 4. also new chicks since yesterday
24 Jun 2021	–	OP	Common murre. Having sex on plot 3 and 4.
24 Jun 2021	–	RI	Songbirds. Leaving lots of turd packets in the trails.
24 Jun 2021	–	CAB	Arctic daisy. Blooming in the sheds area.
24 Jun 2021	–	RI	Stormy
24 Jun 2021	–	FRM	Lessing's arnica. First bloom at flat rock meadow.
24 Jun 2021	–	FRM	Whorled lousewort. Blooming in flat rock meadow
24 Jun 2021	–	RI	White butterflies. Checking out geranium flowers

24 Jun 2021	–	SP	Horned puffins. Two pairs sitting on porches at Second Prime.
24 Jun 2021	1	BC	Unidentified seal. Swimming in BC.
24 Jun 2021	–	CAB	Alaska spring beauty, Nootka lupine. Wildflowers blooming profusely along the trail to cistern and around cistern.
24 Jun 2021	1	RI	Common raven. Flyby with murre egg.
24 Jun 2021	–	RI	Pelagic cormorant. Big flocks of cormorants flying by without brood patches (30+)
25 Jun 2021	–	RI	Stormy
25 Jun 2021	50	EC	Horned puffin. In water around EC.
25 Jun 2021	10	EC	Tufted puffin. In water around EC.
26 Jun 2021	–	EC	Glaucous-winged gulls. Adult and immature. Hanging around EC.
26 Jun 2021	–	SB	Pyrola, wintergreen. First blooming at second beach along the creek part of the trail.
26 Jun 2021	–	TB	Steller sea lion. YOY pup looking chubby, mom healthy looking.
26 Jun 2021	2	BC	Montane "Dusky" shrew. Dead on BC trail.
26 Jun 2021	12	BC	Parakeet auklet.
26 Jun 2021	4	BC	Harlequin duck.
26 Jun 2021	2	OP	Common raven. Took a cached egg from grass near Plot 3. Took a kittiwake chick from an unnumbered nest at Plot 4 right.
26 Jun 2021	–	RI	Yarrows. Beginning to bloom from the center out along trail system
26 Jun 2021	–	RI	Richardson's anemone and alp lily no longer blooming anywhere on lower trail system. Few on TT.
26 Jun 2021	–		Plants on southern half of the trail system battered and leaves and flowers wind burnt or dead. Noticed on Equisetums, burnet, lupine, ferns, geraniums, hemlock parsley, chocolate lily, vibraculum, willow, nagoon berry, monkshood etc.
26 Jun 2021	–		Common raven. One adult resting on ground between SP and SB, feathers seriously busted. Looks like crap. 3 chicks still in nest.
27 Jun 2021	1	SB	Common raven. 1 of the 3 CORA chicks has fledged. In grass below nest with parent. Other 2 still in nest.
27 Jun 2021	–	SB	Pacific walrus. Went beach combing along SB. Found small tip of a tusk, Oosik and some rib bones.
27 Jun 2021	1	SP	Red fox. "sleeping"/stalking auklets on SP beach.
27 Jun 2021	–	RI	Vegetation. Vegetation around island turning brown along the edges. Is this wind damage?
27 Jun 2021	–	RI	Mushrooms. Small orange mushrooms popping up around the island.
27 Jun 2021	3	CG	Horned puffins. Three sitting on the puffin rocks at camp ground.
27 Jun 2021	–	RI	Montane "Dusky" Shrew. Dead on trails.

27 Jun 2021	–	OP	Common raven. Taking murre eggs from MB cliffs. New egg on plot 1 already gone
27 Jun 2021	–	OP	Golden-crowned sparrow. Hoping along trail at OP covered in mud.
27 Jun 2021	–	RIE	Pacific loon.
27 Jun 2021	–	EC	Monkshood. About to bloom.
27 Jun 2021	–	RI	Mosquitos. On RI. Bitey.
28 Jun 2021	3	CG	Horned puffin. Seen on a nest at Alt. boat landing site cliffs. Another came out of a crack right next to it and switched with its partner.
28 Jun 2021	1	OP	Common raven. Took 2 eggs from Nest #8 on Plot 3.
28 Jun 2021	3	WM, NBC	American pipit.
28 Jun 2021	2	WM, NBC	Gray-crowned rosy-finch.
28 Jun 2021	–	WM	Pelagic cormorant. Plots on WM that still remain all have chicks.
28 Jun 2021	–	SP	Unidentified seal with spots. Hauled out on a rock at second prime.
28 Jun 2021	–	FB	Agericus comesetris. mushroom fruiting on the trail to first beach
28 Jun 2021	–	SB	Common raven. All three chicks dispersed from the nest but still on promontories at SB. Adult brings a kittiwake egg and eats it in front of chicks. Egg has bloody chick inside.
28 Jun 2021	–	FP SB	Red Fox. “Bump Limp” female carrying tufted puffin south then later recovers it from the creek at SB. Hangs out with me while I work on trail but does not let me see where she keeps her puffin. Bump Lip has full coat but puff tail has almost lost his entire coat.
28 Jun 2021	–	RIE	Black-legged kittiwake. Adult carcass looks like a raven kill.
29 Jun 2021	–	RI	Yellow rattle. Budding, beginning to bloom
29 Jun 2021	–	FRM	Dwarf arctic bitterweed. Blooming at flat rock meadow, north Boat Cove trail and elsewhere.
29 Jun 2021	–	TTA	Spider saxifrage. Blooming on traverse trail approach
29 Jun 2021	–	CAB	SPIDERS. Out back near ADFG shed I found a grape size ball hanging, suspended in spiderweb. Ball is made of thousands of tiny poppy seed size baby spiders.
29 Jun 2021	–	TTA	Spotted saxifrage. Blooming abundantly
29 Jun 2021	–	TTA	Snow saxifrage (nivulis). Blooming on the cliffs next to traverse trail approach with snow draba.
29 Jun 2021	–	TTA	Alpine bistort. Blooming on trail.
29 Jun 2021	–	TTA/MB	Nodding melandrium. Blooming in disturbed areas on cliff edge with dwarf dogwood. Herbarium sample taken. this was listed by Nietliech and Hasselbaugh, but I never found it until now. the Latin name and genus has been changed to silene uralensis.
30 Jun 2021	1	NBC	Savannah sparrow. Dead in NBC trail

30 Jun 2021	1	BC	Montane "Dusky" shrew. Dead in BC trail.
30 Jun 2021	1	BC	Flat fish. Dead.
30 Jun 2021	–	RI	Numerous passerine fecal sacs in the trails around the island. Hatching birds.
30 Jun 2021	–	RI	Very murky water due to high wind and waves.
30 Jun 2021	–	EC	Monkshood. Blooming
30 Jun 2021	–	EC	Cleavers. Blooming
1 Jul 2021	30	SPP	Glaucous-winged gull. Large flock flew overhead.
1 Jul 2021	84	SP, SB, FB	Parakeet auklet. 42 in water off SP. All flew onto rocks at same time. Some scattered into cracks. 25 off of SB and 15 at FB.
1 Jul 2021	3	SB	Common raven. 3 fledglings.
1 Jul 2021	1	BC	Pacific walrus. Rotten carcass with one tusk high on rocks in Boat Cove.
1 Jul 2021	1	BC	Glaucous-winged gull. Adult in breeding plumage pecking at walrus carcass in Boat Cove.
1 Jul 2021		RI	Alpine milk vetch. Blooming more abundantly than usual 2021
2 Jul 2021	1	TB	Steller sea lion. One skinny old lion with others on third beach.
2 Jul 2021	4	FP	Common raven. Young of year begging from parents.
2 Jul 2021	1	SP	Wandering tattler. Heard call on the beach.
2 Jul 2021	–	FB	Horned puffin. Three pairs porch-sitting at cracks at first beach. Eight total on rocks. Guessing three to six nests in cracks?
2 Jul 2021	–	SB	Horned puffin. Three pairs on second beach porch-sitting.
2 Jul 2021	–	SP	Tufted puffin. Two porch-sitting at second prime.
2 Jul 2021	–	SP	Horned puffin. Three plus porches at second prime south. Three more porches visible from East Cape.
3 Jul 2021	1	BC	Pacific walrus. Mort at rocks on Boat Cove still.
3 Jul 2021		RI	Mosquitos.
3 Jul 2021	1	NBC	Savannah sparrow. Young of year fledgling dead on north Boat Cove trail, broken leg and ankle. Has flight feathers but not tail.
3 Jul 2021	–	FRM	Census of blooming flowers inside quadrant: Bering Chickweed, Lessing's Arnica, Rock Jasmine, Forget-me-nots, Chocolate Lily, Hairy Milk Vetch, Dwarf Arctic Bitterweed, Alaska Poppy, Goldenrod, Cuckoo Flower, Starflower, Yarrow, Whorled Lousewort, Yellow Twin-flower Violet, Garden Sorrel, Arctic Sandwort, Artemisia Arctica, Nagoonberry, Grove Sandwort.
3 Jul 2021	–	RI	Spider saxifrage. blooming.
4 Jul 2021	2	FB	Pacific walrus. One skinny PAWA on first beach. One PAWA with possible bullet scars on shoulder.
4 Jul 2021	–	RI	Savannah sparrow. Fledglings hopping on trails.
4 Jul 2021	–	EC	Tufted puffin. Two possible burrows below the V5 viewpoint.

4 Jul 2021	1	TB	Steller Sea Lion. Young of year pup with group of yearlings, no mom.
4 Jul 2021	–	TT	Dwarf Fireweed. Blooming on trail.
5 Jul 2021	1	BC	Pacific walrus. Nasty mort in Boat Cove stinks.
5 Jul 2021	1	BC	Pacific walrus. Popeye walrus swimming at Boat Cove. No photo, rain.
5 Jul 2021	3	RI	Savannah sparrow. Fledglings on trail.
5 Jul 2021	1	RI	Golden-crowned sparrow. Fledgling on trail.
5 Jul 2021	–	EC	Red fox. Ground around East Cape den recently trampled, kits might be spending time outside of den?
5 Jul 2021	1	OP	Common redpoll. Fledgling at OP, flies poorly. No trace of red or orange cap.
5 Jul 2021	1	OP	Black-legged kittiwake. One adult in non-breeding plumage standing on plot 2 empty nest 17.
5 Jul 2021	–	OP	Rock slide during survey clears most common murre on plot 1 during survey.
6 Jul 2021	–	RI	Continued bad weather, ADF&G battery bank low due to lack of sun.
6 Jul 2021	1	OP	Red fox. Adult female bump lip scaling cliffs at OP.
6 Jul 2021	1	FB	Wild geranium. Pure white mutant blooming at first beach south viewpoint.
6 Jul 2021	–	RIE	Alpine bistort. blooming
7 Jul 2021	–		Stellaria media (European chickweed). Growing at BC access.
7 Jul 2021	2	TT	Gray-crowned rosy-finch. Flying around at traverse trail.
7 Jul 2021	1	BC	Pacific loon. Swimming at Boat Cove.
7 Jul 2021	–	CAB	Red fox. Adult female (BL) nursing very young kits (YOY) outside of den hole between cabin and outhouse, just on time for amber to leave. I think they came out for the first good weather.
7 Jul 2021	2	WR	Common murre. Two plus eggs on west ridge cliffs
7 Jul 2021	10	MB	Glaucous-winged gull. 10+ immature and adult hanging out on MB with walrus
8 Jul 2021	1	MB	Red fox. Common murre. Puffed tail adult male walking down main beach with murre in mouth.
8 Jul 2021	1	OP	Black-legged kittiwake. On OP plot 3 nest number 19. Looks like he has dark orange feet
8 Jul 2021	–	OP	Black-legged kittiwake. Robbing nesting material from empty nests on nesting plots.
8 Jul 2021	–	EC	Red fox. With four kits outside den at EC.
9 Jul 2021	3	RI	Montane "Dusky" shrew. Three plus new dead shrews on trails.
9 Jul 2021	1	SB	Red fox. Adult/elder male red fox with puffy tail hanging out at Y in trail at SB. Took narrated video. Fox limping on left rear foot. All four feet have really awkwardly long toenails. Fox has scar, no bump on lower lip and is missing one lower incisor. This

is a fox I have photographed in previous years, I believe he is old, Refer to elsewhere as "unattached male" (I believe there may be photos of this fox in 2019 and 2020. recognizable by diagonal scar on chin.)

9 Jul 2021	1	SP	Steller sea lion. One sea lion hauled out at SP.
9 Jul 2021		EC	Red fox. Did not see YOY at EC.
9 Jul 2021	—	RI	Cleavers. Lovage. Blooming
10 Jul 2021	—	EC	Red fox. Fox den at east cape has 6 kits.
10 Jul 2021	—	FB	Montane "Dusky" shrew. Dead on trail between cabin and FB.
10 Jul 2021	—	FRM	Black-legged kittiwake. Common raven. Full kittiwake egg buried in hole in the moss in flat rock meadow. Likely stashed by raven based on hole.
10 Jul 2021	—	NBC	Glaucous-winged gull. Stellar sea lion. Group of 12 immature glaucous-winged gulls mobbing a feeding Steller sea lion in the water off NBC. Then two pelagic cormorants join and several black-legged kittiwakes. Several gulls have very light primaries, see photos.
10 Jul 2021	—	OP	Black-legged kittiwake. During productivity survey observed broad range of development including unhatched eggs, new hatched chicks, and chicks quite grown. This seems different from past years where chicks all seem to be within a couple of days of the same age.
10 Jul 2021	—	FRM	Blooming in flat rock meadow: Whorled Lousewort, Goldenrod, Garden Sorrel, Dwarf Dogwood, Forget-me-nots, Bering Chickweed, Chocolate Lily, Arnica, Poppy, Yarrow, Bitterweed, Wild Geraniums, Artemisia Arctica, Arctic Sandwort, Alpine Bistort, Hairy Milk Vetch, Starflower, Yellow Violet. Nearby also blooming: Monkshood, Spring Beauty, Grove Sandwort, Jacobs Ladder and Yellow Rattle.
11 Jul 2021	2	SB, EC	Shearwater. Swimming in the water at EC and SB. See photo.
11 Jul 2021	—	EC	Fireweed. Budding at EC
11 Jul 2021	—	EC	Whimbrel. Flying around at EC. Campers said they saw it yesterday at campground. See photo.
11 Jul 2021	—	EC	Pelagic cormorant. Red fox. Baby pelagic cormorant wing stashed in a hole and covered in straw at the EC trail.
11 Jul 2021	—	SUM	Sheep sorrel. Blooming and growing abundantly on the summit slope above the cabin.
11 Jul 2021	—	SUM	Northern false ssphodel. Blooming on the summit slope behind the cabin.
11 Jul 2021	—	RI	Langsdorf lousewort. Still blooming at higher altitude, lower altitude gone to seed.
11 Jul 2021	—	SUM	Pyrola. Wintergreen. Blooming at this location, looks a little different at FB and SB.
11 Jul 2021	—	SUM	Poppies. Avens. Mostly gone to seed, a few still in bloom.
11 Jul 2021	3	RI	American pipit. 2+ adults on summit. 1+ YOY on TT.

11 Jul 2021	1	SB	Steller sea lion. Hauled out on SB south.
11 Jul 2021	30	RI	Steller sea lion. 20-30 sea lions hauled out on the rocks off south beach. Out of sight on daily counts.
11 Jul 2021	–	RI	Pelagic cormorant. Saw surprisingly few active cormorant nests on the back side of the island during boat ride.
11 Jul 2021	–	BC	Pacific walrus. Found big tusk at BC.
11 Jul 2021	1	TB	Steller sea lion. YOY pup with mom on TB.
11 Jul 2021	–	CG,BC,NBC	Parakeet auklet. biggish aggregations in the water off the beaches.
11 Jul 2021	1	RI	Beluga. Dead beluga floating .3 miles off NW side of island. Immature Glaucous-winged gull eating it.
12 Jul 2021	–	RI	Mosquitos. Lots.
12 Jul 2021	–	RI	Pacific walrus. Tons of walruses in water at CG and BC during survey transiting N and S.
12 Jul 2021	4	CG	Horned puffin. 4+ porch sitting on N side of CG puffin rock. Observer suspects 2 to 3+ HOPU nests and 1+ tufted puffin nests at puffin rock.
12 Jul 2021	–	MB	Monkeyflowers. Yellow monkeyflowers blooming abundantly on cliffs behind MB
12 Jul 2021	–	MB	Black-legged kittiwake. Group of kittiwake appear to be wetting feathers or bathing or cooling in saltwater during counts.
12 Jul 2021	–	RI	Harlequin duck. All harlequin ducks are gone, I didn't notice them leave but they have been gone maybe since the beginning of July. Elsewhere to breed.
12 Jul 2021	–	RI	SUNNY???
12 Jul 2021	–	RIE	Pelagic cormorant. birds hot in the sun, panting.
12 Jul 2021	–	OP	Common murre. may have one or more eggs at the plot 1 "chalice" however, incubators pack in so tight it is hard to tell who has a real egg.
13 Jul 2021	10	RI	Red foxes. So far there are 6 refo kits in the extensive den at east cape between V1T and V3T. Mom is pretty and has a puffy tail, she is playful/flirty with human observers and is usually present when kits are out. Kits are reddish and play together and independently outside their holes, they have pointed ears and are kind of out of control. the male associated with this den is scrappy looking, he had no tail fur when we arrived and it is growing in now. we have referred to him as ruff puff or skinny tail. at the cabin Bump-lip female has four kits (later in July confirmed five kits), her kits are much younger, when first seen they were grey-brown and could barely see, they still sleep a lot and come out to nurse when mom calls them but do not play outside unsupervised. the male associated with the cabin kits had only a puff of tail fur at the tip of his tail when we arrived, now he has lost the rest of his coat and looks quite scraggly and ridiculous. we are beginning to think he is the "brother bear" helper fox from last summer. if he is the kit's father, he may also be uncle, brother and cousin.

13 Jul 2021	—	FR	Pacific walrus. Lots of walruses activity around FR in water - chiming, whistling, swimming. Seems a lot like walrus soup?!?
13 Jul 2021	—	EC	Steller sea lion. two year old nursing again.
13 Jul 2021	—	TB	Steller sea lion. YOY pup still alive
14 Jul 2021	2	OP	Gray-crowned rosy-finches. Two all brown fledgers fluttering at OP. cute.
14 Jul 2021	—	RIE	Harlequin duck. none seen in a while.
14 Jul 2021	—	FRM	Wildflowers. did a quick survey at Flat rock meadow. see separate sheet.
15 Jul 2021	—	TT	Cloudberry. Starting to form berries.
15 Jul 2021	—	BC/FR	Montane "Dusky" Shrew. Dead between BC and FR on trail.
15 Jul 2021	2	FB	Pigeon guillemots. two sitting atop their favorite rock to nest under.
16 Jul 2021	—	EC	Red fox. Mom at V1T, didn't want to move.
16 Jul 2021	—	FB	Pacific walrus. Lots of walruses chiming together at FB.
16 Jul 2021	—	WR	Pelagic cormorant. 13+ chicks in the 16 monitored nests at west ridge (7 active nests)
16 Jul 2021	1	BC	Common murre. alone in Boat Cove. tired or injured.
16 Jul 2021	4	WR	Red Fox. 3+ kits seen with adult at west ridge fox den. photos taken.
16 Jul 2021	2	WR	Common murres. two adults with no chick feeding each other. or passing a bait fish back and forth.
16 Jul 2021	4	WR	Common murres. at least 4 murre eggs visible at west ridge peco area
16 Jul 2021	—	BC	Yellow marsh saxifrage. blooming in wet spots at the Boat Cove trail.
16 Jul 2021	1	CAB	Red fox. Bump Lip Momma walked into the house while I was snacking because I left the door open.
17 Jul 2021	—		Horrible tick experience in the katadyne water filter, we believe this large grey tick to have arrived on a bird carcass under the cabin (brought by foxes) it may have climbed up from under the floor into the kitchen. alternately bump lip might have dropped it when she walked into the cabin yesterday. oops,.
17 Jul 2021	1	TB	Steller sea lion. YOY pup hanging out with a group of adults on third beach. looks healthy.
17 Jul 2021	—	EC	Fireweed. blooming at East cape.
17 Jul 2021	20	EC	Horned puffins. more than 20 aggregated in the water off east cape.
17 Jul 2021	—	OP	Black-legged kittiwake. one adult in non breeding plumage standing on plot 2 nest 15.
17 Jul 2021	—	OP	Common murre. it is very windy and birds are disturbed. NO MURRES ON PLOT 2, 3R, 4R. TWO MURRES ON PLOT 3L

			AND TWO MURRES ON PLOT 4L. 8 murres at plot 1 are crouched against the wall on the chalice.
17 Jul 2021	–	OP	Common murre. there are only two murres on OP plot 4 left they are both numbered because we believed they had eggs. they are #9 and #10. while watching these two side-by side birds to see if they had eggs #10 turned and allowed me to see the egg on the tops of its feet, then it turned a little further and I watched the egg roll off its foot and bounce down the cliff face. the murre stared at its feet. I believe that was the last egg on plots 4 L&R.
17 Jul 2021	–	OP	Black-legged kittiwake. windy, birds restless during survey. at one point something disturbed plot 3 and every adult left OPP3. leaving only the two still living chicks on the plot. adults began returning after a couple minutes. particularly the parents of the chicks.
17 Jul 2021	–	OP	Common murre. after loosing the plot 4 egg, I believe the only murre eggs on our survey plots are two eggs on plot 3L, and possibly 1 or more at the chalice at plot 1.
18 Jul 2021	–	FB	Pacific walruses at FB seem agitated, lots of moving around.
18 Jul 2021	–	CG	Steller sea lion. youngster hauled out alone on a rock at campground. maybe a little ribby.
18 Jul 2021	–	BC	Pacific walrus. lone walrus that I have been calling "BCG" (Boat Cove guy) is hauled alone in Boat Cove again.
18 Jul 2021	–	RI	Fireweed. blooming.
19 Jul 2021	1	EC	Sea otter. Not sure if this is the same one but it is back in the water at EC. Swimming near STSLs.
19 Jul 2021	–	RIE	Monk's hood. Prolific around East side of island.
19 Jul 2021	7	EC,CAB	Red fox. Kits seen at cabin and at EC.
19 Jul 2021	2	CG	Tufted puffin. Very unusual observation of 2 tufted puffins interacting. One appeared to be trying to drown the other. Making terrible sounds. The one would get away only to be chased by the other and then caught and held under water. We watched for five minutes. Ongoing when we left.
19 Jul 2021	1	NBC	Montane "Dusky" shrew. One dead in trail.
19 Jul 2021	1	RIE	Beluga whale. Dead carcass seen offshore while flying in on helicopter. Floated by East side of island and was last seen off of EC.
19 Jul 2021	1		Pacific walrus. carcass, two stump tusks, floating half mile off cabin. seen from heli.
20 Jul 2021	1	EC	Wandering tattler.
20 Jul 2021	3	EC, MB	Pacific loon. 2 off of MB, 1 off of EC.
20 Jul 2021	1	SP	King eider. Male in breeding plumage
20 Jul 2021	6	BC, MB	Harlequin duck.
20 Jul 2021	1	BC	Montane "Dusky" shrew. Dead in trail.
21 Jul 2021	2	CAB, EC	Bald eagle. Juvenile seen at cabin and EC. Had a semi-aggressive encounter in the air at EC with adult.

21 Jul 2021	4	RIE	Short-tailed shearwater. In water along East side of island. Seem healthy.
21 Jul 2021	1	FB	Savannah sparrow. Dead fledgling in trail.
21 Jul 2021	1	BC	Montane "Dusky" shrew. Dead in trail.
21 Jul 2021	1	EC	Sea otter.
21 Jul 2021	1	EC	Unidentified sandpiper. In trail at EC. Flew away before we could get photo. Possible western sandpiper.
21 Jul 2021	8	EC	Red fox. Male and female adults and 6 kits.
21 Jul 2021	1	SP	Unidentified seal. Probable harbor seal. Hauled out on rocks in SP pocket beach.
22 Jul 2021	1	EC	Sea otter.
22 Jul 2021	–	RI	Jelly fish. Present in water around the island.
22 Jul 2021	–	FB, CAB	Marsh five finger. Blooming in marsh behind FB and by the ADF&G shed.
22 Jul 2021	2	BC	Gray-crowned rosy-finch.
22 Jul 2021	2	FB	Wandering tattler.
22 Jul 2021	4	SB, CG	Western sandpiper.
22 Jul 2021	6	CAB	Red fox. Bump lip female, brother bear male and 4 kits at the Explore shed/meadow.
23 Jul 2021	1	MB	Red-breasted merganser. Female in water off MB.
23 Jul 2021	6	CAB	Red fox. 2 adults and 4 kits at cabin meadow.
23 Jul 2021	1	SUMMIT	Red fox. Male with nice coat. Possible male from WM den?
23 Jul 2021	4	EC	Red fox. Female with kits at EC.
23 Jul 2021	–	RI	Pacific walrus, Steller sea lion. Mammals on island all seem a little jumpy today.
24 Jul 2021	1	TB	Wandering tattler.
24 Jul 2021	1	EC	Sea otter. Hanging with Steller sea lions in surf off of ledges at EC.
25 Jul 2021	–	RI	Jellyfish. In water all around island.
25 Jul 2021	2	EC	Montane "Dusky" shrew. Dead in trails.
25 Jul 2021	–	EC	Red fox. Fresh digging in den/hole from REFO on V1W trail.
25 Jul 2021	–	RI	Pacific walrus. Many walruses returning from sea past EC.
25 Jul 2021	>8	ECP	Golden-crowned sparrow. Many fledglings flying around ECP.
25 Jul 2021	6	CG	Horned puffin. Many adults on ledges of rock above Alt boat site. One still on nest in opening. Looked like it was still on an egg but hard to say.
25 Jul 2021	7	CAB	Red fox. Both and adults and 5 kits at the cabin!
25 Jul 2021	1	CG	Double-crested cormorant. Good looks on a flyby.
26 Jul 2021	1	OP	Common murre. Chick present at Plot 5!
26 Jul 2021	2	MB, NBC	Black-legged kittiwake. Chicks dead in the water.

26 Jul 2021	1	CAB	Unidentified seal. Swimming in water in front of cabin in pm.
26 Jul 2021	6	CAB	Red fox. Kits playing behind cabin in pm. Mom fox brought a sparrow.
27 Jul 2021	1	NBC	Steller sea lion. Hauled out at NBC in am.
27 Jul 2021	1	EC	Sea otter. Hauled out at TB with STSLs
27 Jul 2021	3	EC	Red fox. Kits sleeping/playing at EC den.
27 Jul 2021	–	RI	Pacific walrus. Numerous walruses in water around island in am.
28 Jul 2021	1	CG	Double-crested cormorant. In water off of CG
28 Jul 2021	2	BC, MB	Harlequin duck.
28 Jul 2021	1	MB	Red-breasted merganser. Female in water off of MB.
29 Jul 2021	5	CAB	Red fox. Fox kits seem to be back under the cabin.
29 Jul 2021	2	OP	Peregrine falcon. Flying around OP.
29 Jul 2021	1	OP	Gray-crowned rosy-finch.
29 Jul 2021	4	OP	Common raven.
29 Jul 2021	–	FR	Grass of Parnassus. Blooming.
29 Jul 2021	–	FR	Burnet.
30 Jul 2021	2	EC, BC	Wandering tattler.
30 Jul 2021	1	BC	Least sandpiper.
30 Jul 2021	1	EC	Red fox. Adult female mama sleeping.
30 Jul 2021	2	FB	Golden-crowned sparrow. Adult and fledgling feeding on bugs on walruses.
30 Jul 2021	1	SB	Short-tailed shearwater. Dead in water
30 Jul 2021	1	SB	Double-Crested cormorant. Flyby
31 Jul 2021	1	EC	Sea otter.
31 Jul 2021	1	EC, SP	Peregrine falcon. Flying along cliffs between SP and EC.
31 Jul 2021	–	ECP	Bog blueberry. Almost ripe at ECP.
31 Jul 2021	5	EC	Red fox. Kits are getting so big. Little foxes.
31 Jul 2021	5	SB	Glaucous-winged gull.
31 Jul 2021		RI	Pigeon guillemot. Present on all beaches.
31 Jul 2021	1	FB	Least sandpiper.
1 Aug 2021	1	BC	Black-legged kittiwake. Fledgling flying around BC.
1 Aug 2021	1	BC	Harlequin duck. Female.
1 Aug 2021	–	WM	Pelagic cormorant. Chicks missing from 1st camera plots. Did they fledge?
1 Aug 2021	–	TT	Cloudberry. Some ripe ones along the TT trail.
1 Aug 2021	–	WM	Black-legged kittiwake. Many getting ready to fledge at WM nests.

1 Aug 2021	–	TT	Mountain harebell. Blooming along TT where large snowfield was.
1 Aug 2021	1	TT	Red fox. Female mama from WM den came and hung out with me for a while.
1 Aug 2021	1	CAB	Peregrine falcon. Came barreling off the ridge while I was changing out card at overlook camera. Had some speed!
2 Aug 2021	–	RI	American pipit. Many adults and fledglings seen flying around island.
2 Aug 2021	1	EC	Sea otter. Hauled out at TB with STSLs
2 Aug 2021	1	FB	Yellow warbler. Fledgling.
2 Aug 2021	1	CAB	Orange-crowned warbler. Fledgling.
3 Aug 2021	7	CAB	Red fox. Adults and kits around in the am.
3 Aug 2021	1	CG	Horned puffin. Adult not in burrow but 2 near the opening. Chick hatched?
3 Aug 2021	1	FB	Yellow warbler. Fledgling.
3 Aug 2021	–	FRM	Alaska poppy. Second round of blooming here.
3 Aug 2021	–	SB	Richardson's anemone. Second round of blooming in marsh behind SB.
3 Aug 2021	1	CRK	Red fox. Anchored overnight at Crooked in FV Cloudbreak after leaving RI. One fox was seen running along the beach. Could it be one of our Round Island born fox?
3 Aug 2021	1	FR	Unidentified phalarope. Most likely a red-necked phalarope but only saw from a distance swimming around FR.
3 Aug 2021	–	BC–	Pacific loon, outside Boat Cove as we came in.
3 Aug 2021	1	FB	Pigeon guillemot. Adult seen taking fish into cracks of rocks at back of FB.

^a BC = Boat Cove
CAB = Staff Cabin
CG = Campground
CRK = Crooked Island
EC = East Cape
ECP = East Cape Pass
FB = First Beach
FP = First Prime
FR = Flat Rock
FRM = Flat Rock Meadow
MB = Main Beach
NBC = North Boat Cove
OP = Observation Point
OSE = Off Shore-East
OSS = Off Shore-South
RI = Round Island
RIE = Round Island-East
SB = Second Beach
SP = Second Prime
SPP = Second Prime Pass
TB = Third Beach
TT = Traverse Trail
TTA = Traverse Trail Approach
WM = West Main Beach
WR = West Ridge

