

Traditional Knowledge and Historical and Opportunistic Sightings of Beluga Whales, *Delphinapterus leucas*, in Yakutat Bay, Alaska, 1938–2013

W. G. LUCEY, E. HENNIGER., E. ABRAHAM, G. O’CORRY-CROWE,
K. M. STAFFORD, and M. CASTELLOTE

Introduction

Local people have long known about the existence of beluga whales, *Delphinapterus leucas*, in Yakutat Bay, Alaska, although this knowledge was restricted to those connected with seal (Phocidae) hunting and commercial fishing on the Manby shore on the west side of Yakutat Bay. Current knowledge is based on intermittent opportunistic sightings and some directed research (e.g., Hubbard et al., 1999; Laidre et al., 2000; O’Corry-Crowe

et al.^{1,2}). To gather information about historical and current sightings of belugas in the Yakutat region, a directed interview effort of the local people who were most knowledgeable about Yakutat Bay was undertaken and opportunistic sightings, the majority of which were from the past decade, were collected.

Methods

Both informal and formal efforts were made to gather information about local and traditional knowledge of beluga whales in the Yakutat area. A formal gathering was held in May 2005 by The City and Borough of Yakutat, using grant funding from the U.S. Na-

tional Park Service, to interview Yakutat Tlingit Tribal Elders regarding their knowledge of belugas. The elders group was selected and invited by the Yakutat Tlingit Tribal administration and were provided stipends through grant funding. U.S. National Park Service funding was matched by funds from the Alaska Sea Otter and Steller Sea Lion Commission. The meeting was overseen by Henry Huntington who is well versed in formal traditional ecological knowledge (TEK) methods (Huntington, 2000). Prepared questions were distributed by the tribal wildlife biologist. Informal information, or casual conversation was collected from airplane pilots, commercial fishermen, and other agency personnel who shared observations of beluga whales with the city biologist (Lucey). These observations made up half of the sightings and are included to augment formal conversations with elders and direct observations from various marine mammal scientists conducting various wildlife surveys in the area. Dates and locations of sightings from the Yakutat area and as reported in peer-reviewed literature were also included.

Results and Summaries of Local Residents’ Observations

A total of 76 beluga observations were recorded between 1938 and 2013, including calves sighted at regular intervals (Table 1). Fifty-three sightings came from various natural resource agency staff, 12 sightings came from commercial fishermen, 4 from solo pilots, and 7 came from subsistence hunters and elders. Beluga group size averaged 6 (1–26). Although the largest group sizes were reported in 1938 and 1976, over the past 40 years the

W. G. Lucey was with the City and Borough of Yakutat, P.O. Box 160, Yakutat, AK99689 (email: w.g.lucey@gmail.com). E. Henniger is with the Yakutat Tlingit Tribe, P.O. Box 418 Yakutat, AK, 99689. E. Abraham is with the Alaska Native Science Commission, 429 L Street, Anchorage, AK 99689. G. O’Corry-Crowe is with the Harbor Branch Oceanographic Institute, Florida Atlantic University, 5600 U.S. 1, North Fort Pierce, FL 34946. K.M. Stafford is with the Applied Physics Laboratory, University of Washington, 1013 N.E. 40th Street, Box 355640, Seattle, WA 98105. M. Castellote is with the National Marine Mammal Laboratory, Alaska Fisheries Science Center, National Marine Fisheries Service, NOAA, 7600 Sand Point Way N.E., Seattle, WA 98115 and North Gulf Oceanic Society, 3430 Main Street, Homer, AK 99603.

doi: dx.doi.org/10.7755/MFR.77.1.4

¹O’Corry-Crowe, G., W. Lucey, C. Bonin, E. Henniger and R. Hobbs. 2006. The ecology, status and stock identification of beluga whales, *Delphinapterus leucas*, in Yakutat Bay, Alaska. Rep. U.S. Mar. Mamm. Comm., NMFS-YSB-YTT, 22 p.

²O’Corry-Crowe, G., W. Lucey, M. Castellote, and K. Stafford. 2008. Abundance, habitat use and behavior of beluga whales in Yakutat Bay, May 2008, as revealed by passive acoustic monitoring, visual observations and photo-id. Final Rep. to Protected Resour. Div., Alaska Reg. Off. Natl. Mar. Fish. Serv., NOAA, Juneau, Alaska, 49 p. (avail. at: http://alaskafisheries.noaa.gov/protectedresources/whales/beluga/yakutat/yakutat_2008belugas_0309.pdf).

ABSTRACT—A total of 76 confirmed sighting events of beluga whales, *Delphinapterus leucas*, were gathered from 1938 to 2013 in Yakutat Bay, Alaska. The sightings were a mix of incidental observations from airplane pilots and commercial fishermen as well as directed ground and aerial surveys. The earliest sightings are anecdotal, with the first known observation recalled from the summer of 1938. Throughout the observation period the average group sighting was 6 whales with a low of 1 animal and an estimated high of 26 animals. Overall, there is little traditional or historical knowl-

edge about the Yakutat Bay belugas, including whether they were a hunted species. However, the study revealed the existence of the local name for belugas “Kuyeedaay-ee” (skin under the stars), which was either of Tlingit origin or, possibly, from the now extinct Eyak language. The fact that there is a Tlingit/Eyak name for the animals supports the theory, and the genetic evidence, that they have inhabited Yakutat Bay for longer than the sighting record indicates. This report includes four summaries of observations from local residents who are most knowledgeable about Yakutat Bay.

Table 1.—All sightings of beluga whales in Yakutat Bay from 1938 to 2013 with date, observer, location, and notes.

Date	Observer	Affiliation ¹	Location	# of whales	Notes
Summer 1938	George Valle Sr.	SH	Manby Shore	15–20	First seen during seal hunting
Summer 1968	Bob Fraker	CF	Manby Shore	8–10	Common while fishing
31 May 1976	Calkins (cited in Laidre et al., 2000)	NMFS	Yakutat Bay	21+5	Aerial survey
20 April 1979	Cox and Ranney	Pilots	Esker Creek	6	4 adults, 2 calves
15 July 1979	Mallot	CF	Between Blizhni and Manby	Several	Set net fishing
15 July 1980?	Pavlik, Matsko	CF	In Esker Creek		Set net fishing
24 Sept 1993	Ream	NMFS	Disenchantment Bay	2	
19 Feb 1997	Hubbard et al., 1999	MMS	Disenchantment Bay	10	1 gray/white whale
1 July 1997	Adams, Sr.	YTT	Disenchantment Bay	Small pod	Charter trip
20–25 Aug 1997	Small, Lowry	ADF&G	Bancas Point	1–5	Aerial survey
Early Sept 1998	Donahue	CF	Mouth of Icy Bay	6	Power trolling
16 Nov–8 Dec 1998	Molthen, Howard (cited in Hubbard et al., 1999)	USCG	Disenchantment Bay	6–11	
14–15 Aug 2000	Herter, Plafker	USGS	Bancas Point	4–8	Glacier study
7–26 May 2002	Jansen, Adams, Jr., Lucey	USFS, NMFS, YTT	Beluga Bay	5	Biopsy attempt
19–20 Sept 2002	O'Connor, Lucey, Adams, Jr., R. Sensemeier	USFS & YTT	Beluga Bay	6–7	Biopsy attempt
24 March 2003	Johnson	ADF&G	South Khantaak	1	Orca survey
24 April 2003	Russell, Lott	YCA	Disenchantment Bay	9–10	Glacier survey
26 April 2003	Lucey	USFS	Disenchantment Bay	9	Glacier survey
3 May 2003	Lucey, Adams, Jr.	USFS, YTT	Beluga Bay	9	Missed biopsy attempt
6 May 2003	Lucey, R. Sensemeier	YTT, USFS	Beluga Bay	9	Biopsy attempt
21 May 2003	Russell	YCA	Beluga Bay	8	Glacier survey
1 Sept 2003	Adams, Jr., Lucey	CBY, YTT	Beluga Bay	6	One biopsy taken
19 May 2004	Hartley	Alesek Air	Disenchantment Bay	10	Scenic flight
23 May 2004	Dahle	NMFS	Beluga Bay	2–3	Seal survey NMML
31 May 2004	Dahle	NMFS	Beluga Bay	8	Seal survey NMML
1 June 2004	Dahle	NMFS	Beluga Bay	6	Seal survey NMML
3 June 2004	Dahle	NMFS	Haenke Stream	6	Seal survey NMML
15 June 2004	Dahle, Lucey	NMFS/CBY	Haenke Stream	2	Seal survey NMML
18 July 2004	Dahle, Lucey	NMFS/CBY	Turner Glacier	6–7	Seal survey NMML
19 July 2004	Dahle	NMFS	Turner Glacier	5–6	Seal survey NMML
3 Aug 2004	O'Connor, Rush	USFS	Turner Glacier Bancas Side	9	Kayak trip
4 Aug 2003	O'Connor, Rush	USFS	Turner Glacier	12	Kayak trip
19 Aug 2004	Russell	YCA	Disenchantment Bay	8	Scenic flight
26 April 2005	Hartley	Alesek Air	Beluga Bay	10–12	Beluga survey
3 May 2005	O'Corry-Crowe, Bonin	NMFS	Beluga Bay	10–12	Beluga survey
7 May 2005	Jansen	NMFS	Turner Glacier Haenke Side	4	Seal survey NMML
16 May 2005	Jansen	NMFS	Beluga Bay	3–4	Seal survey NMML
17 May 2005	Bonin, Dahle	NMFS	Beluga Bay	4	Seal survey NMML
17 May 2005	Jansen	NMFS	Beluga Bay	2	Seal survey NMML
22 May 2005	Jansen	NMFS	Beluga Bay	8	Seal survey NMML
23 May 2005	Henniger	YTT, NMFS	Turner Glacier Haenke Side	5–6	Seal survey NMML
24 May 2005	Jansen, Dahle	NMFS	South of Haenke River mouth	6	Seal survey NMML
26 May 2005	Dahle, Libby	NMFS	Turner Glacier	3–4	Seal survey NMML
30 May 2005	Jansen, Dahle	NMFS	Beluga Bay	3	Seal survey NMML
31 May 2005	Jansen, Dahle	NMFS	Turner Glacier	5–6	Seal survey NMML
1 June 2005	V. Sensemeier	YTT	Beluga Bay	4	Seal survey NMML
5 May 2006	Lucey	CBY	Disenchantment Bay	5	Skiff survey
14–16 July 2006	Rush	NPS	Esker Stream	13	NPS cabin repair
14 July 2006	Hartley	Alesek Air	Esker Stream	6	Scenic flight
27 June 2007	Lucey	CBY	Turner Glacier	1	Beluga survey
1 July 2007	Bullard	SH	Nunataak Fiord	1	Subsistence hunting trip
3 Aug 2007	Lucey	CBY	Beluga Bay	8	Beluga survey
9 Oct 2007	Lucey	CBY	Center of Hubbard	4	Beluga survey
15 Jan 2008	H. Gray	CF	Point Latouche	1	Winter trolling
14 Feb 2008	Lucey	CBY	Turner Glacier	4–6	Beluga survey
15 Mar 2008	I. Totland	CF	Yakutat Bay-Pinnacles	1	Winter trolling
5 April 2008	O. Totland	CF	Yakutat Bay Logan's Bluff	1	Winter trolling
10–17 May 2008	O'Corry-Crowe	HBOI, UW	Beluga Bay-Turner Glacier	10	Field camp
23 June 2008	Jacobsen	CF	Yakutat Bay-North Khantaak	1	Long lining
8 Oct 2008	Lucey	CBY	Beluga Bay	4	Seismic mitigation survey
19 Feb 2009	Firestack	CF	Pt. Latouche	1	Winter trolling
24 Aug 2009	Larson	UAF	Esker Creek	3–4	Glacier research
8 Sept 2009	Lott	NPS	Turner Glacier	4–5	Park Service flight
10 May 2010	Hartley	Alesek Air	Turner Glacier	5–6	Tourist flight
2 May 2010	Lucey	CBY	Turner Glacier	4	Beluga survey
20 Aug 2010	Jansen	NMFS	Bhizini Point	6	Harbor seal survey
21 Aug 2010	Lucey, O'Corry-Crowe	CBY, HBOI	Bancas point	7–9, 1 calf	Beluga survey
12 Sept 2010	Williams	CF	Pt Latouche	1	Whale eating brown fish
21 Sept 2010	Scott	ADF&G	Esker Creek	7–9	Bear telemetry flight 6:38 pm
25 May 2011	Lucey, Koller	CBY	Beluga Bay	2	Far side near Turner
2 July 2011	Lucey, Heerman	CBY	Turner Glacier/Bancas side	3	Milling near edge of Turner
29 July 2011	Lott	NPS	Bancas Point	5–6, 1 calf	Swimming rapidly
6 Aug 2011	Jansen, Lucey	NMFS, CBY	Esker Creek	9–10	edge of sediment plume
25 July 2012	Lucey	CBY	Esker Creek	8	Feeding in sediment plume
26 July 2012	Thompson	NPS	Esker Creek	7	Swimming
10 Aug 2012	Lucey	CBY	Turner Glacier /Bancas Side	4	Swimming
13 July 2013	Lucey	CBY	Esker Creek	6	Swimming

¹Key: AA = Alesek Air; ADFG = Alaska Department of Fish and Game; CBY = City and Borough of Yakutat; CF = Commercial Fisherman; HBOI = Harbor Branch Oceanographic Institute; NMFS = National Marine Fisheries Service; NPS = National Park Service; SH = Seal Hunter; UAF = University of Alaska Fairbanks; USCG = U.S. Coast Guard; USFS = U.S. Forest Service; USGS = U.S. Geological Survey; YCA = Yakutat Coastal Airlines; YTT = Yakutat Tlingit Tribe.

number of belugas seen in Yakutat Bay has remained fairly stable at roughly 6–10 individuals. Most sightings occurred from April to September in the Disenchantment Bay region (Fig. 1).

Summarized here are conversations with various members of the community of Yakutat, Alaska, in 2005 through 2013. Many conversations were informal and occurred at barbecues and local stores. Additional information was collected during an elder's meeting, that took place in May 2005 in Yakutat, conducted with the specific intent of learning about Yakutat belugas and Steller sea lions, *Eumatopias jubatas*. This meeting revealed the local name and oldest known observation of the Yakutat belugas.

The Pavlik Family

The following informal information comes from several conversations with members of the Pavlik family, beginning in 2001. Mike Pavlik was paid for this information with rough-cut lumber from a local sawmill and a fuel stipend.

The Pavlik family has been in Yakutat since the 1940's. The father, Mike Pavlik, Sr., of Czechoslovakian descent, married Mary Pavlik, a Tlingit woman from Klukwaan, Haines, Alaska, and they had several children.

Mike Pavlik specialized in fishing on the Manby Shore (Fig. 1) during the 1950's and 1960's, now part of Wrangell-St. Elias National Park and Preserve. Over the decades, the family has spent hundreds of days observing the fish runs and wildlife in the area. They were familiar with the Yakutat beluga population long before the scientific community recorded official sightings. They also hunted the Disenchantment Bay harbor seals, *Phoca vitulina*, and continue to do so today.

Mike said that during his fishing days, the belugas would pass by occasionally while they were gillnetting Pacific salmon, *Oncorhynchus* spp., in and outside of the mouth of Esker Creek. He said that there were usually around 15–20 belugas in a group, though he was not sure of the exact number or time of year. The main

commercial fishing season is June–September. He said they never bothered the beluga whales, as they were a special event that broke up the constant work of tending nets and salting fish. His son Andy would drift out amongst the whales and take pictures of them as they played and fed around the river mouth.

Mike's son Johnny Pavlik and a family friend, John Matsko, were good sources of informal information. They tell of accidentally catching a beluga in a net at the mouth of Big Esker Creek. John Matsko is a present-day fishing guide and past partner of the Pavlik's commercial fishing enterprise. The incident occurred around 1980 while Johnny was fishing by himself. He saw a great surge coming down river and went for his net as he wasn't sure what was making the waves. It turned out to be a pod of belugas. One of the whales tried to go under the net as he was lifting it out of the way and its tail became entangled in the lead line. Johnny struggled with the whale for a short time before his brother, Rudy Pavlik, and John Matsko arrived in another skiff.

All three of the fisherman held the whale's blowhole at the surface while they cut it free. This took over an hour. John Matsko stated that the whale was relaxed, swimming along with them as they drifted in the bay. He was amazed by this as the whale was mostly free for a long portion of this time and it could have easily swam away. They took extra time and were successful in cutting off most of the material; the whale recovered and calmly swam off. Other than this one incident, there were no known gillnet and beluga interactions in the Yakutat area.

Mike Pavlik's youngest son, Rudy Pavlik, is the top harbor seal harvester in town, according to the Alaska seal harvest survey published annually by the Alaska Native Harbor Seal Commission (Wolf et al., 2013). He is the chief provider to the community, donating and selling large amounts of seal meat, oil, and skins. Another area where Rudy has seen the belugas is in the Dangerous River southeast of Ya-

kutat. However, Rudy did not give details on this sighting though it probably ranged from the early to mid-1980's.

Jeremiah Pavlik, Mike's grandson, has reported seeing pods of belugas on the Khantaak Pinnacles twice on flights over to Manby during the late 1990's and early 2000's. He feels that the whales are staying closer to the ice more than in years past when they were frequently seen while fishing in areas around Grand Wash. Jeremiah attributes this to the rapid rise in cruise ship traffic to the area.

George Valle, Jr.

George Valle died in 2011. He told his story during the formal elder's meeting, with charming wit and humor. He began hunting and fishing on the west side of Yakutat Bay in 1938, when he was 10 years old, and continued to do so through the late 1990's. Recorded transcription: "I fished over [Manby] in the summer for 7 years... Spoon River, Sudden Stream, Kahliahk. I fished all the rivers. And I'm still poor [Laughing]." Surprised at the subject of this interview and hearing of research on the belugas in Yakutat, George said, "I thought people knew about it all the time. I was surprised when everybody got all excited about them all of a sudden. They had to been there all the time."

George: "That beluga, the first one I seen... the first time I saw one was in...1938 at 10 years old. I was seal hunting with my grandfather. I never asked him about it. I just see them. I was ten years old...He had me working all the time, rowing the boat to the ice, from 3:00 in the morning to just before dark. Hard candy and heart attack... [He laughs]. We saw 'em up around... the Hubbard Glacier. The first one I saw...I never asked questions or anything. I never did ask my grandfather...what they were or anything. We didn't look for them...we were looking for seals. But I just happened to see them up here. We'd hunt back in [front of Turner Glacier, Haenke Glacier, and Beluga Bay area]." Beluga Bay was filled with a landslide in 2012. Few surveys have been conduct-

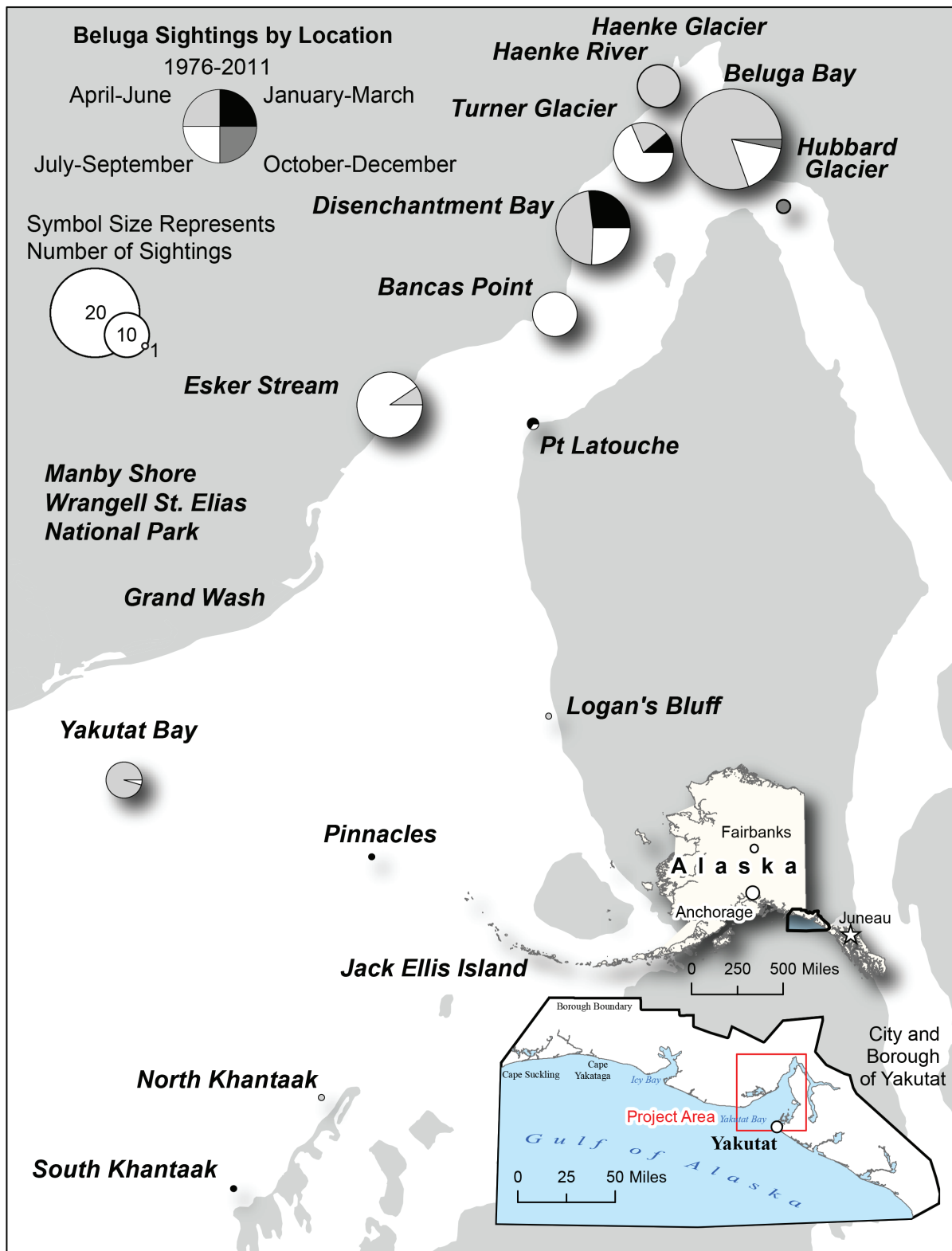


Figure 1.—Cumulative beluga sightings by season and location from 1938 to 2013. The size of the circle is representative of the number of sightings of belugas in the area.

ed since that time and it is unknown how this event has changed beluga movements.

During George's teenage years in the 1940's, hunting with his father and relatives in the spring, he heard the name for belugas; "That's how I got the [Tlingit] name [for belugas]...listen to [deceased Yakutat elders] Sampson Harry, Peter Harry, and William Thomas, and Oscar Frank. Kuyeedaay-ee [pronounced: cuu yee da yee]. I got that name from that old-timer [assuming Oscar Frank]." Although George was not certain, he believed the word for belugas was Tlingit rather than of Eyak origin. "I don't know if that is a Tlingit name....must be. Cause you know if they have a Tlingit name they been here...around here for years," George said.

Most sightings were in the area of Turner Glacier. "I don't see them along the beaches [of Bancas Point area]," said George. They have not been seen in the "open ocean" or very far from the western shore of Yakutat Bay. Nor have belugas been documented in Icy Bay, except once at the Point Riu spit in 1998. "I seen them way down...along here, indicating [Manby coast of Yakutat Bay]. But I never noticed any out here [middle of Yakutat Bay]. We were hunting seal we weren't looking for anything like that either, you know. Besides there was so much ice flow...you probably couldn't tell if it was beluga or iceberg." George had seen the belugas come out of Beluga Bay in the evening, then swim up Grand Wash. He did not offer any explanation for why the belugas might frequently swim up Grand Wash in the evening.

During the summer, while gillnetting at Manby and the west shores of Yakutat Bay with other fishermen, he said, "We used to go in this...Spoon River. Left our barge tied up there. We fished there ...but we never saw anything [belugas] down below [west of Spoon River]. We'd be there by...just getting dark and we'd go into Grand Wash and camp on the beach. Towards evening, they start coming

in [to Grand Wash] and they go way up in [the river of Grand Wash]. We listen to them moaning and groaning all night there. Only time we saw them was when they're going up river. They come in there in the evening, and they start going up...I don't know when they get out. Probably get out before we wake up. They don't make noise when they are traveling. They'd come up, one right after the other, up the river though. But not schooled up, you know. Wish we had a camera then we could have taken pictures of them, never thought of that. They come right close. It's not very far across the river. Once they got inside, way up here, and you hear them; listening to them moaning and groaning. I don't know what they do up there. The way they sound, you know. It's a long ways, long ways from us but you could hear it real good."

George: "We used to see so much of them...Earnest Francis....sometimes he'd go with us, me and Sarge. He was so scared of them. He'd stick an oar in the water. He'd start pounding on it. He said it's going to get us. We [Tlingits] weren't afraid of them. Only Earnest, I guess [laughing]. We'd go right by them." George stated that he believed he saw more than 15–20 belugas at a time, while fishing and hunting in Yakutat Bay. When asked if he saw gray or black belugas, he said, "White. I didn't see any different colored ones. There might have been some, ones that I didn't see." In addition, George did not recall seeing any dead belugas stranded on the shore.

Around 1956, George left Yakutat to join the military. When he returned, fishing was better on other rivers, closing the chapter of his close encounters with belugas in Yakutat Bay. Looking back, he realized that Tlingits shared a quiet coexistence with belugas. Despite sharing food with the whales, such as Pacific salmon and herring, *Clupea pallasii*, Yakutat Tlingits are not known, according to current traditional knowledge, to have hunted or eaten belugas. When referring to the relationship with Yakutat belugas,

Tlingits often said, "we left them alone and they left us alone."

Larry Powell and Byron Mallott

Informal discussions with Larry and Byron were held in Mallott's store. These two individuals fished as a team on the west side of Yakutat Bay in the 1970's. Larry felt that there were 20–30 whales on the Manby side when they fished near Esker Creek. Byron felt it was closer to 20.

Andrew Gray

Andrew is a lifelong commercial fisherman presently in his sixties and well respected in the community. He saw a dead beluga whale on Jack Ellis Island in the mid-1990's. He reported it, but the carcass was never located.

Overall, 53 beluga observations were recorded from scientific surveys compared with 13 reported from informal interviews and 3 were from the tribal meeting. Qualitatively, the elders meeting produced the earliest observation and the most cultural knowledge about the Yakutat beluga group. Locations of sightings were similar across all time periods.

Discussion

The earliest modern-day recollection of beluga whales was from George Valle, Jr., from 1938. Because the Tlingit had a name for belugas, "Kuyeedaayee," it would seem that they have been long-term residents of Yakutat. "Kuyeedaayee" did not have a direct translation; however, in discussions with native speakers, they felt the meaning to approximate "skin under the stars." Yakutat Tlingits are not known to have hunted or eaten belugas. During archeological survey work being conducted by the Yakutat Tlingit Tribe, David Ramos, Sr., and Kai Monture found a beluga skull with a single tooth, on North Khantaak Island in 2012. It is unknown if the skull is from a harvested animal or was beach cast and hauled into the forest by a grizzly bear, *Ursus arctos horribilis*. To understand its age and relation to the current beluga group, the skull was sent to Harbor Branch Ocean-

graphic Institute in 2013 in an attempt to extract DNA. Results are pending (O’Corry-Crowe).

Most beluga whale sightings were in the spring and summer in the Beluga Bay vicinity (Fig. 1). The only late fall–early winter sightings were near Turner Glacier. However, local fishing and hunting occurs predominantly from spring to fall; therefore, opportunistic sightings from fishermen, hunters, and airplane pilots are expected to be lower during wintertime. A recent acoustics monitoring study supports year-round presence of belugas in Yakutat Bay (Castellote et al., 2015). Similarly, recent genetic analysis indicates that these whales are likely endemic to the Yakutat Bay area and, while they are related to the Cook Inlet stock, they are genetically distinct from Cook Inlet whales (O’Corry-Crowe et al., 2015).

Both opportunistic and directed sightings are more common in Disenchantment Bay and from the northwest coast of Yakutat Bay to Manby Point. Less evidence of beluga presence has been reported for the eastern coast of Yakutat Bay despite this being the most heavily utilized area of the bay. A large gap in sightings between 1980 and 1992 is likely a product of historical high Pacific salmon prices and increased fishing effort on the eastern shoreline from the East Alsek River to the Situk River, reducing effort on the Manby side of Yakutat Bay.

Yakutat belugas seem to avoid open waters and stay close to ice, possibly to avoid predation by killer whales, *Orcinus orca*. Sighting distribution suggests that Disenchantment Bay might be their core habitat, with limited excursions to specific locations in Yakutat Bay, such as Grand Wash and Esker Creek, in particular along the west coast of the bay (e.g., Castellote et al., 2015). There are historical

observations (George Valle) and more recent observations (gillnet incident) of belugas entering Grand Wash River and swimming upstream after Pacific salmon. This behavior might also happen in other rivers in Yakutat Bay (Pavlik observation from Dangerous River), as this is a common behavior in other resident beluga populations in Alaska (Rugh et al., 2000).

When belugas travel up river they are probably more susceptible to gillnet interactions due to the confined channels and potentially noisy soundscape. However, as the Manby shore has been gillnetted for decades, it is possible that the whales are familiar with nets as they appear to avoid them given the single known entanglement.

A total of six elders were formally interviewed regarding their knowledge regarding Yakutat beluga whales. Of these, three held the most knowledge. Ten commercial fishermen reported interactions with the whales, though only one involved entanglement. A total of 23 scientists and natural resource agency staff reported beluga observations and 3 commercial air taxi pilots.

Conclusions

Little is known about the present day population of Yakutat’s belugas. What is certain is that they have been around since the early 20th century as indicated by George Valle’s testimony and the fact that the native name, Kuyeedaayee, is still remembered. It is also apparent from these interviews that the population may have been larger in the past though there is no indication that this population has ever been large in comparison to other known stocks.

This TEK study should have been conducted years ago when George Valle’s father and his peers were still alive. It is likely that the oral tradition regarding these whales was broken after the passing of that gen-

eration, and what remains are fragments of that knowledge. It is probable that this brief document has collected the majority of the remaining TEK available.

Acknowledgments

We would like to thank the U.S. National Park Service for generously funding both the elder’s meeting and the services of Henry Huntington. Henry has invaluable experience in TEK and its application. We would also like to thank the following people for sharing their knowledge with us; George Valle, Sr., Rudy Pavlik, Mike Pavlik, George Ramos, Andrew Gray, Larry Powell, Byron Mallott, Johnny Pavlik, and John Matsko. John Jansen and Shawn Dahle, with the NMFS National Marine Mammal Lab, provided regular sightings of belugas during shipboard and aerial surveys for harbor seals.

Literature Cited

- Castellote, M., K. M. Stafford, A. D. Neff, and B. Lucey. 2015. Acoustic monitoring and prey association for beluga whale, *Delphinapterus leucas*, and harbor porpoise, *Phocoena phocoena*, off two river mouths in Yakutat Bay, Alaska. *Mar. Fish. Rev.* 77(1):1–10.
- Hubbard, J. D., D. J. Hansen, and B. A. Mahoney. 1999. Winter sighting of beluga whales *Delphinapterus leucas* in Yakutat-Disenchantment Bay, Alaska. *Arctic* 52:411–412.
- Huntington, H. P. 2000. Using traditional ecological knowledge in science: methods and applications. *Ecol. Appl.* 10(5):1270–1274.
- Laidre, K. L., K. E. Sheldon, D. J. Rugh, and B. A. Mahoney. 2000. Beluga, *Delphinapterus leucas*, distribution and survey effort in the Gulf of Alaska. *Mar. Fish. Rev.* 62(3):27–36.
- O’Corry-Crowe, G., W. Lucey, F. I. Archer, and B. Mahoney. 2015. The genetic ecology and population origins of the beluga whales of Yakutat Bay. *Mar. Fish. Rev.* 77(1):47–58.
- Rugh, D. J., K. E. W. Sheldon, and B. Mahoney. 2000. Distribution of belugas, *Delphinapterus leucas*, in Cook Inlet, Alaska, during June and July 1993–2000. *Mar. Fish. Rev.* 62(3):6–21.
- Wolfe, R. J., B. L. Hutchinson-Scarborough, M. Kookesh, and L. A. Sill. 2013. The subsistence harvest of harbor seals and sea lions in Southeast Alaska in 2012. *Alaska Dep. Fish Game, Div. Substist., Tech. Pap.* 383, 79 p.