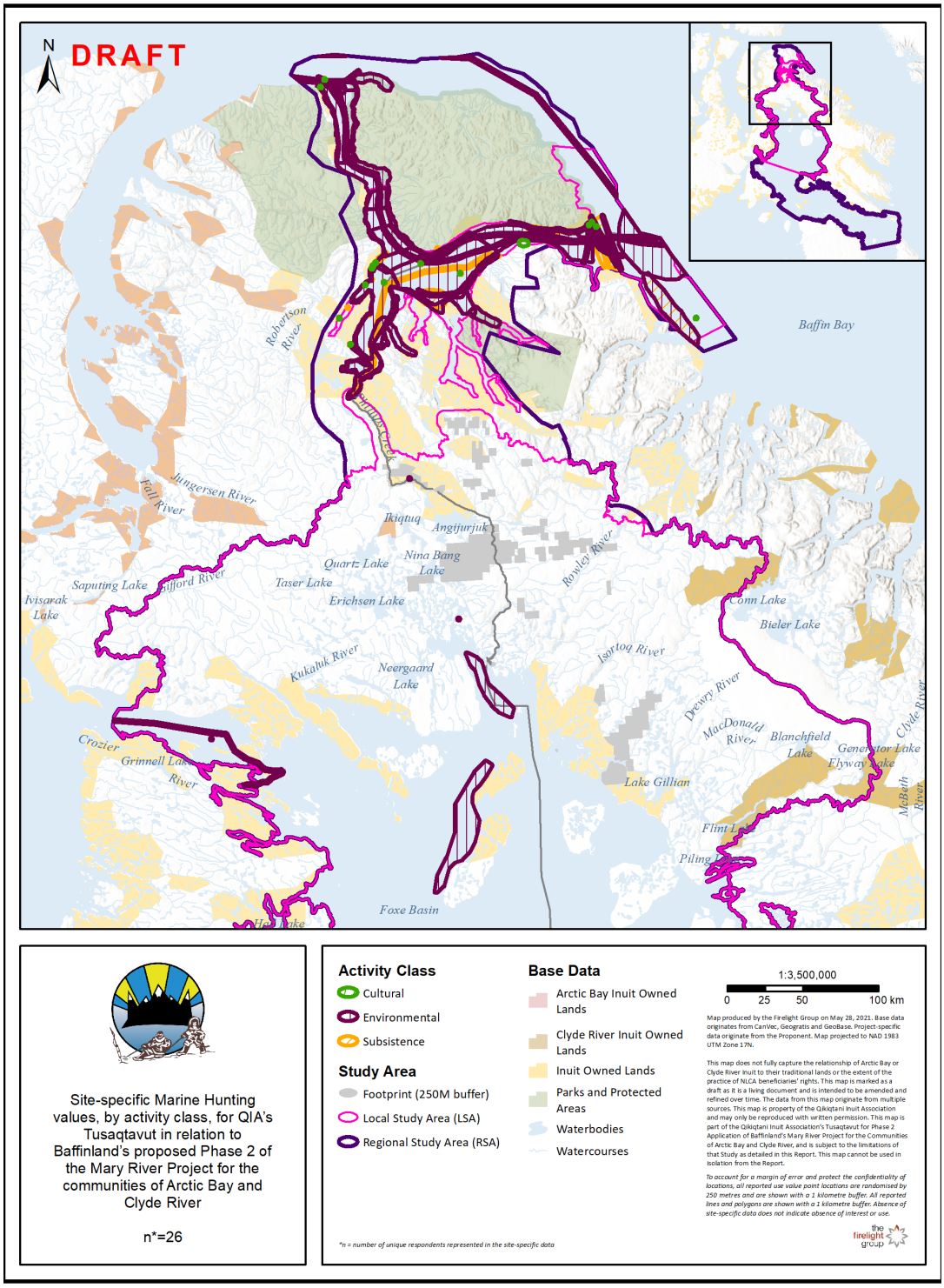

Figure 5: Arctic Bay and Clyde River site-specific Marine Hunting values reported in the Study Area

4.2.2 Importance

Marine Hunting encompasses a variety of species, bodies of knowledge, modes of travel, animal processing and food storage techniques (e.g., food caches), and harvesting locations and habitation sites. Study participants have used and continue to use the Study Area for Marine Hunting. The quotes below highlight some of their experiences hunting narwhal, walrus, and seal species in and around Milne Inlet, Eclipse Sound, Pond Inlet, and Baffin Bay.

> *So, his family would also go narwhal hunting around Milne Inlet. … Yeah, that was a prime narwhal hunting area all that along here. … Yeah, that whole area*. (C15 2020a, interpreted from Inuktitut)

> *There was so much narwhal that you could hear them as soon as you wake up and they'd be there all day … They're migrating but there's so many of them that they would – it could take all day into the night, that's how much narwhal there was … So they … would do all their narwhal hunting around that area [in Eclipse Sound].* (A01 2020, interpreted from Inuktitut)

> *Plenty of seal hunting around Mount Herodier area. … And then, you know, he would also remember people catching narwhal really close to Pond Inlet when he was a child, but he can't quite pinpoint what the year was. Because he lived in Mount Herodier [Igarjuaq], so people used to do some narwhal hunting around here as well.* (A04 2020, interpreted from Inuktitut)

> *[When hunting narwhal in Study area in late 1950s] They were rowing, no motor [boat]. … Sometimes there'd be a hunting party of more than five in one boat. … The reason they would be around there to catch narwhal is because they were also scouting for places to put cache. Yes, so that family would hunt around there also scouting for places to do a cache. ... They used to have lots of seals then around there. ... There would be bearded seal, ringed seal, harp seal. ...* (C15 2020a, interpreted from Inuktitut)

> *Before she was born her grandparents and her mother lived in that area [Quanaq near Pond Inlet] as a homestead because there was a lot of walrus over there… So typically it was an area to gather a lot of dog food with the walrus meat.* (C25 2020, interpreted from Inuktitut)

> *But since we didn't harvest any narwhals that time [at the floe edge at Baffin Bay], and the main hunter wanted seal meat, young seal meat. So, he decided to hunt the seals … and we got lucky that the young seals came up, and we harvested the two seals. That's all he wanted to harvest, and he said that was enough for now.* (C04 2020)

In addition to the species highlighted above, the site-specific data (Sections 4.1 and 4.2.1) shows participants' Marine Hunting values also reflect knowledge and use related to polar bear, beluga whale, bowhead whale, and spotted seal. Further, Marine Hunting values encompass the northern and southern portions of the Study Area, including

Milne Inlet, Eclipse Sound, Navy Board Inlet, Pond Inlet, Baffin Bay, Bylot Island area, the North Baffin coastline, and Steensby Inlet.

Participants' use of the Study Area for Marine Hunting is supported by their detailed knowledge of its ecology including the seasonal movements and behaviours of many species. Narwhal, for example, is a highly valued country food animal harvested in the Study Area and participants identified a range of habitat values for the animal such as migration routes, calving and feeding areas, and refuge areas for predator avoidance.

> *So as soon as the ice retreats and there is open water, that's when the Narwhals would come here to their calving grounds … When Narwhals are congregating in mass numbers, that's when they're reproducing...* (A05 2020, interpreted from Inuktitut)

> *In the narwhal season, hunting season, the whales come in from Baffin Bay, so they either come through Pond around Navy Board Inlet and then on around to our area, or even past it. So, springtime, around the start of April I start spending time at the floe edge …* (A07 2020)

> *They go through there; they go through there to Arctic Bay and Navy Board Inlet … because of the hunter's observation, they watch the migrating patterns of the narwhal, but she knows that they do migrate … through Eclipse Sound and Navy Board inlet into Admiralty [Inlet].* (A10 2020, interpreted from Inuktitut)

> *… the narwhals go migrating to the port site and they usually go, go this area where killer whales can't reach them. … I've seen lots of narwhals ... From when the ice breaks out, I think it's late July to October, September, late September. ... they're just trying to be in ... a shallow area where killer whales can't reach them.* (C16 2020)

> *[In] 2017, 2018, summertime when the fishing commercial fishing harvesting [out of Pond Inlet] had slowed down slightly, he was allowed to use his free time to go narwhal hunting. … There's a lot of narwhal in that area. … Because of the richness of the plankton and the feed of narwhal around that area, is the reason why there is a lot of narwhal there.* (C01 2020, interpreted from Inuktitut)

As the preceding quotes illustrate, Marine Hunting is strongly influenced by season. The quotes below highlight how time of year and changes in sea ice and daylight determine what animals are available and from which environments. Ice condition is an important body of knowledge that enables safe hunting and access to harvesting areas. Ice conditions vary with the season with the floe edge utilised heavily in spring for multiple species, especially narwhal and seal hunting.

> *So they go to the floe-edge between May and June, when the daylight starts to hit. And in June it's mostly narwhals, but from April, May, it could be ring seals, bearded seals, walruses being harvested, but they shift their focus to narwhals when June arrives, with daylight — 24-hour daylight, then you*

> *could travel more and be out there more.* (A06 2020, interpreted from Inuktitut)
>
> *And if we're not hunting down towards the floe edge during the wintertime, me and my father or whoever I decide to go hunting with, we're hunting along the shores, seal hunting. These are just day trips.* (A07 2020)
>
> *When we first went to the floe edge, the first thing I saw, because I love to hunt animals, narwhal – I saw narwhals right away when we reached the floe edge. We spent a couple of days down there and I saw narwhals, seals, quite a bit of birds – different kinds of birds.* (C04 2020)
>
> *In June/July, end of June that ice starts moving out … So, we are always careful of not to drift with the ice because there's big ice pieces that come right off, and they could be – you could be on a piece of ice where it's four or five kilometres long and it's about 50 kilometres or so wide. So, we're always on the edge, at the floe edge. But this is where now we're hunting during the springtime.* (A07 2020)
>
> *During springtime we're all here … at the floe edge … Hunting seals, guiding sport hunters. After May we start going there for narwhal hunting.* (A15 2020)
>
> *… to get a seal from the open floe edge, they say it tastes better ... I think they're traveling more, they're not eating the exact same food, same fish.* (C11 2020, interpreted from Inuktitut)
>
> *I like to hunt on the new ice, seal hunt on the new ice, because they're a little bit easier to catch and sometimes you're able to watch the seal come up close under the ice to the breathing hole … You don't really clearly see it, but you're able to tell the shadow coming. And the wintertime, that's where I spend a lot of my hunting.* (A07 2020)

There is also a seasonal dimension to Inuit food consumption. Some foods are eaten based on their availability at different times of year, while others may be preserved and eaten year-round. In-ground food caches, for example, are commonly used for narwhal. The quotes below highlight the importance of a variety of wild foods such as narwhal, seals, and polar bear.

> *… so the narwhals that we hunt and eat pretty much all year 'round if we have enough of it. And we can eat a lot of it. The blubber anyways.* (C06 2020)
>
> *… [I stop hunting] when I have enough meat in the freezer to last the winter or if I have enough cache to age for the winter, even if there's still tags, narwhal tags, I tend to come back. Like this year, like I said, I caught maybe seven, or six or seven during the summer season.* (A07 2020)
>
> *… I'm a polar-bear meat-eater, I like polar bear meat in the spring and summer, that's the time ... they don't walk as much in that part of the time,*

> *so the taste slightly changes. I eat polar bear meat anytime of the year …* (C11 2020, interpreted from Inuktitut)

> *Yeah, they, they went seal hunting as well, because the seals were very delicious.* (C21 2020, interpreted from Inuktitut)

> *And of course, [while hunting narwhal] we're at the same time hunting for anything like seal or birds, so anything. During that time, we're trying to harvest as much as possible to put caches – If I catch a whale, that I'm going to cache them in the ground.* (A07 2020)

Marine Hunting skills and knowledge are often passed down through family while out on the land, and Inuit often begin hunting and learning at a young age. Participants recalled their own early hunting experiences, learning about the migration and arrival of game, and contributing to the continuity of Marine Hunting knowledge through spending time on the land with younger generations. As the quotes below indicate, access to healthy animals and harvesting areas is foundational to knowledge transmission and the continuity of Marine Hunting practices.

> *I started going to the floe edge maybe, I was just a young boy, with my father. I don't remember what year it was but I know I was probably around eight, nine years old. That's when my father started bringing me down to the floe edge to show me, or what really happens down there.* (A07 2020)

> *I was fortunate enough this summer to catch a few whales along this coast. And my son was able to harvest this year as well. This year was not his first. He's nine years old and he was able to harvest one when he was six years old, over here – actually over here on that. This is called the Gallery in English, I believe.* (A07 2020)

> *And at an early age, you're taught with the migration and the arrival of game. … So, each community has their own calendar year … it's different in Arctic Bay compared to Pond, because of the differences in the weather … So that one year has different seasons. That's how they know what to harvest … Or they're taught by hunters and their family where to go in each season. (A05 2020, interpreted from Inuktitut)*

> *That [Bowhead whale] was the most satisfying hunt he's ever had in his entire life … Because it was such a huge animal … Yeah, the whole community – harvested. And they even exported some … Yeah. Yeah, that's a whole part of the hunting party, is to pass on the skills to the younger generation.* (A04 2020, interpreted from Inuktitut)

As highlighted in the quotes above, Marine Hunting is central to Inuit culture and identity. Marine Hunting provides value to Inuit that goes beyond obtaining sustenance. As communicated in the quote below, hunting provides an opportunity to see and appreciate nature, connect with other hunters, and fulfill the hunting way of life.

> *I love to hunt, it's my way of life. And when I travel to that [Study] area, I was — the way — I don't know how to explain it. It was beautiful. Because I, I love the outdoors, I love going camping and whatnot. And when I went out, I felt like I was welcome there, like from the animals that I saw, or the hunters that we met in the floe edge and on the trail. It's — I don't know, it's beautiful. I don't know how to describe it.* (C04 2020)

4.2.3 Impacted Baseline

During interviews for this Study, participants identified existing impacts on Marine Hunting values within and adjacent to the Study Area. They reported concerns regarding declining numbers and availability of preferred marine species, evidence of compromised animal health and meat condition, and contamination of the marine environment. As evident throughout the section below, the existing impacts described by participants are generally associated with existing Mary River mining operations, especially shipping from Milne Port.

In the quote below, a Clyde River participant describes the diversity and abundance of Eclipse Sound, Bylot Island, and Pond Inlet before mining activities began.

> *Prior to Mary River, there used to be a lot of narwhal in that, east of uh, Bylot Island… Beluga [whale] up there… And walrus. … Would cross to Bylot Island. … Lots of narwhal at Eclipse Sound. … Lots of seals around Pond Inlet area. ... young seals, springtime, there used to be lots over there ... Prior to Mary River project. … And they would catch narwhal up there and walrus up there, [inaudible] inlet. ... There are wildlife now... but not as abundant as they used to be. ... ...the other side, there's a lot more wildlife over there now. ... In [inaudible] inlet. ... It appears that there seems to be a migration since the project started, more towards the east. ... [Inuktitut spoken], yeah they are moving west. ... [C01] can speak from his knowledge of that area. ... They used to go up there a long time ago. ... It's a beautiful place, Pond Inlet, people there are so nice! … And it's so beautiful across the bay, and you feel so comfortable and welcome in any of the land areas, traditional use areas. … Because of the abundance of wildlife it just seems so welcoming. ... And that's how it was prior to the project.* (C01 2020, interpreted from Inuktitut)

Mary River operations (and especially ore shipping out of Milne Port) were commonly attributed as a cause of reported declines in marine animal abundance in the Study Area, particularly in narwhal and seal populations. Participants noted that these species and marine mammals, generally, are highly sensitive and typically avoid noise and development.

> *Marine wildlife do not like noise and the accounts coming from the people in Pond Inlet is because of the noise from the ship that the marine [wildlife] just dispersed themselves, because they like to be in an area where it's less noise and less disturbance. Because they're very sensitive animals.* (C15 2020a, interpreted from Inuktitut)

> *[The Mary River Project] already has an impact, impact on the animals. … Like, a lot less caribou being caught by Pond [Inlet people] in that area. And hardly any narwhals all summer long. They had two narwhal hunts in the beginning of the summer but … They had to travel near Arctic Bay to harvest narwhals. ... [The narwhal numbers started declining] When they – when the project started. ... The seals, there've been a lot less seals up there. That's what I've hear on my – With my friends from Pond. ... Yeah, [because of] the, the shipping route.* (C03 2020)

> *Since it [Mary River Project] started the shipping, it's already noticeable that they're [narwhal are] not around there now.* (A01 2020, interpreted from Inuktitut)

> *He used to narwhal hunt around there [Study area]. There was a lot of wildlife back then [1950s] around there, lots. … they didn't even have to try really hard to hunt for animals, because – because of how plentiful they were. … Not [plentiful there] anymore. … the biggest factors are shipping and orcas because the increase of orcas coming up around that area.* (C15 2020a, interpreted from Inuktitut)

> *Yeah, narwhal hunting, seal hunting, fishing, have been affected [by mining activities] … They say there's like quite a bit less activity with the marine life in that area.* (C04 2020)

> *… even before the expansion, it's – there's already adverse effects that the hunters don't find as much wildlife as they used to … So, wildlife, marine life … they run away from anything that could be considered posing danger, and the noise of the ships to them is posing danger. They can deal with other marine life, because they don't make as much noise as the ships would, but he thinks that because they're not all that familiar – would be familiar with the constant noise, that they are already dispersing.* (C15 2020b, interpreted from Inuktitut)

> *But the thing is like with the mining activity it appears to be like the animals are retreating in a way. Seem to be going further away from the activity.* (C18 2020, interpreted from Inuktitut)

> *They have already affected a large part of our area. They [the Project] are having an impact on the wildlife, our way of life and our food sources … The wildlife is being affected in numbers near Pond Inlet. They are reducing in numbers. Because the wildlife is moving away from Pond Inlet area, they are moving towards Arctic Bay. For example, from Spring till August, we had narwhal while there was hardly any near Pond Inlet. The seal population is being affected as well where we see less.* (A12 2021)

While narwhal and seal populations appear to be declining in the Study Area, other areas nearby such as Admiralty Inlet (Arctic Bay) have experienced an influx of these species. Several Study participants believe the recent timing of this shift suggests that Mary River shipping and port activities could be resulting in the movement of some

animals out of important habitat areas, including calving areas, in the Study Area where they were previously traditionally abundant.

> *And then last year, they started seeing the decline in narwhals in Arctic Bay … And then, this year, in the summertime, they had no narwhals there [Pond Inlet] … And then, in the summertime, community members from Pond Inlet were going to Arctic Bay to go harvest narwhals …* (A12 2020, interpreted from Inuktitut)

> *… there was a family that travelled all the way to Arctic Bay to go narwhal hunting from Pond Inlet … Yeah because of the reduction of narwhal they go to Arctic Bay because there more narwhals over there … It looks like some of the narwhal has migrated around Admiralty Inlet to get away from the Milne area and the activity area …* (C24 2020, interpreted from Inuktitut)

> *So he feels that there's never been any hooded seals in Arctic Bay area, but since the shipping has started, and the project began, that some marine life, such as the hooded seal, was caught around Admiralty Inlet, and normally they don't frequent around this, in there. They frequent more over in the Pond Inlet area.* (A04 2020, interpreted from Inuktitut)

> *So, two years ago, Pond Inlet started noticing and experiencing that there was less wildlife in Lancaster Sound, all the way to [Milne], Milne Inlet … And then, they were telling – the HTO was communicating to the HTO here in Arctic Bay saying that the seals are decreasing in numbers and there's hardly any seals anymore … So, two years ago, when Pond Inlet started expressing all our seals are disappearing, and sure enough, all the seals from Arctic Bay were basking on the – on Victor Bay here, there was a lot of seals that came, that's unusual for them, and they were, like, in awe, like, why are these seals here? … So, all the hunters were in awe and confused where all these seals were coming from. After communicating with the community there, they came to conclusion that it was all the seals from Arctic Bay that came here – from Pond Inlet to Arctic Bay, the seals came here.* (A12 2020, interpreted from Inuktitut)

> *So the one change that people of Arctic Bay have noticed is – and she's just now speaking for herself, is the amount of narwhal that are now going into Arctic Bay … So it was observed that there was a lot of – lot more narwhal around Arctic Bay, up until August, even last … week. But this summer there was quite a lot of narwhal …* (A08 2020, interpreted from Inuktitut)

> *So, traditionally, this is a calving ground for Narwhals, in Milne Inlet … But this year, [A05] heard that they're not reproducing here anymore … So, [A05] thinks that the ones that will be reproducing here [Admiralty Inlet], stayed around here more to get away from the shipping activity and all the noise.* (A05 2020, interpreted from Inuktitut)

As described in Section 4.2.1, seal species are among the valued food animals that have been traditionally reliable in the Study Area. One Study participant expressed

concern that early season shipping and ice breaking is disrupting sea ice habitat relied on by seals in the Pond Inlet area.

> *I've been up in Pond when it was beginning of July, and there was already ships that was breaking through the ice when there was ice. The seals are basking that time of the year. They do – they are basking and that's already had an effect. And I saw quite a bit of seals near the shoreline. They don't spend – seals don't spend near the shoreline when there's ice. They spend their time on top of the ice. … So yes, there was already affected.* (C04 2020)

Several participants reported that since the start of mining activities and shipping in Milne Inlet the quality and condition of animals as declined. Both whales (including narwhals) and seals were characterised as "skinny" and lacking blubber relative to the participants' understanding of normal physical condition. Sensory disturbance from Milne Port activities and shipping, increased predation, and changing ocean conditions were noted as potential factors.

> *And so, they [Pond Inlet Inuit], they hunt a few whales, they hunt those few whales, but they were so skinny, no blubber, they haven't eaten for weeks. And that's where they go eat arctic char in Milne Inlet. Arctic char and other things, shrimp and what not. Halibut, they eat up there in where it's deep. So, we see what's happened in Milne Inlet, is what we fear is going to happen all along the coast.* (C17 2020)

> *So, by fall time, Narwhals are usually fat and ready for the winter. But he doesn't know if it was predation that caused them not to – like either they ran out of food and they stayed there, it might have been predation that – or what. He doesn't understand why. But the main difference that he observed was that their fall Narwhals were skinny … That's, that's the simplest explanation is some Narwhals behave – like they run away from noise … So, this year is an indicator, indicator that this is impacted by the mining activity, or the shipping route being so close and all the ships activity…* (A05 2020, interpreted from Inuktitut)

> *Yeah, shipping activities when they start shipping to Milne Inlet. Every mammals are getting little bit different. They're a lot skinnier. [Inuktitut spoken] They scare very much right away now. … They're getting hard to hunt.* (C20 2020)

> *Before the mine started, in the past, the mammals were a lot fatter than last time. They – they used to be very fat before the mine start. And the migrations of narwhals used to be a lot narwhals too on that area. Used to be a lot of narwhals too, but it doesn't have really much narwhals anymore.* (C20 2020)

> *Oh yes, there's gonna, there's already have been an effect on the narwhals because I hear the narwhals up in the area are skinnier. So that means they're moving more, they're not eating as much. So, this [mine has] already affected marine animals.* (C04 2020)

> *Because she's been doing skins all her life and sometimes she notices that the skin, like the inside of the skin, is not the same … She thinks that with the slow global warming up the ocean currents is having an impact on the quality of the seal skin. Plus, the – so there's the seal meat, blubber, and then there's like the seal between the blubber and the skin inside … it's more like a harder version of the blubber … That sometimes we would eat when our mum was doing the skin. So she feels that's changed a bit but the fur seems to be much thinner than when she … Because that layer between the blubber and the skin, we used to snack on that when our mums were doing the skins. And she would feed to her children, have a little bit herself, but today it's seems more – not as dense. Like it's more like – not slimy but not as appetising.* (A03 2020, interpreted from Inuktitut)

In addition to the aforementioned changes in the abundance and quality of marine mammals in the Study Area, multiple participants reported that mine dust deposition is already occurring in the Study Area, including in harvesting areas for seal and other valued species.

> *She didn't see the dust herself but she's heard from other people in Arctic Bay that it's evident that it's there and they can smell it, like the dust … Yeah, it's present in the air. So that's one thing that she was told that they notice … And she's seen some pictures posted on Facebook about seal [breathing] holes [aglu] being red, from the dust travelling in the air.* (A08 2020, interpreted from Inuktitut)

> *Hearing about the stories where they do the mining — the sand, or the red sand, I don't know what you call the iron. They said, in this area … there's already a big impact on the sediments … It goes right up to the ocean. And I've seen a video on Facebook where a hunter was trying to hunt seals in this area [Stephen's Island/Milne Inlet]. The ice on top of the ice is all red. And that's from the iron.* (C04 2020)

One participant described how dust can make its way up through the food chain to marine mammals.

> *The dust particles as they settle anywhere can be consumed through the food chain by fish, sculpins, shrimp, any marine life will consume particles from the mine.* (A09 2021)

Participants from Arctic Bay noted that mining-related dust deposition is similar to that seen during the operation of the Nanisivik mine.

> *Now he's noticed too that it used to be white, pristine sea ice, but now it's … From the dust coming from the mine … It was the same thing when Nanisivik Mine was operating. You could see yellowish tint on the sea ice back then as well.* (A13 2020, interpreted from Inuktitut)

> *I used to work when – at Nanisivik – when the raw material was being loaded on to ships. When the skirt attached to the conveyer to dump the ore, was*

> *too short and it was windy, the dust would be blown away. There would be black soot everywhere. And it affected seals and others that may have consumed the snow where the dust fell. 20 years have passed, the seals are finally coming back to that area as they had disappeared from the Nanisivik area. The mine also affected the walrus and seals back then. They are slowly coming back …* (A17 2021)

The collected data demonstrate that existing Mary River mine operations, especially Milne Port activities and shipping, are understood by Study participants as the leading causes of existing impacts on Marine Hunting values in the Study Area. The current impacted baseline condition is characterised by reduced abundance and quality of marine animals valued for hunting, and evidence of contamination related to the introduction and dispersal of ore dust into the marine environment. Any potential impacts from the Project on Marine Hunting will be experienced by Inuit from Arctic Bay and Clyde River within this already constrained environment.

4.2.4 Project Interactions

Based on their knowledge of the area and their experiences with existing Project components, participants have a range of concerns about potential interactions between the proposed Phase 2 Project components and their Marine Hunting values. Participants from both communities anticipate Project interactions with Marine Hunting values in the Study Area that could also result in impacts extending beyond the Study Area in some cases (e.g., shipping corridor impacts). The Project interactions summarized in this section would occur in addition to, and potentially amplify, existing impacts described in Section 4.2.3.

Study participants emphasised the importance of protecting marine animals and the hunting way of life that is critical to their identity and an expression of the Inuit way of life. As expressed in quotes throughout this section, migratory species such as narwhal are understood to be especially vulnerable to shipping, particularly given the intersection of Project shipping and migratory routes in the Study Area.

> *That route, we don't want that at all. Arctic Bay is going to be affected. Narwhals that migrate through here [points on the map], up to that area is going to be affected. In the fall when the narwhals try to come back, they're going to be affected. In turn, our lives, our hunters are all going to be affected. So that's what we don't want, 'cause we come to an agreement, the five communities that, the number one thing we want to do is protect the waters and the animals. Cause that's who we are, that makes us who we are, and we don't want that jeopardized at all. So that's the bottom line.* (C17 2020)

Participants expressed concern regarding the increased shipping congestion and relatively constant presence of both anchored and moving ships in Eclipse Sound, an important habitat area for marine species and Marine Hunting practices (discussed in Section 4.2.2).

> *So, he feel, he thinks that, that Eclipse Sound is going to be congested with the ships [with the increased shipping in Phase 2], [Inuktitut spoken], and I think there's going to be a waiting state area for these ships to offload … (*C01 2020, interpreted from Inuktitut)

As discussed by several participants, increased Project shipping traffic and noise from the Milne port would occur along a shipping route which overlaps migration corridors and other valuable habitat areas for several species, including narwhal, bowhead whales, and seals. In addition to migration, narwhal, for example, are known to use the Study Area for feeding and calving. As described in Section 4.2.2, narwhal, seals, and bowhead whales are valued for Marine Hunting and country food security.

> *Yeah, he knows that there's going to be an impact [from increased shipping traffic], and because the area that he outlined is also a calving and feeding area for the narwhal. So, he knows with the noise coming from – the noise from the ships coming from Milne Inlet, all the way through Eclipse Sound, that corridor will be affected from the noise. ... They'll stay away from the noise. … And he knows for sure that they will be moving away from their usual – their traditional feeding and calving area, because of the increased shipping.* (C21 2020, interpreted from Inuktitut)

> *And [I'm concerned about Project impacts in] the shipping area, because that's the only route the narwhals go up to Arctic Bay [is through Eclipse Sound].* (C03 2020)

> *[A04] is concerned about the shipping, increased shipping as it relates to bowheads and narwhal, because this is, like a natural migration, to get to the other side, for the narwhal as well. So [A04] thinks there'll really be an impact for both bowhead and narwhal …* (A04 2020, interpreted from Inuktitut)

> *Yeah, for sure [the shipping traffic will affect the narwhals]. … and this is the route for the narwhal migration, all the way from, all the way to these fiords, and that's where the narwhals go, because there's always lots of narwhals passing by Pond Inlet. And from the ships and all of the coast guards ... all the ore ships could really affect the narwhals ...* because all the noise … (C16 2020)

As noted above, shipping noise is a primary concern for Study participants who understand noise to have a detrimental effect on marine life overall, and note that some marine mammals are especially sensitive to noise including narwhal and seals. Constant presence of ships and shipping noise, impacts on marine animals' hearing, and noise disturbance in foraging areas specifically, were all stated concerns.

> *So … all this abundance of wildlife around here, Navy Board Inlet. Abundance of marine life. … All kinds of bird. … He says that it would be most affected by the constant noise of the ships, because marine life is very sensitive to noise.* (C15 2020b, interpreted from Inuktitut)

> *Seals can be impacted [by the Project], because they can go to the fiords or somewhere along the way and they – and they [ships/ship noise] can impact their hearing or, or their food, where they go eat.* (C16 2020)

> *Narwhals for one thing, and maybe some seals [would be affected by ship traffic related to the Project] and maybe orca … Yeah [orca] they're chasing narwhal so and there's, from according to we can understand, there's starting to be a lot more every summer because of the longer ice-free conditions ...* (C11 2020)

As described in the quotes below, Project increases in shipping traffic and noise are anticipated to further displace marine life from the Study Area which features preferred hunting areas, migration routes, and other important habitat areas in Eclipse Sound and Baffin Bay, among other areas. For example, the shipping route was noted to intersect narwhal migration corridors, feeding locations, and calving grounds used during the summer ice-free period. Participants also anticipate potential reductions in local seal populations. As noted previously, all of these species, and marine mammals generally, are understood to be highly sensitive to noise and shipping disturbance.

> *[Increased number of ships and shipping noise] will probably take away marine mammals … you won't see as many seals when there's ships, or narwhals, as you usually do, so it would it will have that effect.* (C11 2020)

> *Marine life, especially whales, have acute hearing ability because they have – that's they're adapted to that for survival. So, there has been scientific research done where audio was recorded underwater to see how far the whales can hear. … So, [C15] is concerned that with the increased shipping and them hearing all these noise is that they're just going to – they've just going to just not stay.* (C15 2020b, interpreted from Inuktitut)

> *So, he believes that [shipping route] is going to have a major impact on the [narwhal] migration patterns. They're either going to scare them off or push them away, since it's so close to their like good hunting spot.* (2020, interpreted from Inuktitut)

> *It's [the increased shipping under Phase 2 is] going to scare most of the seals away. … And probably all the narwhals*. (C03 2020)

> *… we fear that the wintertime, like, right now, we fear that they [narwhal] might migrate to Bering [Sea], Beaufort area … To winter there. So that's what we fear. Because they winter here in Baffin Bay, but the ships are still going, and it's still very noisy, and they're not coming back. … So, that's what we, what we want to do and what we fear. All this coast is going to become empty. All along that coast, that's our biggest fear, the narwhals are not going to be around here anymore.* (C17 2020)

> *Seals and narwhal would be affected around that area. … They could be diverted to their natural habitats, like through their cycle, but if there's ships around there and there's too much of ship impact, then they – there – there –*

> *they could divert to other areas, like they will not, they will move away from there. … It's already happening today according to the accounts by people of Pond Inlet. … Three to four years now.* (C24 2020, interpreted from Inuktitut)

> *She is concerned about the increase shipping will have a huge impact on the marine wildlife and she feels that they're all going to … disperse and go to different places, they'll try to go there, but because of the noise of the constant ships route going back and forth, they can try to go back, but if they're too disturbed by it, they would go somewhere else …* (A10 2020, interpreted from Inuktitut)

Any displacement of marine species from the Study Area would further reduce marine animal hunting opportunities for hunters from both Arctic Bay and Clyde River. Hunters from both communities continue to hunt in Navy Board Inlet, Milne Inlet, Pond Inlet, and Baffin Bay (among other areas) for a variety of species including narwhal. As highlighted in the last quote below, the spring timing of the beginning of shipping season coincides with the ice break-up when narwhals would normally be migrating into Milne Inlet and the Study Area generally. Participants from both communities stated that local narwhal populations and hunting success have declined in the Study Area and that some Pond Inlet hunters are now traveling to hunt narwhal as far as Arctic Bay (Admiralty Inlet) and Igloolik areas.

> *He's convinced that if the project increases within a month it should be – there'll be no marine life left whatsoever … Because Pond Inlet is now going to Admiralty [Inlet], to Igloolik to go, they went narwhal hunting over there this summer … Pond Inlet guys came by boat this summer. They went around here [Arctic Bay/Admiralty Inlet].* (A13 2020, interpreted from Inuktitut)

> *Yeah, the nearness of that channel there is also a concern. … there will be definite impact on the marine wildlife there … And then have the hunters having a harder time catching them.* (A04 2020)

> *Yeah [increased shipping will affect narwhal]. Guaranteed, because [more shipping is] going to scare them [narwhal] away from this area to other places. ... Especially in the spring they'll be – start opening up the [shipping] route in the early spring. ... When the narwhals still hasn't gone to the inlet. ... So, it's going to scare them away. ... It's going to hurt – it already has affected [hunters in Pond Inlet]. ... They're catching a lot less narwhals then in the past.* (C03 2020)

> *So the entire shipping route, concerned about the impact on the marine life and how, like other people have said, that [animals] are not going to be frequenting in the areas that they used to, because of the increase in shipping.* (A04 2020)

One participant expressed concern regarding shipping impacts on walrus and walrus habitat and hunting areas in Navy Board Inlet, having learned that walrus are highly sensitive to disturbance and easily displaced from areas for long periods.

> *Because we were always told as we were growing up never to bother the walrus that much because when they get scared they go the furthest to run away from what they're scared of. Even they're big, big mammals, but. ... Yeah, yeah [they are displaced] further. ... [It would be] Many, many years [before they would come back if displaced]. Like, back in early 1900s my grandfather said his father used to hunt walrus around and after the whalers were, because they were collecting all the blubber and the tusk here, and they still haven't come back. ... We're finally gradually seeing one or two a year now [in Clyde River], but.* (C03 2020)

A Clyde River participant expressed concern that Project effects on marine species and Marine Hunting values resulting from increased shipping will be experienced as far as Clyde River as shipping extends beyond the Study Area and Baffin Bay into Lancaster Sound and Davis Strait.

> *So, [Phase 2 is] going to increase shipping activity on both ends up to about 176 ships that are going to be going through Lancaster Sounds and going down Davis Straight and Baffin Bay and they'll be passing by Clyde River. ... He feels that we should – we are – like, we're going to have to be aware that anything marine base, any narwhals, seals, all the seal types, everything that we – anything on the [Inuktitut spoken] on the bottom, all that is going to be impacted by increased shipping activity*. (C05 2020b, interpreted from Inuktitut)

One participant emphasised that they would avoid hunting in the Study Area if the Project is approved because, in their experience, shipping pressure on marine animals contributes to reduced animal quality (e.g., overall size, body fat or blubber content) tends to diminish as shipping increases in combination with other factors.

> *Yeah. When they start mining, I don't want to go hunting to that area. … Because the animals on that area they get really skinny when they – when they're going … Yeah, when they're running away from the ship or anything. Killer whales, they start very skinny. … Ever since when the mine started.* (C20 2020)

Introduction of contaminants into the marine environment and uptake by marine life was also identified as a concern by Study participants that could be amplified by the increased number of ships and shipping. Anticipated sources of contamination include ballast water exchange and fuel leaks and spills. Furthermore, one participant expressed concern that increased shipping in combination with regional navigation hazards — namely, strong currents and floating sea ice — increases the probability of a major shipping incident and fuel spill.

> *With all the – if Phase 2 goes through, that's going to increase shipping activity. And with the current quota that they have for expansion and transporting, they already know that it has environmental impacts right now in the ocean. And they hear of ships dumping some substance in these areas and it's not only going to the water, it's also going to like the seals and any invertebrates or anything that may be in these waters. So … there's already*

> *impacts being seen and reported and then it's [Phase 2] just going to increase the impacts in a faster rate and more. Yeah.* (A05 2020)

> *He's concerned about any marine life around that area that would be impacted by the fuel spill from the ship, including planktons and, and like minute little feed that other marine feed off of, they would be affected, as well. … So, this is a sensitive area. … it's a concern for us.* (C15 2020b, interpreted from Inuktitut)

> *So, the first biggest concern he has right now is because of the, the permanent ice shield, it, it's always calving … There's – there could be a possibility because there's strong currents as another participant had said, there's this huge current that goes between Greenland and Baffin Island, along with the, the permanent ice calving, that there could be a potential disaster with these iron ore ships, if there is that many going back and forth. … The biggest concern is not necessarily the iron ore that the ship is carrying, but a fuel spill from the ship on impact.* (C15 2020b, interpreted from Inuktitut)

In addition to anticipated impacts on Marine Hunting values associated with increased ore shipping, multiple Study participants are concerned that ore production increases in the Project case will result in greater ore dust contamination in the marine environment in the vicinity of the Milne Port. This concern was attributed to the close proximity of the ore pad to the water's edge, as well as the perceived inadequacy of Milne Port dust control measures to date compared to the use of enclosed facilities at the previous Nanisivik mine near Arctic Bay. As discussed in section 4.2.3, ore dust dispersal into Milne Inlet and beyond is widely reported. If the Project is approved, production increases could intensify dust dispersal and further expose Marine Hunting values such as narwhal, sea birds, and waterfowl to contamination.

> *So the infrastructure developed here [at Milne Port] is not complete. When the Nanisivik Mine was existing, they had proper techniques and enclosed that area so it was enclosed so the wind can't blow [dust] any direction. But the infrastructure here is not complete but they're still using it for loading and offloading.* (A09 2020, interpreted from Inuktitut)

> *I do [have concerns about increased ore transport and shipping], because on ore pad it's really close to the waters, hey, it's really, really, really close, it's like 200 feet from the water where they get the – get the ore. And if they can – if they can move it just a little bit more away from the waters, it would probably help our animals more. Especially when there is usually lots of caribous near the ore pad or near the ore area. ... I know there's lots of geese and goose and foxes and ravens from all the way here. ... Because from, from the hunters, what I heard, this area it's pretty pink during wintertime, when it's – when it's ice, because from all the dust that's collected from the ore pad and Tote Road.* (C16 2020)

As discussed in Section 4.2.2 and 4.5.2, the ability to travel safely on sea ice is vital for accessing Marine Hunting areas in the Study Area and on Baffin Island overall. One

participant expressed concern that increased rates of ore extraction, processing, and transportation at the Project would in turn increase the scale and magnitude of dust deposition on sea ice in Project-affected areas resulting in earlier and more rapid ice thinning and spring break up, which would reduce Marine Hunting opportunities in ice dependent harvesting areas.

> *And as the years go by, it's going to expand further south because of, because of the dust and all that. And the ice will like, there'll be times that the ice will be gone a lot sooner because of the wind direction landing onto the ice. So, hopefully it won't happen for years and years. That's what we're hoping for, but we have a lot of hunters that go on the ice and that's the only way to travel to some areas that they go hunting to. So, if all that dust is blowing to the same direction it will thinning the ice faster.* (C26 2020)

The ability of hunters to safely access Marine Hunting areas in the Study Area could also be jeopardized by increased Project shipping. One participant discussed how sea ice formation (i.e., freeze up) could reasonably occur before the end of the shipping season, and Project icebreakers and shipping could disrupt sea ice formation and hunting as noted below.

> *The noise will definitely have an impact, but at the same time the – if they break the ice – if the ice forms up around November and they're still shipping it and it hasn't fully formed it will affect hunters' ability to access wildlife, marine life ...* (A04 2020)

Participants also identified potential negative impacts on Marine Hunting resulting from approved and permitted (but not yet built) Mary River mine infrastructure and activities (e.g., southern rail and shipping routes). Several participants expressed concerns that ore shipping from Steensby Inlet through Foxe Basin, for example, would disturb traditional hunting grounds and campgrounds, and valuable habitat for a multitude of marine (and terrestrial) species including walrus, fish, and sea birds. Potential impacts on walrus were noted as especially concerning because walrus meat is a valued country food for Inuit communities.

> *So Steensby … that's where the walruses congregate, it is their habitat. And Steensby is — or, residents of Igloolik are opposed and want to protect Steensby, because the shipping route is directly on the path of where the walruses live, or stay … All year round. This is — they don't move anywhere else, this is where they live all year round … Steensby is … very rich in wildlife and old traditional hunting grounds and campgrounds.* (A06 2020, interpreted)

Marine habitat disturbance, changes to marine animal populations and behaviours (including displacement of valued species), contamination, and reduced ability to travel and safely access harvesting areas resulting from the Project are anticipated by Arctic Bay and Clyde River participants, and would further impair Marine Hunting practices. Study participants expressed that Project effects and reductions in access to game would have long-term impacts on their ability to pursue traditional Marine Hunting activities in the Study Area that are integral to their way of life and food security. In

addition to Project (i.e., Phase 2) impacts, participants are also concerned regarding similar potential interactions with Marine Hunting values in the southern portion of the Study Area associated with approved and permitted shipping infrastructure at Steensby Inlet and shipping through Steensby Inlet and Foxe Basin. In light of the impacted baseline condition of Marine Hunting described in Section 4.2.3, Project effects would occur in addition to and exacerbate existing cumulative effects, and further diminish Marine Hunting in the Study Area. In summary, Arctic Bay and Clyde River participants anticipate the following interactions between the Project and their Marine Harvesting values:

- Impacts to important marine species' habitat and migration routes due to increased shipping traffic (including congestion and noise);
- Displacement of marine species from the Study Area due to increased shipping traffic (including congestion and noise);
- Reduced marine hunting opportunities due to the above interactions;
- Reduced animal quality due to perceived or actual contamination of marine species by shipping activities such as ballast water exchange and fuel leaks or spills;
- Avoidance of harvesting in the Study Area due to perceived contamination; and
- Impacts to sea ice harvesting routes due to dust and changes in ice due to shipping activity.

4.3 TERRESTRIAL HARVESTING

This section (Section 4.3) discusses the importance, impacted baseline, and potential Project interactions with the Inuit Valued Component of Terrestrial Harvesting.

4.3.1 Site-specific values for Terrestrial Harvesting

Table 6: Site-specific Terrestrial Harvesting values reported within the Study Area, by activity class. Numbers are cumulative with increasing spatial scales (i.e., RSA includes LSA and footprint).

Activity Class	Within 250 m of the proposed Project (footprint)		Within 5 km of the proposed Project (LSA)		Within 25 km of the proposed Project (RSA)	
	# of reported values	% of reported values	# of reported values	% of reported values	# of reported values	% of reported values
Cultural	6	12%	21	15%	24	15%
Environmental	25	49%	43	30%	48	30%
Habitation	1	2%	1	1%	1	1%
Subsistence	10	20%	66	46%	72	45%
Total	**42**	100%	**131**	100%	**145**	100%

The following Terrestrial Harvesting values were documented in the Project Study Area. The values are organized by Activity Class.

- **Cultural values** including: a caribou cache site; place name; an historic caribou hunting area; and numerous sites where caribou were processed and butchered after being harvested;

- **Environmental values** including: numerous caribou habitat areas, including calving areas and feeding areas; a fox habitat area; Canada goose nesting sites; snow goose nesting sites; an area that is known to be good habitat for small furbearers such as ptarmigans, weasels, arctic hare, lemmings, and fox; numerous caribou movement and migration corridors; and sites where caribou tracks were observed;

- **Habitation values** including: a historic campsite that was used as a base while hunting caribou; and

- **Subsistence values** including: hunting and kill sites for numerous species, including caribou, Arctic hare, goose, ptarmigan, puffin, rabbit, and wolf; a trapping area for ptarmigans, weasels, arctic hare, lemmings, and foxes; a harvesting site for mountain sorrel; a gathering site for edible roots; sites where blueberries were harvested; and sites where Canada goose, snow goose, and murre eggs are collected.

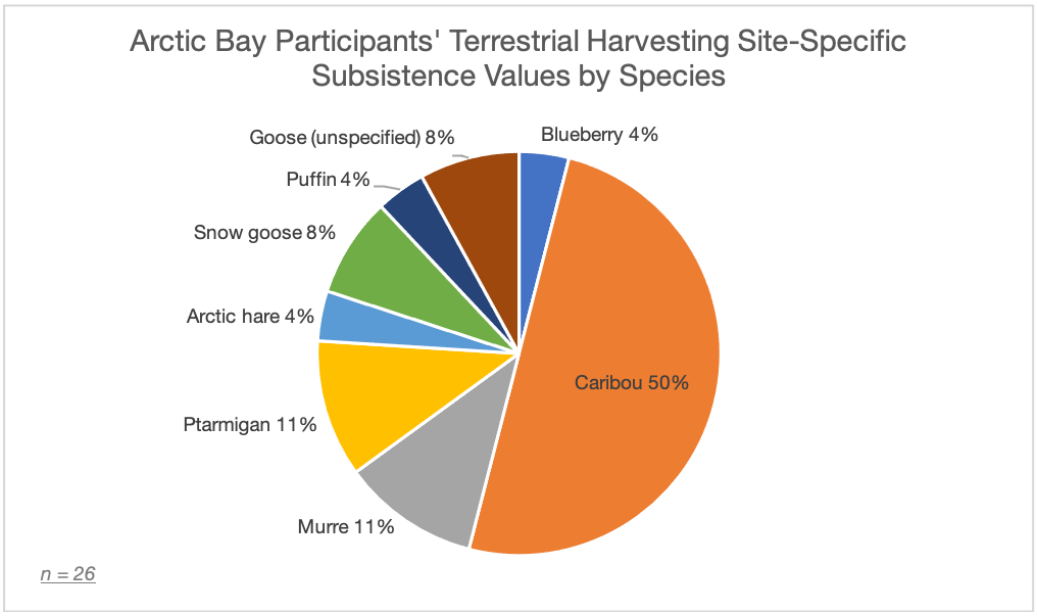

Figure 6: Arctic Bay reported Terrestrial Harvesting site-specific values by species in the Study Area

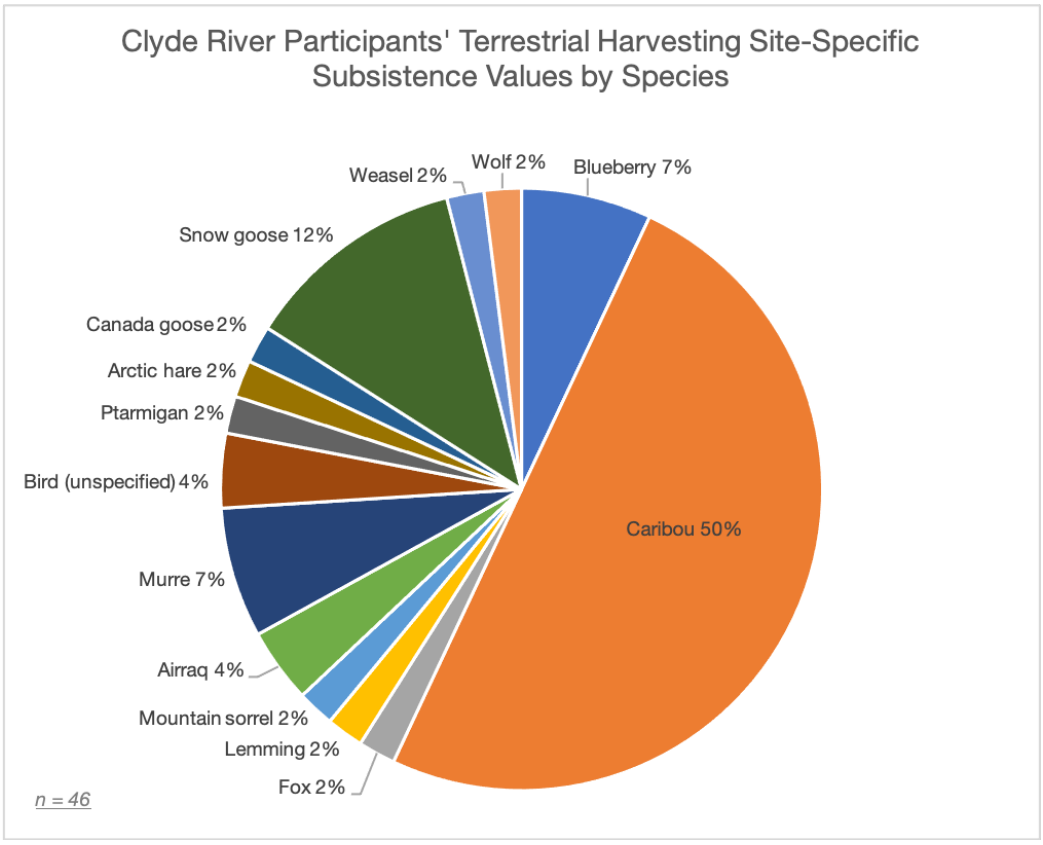

Figure 7: Clyde River reported Terrestrial Harvesting site-specific values by species in the Study Area