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Résumé de l'article

Cet article analyse la liste des noms yupik sibériens d'oiseaux de la Tchoukotka (Russie), à partir du *Dictionnaire de terminologie de subsistance traditionnelle du yupik eskimo asiatique* (*Dictionary of Traditional Subsistence Terminology of the Asiatic Yupik Eskimo*, n.d., [2010]), réalisé la biologiste russe Lyudmila Bogoslovskaya et l'experte de langue yupik Lyudmila Ainana. Il compare la liste d'Ainana et Bogoslovskaya avec d'autres listes de noms vernaculaires d'oiseaux compilées en Tchoukotka et parmi les groupes autochtones voisins de la partie alaskienne du détroit de Béring, ainsi qu'avec les nomenclatures linnéennes des biologistes pour la même région. La séquence des listes yupiit de noms d'oiseaux collectées entre les années 1930 et le début des années 2000 révèle une forte corrélation avec les changements linguistiques et cognitifs, les Yupiit de la Tchoukotka ayant été poussés au bilinguisme dans un environnement dominé par le russe, que ce soit dans le domaine du langage, des médias ou du système scolaire. À l'époque où les ornithologistes et les linguistes ont compilé les premières listes de désignations vernaculaires des oiseaux, les Yupiit de Tchoukotka avaient à l'évidence perdu certaines couches de leur taxonomie traditionnelle pour les oiseaux, mais des éléments de celle-ci peuvent être reconstruits. Alors que l'abandon des désignations traditionnelles des oiseaux se poursuit, les Yupiit empruntent activement des termes russes (ou en Alaska, anglais) pour décrire les nombreuses espèces d'oiseaux qu'ils rencontrent dans leur environnement.

Siberian Yupik Names for Birds: What Can Bird Names Tell Us about Language and Knowledge Transitions?

Igor Krupnikⁱ

ABSTRACT

This article analyzes the list of Siberian Yupik names for birds from Chukotka, Russia, from the unpublished “Dictionary of Traditional Subsistence Terminology of the Asiatic Yupik Eskimo” (n.d., [2010]), produced by the late Russian biologist Lyudmila Bogoslovskaya and Yupik language expert Lyudmila Ainana. It compares Bogoslovskaya and Ainana’s list against other lists of Indigenous bird names compiled in Chukotka and among the nearby Native Alaskan groups in the Bering Strait area, and biological (Linnaean) bird nomenclatures for the same region. The sequence of collected Yupik bird name lists from the 1930s to the early 2000s reveals a strong correlation to the advancing language and knowledge shift, as the Chukotka Yupik were increasingly driven to bilingualism by the Russian-dominated speech environment, media, and school system. By the time ornithologists and linguists compiled the first Native lists of bird names, the Yupik in Chukotka had already lost certain layers of their traditional bird taxonomy, but some of its elements may be construed. As the loss of traditional names for birds continues, the Yupik actively borrow Russian terms (or English, in Alaska) to describe many bird species they encounter in their environment.

KEYWORDS

Siberian, St. Lawrence Island, Yupik, Indigenous knowledge, birds, language and knowledge shift

RÉSUMÉ

Les désignations des oiseaux en yupik sibérien : Que peuvent nous dire les noms d’oiseaux sur les transitions linguistiques et cognitives ?

Cet article analyse la liste des noms yupik sibériens d’oiseaux de la Tchoukotka (Russie), à partir du *Dictionnaire de terminologie de subsistance traditionnelle du yupik eskimo asiatique* (Dictionary of Traditional Subsistence Terminology of the Asiatic Yupik Eskimo, n.d., [2010]), réalisé la biologiste russe Lyudmila Bogoslovskaya et l’experte de langue yupik Lyudmila Ainana. Il compare la liste d’Ainana et Bogoslovskaya avec d’autres listes de noms vernaculaires d’oiseaux compilées en Tchoukotka et parmi les groupes autochtones voisins de la partie alaskienne du détroit de Béring, ainsi qu’avec les nomenclatures linnéennes des biologistes pour la même région. La séquence des listes yupiit de noms d’oiseaux collectées entre les années 1930 et le début des années 2000

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révèle une forte corrélation avec les changements linguistiques et cognitifs, les Yupiit de la Tchoukotka ayant été poussés au bilinguisme dans un environnement dominé par le russe, que ce soit dans le domaine du langage, des médias ou du système scolaire. À l'époque où les ornithologistes et les linguistes ont compilé les premières listes de désignations vernaculaires des oiseaux, les Yupiit de Tchoukotka avaient à l'évidence perdu certaines couches de leur taxonomie traditionnelle pour les oiseaux, mais des éléments de celle-ci peuvent être reconstruits. Alors que l'abandon des désignations traditionnelles des oiseaux se poursuit, les Yupiit empruntent activement des termes russes (ou en Alaska, anglais) pour décrire les nombreuses espèces d'oiseaux qu'ils rencontrent dans leur environnement.

MOTS-CLÉS

Sibérie, île St. Lawrence, Yupik, savoirs autochtones, oiseaux, langue et changement des connaissances

Cultural anthropologists, ornithologists, and linguists have long viewed Indigenous names for birds, as well as for plants and other life forms, as a valuable window to people's ecological knowledge and cognitive systems (Berlin, Breedlove, and Raven 1966; Bulmer 1967, 1974; Hunn 1975). In the Arctic, naturalists recorded Indigenous words for birds among the people they visited since the late 1800s, often in a systematic way (e.g., Palmén 1887). In the 1950s and 1960s, recording bird names evolved into a concerted effort (Fay and Cade 1959; Irving 1953, 1958) under a new field known as “folk biology” or “folk taxonomies” (Berlin, Breedlove, and Raven 1966; Bulmer 1957, 1974; Majnep and Bulmer 1977). Today, the study of Indigenous knowledge of birds is called “ethno-ornithology” (Russell and West 2003; Tidemann and Gosler 2010). This article evaluates several lists of bird names of the Siberian Yupik people from Chukotka, Russia, and the adjacent St. Lawrence Island, Alaska, collected between the 1930s and 2015. These lists are compared to bird nomenclatures of other Indigenous people—the Chukchi, Iñupiat, Central Alaskan Yup'ik, and Athapaskan—and compared to the scientific (Linnaean) taxonomies used in academic literature, bird field guides, and among scientists, birdwatchers, tourists, and other non-Native visitors to the area.

Siberian Yupik is a cluster of related Indigenous languages and dialects within the Yupik branch of the Esko-Aleut family (Dorais 2010; Krauss 1971; Krupnik and Chlenov 1979; Rubtsova 1971), spoken in several communities in the southeastern Chukotka Peninsula, Russia, and on St. Lawrence Island, Alaska. In the 1930s, the dialect with the largest number of speakers—later called the Central Siberian or Chaplinski Yupik (Ungazighmiistun), after its most populous hub, the former village of Ungaziq (Russian, Chaplino)—was used to develop literacy and school education in Russia. It was then a thriving language with more than a thousand speakers, advanced Cyrillic-based orthography, and

printed literature (Krauss 1971; Vakhtin 2001). Today, Chaplinski Yupik is an endangered language in Chukotka, where it is spoken by a few dozen people, almost all of them elderly. A very close form is in use among culturally related Yupik people on the Alaskan St. Lawrence Island (total population ca. 2,200), of whom over a thousand actively speak the language. Children in both Chukotka and Alaska have Yupik language classes at local schools, but most possess limited fluency or even passive knowledge of the language (Schwalbe 2017).

The starting point of this study was an unfinished, unpublished two-hundred-page Russian manuscript titled “Dictionary of Traditional Subsistence Terminology of the Asiatic Yupik Eskimo Language” (in Russian, *Slovar’ leksiki traditsionnogo prirodopol’zovaniia aziatskikh eskimosov-yupik*), compiled between 1998 and 2010 by the late Russian biologist Lyudmila Bogoslovskaya (1937–2015) (Figure 1) and Siberian Yupik language expert Lyudmila Ainana



Figure 1. Lyudmila Bogoslovskaya in Sireniki, Chukotka, on one of her bird surveys, summer 1984.
Photo: Nikolai Konyukhov.

(after her Yupik name, Aynganga, b. 1934). Bogoslovskaya and I were field partners and co-authors for many years; we worked in the same area among the Yupik Eskimo and Maritime Chukchi people on the Asian (Russian) side of the Bering Strait. In the 1980s, Bogoslovskaya started recording names of various species of animals and birds from Yupik hunters and Elders. She later decided to combine her notes in a bilingual (Yupik-Russian) thematic dictionary and started working on it systematically in 1997–98, in partnership with Ainana and the late whaling captain Petr Tepegkaq (1933–2000) from the Yupik community of Sireniki (Sigheneq), Russia. The work continued for some fifteen years. Despite the attempts to publish the manuscript, it remained unfinished at the time of Bogoslovskaya's passing in February 2015.

From the start, Bogoslovskaya viewed her dictionary as a multi-language product. Besides the Siberian Yupik and Russian entries, she also added English translations (supplied by her associate Petr A. Aleinikov), and attached binomial or scientific Latin names of the listed species of animals, birds, and plants. Portions of the dictionary related to marine mammals have been published elsewhere (Bogoslovskaya et al. 2007, 459–68; 2016, 287–98). In 2010 we added to the dictionary the forms in Latin-based orthography of the Yupik dialect spoken on St. Lawrence Island, provided by Chris Koonooka, a Yupik language teacher from the community of Gambell. Koonooka contributed St. Lawrence Island names for marine and terrestrial mammals, birds, fishes, various types of sea ice, etc. A detailed history of Bogoslovskaya's dictionary effort is presented elsewhere (Krupnik 2016).

By 2008 Bogoslovskaya's dictionary had almost two thousand words (entries) and verbal forms in Yupik in twenty-eight thematic chapters organized in five large sections: Animals and Plants; Traditional Subsistence; Transportation; House Life; and Cultural and Natural Environment. This article addresses one of its many sections, the Yupik names for birds. Bogoslovskaya loved birds and knew them well. From 1978 to 1990 she surveyed migrating birds and bird colonies in Chukotka and published several papers on the subject (Bogoslovskaya and Votrogov 1981; Bogoslovskaya, Zvonov, and Konyukhov 1988; Konyukhov et al. 1998). She collaborated with three Yupik experts: Ainana, Tepegkaq, and another Yupik hunter from Sireniki, Nikolai Galgawyi (1935–95). They all grew up in traditional families, with Siberian Yupik as their mother tongue. Today, the team's expertise is unmatched and cannot be replicated, at least not on the Russian side.

The *Bird* chapter in Bogoslovskaya and Ainana's dictionary

The first version of the dictionary, produced in 2004, included sixty-six terms associated with birds. An expanded 2008 version had seventy-seven entries for birds, including terms for bird behaviour and groupings (see Appendix 1). A version from 2010, with the added names in St. Lawrence Island Yupik

orthography, featured the same seventy-seven terms. To assess the richness of the Yupik bird nomenclature, I followed the steps developed earlier in the analysis of Indigenous terminologies for sea ice and snow for the Sea Ice Knowledge and Use (SIKU) project (Krupnik 2011; Krupnik et al. 2010; Krupnik and Müller-Wille 2010).

The first task was to structure Bogoslovskaya and Ainana's list of seventy-seven terms in specific thematic groups or term categories. The names for individual bird species have different functions than the words for age-sex categories within one species (e.g., *qawaagbpaghaq*, a chick of golden eagle; *qawaagbpagagbhaq*, eagle nestling; *qawaagbpak agbnaneq*, female eagle, and the like). Their list also includes terms that apply to all kinds of birds, such as terms for males and females, Yupik designations for (bird) wing, beak, egg, down, nest, etc., as well as terms for bird groupings (*legbllegbyak*, flock of geese), and/or bird actions (*nalugaquq*, birds landing). When organized thematically, Bogoslovskaya and Ainana's list has fifty names for individual bird species, including several names for some species. It also includes fifteen terms for age-sex groups of certain species, nine terms for bird groupings and behaviour, and three general terms ("egg," "nest," and "nest with eggs"). The general terms are heavily underrepresented, since the list lacks many Yupik words reported in other sources (Rubtsova 1971), such as *yaquq*, wing; *siluk*, feather; *sugruk*, beak; *papekullutaq*, (bird) tail; *kaneq*, down; *puuvyaq*, bird's crop; *sulungaq*, chrest; *qantagbhqwaq*, egg shell; *iintaquq*-, to molt (for birds, see *iingtaq*,¹ molting bird).

Bogoslovskaya and Ainana's list similarly misses many known cultural terms related to birds, such as *avleqeghbhtat*, bola; *lluuq*, sling; *anaavak*, basket bird net on a pole; *metghbaq*, bird-skin parka. Some of these terms are found in other sections of the dictionary. Altogether, the recorded bird and bird-related lexicon in the Siberian Yupik language is perhaps ninety to one hundred words strong.

My further analysis focuses exclusively on the fifty Siberian Yupik names for bird species in Bogoslovskaya and Ainana's dictionary. I compare it, first, to other available lists of Yupik names for birds; then to similar lists collected among other Inuit/Yupik groups in the North Pacific–Western Arctic; and lastly to the lists of birds compiled by ornithologists for Chukotka–Bering Strait area. The first two lines of comparison help assess the richness of Siberian Yupik bird knowledge versus that of their neighbours and its level of preservation. The final analysis contrasts the Yupik bird lexicon with modern biological nomenclatures and evaluates Indigenous and biologists' knowledge of birds of the same area.

1. All Yupik words cited in this article are given in the transliteration from the St. Lawrence Island/Siberian Yupik dictionary (Jacobson et al. 2008).

Bogoslovskaya and Ainana's dictionary compared to other Chaplinski Yupik bird lists

Besides Bogoslovskaya and Ainana's list, we have three other sources for the names of birds in the Siberian Yupik (Chaplinski) language. The first is the Yupik-Russian dictionary compiled by Russian linguist Ekaterina S. Rubtsova (1971), where the names for birds are scattered among nineteen thousand alphabetically arranged Yupik entries. The second is the two-volume Russian ornithological monograph on the birds of the Chukchi Peninsula by Leonid Portenko (1972–73), in which a number of Yupik names are cited in a rather rogue transliteration, in the species entries arranged by orders and taxa. The third source, an educational lexicon of the Yupik language for students written by Nikolai B. Vakhtin and Nina M. Emelyanova (1988), features a special section on bird names listed in alphabetical order (53–54). Bogoslovskaya used Rubtsova's dictionary extensively, and checked certain names against Vakhtin and Emelyanova's list. She was certainly familiar with Portenko's book, but I have no evidence that she borrowed Yupik names from it.

The four sources overlap plenty. Rubtsova's list is the shortest (with 32 species), whereas three other lists are more of the same size (Portenko has 41 names for species; Vakhtin and Emelyanova have 47; and Ainana and Bogoslovskaya list 50). Vakhtin and Emelyanova and Bogoslovskaya and Ainana generally concur; Portenko's list is also close but has poor Yupik spellings; and Rubtsova's dictionary features entries with no biological species names and basic Russian translations only (e.g., “gull,” “goose,” “cormorant,” etc.).

The difference in the number of terms is almost certainly related to more advanced biological knowledge of individual authors, particularly in the case of Portenko and Bogoslovskaya, and/or more systematic approach, as in Vakhtin and Emelyanova and Bogoslovskaya and Ainana. For example, Rubtsova (1971, 584) cites the Yupik word *yug(w)ayu* and translates it as “loon.” Vakhtin and Emelyanova (1988, 54) explain that *yug(w)ayu* is used for all species of loon except for the yellow-billed loon (*Gavia adamsii*), and introduce another word, *nangqwalek*, for the latter. Bogoslovskaya and Ainana repeat the distinction between *nangqwalek* and *yugwayu*, but also note that the latter name applies specifically to the red-throated loon (*Gavia stellata*). The St. Lawrence Island Yupik dictionary (Jacobson et al. 2008) lists four names for various species of loons: *eghqaaq* (*Gavia stellata*), *melqupak* (*Gavia arctica*), *yugayu*, and *nangwalek* (*Gavia adamsi*). The Yupik name for the Pacific loon (*Gavia pacifica*) cited by Portenko (1972, 1:50), *thlqō'-puk*, is evidently poorly recorded version of *melqupak*, since these two species are practically undistinguishable. One may assume that *yug(w)ayu* is a more general Yupik term for loon, while *eghqaaq*, *melqupak*, and *nanqwalek* are names for individual local species.

Hence, with fifty names, Bogoslovskaya and Ainana's dictionary offers the most extensive lexicon of bird species' names in the Chaplinski Yupik, but it is not a major departure from what was already known from earlier lists. However,

their dictionary allows broad cross-cultural comparisons, thanks to the taxonomic (Latin) and English terms attached to each bird entry.

Bogoslovskaya and Ainana's dictionary versus other Native bird lists from nearby areas

We start with another Yupik language spoken on the Chukchi Peninsula, the Naukanski Yupik, a tongue of small speech community of about 350 people, who once lived around Cape Dezhnev; barely a few dozen elderly speakers remain today (Krupnik and Chlenov 2013). I was able to pull twenty-four names for individual bird species from the most thorough dictionary of the Naukanski Yupik (Dobrieva et al. 2004), though Michael Krauss (pers. comm., April 2016) claims that the total number from all available sources is perhaps close to forty. Besides the relative shortness of the contemporary Naukanski bird list, it features two or three “parallel” names for a few species (e.g., *amaghullek*, *qatepak*, and *tegmepik* for eider), without specifying which one is the main name and what the other words mean. The relative shortness of the Naukanski bird list most certainly indicates a progressive thinning of the Naukanski Yupik traditional vocabulary through language shift; but the presence of several parallel names for a few species points to perhaps much richer former lexicon (as explained below).

Bogoslovskaya and Ainana's list may be compared to the sample of five lists of bird names in another neighbouring Indigenous language, the Chukchi that is spoken next to the Siberian (Chaplinski) Yupik, often in the same communities. The Chukchi are a much larger and robust Indigenous nation of 15,900 people (according to the Russian census of 2010), with at least 4,500 people reported as language speakers. The five Chukchi lists extend from the late 1800s (Palmén 1887) up to the early 2000s (Apalu et al. 2016; Ranavroltyn 2005), yet they are remarkably alike and comprise the names for just thirty-five to forty bird species. Two most recent lists (cited in Apalu et al. 2016) come from the area adjacent to the Chaplinski Yupik homeland and display similar traces of vocabulary thinning. Three other Chukchi bird lists originated either from the Arctic coast of Chukotka (Palmén 1887; Portenko 1972–73) or from the entire area of the Chukchi people, from the Arctic to the Kamchatka Peninsula (Ranavroltyn 2005). They reveal active borrowing from the Yupik (or vice versa), as in the case of the word for loon (all species), *yokwayu*, compared to the Yupik *yug(w)ayu*. All Chukchi lists also feature several names for a few bird species, albeit without further identification. It is evident that the available Chukchi lexicons either constitute a fraction of total knowledge or have undergone a similar reduction as that which befell the Chaplinski and Naukanski Yupik.

Far more insightful is the comparison of the bird name lists in the Chaplinski Yupik and in closely related (sub)dialect on Alaskan St. Lawrence Island. For the latter we have four critical sources: (1) list from the 1950s

compiled by biologists and organized by orders and taxa (58 names for species) (Fay and Cade 1959); (2) an alphabetical list produced by Yupik language expert Willis Walunga (1986, 49–50) in the 1980s (64 names for individual species); (3) the list of 70 names that I compiled from the St. Lawrence Island (SLI) Yupik–English dictionary (Jacobson et al. 2008), also in alphabetical order; and (4) the list of names for 60 species of birds used in the community of Savoonga collected by ornithologist Lisa Sheffield Guy from 2003 to 2008 (see Appendix 2). Lastly, in the 1970s, Michael Krauss (pers. comm., November 2015) recorded 82 Yupik names for bird species in Gambell from local Elder Lloyd Oovi (Uvi), 75, by showing him photos and drawings from a birdwatcher guidebook. The latter source was reportedly incorporated into the full SLI Yupik dictionary (Jacobson et al. 2008).

All island lists are substantially larger than the Bogoslovskaya and Ainana sample, basically, for the same language. The richness of the SLI Yupik bird lexicon comes from a different status of the language in two geographically close socio-linguistic settings (see Schwalbe 2017). In Chukotka, only a few dozen Elders still speak the Siberian Yupik, primarily women, whereas on the island the active speech community of at least a thousand people includes several hundred active hunters and most of the adults and Elders. This community maintains the lexicon associated with birds and bird hunting, as seen in Sheffield Guy’s unpublished data from 2003 to 2012 and several dozen Yupik names inscribed by anonymous writer(s) on contemporary wall posters for the “Birds on the Subsistence Harvest Survey” in Gambell and Savoonga (see Figure 2). For the Chaplinski Yupik, the old names are mostly in Elders’ memory, and even active hunters of today cannot recall more than twenty words for individual species (Apalu et al. 2016; see Appendix 2).

No wonder the island lists feature many more names for local species, like names for four species of loons (Fay and Cade 1959; Jacobson et al. 2008) versus two in Chukotka (see above). The same ratio of 2:1 applies to other families and orders, both actively hunted (like Anatidae, Alcidae, and Charadriidae) and those that are not (Passeriformes). In the Chaplinski Yupik, one name is often used for several related species (e.g., *alpa* for common murre [*Uria aalge*]). On the island, common murre is also called *alpa*; but another word, *kuwaaq*, is known. There is a special name, *aqevgaghnaq*, for thick-billed murre (*Uria lomvia*) (Walunga 1986, 49; Jacobson et al., 2008, 39, 69), which is also called *alpa* in all Siberian Yupik lists.

The SLI Yupik dictionary (Jacobson et al. 2008) features three or more names for several bird species, unfortunately, without explanation. It cites five different names for common eider (*Somateria molissima*)—*metghaq*, *metghapik* (literally “the genuine *metghaq*”), *qatepak*, *tagrapak*, and *uksulla*—of which only the first two are known in Chukotka. The SLI Yupik bird vocabulary is also much richer in terms related to bird biology, body parts, bird groupings, as well as in cultural terms related to bird hunting and use.



Figure 2. Fragment of a poster produced for the Alaska Migratory Bird Co-Management Council subsistence harvesters survey (Naves and Otis 2017, 51) displayed in Gambell lounge lobby, with the Yupik names of birds inscribed. Altogether, thirty-five Yupik names for birds were written in, out of forty-nine images featured on the poster.

Photo: Igor Krupnik, December 2015.

Yupik bird lexicons both from Chukotka and St. Lawrence Island may be compared to several lists of bird names compiled among the Yup'ik- and Iñupiaq-speaking groups on the Alaskan mainland. Elders in the Yukon–Kuskokwim Delta reportedly know about two hundred words for birds in their native Central Yup'ik language, and many species commonly have two and more names (Ann Fienup-Riordan, pers. comm., June 2015, July 2015), which may also include local variations or dialectal differences. Among the Iñupiaq groups in North Alaska, several lists have names for seventy to one hundred species (see Lawrence Kaplan's unpublished data cited in Lawhead 1996; Norton, Brower, and Macy 1993; Webster and Ziebell 1970), and three lists feature more than one hundred species: in the Nunamiut dialect in Anaktuvuk-Pass area (Irving 1953, 101 species); the Kobuk dialect in the Kobuk River valley (Irving 1958, 110 species); and contemporary North Slope dialect (176 names for 140 species, MacLean 2014, 1242–46).

These examples generally support the assumption that the richness of an Indigenous bird lexicon is a good proxy indicator of the overall status of the

language or, rather, of the number of its active speakers. The lists in the Nunamiut and Kobuk dialects were recorded in the 1950s, when almost every adult person was primarily or exclusively an Iñupiaq speaker. The largest list of 176 names in the North Slope dialect (MacLean 2014) belongs to the community of 5,000 people. Although the younger generation today communicates primarily or exclusively in English, a robust cohort of elderly speakers maintains traditional Iñupiaq cultural lexicon, including many names for birds.

Traditional versus scientific (biological) nomenclatures: How should we count?

Comparing Indigenous and ornithologists' (taxonomic) knowledge of birds presents a huge challenge, since they grew from different principles and sources. The biological knowledge relies on a universally recognized classification (Linnaean taxonomy) organized in hierarchical ranks (order–family–genus–species) established by generations of scholars. Scientists have museum collections with voucher specimens, computer databases, professional journals, and accepted rules for the description and naming of the variety of birds, known and new alike. They also rely on the input of thousands of dedicated birdwatchers ("citizen scientists") empowered by passion and modern photographic equipment.

As a result, scientific knowledge of birds continues to grow. On St. Lawrence Island the number of reported bird species has increased from between 60 and 70 in the 1930s (Friedmann 1932; Murie 1936) to 120 in the 1950s (Fay and Cade 1959; Gabrielson and Lincoln 1959) to between 160 and 180 in the last decade (Lehman 2007, 2012). It continues to climb, thanks to the sightings of rare, passing, or expanding species reported by visiting birdwatchers who monitor birds on their seasonal migrations. Yet the number of the "common" species in the Siberian and St. Lawrence Island Yupik home area remains around 80 to 100, plus 20 to 30 species listed as "rare" or "accidental" (Armstrong 2015; Bogoslovskaya et al. 2016; Fay and Cade 1959; Portenko 1972–73; Tomkovich and Sorokin 1983; Winker et al. 2002). That number is substantially larger, up to between 120 and 170 common species in the more diverse mainland habitats on the Alaskan Seward Peninsula (Bailey 1943; Kessel 1989), Kobuk River valley (Irving 1958), and in the North Slope area (Norton, Brower, and Macy 1993).

To the contrary, Arctic Indigenous knowledge of birds remains poorly known beyond scores of published lists of bird names in Native languages and dialects. The latter are usually organized alphabetically (e.g., MacLean 2014; Ranavroltyn 2005; Webster and Ziebell 1970; also Ainana and Bogoslovskaya; Vakhtin and Emelyanova) or taxonomically, following the Linnaean classification (Fay and Cade 1959; Höhn 1972; Irving 1953, 1958; Nelson 1983; Portenko 1972–73; Russell and West 2003; Wikipedia 2016). It is obvious that traditional Indigenous bird lexicons were neither structured alphabetically nor followed the biologists' Linnaean classification (e.g., Dickinson 2003)—as evidenced by a few

better documented cases in Alaska and elsewhere (Bulmer 1967; Diamond 1972; Hunn 1991; Nelson 1983; Russell and West 2003, 49–51).

Unfortunately, we do not know how the former Siberian Yupik bird classification was organized. It probably relied on some general terms for certain groups, like *naghuya* (common word for gulls) or *yug(w)ayu* (common name for loons), or included words similar to Iñupiaq *tiŋmiaq*, *nauyaq*, *nigliq*, and *qaugak* for the birds of prey, gulls, geese, and ducks, respectively (MacLean 2014). Hardly any of the published lists reflected former Indigenous bird classification (see Nelson 1983, 79), so that it may be lost for many northern languages and dialects.

A meaningful comparison of Indigenous and biological bird taxonomies is also hindered by the presence of many synonyms for species names in Indigenous languages that both biologists and today's native speakers have trouble explaining, such as the previously mentioned five names for common eider (*Somateria mollissima*) or three names for long-tailed duck (*Clangula hyemalis*)—*aabaangwliq*, *kangghwaak*, and *uyangsaq*—plus an additional name for a drake (male duck), *ugeyiighaq*, in the St. Lawrence Island Yupik (Jacobson et al. 2008). In the North Slope Iñupiaq dialect, about 30 percent of all listed species have two or three names (MacLean 2014).

Indigenous lists often include names for birds that, according to biologists, are rare or not known to occur in certain dialect areas. The North Slope Iñupiaq dialect has words for seven species of owls, whereas ornithologists are aware of only three species that inhabit the North Slope area or visit it seasonally. That same dialect has three words for woodpeckers whose habitats are located hundreds of miles further south. The St. Lawrence Yupik language retains the name *piyugraapak* for short-tailed albatross (*Diomedea albatrus*), which has not been seen on the island in the twentieth century (Lehman 2007), though was probably common in the past (Day et al. 2013; Fay and Cade 1959, 101; Nelson 1883, 111; for Chukotka, see Portenko 1972, 1:65; Arkadii Savinetskii, pers. comm., September 2015).

Even more confusing is the use of different names for the same bird species in close dialects of the same language, often in neighbouring communities. The closely overlapping lists of bird names in Chaplinski and St. Lawrence Island Yupik have, nonetheless, separate names for certain species, like *alpa* and *aqevgeghnaq* for thick-billed murre (*Uria lomvia*) or *quvegsi* and *quvumsighaq* (Portenko 1972–72; Vakhtin and Emelyanova 1988; Ainana and Bogoslovskaya, n.d. [2010]) and *tagneghbruwaaq* for Lapland longspur (*Calcarius lapponicus*), respectively. In the North Slope Iñupiaq dialect, dozens of bird species have different names in its three sub-dialects of *Utkiagvik* (Barrow), Point Hope, and Anaktuvuk Pass (MacLean 2014). In the Denai'na Athapaskan language, its four dialects have different words for most of 140 recognized species (Kari 2007; Russell and West 2003).

Furthermore, folk lexicons often include names for birds that do not exist in any scientific nomenclature. They have names for birds that reportedly can speak with a human voice, transform into humans, or cohabit with people and animals, marry, and teach their chicks to hunt. Stories about such birds abound in Yupik myths (see Rubtsova 1954). Some of these words may be cited in dictionaries but not in ornithologists' species list. Siberian Yupik once had a name for mythological giant eagles that hunted whales and mammoths (see Rubtsova 1954, 420–32), as well as words for a “giant raven” (*meteghlluggllak*) or a small bird (*qawaamsighaq*) (Jacobson et al. 2008, 396) that speaks with a human voice. The Naukanski Yupik *uatngisak*, “a bird without anus” (Dobrieva et al. 2004, 220), and Iñupiaq *mitigvik*, mythological black bird with a ten-foot wingspan (MacLean 2014, 861) are similar folk names with no biological identification.

Therefore, Indigenous bird lexicons might have been once more extensive than the current lists of species names that biologists produce for the same habitat because they included sub-dialectal variations, names for age-sex groups, mythological birds, and cultural terms associated with birds' body parts, products, and bird hunting. In some societies, certain names for birds may be taboo, in which case an alternate designation emerged (Eugene Hunn, pers. comm., May 2017). Indigenous people do not have anything akin to ornithologists' species lists for large areas, like the “birds of Alaska” or “birds of the Chukchi Peninsula” (Armstrong 2015; Gabrielson and Lincoln 1959; Portnenko 1972–73). Instead, they develop a meticulous knowledge of birds of a particular home region, with dozens of species names but progressively thinning lists for neighbouring territories (see Nakashima 1991).

Ornithologist Laurence Irving (1958, 66) once argued that the Inuit knowledge of birds differed by (bird) families compared to biologists' taxonomies. He claimed that the Inuit of Anaktuvuk Pass and the Kobuk River valley had the most detailed knowledge of the Anatidae (ducks, geese, and swans) and the Charadriidae (plovers, dotterels, etc.) families, since they have the names for 95 to 100 percent of all species known to ornithologists. Yet their knowledge of woodpeckers, swallows, and warblers was rudimentary, and most species lacked Iñupiaq names. Similarly, the North Slope Iñupiaq bird dictionary (MacLean 2014) includes 80 to 100 percent of names for all identified species of cormorants, ducks and geese, gulls, birds of prey, and owls but only 60 percent for sparrows, plovers, and dotterels known to ornithologists. The disparity in the St. Lawrence Island Yupik is even more striking, as—based on my calculation—it retains the names for 100 percent of loon species, 75 percent for gulls and birds of prey, but only 35 to 38 percent for the many species of swallows and plovers. In the Chaplinski Yupik, all bird families have lost several names for species, but plovers, sparrows, and other small birds lost more names than others.

Generally speaking, “folk taxonomies” should be more detailed in the areas that are vitally important to people; that is, they should include more names for

animals and plants that are essential to human subsistence, and fewer names for species that are of little value to human life. In many Arctic communities, people retain more names for mammals, birds, and fishes than for invertebrates—i.e., mollusks, insects, and worms (see Whiting et al. 2011).

Another hypothesis is that larger birds should have more names for individual species in Indigenous languages than the smaller ones (Hunn 1975). To test this hypothesis, I used one Russian field guide (Boeme and Kuznetsov 1983) organized by bird size: large birds (larger than geese), “geese size,” “duck size,” etc., up to the smallest ones (see actual weight dimensions in Naves and Fall 2017, 93–95). When size categories are considered, the St. Lawrence Island Yupik retain names for 75 percent of large and medium-size species, including 90 percent of the largest birds; whereas only 40 percent names for species of small birds remain. In the Chaplinski Yupik, the small bird category has names for only 16 percent of species and 60 percent for the medium-sized birds (from geese to crows), yet it retained the names for all three of the largest birds in the area—the sandhill crane (*satelgaq*), tundra swan (*quuk*), and golden eagle (*qawaaghpak*).

Studies of Indigenous bird classifications (e.g., Hunn 1991; Hunn and Thornton 2010, 204–06; Nelson 1983) corroborate Irving’s point that certain birds are known better than others. Yet it is also obvious that all recorded Chaplinski Yupik bird lists are uniformly thinner in all categories than similar lexicons from St. Lawrence Island Yupik and Iñupiaq dialects of North Alaska. This peculiar phenomenon is addressed below.

Bogoslovskaya and Ainana’s dictionary as a reflection of language and knowledge shift

Community knowledge does not remain static; language, similarly, keeps changing. It borrows new words and loses old ones. In a situation of active contact, under the influence of schooling, books, and media in another language, the transition accelerates. It eventually leads to a process that linguists call “language shift” (Fishman 1991; Vakhtin 2001). When comparing Indigenous ecological lexicons (such as “bird” or “ice dictionaries”), one should always account for the era that each recorded list represents.

Rubtsova’s (1971) Yupik–Russian dictionary reflects the time of her fieldwork in the 1930s and 1940s, and most of her materials were recorded primarily from speakers born in the late 1800s and early 1900s. These people spoke what we might call today “the old language,” when communication in the family, subsistence, and public domain was primarily, if not exclusively, in Yupik. The bird names collected by Portenko in the late 1930s belonged to the same era. Later lists reflect progressive language shift in the increasingly Russian-language-dominated environment. When Emelyanova recorded the names for birds in the 1960s and early 1970s, and Vakhtin cross-checked her material in

the early 1980s (Vakhtin 2016), they relied primarily on the speakers who were born in the 1920s and 1930s. By that time, the number of Elders who knew the “old words” had shrunk dramatically.

Bogoslovskaya and Ainana’s list generally belongs to the same era. Its key contributors—Ainana (b. 1934), Tepegkaq (b. 1933), and Galgawyi (b. 1935)—belonged to the same age cohort. Their knowledge of bird names reflected the lexicon shared by dozens of their peers, middle-aged adults of the 1970s and 1980s, who were proficient in Yupik, yet many were bilingual Yupik-Russian speakers. That once populous cohort has now contracted to a handful of people, including just a few senior men.

Following the era of government “modernization” policies in Chukotka in the 1950s (Krupnik and Chlenov 2013), the amount of cross-cultural communication among the Yupik skyrocketed. People born in the 1950s and 1960s constituted the first generation of Russian Yupik, who spoke primarily, if not exclusively, in Russian since they were children. Today, they constitute the core of senior language experts in their communities, even though their knowledge of Yupik vocabulary may be a fraction of that of their parents’ generation.

Working from these subsequent language/knowledge baselines, we may construe how the Siberian Yupik names for birds have evolved during the twentieth century using other lists from Chukotka, St. Lawrence Island, and Native groups on the Alaskan mainland as additional illustrations. Our hypothetical starting baseline may be called traditional lexicon. It represented deep and extensive knowledge of birds, with a detailed species nomenclature covering most, if not all, of the bird taxa known by ornithologists for people’s home area. It included numerous synonyms or parallel names for many species, names for age-sex groups for most important and common subsistence taxa (eiders, ducks, murres), as well as for the larger and/or symbolically important birds (eagles, ravens, owls). The language was also rich in cultural terms associated with birds and their use; and birds played important role in folklore and rituals, as evidenced by the names for “non-empirical” (see Burch 1971) and mythological birds, like “big raven” and “whale-hunting eagles.” The names for birds were also actively used as people’s personal names, as evidenced by family genealogies from the early 1900s that listed people named *Meteghlluk* (raven), *Nagbuya* (gull), *Yug(w)ayu* (loon), *Tagra* (eider), *Allpen*, *Alpawen* (from *alpa*, murre), *Galganga*, *Galgata*, *Galgawyi* (from *galga*, gull in Chukchi), and others.

Altogether, such traditional Yupik bird lexicon could have included 120 to 150 words, thanks to the wealth of synonyms, names for age-sex groups, and cultural terms. Unfortunately, we do not have adequate records for this stage among the Siberian Yupik because Rubtsova’s published folk tales (1954) and Yupik–Russian dictionary (1971) are poor sources for bird names and associated terminology. Nonetheless, records from other areas in Alaska may serve as valuable proxies, such as the contemporary Koyukon and Dena’na Athapaskan bird dictionaries (Kari 2007; Nelson 1983; Russell and West 2003) and/or

Anaktuvuk Pass and Kobuk Iñupiaq lists from the 1950s (Irving 1953, 1958). For the latter areas, Iñupiaq experts had names for 94 percent and 90 percent of the species identified by ornithologists, respectively. Irving rightly praised the Iñupiaq knowledge of birds as both “accurate and extensive” (Irving 1958, 64).

The beginning of the “language shift” triggers certain systemic changes in traditional knowledge of birds that can be traced in later lists. The number of synonyms shrinks for most species; the number of specific names for various age-sex groups also drops; and people start losing names for certain small birds and use common terms for several close species (such as *turiik* for all plovers, *terateriiq* for sandpipers, *taghneghruuwaq* for sparrows, etc.). Nonetheless, the nomenclature for large and important groups (such as geese and ducks, loons, and birds of prey) remains strong and diverse. Cultural lexicon associated with birds retains many words for old elements of clothing, food, rituals, and lore.

This early phase of language shift is illustrated by the list of over 100 words for birds and associated cultural terminology in the St. Lawrence Island Yupik dictionary (Jacobson et al. 2008), the list of names for 82 island species recorded from Lloyd Oovi in the 1970s, and more than 170 names for birds species in the North Slope Iñupiaq dialect (MacLean 2014). Nonetheless, as the language shift progresses, the total number of names for bird species contracts to the half of the local taxa known to biologists, and even large and symbolically important groups (loons, owls, birds of prey) become affected. Specific sex names remain for a few species only (e.g., *gatepak*, “male of common eider”; *qengalek*, “male of king eider” in Siberian Yupik). The number of species with parallel names also drops dramatically; even Native language experts cannot explain the meaning of the remaining synonyms.

Other indicators of language shift are seen in the evolving lexicon. The nomenclature for mythological birds contracts to the minimum, even if the memory of them remains in folklore text. Former species names are increasingly used as labels for entire groups of birds, such as *qawaaq* (any “duck”), *qawamsighaq* (any small bird) (Lisa Sheffield Guy, pers. comm., March 2018). Names for age groups are now being formed by using diminutive suffixes (*quuq-quuwaaghaq*, “swan chick”; *qawaagpak-qawaagpaghaq*, “chick of golden eagle”) rather than from separate stems (e.g., *kuykuna*, “duckling”). Even in this advanced phase of the language shift, fairly functional Indigenous nomenclatures are retained, as the Vakhtin and Emelyanova and Ainana and Bogoslovskaya lists of the 1980s and 1990s demonstrate. On St. Lawrence Island, some 60 to 70 species names are in active use today (Lisa Sheffield Guy, pers. comm., March 2018; see also Figure 2); and contemporary Chukchi lists include 40 to 45 names for individual bird species (Apalu et al. 2016). Another example is contemporary Tlingit list of names, which includes 89 Indigenous terms out of the 179 bird species common in their area (with 239 species identified by ornithologists, including rare and passing birds) (Hunn and Thornton 2010, 205).

The next, active phase of the language shift sees the contraction of the entire spheres of traditional lexicon, including names for many species of birds (also fishes or types of sea ice). People use one common name, often in the singular form, for many categories and often produce terms via (re)translation of old words or via borrowing from another language. Elsewhere, we compared this process to “creolization” of Indigenous knowledge (Krupnik and Vakhtin 1997). Younger Native speakers may also face trouble in using proper dual and plural forms for bird names or placing them in the right grammatical context (Lawrence Kaplan, pers. comm., October 2016). This phase is illustrated by the list of twenty-some bird names in the contemporary Naukanski Yupik dictionary (Dobrieva et al. 2004) and by the recent list in Chaplinski Yupik produced by Yuri Yatta, an experienced hunter from New Chaplino, Russia (Apalu et al. 2016). His list features just one name (*legblleq*) for all five geese species, and two terms (*sugbmat* and *turiik*) for all shorebirds; yet it preserves the names for other significant species.

Lastly, during the final phase, only a few names remain from the former nomenclature, whereas the bulk of terms are now borrowed from other languages or used in a combination with isolated Native words. We do not have any Yupik bird lists to illustrate this stage, but we might use a suitable proxy: the current terminology for sea ice used by today’s Yupik hunters in Chukotka (Kalyuzhina et al. 2016). Only a handful of senior hunters, such as Yatta, know a few Yupik terms for certain ice forms, and most communication among hunters is conducted in Russian anyway. Yet today’s hunters, like their fathers and grandfathers, continue to monitor their home environment, including birds, animals, weather, and ice, even if they use Russian terms as identifiers. This way, Russian words such as *utki* (ducks), *chaiki* (gulls), *gagi* (eiders), *krachki* (terns), *baklany* (cormorants) enter their lexicon and replace the old Yupik names for these species. As hunters need precise species designations, they adopt terms from the Russian biological nomenclature, such as *beringov baklan* (pelagic cormorant, *ngelqaq*), *ochkovaya gaga* (spectacled eider, *iivghan*), and others. This process creates a rich and diverse terminology of its own, though of a different origin and based primarily on another language.

Nonetheless, this phase may be quite long and lasting. It has no obvious thresholds, as contemporary speakers continue to view their terms as “Native” and commonly use them in a local subsistence context. To the hunters, their knowledge remains “local,” not “Russian,” and definitely not that of biologists, who use Linnaean taxonomy for bird groupings and classification. A rudimental Yupik lexicon, even individual words, may be in use for a long time or may live in “translation,” when Russian words (or English, in Alaska) become direct analogs of the former Native terms. The same phenomenon has been documented for the contemporary sea ice terminology (Bogoslovskaya and Krupnik 2013; Wisniewski 2010), elements of symbolic environment (Krupnik and Vakhtin 1997), and names for certain family rituals (Oparin 2013).

Conclusion: What is next?

As this study illustrates, two trajectories are obvious. The biologists' knowledge of bird species in northern areas keeps growing, due to systematic research, data sharing, citizen-science observations, and climate/habitat change. At the same time, the Indigenous bird nomenclatures are generally in decline because of the language and knowledge transition.

The latter process follows certain distinctive patterns and phases that were first outlined elsewhere (Krupnik and Vakhtin 1997). When people switch to another language, they leave behind one type of words and classifications and acquire new ones borrowed from another system. The transition is rarely abrupt, and for several decades, perhaps generations, elements of the old cultural terminology and taxonomy continue to be entwined with the new words and perspectives borrowed from another culture. Such model explains the transition in the Yupik bird lexicons over the past eighty years as outlined above.

This study also illustrates how the work started by Bogoslovskaya in the 1980s and 1990s may continue. The unfinished "Siberian Yupik Dictionary of Subsistence Terminology" is an unrivalled source of knowledge to today's Yupik people, educators, and heritage specialists, and to those who care for the future of Indigenous languages and knowledge systems. It also serves as an invaluable "baseline" for any future comparative work. It documents a certain stage in the language/knowledge transition represented by a cohort of middle-aged speakers who grew up in monolingual Yupik families in the 1930s. Yet their knowledge was neither "pristine" nor "traditional," as it displayed clear signs of lexicon attrition. Construing the sequence of such documented baselines could be a valuable path to assess the dynamics of Indigenous knowledge systems and to track indicators and phases of language and knowledge shift.

The documentation of Indigenous nomenclatures and its dissemination via educational, heritage, and other channels in the public domain are crucial means to support Indigenous languages and knowledge at this final phase of language shift. It explains the fundamental value of Bogoslovskaya and Ainana's dictionary of Siberian Yupik ecological terminology to today's Yupik, even to the ones with a passive or rudimental knowledge of their mother tongue.

Another crucial next step is to record contemporary bird terminologies used by Indigenous people in Chukotka (see Apalu et al. 2016) and in the nearby communities in Alaska. It would be insightful to assess these new language and knowledge "baselines" of the grandchildren of Bogoslovskaya's partners from the 1980s and of the great-great-grandchildren of Rubtsova's storytellers of the 1930s. Their bird lexicon is now filled with the Russian *utki* (ducks), *gagi* (eiders), *toporki* (puffins) mixed with a few old Yupik words. Yet altogether it covers the same number of fifty to sixty common species, so that people's grasp of bird diversity in their home areas may not have changed radically with the language shift.

What one is almost certain to miss in today's mixed Native lexicons is the rich cultural component of old terminologies. Even as modern Yupik hunters borrowed scores of Russian biological terms for birds, they lack some old words, such as *qighbuneq*, “a young eider too fat to fly” (Jacobson 2008, 413), or the names for giant eagles that hunted whales, or for small birds who spoke with a human voice. These words belong to the past, together with some fifty names for individual bird species that Bogoslovskaya's partners recorded for the unpublished Yupik “subsistence dictionary” in the last decade of the twentieth century, which are still common knowledge among their kin on the Alaskan St. Lawrence Island.

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Figure 3a-c. “Yupik birds” (left to right): *allpa*, common murre; *nagbuya*, herring gull; *satelgaq*, sandhill crane. Photos: Natalya Kalyuzhina (a) and Alexander Borovik (b and c).

Appendix 1. List of Bird Names from the “Dictionary of Traditional Subsistence Terminology of the Asiatic Yupik Eskimo” (Ainana and Bogoslovskaya, n.d. [2010], translated by Petr Aleinikov and Igor Krupnik)

The list follows the original authors' structure in Cyrillic alphabetical order, without Russian translations. The first word is in Chaplinski Yupik in Cyrillic orthography; the second added term is in St. Lawrence Island Yupik Roman orthography, followed by the English, and scientific binomial name. Translated from Russian by Petr Aleinikov and Igor Krupnik

[Added acronyms: *P* – Portenko 1972–73; *R* – Rubtsova 1971; *V-E* – Vakhtin and Emelyanova 1988; *CH* – Chukotka; *SLI* – St. Lawrence Island]

ааляк'//aalaq; see also кáн'г'wa:к//kangghwaak // oldsquaw // *Clangula hyemalis* L.

аглы́кысыг'ák'//aglekesegaq // Steller's eider // *Polystrieta stelleri* Pallas (*P*, *V-E*)

аг'на:нык'// aghnaaneq//bird female (*V-E*)

акмáли:г'ак'//akmaliighaq// least auklet // *Aethia pusilla* Pallas (*V-E*)

ак'фа:сюк//aqfasuk // northern pintail // *Anas acuta* L. (*R*)

ак'ырги:к'//aqergiiq // willow grouse // *Lagopus lagopus* L. (*R*)

алъпá//алпа (*CH*), апа (*SLI*)// 1) thick-billed murre // *Uria lomvia lomvia* L.;

2) common murre // *Uria aalge* Pontoppidan (special name for this species was evidently lost by the early 1980s [Bogoslovskaya's original comment] (*R*; *P*; *V-E*))

аníпа//анíпа (see also тыг'лá//teghla)// snowy owl // *Nyctea scandiaca* L. (*R*; *P*; *V-E*)

атх'а:х'к'ук'аюк'//atghaaghquqayuk // bird of passage (*R*) [evidently from *atghbaaghqugh-* to fly south (of birds)]

ах'к'ýльюк'//aghqulluk// northern fulmar // *Fulmarus glacialis* L. (*R*; *P*; *V-E*)

канýльга//kangulga // jaeger (any species) // *Stercorarius sp.* (*V-E*)

кáн'г'wa:к //kangghwaak (see also aalaq)// oldsquaw // *Clangula hyemalis* L. (*R*; *P*; *V-E*)

ка:н'у//kaangu(q) // Canada goose // *Branta canadensis* L. (*R*)

капýтаг'ák'//kaputaghaq// short-tailed shearwater // *Puffinus tenuirostris* Temminck (*R*; *P*; *V-E*)

куйкúна//kuykuna // duckling (*R*)

куйкúна:г'ах'ák'//kuykunaaghaghhaq // eider chick (*P*; *V-E*)

кúругиг'ак'; кúругик'; кúруг'ьяк'//kurugighaq; kurugiiq; kurughyaq // ivory gull // *Pagophila eburnea* Phipps (*P*; *V-E*)

к'агини:г'ак'//qagingiiighaq // harlequin duck // *Histrionicus bistrionicus* L. (*V-E*)

к'ак'сiон'ик'//qaqsungiiq (see also yuungaaghaq) трехпалая чайка, или моевка // black-legged kittiwake // *Rissa tridactyla* L. (*P*; *V-E*)

к'атыг'ийг'ак'//qateghyiighaq (see also qawaamsiighaq)// 1) snow bunting // *Plectrophenax nivalis* L.; 2) any passerine bird (*P*, *V-E*)

к'атýпак'//qatepak // common eider male in breeding plumage (*R*, *V-E*)

к'awák'//qawaak // any big bird; fowl (*R*, *V-E*)

к'аwámсi:г'ак'//qawaamsighaq (see also qateghyiighaq) // any small-size bird;
 2) snow bunting // *Plectrophenax nivalis* L.; 3) small passerine bird (R, V-E)
 к'аwа:пик'//qawaapik // mallard // *Anas platyrhynchos* L. (R)
 к'аwа:хпагá'ак'//qawaagpagaghaq // eagle chick young (R)
 к'аwа:хпагá'ах'ак'//qawaagpagaghagghaq// eagle nestling (R)
 к'аwа:хпак'//qawaagpak //1) golden eagle // *Aquila chrysaetos* L.; 2) any big bird
 (R, V-E)
 к'аwа:хпак аг'на́нык'//qawaagppak aghneq // female golden eagle
 к'увы́хси: (к'у́вумси́г'ак' ?)//quvegsi (quvumsiighaq) // Lapland longspur // *Calcarius lapponicus* L. (P, V-E)
 к'у́к'//quuk// 1) Bewick's swan // *Cygnus bewickii* Yarrell; 2) tundra swan // *Cygnus columbianus* Ord (R, P, V-E)
 к'у́лиг'бя́к'//qulighyak // red phalarope // *Phalaropus fulicaria* L. (V-E)
 к'у́пук'ша́к; купы́к'ша́к'//qupuqshak; kupeqshaq //common eider male // *Somateria molissima* L.
 к'у́пшúг'ак'//qupshughaq // tufted puffin // *Fratercula (Lunda) cirrhata* Pallas
 (R, P, V-E)
 к'ы́н'а́лык'//qengalek// king eider male // *Somateria spectabilis* L. (P, V-E)
 лью́:я́к'//lluuyaq// 1) peregrine falcon // *Falco peregrinus* Turnstall 2) gyrfalcon
 // *Falco rusticolus* L. 3) northern goshawk // *Accipiter gentilis* L. (R, P, V-E)
 лы́х'л́тык'//leghlleq// goose (any species?) // *Anser* sp.? (R, P, V-E)
 ман'а:к'//maangaq (see unglun // nest with eggs (V-E)
 ма́ни́к'//manik // egg (R)
 мы́тх'а́к'//metghaq (see also taagra) //1) common eider // *Somateria molissima* L.
 2) common eider female (R, P, V-E)
 мы́ты́х'л́ты́к'//meteghlluk// common raven// *Corvus corax* L. (R,P, V-E)
 на́г'у́я'//naghuya //1) glaucous gull // *Larus hyperboreus* Gunnerus 2) herring gull
 (see naghuyapik) // *Larus argentatus* Pontoppidan 3) slaty-backed gull // *Larus schistisagus* Stejneger (R, P, V-E)
 на́г'у́я:г'а́к'//naghuyaaghaq (see also ugraaq) // herring gull chick (R)
 на́г'у́япик'//naghuyapik (see also naghuya)//herring gull//*Larus argentatus*
 Pontoppidan (R, V-E)
 на́н'к'wа́лык'//nangqwalek // yellow-billed loon // *Gavia adamsii* Gray (P, V-E)
 н'и:к'ак'//ngiikaq, ngiiqaq // bean goose // *Anser fabalis* Latham (R)
 н'ы́лты́к'а́г'ак'//ngellqaghaq // cormorant chick
 н'ы́лты́к'а́к'//ngellqaq // pelagic cormorant // *Phalacrocorax pelagicus* Pallas
 (R, P, V-E)
 па́грúг'ак'//pagrughaq // horned puffin // *Fratercula corniculata* Naumann
 (R, P, V-E)
 па́пы́хпалью́к'//papeggpalluq // white wagtail // *Motacilla alba* L. (R, V-E)
 сы́вы́йыг'ак'//seveyiighaq // seagull chick
 сю́г'мы́г'ак'//sughmeghaq // phalarope (any species) // *Phalaropus* sp. (R, P, V-E)
 сю́кiльпа'//sukillpa (q) // crested auklet // *Aethia cristatella* Pallas (R, V-E)
 сю́кльо́грак'//sukllugraq // parakeet auklet // *Cyclorhynchus psittacula* Pallas
 (P, V-E)
 сю́хту́вак'//sugtuvak (see also turiik)// any of long-billed shorebirds
 (*Charadriiformes*) (V-E)

сямсых'аг'ак'//samseghhaghaq// 1) black guillemot // *Cepphus grylle* Pallas;
 2) pigeon guillemot // *Cepphus columba* Pallas (individual species names
 have not been identified) (R, P, V-E)
 сятылгак'//satelgaq // sandhill crane // *Grus canadensis* L. (R, P, V-E)
 та:гра // taagra, tagrapak // common eider // *Somateria mollissima* L. (R, V-E)
 таги:тугик'; тагитугьяк' //tagitugiiq; tagitugyaq // Kittlitz's murrelet //
Brachyramphus brevirostris Vigors (P); the name of this bird was formerly
 used in invocations
 ти:льма//tiilma // sea eagle // *Haliaeetus pelagicus* Pallas (V-E)
 турик'//turiik (see also sugtuvak) // any of short-billed shorebirds
 (*Charadriiformes*) (R, P, V-E)
 тыг'ля'//teghla (see also anipa) // snowy owl // *Nyctea scandiaca* L. (R, V-E)
 тыг'ляг'ак'//tegglaghaq // snowy owl chick
 тыкийи:г'ак'//tekeyiighaq // arctic tern // *Sterna paradisaea* Pontoppidan
 (P, V-E)
 угра:к'//ugraaq (see naghuyaaghaq// herring gull chick // (R, P)
 ун'люн//unglun (see mangaaq) // nest with eggs (R, V-E)
 у:хтар'ак'//uugtaghaq // bird sitting on land or ice (R)
 югwаю (юwаю)//yugayu (yuwayu)// 1) loon (all species except the yellow-billed
 loon, *Gavia adamsii*) // *Gavia sp.* 2) red-throated loon // *Gavia stellata*
 Pontoppidan (R, P, V-E)
 ю:н'аг'ак'// yuungaaghaq (see also qagsungiq) // black-legged kittiwake // *Rissa*
tridactyla L. (R; P; V-E)
 ячйк'а//yayiiqa/yachiiqa // rough-legged hawk // *Buteo lagopus* Pontoppidan
 (V-E)

Bird groupings and behaviour

атх'ах'к'уг'а:к'ут//atghhaaghqughaaqut // fly south (*in reference to birds*) (R)
 к'awá:гьяк'//qawaaghyak// dispersed duck flock (R)
 к'awa:лгун/qawaalgun // compact flock of ducks (R)
 лыхлгыг'ьяк'//leghlleghyak//flock of geese (R)
 налюгак'ук'//nalugaquq // (it) lands (*of a bird*) (R)
 як'укихся:г'ак'ук'//yaquqegsaghaquq// (it) flaps wings before taking off in flight
 (R, V-E)
 яхтáг'аг'а:к'ук'//yagtaghaghaaquq // (it) hovers (R, V-E)

Appendix 2. Siberian/St. Lawrence Island Yupik Names for Bird Species of the Chukchi Peninsula and St. Lawrence Island (compiled by Igor Krupnik with additions from Lisa Sheffield Guy, March 2018)

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Alinana-Bogoslovskaya	Jacobson et al. 2008	L.S. Guy 2000s
Anatidae	Anser fabalis	Bean goose	...		лых, лык; н, иик, ак,	...	
	Anser albifrons	White-fronted goose*	...		лых, лык,	...	
	Chen canagica	Emperor goose*	лехлепик		лых, лык,	leghlleq	leghlleq
	Chen caerulescens	Snow goose*	канну; кангу	лых, лык, (any goose)	лых, лык,	kaanguq	kaangu
	Chen rossii	Ross's goose					kaangungistaq
	Branta bernicla	Brant+	лехлек тахкельгук		...	teghqilkak	teghqillkak
	Branta canadensis	Canada goose	...		кан, у	qefteq	qefteq
	Cygnus columbianus	Tundra swan; Whistling swan*	кук; кхук	к, ук	куук	quuk	quuk, quuwaaghaq (young)
	Cygnus bewickii	Bewick's swan (subspecies of Tundra)	...		куук	...	
	Anas acuta	Northern pintail	...	уальука	ак, фасюк	ngiikaq; quulvekesiiq	ngiikaq, pikuutagharaq
	Anas clypeata	Northern shoveller*	...		...	pekuutaghuk	
	Anas platyrhynchos	Mallard	n/a		к, аваапик	qaghqwaaq; metghasaak (?)	
	Aythya marila	Greater scaup*	...			...
	Somateria mollissima	Common eider	мэткак; мытхак	тагра (all species of eider)	мытх, ак; тагра	metghaq; metghapik; uksulla	metghaq, metghapik, qatepak
	Somateria spectabilis	King eider*	амагутак; кнаналик			qengalek	qengalek

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Ainana-Bogoslovskaya	Jacobson et al. 2008	L.S. Guy 2000s
Anatidae (cont.)	<i>Somateria fischeri</i>	Spectacled eider*	леякалли			iivghan; iyegeatelek	iivghaan, iiveghatelik
	<i>Polysticta stelleri</i>	Steller's eider	аглыкысигак	аглыкысыг, ак,	аглыкысыг, ак,	aglekesegaq	aglekeseqaq
	<i>Histrionicus histrionicus</i>	Harlequin duck	...	кагин, иг, ак,	к, агин, иг, ак,	qaghingiiik	qagingiik
	<i>Clangula hyemalis</i>	Long-tailed duck	кауннахак; аиграк	канг, уак,	ааяк;; кан, г, ваак	kangghwaak; uyangsaq;	qangwaaq, qungwaak
	<i>Melanitta nigra</i>	Black scoter				iikaq	metghasak
	<i>Mergus merganser</i>	Common merganser*+	...				
Phasianidae	<i>Mergus serrator</i>	Red-breasted merganser*				aqfasuk	aqfasuk
	<i>Lagopus lagopus</i>	Willow ptarmigan*	...		ак, ыргик	aqergitiq	
	<i>Lagopus mutus</i>	Rock ptarmigan	n/a			aqergitiq	
	<i>Gavia stellata</i>	Red-throated loon	югаю	югаю (any loon)	югwa:ю	eghqaq	
Gaviidae	<i>Gavia arctica</i>	Arctic loon*	...		югwa:ю	melqupak	
	<i>Gavia pacifica</i>	Pacific loon	...		югwa:ю	yugayu; yuwayu	yungwaalik
	<i>Gavia immer</i>	Common Loon					yugayu, yuwayu, yuwavaghaq (young)
	<i>Gavia adamsii</i>	Yellow-billed loon	наункалек	нан, к, уалык	нан, к, уалык	nangwalek	nangqwalek
Podicipedidae	<i>Podiceps griseigena</i>	Red-necked grebe			...		aqfasuk
Diomedidae	<i>Phoebastria albatrus</i>	Short-tailed albatross*	...	...		piyugraapak	piyughraapak
	<i>Fulmaris glacialis</i>	Northern fulmar	..	ых, к, ульюк; ах, к, ульюк	ах, к, ульюк	aghqulluk	aghqulluk
Procellariidae	<i>Puffinus tenuirostris</i>	Short-tailed shearwater	капутагак	капутагак, ак,	капутаг, ак,	kaputaghaq	kaputaghaq

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Alinana-Bogoslovskaya	Jacobson et al. 2008	L.S. Guy 2000s
Hydrobatidae	Oceanodroma furcata	Fork-tailed storm-petrel					kaputaghangestag
Phalacrocoracidae	Phalacrocorax pelagicus	Pelagic cormorant	нытлык	нытлык, ак,	н, ытлык, ак,	ngelqag	ngelqag, ngelqaghaq (young)
Pelecanidae	Pelecanus occidentalis	Brown pelican					pikutaggpak
Threskiornithidae	Plegadis chihi	White-faced ibis					sughruggpalluq
Accipitridae	Buteo lagopus	Rough-legged hawk	...	ячик, а	яйика, ячика	уавица	уавица
	Aquila chrysaetos	Golden eagle	...		к.аваахпак	qawqaaghpak; tilma	qawaapak
	Accipiter gentilis	Northern goshawk	...		лыю-як,	...	...
	Haliaetus pelagicus	Steller's sea eagle	...	тильма	ти-льма	...	...
Gruidae	Grus canadensis	Sandhill crane	сатылыгак	сатылыгак,	сатылыгак,	satelgaq	satelgaq
Charadriidae	Pluvialis squatarola	Black-bellied plover			...	...	turiik, turiqpak
	Pluvialis dominica	American golden plover*	сатыльма; турик	сюхтугак,		turiq	turiik, turiqpak
	Charadrius hiaticula	Common ringed plover	n/a		сюхтугак; тури:к		
	Charadrius mongolus	Lesser sand plover*	...	турик (any plover)	сюхтугак; тури:к	...	...
	Charadrius morinellus	Eurasian Dotterel*	...			...	...
Scolopacidae	Arenaria interpres	Ruddy turnstone*	трапрек; сатыльма			sagelmak	sagelmak
	Tringa incana	Wandering tattler	...			qalmesam qawaaga	
	Calidris minuta	Little stint+	...	сюхтугак (any sandpiper)			

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Ainana-Bogoslovskaya	Jacobson et al. 2008	L.S. Guy 2000s
Scolopacidae (cont.)	<i>Calidris bairdii</i>	Baird's sandpiper*	...			...
	<i>Calidris alpina</i>	Dunlin*	...			terateriiq	terateriiq
	<i>Calidris pilocnemis</i>	Rock sandpiper*	...			terateriiq	terateriiq
	<i>Calidris melanotos</i>	Pectoral sandpiper*	...				terateriiq
	<i>Calidris pusilla</i>	Semipalmated sandpiper*	...				
	<i>Calidris mauri</i>	Western sandpiper*	...			iglagllengiiq	iglagllengiiq
	<i>Numenius pheopus</i>	Whimbrel*	...			sugtuvak	sugtuvak
	<i>Limosa lapponica</i>	Bar-tailed godwit*	...				
	<i>Limnodromus scolopaceus</i>	Long-billed dowitcher*	...				
	<i>Phalaropus fulicarius</i>	Red phalarope	сухмыгак	к,улиг,ьяк	к,улиг,ьяк,; сюг,мыг,ак,	sughmeghaq; qulighyak	sughmeghaq, somaaghaq
Stercoraridae	<i>Phalaropus lobatus</i>	Red-necked phalarope*	...	сюг,мыг,ак,	сюг,мыг,ак,		
	<i>Stercorarius pomarinus</i>	Pomarine jaeger+	юнахак	кан,ула; юн,аг,ак,	канулыга	meghem yuungaaghaa	yuungaaghaq
	<i>Stercorarius parasiticus</i>	Parasitic jaeger+	юнахак		канулыга	yuungaaghaq	yuungaaghaq
	<i>Stercorarius longicaudus</i>	Long-tailed jaeger+	юнахак		канулыга	qutem yuungaaghaa	yuungaaghaq
	<i>Uria aalge</i>	Common murre	...	альпа	(*) альпа	alpa; kuwaq	alpa, alpaghaq (young)
Alcidae	<i>Uria lomvia</i>	Thick-billed murre	альпа		альпа	aqevgaghnak	alpa, alpaghaq (young)
	<i>Cephus grylle</i>	Black guillemot+	самыхагак	сямсых,аг,ак,	сямсых,аг,ак,	samseghaghaq	

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Alinana-Bogoslovskaya (*) самсых, аг, ак, ...	Jacobson et al. 2008	L.S. Guy 2000s
Alcidae (cont.)	Cephus columba	Pigeon guillemot	самсыхагак			sipelaaghaq	samseghaq, sipelaghaq (young)
	Alle alle	Dovekie				quqiiq	quqiiq
	Brachyramphus marmoratus	Marbled murrelet					tagitugiiq, quqiiq
	Brachyramphus brevirostris	Kitlitz's murrelet	тагитугек	тагитугьяк,	тагитугтик; тагитугьяк,	tagitugiiq	tagitughiq
	Synthliboramphus antiquus	Ancient murrelet					quqiiq
	Aethia cristatella	Crested auklet	сухляуграк	сюкильпак,	сюкильпа	sukilpaq	sukilpaq, sukillpaghag (young), amaagneq (auklet chick, any species)
	Aethia pusilla	Least auklet	...	акмалиг, ак,	акмалиг, ак,	akmalighaq	akmalighaq, amaghaq (young)
	Cyclorhynchus psittacula	Parakeet auklet	...	сюкльюграк,	сюкльюграк,	suklugraq	sukluraq
	Fratercula corniculata	Horned puffin	пагругак	пагругак,	пагруг, ак,	quprughaq	quprughaq
	Fratercula cirrhata	Tufted puffin	копрохак	к, утшуг, ак,	к, утшуг, ак,	pagruraq	pagrurghaq
Laridae	Pagophila eburnea	Ivory gull	курутек; куроуэк	курут, ъяк,; курутик,	курутик, ак,; курутик,	kurugiiq; kuruwiiq	kuruwiiq
	Larus argentatus	Herring gull	утрак; ухрак	наг, уя; наг, уяпик	наг, уя; наг, уяпик; уг, рак, (chick)	ugraaq	ugraaq
	Larus schistisagus	Slaty-backed gull			наг, уя, наг, уяпик	naghuyapik	ughraghpaq
	Larus glaucescens	Glaucous-winged gull+	...			naghuyapik	
	Larus hyperboreus	Glaucous gull	нагуя	наг, уя	наг, уя	naghuya	naghuyapik
	Xema sabini	Sabine's gull+	насяхтлынтен			nasallenguq	qaqsungighangisteq

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Ainana-Bogoslovskaya	Jacobson et al. 2008	L.S. Guy 2000s
Laridae (cont.)	<i>Larus thayeri</i>	Thayer's gull				nunivagsaghuq	
	<i>Rissa tridactyla</i>	Black-legged kittiwake	кахсюнек	к,ак,сюн,ик, юн,агак		qacsungiq	qacsungiq, qacsungighaq (young), awaatkaggtaq (winter or 2nd year)
	<i>Rhodostethia rosea</i>	Ross' gull+				kulusim qawaaga	kulusim qawaaga
	<i>Larus ridibundus</i>	Black-headed gull					nagallenguq
Strigidae	<i>Sterna paradisaea</i>	Arctic tern	тыкклетак	тыкыйи,г,ак,	тыкыйи:г,ак,	tekeyiighaq	tekeyiighaq, teqeyughhak
	<i>Bubo scandiacus</i>	Snowy owl	анипа	анипа; тыг,ля	анипа; тыг,ля	анипа; anipaghllak; teghla	анипа
	<i>Asio flammeus</i>	Short-eared owl+	...		...	...	anipangisteq
	<i>Selasphorus rufus</i>	Rufous hummingbird*	...		...	kumlulqunak	
Falconidae	<i>Falco rusticolus</i>	Gyr Falcon	...	лъяюк,	лъяюк,	lluuyaq	lluuyaq
	<i>Falco peregrinus</i>	Peregrine falcon	лъяюк	лъяюк,	лъяюк,	...	...
Corvidae	<i>Corvus corax</i>	Common raven	мыгыхлук	мыгых,лъяюк	мыгых,лъяюк	meteghluk	meteghluk
Hirundinidae	<i>Hirundo rustica</i>	Barn swallow+	...		...
	<i>Delichon urbica</i>	House martin+	...		...
Phylloscopidae	<i>Phylloscopus borealis</i>	Arctic warbler*	кувахсиапак		...	kumlulqunak	
Motacillidae	<i>Motacilla tschutschensis</i>	Yellow wagtail+	...		...
	<i>Motacilla alba</i>	White wagtail	...	паныхпалъяюк,	паныхпалъяюк,	anqalqataq; mesaqaaghaq	
	<i>Anthus gustavi</i>	Petchora pipit+	...		...	kumlulqunak ?	
Muscicapidae	<i>Luscinia svecica</i>	Bluetthroat*			...		
	<i>Oenanthe oenanthe</i>	Wheatear*			...	teghlilkak	

	Scientific (Latin) name	English name	Portenko 1972-73	Vakhtin-Emelyanova 1988	Ainana-Bogoslovskaya	Jacobson et al. 2008	L.S. Guy 2000s
Turdidae	<i>Catharus minimus</i>	Gray-cheeked thrush*			...		
Calcariidae	<i>Calcarius lapponicus</i>	Lapland longspur	...	к,увыхси,пак,	к,увыхси; к,у,умси,ак,	mesaqaaghaq	tengneghrugaaq, tegeneghrugaaq, tengenggaghaq (young)
	<i>Plectrophenax nivalis</i>	Snow bunting	катыриегак	к,атыг,ийг,ак;; к,ауамси,ак;; тагитутиг,ак,	к,атыг,ийг,ак;; к,ауамси,ак,	qategruwaaq; mesaqaaghaq	mesaqaaghaq, qateghyeghaq, qateghruwaaq (young)
Fringillidae	<i>Acanthis flammea</i>	Common redpoll*	...		...	quwesliipak	kumlullqugghruk
	<i>Acanthis hornemani</i>	Hoary redpoll*			...	quwesliipak	
	<i>Pyrrhula pyrrhula</i>	Eurasian bullfinch*		укилыг,ьяхак,	...		
Emberizidae	<i>Passerella iliaca</i>	Fox sparrow+	...		...
	<i>Spizella passerina</i>	Chipping sparrow*			...	tagneghruwaaq	
	<i>Passerculus sandwichensis</i>	Savannah sparrow+			...		

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