Université de Montréal

Inuit Ethnobotany in the North American Subarctic and Arctic: Celebrating a Rich History and Expanding Research into New Areas Using Biocultural Diversity

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Résumé

Historiquement, l'utilisation des plantes par les Inuits était considérée comme minimale. Notre compréhension de l'utilisation des plantes par les Inuits a commencé par suite de la prise en compte de concepts tels que la diversité bioculturelle et les espèces clés, et ces nouvelles idées ont commencé à dissiper les mythes sur le manque d'importance des plantes dans la culture inuite. Les Inuits peuvent être regroupés en quatre régions en fonction de la langue: l'Alaska, l'Arctique ouest canadien, l'Arctique et la région subarctique est canadienne et le Groenland. Le chapitre 1 passera en revue la littérature sur l'utilisation des plantes inuites de l'Alaska au Groenland. Au total, 311 taxons ont été mentionnés dans les quatre régions, ce qui correspond à 73 familles. Les niveaux de diversité étaient similaires dans les quatre régions. Seuls 25 taxons et 16 familles étaient communs à toutes les régions, mais 50%-75% des taxons et 75%-90% familles étaient signalés dans au moins deux régions, et les régions voisines ont généralement un chevauchement plus élevé que les régions plus éloignées. De la même manière, les Inuits des quatre régions ont indiqué comestible, médecine, incendie et design comme principales catégories d'utilisation, ainsi qu'une différenciation commune claire en ce qui concerne les taxons utilisés à des fins spécifiques. En ce qui concerne les utilisations médicinales, les Ericaceae était la première famille de plantes médicinales dans toutes les régions, et les affections cutanées étaient également les maladies traitées le plus couramment dans toutes les régions. Il semble également y avoir des applications pan-inuites pour les Ericaceae dans les maladies gastro-intestinales et virales, et les Salicaceae et Pinaceae pour les traitements cutanés. Les résultats présentés ici suggèrent qu'il existe des modèles communs de connaissances et d'utilisations des plantes sur l'ensemble du territoire inuit. Le chapitre 2 utilise la diversité bioculturelle pour décrire l'utilisation des plantes au Nunatsiavut, Labrador, Canada. La diversité bioculturelle est la

reconnaissance du lien entre la diversité biologique et la diversité culturelle. Les travaux actuels sur la diversité bioculturelle sont extrêmement biaisés par l'équateur. Pour élargir ce cadre à un contexte subarctique, cet article cherche à comprendre comment la diversité végétale soutient la diversité intraculturelle à Postville, Hopedale et Rigolet, au Nunatsiavut, au moyen d'interviews avec des membres de la communauté. Au total, 66 taxons ont été identifiés parmi les trois communautés. Environ 75% des taxons étaient communs à au moins deux communautés, ce qui correspond à 95% de toutes les réponses. Les plantes comestibles constituaient l'usage signalé le plus courant, avec un accent particulier sur les taxons producteurs de baies. En ce qui concerne les liens entre les plantes et la culture, il a été constaté que les plantes (i) étaient au centre des activités culturelles; (ii) servaient de sentinelles pour des événements historiques; (iii) jouaient le rôle de catalyseur dans les échanges intergénérationnels et la valorisation des connaissances les concernant; (iv) exprimaient la profonde connaissance que les gens ont de leur environnement local; et (v) étaient et sont encore un moyen d'expression des valeurs traditionnelles. Les similitudes dans les réponses concernant les plantes parmi les communautés suggèrent un ensemble de connaissances communes parmi les communautés de Postville, Hopedale et Rigolet. Il est clair que les plantes supportent une grande diversité d'activités culturelles, de souvenirs et d'histoires locales et de valeurs traditionnelles. Notre étude soutient l'inclusion d'une perspective bioculturelle dans un contexte nordique et attire l'attention sur l'importance culturelle des plantes dans les communautés nordiques. Nous espérons que les lecteurs finiront de lire cette thèse avec une profonde reconnaissance de la valeur des plantes dans la culture inuite. Du nord de l'Alaska à l'est du Groenland, les plantes sont des piliers indéniables de la culture inuite.

Mots-clés: Inuit, ethnobiologie, Arctique, Subarctique, Amérique du Nord, utilisation des plantes, plantes comestibles, plantes médicinales, Nunatsiavut, Labrador, diversité bioculturelle

Abstract

Historically, plant usage by the Inuit was considered minimal. Our recent understanding of Inuit plant usage has been informed by concepts such as biocultural diversity and keystone species, and these new ideas began to dispel myths about a lack of importance of plants in Inuit culture.

Chapter 1 is a review and synthesis of literature concerning Inuit plant usage from across the four Inuit regions including Alaska, Canadian Western Arctic, Canadian Eastern Arctic and Subarctic, and Greenland. In total, there were 311 taxa reported across the four regions, corresponding to 73 families. There were similar levels of plant diversity in all four regions. Only 16 Families and 25 taxa were common to all regions, but 50%-70% of taxa and 75%-90% of Families were reported in at least two of the four regions, and neighbouring regions generally had higher overlap than regions farther apart. Similarly, all four regions showed edible, medicine, fire, and design as their top usage categories, as well as common, clear differentiation concerning what taxa are used for what purpose. Regarding medicinal uses, Ericaceae was the top medicinal Family in all regions, and dermal ailments were the most common treated illness in all regions. There also appeared to be pan-Inuit applications for Ericaceae for gastrointestinal and viral illnesses, and Salicaceae and Pinaceae for dermal treatments. Results of the review suggest that common patterns of plant knowledge and plant use exist across the entirety of the Inuit territory.

Chapter 2 uses biocultural diversity to describe plant usage in Nunatsiavut (Labrador), a self-governing Inuit region within Canada, part of the Eastern Canadian Inuit region. Biocultural diversity is a concept that links biological and cultural diversities. The current body of work

around biocultural diversity is extremely biased towards low latitudes, with much less information available at higher ones. To expand this framework into a Subarctic context, this paper seeks to understand how plant diversity supports intra-cultural diversity within the Nunatsiavut region, including communities of Postville, Hopedale, and Rigolet, via interviews with community members. In total, 66 taxa were identified among the three communities. Approximately 75% of taxa were common to at least two communities, corresponding to 95% of all responses. Edible plants were the most common reported usage, with particular emphasis on berry producing taxa. Plants and culture were highly linked via (i) supporting cultural activities; (ii) marking for historical events; (iii) highlighting intergenerational exchange and valuing of plant knowledge; (iv) expressing the deep awareness that people have for their local environment; and (v) a medium for the expression of traditional values. The similarities in the plant responses among the communities suggest a common body of plant knowledge among Postville, Hopedale, and Rigolet. It is clear that plants support a rich diversity of cultural activities, local memory and history, and traditional values. This study supports the inclusion of a biocultural perspective in a northern context and brings attention to the cultural importance of plants in northern communities. We hope that readers will finish reading this thesis with a profound appreciation for the value of plants in Inuit culture. From northern Alaska to eastern Greenland, both historically and presently, plants are undeniable pillars of Inuit culture.

Key words: Inuit, ethnobiology, Arctic, Subarctic, North America, plant usage, edible plants, medicinal plants, Nunatsiavut, Labrador, biocultural diversity

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Abbreviations and Acronyms

AC: Alain Cuerrier

CA: Correspondence Analysis

CERAS: Comité d'éthique de la recherche en arts et en sciences

GCS M: Canadian Graduate Scholarship Masters

CN: Christian Norton

EBSCO discovery service: Elton B. Stephens Co. discovery service

ENT: ear, nose, throat

Freq.: frequency

IRBV: Institut de recherche en biologie végétale

MUN: Memorial University of Newfoundland

NG: Nunatsiavut Government

NSERC: Natural Sciences and Engineering Research Council of Canada

NSTP: Northern Science Training Program

PCA: Principle Component Analysis

RR: rarefied richness

SCBD: Secretariat for the Convention on Biological Diversity

SID: Simpson’s Index of Diversity:

spp.: species

SSHRC: Social Sciences and Humanities Research Council

UdeM: Université de Montréal

UPEI: University of Prince Edward Island

VM: Vanessa Mardones

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For Madison

1999-2018

Introduction

Ethnobotany is the study of the relationships between plants and people. For the purpose of this thesis, Ethnobotany will be approached through understanding how people use plants, with the goal of highlighting the multitude of relationships that exists between plants and people via culture. Ethnobotanical studies are common in low latitude regions on or near the equator, but there is now a rich body of work describing Ethnobotany at higher latitudes, specifically with respect to the Inuit of the North American Arctic and Subarctic.

Inuit are a maritime culture of the Arctic and Subarctic. They have made incredible technological contributions to global society through invention of the parka, kayak, and snow goggles, to name a few. For the purpose of this thesis, Inuit refers to the speakers of the Inuit languages, i.e. one sub-branch of the Inuit-Yupik-Unangan language family, spoken in northern Alaska, northern Canada, and Greenland. This language family is split into two main branches with Inuit and Yupik languages occupying one branch and the Unangan language occupying the other. In North America, the Inuit homelands span from the northern coast of Alaska to the eastern coast of Greenland. Yupik territory lies within coastal and interior Alaska, islands in the Bering Sea, and parts of far eastern Siberia. Considered together with Yupik—as Inuit often are due to cultural overlap—the Inuit-Yupik homeland spans from eastern coastal Siberia, across the North American Arctic and parts of the Subarctic, and along coastal Greenland. Within North America, there are four broad groups of Inuit between Alaska, the Canadian Western Arctic, the Canadian Eastern Arctic and Subarctic, and Greenland. Although broadly referred to as the Inuit, the Inuit of Alaska are more specifically known as the Iñupiat, the Inuit of the Western Canadian Arctic as the Inuvialuit, and the Inuit of Greenland are known as the Kalaallit. There are four broad language groups: Inupiaq in northern Alaska, Inuvialuktun or Western Canadian Inuktitut

in Inuvialuit and western Nunavut, Eastern Canadian Inuktitut in central and western Nunavut, Nunavik, and Nunatsiavut, and Greenlandic or Kalaallisut in Greenland.

Historically, plant usage by the Inuit was considered by settlers to be minimal, particularly with respect to the role that plants played in caloric intake. However, beginning in mid 20th century, nutritional research began to highlight the important role that plants can play in an Arctic diet in terms of vitamin C value. As we moved into the late 20th century and early 21st century, perspectives on Inuit plant use began to be informed by concepts such as biocultural diversity and cultural keystone species concepts. These concepts, biocultural diversity and cultural keystone species concept, were important because they expanded our understanding about what merits give a plant taxa importance to a particular culture. Calorically and nutritionally, the contributions of plants could be smaller compared to animal sources, but we can now understand that plants can have immense value through being part of cultural activities, assisting with quality of life through providing medical treatment for various illness, and acting as a raw material from which tools can be made. Plants are now seen for their larger cultural value, and this change in perspective greatly challenges the archaic view that plants did not play a vital role in Inuit culture.

The first chapter of this thesis is a review and synthesis of literature concerning Inuit plant usage from Alaska to Greenland. The direct goal of this review is to understand patterns of plant usage in each of the four Inuit regions specified above, as well as how regions compare with respect to their patterns of plant usage. The broader goal of this review and synthesis is to document and highlight the broader trends in plant usage in the North American Arctic and Subarctic. It is anticipated that given the (i) lower species richness in the Arctic and Subarctic due to the higher latitude; (ii) the wider distributions of plants in this area due to the circumpolar

distribution of many plants, and (iii) the cultural connections among the four regions, that the four Inuit regions will show similar patterns of plant usage.

The second chapter of this thesis is an ethnobotanical survey done in Nunatsiavut, Labrador, Canada. Our goal here was to expand biocultural research into a northern context, an area where, until recently, it has been largely absent. There are five communities within Nunatsiavut: Nain, Hopedale, Postville, Rigolet, and Makkovik; this study concentrated on ethnobotanical research in three of the southern communities of Hopedale, Postville, and Rigolet. The goal of this chapter is to describe patterns of plant usage and the relationships between plants and people in Postville, Hopedale, and Rigolet to understand the ways in which biodiversity (i.e. plant diversity, in this case) acts as a means through which cultural diversity (i.e. the diversity of cultural practices in Nunatsiavut) is expressed and maintained. The concept of biocultural diversity often emphasises diversity in taxa and diversity in discrete cultures as a way to understand links between biological and cultural diversities. In this chapter, we suggest that considering intra-cultural diversity—i.e. diversity within a culture—as another way to understand the links between biological and cultural diversities that can be applied to northern contexts

Chapter 1:

Understanding and Comparing

Inuit plant use across North American Arctic and Subarctic

Abstract

Historically, plant usage by Inuit was considered to be minimal, particularly with respect to the role that plants played in food and caloric intake. However, concepts such as biocultural diversity and cultural keystone species now inform our understanding of Inuit plant usage and these new ideas have dispelled myths about a lack of plants in Inuit culture. We now know that plants assume a large cultural value and integral role in Inuit culture. Inuit are grouped into four broad language groups (Inupiaq, Inuvialuktun or Western Canadian Inuktitut, Eastern Canadian Inuktitut, and Greenlandic or Kalaallisut) and these languages are the criteria used to divide the Inuit into four regions, respectively: Alaska, the Canadian Western Arctic (Inuvialuit and western Nunavut), the Canadian Eastern Arctic and Subarctic (central and eastern Nunavut, Nunavik, and Nunatsiavut), and Greenland. This paper reviews literature on Inuit plant usage from Alaska to Greenland with respect to (a) richness of reported taxa and Families, (b) Simpson's Index of Diversity (SID) and rarefied richness of reported taxa and Families, (c) overlapping taxa and Families, (d) applications of reported plants and (e) how plants are used as medicines, specifically what ailments are treated with what Families. In total, there were 311 plant taxa reported across the four regions, corresponding to 73 families. The Eastern region had the highest levels of reported species richness, but SID and rarefied richness suggest that there were similar levels of diversity in all four Inuit regions. Only 25 taxa and 16 Families were common to all regions, but most taxa and Families were reported in at least two regions, suggesting common usage among regions. Neighbouring regions also showed greater taxonomic overlap. Similarly, all four regions showed edible, medicine, fire, and design as their top usage categories. Regarding medicinal uses, Ericaceae was the top medicinal Family used in all regions. Dermal ailments were the most common treated illness in all regions. There also appeared to be pan-Inuit

applications for Ericaceae for gastrointestinal and viral illnesses, and Salicaceae and Pinaceae for dermal treatments. This study highlights that historical conceptions about the lack of importance of plants to Inuit culture are incorrect. Broadly, our results identify the immense cultural importance of plants in Inuit culture. More specifically, results presented here suggest that common patterns of plant knowledge and plant use exist across the Inuit territories. The Eastern Inuit region, though lower in available diversity than the Alaskan and Western Inuit regions, may have shown greater reported richness on account of the sheer number of texts published concerning that region. Cultural connections, circumpolar plant distributions at higher latitudes, relatively low diversity of taxa, and common environmental pressures may explain patterns of plant usage being maintained across such an incredible distance.

Introduction

Historically, plant usage by Inuit was considered negligible, particularly with respect to the role that plants played in caloric intake (Boas 1888; Porsild 1953). However, beginning in mid 20th century, nutritional research began to highlight the important role that plants can play in an Arctic diet in terms of vitamin C value (Rodahl 1952; Hofmann et al. 1967; Fediuk et al. 2002). In the late 20th century and early 21st century, perspectives on Inuit plant use began to be informed by concepts such as biocultural diversity (Posey 1999) and cultural keystone species concepts (Garibaldi and Turner 2004). These concepts were important because they expanded our understanding of what merits give a plant taxon importance to a particular culture. Calorically and nutritionally, the contributions of plants may be less compared with animal sources, but plants have immense value through cultural activities (e.g. berry picking and other foraging activities), assisting with quality of life through providing medical treatment for various illness, and acting as raw materials from which tools are made. When the larger links between Inuit culture and plants were elucidated, studies no longer focused on plants that were strictly edible or used medicinally, but plants were seen for their larger cultural value, and this change in perspective greatly challenged the archaic view that plants did not play a vital role in Inuit culture.

The Inuit are an Arctic, marine culture with communities from northern Alaska to Greenland. There are four broad groups of Inuit among Alaska, the Canadian Western Arctic (Inuvialuit and western Nunavut), the Canadian Eastern Arctic and Subarctic (central and eastern Nunavut, Nunavik, and Nunatsiavut), and Greenland. Although broadly referred to as the Inuit, the Inuit of Alaska are as the Iñupiat, the Inuit of the Western Canadian Arctic as the Inuvialuit, and the Inuit of Greenland are known as the Kalaallit. The term Inuit can refer to all four groups,

but it often only refers to the Western and Eastern Inuit in the Canadian Arctic and Subarctic, and is even more likely to refer to groups that are specifically in the Eastern Canadian Arctic and Subarctic. Although it is important to recognize that groups have specific names, this review will use Inuit to refer to all four regions. It is worth noting that the Inuit are mainly an Arctic culture with the Eastern Inuit living in the Subarctic in the Inuit territories of Nunavik (Québec) and Nunatsiavut (Newfoundland and Labrador).

Along with the Aleutian language and Yupik, the Inuit languages make up one of the major branches of the Eskimo-Aleut language family (Dorais 2010). There are four broad language groups: Inupiaq, Inuvialuktun or Western Canadian Inuktitut, Eastern Canadian Inuktitut, and Greenlandic or Kalaallisut (Dorais 2010). These different languages are the criteria broadly used to divide the Inuit into these four regions. Even within each language and region, there are multiple dialects. People speaking different dialects are generally able to communicate with each other, but communication becomes more difficult as speakers communicate across greater geographic distances. The ability of an Inupiaq speaker in Alaska to communicate with a Kalaallisut speaker in Greenland would pose a significant, if not impossible, challenge (Dorais 2010).

This paper reviews literature concerning Inuit plant usage from Alaska to Greenland. The goal of this review is to compile information about Inuit plant usage from texts and documents to understand patterns of plant usage in each of the four Inuit regions and compare regions with respect to their patterns of plant usage. The broader goal of this review is to document and highlight the broader trends in plant usage in the North American Arctic and Subarctic Inuit groups. Plant usage will be quantified and compared among Inuit regions with respect to (a) species richness of reported plant taxa and Families (b) Simpson's Index of Diversity and rarefied

richness of reported taxa and Families (c) overlapping taxa and Families (d) applications of reported plants and (e) how plants are used as medicines, specifically what ailments are treated with what Families. Please note that while the phrasing above may seem redundant, mentioning both taxa and Families, the phrasing refers to the structure of the data. Taxon refers to the most specific level of classification for a reported plant. The taxon could be Species, or it could be Order, depending on the specificity of the text. Family is used as an additional level of data for responses that are classifiable at or below the level of Family. Given the (i) lower species richness in the Arctic and Subarctic compared with lower latitudes (ii) the wider circumpolar distributions of plants in this area and (iii) the cultural connections among the four regions, it is predicted that the four Inuit regions will show similar patterns of plant usage.

There are differences among regions in terms of diversity, and we need to acknowledge how these differences may affect reported plant usage. There are longitudinal and latitudinal gradients for plant diversity in North America, with diversity generally decreasing West to East and South to North (Qian et al. 1998). In the case of this paper, we have a much larger West-East gradient than we do a South-North gradient, so we will focus on the West-East gradient. For example, there are 105 vascular Families reported in Alaska (https://floraofalaska.org). According to VASCAN (http://data.canadensys.net/vascan), there are vascular 95 Families in the Yukon and Northwest Territories (roughly the Western Inuit region), 88 Families in Nunavut and Labrador (roughly the Eastern Inuit region) and 63 Families in Greenland. Under the condition that greater available diversity relates to greater used diversity, we may expect a West to East gradient, with the Westerly regions reporting higher used and diversity and the Easterly regions reporting lower used diversity.

Methods

Locating texts

Geographically, references from across the Inuit territory, from northern Alaska to eastern Greenland were reviewed, including journal articles, field guides, local dictionaries, academic dissertations, government reports, and book chapters. A large portion of texts came from an existing library collected by Alain Cuerrier. Additional documents were located using the library search system at Université de Montréal (UdeM), as well as the library search system at the University of Prince Edward Island (UPEI). The search systems at UdeM and UPEI do not refer to searches of specific collections at these institutions, but instead refers to their library literature search engines. UdeM uses Atrium and UPEI uses OneSearch via EBSCO discovery service. Google Scholar was used, too. Key search terms and phrases included "Inuit, plant use, ethnobotany, Arctic, Subarctic, Iñupiat, Kalaallit, and medicinal." Once a few useful texts were located, further references/sources were extracted from references cited in each of the documents, and this led to a plethora of additional documents. Although keywords were an important tool for finding preliminary and obvious documents, the bulk of documents incorporated came from reviewing the literature sections of preliminary documents to identify what texts were yet to be considered and could be found and added to the review. Particularly useful were three review documents that assisted with identifying documents for this review, especially literature published before 2000 (Eidlitz 1969, Fortuine 1988, and Garibaldi 1999).

Collecting and organizing data from texts

For the purpose of this review, a broader definition of a "plant" was employed to be consistent with other ethnobotanical surveys across North American Arctic and Subarctic. To the

Eastern Inuit, *pirurtuq* refers to plants, but includes fungi, lichens, and seaweeds (Cuerrier and Elders of Kangirsujuaq 2005), and this grouping appears to be reflected in the texts collected from all four Inuit regions. Each document was reviewed and information extracted included: (i) reference (ii) taxonomy (iii) usage category (iv) language region (v) whether or not a name was given in an Inuit language (vi) group or type (vii) part of plant used and (viii) additional notes on usage.

Geographically documents were sorted into one of the four regions based on the language regions outlined in Dorais 2010. Inupiat region included documents that contained references north of Norton Sound in Alaska to the Alaska-Yukon border; the Inuvialuit or Western Inuit continued from the Alaska-Yukon border to the eastern border of the Northwest Territories. The Eastern Inuit included most of Nunavut, northern Québec, and the Inuit territory of Nunatsiavut in northern Labrador. The Greenlandic Inuit, or the Kalaallit, included any reference from Inuit groups on the island of Greenland. There were cases where a response fell into a geographic grey zone, or an author was unclear about the group referred to in a geographic grey zone. These unclear responses were designated as being between two regions so that they were not counted twice accidentally for both regions during tabulations. Appendix 2 details texts with responses that may be between regions. References and responses that fell in these geographic grey zones were included in tabulations for total taxa and total Families, but were not considered in region specific analyses and comparisons. There were nine documents that contained responses for more than one Inuit region. Four of these documents contained enough information such that responses could be sorted into their respective regions. Five documents contained responses that were not possible to reliably sort into one region or another.

In addition to geographic category, usage was sorted into nine categories as per Clark 2012: edible, medicinal, fire, design, garden, game, avoid, decoration, and miscellaneous (See Appendix 1 for overview). The medicinal category was further broken down to which ailments were being treated (See Appendix 1 for overview). In each case the plant tissue/part used was recorded into nine categories: leaf, stem, fruit, flower, root, sap, bark, wood, and all. There were several rare cases of usage, such as fungal spores, and these were entered into the section containing additional information. Some of the categories were expanded outside of their strict definition. For example, the fruit category also included the cones of coniferous trees, as well as the berries of juniper, even if both cases are not a botanical definition of a true fruit. The sap category was also expanded to include any juice or fluid squeezed from a plant, including the sap collected from resinous trees and the stem and leaf category were used when referring to the blade and stipe of marine taxa.

Efforts were made to reduce redundancy in responses between documents with similar content. For instance, the plant uses contained in the three documents written by Cuerrier in Nunavik were combined (Cuerrier and Elders of Kangiqsualujjuaq 2012; Cuerrier and Elders of Kangirsujuaq 2005; Cuerrier and Elders of Umiujaq and Kuujjuarapik 2011). There were a number of documents written by a group of explorers on the Thule Expedition in the early 20th century, and so these documents were combined where two explorers on the same voyage were writing about the same Inuit groups (Birket-Smith 1945 and Rasmussen 1931; Birket-Smith 1929 and Rasmussen 1930 and Mathiassen 1928; Birket-Smith 1924 and Birket-Smith 1928). Porsild 1937 and Porsild 1945 were combined due to the almost identical information in the two documents. Høygaard 1937 and Høygaard 1941 were combined for similar reasons. Jones 1983 and Heller 1953 were combined because of the overlapping information and figures in the two

texts. Also, notes in Jones 1983 stated that Heller 1953 was an inspiration for that text. Finally, Ootoova et al 2001 and Joamie and Ziegler 2009 were combined because the same Inuit Elder, Aalasi Joamie, recounted plant uses in both texts.

Throughout the study, the lowest level of taxonomic classification, the species level was incorporated where possible. However, such specificity was not always possible because in some cases only common names were reported. For example, a document may report "redberry," and this was easily allocated to *Vaccinium vitis-idaea*; however if a document referred to a "willow," it was not possible to assign a species below the genus *Salix*. In the cases of broad categories such as moss or seaweed, it was not possible to make taxonomic assignments without certainty below the level of Division or Kingdom.

A wide variety of resources were used to elucidate the taxonomy of responses, but particularly helpful sources included VASCAN and the Plant List for vascular taxa (http://data.canadensys.net/vascan; http://www.theplantlist.org), the World Registry for Marine Species for algae (http://www.marinespecies.org), the MycoBank Database for fungal taxa (http://www.mycobank.org), the United States Department of Agriculture Natural Recourses Conservation Service for non-vascular taxa (https://www.nrcs.usda.gov), and the Consortium of North American Lichen Herbaria for lichen taxa (http://lichenportal.org). Furthermore, in the creation of the final table summarizing plant usage across Inuit regions, the above mentioned resources were also valuable in determining the common names for reported taxa, in addition to the Encyclopaedia of Life (http://www.eol.org), the United States Forest Service (https://www.fs.fed.us), and the Plant List.

Statistical approaches

To quantify and compare the patterns of plant usage across the four regions, the following approaches were used: (a) richness of reported taxa and Families, (b) Simpson's Index of Diversity (SID) (Simpson 1949) and rarefied richness (Hurlbert 1972; Heck et al. 1975) of reported taxa and Families, (c) Venn diagrams for overlapping taxa and Families, (d) quantifying usage overlaps of reported plants via Principle Component Analysis (PCA), and (e) quantifying which plants are used as medicines, specifically what ailments are treated with what Families, via Correspondence Analysis (CA).

The equation for SID is:

$$D = 1 - \frac{\sum n(n-1)}{N(N-1)}$$

Where n is the total number of individuals of a single taxon and N is the total number of individuals of all taxa (Simpson 1949). As D approaches 1, diversity increases. The equation for calculating rarefied richness (i.e. rarefaction) is:

$$E(S) = \sum_{i-1}^{S} \left(1 - \left[\frac{\binom{N - N_i}{n}}{\binom{N}{n}} \right] \right)$$

Where E(S) is "the expected number of [taxa] in a sample of n individuals selected at random from a collection containing N individuals, S [taxa], and N_i individuals in the *i*th [taxa]" (Hurlbert 1971). SID and rarefied richness were used to compare diversity and richness between regions to account for the difference in sample size (i.e. number of documents per region). Note that rarefied richness is calculated without resampling, thus the desired rarefied community should be smaller than the community from which resampling is being done. For these analyses,

community refers to reported taxa, and the associated Families where applicable, reported in each of the Inuit regions. Both SID and rarefied richness were used to get a better understanding of the differences in reported diversity and reported richness between regions by describing reported diversity and reported richness in ways that are comparable between regions. As an index of diversity, Simpson's gives more weight to common taxa, and less weight to rare and less common taxa (Nagendra 2002), while rarefied richness is a means to consider richness between regions when there are large differences in sampling (Gotelli and Colwell 2011). Venn diagrams were used to describe overlapping taxa. A PCA was run on the responses in each region (i.e. four PCAs) to describe the interactions between the main categories of plant usage and the amount of overlap in usage. The goal with a PCA per region is to understand whether the ways in which plants were used—as per the usage categories—was similar among the four Inuit regions. For example, a PCA will describe how plants that are used for food overlap with plants that are used as medicine. Doing a PCA for each region individually will allow us to see if regions show similar or dissimilar relationships concerning overlap between usages. Finally, CA—and the chi-square tests implicit in this analysis—was used to determine if certain Families were linked to treating certain illnesses. The most common Families were used in the CA analysis to reduce the number of zeros in the contingency tables implicit in the analyses. Moerman's regression (Moerman 1991; 1996) was also considered as a tool to understand how medicinal usage is related to Family. The regression was not run due to the analysis requiring accurate species lists to compare species used medicinally per Family vs. species available per Family. All statistical analyses were run using R studio v3.3.2.

Results

Total texts and total taxa

A total of 99 documents contained information about plant, algae, fungi, and lichen usage, and a breakdown of documents by region can be found in Appendix 2. The greatest number of documents (36/99) described the Eastern region, whereas the Western region was only described by 10 texts, and that was the lowest number of the four regions. In total, there were 311 taxa reported across the four regions, corresponding to 73 families. Appendix 3 gives a full description of all recorded taxa, as well as information concerning their uses, their common names, where they were used, and the part of the plant that was used.

Taxonomic diversity, Simpson's Index of Diversity, and Rarefied Richness

There were differences among the four regions in terms of the taxonomic diversity (Table 1). The Eastern region had the highest reported usage diversity with 208 taxa, and the Alaskan and Western regions reported the lowest number of taxa, and had similar diversity with 90 and 94 taxa, respectively. Similarly, the Eastern region reported the greatest number of Families, and the Alaskan and Western regions reported the lowest (Table 1). Appendix 4 through 7 show full taxa lists for each of the four regions, sorted according to taxonomic specificity and plant group of the taxon.

Although simple counts indicate that the Eastern region had the highest reported usage diversity, this region also had the greatest number of documents (208 taxa /36 texts), almost four times that of the Western region (94 taxa/ 10 texts, Appendix 2). Based on Simpson's Index, the Eastern region had the highest value for diversity, but the differences between the regions was extremely small (Table 2), meaning that the regions had similar levels of reported diversity for

taxa. The SID for the Families in each region was similar in that there was very little difference between the regions (Table 2), again suggesting similar levels of diversity at the level of Family. The results for rarefied richness were similar to the results for SID for each region (Table 2). Rarefied richness was similar among regions for all taxa and for Families. Similiar values for rarefied richness means that while there may be large differences in reported richness among regions, reported richness is not greatly different among regions when sample size is accounted for through rarefied richness.

Taxonomic overlap and comparing usage between regions

Overall, there were 25 taxa and 16 Families that were common to all four regions (Tables 3 and 4). Examples of taxa common to all four regions include taxa burnt for heat (*Betula* spp., *Juniperus communis*, *Cassiope tetragona*), edible greens (*Chamaenerion* spp., *Oxyria digyna*, *Salix* spp.), edible berries (*Empetrum nigrum*, *Rubus chamaemorus*, *Vaccinium uliginosum*, *Vaccinium vitis-idaea*), and medicinal taxa (*Rhodiola rosea*, *Rhododendron tomentosum*). Only 8.0% (25/311) of all taxa were common among all regions, whereas 21.9% (16/73) of all Families were common to all regions, showing that there was higher overlap among regions at higher taxonomic levels. Although only 25 taxa and 16 Families were common to all regions, there was much greater overlap between adjacent communities. For taxa, over 75% of taxa reported in Alaska and the West were reported in at least one other region, and approximately 50% of taxa in Greenland and the East were reported in at least one other region (Fig. 1). Concerning Families, regions had 75% to over 90% in Families that were found in that region and at least one other (Fig. 2). When comparing overall overlap between any two regions, the highest level of overall overlap was between the Eastern and Western regions (Table 1). When

comparing percent overlap between regions, Alaska and Western regions had the highest overlap for both taxa and Families, and there was higher percentages overlap at the Family level than at the level of taxa between regions (Table 5). Table 5 also shows that geographically closer regions have generally higher percent overlap, particularly for taxa, but the Eastern region more closely aligns with the other continental regions than it does Greenland. The Alaskan, Eastern, and Western regions—the three regions that were on the mainland of the continent of North America—had the highest level of overlap among three regions (Table 1.)

The most common usage in all four regions was edible (Fig. 3). In the Alaskan, Eastern, and Greenlandic regions, the next most common uses were medicinal, fire, and design, in that order (Fig. 3). The Western region was slightly different in that fire was more common than medicinal (Fig. 3). Concerning taxonomic overlap, the edible use category was the main usage overlap between the regions, three to four times as much as the medicinal, fire, and design categories (Table 1). Vascular plants were overwhelmingly the most commonly reported plant group for all regions (Fig. 4). Greenland, unlike other regions, had a considerable portion of responses that concerned algae (Fig. 4).

The regions showed similar patterns of usage among usage categories, as can be seen in the PCA biplots for Alaska (Fig. 5), East (Fig. 6), Greenland (Fig. 7), and West (Fig. 8). Note the y-shaped arrangement of the four main vectors in all four of the biplots meaning that –in all cases—fire and design are correlated, and edible and medicinal are both distinct from each other, as well as distinct from the correlated fire and design vectors. The first two principle components (PCs) in the biplot for the Eastern region explain 49.2% of the variance in those data, and that is the lowest combined variance of the four regions. PC1 and PC2 for Greenland and West explain approximately the same amount of variance, less than 60%. PC1 and PC2 for Alaska explain over

80% of total variance, and that is the greatest of the four regions. The Greenland biplot shows a noticeable correlation between medicinal and decorate categories, and the West biplot shows a correlation between miscellaneous, fire and design.

Special consideration for medicinal responses

Plants reported as being used for medicine were the 2nd most common response in Alaska, East, and Greenland, and the 3rd most common response in West (Fig. 3). Most medicinal taxa were reported in the East, and the fewest medicinal taxa were reported in Alaska (Table 1). Four medicinal taxa (*Empetrum nigrum, Juniperus communis, Rhododendron tomentosum*, and *Vaccinium vitis-idaea*) were reported in all four regions, but this was the 2nd highest four-way overlap after the medicinal usage category (Table 1). There was higher overlap when comparing two or three regions. Overlap in two-way comparisons ranged between six and 19 taxa, and overlap in three-way comparisons ranged from four to 10 taxa. Dermal ailments were the most commonly reported conditions treated with plants in all four regions. Other most frequently treated conditions include gastrointestinal, viral, general health, pulmonary, and optic illnesses. Ericaceae was the most common Family for medicinal taxa in all four regions. Other most highly reported Families include Asteraceae, Salicaceae, Pinaceae, and Onagraceae.

Results for Correspondence Analysis (CA) suggest that there are common patterns of medicinal plant usage among the four regions when considering the relationships between the most frequent ailments and most frequent Families. Alaska and the Eastern region were the only two regions that showed significant results between Families and ailments. In Alaska, the chi-square test associated with the CA test had a *p*-value less than 0.05, suggesting that the contingency table used in the CA showed significant relationships between which Families treat

what ailments. Axis 1 and Axis 2 account for 95.89% of total variance (Fig. 9). Ericaceae was correlated to treating gastrointestinal ailments and Salicaceae for dermal ailments (Fig. 9). Pinaceae was associated with treating dermal and viral illnesses, as well as acting as a remedy for improving general health (Fig. 9). Moreover, Asteraceae appears central on the CA factor map due to its application in treating all of the most common ailments (Fig. 9). In the East, the contingency table for the CA also had a *p*-value less than 0.05. Axis 1 and Axis 2 account for 82.71% of the total variance (Fig. 10). Dermal ailments appear to be equally associated with four families: Cyperaceae, Salicaceae, Crassulaceae, and Pinaceae (Fig. 10). Ericaceae is associated with treating five ailments: pulmonary, viral, general health, oral, and gastrointestinal (Fig. 10). Rosaceae, Polygonaceae, and Onagraceae were associated with treating gastrointestinal illnesses, as well as improving general health (Fig. 11).

The CAs for Greenland and West did not show significant results because both *p*-values from the associated chi-square tests were greater than 0.05, and so interpretations for these two regions are less confident then in the cases of Alaska and East. In the case of Greenland, there was no factor map produced from the CA because there were only two top Families in this region: Asteraceae and Ericaceae. The two Families had the same applications for dermal, ear-nose-throat (ENT), general health, and nervous system conditions, in addition to Ericaceae being used for treating viral illness whereas Asteraceae was not. In the Western region, Ericaceae may be associated with treating viral illnesses, and dermal conditions maybe associated with treatment using Salicaceae, Asteraceae, and Pinaceae (Fig. 11). Axis 1 and Axis 2, when combined, explained 97.03% of total variance.

Broadly, there appear to be four main trends among the four regions. Firstly, Ericaceae as a treatment for viral conditions was noted in the Eastern region as being significant, and this is

mirrored in Greenland and the West. Secondly, Ericaceae is also noted as a treatment for gastrointestinal illnesses in both Alaska and the East. Thirdly, Salicaceae is noted as a significant treatment for dermal conditions in Alaska and the East, as well as appearing to be being associated with dermal conditions in the West. Finally, Pinaceae is linked to treating dermal conditions in the East, and there is evidence of this in the West, too.

Discussion

In total, 311 taxa and 73 families were reported across the Inuit homeland. However, taxa were not equally reported among regions. The Eastern region was the group with the highest species richness and Family richness, with 208 and 53, respectively. Inversely, documents about Alaska only contained information about 90 taxa corresponding to 30 Families, and results from documents concerning Greenland are similar. Morever, concerning West-East gradients in diversity, there should be a West to East decrease in reported taxa under the condition that available diversity related to used diversity. How do we understand the obvious difference between the East and the other regions and how this result conflicts with the West-East diversity gradient? The Eastern region has been a particular hotspot in recent years for ethnobotanical research with an abundance of new research and publications lacking in other areas (Cuerrier and Elders of Kangirsujuaq 2005; Joamie and Ziegler 2009; Cuerrier and Elders of Umiujaq and Kuujjuarapik 2011; Clark 2012; Cuerrier and Elders of Kangiqsualujjuaq 2012; Cuerrier and Hermantuz 2012; Downing et al. 2012; Zutter 2012; Pigford and Zutter 2014; Orberndorfer 2016; Siegwart Collier 2018 unpublished PhD thesis). An abundance of new literature is unique to the Eastern Inuit region (Appendix 2). For example, the average date of publication for texts in the Western Inuit region is 1946, with only three texts published after 1978[1]. The most recent Alaskan text is from 1989. Greenland has only two texts published after 1994. These recent studies in the Eastern Inuit region may be free of historical biases against the reality of plant usage in the North by Inuit (Boas 1888; Porsild 1945, 1953). Perspectives such as the cultural keystone species concept and biocultural diversity supplement newer texts (Posey 1999; Nabhan et al 2002; Garibaldi and Turner 2004; Bandringa and Inuvialuit Elders 2010). These recent

[1]Please note that one of the three texts mentioned here, Desrosier 2017, was found after analyses were completed and thus was not included in analyses.

studies informed by such concepts may account for more detailed, nuanced descriptions of plant usage in the Eastern Inuit region, which would in turn account for increased reporting in species richness. Even more simply, the sheer number of texts from the Eastern Inuit region would naturally document plant knowledge in greater detail.

Although the Eastern region had the greatest species richness in terms of reported plants, it is interesting to note that both the SID and RR showed similar levels of diversity and rarefied richness among the four regions. Considered together, these two diversity measures suggest that the large differences in reported species richness between the Eastern region and the other three regions are largely due to taxa that are reported with lower frequency. For example, looking at Figure 1, we can see that the East has 105 taxa that were only reported in that region, whereas Alaska had 20 taxa, Greenland 48, and the West 23 (Fig. 1). There is a similar level of species diversity among the four regions where frequent taxa are concerned, as is implicit in the similar SID scores. It is worth restating what was noted in the last paragraph; higher reported richness in the Eastern Inuit region may be due to the sheer number of studies conducted in that area, and is not indicative of higher available diversity in that area.

There were 25 taxa and 16 Families that were reported in all four regions. The overlap for Families was a much larger percentage of total Families than the overlapping taxa were of the total taxa (i.e. all responses, inclusive of Family). This study supported the higher correspondence at the level of Family was noted in comparative studies between Inuit communities in Nunavik and Nunatsiavut (Clark 2012), most likely because higher levels of taxonomy inherently contain more lower taxa. Only about 8% of all reported taxa were common to all four regions, and this result deserves further consideration. The low overlap among all four regions could be due to constraints on plant distributions, i.e. not all plants are found in all regions, but this explanation

does seem unlikely considering the larger distributions of plant taxa at higher latitudes (Cuerrier and Hermanutz 2012; Blondeau et al. 2011 in Clark 2012). Though speculative, one explanation may be commonness, which was discussed by Clark (2012). A taxon may have a wide distribution and thus be found in all four regions, but it could be uncommon in one region, perhaps leading to this taxon being overlooked as useful by groups in that region. It may be that the 25 taxa and 16 families common to all four regions have larger distributions and are common in all regions, and thus show up in surveys across the North American Arctic and Subarctic. A second explaination may again be related to a difference in the number of detailed ethnobotanical studies. The Alaska, Western, and Greenland Inuit regions, with older texts and fewer studies compared to the Eastern Inuit region, may be understudied. The communities in these regions may use more plants than was reported in the texts, and additional ethnobotanical studies may recognize additional taxa as being used in these regions that are not recognized in the literature considered for this study, thus adding to the number of plants that are used commonly across the four Inuit regions.

Only 25 taxa and 16 Families may have been common to all four regions concurrently, but there was much greater overlap when we consider overlap from the perspective of taxa or Family being reported in one region and at least one other. The high overlap suggests that plants considered here do in fact have wide distributions, and that differences existing between regions may be to due to differences in either species availability, differences in a species commonness between regions, or regions being understudied, as was touched on in the previous paragraph.

There is also something to be said for the role that proximity plays in describing the similarity of reported plants among and between regions. Looking at total overlap, the Eastern Inuit region had the highest overlap overall with the Western Inuit region, but with almost equal

overlap with Greenland and Alaska, too. However, looking at percent overlap allows us to tease apart the role that proximity appears to play (Table 5). Generally, neighbouring regions had higher percent overlap, with decreasing similarity with increasing distance, particularly in the case of lower taxa. There was greater overlap between the three regions on the continent, but Greenland still had higher percent overlap with the Eastern region compared to the West and Alaska. It may be that plants found in one region are more likely to be found in closer regions simply due to distribution and similar ecologies. It may also be that closer proximity encourages knowledge exchange, thus increasing the similarity of reported useful taxa.

In addition to overlapping taxa, regions were also similar concerning how they used plants. In all four regions, the top four uses were edible, medicinal, fire, and design. Edible was the most frequent uses in all four regions, and this is particularly interesting because, historically, the relevance of plants to the diets of Northern communities was seen as negligible, and there is an historic biased towards considering the animal-based components in the diets of these communities. Calorically, the contribution of plants to local diet may still be low (Fediuk et al. 2002), but this does not discredit the nutritional contributions of plants to diets in Inuit diets, from Alaska to Greenland.

It is also important to note that plants were employed in similar ways in all regions, with edible and medicinal being distinct from each other as well as from fire and design. Firstly, the distinction between edible and medicine seems to suggest that these areas of plant knowledge are made up of different groups of plants, that are viewed as being either for eating or for medicine, and rarely both. More broadly, the separation of taxa into these three groups—fire/design, medicine, and edible—suggests that taxa used by groups considered here have a main usage, and

that main usage is consistent within a specific region, and that secondary usages for a taxa are less important.

Much like overlaps in taxa and similar plant usage, the application of medicinal plants showed similarities across the four regions, and this may be evidence of a common body of medicinal plant knowledge across regions. The regions shared the same most frequent medicinal taxa. Ericaceae was the most frequent in all regions, and the other most frequent—although not necessarily having the same rank between regions—were Asteraceae, Salicaceae, Pinaceae, and Onagracae. The finding that Ericaceae, Asteraceae, Salicaceae, and Pinaceae are top medicinal taxa is notable because these Families were noted as five of the top Families containing medicinal taxa employed by Indigenous groups in North America (Moerman 1996). The most commonly treated ailment was for dermal application—e.g. cuts, rashes, irritation, stings, etc.—in addition to top treatments for issues regarding gastrointestinal, general health, pulmonary, viral, and optic, and the consistency of these treatments across the whole of the region is further testament to the degree of similarity among regions. The broad, medicinal trends identified in this review can be seen at a smaller scale in some of the texts that made up this review. In Clark (2012), dermal and gastrointestinal ailments were the most commonly treated, and this is further noted in Ootoova et al. (2001). Applications for general health were one of the most common treatments identified by Black et al. (2008), in addition to treatments for gastrointestinal conditions. Although similarities among regions about linking specific Families to specific aliments is a bit tenuous—as per the results of the CAs—Ericaceae as a treatment for gastrointestinal and viral illnesses is common across regions, as does the treatment of dermal conditions with Salicaceae, and to a lesser extent Pinaceae.

This review included almost 100 texts on Inuit plant usage across the North American Arctic and Subarctic. It confirms that outdated views about the low importance of plants in Inuit culture are wholly incorrect, noting that over 300 plant taxa have applications in providing nutrition to northern diets, improving quality of life through acting as medical treatments to mitigate illness, giving heat source for warming lodgings and cooking food, and offering raw material for crafting and designing the tools needed to carrying out day to day activities. Inuit may be the most widely dispersed Indigenous language group, and the results presented here suggest that common patterns of plant knowledge and plant use exist across the whole of the Inuit territory, even at a more specific level concerning medicinal plants. The Eastern Inuit region, though lower in available diversity than the Alaskan and Western Inuit regions, may have shown greater reported richness on account of the sheer number of texts published concerning that region. There are differences among regions—with neighboring regions having greater taxonomic overlap—but the general conclusion is that, broadly and overall, regions have plant usage profiles that are repeated across the whole Inuit territory. Although speculative, it may be that commonalities among and between the regions noted in this review are a combination of a common cultural heritage shared among regions, in addition to a biome with some of the lowest levels of plant diversity and common environmental pressures (i.e. needing heat, lack of woody species, etc.), thus reducing the ability for communities and regions to develop divergent bodies of plant knowledge.

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Legends for Tables, Figures, and Appendices

Table 1. Summary of taxa and Families reported in each of the four Inuit regions (in blue), in addition to comparisons of overlapping taxa and overlapping taxa by usage (a) between two regions (in orange) (b) among three regions (in purple) and (c) among all four regions (in white). Taxa refer to the most specific classification of a given response.

Table 2. Summary of results from Simpson's Index of Diversity (SID) and rarefied richness (RR) between the four regions for both taxa and Families.

Table 3. Review of the 25 taxa reported across all Inuit regions, from Alaska to Greenland. Table includes information about the most specific classification possible for that taxon, common names, applicable usage categories, as well as what part of the plant was used.

Table 4. Review of the 16 Families reported across all Inuit regions, from Alaska to Greenland. Table includes Family name, common names, and applicable usage categories.

Table 5. Overlap among Inuit regions for both taxa and Families expressed as a percent.

Figure 1. Venn diagram comparing total taxa reported among Inuit regions.

Figure 2. Venn diagram comparing total Families reported among Inuit regions.

Figure 3. Usage categories and their total percent of all reported usages among the four Inuit regions. Columns for Alaska are blue, columns for East (i.e. central and eastern Nunavut, Nunavik, and Nunatsiavut) are green, columns for Greenland are purple, and columns for West (i.e. Inuvialuit and western Nunavut) are red.

Figure 4. Plant groups and their total percent of all responses among the four Inuit regions. Columns for Alaska are blue, columns for East (i.e. central and eastern Nunavut, Nunavik, and Nunatsiavut) are green, columns for Greenland are purple, and columns for West (i.e. Inuvialuit and western Nunavut) are red.

Figure 5. Variable factor map of a Principle Component Analysis (PCA) used to visualize relationships among usage categories in Alaska. See Appendix 1 for explanation of shortened words.

Figure 6. Variable factor map of a Principle Component Analysis (PCA) used to visualize relationships among usage categories in East (i.e. central and eastern Nunavut, Nunavik, and Nunatsiavut). See Appendix 1 for explanation of shortened words.

Figure 7.Variable factor map of a Principle Component Analysis (PCA) used to visualize relationships among usage categories in Greenland. See Appendix 1 for explanation of shortened words.

Figure 8. Variable factor map of a Principle Component Analysis (PCA) used to visualize relationships among plant usage categories in West (i.e. Inuvialuit and western Nunavut). See Appendix 1 for explanation of shortened words.

Figure 9. Plot of Correspondence Analysis (CA) used to visualize the association among most frequent Families and most frequent ailments in Alaska. See Appendix 1 for explanation of shortened words.

Figure 10. Plot of Correspondence Analysis (CA) used to visualize the association among most frequent Families and most frequent ailments in East (i.e. central and eastern Nunavut, Nunavik, and Nunatsiavut). See Appendix 1 for explanation of acronyms words.

Figure 11. Plot of Correspondence Analysis (CA) used to visualize the association among most frequent Families and most frequent ailments in West (i.e. Inuvialuit and western Nunavut). See Appendix 1 for explanation of shortened words.

Appendix 1. List describing what uses were classified into which usage categories, with an additional explanation of ailments that were included under the medicinal category of usage.

Appendix 2. Summary of documents included in the literature review and the Inuit regions that are included in each of the documents.

Appendix 3. Summary of all 311 taxa reported as having a usage across all four Inuit regions: Alaska, East (i.e. central and eastern Nunavut, Nunavik, and Nunatsiavut), Greenland, and West (i.e. Inuvialuit and western Nunavut). Taxa are sorted according to plant group and then Family, where possible. Taxa are specified to the lowest possible taxa, and the table also includes information concerning common names, usage, and parts of the plants that are used.

Appendix 4. Full list of the 90 taxa reported in Alaska, sorted according to plant group and then taxonomic specificity.

Appendix 5. Full list of the 208 taxa reported in East (i.e. central and eastern Nunavut, Nunavik, and Nunatsiavut), sorted according to plant group and then taxonomic specificity.

Appendix 6. Full list of the 112 taxa reported in Greenland, sorted according to plant group and then taxonomic specificity.

Appendix 7. Full list of the 94 taxa reported in West (i.e. Inuvialuit and western Nunavut), sorted according to plant group and then taxonomic specificity.

Tables, Figures, and Appendices

Table 1

	Comparison	Overall		Top Uses			
		# Taxa	# Families	# Edible Taxa	# Medicinal Taxa	# Fire Taxa	# Design Taxa
By Region	A	90	30	71	23	13	14
	W	94	33	53	32	26	24
	E	208	53	125	83	68	77
	G	112	43	74	34	21	20
Between Two Regions	AE	62	26	43	13	3	12
	AG	32	21	22	6	4	4
	AW	50	21	30	8	9	9
	EG	61	31	35	16	12	14
	EW	63	26	35	19	17	16
	GW	37	22	16	11	6	5
Among Three Regions	AEG	30	19	20	5	4	4
	AEW	43	21	24	7	6	9
	GWA	26	20	12	4	3	4
	EGW	35	16	14	10	6	5
Overall	AEGW	**25**	**16**	**11**	**4**	**3**	**4**

Table 2

For Taxa	**Region**	**SID**	**RR**
	Alaska	0.978	9.27
	West	0.984	9.60
	East	0.990	9.62
	Greenland	0.982	9.40
For Families	Alaska	0.907	7.17
	West	0.926	7.66
	East	0.928	7.72
	Greenland	0.931	7.87

Table 3

Lowest classification	**Common name(s)**	**Use(s)**	**Part(s) used**
Division Basidiomycota	Mushroom	Edible, medicinal, fire, game, avoid, decorate	All
Betula glandulosa	Glandular birch, bog birch, scrub birch	Edible, medicinal, fire, design, game	Leaf, stem, root, bark, wood
Betula spp.	Birch	Edible, fire, design, miscellaneous (fragrance)	Leaf, flower, bark, wood, all
Division Bryophyta	Moss	Edible, medicinal, fire, design, game, decorate, miscellaneous (disposable cleaning fibre)	All
Carex spp.	Sedge	Edible, design	Leaf, stem, root
Cassiope tetragona	Four-angled mountain heather, arctic bell heather, arctic white heather	Edible, medicinal, fire, design, miscellaneous	Leaf, stem, flower, roots, all
Chamaenerion angustifolium	Fireweed	Edible, medicinal, fire, decorate, game,	Leaf, stem, flower, root, all

		miscellaneous	
Chamaenerion latifolium	River beauty	Edible, medicinal, fire, design, decorate, miscellaneous	Leaf, stem, fruit (seeds), flower, all
Non-specific	Digested plants	Edible	From caribou, deer, muskoxen, ptarmigan Mainly lichens in ungulates Mainly willow in ptarmigan
Empetrum nigrum	Blackberry, crowberry, curlewberry, heathberry	Edible, medicinal, fire, design, avoid, decorate, miscellaneous (toughen dog paws, pest repellent, indicator)	Leaf, stem, fruit, root, all
Eriophorum spp.	Cottongrass	Edible, medicinal, fire, design, game, decorate, miscellaneous (caribou indicator	Leaf, stem, fruit, flower, root, all

		and amulet for long life)	
Juniperus communis	Common juniper	Edible, medicinal, fire, design, avoid, decorate, miscellaneous (burn to remove unwanted spirits)	Leaf, stem, fruit, wood, all
Kingdom Fungi	Lichen	Edible, medicinal, fire, design, miscellaneous (caribou food, amulet, dog food)	All
Oxyria digyna	Mountain-sorrel	Edible, medicinal, design, miscellaneous (pacifier for baby)	Leaf, stem, fruit, flower, root, all
Pedicularis lanata	Woolly lousewort	Edible, fire	Leaf, stem, flower, root
Bistorta vivipara	Alpine bistort	Edible, medicinal	Leaf, fruit (seed), flower, roots, all
Family Poaceae	Grass	Edible, medicinal, fire, design, game,	Leaf, stem, flower, all

		decorate, miscellaneous	
Rhodiola rosea	Roseroot	Edible, medicinal, decorate	Leaf, stem, fruit, flower, root, sap, all
Rhododendron tomentosum	Northern Labrador tea, dwarf Labrador tea	Edible, medicinal, fire, design,	Leaf, stem, flower, root, wood, all
Rubus chamaemorus	Bakeapple, cloudberry	Edible, medicinal, miscellaneous (indicator)	Leaf, fruit
Salix spp.	Willow	Edible, medicinal, fire, design, games, decorate, miscellaneous (amulet, bee food, indicator for timing of hunting, superstition)	Leaf, stem, fruit, flower, root, bark, wood, all
Sphagnum spp.	Sphagnum moss	Edible, medicinal, fire, design, miscellaneous (dog food, natural compass, disposable	All

		cleaning fibre)	
Taraxacum spp.	Dandelion	Edible, medicinal, game, decorate	Leaf, stem, flower, root, all
Vaccinium uliginosum	Bog bilberry, bog blueberry, alpine bilberry	Edible, medicinal, fire, design, game, miscellaneous (stain removal)	Leaf, stem, fruit, flower, root, all
Vaccinium vitis-idaea	Mountain cranberry, redberry, lingonberry, partridgeberry	Edible, medicinal, fire, design, games	Leaf, fruit, flower, all

Table 4

Family	**Common name**	**Use(s)**
Asteraceae	Daisy family	Edible, medicinal, fire, garden, game, decorate, miscellaneous (bookmark, bee food, bedding for puppies)
Betulaceae	Birch family	Edible, medicinal, fire, design, game, decorate, miscellaneous (house scent, indicator for ptarmigan)
Caryophyllaceae	Carnation family	Edible, medicinal, design, game, miscellaneous (superstition, arrival of capelin, bee food)
Crassulaceae	Orpine family	Edible, medicinal, decorate
Cupressaceae	Cypress family	Edible, medicinal, fire, design, avoid, decorate, miscellaneous (remove spirits)

Cyperaceae	Sedge family	Edible, medicinal, fire, design, game, decorate, miscellaneous (indicate caribou are ready for harvest, amulet for long life)
Equisetaceae	Horsetail family	Edible, medicinal, design, miscellaneous (bookmark, goose food, caribou food)
Ericaceae	Health family	Edible, medicinal, fire, design, game, avoid, decorate, miscellaneous (attract caribou, bee food, give dogs energy, house scent, pest repellent, predict arrival of geese, treat dog paws)
Onagraceae	Willowherb family	Edible, medicinal, fire, design, game, decorate, miscellaneous (indicate arrival of salmon,

		bookmark, bee food)
Orobanchaceae	Broomrape family	Edible, medicinal, fire, design, game, miscellaneous (bee food)
Poaceae	Grass family	Edible, medicinal, fire, design, game, decorate, miscellaneous (in gunpowder)
Polygonaceae	Knotweed family	Edible, medicinal, design, games, miscellaneous (as baby pacifier)
Rosaceae	Rose family	Edible, medicinal, fire, game, avoid, decorate, miscellaneous (seasonal indicator, pest repellent, house scent, indicator for caribou fur, indicator for how much snow, indicator for birds laying eggs)
Salicaceae	Willow family	Edible, medicinal, fire,

		design, garden, game, decorate, miscellaneous (caribou food, amulet for boys, pest repellent, bee food, indicator to begin hunting, supernatural associations)
Saxifragaceae	Saxifrage family	Edible, medicinal, fire, design, decorate, miscellaneous (treat dog paws, house scent, bedding for puppies)
Sphagnaceae	Peat moss	Edible, medicinal, fire, design, miscellaneous (telling direction, dog food)

Table 5

For Taxa		**% Overlap With Alaska**		**% Overlap With West**		**% Overlap With East**		**% Overlap With Greenland**
	AW	37.3	**WA**	37.3	**EW**	26.6	**GE**	23.6
	AE	26.3	**WE**	26.6	**EG**	23.6	**GW**	21.9
	AG	18.8	**WG**	21.9	**EA**	26.3	**GA**	18.8
For Families	**AW**	50.0	**WA**	50.0	**EW**	37.1	**GE**	47.7
	AE	45.6	**WE**	37.1	**EG**	47.7	**GW**	40.7
	AG	40.4	**WG**	40.7	**EA**	45.6	**GA**	40.4

Figure 1

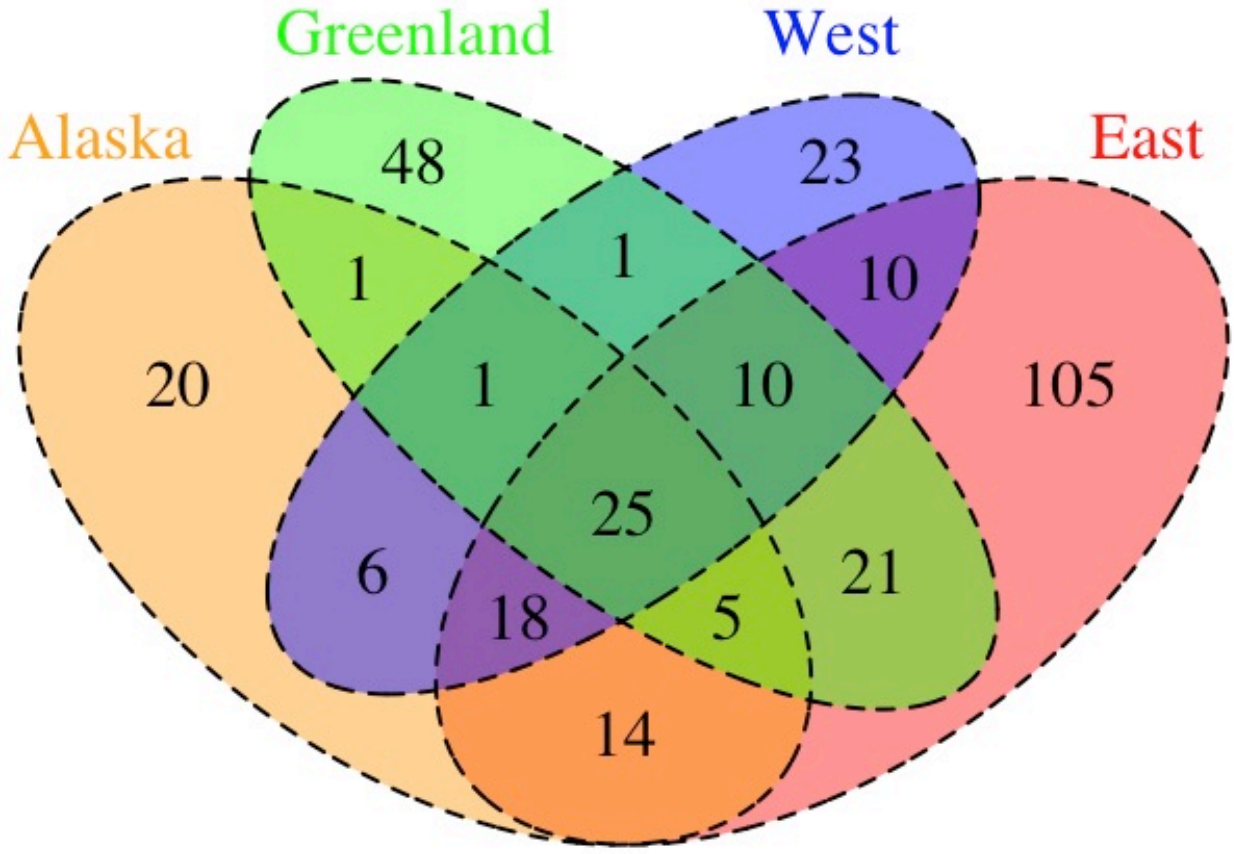


Figure 2

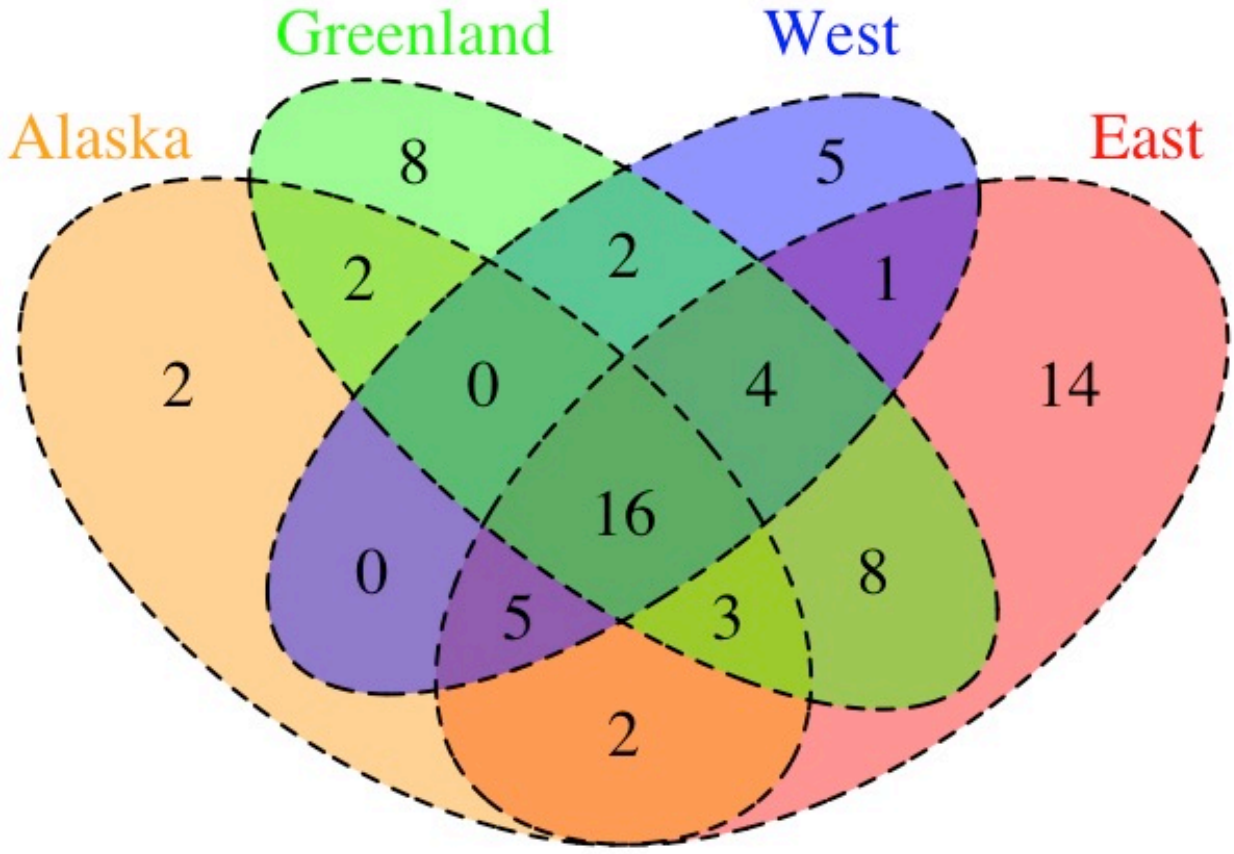


Figure 3

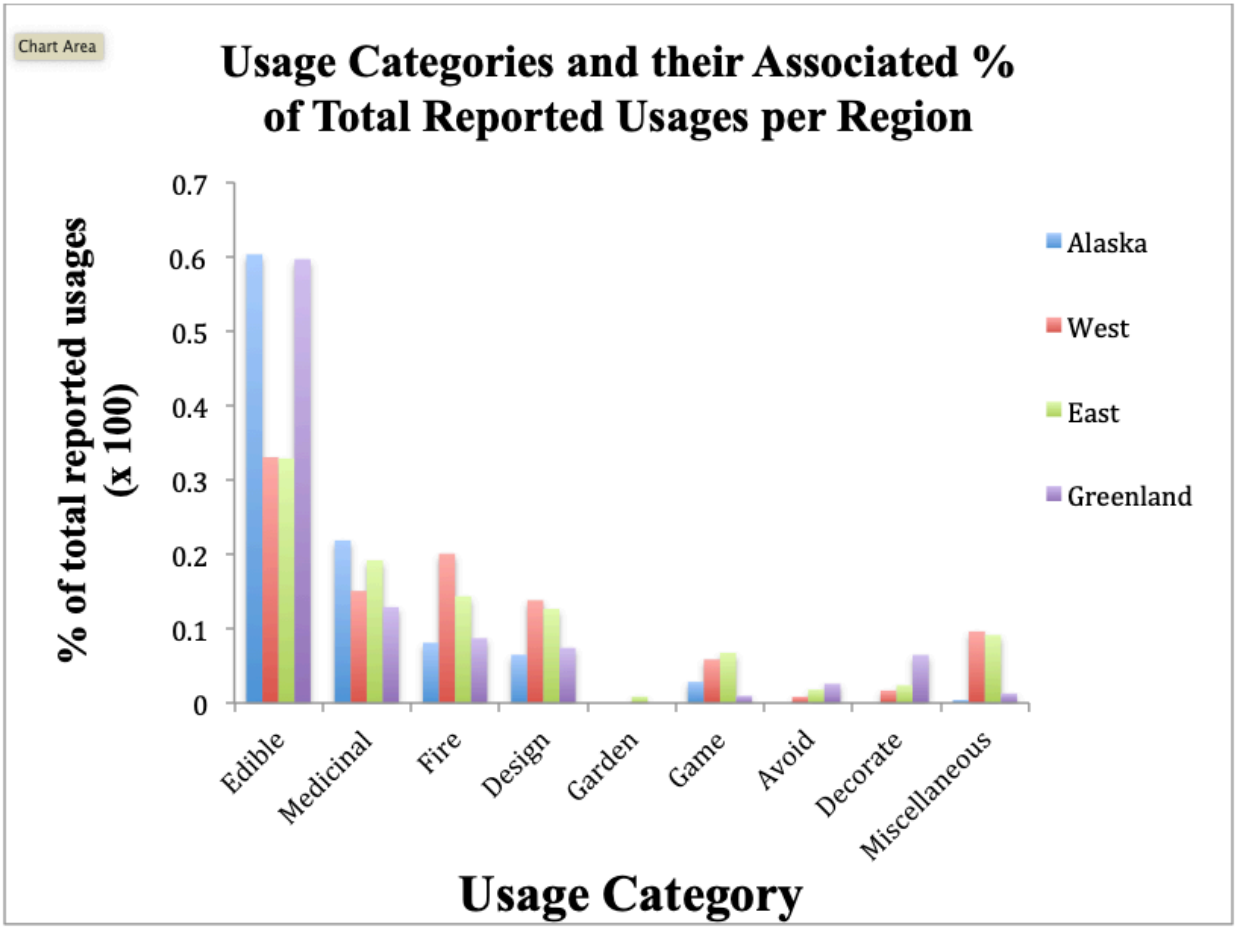


Chart Area
Usage Categories and their Associated % of Total Reported Usages per Region
% of total reported usages (x 100)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Alaska
West
East
Greenland
Edible
Medicinal
Fire
Design
Garden
Game
Avoid
Decorate
Miscellaneous
Usage Category

Figure 4

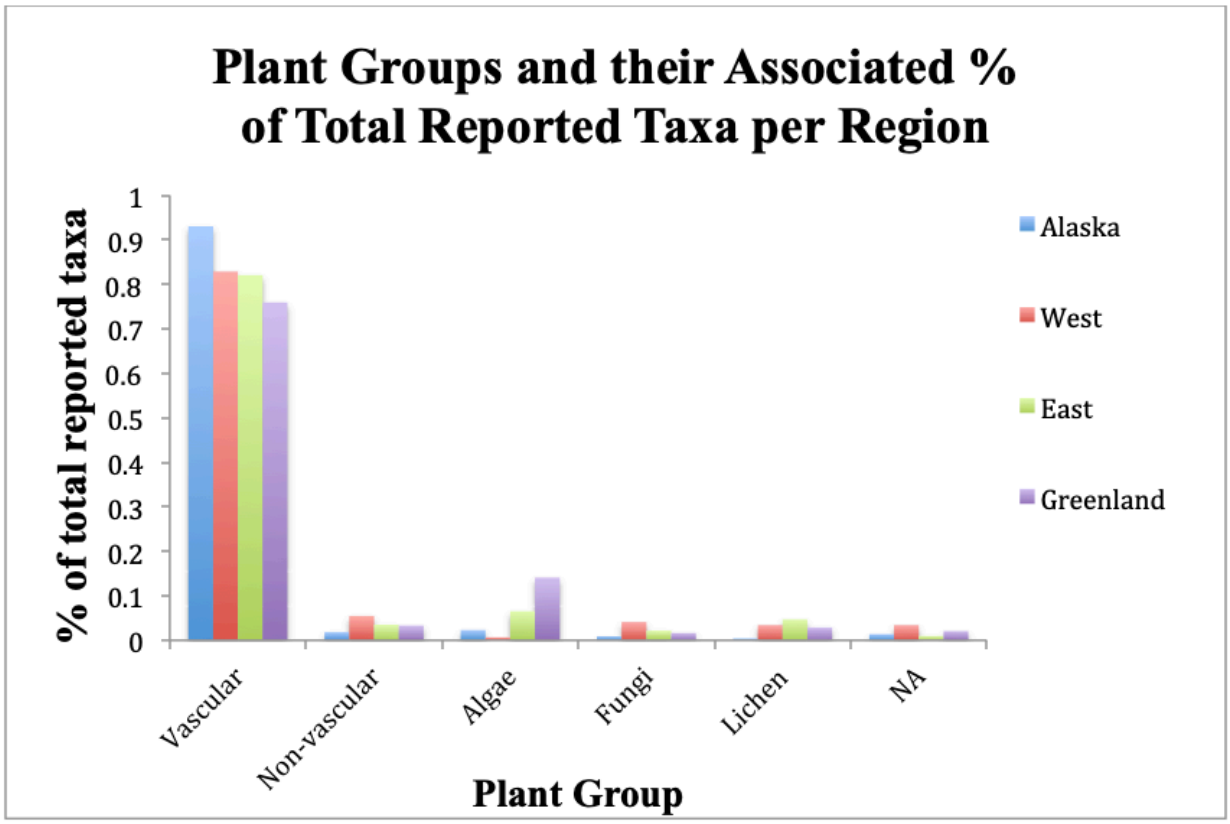

Plant Groups and their Associated % of Total Reported Taxa per Region
% of total reported taxa
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Vascular
Non-vascular
Algae
Fungi
Lichen
NA
Plant Group
Alaska
West
East
Greenland

Figure 5

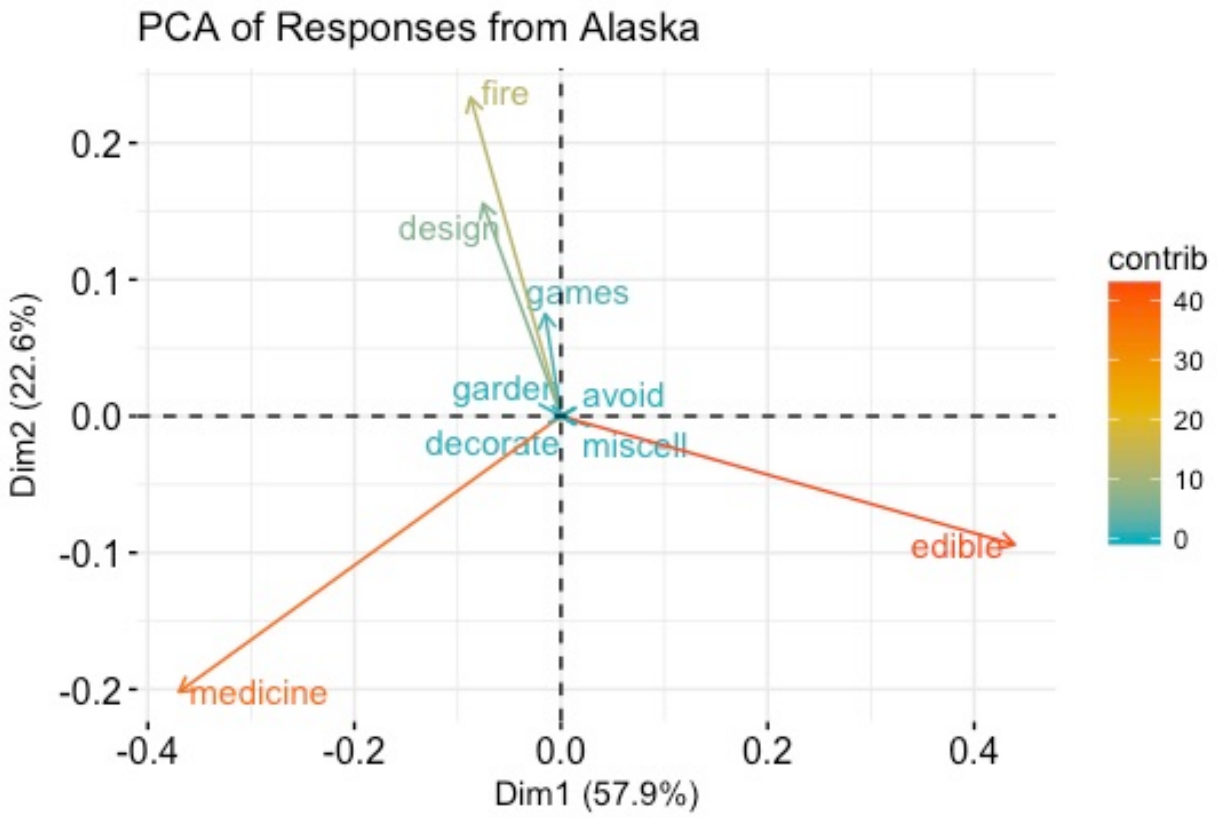

PCA of Responses from Alaska
fire
design
games
garden
avoid
decorate
miscell
edible
medicine
contrib
40
30
20
10
0
0.2
0.1
0.0
-0.1
-0.2
Dim2 (22.6%)
-0.4
-0.2
0.0
0.2
0.4
Dim1 (57.9%)

Figure 6

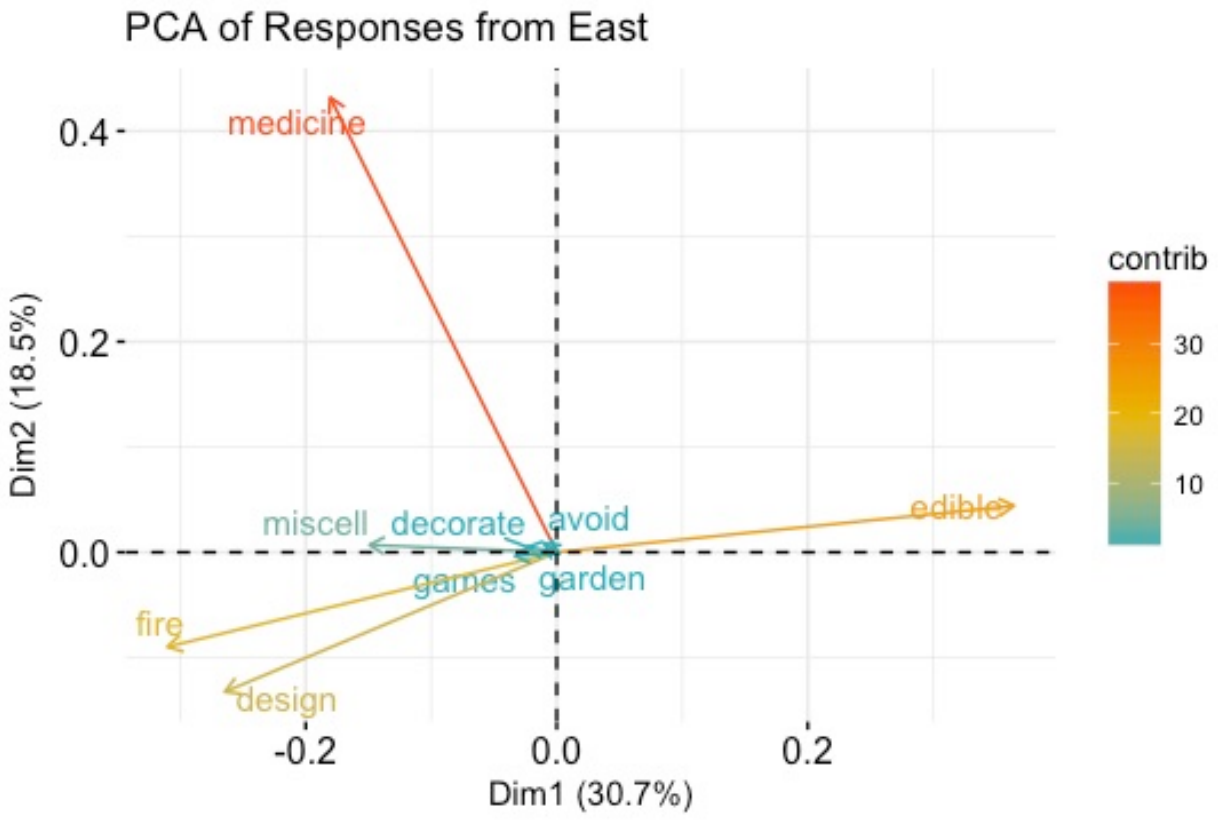

PCA of Responses from East
medicine
edible
miscell
decorate
avoid
games
garden
fire
design
0.4
0.2
0.0
-0.2
0.0
0.2
Dim2 (18.5%)
Dim1 (30.7%)
contrib
30
20
10

Figure 7

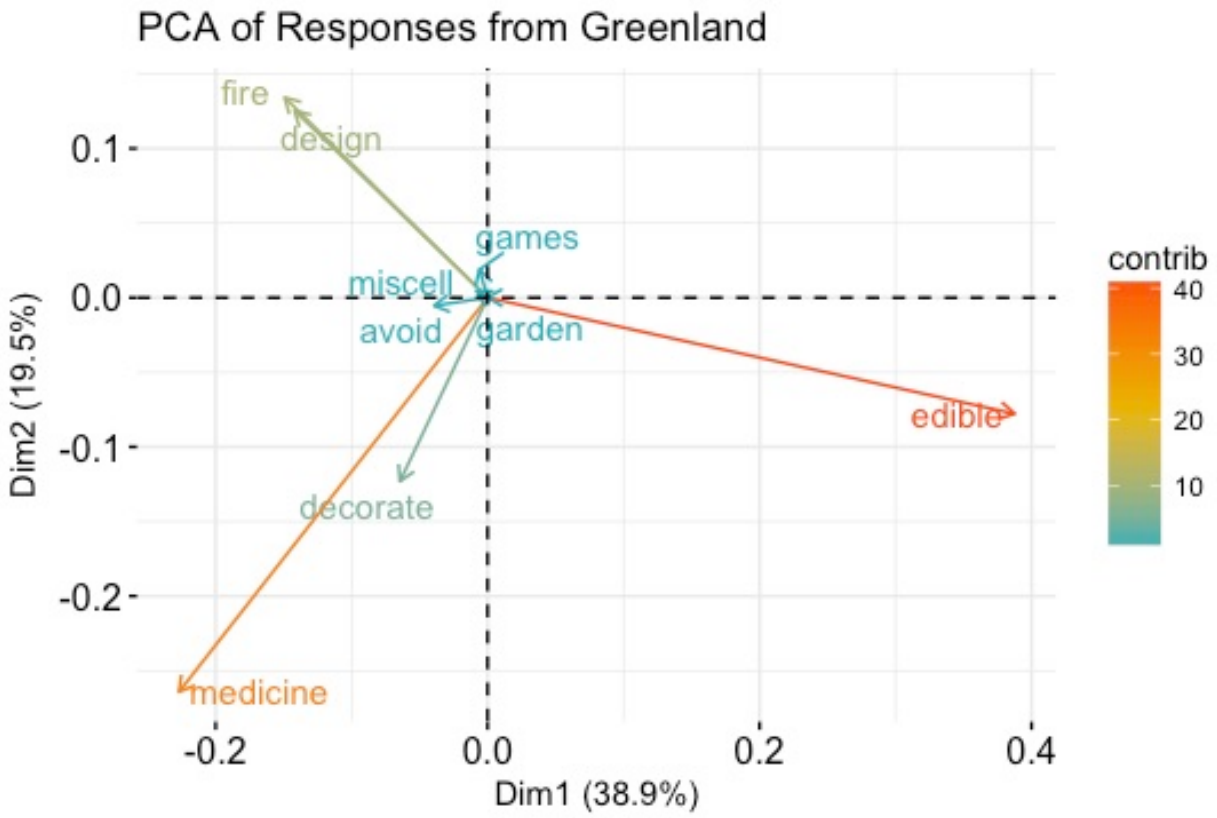

PCA of Responses from Greenland
fire
design
games
miscell
avoid
garden
edible
decorate
medicine
0.1
0.0
-0.1
-0.2
Dim2 (19.5%)
-0.2
0.0
0.2
0.4
Dim1 (38.9%)
contrib
40
30
20
10

Figure 8

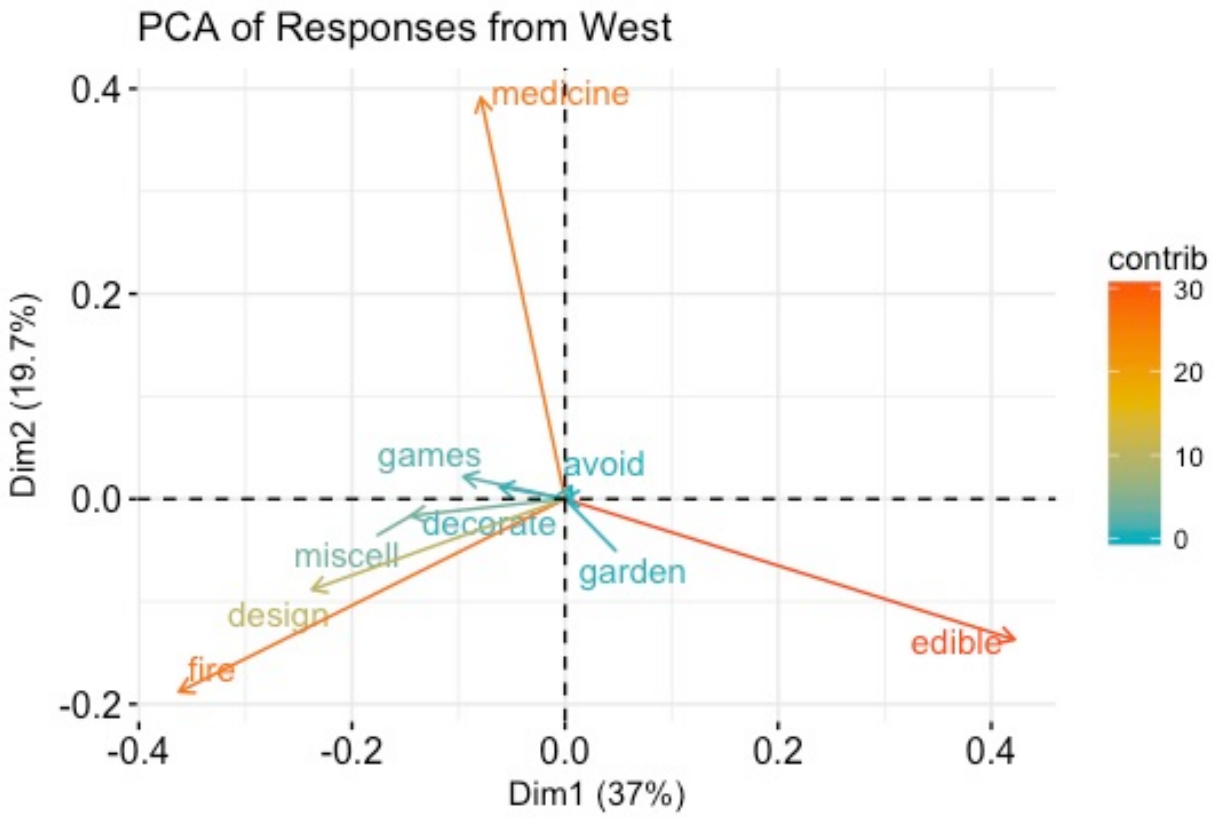

PCA of Responses from West
medicine
games
avoid
decorate
miscell
garden
design
edible
fire
0.4
0.2
0.0
-0.2
-0.4
-0.2
0.0
0.2
0.4
Dim2 (19.7%)
Dim1 (37%)
contrib
30
20
10
0

Figure 9

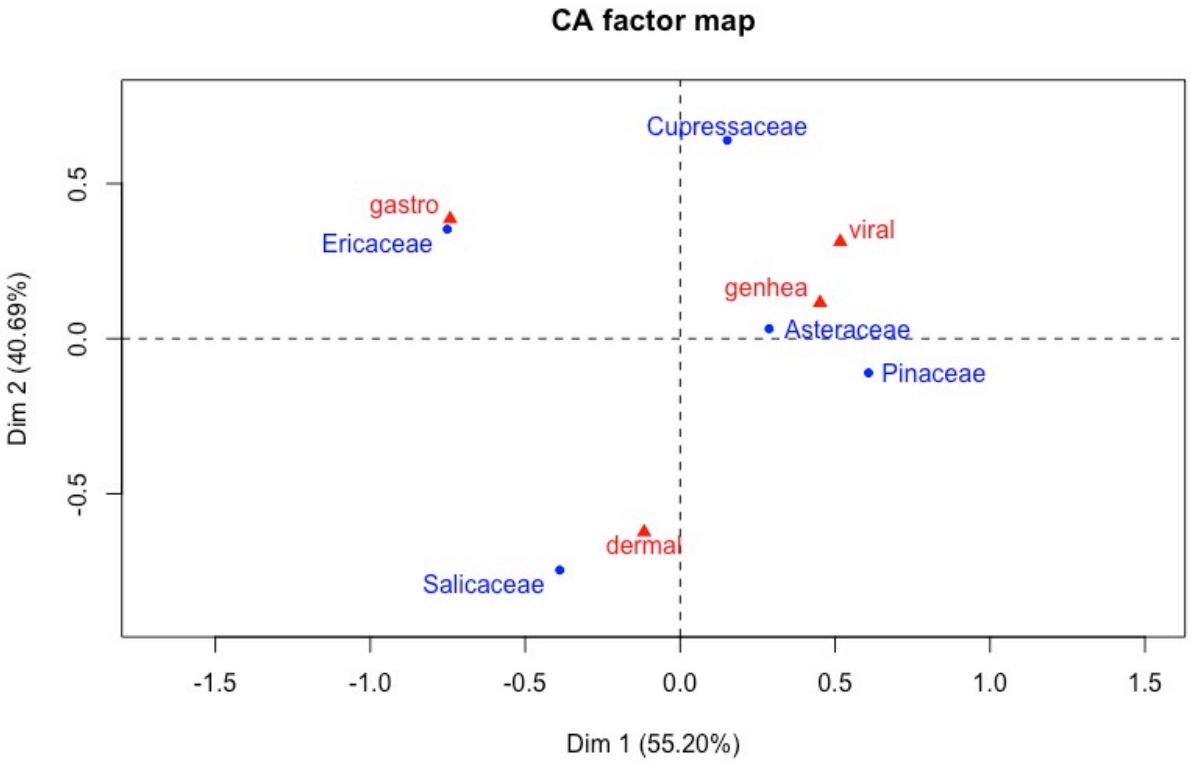

CA factor map
Cupressaceae
gastro
Ericaceae
viral
genhea
Asteraceae
Pinaceae
dermal
Salicaceae
0.5
0.0
-0.5
Dim 2 (40.69%)
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
Dim 1 (55.20%)

Figure 10

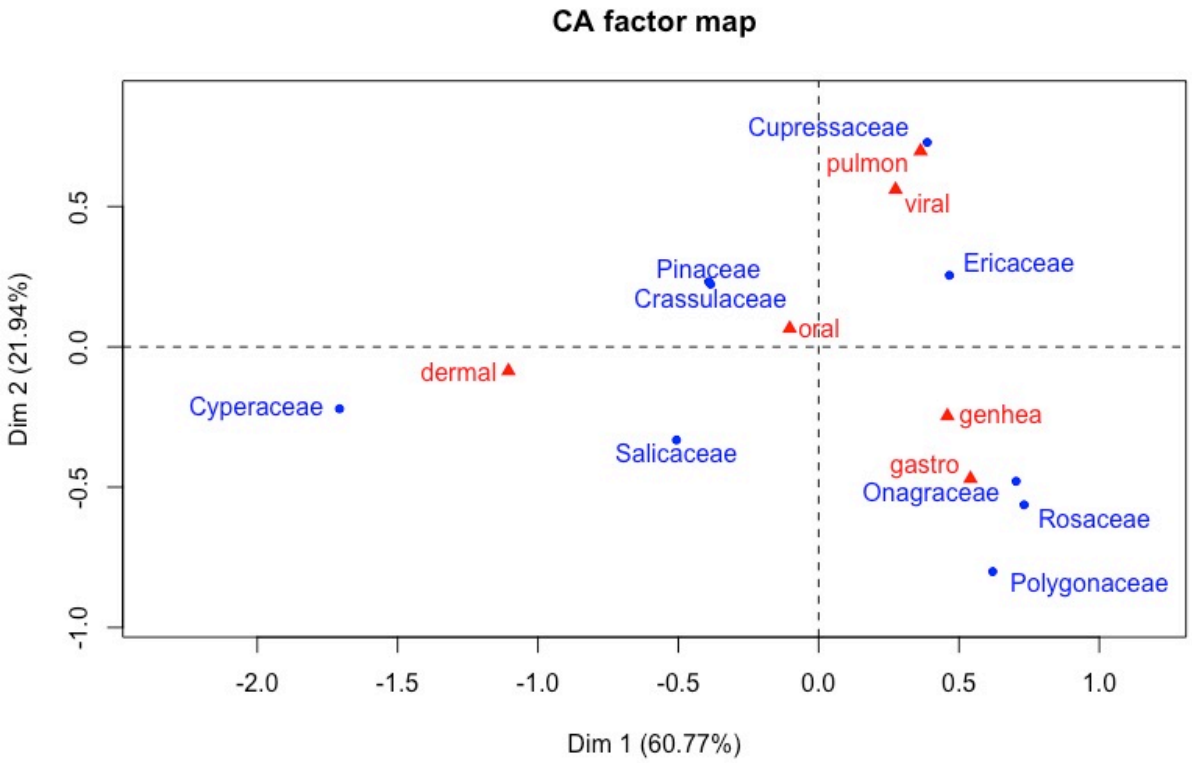
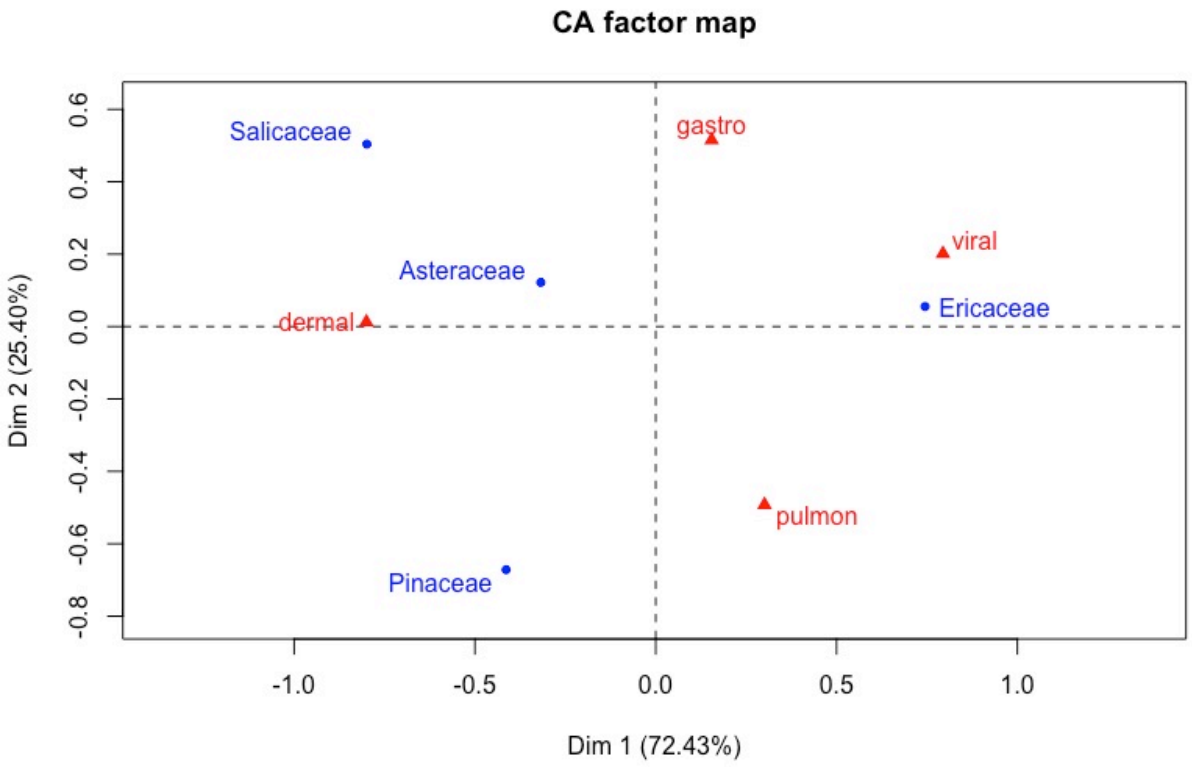

CA factor map
Cupressaceae
pulmon
viral
Ericaceae
Pinaceae
Crassulaceae
oral
dermal
Cyperaceae
genhea
Salicaceae
gastro
Onagraceae
Rosaceae
Polygonaceae
Dim 2 (21.94%)
0.5
0.0
-0.5
-1.0
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
Dim 1 (60.77%)

Figure 11


CA factor map
Salicaceae
gastro
viral
Asteraceae
Ericaceae
dermal
pulmon
Pinaceae
Dim 2 (25.40%)
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-0.5
0.0
0.5
1.0
Dim 1 (72.43%)

Appendix 1

1. Edible
    a. Wild-harvested food
    b. Teas
    c. Plants used for food preparation
    d. Alcohol production
    e. Naturalized plants
    f. Food preparation
2. Medicinal
    a. Used for treating an aliment
        i. Analgesic
        ii. Anti-cancer
        iii. Cardiac
        iv. Circulatory
        v. Dermal
        vi. Endocrine
            1. Diabetes, scurvy, hormones, abortive
        vii. Ear, nose, throat (ENT)
        viii. Gastrointestinal
        ix. Infection and infestation
        x. Musculoskeletal
        xi. Nervous system
        xii. Optic

xiii. Oral

xiv. Polydipsia

xv. Pulmonary

xvi. Pyrexia

xvii. Stimulant

1. No strength, fatigue, sex drive, impotence, weigh loss, encouraging lactation

xviii. Urinary-renal

xix. Viral

1. Cold and flu

b. Up keep of general health

i. General health

3. Fire

a. Heating

b. Fire starting

c. Fish smoking

d. Being burned to repel pests

e. Burned as tobacco substitute

4. Design

a. Building

b. Insulation

c. Crafting

d. Some aspect of remaking or altering the plant

5. Garden and cultivation
    a. Wild plants used as fertilizer
    b. Wild plants collected and grown near homes
    c. Naturalized plants that are harvested
6. Games and recreation
    a. Make believe
    b. Used as toys
    c. Used as tobacco substitute
7. Avoid
    a. Poisonous
    b. Lack of interest
    c. Told to avoid
8. Decorate and appreciation
    a. Cut flowers
    b. Wild flowers left where they are
    c. Plants that are generally appreciated
9. Miscellaneous
    a. Indicators for ecological or climatic awareness
        i. Salmon running
        ii. Caribou fat
        iii. Berry ripeness
        iv. Presence of berries, water, etc.
        v. Winter snowfall/severity

vi. Changing of seasons

vii. Foods for wild animals

b. Dog food

c. House scent

d. Spirituality

e. Pest repellent

Appendix 2

Region	Reference
Alaskan	Anderson 1939 Anderson 1977 Barry and Roderick 1982 Book et al. 1983 Brown 1961 Carlo 1978 DeLapp and Ward 1981 Dixon and Kirchner 1982 Giddings 1952 Giddings 1961 Graham and Ouzinkie Botanical Society 1985 Gubser 1965 Heller 1953 Ingstad 1954 Jones 1983 Juul 1979 Lantis 1959 Lucier et al. 1971 Mauneluk Cultural Heritage Program 1976 Murdoch 1892

	Nelson 1899 Nickerson et al. 1973 Porsild 1938 Potter 1972 Preston 1961 Saario 1962 Stoney 1900 Turner 1989 Webster and Zibell 1970 Weyer 1932
Western	Amundsen 1908 Anderson 1912* Bandringa and Inuvialuit Elders 2010 Birket-Smith 1945 Davis and Banack 2012 Jenness 1922 Rasmussen 1931 Rasmussen 1932 Steensby 1910* Wilson 1978*
Eastern	Ackerknecht 1948* Bell 1886 Birket-Smith 1929

	Black et al. 2008 Boas 1888 Clark 2012 Collier 2017 Cuerrier and Elders of Kangiqsualujjuaq 2012 Cuerrier and Elders of Kangirsujuaq 2005 Cuerrier and Elders of Umiujaq and Kuujjuarapik 2011 Cuerrier and Hermantuz 2012 Downing et al. 2012 Dritsas 1986 Hall F 1865 Hawkes 1916 Hoffman et al. 1967 Hunter 2006 Hutton 1912 Joamie and Ziegler 2009 Lemus-Lauzon et al. 2012 Mackey and Orr 1987 Mathiassen 1928 Oberndorfer 2016 Ootoova et al. 2001

	Paillet 1973 Payne 1889 Peacock 1947 Pigford and Zutter 2014 Rasmussen 1930a Rasmussen 1930b Roy et al. 2012 Stevens and Palliser 1984 Turner 1894 Wein et al. 1996 Wilson 1978* Zutter 2012
Greenlandic	Ackerknecht 1948* Backeus 2012 Birket-Smith 1924 Birket-Smith 1928 de Bonneval and Robert-Lamblin 1979 Cranz 1765 Freuchen and Salomonsen 1958 Hertz 1968 Holm and Thalbitzer 1911 Høygaard 1937 Høygaard 1941

	le Mouel 1969 Porsild 1953 Rasmussen and Ostermann 1938 Rink 1857 Robbe 1994 Rodahl 1952 Steensby 1910* Thalbitzer 1914 Whitecloud and Grenoble 2014
Alaskan and/or Western	Anderson 1912
Eastern and/or Western	Fediuk et al. 2002 Mallory and Aiken 2012 Porsild 1937 Porsild 1945 Swales 1971

*Contained responses for more than one region

Appendix 3

Vascular

Family and below

1. Adoxaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Viburnum edule	Squashberry, highbush cranberry	Alaska, East	Edible	Fruit

2. Amaryllidaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Allium schoenoprasum	Wild chives	Alaska, East, West	Edible, garden	Leaf, stem, root, all

3. Apiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Angelica archangelica	Norwegian angelica	Greenland	Edible, medicinal, fire, games, decoration	Leaf, stem, fruit (seed), flower, root, all

Angelica atropurpurea	Purple-stemmed angelica	East	Avoid	All
Angelica lucida	Seacoast angelica	Alaska	Edible, medicinal	Leaf, stem, all
Heracleum maximum	American cow parsnip	East	Game	Stem
Ligusticum spp.	Lovage, licorice root	East	Edible	All
Ligusticum scoticum	Scotch lovage, liquorice root	Alaska, East	Edible	Leaf, stem, root, all

4. Asteraceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Achillea spp.		East	Medicinal	Leaf
Achillea millefolium	Common yarrow	Alaska, East, Greenland	Edible, medicinal, decoration, miscellaneous	Leaf, flower, root, all
Achillea boreale var. boreale	Woolly yarrow	West	Medicinal	All
Arctanthemum arcticum	Arctic daisy	East	Medicinal, decoration	Flower
Arnica	Narrow-leaved	East	Miscellaneous	Flower

angustifolia	arnica			
Artemisia spp.	Wormwood, sagewort, sagebush	Alaska	Medicinal	All
Artemisia borealis	Boreal wormwood, boreal sagewort	West	Edible	Root
Artemisia campestris	Field wormwood, sand wormwood	East	Miscellaneous	Flower
Artemisia tilesii	Tilesius wormwood, mountain sagewort	Alaska, West	Medicine	Leaf, stem, all
Hieracium alpinum	Alpine hawkweed	Greenland	Edible	Flower
Matricaria discoidea	Pineappleweed	East	Edible	All
Petasites frigidus	Arctic sweet coltsfoot	Alaska, West	Edible, medicinal, game	Leaf, flower
Senecio pseudoarnica	Seaside ragwort, false arnica, beach groundsel	East	Garden	All
Tanacetum	Dwarf tansy	East	Miscellaneous	Flower

bipinnatum			(bedding for puppies, as bookmark)	
Taraxacum spp.	Dandelion	Alaska, East, Greenland, West	Edible, medicinal, game, decorate	Leaf, stem, flower, root, all
Taraxacum lapponicum	Lapland dandelion	Greenland	Edible	Leaf, stem, flower, root
Taraxacum officinale	Common dandelion	Greenland	Edible	Leaf, stem, flower, root
Tephroseris palustris	Marsh groundsel, marsh fleabane, marsh ragwort	Alaska, East, West	Edible, medicinal, fire, game	Leaf, fruit, flower, sap

5. Athyriaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Athyrium filix-femina	Common lady fern, subarctic lady fern	East	Design	Leaf

6. Betulaceae

Lowest	**Common**	**Regions(s)**	**Use(s)**	**Part(s) used**

classification	**name(s)**			
Alnus spp.	Alder	Alaska	Design	Bark
Alnus alnobetula	Green alder, mountain alder	Alaska and/or West	Design	Bark
Alnus alnobetula subsp. crispa	American green alder	East, West	Edible, medicinal, fire, design, miscellaneous	Leaf, stem, flower, bark, wood
Alnus fruticosa	Siberian alder	Alaska	Design	Bark
Betula spp.	Birch	Alaska, East Greenland, West	Edible, fire, design, miscellaneous (fragrance)	Leaf, flower, bark, wood, all
Betula glandulosa	Glandular birch, bog birch, scrub birch	Alaska, East, Greenland, West	Edible, medicinal, fire, design, game	Leaf, stem, root, bark, wood
Betula nana	Arctic dwarf birch	East, Greenland	Edible, medicinal, fire, design	Leaf, stem, wood
Betula papyrifera	Paper birch	Alaska, East	Medicinal, fire, design	Leaf, sap, bark, wood
Betula pubescens	Downy birch, European white birch	Greenland	Edible, medicinal, fire, decorate	Leaf, bark, wood

7. Boraginaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Mertensia maritima	Oysterleaf, sea bluebells, seaside bluebells	Alaska, East, West	Edible, medicinal	Leaf, stem, flower, root

8. Brassicaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Capsella bursa-pastoris	Common shepherd's purse	Greenland	Medicinal	Leaf
Cochlearia groenlandica	Greenland scurvygrass	East, Greenland	Edible, medicinal,	Leaf, stem, fruit, all
Draba glabella	Smooth draba	East	Edible	Leaf
Parrya nudicaulis	Naked-stemmed false wallflower	Alaska	Edible	Root
Physaria arctica	Arctic bladderpod	East	Design	Leaf, stem

9. Campanulaceae

Lowest	**Common**	**Regions(s)**	**Use(s)**	**Part(s) used**

classification	**name(s)**			
Campanula spp.	Bellflower	Greenland	Edible	Flower
Campanula rotundifolia	Harebell, bluebell	East, Greenland	Edible, game, decorate	Leaf, stem, flower
Campanula uniflora	Arctic bellflower, alpine harebell	East	Game, decorate	Flower

10. Caryophyllaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Cerastium alpinum	Alpine chickweed	Greenland	Edible	Flower
Cerastium cerastoides	Starwort chickweed	Greenland	Edible	Flower
Honckenya peploides	Seabeach sandwort, seaside sandwort	Alaska, East, West	Edible, medicinal, game	Leaf, stem, fruit, flower, all
Silene spp.	Campion	West	Medicinal	All
Silene acaulis	Moss campion, cushion pink	East, Greenland, West	Edible, miscellaneous (bee food)	Fruit, flower, root, all

Silene suecica	Alpine catchfly, alpine campion	Greenland	Edible	Flower
Stellaria longipes	Long-stalked starwort, long-stalked chickweed, long-stalked stitchwort	East	Medicinal, design	All
Stellaria media	Common chickweed	Greenland	Medicinal	All

11. Cornaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Cornus spp.	Dogwood	East	Edible, game	Leaf, fruit
Cornus canadensis	Bunchberry, crackerberry	Alaska, East	Edible, game, miscellaneous (pest repellent)	Leaf, fruit
Cornus suecica	Swedish bunchberry, crackerberry	Alaska, Greenland	Edible, decorate	Leaf, stem, fruit, flower

12. Crassulaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Rhodiola integrifolia	Entire-leaved stonecrop, western roseroot	Alaska	Edible	Leaf, root
Rhodiola rosea	Roseroot	Alaska, East, Greenland, West	Edible, medicinal, decorate	Leaf, stem, fruit, flower, root, sap, all

13. Cupressaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Juniperus spp.	Juniper	East	Medicine, fire, design	All
Juniperus communis	Common juniper	Alaska, East, Greenland, West	Edible, medicinal, fire, design, avoid, decorate, miscellaneous (burn to remove unwanted spirits)	Leaf, stem, fruit, wood, all

14. Cyperaceae

Lowest	**Common**	**Regions(s)**	**Use(s)**	**Part(s) used**

classification	**name(s)**			
Carex spp.	Sedge	Alaska, East, Greenland, West	Edible, design	Leaf, stem, root
Carex aquatilis	Water sedge	East, West	Edible, fire, design, miscellaneous	Leaf, stem root
Carex atrofusca	Dark-brown sedge	East	Design	Leaf, stem
Carex membranacea	Fragile sedge	East	Design	Leaf, stem
Carex rupestris	Rock sedge	West	Medicinal, fire	Leaf, stem
Carex scirpoidea	Single-spike sedge	East	Design	Leaf, stem
Family Cyperaceae	Sedge	Greenland	Decorate	Leaf, stem, flower
Eriophorum spp.	Cottongrass	Alaska, East, Greenland, West	Edible, medicinal, fire, design, game, decorate, miscellaneous (caribou indicator and amulet for long life)	Leaf, stem, fruit, flower, root, all

Eriophorum angustifolium	Narrow-leaved cottongrass, common cottongrass	Alaska, East	Edible, medicinal, fire, design, miscellaneous (indicator)	Stem, fruit (seed)
Eriophorum russeolum	Russet cottongrass	East	Medicinal, fire, miscellaneous (indicator)	Fruit (seed)
Eriophorum scheuchzeri	Scheuchzer's cottongrass	East, West	Edible, medicinal, fire, design, decorate, miscellaneous (indicator)	Leaf, stem, fruit (seed), all
Eriophorum vaginatum	Tussock cottongrass	East	Medicinal, game, miscellaneous (indicator)	Fruit (seed)

15. Cystopteridaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Cystopteris fragilis	Fragile fern, brittle fern, bladder fern	East	Edible, game	Leaf

16. Diapensiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Diapensia lapponica	Lapland diapensia	East	Edible, decorate, miscellaneous (superstition, seasonal indicator)	Flower, root, all

17. Dryopteridaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Dryopteris expansa	Spreading wood fern	East	Miscellaneous (bookmark)	All
Dryopteris fragrans	Fragrant wood fern	West	Miscellaneous (scent)	Leaf

18. Elaeagnaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Shepherdia canadensis	Soapberry, Canada buffaloberry	West	Miscellaneous (animal food)	All

19. Equisetaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Equisetum spp.	Horsetail	Alaska, East, West	Edible, miscellaneous (disposable cleaning fibre)	Leaf, stem, root
Equisetum arvense	Field horsetail	East, Greenland, West	Medicinal, design, miscellaneous (goose and caribou food)	
Equisetum variegatum	variegated scouring-rush, variegated horsetail	East	Design	Leaf, stem

20. Ericaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Arctostaphylos uva-ursi	Common bearberry	Alaska, West	Edible, medicinal, fire, design, games	Leaf, fruit

Arctous spp.	Bearberry, alpine bearberry, northern bearberry	East, West	Edible, medicinal, game	Leaf, fruit, all
Arctous alpina	Alpine bearberry	Alaska, East, West	Edible, medicinal, design, games, avoid, miscellaneous	Leaf, fruit, all
Arctous rubra	Red bearberry	Alaska, East, West	Edible, medicinal, games, avoid	Leaf, fruit, all
Cassiope tetragona	Four-angled mountain heather, arctic bell heather, arctic white heather	Alaska, East, Greenland, West	Edible, medicinal, fire, design, miscellaneous	Leaf, stem, flower, roots, all
Empetrum nigrum	Blackberry, crowberry, curlewberry, heathberry	Alaska, East, Greenland, West	Edible, medicinal, fire, design, avoid, decorate, miscellaneous (toughen dog	Leaf, stem, fruit, root, all

			paws, pest repellent, indicator)	
Gaultheria hispidula	Creeping snowberry, maidenhair berry	East	Edible	Fruit
Harrimanella hypnoides	Moss heather	Greenland	Edible	Flower
Moneses uniflora	One-flowered wintergreen	East	Edible	Leaf
Phyllodoce caerulea	Purple mountain heather	Greenland	Edible, fire, avoid	Flower, all
Pyrola grandiflora	Arctic pyrola, arctic wintergreen	East, Greenland, West	Edible, medicinal, miscellaneous (bee food, fragrance)	Leaf, flower, all
Rhododendron spp.	Labrador tea	Alaska, East	Medicinal	Leaf, stem
Rhododendron groenlandicum	Common Labrador tea, bog Labrador tea	East, Greenland, West	Edible, medicinal, fire, game, decorate	Leaf, stem, flower
Rhododendron	Lapland rosebay	East, Greenland	Edible,	Leaf, stem,

lapponicum			medicinal, fire, avoid, miscellaneous (energize dogs)	flower, all
Rhododendron tomentosum	Northern Labrador tea, dwarf Labrador tea	Alaska, East, Greenland, West	Edible, medicinal, fire, design,	Leaf, stem, flower, root, wood, all
Vaccinium spp.	Blueberry, bilberry, cranberry	Alaska, East, Greenland	Edible	Fruit
Vaccinium angustifolium	Early lowbush blueberry, upland lowbush blueberry	East	Edible	Fruit
Vaccinium boreale	Northern blueberry, sweet hurts, alpine blueberry	East	Edible	Fruit
Vaccinium caespitosum	Dwarf bilberry, dwarf blueberry, dwarf whortleberry	East, West	Edible, medicinal	Leaf, stem, fruit

Vaccinium microcarpum	Small bog cranberry	Alaska	Edible, medicinal	Fruit
Vaccinium myrtillus	Myrtle whortleberry, dwarf bilberry, myrtle blueberry	Greenland	Edible	Fruit
Vaccinium oxycoccos	Small cranberry, bog cranberry, marshberry, swamp cranberry	Alaska, East	Edible, medicinal	Fruit, leaf
Vaccinium parvifolium	Red huckleberry, red bilberry	Alaska	Edible	Fruit
Vaccinium uliginosum	Bog bilberry, bog blueberry, alpine bilberry	Alaska, East, Greenland, West	Edible, medicinal, fire, design, game, miscellaneous (stain removal)	Leaf, stem, fruit, flower, root, all
Vaccinium vitis-idaea	Mountain cranberry, redberry, lingonberry, partridgeberry	Alaska, East, Greenland, West	Edible, medicinal, fire, design, games	Leaf, fruit, flower, all

21. Fabaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Astragalus australis	Southern milk-vetch	West	Edible	Root
Astragalus eucosmus	Elegant milk-vetch	East	Edible	Fruit (seed)
Hedysarum spp.	Sweet vetch	Alaska	Edible	Root
Hedysarum americanum	Alpine hedysarum, American sweet-vetch	Alaska, East, West	Edible, medicinal,	Root
Hedysarum boreale	Northern hedysarum, northern sweet-vetch	East and/or West	Edible	Root
Lathyrus japonicus	Beach pea	Alaska, East, West	Edible, miscellaneous (bee food)	Fruit, flower
Oxytropis spp.	Oxytrope	Alaska	Edible	Root
Oxytropis campestris	Field locoweed, field oxytrope, yellowish	Alaska, East, West	Edible, medicinal	Leaf, roots

	mountain oxytrope			
Oxytropis nigrescens	Blackish locoweed, blackish oxytrope	East	Edible, medicinal	Root

22. Gentianaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Gentiana nivalis	Snow gentian	Greenland	Edible, medicinal	Flower, root, all

23. Grossulariaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Ribes spp.	Currant, gooseberry	East	Edible	Fruit
Ribes glandulosum	Skunk currant	East	Edible	Fruit
Ribes hudsonianum	Northern black currant, Hudson Bay currant	West	Edible	Fruit
Ribes	Canada	East and/or West	Edible	Fruit

oxyacanthoides	gooseberry, northern gooseberry			
Ribes triste	Swamp red currant	Alaska, East, West	Edible	Fruit

24. Iridaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Iris setosa	Alaska iris, Arctic Iris	Alaska	Edible	Fruit

25. Juncaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Family Juncaceae	Rush	Greenland	Decorate	Leaf, stem, flower
Juncus spp.	Rush	East	Design	Leaf, stem
Juncus biglumis	Two-glumed rush	East	Design	Leaf, stem
Luzula nivalis	Arctic woodrush	East	Design	Leaf, stem

26. Lamiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Mentha arvensis	Field mint	East	Edible, medicinal, garden	All
Thymus praecox	Creeping thyme, wild thyme	Greenland	Edible, fire, game, miscellaneous (fragrance)	Leaf, stem, flower, root, all
Thymus serpyllum	Lemon thyme, wild thyme, large thyme	Greenland	Edible	All

27. Lycopodiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Diphasiastrum complanatum	Ground cedar, northern ground cedar, trailing clubmoss	East	Fire	All
Huperzia selago	Northern firmoss	East, Greenland	Medicinal, fire, game, avoid, miscellaneous (cleaning, caribou	All

			attractant)	
Lycopodium spp.	Clubmoss	East	Miscellaneous (indicator)	All
Lycopodium annotinum	Stiff clubmoss	East	Edible, medicinal, fire, design, game, miscellaneous (disposable cleaning fibre)	Leaf, stem, all
Lycopodium clavatum	Running clubmoss	Greenland	Fire, avoid	All

28. Menyanthaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Menyanthes trifoliata	Bog buckbean	East	Miscellaneous (predict bakeapples)	All

29. Montiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Claytonia acutifolia	Spring beauty	Alaska	Edible	Root

Claytonia tuberosa	Tuberous spring beauty	Alaska	Edible	Root

30. Myricaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Myrica gale	Sweet gale, bog myrtle, sweet bayberry	East	Edible, fire, design	Leaf, wood, all

31. Onagraceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Chamaenerion angustifolium	Fireweed	Alaska, East, West, Greenland	Edible, medicinal, fire, decorate, game, miscellaneous	Leaf, stem, flower, root, all
Chamaenerion latifolium	River beauty	Alaska, East, West, Greenland	Edible, medicinal, fire, design, decorate, miscellaneous	Leaf, stem, fruit (seeds), flower, all
Epilobium palustre	Marsh willowherb	East	Edible	All

32. Orchidaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Platanthera hyperborea	Leafy northern green orchid, northern bog orchid	Greenland	Edible	All

33. Orobanchaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Bartsia alpina	Alpine bartsia, velvetbells	Greenland	Edible	Root, all
Boschniakia rossica	Northern groundcone	West	Design, game	Stem
Castilleja elegans	Elegant paintbrush	West	Medicinal	All
Euphrasia frigida	Eyebright	Greenland	Medicinal	All
Pedicularis spp.	Lousewort	Alaska, East, Greenland	Edible, design, miscellaneous	Leaf, stem, flower, root
Pedicularis capitata	Capitate lousewort	East, West	Edible	Flower

Pedicularis flammea	Red-tipped lousewort	East	Miscellaneous (bee food)	All
Pedicularis groenlandica	Elephant's-head lousewort	East	Edible	Leaf, all
Pedicularis hirsuta	Hairy lousewort	East, Greenland	Edible, game	Leaf, stem, flower, root
Pedicularis labradorica	Labrador lousewort	East	Edible	Leaf, root
Pedicularis lanata	Woolly lousewort	Alaska, East, Greenland, West	Edible, fire	Leaf, stem, flower, root
Pedicularis langsdorffii	Langsdorff's lousewort	West	Edible	Root
Rhinanthus minor	Little yellow rattle	Greenland	Decorate	Fruit

34. Papaveraceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Papaver labradoricum	Labrador poppy	East	Miscellaneous (bee food)	All
Papaver radicatum	Arctic poppy, Icelandic-	East	Edible, miscellaneous	Flower

	Scandinavian poppy		(bee food)	

35. Pinaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Abies balsamea	Balsam fir	East	Medicine, fire, design, decoration, miscellaneous	Leaf, stem, sap wood
Larix laricina	Tamarack, eastern larch, juniper	East, West	Edible, medicinal, fire, design, garden, games, miscellaneous	Leaf, stem, fruit, sap, bark, wood
Picea spp.	Spruce	Alaska, East	Edible, medicinal, fire, design, game	Leaf, stem, fruit (cone), root, sap, bark, wood
Picea glauca	White spruce	Alaska, East, West	Edible, medicinal, fire, design, games, avoid, decorate, miscellaneous	Leaf, stem, fruit (cone), root, sap, bark, wood,

			(fragrance)	
Picea mariana	Black spruce	Alaska, East, West	Edible, medicinal, fire, design, games, avoid, decorate, miscellaneous (fragrance)	Leaf, stem, fruit (cone), root, sap, bark, wood, all
Pinus banksiana	Jack pine	East	Design, garden, decorate	Leaf, stem, all

36. Plantaginaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Hippuris tetraphylla	Four-leaved mare's-tail	Alaska	Edible	Leaf
Veronica alpina	Alpine speedwell	Greenland	Edible	Flower

37. Plumbaginaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Armeria maritima	Sea thrift	Greenland, West	Edible, decorate	Flower

38. Poaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Alopecurus magellanicus	Alpine foxtail	East	Design	Leaf, stem
Arctagrostis latifolia	Wide-leaved polargrass	East	Design	Leaf, stem
Deschampsia cespitosa	Tufted hairgrass, tussock grass	East, West	Design	Leaf, stem
Dupontia fisheri	Fisher's tundra grass	East	Design	Leaf, stem
Festuca baffinensis	Baffin Island fescue	East	Design	Leaf, stem
Leymus arenarius	European lymegrass	Greenland	Design	Leaf, stem
Leymus mollis	Sea lymegrass, American dunegrass	East, Greenland, West	Edible, medicinal, fire, design, game, miscellaneous (disposable cleaning fibre)	Leaf, stem, root, all
Phleum alpinum	Alpine timothy	Greenland	Design	Leaf, stem

Pleuropogon sabinei	Sabine's semaphoregrass	East	Design	Leaf, stem
Poa spp.	Blue grass, meadow grass, spear grass	Greenland	Design	Leaf, stem
Poa arctica	Arctic bluegrass	East, Greenland	Design	Leaf, stem
Poa hartzii	Hartz's bluegrass	East	Design	Leaf, stem
Poa pratensis	Kentucky bluegrass	East, Greenland	Design	Leaf, stem
Family Poaceae	Grass	Alaska, East, Greenland, West	Edible, medicinal, fire, design, game, decorate, miscellaneous	Leaf, stem, flower, all
Trisetum spicatum	Spike trisetum, mountain trisetum	Greenland	Design	Leaf, stem

39. Polygonaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Oxyria digyna	Mountain-sorrel	Alaska, East, Greenland, West	Edible, medicinal, design, miscellaneous	Leaf, stem, fruit, flower, root, all

			(pacifier for baby)	
Persicaria alpina	Alpine knotweed, Alaska wild rhubarb	Alaska, East and/or West, West	Edible	Leaf, stem, root, all
Bistorta officinalis	European bistort	Alaska, East and/or West, Greenland, West	Edible, medicinal	Leaf, stem, root
Bistorta vivipara	Alpine bistort	Alaska, East, Greenland, West	Edible, medicinal	Leaf, fruit (seed), flower, roots, all
Rheum spp.	Rhubarb	East	Edible, medicinal, garden	Stem
Rheum officinale	Rhubarb	East	Edible, medicinal	Stem, root
Rumex spp.	Dock	Greenland	Edible	All
Rumex acetosella	Sheep sorrel, field sorrel, sourweed	Greenland	Edible	Leaf
Rumex arcticus	Arctic dock	Alaska, East, West	Edible, medicinal	Leaf, stem, flower, root, all
Rumex occidentalis	Western dock	East	Edible	All

40. Primulaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Trientalis borealis	Northern starflower, maystar	East	Decorate	Flower

41. Ranunculaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Anemonastrum sibiricum	One-flowered anemone	Alaska	Edible	Leaf, stem
Caltha palustris	Yellow marsh marigold, American cowslip, common marsh marigold	Alaska	Edible	Leaf
Coptidium pallasii	Pallas' buttercup	Alaska	Edible	Root
Ranunculus spp.	Crowfoot, buttercup, spearwort	Greenland	Edible, decorate	Leaf, stem, flower

42. Rosaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Alchemilla alpina	Alpine lady's mantle	Greenland	Edible	Leaf
Alchemilla glomerulans	Clustered lady's mantle	Greenland	Edible, medicinal, avoid	Leaf
Amelanchier bartramiana	Bartram's serviceberry, Bartram's chuckleypear	East	Edible	Fruit
Comarum palustre	Marsh cinquefoil	West	Edible	Stem
Dasiphora fruticosa	Shrubby cinquefoil	Alaska, West	Edible, medicinal,	Leaf, flower
Dryas integrifolia	Entire-leaved mountain avens	East, Greenland, West	Edible, medicinal, fire, game, design, miscellaneous (pest repellent, indicator, directions)	Leaf, stem, fruit (seeds), flower, all

Fragaria virginiana	Wild strawberry	East, East and/or West	Edible	Fruit
Potentilla spp.	Cinquefoil	Greenland	Decorate	Leaf
Potentilla anserina	Silverweed	West	Fire, miscellaneous (pest repellent)	All
Potentilla pulchella	Pretty cinquefoil	East	Edible	Root
Prunus pensylvanica	Pin cherry	East	Edible, garden	Fruit, all
Rosa acicularis	Prickly rose, wild prickly rose	Alaska, West	Edible	Fruit
Rubus arcticus	Arctic raspberry	Alaska, East, West	Edible, medicinal	Leaf, fruit
Rubus chamaemorus	Bakeapple, cloudberry	Alaska, East, Greenland, West	Edible, medicinal, miscellaneous (indicator)	Leaf, fruit
Rubus idaeus	Red raspberry, wild red raspberry	Alaska, East, West	Edible, medicinal	Fruit
Rubus pedatus	Five-leaved dwarf bramble	Alaska	Edible	Fruit
Rubus pubescens	Dwarf raspberry,	East	Edible	Fruit

	dewberry, swamp red raspberry			
Sibbaldia tridentata	Three-toothed cinquefoil	East	Edible, medicinal	Leaf, stem, all
Sorbus decora	Showy mountain-ash, dogberry, northern mountain-ash	East	Edible, miscellaneous (indicator for snowfall)	Fruit
Sorbus groenlandica	Showy mountain-ash, dogberry, northern mountain-ash	Greenland	Edible	Leaf, fruit, bark, wood

43. Salicaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Populus spp.	Poplar, cottonwood	Alaska	Fire, game	Flower, bark
Populus balsamifera	Balsam poplar, cottonwood	Alaska, East, West	Edible, medicinal, fire, design, garden, game,	Leaf, flower, bark, wood, all

			miscellaneous (pest repellent)	
Populus tremuloides	Trembling aspen	East	Design	Wood
Salix spp.	Willow	Alaska, East, Greenland, West	Edible, medicinal, fire, design, games, decorate, miscellaneous (amulet, bee food, indicator for timing of hunting, superstition)	Leaf, stem, fruit, flower, root, bark, wood, all
Salix alaxensis	Alaska willow, felt-leafed willow	Alaska, East, West	Edible, medicinal, fire, design, miscellaneous (caribou food)	Leaf, stem, flower, root, sap, bark, wood, all
Salix arbusculoides	Little-tree willow	West	Edible, fire	Leaf, wood
Salix arctica	Arctic willow	East	Edible, medicinal	Leaf, bark
Salix arctophila	Northern willow	East, West	Edible, medicinal, fire, game	Leaf, stem, fruit, flower, wood
Salix glauca	Grey-leaved	East, Greenland	Edible, medicinal,	Leaf, stem,

	willow, smooth willow		fire, design, game, miscellaneous (caribou food)	fruit, flower, root, bark, wood
Salix herbacea	Snowbed willow	East, Greenland	Edible	Leaf, root
Salix planifolia	Tea-leaved willow, diamond-leaved willow	East	Edible, medicinal, fire, design, games, miscellaneous (caribou food)	Leaf, stem, flower, wood
Salix pulchra	Diamond-leaved willow	Alaska	Edible, medicinal	Leaf, flower, bark
Salix reticulata	Net-veined willow	East, West	Edible, medicinal, fire, design, game, miscellaneous (caribou food)	Leaf, fruit, flower, root, sap, all
Salix uva-ursi	Bearberry willow	East	Edible, medicinal, fire, miscellaneous (habitat for bugs)	Stem, flower, root, wood, all
Salix vestita	Hairy willow	East	Edible, medicinal, game	Leaf, flower

44. Santalaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Geocaulon lividum	Northern comandra, foxberry	East	Avoid	Fruit

45. Saxifragaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Saxifraga spp.	Saxifrage	East, Greenland	Edible, medicinal	Leaf, flower, all
Saxifraga cernua	Nodding saxifrage	East	Design	Leaf, stem
Saxifraga hieracifolia	Hawkweed-leaf saxifrage	East	Edible	Flower
Saxifraga oppositifolia	Purple mountain saxifrage	East, Greenland, West	Edible, medicinal, fire, miscellaneous (fragrance)	Leaf, stem, flower, all
Saxifraga punctata	Streambank saxifrage	Alaska	Edible	Leaf

Saxifraga tricuspidata	Three-toothed saxifrage	East, West	Edible, medicinal, design, decorate, miscellaneous (toughen puppy paws)	Leaf, stem, flower

46. Woodsiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Woodsia spp.	Cliff fern	East	Edible, game	Leaf
Woodsia alpina	Alpine woodsia, alpine cliff fern, alpine cliffbrake	East	Design	Leaf, stem

Non-vascular

Family and below

1. Amblystegiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Campylium hispidulum	Hispid campylium moss	West	Design	All
Drepanocladus uncinatus	Sanionia moss	Greenland	Fire	All

1. Bartramiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Famliy Bartramiaceae	Moss, liverwort	East	Fire	All

2. Bryaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Bryum spp.	Moss	Greenland	Medicinal, design	All

3. Dicranaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Dicranum elongatum	Elongate dicranum moss	East	Medicinal	All
Dicranum groenlandicum	Greenland dicranum moss	East	Medicinal, fire, design	All

4. Ditrichaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Ditrichum flexicaule	Ditrichum moss	East	Fire	All

5. Grimmiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Racomitrium spp.	Moss	East	Fire	All
Racomitrium lanuginosum	Woolly moss	East, Greenland	Medicinal, fire, design, miscellaneous (caribou food	All

6. Hylocomiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Pleurozium schreberi	Schreber's big red stem moss, red-stemmed feather moss	West	Design	All

7. Polytrichaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Polytrichum piliferum	Polytrichum moss, bristly haircap moss	Greenland	Fire	All

8. Sphagnaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Sphagnum spp.	Sphagnum moss	Alaska, East, Greenland, West	Edible, medicinal, fire, design, miscellaneous (dog food, natural compass, disposable	All

			cleaning fibre)	
Sphagnum russowii	Russow's peatmoss, Russow's sphagnum	East	Fire	All

Division

1. Division Bryophyta

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Division Bryophyta	Moss	Alaska, East, Greenland, West	Edible, medicinal, fire, design, game, decorate, miscellaneous (disposable cleaning fibre)	All

Algae

Family and below

1. Alariaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Alaria spp.		Greenland	Edible	All
Alaria pylaiei		Greenland	Edible	All

2. Bangiaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Porphyra laciniata	Laver sloke, red laver	Alaska, East	Edible	All

3. Chordaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Chorda filum	Dead men's ropes, sea lace, bootlace weed	Greenland	Edible	All

4. Chordariaceae

Lowest	**Common**	**Regions(s)**	**Use(s)**	**Part(s) used**

classification	**name(s)**			
Dictyosiphon spp.	Seaweed, brown seaweed	East	Edible, fire, game, miscellaneous (pest repellent)	Stem, all

5. Delesseriaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Delesseria spp.	Seaweed, sea beech (possibly)	Greenland	Edible	All

6. Fucaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Ascophyllum nodosum	Yellow tang, knotted wrack, knobbed wrack, egg wrack	East, Greenland	Edible, fire, game	Stem, all
Fucus spp.	Rockweed	East, Greenland, West	Edible, medicinal, fire, game	Stem, all
Fucus edentatus	Rockweed, wrack	East	Edible, fire, game	Stem, all

Fucus evanescens	Rockweed, wrack	East	Edible, design, avoid	Leaf, all
Fucus serratus	Serrated wrack, toothed wrack, saw wrack	Greenland	Edible	All
Fucus vesiculosus	Bladder wrack,	East, Greenland	Edible, medicinal, fire, games	Stem, all

7. Laminariaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Laminaria groenlandica	Sea belt, oarweed, kelp, sugar wrack	Greenland	Edible	Stem
Laminaria longicruris	Kelp, oarweed, Atlantic kombu	Greenland	Edible	All
Laminaria saccharina	Sea belt, kelp, sugar wrack	East	Edible	All
Laminaria solidungula	Kelp	East	Edible, medicinal	Stem, all

8. Pilayellaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Pilayella spp.	Seaweed	East	Edible, fire, game, miscellaneous (pest repellent)	Stem, all

9. Rhodymeniaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Rhodymenia palmata	Dulse	East, Greenland	Edible	All

Order

10. Order Fucales

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Order Fucales	Seaweed	East	Edible	All

11. Order Laminariales

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Order Laminariales	Kelp	Alaska, East, East and/or	Edible, medicinal, fire, game, avoid,	Stem, all

		West, Greenland	miscellaneous (pest repellent)	

Class

12. Class Chlorophyceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Class Chlorophyceae	Green algae	Alaska, East	Edible, medicinal, avoid	All

13. Class Phaeophyceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Class Phaeophyceae	Brown algae	East	Edible, medicinal, design, game	Leaf, stem, all

Kingdom

1. Kingdom Plantae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Kingdom Plantae	Seaweed	Alaska, East, Greenland, West	Edible, medicinal, fire, garden,	Sap, all

			miscellaneous (cool fish after caught)	

Fungus

Family and below

1. Agaricaceae

Lowest classification	Common name(s)	Regions(s)	Use(s)	Part(s) used
Bovista spp.	Puffball	West	Miscellaneous (amulet for power and invisibility)	All, spores
Calvatia spp.	Puffball	East, West	Game, miscellaneous (amulet for power and invisibility)	All, spores
Calvatia cretacea	Puffball	East, Greenland	Edible, medicinal, fire	All, spores
Lycoperdon spp.	Puffball	East, Greenland, West	Edible, medicinal, game, avoid, miscellaneous (amulet for power and invisibility)	All, spores
Lycoperdon gemmatum	Puffball	East, Greenland	Medicinal	All, spores

2. Hygrophoraceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Hygrophorus spp.	Woodwaxes, waxy caps, mushroom	West	Medicinal, miscellaneous (improve puppy fur)	Sap

3. Polyporaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Family Polyporaceae	Bracket fungi	West	Fire, game, miscellaneous (fragrance)	All

Division

4. Division Basidiomycota

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Division Basidiomycota	Mushroom	Alaska, East, Greenland, West	Edible, medicinal, fire, game, avoid, decorate	All

Lichen

Family and below

1. Cladoniaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Cladonia spp.	Cup lichen	East, Greenland, West	Edible, medicinal, fire, design, game, miscellaneous (dog food)	All
Cladonia pleurota	Cup lichen	East	Fire, design	All
Cladonia rangiferina	Reindeer lichen, caribou moss	East	Fire, design, miscellaneous (animal food)	All
Cladonia stellaris	Star reindeer lichen	East	Medicinal, fire, design, miscellaneous (animal food)	All

2. Icmadophilaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Thamnolia vermicularis	Whiteworm lichen	West	Edible	All

3. Parmeliaceae

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Part(s) used**
Alectoria spp.	Witch's hair licen	East	Fire, design, game, miscellaneous (animal food)	All
Alectoria nigricans	Witch's hair lichen	East	Fire, design	All
Alectoria ochroleuca	Witch's hair lichen	East	Fire, design	All
Bryoria spp.	Horsehair lichen	West	Fire	All
Cetraria islandica	Iceland lichen, Iceland moss	East, Greenland	Medicinal, fire, design	All
Cetraria nivalis		East	Miscellaneous (caribou food)	All
Cetrariella delisei		West	Design	All
Flavocetraria spp.		East	Medicinal	All

4. Teloschistaceae

Lowest classification	Common name(s)	Regions(s)	Use(s)	Part(s) used
Xanthoria elegans	Sugared sunburst lichen	Greenland	Fire, game	All

5. Umbilicariaceae

Lowest classification	Common name(s)	Regions(s)	Use(s)	Part(s) used
Umbilicaria spp.	Rock tripe	East, East and/or West, Greenland	Edible, medicinal, design, miscellaneous	All

Kingdom

1. Kingdom Fungi

Lowest classification	Common name(s)	Regions(s)	Use(s)	Part(s) used
Kingdom Fungi	Lichen	Alaska, East, Greenland, West	Edible, medicinal, fire, design, miscellaneous (caribou food, amulet, dog food)	All

Non-specific Classifications

Lowest classification	**Common name(s)**	**Regions(s)**	**Use(s)**	**Additional context**
Non-specific	Berry	Alaska, East	Edible	
Non-specific	Digested plants	Alaska, East, Greenland, West	Edible	-From caribou, deer, muskoxen, ptarmigan -Mainly lichens in ungulates -Mainly willow in ptarmigan
Non-specific	Flower bud	Greenland	Edible	
Non-specific	Flower	East	Edible	
Non-specific	Herb	East, Greenland	Edible, medicinal	
Non-specific	Humus	East	Medicinal, design	
Non-specific	Leaf	East, Greenland	Edible, decorate	
Non-specific	Peat	East	Design	
Non-specific	Root	Alaska, East	Edible	
Non-specific	Sod	West	Design	
Non-specific	Wood	Alaska, East, West	Fire, design, game, decorate, miscellaneous (significant gift)	-Concerned driftwood in many cases

Appendix 4

Alaska taxonomic diversity

Vascular

Species

1. Achillea millefolium
2. Allium schoenoprasum
3. Alnus fruticosa
4. Anemonastrum sibiricum
5. Angelica lucida
6. Arctostaphylos uva-ursi
7. Arctous alpina
8. Arctous rubra
9. Artemisia tilesii
10. Betula glandulosa
11. Betula papyrifera
12. Caltha palustris
13. Cassiope tetragona
14. Chamaenerion angustifolium
15. Chamaenerion latifolium
16. Claytonia acutifolia
17. Claytonia tuberosa
18. Coptidium pallasii
19. Cornus canadensis
20. Cornus suecica
21. Dasiphora fruticosa
22. Empetrum nigrum
23. Eriophorum angustifolium
24. Hedysarum americanum
25. Hippuris tetraphylla
26. Honckenya peploides
27. Iris setosa
28. Juniperus communis
29. Lathyrus japonicus
30. Ligusticum scoticum
31. Mertensia maritima
32. Oxyria digyna
33. Oxytropis campestris
34. Parrya nudicaulis
35. Pedicularis lanata
36. Persicaria alpina
37. Bistorta officinalis
38. Bistorta vivipara
39. Petasites frigidus
40. Picea glauca
41. Picea mariana

42. Populus balsamifera
43. Rhodiola integrifolia
44. Rhodiola rosea
45. Rhododendron tomentosum
46. Ribes triste
47. Rosa acicularis
48. Rubus arcticus
49. Rubus chamaemorus
50. Rubus idaeus
51. Rubus pedatus
52. Rumex arcticus
53. Salix alaxensis
54. Salix pulchra
55. Saxifraga punctata
56. Tephroseris palustris
57. Vaccinium microcarpum
58. Vaccinium oxycoccos
59. Vaccinium parvifolium
60. Vaccinium uliginosum
61. Vaccinium vitis-idaea
62. Viburnum edule

Genus

1. Alnus spp.
2. Artemisia spp.
3. Betula spp.
4. Carex spp.
5. Equisetum spp.
6. Eriophorum spp.
7. Hedysarum spp.
8. Oxytropis spp.
9. Pedicularis spp.
10. Picea spp.
11. Populus spp.
12. Rhododendronspp.
13. Salix spp.
14. Taraxacum spp.
15. Vaccinium spp.

Family

1. Poaceae

Non-vascular

Genus

1. Sphagnum

Division

1. Bryophyta (moss)

Algae

Species

1. Porphyra laciniata

Order

1. Laminariales

Class

1. Chlorophyceae (green, freshwater algae)

Kingdom

1. Plantae (seaweed)

Fungus

Division

1. Basidiomycota (mushroom)

Lichen

Kingdom

1. Fungi (lichen)

Non-specific

1. Berry
2. Digested plants (caribou, ptarmigan, muskox, and deer)
3. Roots
4. Wood

Appendix 5

Eastern taxonomic diversity

Vascular

Species

1. Abies balsamea
2. Achillea millefolium
3. Allium schoenoprasum
4. Alnus alnobetula sp. crispa
5. Alopecurus magellanicus
6. Amelanchier bartramiana
7. Angelica atropurpurea
8. Arctagrostis latifolia
9. Arctanthemum arcticum
10. Arctostaphylos uva-ursi
11. Arctous alpina
12. Arctous rubra
13. Arnica angustifolia
14. Artemisia campestris
15. Astragalus eucosmus
16. Athyrium filix-femina
17. Betula glandulosa
18. Betula nana
19. Betula papyrifera
20. Campanula rotundifolia
21. Campanula uniflora
22. Carex aquatilis
23. Carex atrofusca
24. Carex membranacea
25. Carex scirpoidea
26. Cassiope tetragona
27. Chamaenerion angustifolium
28. Chamaenerion latifolium
29. Cochlearia groenlandica
30. Cornus canadensis
31. Cystopteris fragilis
32. Deschampsia cespitosa
33. Diapensia lapponica
34. Diphasiastrum complanatum
35. Draba glabella
36. Dryas integrifolia
37. Dryopteris expansa
38. Dupontia fisheri
39. Empetrum nigrum
40. Epilobium palustre
41. Equisetum arvense

42. Equisetum variegatum
43. Eriophorum angustifolium
44. Eriophorum russeolum
45. Eriophorum scheuchzeri
46. Eriophorum vaginatum
47. Festuca baffinensis
48. Fragaria virginiana
49. Gaultheria hispidula
50. Geocaulon lividum
51. Hedysarum americanum
52. Heracleum maximum
53. Honckenya peploides
54. Huperzia selago
55. Juncus biglumis
56. Juniperus communis
57. Larix laricina
58. Lathyrus japonicus
59. Leymus mollis
60. Ligusticum scoticum
61. Luzula nivalis
62. Lycopodium annotinum
63. Matricaria discoidea
64. Mentha arvensis
65. Menyanthes trifoliata
66. Mertensia maritima
67. Moneses uniflora
68. Myrica gale
69. Oxyria digyna
70. Oxytropis campestris
71. Oxytropis nigrescens
72. Papaver labradoricum
73. Papaver radicatum
74. Pedicularis capitata
75. Pedicularis flammea
76. Pedicularis groenlandica
77. Pedicularis hirsuta
78. Pedicularis labradorica
79. Pedicularis lanata
80. Bistorta vivipara
81. Physaria arctica
82. Picea glauca
83. Picea mariana
84. Pinus banksiana
85. Pleuropogon sabinei
86. Poa arctica
87. Poa hartzii

88. Poa pratensis
89. Populus balsamifera
90. Populus tremuloides
91. Potentilla pulchella
92. Prunus pensylvanica
93. Pyrola grandiflora
94. Rheum officinale
95. Rhodiola rosea
96. Rhododendron groenlandicum
97. Rhododendron lapponicum
98. Rhododendron tomentosum
99. Ribes glandulosum
100. Ribes triste
101. Rubus arcticus
102. Rubus chamaemorus
103. Rubus idaeus
104. Rubus pubescens
105. Rumex occidentalis
106. Salix alaxensis
107. Salix arctica
108. Salix arctophila
109. Salix glauca
110. Salix herbacea
111. Salix planifolia
112. Salix reticulata
113. Salix uva-ursi
114. Salix vestita
115. Saxifraga cernua
116. Saxifraga hieracifolia
117. Saxifraga oppositifolia
118. Saxifraga tricuspidata
119. Senecio pseudoarnica
120. Sibbaldia tridentata
121. Silene acaulis
122. Sorbus decora
123. Stellaria longipes
124. Tanacetum bipinnatum
125. Tephroseris palustris
126. Trientalis borealis
127. Vaccinium angustifolium
128. Vaccinium boreale
129. Vaccinium caespitosum
130. Vaccinium oxycoccos
131. Vaccinium uliginosum
132. Vaccinium vitis-idaea
133. Viburnum edule

134. Woodsia alpina

Genus

1. Achillaea spp.
2. Arctous spp.
3. Betula spp.
4. Carex spp.
5. Cornus spp.
6. Equisetum spp.
7. Eriophorum spp.
8. Juniperus spp.
9. Juncus spp.
10. Ligusticum spp.
11. Lycopodium spp.
12. Pedicularis spp.
13. Picea spp.
14. Populus spp.
15. Rheum spp.
16. Rhododendron spp.
17. Ribes spp.
18. Salix spp.
19. Saxifraga spp.
20. Taraxacum spp.
21. Vaccinium spp.
22. Woodsia spp.

Family

1. Family Bartramiaceae
2. Family Poaceae

Non-vascular

Species

1. Dicranum elongatum
2. Dicranum groenlandicum
3. Ditrichum flexicaule
4. Racomitrium lanuginosum
5. Sphagnum russowii

Genus

1. Racomitrium spp.
2. Sphagnum spp.

Division

1. Bryophyta

Algae

Species

1. Ascophyllum nodosum
2. Fucus edentatus
3. Fucus evanescens
4. Fucus vesiculosus
5. Laminaria saccharina
6. Laminaria solidungula
7. Porphyra laciniata
8. Rhodymenia palmata

Genus

1. Dictyosiphon spp.
2. Fucus spp.
3. Pilayella spp.

Order

1. Fucales
2. Laminariales

Class

1. Chlorophyceae
2. Phaeophyceae

Kingdom

1. Plantae

Fungus

Species

1. Calvatia cretacea
2. Lycoperdon gemmatum

Genus

1. Calvatia spp.
2. Lycoperdon spp.

Divsion

1. Basidiomycota

Lichen

Species

1. Alectoria nigricans
2. Alectoria ochroleuca
3. Cetraria islandica
4. Cetraria nivalis
5. Cladonia pleurota

6. Cladonia rangiferina
7. Cladonia stellaris

Genus

1. Alectoria spp.
2. Cladonia spp.
3. Flavocetraria spp.
4. Umbilicaria spp.

Kingdom

1. Fungi

Non-specific

1. Berry
2. Digested plants (caribou, ptarmigan, muskox, and deer)
3. Flowers
4. Herbs
5. Humus
6. Leaves
7. Peat
8. Roots
9. Wood

Appendix 6

Greenland taxonomic diversity

Vascular

Species

1. Achillea millefolium
2. Alchemilla alpina
3. Alchemilla glomerulans
4. Angelica archangelica
5. Armeria maritima
6. Bartsia alpina
7. Betula glandulosa
8. Betula nana
9. Betula pubescens
10. Campanula rotundifolia
11. Capsella bursa-pastoris
12. Cassiope tetragona
13. Cerastium alpinum
14. Cerastium cerastoides
15. Chamaenerion angustifolium
16. Chamaenerion latifolium
17. Cochlearia groenlandica
18. Cornus suecica
19. Dryas integrifolia
20. Empetrum nigrum
21. Equisetum arvense
22. Euphrasia frigida
23. Gentiana nivalis
24. Harrimanella hypnoides
25. Hieracium alpinum
26. Huperzia selago
27. Juniperus communis
28. Leymus arenarius
29. Leymus mollis
30. Lycopodium clavatum
31. Oxyria digyna
32. Pedicularis hirsuta
33. Pedicularis lanata
34. Bistorta officinalis
35. Bistorta vivipara
36. Phleum alpinum
37. Phyllodoce caerulea
38. Platanthera hyperborea
39. Poa arctica
40. Poa pratensis

41. Pyrola grandiflora
42. Rhinanthus minor
43. Rhodiola rosea
44. Rhododendron groenlandicum
45. Rhododendron lapponicum
46. Rhododendron tomentosum
47. Rubus chamaemorus
48. Rumex acetosella
49. Salix glauca
50. Salix herbacea
51. Saxifraga oppositifolia
52. Silene acaulis
53. Silene suecica
54. Sorbus groenlandica
55. Stellaria media
56. Taraxacum lapponicum
57. Taraxacum officinale
58. Thymus praecox
59. Thymus serpyllum
60. Trisetum spicatum
61. Vaccinium myrtillus
62. Vaccinium uliginosum
63. Vaccinium vitis-idaea
64. Veronica alpina

Genus

1. Betula spp.
2. Campanula spp.
3. Carex spp.
4. Eriophorum spp.
5. Pedicularis spp.
6. Poa spp.
7. Potentilla spp.
8. Ranuculus spp.
9. Rumex spp.
10. Salix spp.
11. Saxifraga spp.
12. Taraxacum spp.
13. Vaccinium spp.

Family

3. Cyperaceae
4. Juncaceae
5. Poaceae

Non-vascular

Species

1. Drepanocladus uncinatus
2. Polytrichum piliferum
3. Racomitrium lanuginosum

Genus

2. Bryum spp.
3. Sphagnum spp.

Division

2. Bryophyta

Algae

Species

2. Alaria pylaiei
3. Ascophyllum nodosum
4. Chorda filum
5. Fucus serratus
6. Fucus vesiculosus
7. Laminaria groenlandica
8. Laminaria longicruris
9. Rhodymenia palmata

Genus

1. Alaria spp.
2. Delesseria spp.
3. Fucus spp.

Order

3. Laminariales

Kingdom

2. Plantae

Fungus

Species

1. Calvatia cretacea
2. Lycoperdon gemmatum

Genus

1. Lycoperdon spp.

Division

1. Basidiomycota

Lichen

Species

1. Cetraria islandica
2. Xanthoria elegans

Genus

1. Cladonia spp.
2. Umbilicaria spp.

Division

1. Fungi

Non-specific

5. Digested plants (caribou, ptarmigan, muskox, and deer)
6. Flower buds
7. Herbs
8. Leaves

Appendix 7

Western taxonomic diversity

Vascular

Species

1. Achillea boreale var. boreale
2. Allium schoenoprasum
3. Alnus alnobetula sp. crispa
4. Arctostaphylos uva-ursi
5. Arctous alpina
6. Arctous rubra
7. Armeria maritima
8. Artemisia borealis
9. Artemisia tilesii
10. Astragalus australis
11. Betula glandulosa
12. Boschniakia rossica
13. Campylium hispidulum
14. Carex aquatilis
15. Carex rupestris
16. Cassiope tetragona
17. Castilleja elegans
18. Chamaenerion angustifolium
19. Chamaenerion latifolium
20. Comarum palustre
21. Dasiphora fruticosa
22. Deschampsia cespitosa
23. Dryas integrifolia
24. Dryopteris fragrans
25. Empetrum nigrum
26. Equisetum arvense
27. Eriophorum scheuchzeri
28. Hedysarum americanum
29. Honckenya peploides
30. Juniperus communis
31. Larix laricina
32. Lathyrus japonicus
33. Leymus mollis
34. Mertensia maritima
35. Oxyria digyna
36. Oxytropis campestris
37. Pedicularis capitata
38. Pedicularis lanata
39. Pedicularis langsdorffii
40. Persicaria alpina
41. Bistorta officinalis

42. Bistorta vivipara
43. Petasites frigidus
44. Picea glauca
45. Picea mariana
46. Populus balsamifera
47. Potentilla anserina
48. Pyrola grandiflora
49. Rhodiola rosea
50. Rhododendron groenlandicum
51. Rhododendron tomentosum
52. Ribes hudsonianum
53. Ribes triste
54. Rosa acicularis
55. Rubus arcticus
56. Rubus chamaemorus
57. Rumex arcticus
58. Salix alaxensis
59. Salix arbusculoides
60. Salix arctophila
61. Saxifraga oppositifolia
62. Saxifraga tricuspidata
63. Shepherdia canadensis
64. Silene acaulis
65. Tephroseris palustris
66. Thamnolia vermicularis
67. Vaccinium uliginosum
68. Vaccinium vitis-idaea

Genus

1. Arctous spp.
2. Betula spp.
3. Carex spp.
4. Equisetum spp.
5. Eriophorum spp.
6. Salix spp.
7. Silene spp.
8. Taraxacum spp.

Family

1. Poaceae

Non-vascular

Species

1. Pleurozium schreberi

Genus

1. Bryoria spp.
2. Sphagnum spp.

Division

1. Bryophyta (moss)

Algae

Genus

1. Fucus spp.

Fungus

Genus

1. Bovista spp.
2. Calvatia spp.
3. Hygrophorus spp.
4. Lycoperdon spp.

Family

1. Polyporaceae

Division

1. Basidiomycota (mushroom)

Lichen

Species

1. Cetrariella delisei

Genus

1. Cladonia spp.

Kingdom

1. Fungi

Non-specific

1. Digested plants (caribou, ptarmigan, muskox, and deer)
2. Sod
3. Wood

Chapter 2:

Understanding plant use through a biocultural perspective

in Nunatsiavut, Labrador, Canada

Abstract

Biocultural diversity is the recognition that biological diversity and cultural diversity are linked, inseparable, and different manifestations of the same thing: life on earth. The current body of work about biocultural diversity is extremely equator-biased, but the conceptual framework that explains the links between biological and cultural diversity is being expanded to include northern areas. To expand this framework into a Subarctic context, this paper seeks to understand how the diversity of plant and plant allies (i.e. fungi, algae, lichen) supports intra-cultural diversity in communities (Postville, Hopedale, and Rigolet) in southern Nunatsiavut (Labrador) a Inuit self-governing region of Canada. Via interviews with community members, this research accomplished this goal by first documenting the link between plant usage and culture by understanding the direct ways that plants are used for food, construction, gardening, and medicine, and to link these uses to cultural diversity within the three communities. In total, 66 taxa were identified among the three communities. About 75% of taxa were common to at least two communities, corresponding to 95% of all responses. Edible plants were the most common reported usage, with particular emphasis on berry producing taxa. Concerning links between plants and culture, plants were found to (i) support cultural activities such as berry picking, smoking fish, fishing, and wooding that supported family life and cohesiveness; (ii) acting as markers for historical events such as caribou movement, activities of missionaries, and local happenings; (iii) highlighting intergenerational exchange and valuing of plant knowledge; (iv) expressing the deep awareness that people have for their local environment though monitoring which plants animals eat, and vegetation changes with climate change; and (v) a medium for the expression of traditional values such as food sharing, being on the land, living off the land, and respecting the land. The similarities in the plant responses among the communities suggest a

common body of plant knowledge among Postville, Hopedale, and Rigolet, and it is clear that plants and plant allies—including their direct applications as food or materials—support a rich diversity of cultural activities, local memory and history, and traditional Inuit values. Our study supports the inclusion of a biocultural perspective in a northern context and brings attention to the incredible cultural importance of plants in northern communities.

Introduction

Beginning in the 1980s, a body of work began to develop that recognized the overlap between areas that were biologically diverse and culturally diverse, in addition to the broader ways that aspects of culture such as belief systems and livelihoods were buttressed by biodiversity (Posey 1999; Nabhan et al 2002). Biocultural diversity, the recognition of links between biological and cultural diversity, is becoming increasingly common in research in both social and biological science realms, in addition to conservation efforts (Cocks 2006; Pretty et al. 2009; Maffi and Woodley 2010; Gavin et al. 2015). Literature concerning biocultural diversity is almost exclusively founded upon works from low latitudes (Loh and Harmon 2005; Frank 2011; St. Martin 2012).

Where do places at higher latitudes, such as the Subarctic and Arctic, fit into the body of work describing biocultural diversity? There is a growing body of scholarship that recognize northern areas as bioculturally diverse (Kassam 2009; Bandringa and Inuvialuit Elders 2010; St. Martin 2012). These regions would include Inuit, Yupik, Aleutian, and Sami cultures, to highlight a few. Focusing on Inuit culture, cultural diversity includes four main language groups, almost fifteen dialects, and numerous sub-dialects (Dorais 2010). Although floral and faunal diversity is lower at higher latitudes, compared to lower latitudes (Qian 1998; Willig et al. 2003), there are still hundreds of vascular plant species, in addition to non-vascular plants, fungi, algae, and lichen. There is also high ecosystem diversity, including various types of wetlands, marine-terrestrial coast zones, alpine areas and boreal forests. There are both biological and cultural diversity in the Subarctic and Arctic, thus diversity elements exist to research relationships between biological and cultural diversity—i.e. biocultural diversity—in these areas.

We conducted ethnobotanical research in Nunatsiavut, a self-governing Inuit territory in northern Labrador, Newfoundland and Labrador, Canada. Our goal was to expand biocultural research into a northern context. There are five communities within Nunatsiavut, all of which are coastal (most northerly to southerly): Nain, Hopedale, Postville, Makkovik, and Rigolet. This study concentrated on ethnobotanical research in three of the southern communities of Hopedale, Postville, and Rigolet. Both Nain (Clark 2012: Downing et al. 2012; Lemus-Lauzon et al. 2012; Siegwart Collier 2018, unpublished PhD data) and Makkovik (Oberndorfer 2016; Oberndorfer et al. 2017) have been the subject of other projects.

The goal of this paper is to describe patterns of plant usage and the relationships between plants and people of the three communities to understand the ways in which cultural diversity is supported by biological diversity. The concept of biocultural diversity often emphasizes diversity in taxa and diversity in discrete cultures (via languages as a proxy) as a way to understand links between biological and cultural diversity (Maffi 2007). In this paper, we suggest that considering intra-cultural diversity—i.e. diversity within a culture—is another way to understand the links between biological and cultural diversity that can be applied to northern contexts. Considering intra-cultural diversity may also help us to break away from the existing equator-biased perspectives.

Methods

Study area and historical context

Nunatsiavut is one of four Inuit regions in northern Canada (Fig. 1). Nunatsiavut is the most eastern Inuit region in Canada. Hopedale, Postville, and Rigolet are three of the five communities that make up Nunatsiavut (Fig. 2). Hopedale is the most northern and most populous of the three communities (Table 1), Rigolet is the most southern and Postville is located between Hopedale and Rigolet, but closer to Hopedale. Hopedale is the most coastal and least forested of communities, while Postville and Rigolet have more tree-cover due to their inland, sheltered locations. Hopedale is approximately 68km NNW from Postville and 183km NW from Rigolet. Postville is 120km NW of Rigolet. These are the three smallest communities in Nunatsiavut.

There are three historical events that permeate and define culture in Nunatsiavut. Firstly, Moravian missionaries—a German protestant denomination—began establishing missions in this region in the mid 18th century, and these missions ran until the late 20th century. Secondly, the Spanish Flu epidemic in the early 20th century ravaged northern Labrador, even forcing the closure and resettlement of Okak, a community north of where Nain is today. Thirdly, the provincial government of Newfoundland and Labrador implemented forced relocations in the late 1950s of Inuit from Nutak and Hebron. Nutak and Hebron were located further north than existing communities today, and Inuit living in these communities were moved to the more southern communities of Nain, Hopedale, and Makkovik. Plant knowledge is a reflection of history, geography, and experience, so it is important to consider these historical contexts and the way they mediate how people express culture through plants.

Data Collection

This project was approved by the Comité d'éthique de la recherche en arts et en sciences, project code 2016-17-293-CERAS-D and the Nunatsiavut Government Research Advisory Committee.

Data collection consisted of semi-structured interviews with local informants (Martin 2004). Interviews consisted of questions about plants used for eating, medicine, crafting (See Appendix 1 for break-down of usage categories). In the context of these interviews, a "plant" was defined in colloquial terms; thus, organisms that are not generally considered to be plants in the scientific community (such as lichens and algae) were considered plants in the context of these interviews because they have a plant-like appearance. To the Eastern Inuit, *pirurtuq* refers to plants, but includes fungi, lichens, and seaweeds (Cuerrier and Elders of Kangirsujuaq 2005).

Interviews did not follow a strict questionnaire, but instead explored topics based on the informant's interests. Generally, most interviews began with questions about berry picking, and then led into topics such as smoking fish, medicinal plants, wood burning, and liked/disliked plants. Informants were also asked the Inuktitut names of plants. Interview locations were determined by the informants and took place in homes, offices, and public spaces. Informants were recruited based on recommendation from other members in the community, in addition to paper and online advertisements. Interviews were conducted in English, but there were three interviews during which an interpreter was used to translate between Inuttut and English were needed. Interviews in Hopedale and Postville took place in June 2017 by CN. Interviews in Rigolet were conducted in March 2015 by AC and VM.

Plants were classified mainly using VASCAN (data.canadensys.net/vascan) and the Digital Flora of Newfoundland and Labrador (digitalnaturalhistory.com/flora.htm), in addition to

previous ethnobotanical surveys in Nunatsiavut (Clark 2012; Orderndorfer 2016) and local field guides (Downing et al. 2012; Cuerrier and Hermanutz 2012; Scott 2010). We made an effort to identify responses to the lowest level of taxonomic classification considered for this survey, the species level. Such specificity was not always possible due to a lack of clarity with common names. For examples, a person may report "redberry," and this was easily allocated to *Vaccinium vitis-idaea*; however if a person discussed a "willow," it was not possible to classify below the genus *Salix*.

Results

Demographics of people interviewed

There were a total of 32 interviewees across 30 interviews (Table 2). The most interviews were conducted in Hopedale, and about an equal number were conducted in both Postville and Rigolet. Overall, there were more female participants than male participants, and the average age of participants was almost 63 years, and ranged from 48 to 90 years old.

Taxonomy and plant group

There were a total of 61 reported taxa and five broad categories that did not relate to any taxonomic grouping (Appendix 1; Table 3). For the sake of brevity, both the 61 reported taxa and the five larger groupings (rotten wood, seaweed, wood, brush, and tree) will henceforth be referred to as taxa, resulting in a total of 66 taxa. At the community level, Hopedale had the greatest taxonomic richness (54 taxa) and Rigolet the least (46 taxa) but the differences in richness among communities were small (Table 3).

Of the 66 taxa, 34 were reported in all three communities (Fig. 1; Table 4). Additionally, 15 taxa were common to two of the three communities (Fig. 1). The overwhelming majority of taxa reported were vascular (Fig. 2).

Frequency and usage

The 34 common taxa accounted for 430 of the 530 total responses (Table 4; Appendix 2). Examples of taxa reported in all three communities include birch (*Betula* spp.), bunchberry (*Cornus* spp., called crackerberry locally), American dunegrass (*Leymus mollis*, called saltgrass locally), and squashberry (*Viburnum edule*). The 15 taxa common to two of the three

communities taxa accounted for 72 responses (Appendix 2). Examples of taxa reported in two communities include common yarrow (*Achillea millefolium*, called hundred-thousand locally), Bartram's serviceberry (*Amelanchier bartramiana*, called dempsum locally), and caribou moss (*Cladonia* spp.). Considered together, taxa common to all three communities and taxa common to two communities made up 502 of 530 total responses, about equal to 95% of all responses (Appendix 2).

The "edible" usage category was the most frequent across all three communities (Fig. 3). Table 5 reports the edible taxa in each community that were reported in at least half of interviews. Berry producing taxa made up the majority of the most reported edible taxa (Table 5). Top edible taxa that were not berries include rotten wood (used in smoking fish, i.e. food preparation), rhubarb (*Rheum compactum*), and roseroot (*Rhodiola rosea*) (Table 5). Table 6 gives examples of plants that were the most common responses in other usage categories such as medicinal, fire, design, etc.

Identifying and describing biocultural relationships

Plants were used for a variety of purposes, but plants also play an integral role in cultural activities such as berry picking. Berry picking is an important annual activity in northern Labrador, and every person interviewed had something to say about the annual event. One community member said, "Everyone gets their berries!" and that quote succinctly sums up how integral the annual berry harvest is to the cultural calendar in Labrador. In Rigolet, a community member discussed with pride his family's long-standing tradition of berry picking together. Some berries were held in great esteem, such as the bakeapple (*Rubus chamaemorus*) with its golden druplets, which was described as "priceless," " a priceless gift," and "[their] gold." Especially in

the case of the bakeapple, people travelled great distances by boat out to islands or inland large distances to find suitable patches. Older community members, finding it difficult to travel, lamented that berry patches closer to town were being ruined by road dust, skidoo damage, and careless garbage disposal. Picked berries are eaten raw, and are often made into baked goods such as squares (a type of cake filled with fruit, cut into small pieces), puddings, cheesecakes, pies, jams, and jellies. Blackberry (*Empetrum nigrum*) cake and redberry (*Vaccinium vitis-ideae*) squares were two often mentioned recipes, the blackberry cake being fondly remembered as a special treat by older generations.

The smoking of fish was another cultural activity in which plants played an integral role. A community member in Hopedale explained how berry sods are used to smoke fish:

> "We call them sods. We don't call them berry bushes. It goes for redberries. You make a square out of the ground where the redberries grows, make it around ten inches thick...cut it 16 by 12, need about three or four of them for a smoke, one batch of fish. There are other people that likes blackberries sods, but I like the redberries in general. Some uses birch wood...they get that from out on the land."

A community member from Postville remembered summers from her childhood where she smoked and salted fish continuously, and the role the plants played in this process:

> "He [my father] and the boys would bring in the most fish from the outside...he would dry and pile the fish in the fish shed and salt it so that it wouldn't go bad. That's how it was. Smoking fish was another thing, smoking fish continuously all summer. That was food for our table. Smoked it with berry leaves and rotten wood...and then sawdust on top of that so that the...flames wouldn't come up...sprinkle a little bit of water to keep it from catching. Didn't want to burn his smokehouse and lose his fish!"

In the case of smoking fish, berry sods, wood, and rotten wood provided the heat and smoke that both dried the fish to preserve, as well as providing a flavour appreciated by many community members.

During the interviews, it became clear that plants served as memory markers for defining historical events in Postville, Hopedale, and Rigolet, such as the history of the Moravians and the relocations that happened in the late 1950s. When people were asked about mushrooms, rhubarb, poppies (*Papaver nudicaule*), and chives (*Allium schoenoprasum*), they recalled the history of the Moravian missions and missionaries in northern Labrador. In the case of mushrooms, few people recalled ever picking wild mushrooms, but they remembered that these were a favorite of the Moravians. Relocated Inuit now living in Hopedale expressed memories of their former communities when discussing rhubarb, cottongrass (*Eriphorum* spp.), and wild chives. Trips back to the old settlements like Hebron are important and incredibly emotional, and memories of these reunions were triggered by picking blackberries and eating seaweed (Class Phaeophyceae). A relocatee in Hopedale recalled crying so hard at one of the Hebron reunions while picking blackberries that she accidentally picked up pieces of animal feces into the bucket with the rest of the berries. Another woman, attending a similar reunion at Hebron, remembered that she saw people eating seaweed at that event. Plants marked minor events, too. The building of the new school in Postville allegedly brought in butter and eggs (*Linaria vulgaris*) with the lumber, and vetch (*Vicia cracca*) was introduced to Postville via hay that was brought in years ago for a beloved horse named Queenie. In Hopedale, one woman said pink clover (*Trifolium pratense*) was introduced via the sod used to turf the new playground. When discussing plants, people recalled these historical events, both major and minor, of northern Labrador.

When talking about plants, community members often recalled who taught them about a certain plant, or with whom they associated a specific plant. One woman in Hopedale recalled her father bringing her back spruce gum (*Picea* spp.) as a treat when he returned from checking his traps. A man recalled "going wooding" with his father, and how his father gave him a piece of spruce gum to help him breath and clear up his cold. An elder in Hopedale recalled her mother boiling spruce bows to make a tonic for cleaning the blood. A woman, though she had never tried it herself, remembered her grandmother eating the new alder leaves (*Alnus alnobetula* subsp. *crispa*) and the tops of roseroot. Importantly, discussion about plants also brought up reasons why someone may not have learned as much about plants from their parents and grandparents as they now wish they had. One woman, expressing sadness that she did not know more about plants and their traditional uses said:

> "I never used to watch and that's why I never learned much...I'd just run off. It's like we didn't care...we didn't want to learn or something... and now I regret it...not learning from them. Mostly I did [learn from them], but not the most important things, I suppose."

Through discussing plants, it was clear that plants were evidence of knowledge transfer between generations, and the respect and status of this knowledge is reflected in the sadness of those who wish they had learned more from their parents and grandparents when they had the chance.

Plants are also a means through which people monitor environmental changes and understand ecological relationships. In both Hopedale and Postville, interviewees noted the rapid change over the last few decades concerning the increase in the number and growth rate for willows (*Salix* spp.), alders, and balsam poplar (*Populus balsamifera*). A man in Hopedale said, "something happened to the climate, made them go boom!" Willows, in addition to marking

changes in climate, were noted by a few interviewees as a plant used to indicate water on the land. Again concerning climate change, berries, but particularly bakeapples, are said by locals to be sensitive to too much heat and too much sun. A woman in Postville said that there are now years with no berries at all because it is too hot and too dry, and she felt climate change was to blame for this. In Rigolet, a few people recalled fireweed (*Chamaenerion angustifolium*) being called salmon flower because the blooms corresponded with the arrival of the salmon (*Salmo salar*). In Hopedale, an Elder said that appearance of the fluffy heads of cottongrass meant that the backs of the caribou (*Rangifer tarandus*) were full of fat. The amount of fruit set by the mountain ash (*Sorbus decora*) was noted as a predictor for snowfall in the coming winter. Finally, people noted the importance of plants in the diets of animals they hunt. Caribou moss (*Cladonia* spp.) is called such because it is known as a staple of the caribou diet. Snowberries (*Gaultheria hispidula*), redberrries, blackberries, spruce buds, and willow seeds are noted as food for partridges (*Lagopus muta* and *Lagopus lagopus*). Plants and plant allies, in multiple ways, are a medium through which community members understood and monitored the environment around them.

Finally, discussion about plants and plant allies revealed that plants supported and maintained traditional values and conventions concerning traditional usage of natural resources. Tradition values supported by plants included sharing with others, sustainable usage, and living off the land. Berry species seemed to be particularly important concerning the maintenance and expression of traditional values. In Postville, one woman we interviewed made it clear that when picking berries, you did not pick everyday and you did not over pick, and you share with others when you can. When talking about harvesting wood for home heating, the same woman also said that you should not use someone else's wood path, i.e. the trail in the woods they had cut to

access firewood, because it would be disrespectful to do so. Again, when talking about berries, another woman said that berries used to be only given, but now people sell them for high prices, particularly the bakeapples. Across all interviews, it was clear that there was great pride in being on and living off the land, and using and being on the land was an integral part of local identity. When discussing gardening, a woman in Hopedale said, "We've always lived off the land, and gardening is just another arm of that." Another woman interviewed, who was also discussing gardening, but instead explaining why not everyone gardens, said, "Our people have always been hunters and gatherers, but our people aren't croppers." When discussing plants as medicine, and what seemed to be their decreased use over time, multiple people expressed frustration that they do not use more medicines off of the land for the general ailments.

Discussion

The two main goals of this research were to (a) understand plant usage and to (b) tease apart the deeper, more fundamental ways that plants are linked to culture in Nunatsiavut. We found that plant usage is highly similar among the three communities. Secondly—but perhaps more importantly—speaking with community members in Postville, Hopedale, and Rigolet shone a light on the integral ways that plants are part of life on the north coast of Labrador.

Historically, much of the ethnobotanical research in the North American Subarctic and Arctic has focused on far western regions, with the seminal works of Ager and Ager (1980), Oswalt (1957), Young and Hall (1969), Bank (1952), and Anderson (1939). Fortunately, recent years have seen a surge of interest of the ethnobotany of the Eastern North American Subarctic and Arctic (Cuerrier and Elders of Kangirsujuaq 2005; Black et al. 2008; Joamie and Ziegler 2009; Zutter 2009; Cuerrier and Elders of Umiujaq and Kuujjuarapik 2011; Clark 2012; Zutter 2012; Cuerrier and Elders of Kangiqsualujjuaq 2012; Cuerrier and Hermanutz 2012; Downing et al. 2012; Lemus-Lauzon et al. 2012; Pigford and Zutter 2014; Oberndorfer 2016; Oberndorfer et al. 2017; Siegwart Collier 2018, unpublished PhD data).

With the completion of this work, all five communities in Nunatsiavut have been included in contemporary ethnobotanical surveys. In total, there are 101 taxa reported in Nunatsiavut, with 51 taxa being reported in at least two communities and 50 taxa being reported in only one community. Seventeen taxa were reported in all five communities, and these taxa are given in Table 7. Clark (2012) completed her studies in Nain, and she found similar results. Clark reported 58 taxa in Nain, which is similar to the richness among the three communities discussed in this paper. Concerning usage reported by Clark, the most common reported usage was edibility, and she emphasized that berries were a highlight for edible plants, much like what was found in

Postville, Hopedale, and Rigolet. Makkovik has also been the focus of a recent ethnobotanical survey by Oberndorfer (2016). Oberndorfer reported 65 taxa, similar richness to this survey. Although not reported in the survey, the most common usage category was edible, and there were 11 berry-producing species reported in the edible usage category. Results presented here are consistent with Oberndorfer's (2016) work in Makkovik in that edibility was the most common usage with a distinct focus on berries and a similar number of taxa were reported. Examples of native plants reported in Makkovik but not in this study include arnica (*Arnica* spp.), marsh cinquefoil (*Comarum palustre*), northern comandra (*Geocaulon lividum*), bog laurel (*Kalmia polifolia*), twinflower (*Linnaea borealis*), bog buckbean (*Menyanthes trifoliata*), one-flowered wintergreen (*Moneses uniflora*), and clasping-leaved twisted-stalk (*Streptopus amplexifolius*).

In addition to the recent works by Clark (2012) in Nain and Oberndorfer (2016) in Makkovik, there are additional texts that include references to plant usage by Inuit in Labrador, albeit it in a minor way[2]. Brice-Bennett's (1977) work paved the way for the Inuit land claim agreement and the existence of Nunatsiavut as an autonomous territory by showing the intimate connection between the communities on the north coast of Labrador and their environment. In this powerful text, there is a chapter on Postville that includes a list of berries used by community members, all of which were also documented in this survey, and there is even a map that details the locations of berry patches around Postville. There are examples of berry toponyms given in the book, further testament to the importance of berries—and plants at large—to local communities. In northern Labrador, Hutton (1912) and Peacock (1947), both medical doctors,

[2] Note that a closer reading of Hawkes (1916)—which is often cited as a document pertaining to what is now Nunatsiavut—revealed that the document refers to the whole Labrador peninsula, with accounts spanning from Sandwich Bay in southern Labrador, to almost the southern border of what is now Nunavik on the East coast of Hudson Bay, with a few accounts even coming from the West coast of Hudson Bay. Considering the vast geographic area covered by the text, it seems misleading to consider it a text that solely describes the Inuit of the northern Labrador coast.

provided extremely briefs notes on plants usage they saw. Hutton noted that berries and willow were eaten, and berries were an especially important food source. Hutton only noted one example of medicinal plant use, referring to "twigs of rosemary" that were made into a tea and drank for any illness. The twigs to which he refers are most like Labrador tea (*Rhododendron* spp.) and their usage as a medicinal tea continues today in Postville, Hopedale, and Rigolet as noted by Labrador tea being the most frequent response in the medicinal usage category. Peacock (1947) noted Labrador tea, willow, roseroot, puffball (Division Basidiomycota), and tamarack (*Larix laricina*; often called juniper tree) as medicinal taxa, all five of which were noted in this survey as having medicinal uses. Like the results presented above, as well as notes by Hutton (1912), the importance of Labrador tea as a traditional medicine is obvious. Studying country food consumption in Makkovik, Mackey and Orr (1986) found that, in total, surveyed households collect 832kg of berries, mainly redberry, blackberry, blueberry (*Vaccinium* spp.), bakeapple, and squashberry (*Viburnum edule*). All of which were noted as still being used in both a recent survey of Makkovik (Oberndorfer 2016), in addition to the former four taxa being the most reported plants in the results presented in this paper, a testament to their continued importance to the communities as a valued food source and cultural item.

Although there is now a detailed ethnobotanical record in Nunatsiavut—and the North American Arctic at large—the field of biocultural theory is only just beginning to meaningfully expand outside of contexts on or near the equator. The widespread adoption of biocultural diversity as a framework to describe plant-people relations in the north is helpful because it can give full recognition to the immense cultural weight supported by plants, breaking away from the classic understanding that plants were only secondary food sources in the Arctic and Subarctic (Porsild 1945; 1953). Consideration for biocultural diversity in the Arctic and Subarctic is

particularly lacking, with only three publications found that identified and noted its applicability to understand the relationships between northern peoples and their environments: Bandringa and Inuvialuit Elders (2010), Kassam (2009), and Polfus et al. 2017. Although they do not use the term specifically, works by Oberndorfer (2016) and Oberndorfer et al. (2017) in Makkovik. Joamie and Zeigler (2009) in Nunavut and Jones (1983) in northern Alaska are holistic in their descriptions of Inuit plant use, taking care to describe the broader ways that plant and plant allies support a diversity of cultural practices within a culture, beliefs, and activities, outside of their simplistic, assigned usage categories such as being edible, medicinal, or combustible.

In Postville, Hopedale, and Rigolet, the depth of the relationships between plants and local culture is undeniable and the complexity of relationships became more integral and complicated, as the layers of culture were understood. Most obviously were the direct uses for plants, and these obvious uses are reflected in other ethnobotanical surveys conducted in Nunatsiavut. After discrete uses, the ways that plants are linked to cultural activities—like berry picking, smoking fish, and wooding—became understood. These cultural activities, in turn, provide quality of life for community members by providing cultural relevant food sources, i.e. supporting food sovereignty, in addition to heating homes in an environment that would be almost impossible to inhabit without heating. Smoking fish and wooding are noted as integral cultural activities by Clark (2012) and Oberndorfer (2016), and accounts from across the Arctic and Subarctic attest to the widespread importance of berry picking as a cultural activity, both historically and presently (Hawkes 1916; Jones 1983: Zutter 2009; Murray et al. 2005).

The deeper levels of plant-people relationships included plants as memory markers, expressions of ecological awareness, a catalyst for intergenerational knowledge exchange, and a medium to express and encourage traditional values. Aiken et al. 2007 noted that plants in the

Arctic acted as means to monitor both environmental change, as well as the activities of humans, i.e. accidental introductions, intentional introductions, and introductions via gardening. Plants as markers of local history were noted by Oberndorfer (2016) in Makkovik, particularly poppies and rhubarb as reminders of the Moravians, as they were noted as such in this survey. Examples of plants acting as a means for people to monitor their environment are many, both in Labrador and the larger Arctic and Subarctic. Siegwart Collier (2018) noted that people felt increased tree growth and cover was shading berries. Clark (2012) noted certain flowers referred to as bumblebee food in Nain. Other texts from Nunavik noted flowers as bee food, too, in addition to cottongrass (Cuerrier and Elders of Kangirsujuaq 2005; Cuerrier and Elders of Umiujaq and Kuujjuarapik 2011; Cuerrier and Elders of Kangiqsualujjuaq 2012.) Joamie and Zeigler (2009) and Mallory and Aiken (2012) found that mountain avens (*Dryas integrifolia*) can be used to judge the season, and thus predict when to time certain seasonal activities, and, again, Oberndorfer (2016) found that the ripening of blackberries was linked to the arrival of the geese in the fall. She also noted that people linked the blooming of pond lilies to the ripening of bakeapples, another example of plants acting as expressions of ecological awareness. Plants as a catalyst and medium for intergenerational knowledge exchange was noted by Joamie and Zeigler (2009), when describing learning about plants from parents, and reports about tree usage in Nain referred learning from family members, too (Lemus-Lauzon et al. 2012).

The final point about the importance of plants in expressing and continuing traditional values is perhaps the deepest layer of plant-people relationships understood from this survey, and is also perhaps the most difficult to locate in other texts. A presentation at the 41st meeting of the Society of Ethnobiology by Elder Annie Evans from Makkovik, Nunatsiavut (2018) discussed how plants are linked to customary laws governing the usage of natural resources, such as sharing

resources and respecting the land, and such customary laws are an integral aspect of local identity in Nunatsiavut (Brice-Bennett 1977). Being on the land and living off the land is a cultural foundation in Nunatsiavut, in addition to other communities both in and outside of the north (Ohmagari and Berkes 1997; Oster et al. 2014; Greenwood and de Leeuw 2007), and the collection and distribution of plant resources (such as berries) is a means to practice values like sharing, being on the land, and living off the land, without degrading the land.

Plants are an integral part of life in Postville, Hopedale, and Rigolet, as is demonstrated in this paper. Reported plants were exceptionally common among the three communities, suggesting a shared body of plant knowledge and usage and the widespread distribution of these species. From their direct application in cultural practices—such as smoking fish, berry picking, and wooding—to the fundamental ways that they support the continuity of cultural activities, local memory, knowledge exchange, ecological awareness, and traditional values. Using a biocultural approach encourages us to expand the ways that we assign plants to usage categories, and to grow the picture we paint about plant usage into one that is holistic and gives full consideration to the immense cultural weight that is support my plants and plant allies in both Nunatsiavut, and the North at large.

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Legends for Tables, Figures, and Appendices

Table 1. Summary of community demographics in Postville, Hopedale, and Rigolet, Labrador (Canada).

Table 2. Summary of interview demographics for Postville, Hopedale, and Rigolet, Labrador (Canada).

Table 3. Summary of reported taxa according to specificity of response in Postville, Hopedale, and Rigolet, Labrador, Canada, as well as total taxa among the three communities.

Table 4. Table of the 34 taxa reported in all three communities. Please see Appendix 1 for the full table containing the information described in this table, in addition to taxa common to two communities and taxa reported in only one community.

Table 5. Most frequent edible taxa in Postville, Hopedale, and Rigolet. Taxa reported in this table were mentioned in at least half of the interviews conducted in each of the communities.

Table 6. Examples of common uses for reported taxa in each usage category, sorted according to overall frequency with gardening—top left—being the usage that had the most responses and games—bottom right—being the usage with the fewest responses. The table is read left column first, top to bottom, and then the right column, top to bottom.

Table 7. Review of 17 taxa reported in all five Nunatsiavut communities.

Figure 1. Map showing all four Inuit regions in Canada. Nunatsiavut is the most eastern. Sourced from: https://www.itk.ca/maps-of-inuit-nunangat/

Figure 2. Map showing the locations of communities in Nunatsiavut. Sourced from: https://www.tourismnunatsiavut.com/home/communities.htm

Figure 3. Venn diagram illustrating taxonomic overlap between the three communities.

Figure 4. Bar graph illustrating percent of total taxa per Inuit region that corresponded to each of the plant groups.

Figure 5. Bar graph illustrating the percent of total responses that corresponded to applicable usage categories.

Appendix 1. Breakdown of plant usage categories.

Appendix 2. Summary of 66 plant, algae, fungi, and lichen taxa reported in Postville, Hopedale, and Rigolet, Nunatsiavut, Labrador (Canada).

Table 1

	Postville	**Hopedale**	**Rigolet**
Latitude	54.907550	55.457130	54.178850
Longitude	-59.769930	-60.225950	-58.433110
Population	177	574	305
Average age	39.5	34	37

Table 2

	# People	**# Interviews**	**Male**	**Female**	**Avg. Age (years)**
Postville	8	8	1	7	62.8
Hopedale	17	15	6	11	63.6
Rigolet	7	7	3	4	69.7
Total	**32**	**30**	**10**	**22**	**63.8**

Table 3

	PV	**HD**	**RGL**	**Total**
Species	31	34	29	41
Genus	10	11	9	14
Family	1	1	0	1
Order	1	1	1	1
Class	1	1	1	1
Division	2	1	3	3
Kingdom	0	0	0	0
Functional	3	5	3	5
Total	**49**	**54**	**46**	**66**

Table 4

Most specific classification	**Family**	**Plant Group**	**Reported common name(s)**	**Use(s)**	**Part(s) used**
Abies balsamea	Pinaceae	Tree	Vir, fir	Edible, medicinal, fire, design, garden, decorate, miscellaneous (for puppy beds)	Leaf, stem, root, sap, wood, all
Allium schoenoprasum	Amaryllidaceae	Herb	Chives, wild chive, wild onion	Edible, garden	Leaf
Angelica atropurpurea	Apiaceae	Herb	Hemlock	Fire, game, avoid	Stem, all
Arctous alpina	Ericaceae	Shrub	Foxberry, bearberry, dog berry	Avoid	Fruit, all
Vicia cracca	Fabaceae	Herb	Poison ivy, vetch, Jacob's ladder	Avoid	All
Division Basidiomycota	-	Fungus	Mushroom, puffball	Edible, medicinal, design, avoid	All
Betula spp.	Betulaceae	Tree	Birch	Edible, fire, design, garden, avoid	Bark, wood, all
Chamaenerion angustifolium	Onagraceae	Herb	Fireweed, salmon flower, bumblebee flower	Game, avoid, decorate, miscellaneous (bloom indicates that salmon are coming)	Flower, all
Cornus spp.	Cornaceae	Herb	Crackerberry, crackers	Edible, game, avoid	Leaf, fruit
Empetrum nigrum	Ericaceae	Shrub	Blackberry, crowberry	Edible, fire, design, miscellaneous (pest repellent, partridge food)	Fruit, all
Eriophorum spp.	Cyperaceae	Herb	Cottongrass, puffin plant	Medicinal, fire, design, decorate,	Fruit (seed)

				miscellaneous (indicate when caribou are fat)	
Order Laminariales	-	Alga	Shark's blanket, flat seaweed, kellup, kelp	Edible, garden, avoid	Stem (stipe), all
Larix laricina	Pinaceae	Tree	Juniper	Edible, medicinal, fire, design, garden, avoid, decorate, miscellaneous (as toilet paper)	Leaf, stem, fruit (cone), bark, wood, all
Lathyrus japonicus	Fabaceae	Herb	Beach pea, sea pea, wild pea	Edible, avoid	Fruit (seed)
Leymus mollis	Poaceae	Herb	Salt grass, saltwater grass, tidal grass, grass, lime grass, sewing grass	Edible, design	Leaf, stem, root
Class Phaeophyceae	-	Alga	Seaweed with bubbles, kellup, rockweed	Edible, garden, game	All
Picea spp.	Pinaceae	Tree	Spruce	Edible, medicinal, fire, design, game, decorate, miscellaneous (partridge food)	Leaf, stem, fruit (cone), sap, bark, wood
Populus balsamifera	Salicaceae	Tree	Aspen, poplar, asp	Fire, design, garden, avoid	Wood, all
Rheum compactum	Polygonaceae	Herb	Rhubarb	Edible, garden	Stem
Rhodiola rosea	Crassulaceae	Herb	Tulligunuk, tunialuk, two-lee –oo-nuck	Edible, medicinal, garden, game, decorate, miscellaneous (food for gulls)	Leaf, stem, flower, root, all
Rhododendron groenlandicum	Ericaceae	Shrub	Labrador tea, Indian tea	Edible, medicinal, fire, design, avoid	Leaf, stem, all
Ribes glandulosum	Grossulariaceae	Shrub	Currant	Edible	Fruit

Rotten wood	-	Fungus	Rotten wood	Edible, medicine, fire	All
Rubus arcticus	Rosaceae	Shrub	Strawberry, raspberry, beach strawberry, wild strawberries	Edible	Fruit
Rubus chamaemorus	Rosaceae	Herb	Bakeapple, cloudberry	Edible	Fruit
Rubus idaeus	Rosaceae	Shrub	Raspberry	Edible	Fruit
Salix spp.	Salicaceae	Shrub	Willow, low willow	Edible, medicine, design, avoid, decorate, miscellaneous (pest repellent, animal food, indicator for water)	Leaf, stem, flower, bark, all
Seaweed	-	Alga	Kellup	Garden	All
Sorbus decora	Rosaceae	Tree	Dogberry, dogwood tree	Edible, medicinal, garden, decorate, miscellaneous (indicator for potential snowfall)	Leaf, stem, fruit, all
Taraxacum spp.	Asteraceae	Herb	Dandelion	Edible, avoid, decorate	Flower, all
Vaccinium spp.	Ericaceae	Shrub	Blueberry, ground hurts, tobacco hurts	Edible	Fruit
Vaccinium vitis-idaea	Ericaceae	Shrub	Redberry, partridgeberry	Edible, medicinal, fire, design	Fruit, all
Viburnum edule	Adoxaceae	Shrub	Squashberry	Edible	Fruit
Wood	-	Tree	-	Edible, fire, design, game	-

Table 5

Postville	**Hopedale**	**Rigolet**
Empetrum nigrum	*Empetrum nigrum*	*Vaccinium* spp.
Rubus chamaemorus	*Rubus chamaemorus*	*Empetrum nigrum*
Vaccinium spp.	*Vaccinium vitis-idaea*	*Rubus chamaemorus*
Vaccinium vitis-idaea	*Vaccinium* spp.	*Rhodiola rosea*
Rotten wood	*Rheum compactum*	*Vaccinium vitis-idaea*
Ribes glandulosum	*Rhodiola rosea*	*Gaultheria hispidula*
Rubus idaeus		*Rheum compactum*
Rheum compactum		*Sorbus decora*
Viburnum edule		*Viburnum edule*

Table 6.

Most Frequent Garden Taxa	**Most Frequent Design Taxa**
Rheum compactum	*Leymus mollis*
Allium schoenoprasum	*Betula* spp.
Seaweed	*Picea* spp.
Class Phaeophyceae	Division Bryophyta
Delphinium spp.	*Larix laricina*
Papaver nudicaule	Family Pinaceae
Most Frequent Medicine Taxa	**Most Frequent Decorate Taxa**
Rhododendron groenlandicum	*Papaver nudicaule*
Abies balsamea	*Salix* spp.
Picea spp.	*Delphinium* spp.
Larix laricina	*Taraxacum* spp.
Gaultheria hispidula	*Chamaenerion angustifolium*
Juniperus communis	*Eriophorum* spp.
Most Frequent Avoid Taxa	**Most Frequent Miscellaneous Taxa**
Arctous alpina	*Empetrum nigrum*
Salix spp.	*Salix* spp.
Angelica atropurpurea	*Chamaenerion angustifolium*
Vicia cracca	*Cladonia* spp.
Division Basidiomycota	*Abies balsamea*
Alnus alnobetula subsp. *crispa*	*Alectoria* spp.
Most Frequent Fire Taxa	**Most Frequent Game Taxa**
Empetrum nigrum	*Cornus* spp.
Wood	Class Phaeophyceae
Rotten wood	*Picea* spp.
Betula spp.	*Rhodiola rosea*
Larix laricina	*Alectoria* spp.
Picea spp.	*Angelica atropurpurea*

Table 7

Most specific classification
Abies balsamea
Arctous alpina
Chamaenerion angustifolium
Empetrum nigrum
Larix laricina
Leymus mollis
Class Phaeophyceae
Rheum compactum
Rhododendron groenlandicum
Rhodiola rosea
Ribes glandulosum
Rubus arcticus
Rubus chamaemorus
Salix spp.
Sorbus decora
Vaccinium vitis-idaea
Viburnum edule

Figure 1

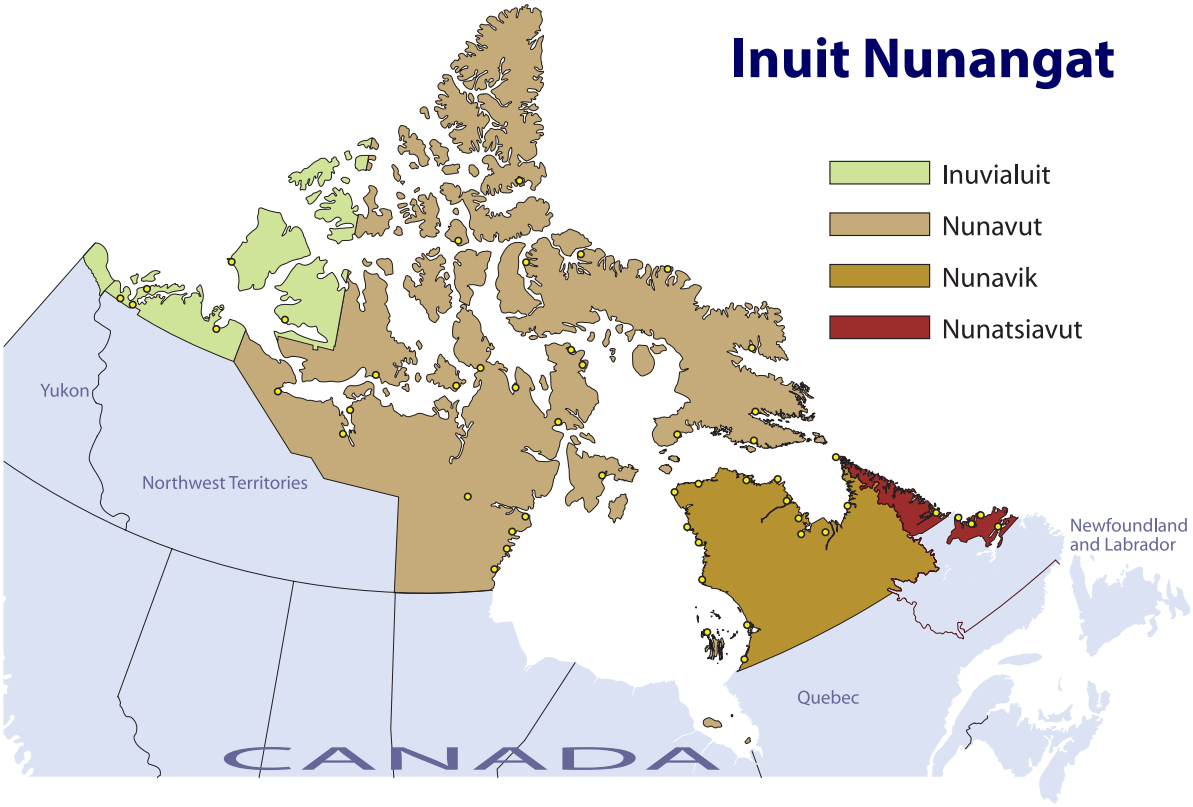

Inuit Nunangat
Inuvialuit
Nunavut
Nunavik
Nunatsiavut
Yukon
Northwest Territories
Newfoundland and Labrador
Quebec
CANADA

Figure 2


Torngat Mountains
National Park
of Canada
Kangidluasuk
Base Camp
Nunatsiavut
Communities
Nain
Nunatsiavut
National Park
Hopedale
Makkovik
Postville
Rigolet
Happy Valley -
Goose Bay
LABRADOR
QUÉBEC
NEWFOUNDLAND
0
100
200km

Figure 3

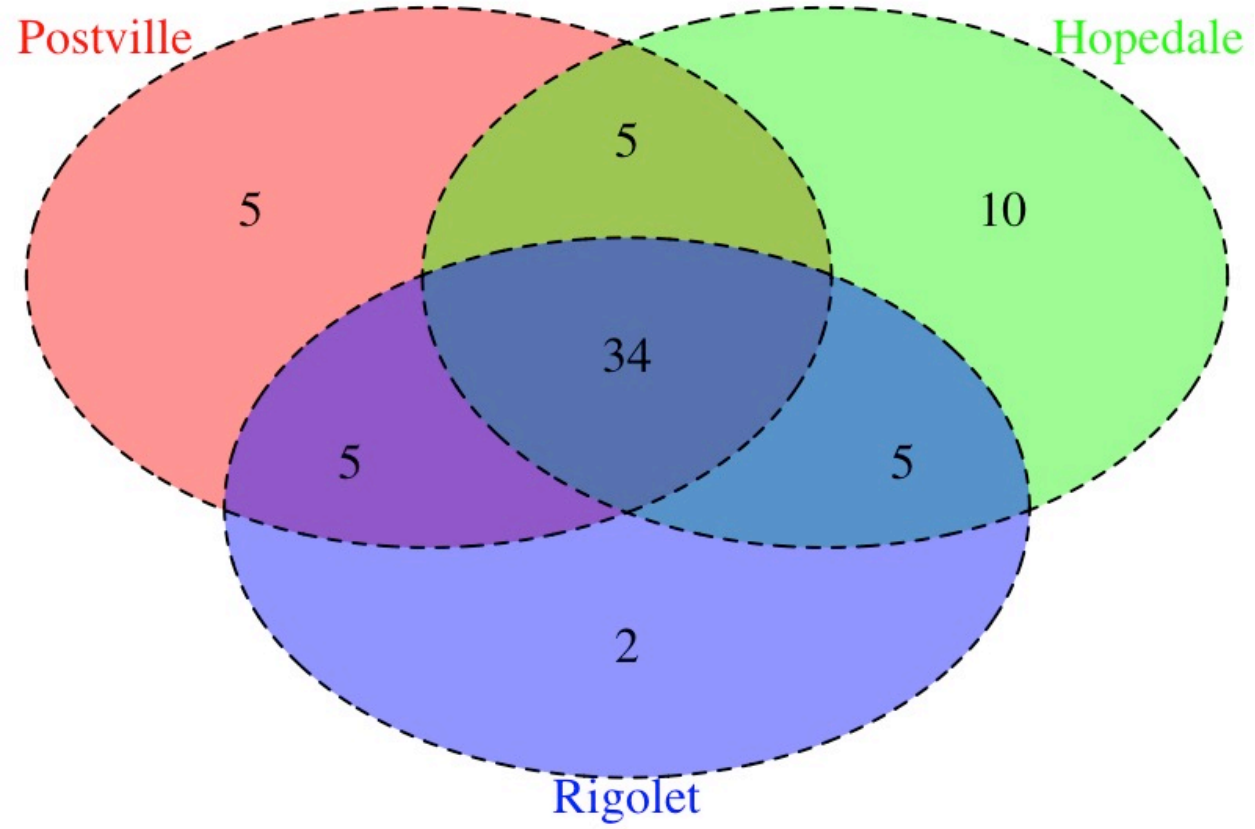


Figure 4

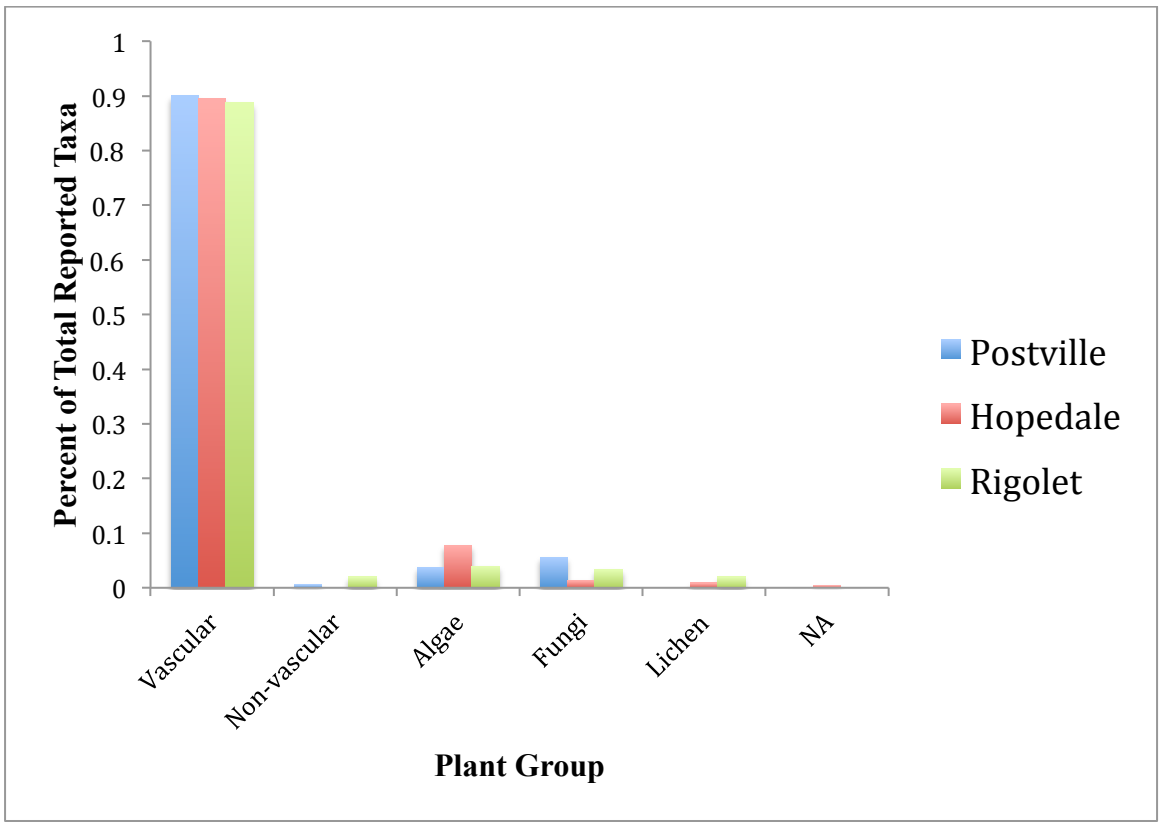
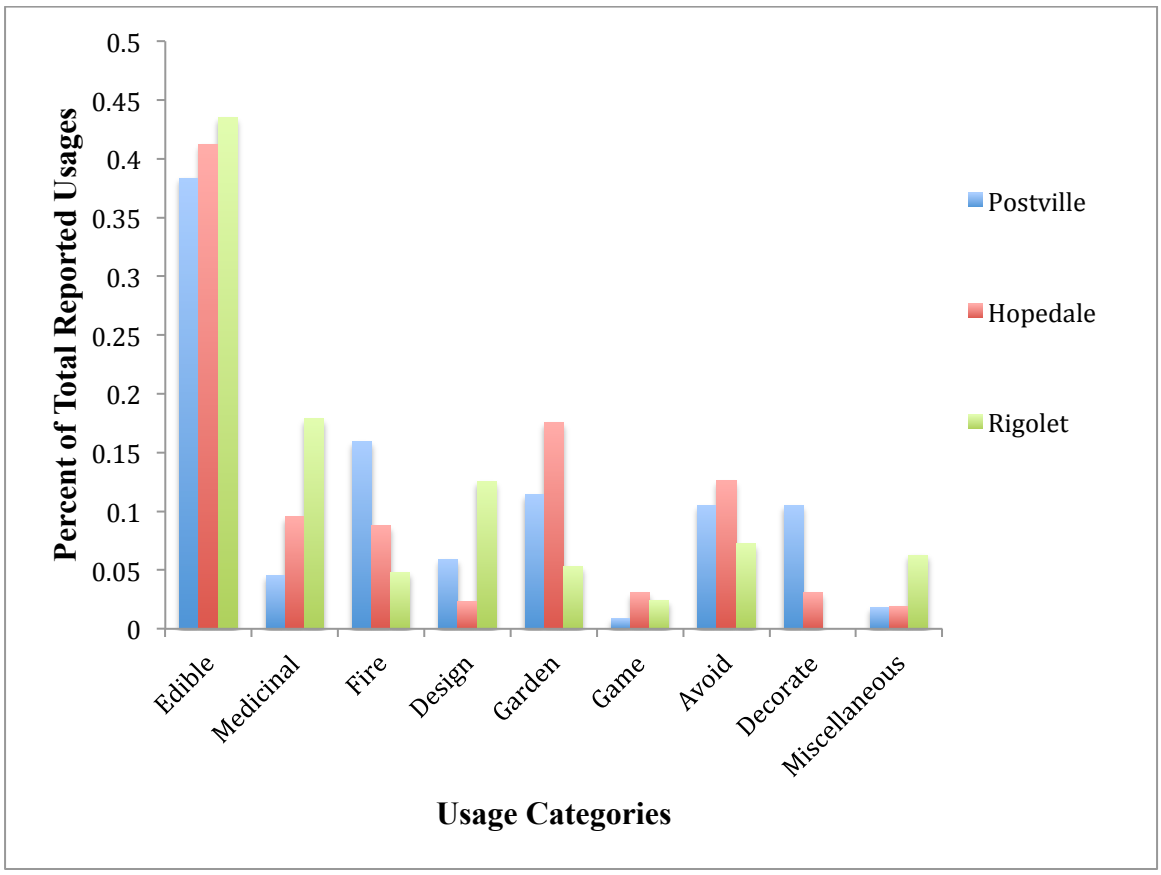

Percent of Total Reported Taxa
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Vascular
Non-vascular
Algae
Fungi
Lichen
NA
Plant Group
Postville
Hopedale
Rigolet

Figure 5


Percent of Total Reported Usages
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Edible
Medicinal
Fire
Design
Garden
Game
Avoid
Decorate
Miscellaneous
Usage Categories
Postville
Hopedale
Rigolet

Appendix 1

1. Edible
    a. Wild-harvested food
    b. Teas
    c. Plants used for food preparation
    d. Alcohol production
    e. Food preparation
2. Medicinal
    a. Used for treating an aliment
    b. Up keep of general health
3. Fire
    a. Heating
    b. Fire starting
    c. Fish smoking
    d. Being burned to repel pests
4. Design
    a. Building
    b. Insulation
    c. Crafting
    d. Some aspect of remaking or altering the plant
5. Garden and cultivation
    a. Wild plants used as fertilizer
    b. Wild plants collected and grown near homes

    c. Naturalized plants that are harvested

6. Games and recreation
    a. Make believe
    b. Used as toys
7. Avoid
    a. Poisonous
    b. Garden pests
    c. Nuisance
8. Decorate and appreciation
    a. Cut flowers
    b. Wild flowers left where they are
    c. Plants that are generally appreciated
9. Miscellaneous
    a. Indicators for ecological or climatic awareness
        i. Salmon running
        ii. Caribou fat
        iii. Presence of berries, water, etc.
        iv. Winter snowfall/severity
        v. Foods for wild animals
    b. Dog food
    c. Pest repellent

Appendix 2

Most specific classification	**Family**	**Plant Group**	**Reported common name(s)**	**Where reported**	**Use(s)**	**Part(s) used**	**Freq.**
Abies balsamea	Pinaceae	Tree	Vir, fir	PV, HD, RGL	Edible, medicinal, fire, design, garden, decorate, miscellaneous (for puppy beds)	Leaf, stem, root, sap, wood, all	13
Achillea millefolium	Asteraceae	Herb	Thousand leaves, fern, hundred thousand	HD, RGL	Medicinal, avoid	All	2
Alectoria spp.	Parmeliaceae	Lichen	Old man's whiskers	RGL	Fire, game, miscellaneous (tobacco substitute)	All	1
Allium schoenoprasum	Amaryllidaceae	Herb	Chives, wild chive, wild onion	PV, HD, RGL	Edible, garden	Leaf	8
Alnus alnobetula subsp. *crispa*	Betulaceae	Shrub	Alder	HD	Edible, avoid, miscellaneous (only recognized)	Leaf, all	6
Amelanchier bartramiana	Rosaceae	Shrub	Dempsum, wild plum, pear tree, prune tree	PV, RGL	Edible, garden, avoid, miscellaneous (animal food)	Fruit, all	5
Angelica atropurpurea	Apiaceae	Herb	Hemlock	PV, HD, RGL	Fire, game, avoid	Stem, all	7
Aquilegia vulgaris	Ranunculaceae	Herb	Columbine	HD	Garden	Flower	1
Arctous alpina	Ericaceae	Shrub	Foxberry, bearberry, dog berry	PV, HD, RGL	Avoid	Fruit, all	16
Vicia cracca	Fabaceae	Herb	Poison ivy, vetch,	PV, HD,	Avoid	All	5

			Jacob's ladder	RGL			
Division Basidiomycota	-	Fungus	Mushroom, puffball	PV, HD, RGL	Edible, medicinal, design, avoid	All	8
Betula spp.	Betulaceae	Tree	Birch	PV, HD, RGL	Edible, fire, design, garden, avoid	Bark, wood, all	15
Brush	-	-	Vegetation growing along a road	HD	Avoid	All	1
Division Bryophyta	-	Non-vascular	Moss	PV, RGL	Medicinal, design	All	4
Campanula spp.	Campanulaceae	Herb	Bluebells	HD	Garden	Flower	1
Chamaenerion angustifolium	Onagraceae	Herb	Fireweed, salmon flower, bumblebee flower	PV, HD, RGL	Game, avoid, decorate, miscellaneous (bloom indicates that salmon are coming)	Flower, all	6
Division Chlorophyta	-	Alga	Green seaweed	RGL	Edible	All	1
Cladonia spp.	Cladoniaceae	Lichen	Caribou moss	HD, RGL	Medicinal, design, miscellaneous (dog food, caribou food)	All	4
Cornus spp.	Cornaceae	Herb	Crackerberry, crackers	PV, HD, RGL	Edible, game, avoid	Leaf, fruit	5
Delphinium spp.	Ranunculaceae	Herb	Larkspur	PV, HD	Garden, decorate	Flower	8
Empetrum nigrum	Ericaceae	Shrub	Blackberry, crowberry	PV, HD, RGL	Edible, fire, design, miscellaneous (pest repellent, partridge	Fruit, all	29

					food)		
Eriophorum spp.	Cyperaceae	Herb	Cottongrass, puffin plant	PV, HD, RGL	Medicinal, fire, design, decorate, miscellaneous (indicate when caribou are fat)	Fruit (seed)	4
Gaultheria hispidula	Ericaceae	Herb	Snowberry, whiteberry, fever tea, Maynard tea, maidenhair	PV, RGL	Edible, medicinal, fire, miscellaneous (partridge food)	Leaf, fruit, all	8
Gypsophila elegans	Caryophyllaceae	Herb	Little carnation	HD	Decorate	Flower	1
Inonotus obliquus	Hymenochaetaceae	Fungus	Chaga	HD	Medicinal	All	1
Iris setosa	Iridaceae	Herb	Iris	PV, HD	Garden	Flower	4
Juniperus communis	Cupressaceae	Tree	Ground juniper		Edible, medicinal, design, miscellaneous (as toilet paper)	Leaf, stem	3
Order Laminariales	-	Alga	Shark's blanket, flat seaweed, kellup, kelp	PV, HD, RGL	Edible, garden, avoid	Stem (stipe), all	10
Larix laricina	Pinaceae	Tree	Juniper	PV, HD, RGL	Edible, medicinal, fire, design, garden, avoid, decorate, miscellaneous (as toilet paper)	Leaf, stem, fruit (cone), bark, wood, all	15
Lathyrus japonicus	Fabaceae	Herb	Beach pea, sea pea, wild pea	PV, HD, RGL	Edible, avoid	Fruit (seed)	4
Leymus mollis	Poaceae	Herb	Salt grass, saltwater	PV, HD,	Edible, design	Leaf, stem,	8

			grass, tidal grass, grass, lime grass, sewing grass	RGL		root	
Ligusticum scoticum	Apiaceae	Herb	Alexander, alexander plant				4
Linaria vulgaris	Plantaginaceae	Herb	Eggs and butter	PV	Avoid	All	1
Lupinus polyphyllus	Fabaceae	Herb	Lupine	PV, HD	Garden, game, avoid	Flower, all	4
Mertensia maritima	Boraginaceae	Herb	-	HD, RGL	Edible, game	Leaf, fruit, flower	2
Papaver nudicaule	Papaveraceae	Herb	Poppy	PV, HD	Garden, decorate	Flower	9
Class Phaeophyceae	-	Alga	Seaweed with bubbles, kellup, rockweed	PV, HD, RGL	Edible, garden, game	All	10
Picea glauca	Pinaceae	Tree	White spruce, spruce	HD	Fire	Wood	1
Picea mariana	Pinaceae	Tree	Black spruce, spruce	HD, RGL	Edible, medicinal, fire, design	Leaf, stem, wood	4
Picea spp.	Pinaceae	Tree	Spruce	PV, HD, RGL	Edible, medicinal, fire, design, game, decorate, miscellaneous (partridge food)	Leaf, stem, fruit (cone), sap, bark, wood	17
Family Pinaceae	Pinaceae	Tree	Evergreen	PV, HD	Medicine, design, decorate	Leaf, stem, sap	5
Platanthera dilatata	Orchidaceae	Herb	Orchid	PV	Decorate	Flower	1
Populus balsamifera	Salicaceae	Tree	Aspen, poplar, asp	PV, HD, RGL	Fire, design, garden, avoid	Wood, all	5

Ranunculus spp.	Ranunculaceae	Herb	Buttercup	PV	Avoid, decorate	Flowe r, all	3
Rheum compactum	Polygonaceae	Herb	Rhubarb	PV, HD, RGL	Edible, garden	Stem	18
Rhodiola rosea	Crassulaceae	Herb	Tulligunuk, tunialuk, two-lee – oo-nuck	PV, HD, RGL	Edible, medicinal, garden, game, decorate, miscellaneo us (food for gulls)	Leaf, stem, flower , root, all	16
Rhododendro n groenlandicu m	Ericaceae	Shrub	Labrador tea, Indian tea	PV, HD, RGL	Edible, medicinal, fire, design, avoid	Leaf, stem, all	20
Ribes glandulosum	Grossulariaceae	Shrub	Currant	PV, HD, RGL	Edible	Fruit	10
Rotten wood	-	Fungu s	Rotten wood	PV, HD, RGL	Edible, medicine, fire	All	9
Rubus arcticus	Rosaceae	Shrub	Strawberry, raspberry, beach strawberry, wild strawberries	PV, HD, RGL	Edible	Fruit	5
Rubus chamaemoru s	Rosaceae	Herb	Bakeapple, cloudberry	PV, HD, RGL	Edible	Fruit	29
Rubus idaeus	Rosaceae	Shrub	Raspberry	PV, HD, RGL	Edible	Fruit	11
Rumex acetosella	Polygonaceae	Herb	Sweetums, sorrel	PV	Edible	Leaf	1
Rumex spp.	Polygonaceae	Herb	Dock	PV	Avoid	All	2
Salix spp.	Salicaceae	Shrub	Willow, low willow	PV, HD, RGL	Edible, medicine, design, avoid, decorate, miscellaneo us (pest repellent,	Leaf, stem, flower , bark, all	18

					animal food, indicator for water)		
Seaweed	-	Alga	Kellup	PV, HD, RGL	Garden	All	8
Sorbus decora	Rosaceae	Tree	Dogberry, dogwood tree	PV, HD, RGL	Edible, medicinal, garden, decorate, miscellaneous (indicator for potential snowfall)	Leaf, stem, fruit, all	12
Taraxacum spp.	Asteraceae	Herb	Dandelion	PV, HD, RGL	Edible, avoid, decorate	Flower, all	7
Tree	-	-		HD	Garden	All	4
Trifolium pratense	Fabaceae	Herb	-	HD	Avoid	All	1
Umbilicaria spp.	Umbilicariaceae	Lichen	-	HD	Medicinal	All	1
Vaccinium oxycoccos	Ericaceae	Shrub	Marshberry	PV, RGL	Edible	Fruit	6
Vaccinium spp.	Ericaceae	Shrub	Blueberry, ground hurts, tobacco hurts	PV, HD, RGL	Edible	Fruit	30
Vaccinium vitis-idaea	Ericaceae	Shrub	Redberry, partridgeberry	PV, HD, RGL	Edible, medicinal, fire, design	Fruit, all	28
Viburnum edule	Adoxaceae	Shrub	Squashberry	PV, HD, RGL	Edible	Fruit	10
Wood	-	Tree	-	PV, HD, RGL	Edible, fire, design, game	-	14

PV: Postville, HD: Hopedale, RGL: Rigolet

- : cell left intentionally empty because response was either not applicable or not provide

Conclusion

This thesis challenges ideas about plants not being important in Inuit culture. Chapter 1 sought to documents the rich usage of plants by Inuit over the last few hundred years across the North American Arctic. Chapter 2 shows that plants are far from being vestiges of the past, but are instead an active, vital, and treasured component of Inuit culture in Nunatsiavut.

The review for Chapter 1 consisted of almost 100 texts about Inuit plant usage across the North American Arctic and Subarctic. We now understand that historical ideas about the negligence of plants to Inuit culture are incorrect, and this review noted that over 300 taxa have applications in providing nutrition to northern diets, improving quality of life through acting as medical treatments to mitigate illness, giving heat source for warming lodgings and cooking food, and offering raw material for crafting and designing the tools needed to carrying out day to day activities. The results presented in Chapter 1 suggest that common patterns of plant knowledge and plant use exist across the whole of the Inuit territory. Levels of reported diversity are similar among regions, and there is great overlap among regions concerning reported taxa. Plant usage between the regions appears to show similar patterns of usage. Of course, there are differences among regions—particularly at at lower taxonomic levels as well as between regions farther apart—but the general conclusion of this must be that, broadly, regions have plant usage profiles that are repeated across the whole Inuit territory. Although speculative, it may be that commonalities between the regions noted in this review are a combination of a common cultural heritage shared among regions, common environmental pressures, in addition to a biome with some of the lowest levels of plant diversity, thus reducing the ability for communities and regions to develop divergent bodies of plant knowledge.

Chapter 2 shows that plants are an integral part of life in Postville, Hopedale, and Rigolet. Reported plants were exceptionally common among the three communities, possibly suggesting a shared body of plant knowledge and usage. This shared body of plant knowledge may also be encouraged by factors such as wide distributions of plants in the Subarctic and fewer plants that could actually be used by people compared with lower latitudes. From their direct application in cultural practices—such as smoking fish, berry picking, and wooding—to the fundamental ways that they support the continuity of cultural activities, local memory, knowledge exchange, ecological awareness, and traditional values. Using a biocultural approach encourages us to expand the ways that we assign plants to usage categories, and to grow the picture we paint about plant usage into one that is holistic and gives full consideration to the immense cultural weight that is supported by plants and plant allies in Nunatsiavut.

We hope that readers will finish reading this thesis with a profound appreciation for the value of plants in Inuit culture. From northern Alaska to eastern Greenland, both historically and presently, plants are undeniable pillars of Inuit culture. This thesis uses biocultural diversity theory as a framework for thinking about the relationships between plants and people through culture that is only recently being applied in northern places.