

BIOCULTURAL DIVERSITY AND INDIGENOUS WAYS OF KNOWING: HUMAN ECOLOGY IN THE ARCTIC

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Introduction

Conservation is getting nowhere because it is incompatible with our Abrahamic concept of land. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.... That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics. That land yields a cultural harvest is a fact long known, but latterly often forgotten (Leopold 1949: viii-ix).

At the dawn of the third millennium subsistence hunting and gathering are not relics of an earlier era, but rather remain essential to both cultural diversity and human survival. Arctic ecosystems continue to provide the basis for human existence, bridging biological and cultural diversity. In the mid-1990s, after the collapse of the Soviet Union's centralized economy, the world's most industrialized and densely populated polar region found itself facing shortages of food and fuel. In the Kola Peninsula and the Chukotka Peninsula these shortages threatened to starve and freeze entire communities. In Lovozero, on Russia's Kola Peninsula, the prices of essential food items (if available) fluctuated hourly as the rouble plummeted. Doctors could diagnose illness, but lacked medicines to treat patients. Hospitals, under the best of conditions, could only offer one meal a day to their patients,

if that. Help was not widely available from Russian government institutions; instead it arrived from other circumpolar indigenous communities and international institutions. The diverse Sami cultural groups from Norway, Sweden, and Finland came to the assistance of the Sami in Russia. Various Iñupiaq, Inuit, Inuvialuit, and Yupik groups came to the assistance of the Chukchi and Yupik in the Chukotka Peninsula.

While sharing some similarities with other international emergency relief efforts, these responses were otherwise unique because they involved the transfer of tools and knowledge to facilitate subsistence hunting and gathering. The ability to hunt and fish was not a question of sport, but essential for feeding members of one's community and household. A university degree was irrelevant to meeting one's immediate needs. A different kind of learning was necessary – knowing *how* to live off the land and sea. Although this ability to maintain a subsistence lifestyle was present in some individuals, it had been largely neglected and devalued during decades of industrialization and collectivization. To offset decades of Soviet discouragement of local resource use, for example, Alaska's Iñupiat found it necessary to send supplies and weapons to their neighbours across the Bering Sea. But before Chukotka's communities could effectively hunt marine mammals, the Iñupiat also found it necessary to pressure the International Whaling Commission to extend quotas to enable subsistence hunting. Moreover, for several years they invited community leaders, hunters, and scientists from the Chukotka Peninsula to Alaska's North Slope Borough to facilitate the transfer of knowledge and the strengthening of local institutions that would become stewards of hunters' rights and capacities to use local resources effectively.

These recent events provide a compelling link between biological and cultural diversity.¹ Diversity is not commonly associated with the Arctic and sub-Arctic, but it is in fact a reality of the circumpolar north. As subsequent chapters will illustrate, it is a common mistake in urbanized and industrialized societies of the twenty-first century to regard subsistence activities as anachronistic or obsolete cultural holdovers from earlier centuries. Instead, there are communities where these subsistence activities remain as essential as ever to cultural identity and even to human survival.

In the initial decades of the twenty-first century there are three pivotal trends confronting interdisciplinary scholarship that seeks to serve civil society: (1) growing questions of the relevance of the social sciences and humanities to human needs, (2) increasing need to integrate the biological and cultural, and (3) mounting threats to both biological and cultural diversity. These broad tendencies contextualize and inform this book (section 1.1). The response to these trends will determine how relations between human beings and their environment are perceived and explained. Whether and how diversity is perceived will be shaped by the perception of the Arctic and sub-Arctic as a homeland rather than a frontier for resource exploitation (section 1.2). A brief outline of the chapters and the research steps will illustrate how these three broad trends and the conception of the circumpolar north as a homeland are presented in this work (1.3).

1.1. Three Trends Affecting Applied Scholarship

First, faculties of social sciences and humanities are almost everywhere besieged by negative perceptions as to the relevance of their work, resulting in diminishing funding resources (Gibbons et al. 1994; Wilson 1999a). The responsibility for this largely lies with tenured faculty who have sought to remain comfortably within the confines of the university rather than using their scholarship to directly engage human communities. The word ‘social’ in the social sciences and the term ‘humanities’ imply subject matter of applied scholarship that seamlessly merges teaching, research, and service on crucial or relevant issues of concern to society.² Academic freedom through tenure is the basis for empowering the scholar to undertake meaningful work by bridging societal issues with academic activity. History illustrates that individuals employed in the private or government sectors are not able to speak up as effectively in difficult times; however, a scholar empowered by tenure is meant to fulfill precisely such a role – particularly since public resources are used to employ such individuals. It is not a matter of public duty as such, but a requirement. It is the scholar’s responsibility to engage civil society through her or his respective discipline. The goal of teaching and research is service. It is this concept of service that makes research

relevant to social issues and teaching purposeful by creating a generation of critically engaged citizens. Based on this proposition, this book illustrates how social science research can be relevant and applied to human communities. It presents a process, an approach, of engaging diverse elements of human society with current and vital issues.

Second, the classic Cartesian dichotomy between nature and culture is a fallacy (Bateson 2002; Wilson 1975; 1999a). The varied fields of the biological sciences are knocking on the doors of the social sciences and humanities demanding to be allowed inside. While many social scientists are still engaging in ‘physics envy,’³ a significant number around the world are tackling issues of relevance to human rights, natural resource exploitation, the environment, and economic development through interdisciplinary and applied research that embraces both the social and the biological. This book utilizes the interdisciplinary field of human ecology to address current issues such as climate change and indigenous rights from a multi-disciplinary point of view, recognizing that expertise from the varied natural sciences and social sciences combined with local knowledge are critical when dealing with matters of societal concern. It demonstrates that in order for applied research to be effective, scholars must recognize that context integrates a cultural system and its social structure on an ecological foundation. This is true for diverse fields of study from anthropology, health care, sociology, and psychology to rhetoric. Human communities and their cultures cannot be separated from their biological basis, as will be illustrated in subsequent chapters.

Third, the increasingly accepted “clash of civilizations” hypothesis seeks to “remake the world order” by painting diverse cultures, societies, and religions with one monolithic stroke, thereby recreating global polarization. This trend has been brought about by the collapse of the Soviet Empire and the end of Cold War polarization which has released an upsurge of cultural and ethnic consciousness throughout the globe. Much like the collapse of the Ottoman Empire, these conditions create uncertainty and a certain amount of instability. However, the “clash of civilizations” premise heard often today achieved its hegemony as an explanation for the events of September 11, 2001. For instance, this hypothesis demonizes Muslim and Chinese societies, whose parts are diverse to a dizzying degree. This

hypothesis completely ignores indigenous cultures around the world, arguing, for instance, that in North America these cultures “were effectively wiped out” (Huntington 1996: 46).⁴ This hypothesis, while pretending to acknowledge cultural diversity, does not recognize pluralism in human societies. It creates shaky taxonomies such as “the west” and “the rest,” giving rise to pronouncements such as “if you are not with us you are against us.” Such an outlook is limited to a polarized perspective which is blind to diversity in human society. It is not surprising, therefore, that policy makers and governments that hold the “clash of civilizations” perspective also have the worst environmental policies because they are wilfully blind to biological diversity. Humanity stands at the edge of an abyss of the sixth mass extinction in geological time. The difference between the previous five extinctions and this one is that in this case one species, that of human beings, is primarily responsible. This work illustrates that the field of human ecology in the context of the circumpolar north provides an effective lens to express the relationship between cultural and biological diversity. The Arctic and sub-Arctic provide a valuable geographical context in which to address questions of diversity, relations between the cultural and biological, and the relevance of the social sciences and humanities. This book makes a case for an ethic of conservation of biological and cultural diversity, proposing that the interdisciplinary outlook of human ecology is an ideal lens for understanding cultural and biological relations. As such, human ecology serves as a model for analyzing such interactions.

1.2. The North:⁵ Frontier or Homeland?

The response to the question of whether the north is a frontier or a homeland determines whether biological and cultural diversity are germane to the future of humanity. The frontier prospective of the north as simply a geographic space from which to achieve extraction of valuable natural resources simply advances instrumental connectivity with the land and sea, whereas the north perceived as homeland is less instrumental and more attached. Its connectivity with the land and sea is complex at the level *living through* the environment. The discussion below shows how the frontier

perspective is a facile construct that can be deconstructed to reveal the north to be rich in diversity.

Differing visions of the north exist between those who live or are committed to the north and those who view it solely through a southern outsider's lens. A rich history and diversity of culture inform the conception of the north as homeland. The perception of the north as a frontier is relatively more recent, homogenous, and Eurocentric. The vision of the north as homeland originates from those who live, work, and play there, whereas, its conception as a frontier has southern roots. The latter is motivated by a desire to exploit natural resources whilst the former is informed by thousands of years of indigenous use of the land and sea. The notion of the north as frontier is myopic and simplistic. The nature of this engagement tends to emphasize discovery, vast riches, and the exotic. The search for the Northwest Passage as a means to the riches in the east was accompanied by a desire to discover great wealth in the north, and marked the beginning of cultural representations of the peoples and the environment of the Arctic and sub-Arctic.⁶ At best these characterizations are romantic and at worst they are tantamount to intellectual colonialism (Coates and Morrison 1996). The following quote from Robert Service's famous poem "The Cremation of Sam McGee," one that has been taught to generations of school children, illustrates this perception of a mysterious gold-laden north:

There are strange things done in the midnight sun
By the men who toil for gold;
The Arctic trails have their secret tales
That would make your blood run cold;
The Northern Lights have seen queer sights,
But the queerest they ever did see
Was that night on the marge of Lake Lebarge
I cremated Sam McGee (Service 1990: 159).

These constructions suggest an indifference to the reality of the north as a homeland. Northern homeland is a regional consciousness linking local geography to cultural and economic life (Bone 1992). To call the north a homeland is to recognize its autochthonous political and social reality (West 1995). The reality of the north as homeland is characterized by diversity and complexity in the population demographic, culture, and economy. The north as homeland has withstood the test of time, showing the resilience and sustainability of indigenous lifestyle. Development in the north inspired by the frontier mindset, however, has and remains invasive and dogged by boom and bust cycles such as the Klondike Gold Rush at the turn of the nineteenth century. The north as homeland is conducive to circum-polar linkages to communities across national borders in meeting the challenges of globalization, as witnessed by the recent example offered at the beginning of this chapter. As frontier, the north is limited to staples dependence in supplying renewable and non-renewable resources to southern markets. In essence, one point of view is informed by industrial capitalism and is exogenous whilst the other is indigenous and shaped by a relationship with the natural ecology (Kassam 2001).

The Canadian national anthem describes the country as a “the true north strong and free.” But what is the true north strong and free? Is there a distinct definition of the north, or is it really a constructed space? Where are stereotypes of a people or place constructed and sustained? They thrive in the realm of culture (Said 1993). Representations of the “north” are directly linked to the growth in literacy and the development of spatially oriented technologies of mass communications. In the early periods these were narratives in books, newspapers, advertisements, comics, painting, poetry, photographs, and later music and other audio-visual modes such as film. For example in Mary Shelley’s classic novel, the creature says to Baron Frankenstein, “Follow me; I seek the everlasting ices of the north, where you will feel the misery of cold and frost, to which I am impassive” (Shelley 1993: 278). Yet the north is no more a place of misery than the heat and mosquitoes of the tropics. Nor is the ice eternal in the Arctic, as it comes and goes with seasons. There are marked changes in the sea and landscape as they follow the rhythms of the sun. Furthermore, with the threat of climate change there is now tremendous uncertainty about ice formation even

in the cold months of the autumn. The ecology of the north and its people are dynamic as in any other environment. Stereotypical images are the ones that are frozen. Overlapping factors such as memory, sensory perception, and skills in constructing images, available technology, and European pre-conceptions of this unfamiliar environment influenced early images of the north and its peoples. Characterizations of the environment and its peoples include terms such as primitive, noble, dangerous and menacing, overwhelmingly white, empty, and desolate.

The idea of the diverse people of the north as primitive is racist. It is a self-affirming and self-congratulatory construct which places Euro-American culture at the pinnacle of civilization. It justifies subjugation in the form of manifest destiny. The idea is strengthened by a sense of superior European technology compared to inferior, inefficient, and incompetent indigenous peoples. The problem with such a view is that it is not tenable, given the simple historical facts. European explorers in most cases did not survive without the assistance of indigenous peoples. As for technology, the British, and the Franklin expedition in particular, is archetypal in this case. It carried a large stock of foods requiring the accumulation of material equipment, whereas the Inuit used minimal equipment to ensure survival and used products of the land to make traps, fires, and shelter. They stored their technology in their minds (David 2000; Fienup-Riordan 1995; Grace 2002; King and Lidchi 1998; Wiebe 2003).

The characterization of the Aboriginal peoples as noble is romantic. Like religious fundamentalists wanting to return to a mythical past, these conceptions are self-revealing. The Native people are used as a counterpoint, as self-criticism to industrial society. Such stereotypes tell us more about their makers than about the indigenous peoples (David 2000; Fienup-Riordan 1995; Grace 2002; Said 1994).

The north as dangerous and menacing conveys the idea that death is synonymous with the idea of the north. Sir John Franklin's tragic expedition (1845) and the resultant injury to British pride caused historians to emphasize the bravery of explorers (David 2000; Grace 2002; Wiebe 2003). Representation of northern regions as empty lands and desolation served a political purpose. After the loss of the Franklin expedition and then John Rae's report from the Inuit suggesting that the expedition may

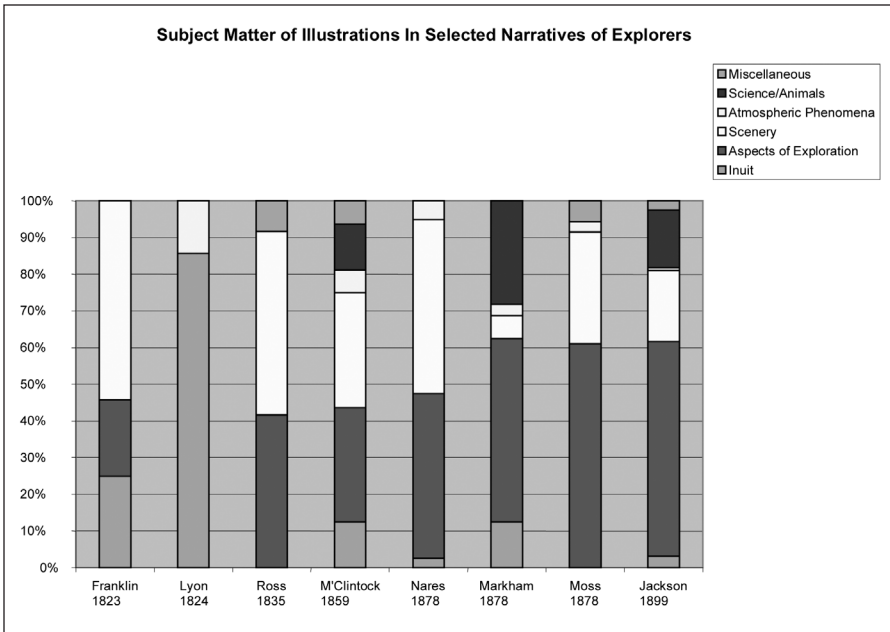


Figure 1.1: Subject Matter of Illustrations in Selected Narratives of Explorers.⁷

have engaged in cannibalism, the Inuit were characterized as ‘savages’ who could not be trusted, and their representations disappeared from accounts of explorers. Furthermore, when claiming a “discovered” land for the Empire, it becomes problematic if there are people living there. Therefore, it is better to ignore their presence; thus justifying the notion of ‘empty lands’ or *terra nullius* (David 2000; Fienup-Riordan 1995; Said 1994; Wiebe 2003).

Overwhelmingly the white north is a characterization associated with winter views, seascapes, icebergs, and vast skies with the aurora borealis. Notable in these images is human absence. Figure 1.1 illustrates the subject matter of illustrations from selected narratives of explorers. It is noteworthy that with the exception of Lyon (1824), images of the Inuit and other living organisms (category Science/Animals) are relatively few compared to images of scenery and aspects of exploration. Furthermore, the actual Arctic and sub-Arctic are filled with a diversity of colours and are not solely white (David 2000; Grace 2002).

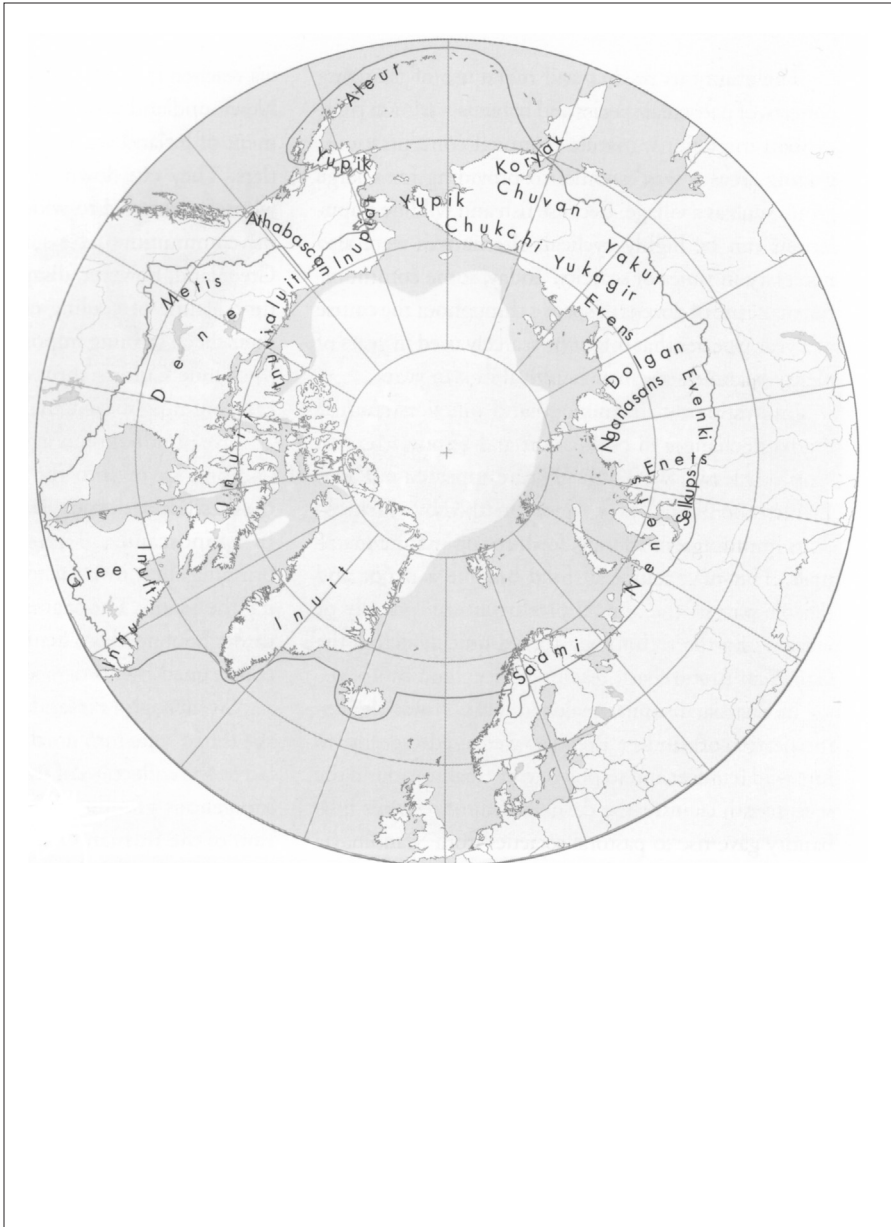


Figure 1.2: Cultural Diversity in the Circumpolar North (CAFF 2001: 58).

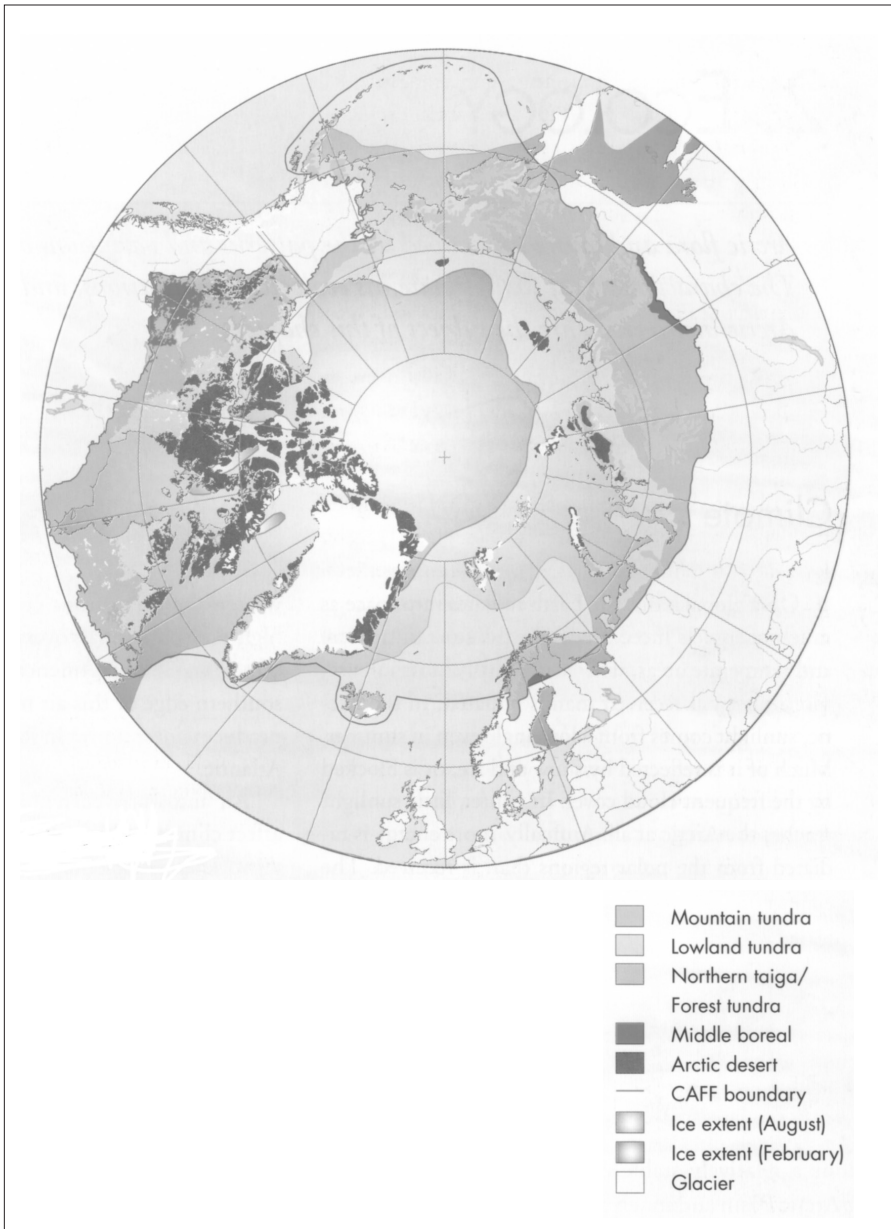


Figure 1.3: Ecological Diversity in the Circumpolar North (CAFF 2001: 18).

Why do such stereotypes of the north and its peoples persist? First, the nature of communications technology is such that it advances the interests of those who control it rather than those who actually live and work in the north. Second, teaching regarding the north places an emphasis on exploration in which the history of discovery is viewed as an end in itself. Third, this vision of the north is not dynamic or diverse, but simplistic, almost naïve, which serves to feed an appetite for trite forms of Hollywood-style entertainment.

A strong Aboriginal demographic and a mainly youthful population is combined with a rich cultural diversity in the regions of the circumpolar north. This diversity is manifested in the assertion of Aboriginal identity. The use of Aboriginal languages is a good indicator of this assertion. For instance, in 2001 almost 71 per cent of those who identified themselves as Inuit in Canada reported that they could conduct a conversation in Inuktitut (Statistics Canada 2003a). Inuktitut is itself marked by a significant diversity of dialects and is representative of a language group. Some of the other language groups in the Canadian territories include Chipewyan, Cree, Dogrib, South Slave, Kutchin-Gwich'in, and Tlingit. Figure 1.2 illustrates the cultural diversity of the circumpolar north. This map is indicative of circumpolar linguistic and cultural diversity. Cultural pluralism is a definitive attribute of the circumpolar north.

Diversity is not only present among the Aboriginal communities, but is also manifested in the ecology of the circumpolar north. The boreal forest encircles the north as a protective skin. After the Amazon, it is the second largest forest on the Earth. The boreal forest, the tundra, and the ice-covered regions create a unifying ecological diversity for the north. Figure 1.3 illustrates Arctic vegetation zones (biomes). In short, this ecological diversity matches the diversity of indigenous people, who have been living within these lands for thousands of years.

1.3. Overview of Chapters

This work is the culmination of over thirteen years of research and teaching related to human ecology in the Arctic and sub-Arctic. It represents a

reflexivity gained from years of experience. It situates action research methodology on a broader theoretical basis in order to provide insight into the human ecology of the circumpolar north.

Chapter 2 critically examines the concept of human ecology with specific reference to the relations between culture and nature. Beginning with a discussion of ecology as a founding science that informs the notion of human ecology, it recounts how human ecology incubated and emerged in the social sciences. These origins set the stage for discussing relations between biological and cultural diversity. The reliance on language as an indicator of cultural diversity and species as an indicator of biological diversity are discussed. A critique of the current propositions of human ecology is provided with specific reference to the nature-culture dichotomy, the role of human agency versus cultural materialism, and the fetish for averages that is tantamount to standardizing diversity. The chapter concludes with an argument for the need to reconceptualize human ecological relations.

Chapter 3 reconceptualizes human ecological relations by asserting that it is a lens for understanding relations between biological and cultural diversity with specific reference to the Arctic and sub-Arctic. Starting with a discussion of diversity as the basis of sensory perception which provides a (human ecological) context for the formation of relations, the discussion proceeds into different ways of knowing utilizing Aristotle's notion of *phronesis*, or practical wisdom. By contrasting different ways of knowing such as the context-independent knowing *that* with context-dependent knowing *how*, the chapter illustrates how these categories facilitate a wider process of learning. The chapter concludes with the assertion that human ecological understanding, in the context of communities in the circumpolar north, is best achieved through sensitivity to indigenous knowledge.

Chapters 4, 5, and 6 present cases to illustrate the relation between the biological and cultural through the interdisciplinary lens of human ecology. Explanation of human activity cannot be context-free. Application of human skills or social and biological interaction presupposes context, making human ecology fundamentally context-dependent. The case study approach through context-dependent knowledge provides insights into experience, which is precisely the basis of grounded theory. The case study approach is appropriately illustrated by Galileo's physical experimentation

and Darwin's zoological studies, both resulting in dramatic and significant contributions to knowledge. In other words, case studies produce theories. In fact, Darwin generalized on the basis of just one case study to produce the theory of evolution. While this work does not presume to offer such a grand theory, the power of good examples cannot be underestimated when formulating the notion of human ecology. A common criticism of the case study is that there is room for subjective and arbitrary judgement, and therefore the case study is less rigorous. The case study approach has no more inherent tendency towards verification of the researcher's preconceived notions than any other method of inquiry. The case study approach using the participatory method has its own rigour and basis for validity (as will be illustrated in chapter 5).

Partnership formation is a fundamental first step to achieving community participation in any human ecology research project. Meaningful and robust human ecological research cannot occur without community participation. Partnership formation occurs when trust is established in the relationship. Therefore, chapter 4, a product of such collaboration, illustrates the unique and diverse human ecological culture of the Arctic Inuit community of Ulukhaktok (formerly Holman), Northwest Territories, Canada. It briefly discusses the historical phases of human ecological relations and describes in detail current patterns of relations between humans, marine and terrestrial mammals, birds, fish, and plants. It reveals that sharing of the fruits of the hunt is at the basis of the cultural system and informs social relations in the community.

Chapter 5 draws upon human ecological research to explore the impact of climate change and sea-ice conditions on the subsistence lifestyle of the Iñupiat community of Wainwright, Alaska. Particular ways of knowing and the value of community participation and action research are examined as methodological approaches for investigating human ecological relations. The basis of validity is examined. Specifically indigenous knowledge about sea-ice formation, pressure ridges, leads, winds, and currents is presented as a valid source of scientific knowledge. A case is made for combining scientific and indigenous ways of knowing. Finally, human ecological impacts of climate change are discussed.

Chapter 6 examines the transformative character of human ecological mapping. Human ecological maps and their history are briefly related. The power of human ecological maps is described with reference to their mediating and communicative roles, reflexivity and human agency, and the intergenerational transfer of practical wisdom.

Chapter 7 draws together the key elements such as biocultural diversity, ways of knowing, and community participation in order to discuss the theoretical and practice implications of human ecological research.

