

Valuation of Country Food in Nunavut Based on Energy and Protein Replacement

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APPENDIX TABLES

TABLE S1. Estimated energy and protein content of Nunavut country foods, including tissue type and preparation method contributing most to edible fraction, and the Canadian Nutrient File food code (CNF; Health Canada, 2018) from which energy and protein content were obtained.

Common name	Scientific name	Tissue type ¹	CNF code ²	Energy (kcal kg ⁻¹)	Protein (g kg ⁻¹)
Bivalves:					
Clams	<i>Mya truncata</i>	r	3109	860	146.7
Mussels	<i>Mytilus edulis</i>	r	3115	860	119.0
Fish:					
Whitefish	<i>Coregonus</i> spp.	r	3208	1140	190.0
Inconnu	<i>Stenodus leucichthys</i>	r	3234	2410	168.0
Char	<i>Salvelinus alpinus</i>	mr	3230	1030	195.0
Lake trout	<i>S. namaycush</i>	r	3204	1480	207.7
Grayling	<i>Thymallus arcticus</i>	r	5483	970	200.0
Cod	Gadidae spp.	r	3194	820	178.1
Turbot	<i>R. hippoglossoides</i>	r	3013	1860	143.7
Birds:					
Ptarmigan	<i>Lagopus</i> spp.	mr	5932	1280	240.0
White-fronted Goose	<i>Anser albifrons</i>	msr	5215	2700	191.1
Snow Goose	<i>A. caerulescens</i>	msr	5215	2700	191.1
Brant	<i>Branta bernicla</i>	msr	5215	2700	191.1
Canada Goose	<i>B. canadensis</i>	msr	5215	2700	191.1
Goose	<i>Branta/Anser</i> spp.	msr	5215	2700	191.1
Goose egg	<i>Branta/Anser</i> spp.	r	89	1850	138.7
Swan	<i>Cygnus columbianus</i>	msr	5215	2700	191.1
Swan egg	<i>C. columbianus</i>	r	89	1850	138.7
Duck	<i>Anas/Aythya</i> spp.	msr	667	2100	174.2
Eider	<i>Somateria</i> spp.	msr	X ³	1215	123.0
Murre egg	<i>Uria lomvia</i>	r	89	1850	138.7
Mammals:					
Grizzly bear	<i>Ursus arctos</i>	mr	3565	1280	220.0
Polar bear	<i>U. maritimus</i>	mr	5835	1160	220.0
Muskox	<i>Ovibos moschatus</i>	mr	5831	1050	190.0
Moose	<i>Alces alces</i>	mr	3587	1240	220.0
Caribou	<i>Rangifer tarandus</i>	mr	3577	1220	225.0
Hare	<i>Lepus arcticus</i>	mr	X	640	215.0
Ground squirrel	<i>Urocyon parryi</i>	mr	3598	1200	212.3

¹ Tissue types: r = whole raw, mr = meat raw, and msr = meat with skin.

² Italicized codes indicate values obtained from closely related species.

³ For X, values were taken from Kuhnlein and Humphries (2017).

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TABLE S2. Estimated energy (E) and protein (P) content of marine mammals with edible fraction components (EFC) and their assumed contributions (%) to total edible fraction and total nutrient content.

Common name	Scientific name	1st			2nd			3rd			4th			E (kcal/kg)	P (g/kg)									
		EFC ¹	%	Code ²	E	P	EFC	%	Code	E	P	EFC	%			Code	E	P						
Walrus	<i>Odobenus rosmarus</i>	mu	60	5796	1710	330.0	mr	20	3647	1150	235.0	o	10	5904	9010	0	br	10	5791	7560	59.0	2903	250.9	
Bearded seal	<i>Erignathus barbatus</i>	mr	70	5759	1210	250.0	o	20	5891	8990	5.6	br	10	5763	7700	7.0							3415	176.8
Hooded seal	<i>Cystophora cristata</i>			x																			2679	193.2
Harp seal	<i>Pagophilus groenlandicus</i>	mr	100	3645	1130	238.0																	1130	238.0
Harbor seal	<i>Phoca vitulina</i>			x																			2679	193.2
Ringed seal	<i>Pusa hispida</i>	mr	70	5782	1260	230.0	ba	20	5779	8950	7.0	br	10	5778	8190	22.5							3491	164.7
Seal	Phocid spp.	mu	70	5906	4660	126.0	o	20	5907	9010	0.0	br	10	5905	8700	4.0							2679	193.2
Bowhead	<i>Balaena mysticetus</i>			x																			5934	88.6
Beluga	<i>Delphinapterus leucas</i>	mu	50	5766	1540	245.0	md	30	5769	3560	720.0	o	10	5768	8900	3.0	br	10	5764	7310	95.0	3459	348.3	
Narwhal	<i>Monodon monoceros</i>	mu	70	5755	1320	225.0	md	20	5771	4250	110.0	br	10	5772	6570	91.5							2431	320.7

¹ EFC = edible fraction components: mu = muktuk raw, o = oil, br = blubber raw, mr = meat raw, ba = blubber aged, and md = meat dried.

² Code = the Canadian Nutrient File food code (Health Canada, 2018). For x, due to a lack of species-specific data, E and P values were estimated as the average of the three other seals (bearded, harp, and ringed) with available data.

TABLE S3. Country food harvest, store-bought food costs, and reported income for Nunavut communities. *Italicized communities have reported harvest but lack publicly available store-bought food basket costs and reported incomes. Regional capitals are displayed in bold.*

REGION	Community	Population	Country food harvested (kcal yr ⁻¹)	Country food total protein harvested (g yr ⁻¹)	Country food available energy (kcal pers ⁻¹ d ⁻¹)	Country food available protein (g pers ⁻¹ d ⁻¹)	Store-bought food basket cost (\$ yr ⁻¹)	Median reported total income (\$ yr ⁻¹)	Store-bought food basket cost/income (%)	Store-bought food basket energy cost (\$ kcal ⁻¹)	Store-bought food basket protein cost (\$ g ⁻¹)	Store-bought food basket unsubsidized energy cost (\$ kcal ⁻¹)	Store-bought food basket unsubsidized protein cost (\$ g ⁻¹)
KITIKMEOT													
	<i>Umingmaktok</i>	—	—	—	—	—	—	—	—	—	—	—	—
	<i>Bathurst Inlet</i>	—	—	—	—	—	—	—	—	—	—	—	—
	<i>Kugaaruk</i>	972	170,624,907	21,420,000	480.9	60.4	24,205	23,760	—	—	—	—	—
	Taloyoak	1076	253,528,163	33,374,312	645.5	85.0	24,205	23,460	1.032	0.0067	0.1503	0.0089	0.1987
	Gjoa Haven	1483	135,577,902	21,626,669	250.5	40.0	23,538	23,920	0.984	0.0065	0.1462	0.0085	0.1904
	Kugluktuk	1610	223,068,892	35,795,761	379.6	60.9	22,431	23,740	0.945	0.0062	0.1393	0.0077	0.1725
	Cambridge Bay	1746	122,407,898	20,173,396	192.1	31.7	21,708	32,540	0.667	0.0060	0.1348	0.0070	0.1571
KIVALLIQ													
	<i>Whale Cove</i>	462	174,524,180	22,780,671	1035.0	135.1	—	25,260	—	—	—	—	—
	Chesterfield Inlet	473	135,092,396	19,063,526	782.5	110.4	20,770	31,850	0.652	0.0058	0.1290	0.0076	0.1705
	Nauyasat	1069	373,380,781	37,809,625	956.9	96.9	21,482	23,520	0.913	0.0060	0.1334	0.0084	0.1887
	Coral Harbour	1080	676,057,718	72,469,702	1715.0	183.8	22,083	24,370	0.906	0.0061	0.1371	0.0085	0.1911
	Baker Lake	1997	279,690,325	50,747,258	383.7	69.6	20,489	28,760	0.712	0.0057	0.1272	0.0076	0.1701
	Arviat	2772	1,086,673,078	139,675,510	1074.0	138.0	19,880	26,400	0.753	0.0055	0.1234	0.0066	0.1484
	Rankin Inlet	2675	266,944,687	33,706,200	273.4	34.5	20,068	44,210	0.454	0.0056	0.1246	0.0068	0.1523
QIKIQTAALUK													
	<i>Grise Fjord</i>	167	123,008,228	8,592,504	2018.0	141.0	—	—	—	—	—	—	—
	<i>Resolute Bay</i>	210	121,782,456	9,086,338	1588.8	118.5	—	31,170	—	—	—	—	—
	Kimmitut	450	192,764,989	16,472,009	1173.6	100.3	22,499	26,650	0.844	0.0062	0.1397	0.0094	0.2116
	Qikiqtarjuaq	616	493,805,289	30,667,891	2196.3	136.4	23,966	21,450	1.117	0.0066	0.1488	0.0095	0.2124
	Arctic Bay	876	393,950,688	36,299,724	1232.1	113.5	24,030	26,680	0.901	0.0067	0.1492	0.0118	0.2653
	Sanikiluaq	887	290,263,696	23,576,857	896.6	72.8	23,390	19,220	1.217	0.0065	0.1452	0.0075	0.1675
	Hall Beach	956	459,598,869	45,709,094	1317.1	131.0	21,358	26,110	0.818	0.0059	0.1326	0.0092	0.2073
	Clyde River	1,127	445,330,267	31,499,172	1082.6	76.6	24,045	24,220	0.993	0.0067	0.1493	0.0106	0.2378
	Cape Dorset	1,481	448,837,325	40,901,146	830.3	75.7	23,563	20,290	1.161	0.0065	0.1463	0.0092	0.2072
	Pangnirtung	1,633	1,372,498,032	108,790,049	2302.7	182.5	24,866	26,660	0.933	0.0069	0.1544	0.0093	0.2083
	Pond Inlet	1,663	628,046,553	63,856,474	1034.7	105.2	24,031	22,530	1.067	0.0067	0.1492	0.0115	0.2584
	Igloodik	1,986	907,786,478	88,071,166	1252.3	121.5	22,373	25,340	0.883	0.0062	0.1389	0.0095	0.2136
	Iqaluit	7,590	793,252,977	80,233,377	286.3	29.0	21,486	67,260	0.319	0.0060	0.1334	0.0073	0.1625

TABLE S4. Country food valuation for Nunavut communities. Italicized communities have reported harvest but lack publicly available store-bought food basket costs and reported incomes. Regional capitals are displayed in bold.

REGION	Community	Population	Country food energy value (\$ yr ⁻¹)	Country food protein value (\$ yr ⁻¹)	Country food unsubsidized energy value (\$ yr ⁻¹)	Country food unsubsidized protein value (\$ yr ⁻¹)	Country food energy value per capita (\$ pers ⁻¹ yr ⁻¹)	Country food protein value per capita (\$ pers ⁻¹ yr ⁻¹)	Country food unsubsidized energy value per capita (\$ pers ⁻¹ yr ⁻¹)	Country food unsubsidized protein value per capita (\$ pers ⁻¹ yr ⁻¹)
KITIKMEOT:										
	<i>Umingsmaktook</i>	—	—	—	—	—	—	—	—	—
	<i>Bathurst Inlet</i>	—	—	—	—	—	—	—	—	—
	<i>Kugaaruk</i>	972	—	—	—	—	—	—	—	—
	Taloyoak	1076	1,700,022	5,016,115	2,247,692	6,632,082	1,579.95	4,661.82	2,088.93	6,163.64
	Gjoa Haven	1483	884,054	3,160,869	1,151,872	4,118,431	596.13	2,131.40	776.72	2,777.09
	Kugluktuk	1610	1,386,107	4,985,586	1,716,856	6,175,234	860.94	3,096.64	1,066.37	3,835.55
	Cambridge Bay	1746	736,127	2,719,250	857,724	3,168,430	421.61	1,557.42	491.25	1,814.68
KIVALIQ:										
	<i>Whale Cove</i>	462	—	—	—	—	—	—	—	—
	Chesterfield Inlet	473	777,301	2,458,605	1,027,522	3,250,051	1,643.34	5,197.90	2,172.35	6,871.14
	Nauyasat	1069	2,222,010	5,043,399	3,143,581	7,135,131	2,078.59	4,717.87	2,940.67	6,674.58
	Coral Harbour	1080	4,135,740	9,936,944	5,762,690	13,846,016	3,829.39	9,200.87	5,335.82	12,820.39
	Baker Lake	1997	1,587,500	6,456,180	2,122,790	8,633,146	794.94	3,232.94	1,062.99	4,323.06
	Arviat	2772	5,984,563	17,241,724	7,194,281	20,726,960	2,158.93	6,219.96	2,595.34	7,477.26
	Rankin Inlet	2675	1,484,009	4,200,025	1,814,058	5,134,125	554.77	1,570.10	678.15	1,919.30
QIKIOTAAALUK:										
	<i>Grise Fjord</i>	167	—	—	—	—	—	—	—	—
	<i>Resolute Bay</i>	210	—	—	—	—	—	—	—	—
	Kimmiut	450	1,201,442	2,301,167	1,819,671	3,485,284	2,669.87	5,113.70	4,043.71	7,745.08
	Qikiqtaaruaq	616	3,278,468	4,563,793	4,679,725	6,514,414	5,322.19	7,408.75	7,596.96	10,575.35
	Arctic Bay	876	2,622,437	5,416,185	4,662,231	9,629,020	2,993.65	6,182.86	5,322.18	10,992.03
	Sanikiluaq	887	1,880,746	3,424,129	2,169,088	3,949,091	2,120.34	3,860.35	2,445.42	4,452.19
	Hall Beach	956	2,719,276	6,061,831	4,249,891	9,473,889	2,844.43	6,340.83	4,445.49	9,909.93
	Clyde River	1,127	2,966,384	4,702,958	4,723,723	7,489,075	2,632.11	4,172.99	4,191.41	6,645.14
	Cape Dorset	1,481	2,929,809	5,984,290	4,148,181	8,472,880	1,978.26	4,040.71	2,800.93	5,721.05
	Pangnirtung	1,633	9,454,316	16,797,105	12,757,267	22,665,325	5,789.54	10,286.04	7,812.17	13,879.56
	Pond Inlet	1,663	4,180,940	9,528,266	7,239,495	16,498,644	2,514.10	5,729.56	4,353.27	9,921.01
	Iqloolik	1,986	5,626,295	12,234,871	8,649,521	18,809,142	2,832.98	6,160.56	4,355.25	9,470.87
	Iqaluit	7,590	4,721,494	10,704,087	5,751,174	13,038,474	622.07	1,410.29	757.73	1,717.85