

Skills Transmission and Inuit Adaptation to Climate Change



Inuit environmental knowledge and land skills have been identified as key determinants of adaptive capacity to climatic changes that affect subsistence harvesting. There is evidence however that the traditional modes of knowledge transmission are not functioning as they were in the past. As a result, many younger and inexperienced hunters are not as well equipped to cope with the risks of hunting, and changing climatic conditions are making it even more hazardous for them. To test this hypothesis, the transmission of environmental knowledge and land skills was studied with Inuit men in Ulukhaktok, Northwest Territories in the western Canadian Arctic. A list of 83 skills important for safe and successful harvesting was generated with 14 active hunters and elders, and tested with a sample of 39 men. Key findings are outlined and recommendations for supporting skills transmission in the community are made.

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Findings

SOME SKILLS HAVE BEEN TRANSMITTED WELL

General hunting, traveling, fishing and camp-related skills, and skills related to caribou, musk ox, seal (summer) and duck hunting were learned well among younger respondents.

SOME SKILLS HAVE BEEN REPLACED BY NEWER TECHNOLOGIES

Skills including lighting and tending a kulliq, and running a dog team, have been largely replaced by newer technologies, naptha burning stoves, snow machines and all-terrain-vehicles (ATV).

INCOMPLETE SKILL TRANSMISSION

Skills had been acquired to a lower level of mastery among respondents 18-34 years of age than among older respondents. Most 18-34 year old respondents had not learned detailed knowledge of animal behaviour or habitat preference and relied on others to lead them to hunting areas. Younger respondents had also not mastered important emergency survival skills like how to build a snow shelter (igloo or nalaqtaq – small snow shelter). The incomplete transmission of many skills could have a profound effect on the capacity of younger respondents to continue to hunt and travel under changing environmental conditions. As habitats and wildlife movements change in response to climate change it will be increasingly important for hunters to understand how to navigate alternative travel routes on the land and ice.

SOME SKILLS HAVE BEEN TRANSMITTED POORLY

Some skills were poorly learned among younger respondents: understanding wildlife behavior and habitat choice, navigation by snowdrifts and stars, travel and navigation by boat, travel on the sea ice in the fall and winter, understanding weather patterns from clouds and wind direction, igloo building, meat and fur preparation, storing (caching) meat on the land, tracking wildlife, winter seal hunting, trapping skills, and some equipment making and repair skills (e.g. fix fish nets, repair sleds, small engine repair). Most young respondents had not learned the detailed knowledge and skills needed to navigate in poor visibility (niptiaktuk), how to anticipate and cope with changes in weather, or how to travel on the sea ice in different seasonal conditions. This is of concern because weather patterns, land, and sea ice conditions are changing rapidly requiring travelers to have the knowledge and skills necessary to be flexible and cope with changing conditions.

FATHER AND GRANDFATHER ARE IMPORTANT TEACHERS

Respondents were nearly 50% more likely to have learned the tested knowledge and skills if they had a father (biological or adopted by grandfather) than if they did not have a biological father in their lives.

FACTORS THAT HAVE AFFECTED TRANSMISSION SUCCESS

- access to teachers,
- declining participation in some subsistence activities,
- competing school education, and
- loss of native language.

Recommendations

SKILLS WHICH REQUIRE ATTENTION:

- Understand wildlife behavior and habitat choice (e.g. know where to hunt a species and why?)
- Navigate by snowdrifts and stars
- Travel and navigate by boat
- Travel on the sea ice in the winter
- Understand weather patterns from clouds and wind direction
- Build a snow shelter (igloo or nalaqtaq) – emergency shelter
- Meat and fur preparation
- Storing meat on the land - cache
- Tracking wildlife
- Hunting seals in the winter
- Trapping skills
- Equipment making and repair (e.g. fix fish nets, repair sleds; small engine repair)

FOR EDUCATORS:

- A greater integration of environmental knowledge and land skills, native language, and hands-on learning into formal educational curricula would help youth to acquire skills relevant to their local surroundings and culture
- Provide skills training programs for individuals 19 years and older (and youth who are not in school)
- Greater involvement of skills teachers (active harvesters and elders) in daily education



TRANSMISSION OF ENVIRONMENTAL KNOWLEDGE AND LAND SKILLS

Mean Scores by Groups of Skills, by Percentage

Groups of Knowledge and Skills	Percentage Reporting the Skills					
	18-34 years (n=28)			35-49 years (n=11)		
	HO	O	N	HO	O	N
General hunting and traveling skills (x=5)	95	4	1	100	0	0
Re-load bullets (x=1)	18	43	39	64	27	9
Dog team skills (x=2)	39	19	42	73	27	0
Camp-related skills (x=8)	87	8	5	100	0	0
Light and tend a kulliq (x=1)	11	64	25	27	18	55
Fishing skills (x=3)	94	1	5	100	0	0
Caribou hunting skills (x=4)	84	6	10	100	0	0
Musk-ox hunting skills (x=4)	74	14	12	100	0	0
Seal hunting skills (x=7)	43	29	28	79	9	12
Duck hunting skills (x=3)	100	0	0	100	0	0
Polar bear hunting skills (x=3)	23	12	65	91	6	3
Wolf hunting skills (x=3)	26	14	60	85	0	15
Trapping skills (x=3)	50	11	39	88	0	12
Fur preparation skills (x=6)	25	46	29	79	16	5
Navigation and wayfinding skills (x=7)	45	14	41	94	0	6
Travel on the sea-ice (x=3)	54	8	38	97	3	0
Weather forecasting (x=5)	39	25	36	64	7	29
Equipment making and repair (x=15)	51	17	31	82	10	8
Average (x = 83)	56%	17%	27%	87%	6%	7%

HO: learned by hands-on experience, O: learned by observation only, N: not learned, x: number of skill items, n: number of respondents, * Inuit stone lamp

Clockwise from top: **Adam Kolouhok Kudlak** retrieves a natiq (ringed seal) from the aolagot (open water lead) using an oinikhiot (open water boat); Local researcher **Roland Notaina** documented where respondents traveled and hunted on the land and ice; **Jerry Sr. Akoaksion** runs one of the active dog teams in the community and is teaching his son Jerry Jr. the skills needed to keep and run dogs; Elders like **Elizabeth Banksland** are important skills teachers.

