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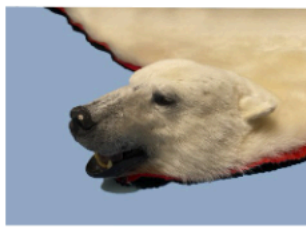

Ernest W. T. Cooper

Review and Analysis of Canadian Trade in Polar Bears from 2012–2021

September 23, 2022

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Ernest W.T. Cooper
September 28, 2022

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Suggested citation:
Cooper, E.W.T. (2022). *Review and Analysis of Canadian Trade in Polar Bears from 2012–2021*. Environment and Climate Change Canada, Ottawa, Canada, 98 pp.

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Cover photos:
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List of Abbreviations and Acronyms

ARQ	Annual Recommended Quota
CAD	Canadian dollars
CBSA	Canada Border Services Agency
CEPS	CITES Electronic Permitting System
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties to CITES
CoP15	Fifteenth meeting of the CITES Conference of the Parties
CoP16	Sixteenth meeting of the CITES Conference of the Parties
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COVID-19	Coronavirus disease 2019
CWS	Canadian Wildlife Service [of ECCC]
ECCC	Environment and Climate Change Canada [formerly Environment Canada]
EMR	Eeyou Marine Region
ESA	Endangered Species Act of 1973 [United States]
FHA	Fur Harvesters Auction Inc.
GMVF	Genuine Mackenzie Valley Fur
HTO	Hunters and Trappers Organization
IFA	Inuvialuit Final Agreement
ISR	Inuvialuit Settlement Region
IUCN	International Union for Conservation of Nature
JBNQA	James Bay and Northern Québec Agreement
JC	Canada-Greenland Joint Commission on Polar Bears
KRG	Kativik Regional Government
LILCA	Labrador Inuit Land Claims Agreement
LISA	Labrador Inuit Settlement Area
MMPA	Marine Mammal Protection Act [United States]
MOU	Memorandum of Understanding
NAFA	North American Fur Auctions Inc.
NDF	Non-detriment finding
Nfld.	Newfoundland
NMR	Nunavik Marine Region
NSA	Nunavut Settlement Area
NWMB	Nunavut Wildlife Management Board
PBAC	Polar Bear Administrative Committee
PBSG	Polar Bear Specialist Group [IUCN]
PBTC	Polar Bear Technical Committee
RWO	Regional Wildlife Organizations
SARA	Species at Risk Act [Canada]
TAH	Total Allowable Harvest
UNEP-WCMC	United Nations Environment Programme-World Conservation Monitoring Centre
US	United States of America
USD	US dollars
USFWS	US Fish and Wildlife Service
WED	Wildlife Enforcement Directorate

Acknowledgements

The author would like to express his gratitude to the following people for their support and input in developing this document:

- Alexander Cooper, E. Cooper Environmental Consulting.
- Carolina Caceres, Environment and Climate Change Canada, Government of Canada.
- Caroline Ladanowski, Environment and Climate Change Canada, Government of Canada.
- Caryn Smith, Department of Environment, Government of Nunavut.
- Cecilia Lougheed, Environment and Climate Change Canada, Government of Canada.
- David Lee, Department of Wildlife and Environment, Nunavut Tunngavik Incorporated.
- David McGeachy, Environment and Climate Change Canada, Government of Canada.
- Devon Imrie, Department of Environment, Government of Nunavut.
- Dominique Henri, Environment and Climate Change Canada, Government of Canada.
- Drikus Gissing, Department of Environment, Government of Nunavut.
- Evan Richardson, Environment and Climate Change Canada, Government of Canada.
- Geoff York, Polar Bears International.
- Gregor Gilbert, Department of Environment, Wildlife and Research, Makivik Corporation.
- Guillaume Szor, Ministère des Forêts, de la Faune et des Parcs, Gouvernement du Québec.
- Howard Noseworthy, Director of Planning and Development, Fur Harvesters Auction Inc.
- Jasmine Ware, Department of Environment, Government of Nunavut.
- Jason Dicker, Department of Lands and Natural Resources, Nunatsiavut Government.
- Jim Goudie, Department of Lands and Natural Resources, Nunatsiavut Government.
- Jo Esten Hafsmo, Norwegian Environment Agency, Government of Norway.
- Joseph Northrup, Ministry of Northern Development, Mines, Natural Resources and Forestry, Government of Ontario.
- Kaitlin Wilson, Wildlife Management Advisory Council (North Slope).
- Lise Jubinville, Environment and Climate Change Canada, Government of Canada.
- Maha Ghazal, Department of Environment, Government of Nunavut.
- Markus Dyck, Department of Environment, Government of Nunavut.
- Marsha Branigan, Environment and Natural Resources, Government of the Northwest Territories.
- Melissa Galicia, Environment and Climate Change Canada, Government of Canada.
- Meredith Purcell, Torngat Wildlife, Plants & Fisheries Secretariat.
- Nick Lunn, Environment and Climate Change Canada, Government of Canada.
- Ryan Zimmerling, Environment and Climate Change Canada, Government of Canada.
- Ruben Boles, Environment and Climate Change Canada, Government of Canada.
- Samantha Smuk, Department of Environment, Government of Nunavut.
- Samuel Iverson, Environment and Climate Change Canada, Government of Canada.
- Sheldon Jordan, Environment and Climate Change Canada, Government of Canada.
- Steve Baryluk, Environment and Natural Resources, Government of the Northwest Territories.
- Toby Halle, Department of Environment and Natural Resources, Government of Northwest Territories.
- Valerie Beaulieu Blanchette, Department of Environment, Government of Nunavut.
- Vicki Trim, Department of Agriculture and Resource Development, Government of Manitoba.
- Zoya Martin, Department of Environment, Government of Nunavut.

Executive Summary

The purpose of this study was to compile information about the harvest and trade in Canadian polar bears for the years 2012–2021. This report is a follow-up to the 2015 report entitled *Review and Analysis of Canadian Trade in Polar Bears from 2005–2014* and attempts to provide a national picture of Canadian exports linked to harvest management at the provincial, territorial or settlement area level.

Data for Canadian polar bear hides and skulls exported in 2012–2021, as recorded in the Convention on International Trade in Endangered Species of Wild Fauna and Flora Electronic Permitting System, were provided by Environment and Climate Change Canada. Supplemental information was downloaded from the United Nations Environment Programme-World Conservation Monitoring Centre CITES Trade Database.

Hunting quotas and the numbers of bears killed in the relevant provinces and territories for the hunting seasons 2011/12 to 2020/21 were provided by the jurisdictional authorities. Data on polar bear hide auction results for the years 2012–2021 were provided by Fur Harvesters Auction Inc. and the Government of Nunavut. All parts of this report were completed in consultation with the relevant literature, websites, and experts.

Conservation impact of Canadian polar bear trade

Exports of hides boomed in 2012 and 2013 before the market for polar bear hides crashed in 2014. Exports subsequently dropped significantly and continued to decline in the following years. In 2020, only 75 hides were exported. This was fewer than exported in any of the preceding years and comprised an 80% drop from the 2012 peak numbers. Sales of polar bear hides at auction showed a similar boom and bust, both as numbers sold and prices realized. By 2021, only 19 hides were sold at the Fur Harvesters Auction (compared to the 165 sold in 2012) at an average price that was approximately one-half of the 2012 average price. The decline in the international market for polar bear hides correlated with declining markets for furs from other species and Canadian exports were particularly impacted by the rapidly declining Chinese market for hides. This was after the Chinese market fueled the rapid increase in commercial exports of hides in the years 2008–2013.

In 2021, a total of 117 hides were exported. This was 42 more than were exported in 2020, and the first increase in hide exports since 2015. This increase was driven by a spike in commercial exports. Conversely, both exports for personal purposes and of hunting trophies declined in 2021.

A significant proportion of the 2021 increase consisted of hides exported to a single Norwegian importer. Spikes in exports to one or two Norwegian importers occurred several times in 2012–2021 and were likely caused by dealers replenishing their available stock rather than a resurging international market for polar bear hides. Exports of hides to China also increased slightly in 2021. The increase was modest, but it was the first increase in Chinese imports since 2013. It is possible the 2021 upturn in exports signified a resurging market for polar bear hides, but more likely it was the result of export delays in 2020 caused by the COVID-19 pandemic.

The hides and skulls exported in 2012–2021 were taken from bears killed over a span of 31 different hunting seasons, dating back to 1975. The skulls and hides exported in 2012–2021 were sourced from 1,382–1,403 individual polar bears out of the 5,329 killed in the same period. Approximately 26% of the bears killed in 2012–2021 had been exported by the end of 2021.

Given that most of the polar bears killed annually in Canada are not exported and considering the significant decline in Canadian exports over the past decade, along with very low numbers of polar bears exported as hides and skulls in recent years, trade does not currently constitute a significant driver of harvest in Canada and appears to be a low threat to the conservation of polar bears.

Impact of hide prices on polar bear hunting

Overall, the booming commercial market for polar bear hides lasted only approximately six years, from 2009–2014, with prices for hides lagging sales by one or two years. The boom-and-bust market for hides was not reflected in the numbers of bears killed in Nunavut over that same period. The numbers killed in Nunavut were relatively consistent and ranged between 400–500 bears per year. It is worth noting that Nunavut provides hunters with an advance payment for hides to be sold at auction via the Seal and Fur Programs Policy. This mitigates the impact on hunting effort of a changing market for hides and potentially encourages a higher hunting effort than would be realized if guaranteed advance payments were not available when the market demand for hides was very low.

In contrast, the numbers killed in Québec suggest hunters have tended to hunt more polar bears when the market for hides was hot and fewer bears when the market cooled. Québec does not have a maximum allowable take of polar bears outside of the offshore waters of the Southern Hudson Bay portion of the Nunavik Marine Region and reporting of harvest by hunters is currently not mandatory. Therefore, Québec hunters may have had a greater incentive to report kills when the market was good, to be able to sell their hides. When the market cooled and the opportunity to sell hides dropped, the incentive to report kills also appears to have dropped. Hence, the fluctuating numbers for Québec may reflect a combination of both hunting pressure and level of voluntary reporting. Either way, the data suggest the market for polar bear hides impacts the number of polar bear kills recorded for Québec.

The data for the Inuvialuit Settlement Region suggest some correlation between the market for hides and the numbers of bears killed. But the correlation is not as apparent as shown for Québec.

Sport hunting resurgence

Both the numbers of polar bears hunted for sport and the numbers of exported trophies rapidly declined after the 2008 listing of the polar bear on the Endangered Species Act of 1973 and subsequent import prohibition under the Marine Mammal Protection Act. In the 2015/16 hunting season, the number of bears hunted for sport in Canada began to increase again. Sport kills increased steadily in the 2017/18 and 2018/19 seasons. Despite the resurgence in sport hunting, the numbers of hides and skulls exported as hunting trophies did not increase. Conversely, exports of both decreased steadily after 2015.

Approximately one-half of the Nunavut sport kills in the 2015/16–2018/19 seasons were made by US hunters who cannot take their trophies back to the United States. This caused the discrepancy between the trend in sport hunting and hunting trophy exports. Successful US hunters may give away the hide, skull and other parts of a polar bear carcass, or they can store their trophies in Canada in hopes the US import prohibition is removed in the future.

Impact of COVID-19 on trade

The number of polar bears killed for sport dropped dramatically in 2019/20 and no bears were hunted for sport in 2020/21. This abrupt shift was the result of the travel restrictions imposed in response to the COVID-19 pandemic. The loss of the sport hunting market also likely accounted for the increased numbers killed for subsistence in 2019/20 and 2020/21—with hunting tags being retained for subsistence hunting rather than being allocated to sport hunting.

The fur industry was also impacted by the COVID-19 pandemic. Exports of bobcat, Canadian lynx, river otter and wolf hides all spiked in 2019 before crashing again in 2020, presumably because of the COVID-19 pandemic. Also in 2020, outbreaks of COVID-19 were discovered amongst populations of farmed mink. Denmark's extensive mink farming industry was abruptly shut down, and mink farming was curtailed in other parts of the world. The loss of mink fur production caused mink prices to jump in late 2020, and prices for wild furs followed. Exports of bobcat, Canadian lynx, river otter and wolf hides all subsequently increased in 2021, possibly due to pent-up market demand resulting from the low numbers exported in 2020 and stimulated by the higher prices.

Exports of polar bear hides did not spike in 2019, and exports also did not decline appreciably in 2020. Whether rising prices for wild furs will stimulate the market for polar bear hides remains to be seen. There is a fundamental difference between the market for polar bear hides and the market for other wild species. The upsurge in wild fur prices may not, therefore, translate into higher numbers of polar bear hides sold at auction or traded internationally.

Underreporting of Québec kills

As noted, the market price of polar bear hides appears to influence both the number of bears being harvested as well as the degree of reporting in Québec. A poor market is a disincentive for reporting as hunters are less likely to want to sell their hides and may not see the value of reporting their harvest or requesting a tag for their hide. Reporting seems to be consistently higher in Southern Hudson Bay, where more local efforts have been invested since the implementation of the Total Allowable Harvest in the Nunavik Marine Region.

Although underreporting occurs, the actual Québec harvest has been declining. There are very few specialized polar bear hunters left in the region and hunting specifically for polar bears is expensive. The reduced market value for polar bear hides has diminished the incentive to target polar bears and it appears many of the polar bears killed are incidental harvests or bears that approached too close to communities. If the province establishes mandatory reporting (a goal of Québec's new management plan), a more accurate picture of hunting in the province will be available.

Sex-selective harvest

The sex ratio of polar bears taken by a community or region may be influenced by the reason for hunting. Adult male polar bears can be up to 2.1 times larger than females and therefore more desirable to sport hunters and larger hides sell for more money than smaller hides of similar quality. Conversely, the meat of smaller bears and especially female polar bears is considered more palatable. In areas where sport hunting is common, more males will be taken. And a strong market for polar bear hides may encourage hunters to target males in preference to females. Conversely, a weak market for polar bear hides may encourage hunters to target bears for traditional purposes, which may result in fewer males and more females being killed.

Neither Newfoundland and Labrador nor Québec regulate polar bear hunting by sex. Despite this, more males than females are killed annually in both provinces. The traditional protection of females with cubs may have influenced the sex ratio of the harvest in those provinces, resulting in more males being hunted than females. The market for polar bear hides also appears to have influenced the sex ratio of hunted bears in Québec. The hot commercial market for hides early in the past decade may have influenced the sex of polar bears killed in Newfoundland and Labrador as well, although to what extent is not apparent.

Polar bear hunting in the Inuvialuit Settlement Region and Nunavut is managed through sex-selective quota systems that maximize the number of animals available for harvest while restricting the number of females killed. Historically, both imposed a quota of two males killed for every female.

However, Nunavut changed the harvest sex ratio to allow up to one female to be harvested for every male for all subpopulations, beginning in the 2019/20 hunting season. Despite this change, almost two males were still killed for every female in Nunavut in 2019/20. That changed in 2020/21 when the proportion of males to females shifted closer to 3:2. One factor affecting the sex ratio for the 2020/21 harvest was the loss of sport hunting due to the pandemic and the corresponding movement of hunting tags to subsistence hunting. The extent to which the shift in the sex ratio was the result of the revised Nunavut harvest sex ratio is unclear. The expected return of sport hunting in 2021/22 will adjust the sex ratio accordingly. Whether the ratio of males to females killed will move closer to pre-2020/21 levels remains to be seen.

1. Introduction

This report is intended as a follow-up to a previous report entitled *Review and Analysis of Canadian Trade in Polar Bears from 2005–2014* (Cooper, 2015). That report provided an analysis of Canadian exports of polar bear hides and skulls, summarized the prices paid for polar bear hides sold at auction and mapped the Canadian domestic trade chain for polar bear products. This document follows the same format and is intended to summarize Canadian polar bear trade for the years 2012–2021. The overlap between the two reports is intentional, as it will provide a 10-year snapshot that includes the years 2013 and 2014 when Canadian trade peaked and then dropped.

The sustainability of polar bear hunting is typically assessed at the subpopulation level while trends in harvest and export are more commonly evaluated regionally and nationally. International trade is normally focussed on species (rather than populations) and discussed at the national or multinational level. This report is meant to update the information provided in Cooper (2015) and attempts to provide a national picture of Canadian exports linked to harvest management at the provincial, territorial or settlement area level. The different polar bear subpopulations are referenced when relevant for context, but the analysis provided does not focus down to the level of subpopulation harvest as that was not the intent of the study.

The document is divided into nine parts. This introduction concludes Part 1. Part 2 provides pertinent background information and Part 3 describes the methodology used to complete the study. Portions of the background and methods are similar or identical to the text originally provided in Cooper (2015).

Part 4 reviews polar bear hunting quotas and the numbers of bears killed annually in the Canadian provinces and territories.[1] This section is a more in-depth review of polar bear hunting in Canada than was provided in Cooper (2015). Additional data was accessed for this report, including the numbers of bears killed sorted by both the purpose for kills, and the sex of the animals killed.

Part 5 updates the polar bear trade data published in Cooper (2015) and summarizes the numbers of polar bear hides and skulls exported from Canada from 2012–2021, their destination, purpose of trade and the numbers of individual bears represented by this trade.

Part 6 reviews auction prices for polar bear hides in the years 2012–2021. The topicality of this information has changed since 2015. In the years 2012–2013, numerous accounts were published about the impact of "soaring" prices for polar bear hides. The controversy has since dissipated. Sales of polar bear hides were reviewed again for this report, but the focus was more on understanding how the market for hides has changed rather than on addressing speculative concerns about high prices.

Part 7 summarizes the Canadian chain of custody for polar bear parts and products. Much of this content is little changed from Cooper (2015). However, this section also provides a quick snapshot of national polar bear hunting and exporting activities, using 2019 as a typical year.

Part 8 was added to this report to provide insight into how polar bear trade dynamics have evolved over the past two decades by summarizing 20 years of hide exports and 15 years of hide auction sales. This content is new as an equivalent section was not included in Cooper (2015).

Part 9 discusses the results compiled in Parts 4 to 8 and offers conclusions based on those analyses.

Appendices A and B provide complete lists of the destination countries for hides and skulls exported from Canada in 2012–2021. Appendix C summarizes Canadian hide exports dating back to 2002, and Appendix D reviews hide auction sales results since 2007.

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[1] The terms "quota" and "Total Allowable Harvest" are used synonymously in this document (see *Methods*).

2. Background

Polar bear distribution and abundance

Polar bears are unevenly distributed throughout the Arctic and are native to Canada, Greenland, Norway, Russia and the United States (Wiig et al., 2015). They are most common in the areas of annual ice over the continental shelf and archipelagos surrounding the polar basin. Polar bears may spend summer months on land in areas where the sea ice melts completely (Wiig et al., 2015). Approximately two-thirds of the global polar bear population is found within or adjacent to Canada.

The species is managed not as a single population, but as 19 subpopulations (Aars et al., 2006). Genetic studies indicate that gene flow occurs among the various subpopulations and there is no evidence of evolutionary separation for significant periods (Paetkau et al., 1999). They are not subpopulations in a biological sense, and more accurately may be considered management units (Aars et al., 2006; Vongraven & Peacock, 2011; Wiig et al., 2015).

The total global population of polar bears is approximately 22,000–31,000 animals, based on estimates for the subpopulations—not including the Arctic Basin subpopulation for which there is no available population data. The Canadian population consists of approximately 16,000 animals, accounting for approximately 60% of the global population (COSEWIC, 2018). Approximately 75%–80% of Canadian polar bears range through Nunavut (Iverson, in litt.). There is considerable uncertainty about these numbers given the difficulty of conducting accurate polar bear population surveys. The data are considered poor or outdated for some subpopulations (Wiig et al., 2015).

Subpopulations and Canada

Fourteen of the polar bear subpopulations are located at least partially within Canadian territory (Table 1). The Arctic Basin subpopulation is shared with Greenland, Norway, Russia, and the United States, but there is no active monitoring or management of the subpopulation (Iverson, in litt.).

Of the 14 subpopulations that fall within Canadian jurisdiction, only the Southern Beaufort Sea is not at least partially within Nunavut. The Gulf of Boothia, Lancaster Sound, M'Clintock Channel, and Norwegian Bay subpopulations are each located entirely within Nunavut (Canada & Nunavut, 2022), and management is the responsibility of Nunavut. The Southern Beaufort Sea subpopulation is shared between the Northwest Territories, Yukon, and the US state of Alaska, and is managed under a 1988 Inuvialuit-Inupiat management agreement (reaffirmed in 2000) (Anon., 2000; Joint Secretariat, 2017).

Nunavut shares the management of the other subpopulations with different jurisdictions as follows:

- Davis Strait is shared within Canada between Nunavut, Québec, Newfoundland and Labrador. Externally, Davis Strait is shared with Greenland (Denmark).
- Foxe Basin is shared with Québec.
- Western Hudson Bay is shared with Manitoba and Ontario.
- Northern Beaufort Sea and Viscount Melville Sound are shared with the Northwest Territories.
- Southern Hudson Bay is shared with Québec and Ontario.
- The Baffin Bay and Kane Basin polar bear subpopulations are shared with Greenland and jointly managed via an MOU between Canada, Nunavut, and Greenland (Canada, 2021).[2]

[2] At the time of writing the MOU was undergoing revision (Iverson, in litt).

Table 1. Canadian Polar Bear subpopulations and management authorities

Subpopulation	Provincial and Territorial Management Authorities	Foreign Co-Management Partners
Arctic Basin	Nunavut & Northwest Territories	Greenland, Norway, Russia & United States
Baffin Bay	Nunavut	Greenland
Davis Strait	Nunavut, Newfoundland and Labrador & Québec	Greenland
Foxe Basin	Nunavut & Québec	-
Gulf of Boothia	Nunavut	-
Kane Basin	Nunavut	Greenland
Lancaster Sound	Nunavut	-
M'Clintock Channel	Nunavut	-
Northern Beaufort Sea	Nunavut & Northwest Territories	-
Norwegian Bay	Nunavut	-
Southern Beaufort Sea	Northwest Territories & Yukon	United States
Southern Hudson Bay	Nunavut, Ontario & Québec	-
Viscount Melville Sound	Nunavut & Northwest Territories	-
Western Hudson Bay	Manitoba, Nunavut & Ontario	-

Source: (Canada & Nunavut, 2022; Shadbolt et al., 2012). There is currently no active monitoring or management the Arctic Basin subpopulation.

Polar bear conservation status

Global

In 2015, the International Union for Conservation of Nature (IUCN) assessed the status of the polar bear as Vulnerable (facing a high risk of extinction in the wild) due to projected population reduction within the next 10 years or three generations resulting from the loss of sea-ice forecast by climate models (Wiig et al., 2015). The uncertainty in polar bear abundance was a factor in the assessment.

Canada

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the polar bear as a species of special concern due to the predicted decline in the Canadian population over the next three generations resulting from the reduction of seasonal sea ice (COSEWIC, 2018). In 2011, the polar Bear was listed as a species of special concern under the Species at Risk Act (SARA). A special concern listing triggers the development of a federal Management Plan that must include measures to conserve the species (Canada, 2002). Manitoba and Ontario have designated polar bears as threatened (Manitoba, 1990, 1998; Ontario, 2007). Québec, and Newfoundland and Labrador have listed the species as vulnerable (NL, 2001; Québec, 1989) (equivalent to special concern under SARA). The Northwest Territories has designated polar bears as a species of special concern (NWT, 2009).

United States

In December 2006, the United States Fish and Wildlife Service (USFWS) published a status assessment of the polar bear that supported listing the species on the US Endangered Species Act (ESA) (Schliebe et al., 2006). In May 2008, the USFWS published a Final Rule in the Federal Register listing the polar bear as a threatened species under the ESA (USFWS, 2008a). This listing automatically designated the polar bear as a depleted species under the Marine Mammal Protection Act (MMPA). As a result, since May 15, 2008, the importation of sport-hunted polar bear trophies into the United States has been prohibited (USFWS, 2008b).

Convention on International Trade in Endangered Species of Wild Fauna and Flora

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a multinational agreement that originally entered into force on July 1, 1975. The goal of CITES is to ensure international trade in wild animals and plants does not threaten their survival thereby ensuring international trade in wildlife is conducted at sustainable levels (CITES, 2021c). Canada was the 10th nation to join CITES and brought the treaty into force on July 9, 1975. As of October 2021, 183 Parties had joined CITES (CITES, 2021b).

Each Party is required to designate at least one Management Authority and one Scientific Authority. The primary function of the Management Authority is to issue import, export and re-export permits and certificates according to the rules of CITES. To issue these permits the Management Authority must make several findings and consider recommendations from the relevant Scientific Authority. The primary function of a Scientific Authority is to consider species data and advise the Management Authority regarding the issuance of permits (CITES, 1973).

Functionally, CITES works by prohibiting international trade in endangered species (with limited exceptions) and regulating international trade in species vulnerable to overexploitation. CITES monitors and regulates international wildlife trade through an international permitting system. Countries grant permits only if defined conditions are met, and permits must be presented before specimens of species subject to the Convention may cross international borders (CITES, 1973).

The "Parties" are the members of CITES. Historically the Parties were individual States. However, in July 2015 the European Union became the first Regional Economic Integration Organization to become a full member of the Convention (TRAFFIC, 2015).

The Convention defines trade as export, re-export (export of a previously imported specimen), import and introduction from the sea.

Species of concern are listed in three Appendices, each of which sets different restrictions on the international trade in those species:

- Appendix I lists species that are threatened with extinction. Trade in Appendix I species is permitted only in very limited circumstances and trade for primarily commercial purposes is generally prohibited. Both an import permit from the importing country and an export permit or re-export permit from the country of export are required for trade in Appendix I specimens (CITES, 1973).
- Appendix II lists species that are not currently threatened with extinction but may become so if their trade is not regulated. Species may also be listed on Appendix II because they cannot easily be distinguished from other species listed on Appendix I or II (CITES, 1973). Trade in an Appendix II specimen requires a CITES export permit or re-export certificate issued by the exporting or re-exporting country (respectively) (CITES, 1973).
- Appendix III includes species that have been listed by individual countries. Any Party may list native species in Appendix III when those countries wish to exert control over the export of those species. If an Appendix III specimen originates from the listing Party, then a CITES export permit from that Party is required for export. Trade in specimens from other countries requires a certificate of origin (CITES, 1973).

Polar bears and CITES

The polar bear was originally listed on Appendix II of CITES in 1975 (CITES, 2021a). Canada initially submitted a reservation on the listing and treated the species as if listed in Appendix III.[3] Canada withdrew its reservation in 1977 (CITES, 2021a).

In October 2009, the United States submitted a proposal for consideration at the fifteenth meeting of the CITES Conference of the Parties (CoP15) to transfer the polar bear from CITES Appendix II onto Appendix I (USA, 2009). Transferring the polar bear to CITES Appendix I would not have directly impacted subsistence hunting by indigenous peoples but would have prevented international commercial trade in the products of hunting, such as hides and skulls. The US proposal was defeated at CoP15 in Doha, Qatar (CITES, 2010). In October 2012, the United States again submitted a proposal to transfer the polar bear onto Appendix I (USA, 2012). This proposal was defeated at the sixteenth CITES Conference of the Parties (CoP16) in Bangkok, Thailand (CITES, 2013c).

Canadian polar bear management

Under Canada's Constitution, the responsibility for wildlife management is shared between the federal, provincial, and territorial governments. The provinces and territories have jurisdiction over wildlife within their borders, while the federal government has jurisdiction over coastal and inland fisheries, migratory birds, marine mammals, and wildlife on federal land (such as national parks). The federal government also has jurisdiction over international and interprovincial trade (Anon., 1867).

Polar bears are not designated as marine mammals under the Canadian Fisheries Act (Anon., 1985). The provinces and territories have the authority and responsibility for polar bear management while the federal government is responsible for regulating exports (and imports) of polar bears.

Polar Bear Administrative Committee

The Polar Bear Administrative Committee (PBAC) was founded to provide a forum for cooperative management of polar bear populations, and to ensure Canada fulfils its obligations for polar bear conservation under the 1973 Agreement on the Conservation of Polar Bears.[4] PBAC is comprised of representatives from Environment and Climate Change Canada (ECCC), Parks Canada Agency, the provinces and territories with polar bear populations, polar bear co-management partners under Land Claims Agreements, and organizations representing Indigenous peoples (Nunavut & Canada, 2021a).

PBAC established the Polar Bear Technical Committee (PBTC) to review scientific research and Indigenous Traditional Knowledge and provide an annual status assessment of the Canadian polar bear subpopulations. PBTC includes provincial, territorial and federal scientists, experts from within Indigenous user groups, Wildlife Management Boards and ex-officio members from the US Fish and Wildlife Service, the US Geological Society, the North Slope Borough and the Greenland Institute of Natural Resources (Nunavut & Canada, 2021b).

PBAC meets annually to review the recommendations of the PBTC and coordinate polar bear management across jurisdictions (Nunavut & Canada, 2021a).

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[3] CITES Parties may make reservations regarding amendments to Appendix I or II. Until a reservation is withdrawn a Party is treated as if it was not a CITES Party for trade in the species concerned (CITES, 1973).

[4] The Agreement on the Conservation of Polar Bears is a multilateral treaty on the conservation of polar bears signed by the five polar bear range States.

CITES Permit issuance

As of August 2020, the Canadian provinces of British Columbia, New Brunswick, Ontario, and Yukon territory issued CITES export permits for terrestrial wildlife within their jurisdiction on behalf of the national CITES Management Authority of ECCC. However, all CITES permits for exporting polar bears are issued by the national Management Authority, which is part of the Canadian Wildlife Service (CWS) of ECCC (Jubinville, in litt.).

CITES permit information is managed via the CITES Electronic Permitting System (CEPS), which allows permits to be issued electronically. Scanned copies of CITES export permits that have been validated by the Canada Border Services Agency (CBSA) are stored in the database. This allows the permitting office to monitor when exports occur and which goods specifically have been exported (e.g., if a permit authorized two polar bear hides to be exported, and only one was shipped, then the second hide is still exportable).[5]

The CEPS database is not accessible to outside authorities. However, ECCC Wildlife Enforcement Directorate (WED) officers can access permit data via a Memorandum of Understanding (MOU) between WED and the CWS regarding data exchange (Sirois, pers. comm.). The CITES Management Authority will contact WED about questionable applications, or when WED has advised the Management Authority to watch for certain issues (Jubinville, in litt.).

Concern over demand and high prices for polar bear hides

In 2011, the Canadian Broadcasting Corporation reported the soaring demand for polar bear hides was provoking concerns about overhunting (CBC, 2011). Also in 2011, MacLean's magazine wrote that *"High prices leave the polar bear population at risk"* (Köhler, 2011).

In 2012, MacLean's reported that the prices paid for polar bear hides sold at auction had increased by over 200% in the previous two years, and one hide sold for a record high of CAD 12,400 (USD 12,941) (Köhler, 2012). MacLean's suggested the demand for hides was increasing in anticipation of CITES CoP16 where the USA proposal to transfer the polar bear onto CITES Appendix I would be debated (USA, 2012). They concluded the potential end to commercial trade in polar bear products was stimulating buyers who wanted to acquire these products while they still could. In 2012, Northern News Services reported the high prices were due mainly to increasing demand for polar bear hides in Russia and China (Anon., 2012).

In 2013, a National Post story, entitled *"Canada's fur trade is booming again — thanks to demand from China's new capitalists"* reported another record was set when a polar bear hide sold for CAD 22,000 (USD 20,926) (O'Connor, 2013). At CITES CoP16 (2013), a document was circulated entitled *"On the Precipice: Why International Commercial Trade in Polar Bears Must Be Eliminated"* which stated polar bear hide prices had contributed to overharvesting in Québec and an unsustainable harvest rate for the Southern Hudson Bay polar bear population (NRDC, 2013). An Information Document was also submitted at CoP16 (CoP16 Inf. 15) which suggested international demand for polar bear parts had soared and contributed to skyrocketing prices, increased quotas and increased harvest (CITES, 2013a).

After CoP16 concluded, stories about polar bear trade disappeared from the media and the demand and prices for polar bear hides ceased to be topical.

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[5] Note that Canada intends to launch a new online electronic permitting system.

3. Methods

Information sources and data variability

This report was compiled via analysis of Canadian polar bear harvest and trade data, compilation of polar bear hides auction prices, literature reviews and interviews with relevant experts and authorities.

The trade and hunting data used in this report were accessed from different databases and sources. These databases are not static, and the information compiled in them may change over time for various reasons. Errors in recording or reporting may be eventually corrected and delays in transfer of harvest information from remote communities may occur. Furthermore, the data in CEPS are based on permit issuance and unused export permits will be cancelled and may or may not be re-issued. The harvest and trade data reported in this document were as available in January 2022 and may differ slightly from previous or future reports drafted using the same databases. Any differences in the data will be minor and will not significantly affect the results of any analysis.

Definitions

A variety of terms may be used to describe the skin of a polar bear once it has been removed from the carcass, including skin, hide, rug, and mount—depending on the source and how the item has been processed and for what purpose. For consistency, this report uses the term "hide" throughout for any reference to the whole, detached skin of a bear, whether it is raw, tanned, or used to create a product such as a rug or a mounted specimen. "Hide" was chosen rather than "skin" to avoid confusion with smaller pieces of skin that are also in trade and because "hide" is a more precisely defined term.[6]

The data provided by ECCC included the numbers of "skins" and "bodies" (fully mounted bears using the hide but not the skull of an animal) that had been exported from Canada. These numbers were combined and reported herein as "hides."

The terms "quota" and "Total Allowable Harvest (TAH)" are used by different sources when referring to the number of polar bears that can be killed each year. Some use slightly different definitions for the terms, but in common parlance they are used interchangeably.[7] Furthermore, "quota" is a less technical term that is often easier to use and understand in written text. Therefore, for the purpose of this report, both terms are used synonymously.

Various jurisdictions may use slightly different definitions for what constitutes a kill for defence. The Polar Bear Range States Conflict Working Group references "polar bears killed in response to, or to prevent, conflicts with humans" (Iverson, in litt.). In Canada, the defence of property may also be a valid reason to kill a polar bear. Furthermore, the Government of Nunavut Polar Bear Defence Kill Regulations authorize and regulate the killing of polar bears to prevent the starvation of a person, to preserve the life of a person, or to protect property (Nunavut, 1999). For this report, kills for defence refers to polar bears killed in response to, or to prevent, conflicts with humans, and in some locations to protect property.

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[6] Merriam-Webster defines "hide" as "*the skin of an animal whether raw or dressed —used especially of large heavy skins*" (Merriam-Webster, 2021).

[7] For example, The Wildlife Management Advisory Council (North Slope) has noted that if a TAH has been established for a population, then a quota will be used to distribute the animals that may be harvested between different groups of harvesters, communities, seasons, uses, etc (WMAC(NS), 2008).

Quotas and numbers of bears killed by hunting season

Hunting statistics are compiled based on hunting seasons that may overlap two calendar years. Therefore, hunting seasons are referenced using the years that are overlapped by the season. For example: 2007/08 would refer to the hunting season beginning in 2007 and ending in 2008.

For consistency, when comparing trade data to hunting season data, this report follows the approach taken by Canada in preparing the information document about polar bear trade distributed at CoP16 (CITES, 2013b). Using the previous example, data for the 2007/08 hunting season would be compared to 2008 trade data. This provides only a crude comparison of hunting and trade because polar bear hides and skulls may be exported years after the animal was hunted.

The established polar bear hunting quotas and the actual numbers of bears killed in the hunting seasons 2011/12 to 2019/20 were provided by the authorities of the provinces and territories through which polar bears range.

Analysis of Canadian trade data

Polar bear export data for the years 2012–2021 were sourced from the CEPS and provided to the author by the ECCC national CITES Management Authority. Data for pre-convention items and products traded for law enforcement purposes were excluded from the analysis.

These data were sorted and tabulated to summarize the following results:

- The numbers of polar bear hides and skulls exported from Canada, sorted by purpose of export, for the years 2012–2021.
- The main destination countries for hides and skulls exported from Canada, and purpose of export, for the years 2012–2021.
- The numbers of polar bears exported from Canada in the years 2012–2021, calculated from the numbers of hides and skulls cross-referenced against hunting tag numbers.

These data were further plotted to offer insight regarding the following:

- Trends in the numbers and purpose of export for Canadian polar bear hides and skulls for the years 2012–2021.
- Trends in Canadian exports of hides and skulls exported to China and other important importing countries.
- The numbers of polar bears represented in Canadian exports in 2012–2021.
- The numbers of polar bears exported vs killed in Canada in 2012–2021.

Canadian export data was also used to prepare a 20-year review of polar bear hide exports. In addition to the above-mentioned data for 2012–2021, this review used the following:

- Data for the years 2002–2010 were compiled from the United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC) CITES Trade database using the option for comparative tabulation reports.
- Polar bear trade data for the years 2010–2014 were originally obtained from ECCC in 2013 and 2014 for inclusion in Cooper (2015). These latter data were sourced from the CEPS and an older database called the National Enforcement Management Information System and Intelligence System (NEMISIS).

Numbers of bears exported from Canada

For the years 2012–2021, the information collected in the CEPS databases included the hunting tag number associated with each hide and skull exported. Hunting tags are unique to each bear killed. Hence, if a skull and hide both have the same tag number, they both came from the same bear. The numbers of bears exported each year was thereby calculated by deleting entries with duplicate tag numbers. In some years, the tag numbers of a small number of hides or skulls were not recorded. In those cases, the minimum and maximum numbers of bears exported from Canada as hides or skulls were calculated using the following formula:

Minimum = A + (B – C) Maximum = A + (B – C) + D

A = the total number of hides exported with a tag number.
B = the total number of skulls exported with a tag number.
C = the number of skulls with tag numbers that match tag numbers for hides.
D = the number of hides and skulls that had no tag number recorded.

Exported hides and skulls were also sorted and tabulated by the hunting seasons in which the individual animals were killed. Hunting seasons were not recorded for many of the hides and skulls exported in 2012, and therefore 2012 data were excluded from this analysis. The numbers of bears represented by these data were calculated through a comparison of tag numbers and compared to the numbers of bears killed in those seasons.

Data for Canadian exports of bobcat, lynx, otter, and wolf hides in the years 2012–2021 were compiled and trends in these exports were compared to the trends for polar bear hides. The data for bobcat, lynx, otter, and wolf were compiled from the Canadian export data reported in the UNEP-WCMC CITES Trade Database and the CEPS.

Analysis of auction prices

Historically, most of the polar bear hides sold by auction in Canada have been sold via Fur Harvesters Auction Inc. (FHA). Information on polar bear hides sold at auction was requested from the FHA and from the Government of Nunavut, which is the only provincial or territorial authority tracking these data. The information requested included the number of polar bear hides offered for sale; the number sold; the highest price; and the average price for auctions held in 2012–2021. The data received were tabulated and plotted against the numbers of bears killed for each of those years.

The prices and values of polar bear hides have been recorded in both Canadian dollars (CAD) and US dollars (USD) based on the average exchange rate for the year a cited work was published.

Canadian domestic trade chain

Since the 2013/14 hunting season, ECCC has been recording in the CEPS database the province or territory, and subpopulation in which every polar bear was killed. These data were used to prepare a snapshot of Canadian polar bear hunting and exporting activities in 2019, sorted by provincial and territorial jurisdictions. Hunting and export activities were disrupted in the years 2020–2021 due to the Coronavirus disease 2019 (COVID-19) pandemic. The year 2019 was chosen as the most recent example of a "normal" year of polar bear hunting and trade activities.

Cooper (2015) included two flowchart diagrams that detailed the trade chain for exporting Canadian polar bear hides, from hunter to destination. These diagrams were prepared using information compiled for the study, consultation with Canadian authorities and personal observations of the author. Those diagrams are included in this report after being reviewed by relevant experts to ensure they reflect the current systems.

4. Hunting Quotas and Harvest Numbers

Inuvialuit Settlement Region

The Inuvialuit Final Agreement (IFA) between the Government of Canada and the Inuvialuit was signed in 1984. Under the agreement, the Inuvialuit have the exclusive right to hunt polar bears in the Inuvialuit Settlement Region (ISR) which encompasses the northern portion of Yukon (called the Yukon North Slope) and the northwest portion of the Northwest Territories (Canada, 2005a; IRC, 2021; Shadbolt et al., 2012). There are currently no year-round communities located in the Yukon North Slope, so while polar bear hunting does occur there, harvest is highest in the Northwest Territories portion of the ISR.

The TAH levels for polar bears are established per the IFA with community input. Polar bear hunting levels and subpopulations abundance data are reviewed annually by the North Slope and Northwest Territories Wildlife Management Advisory Councils, Inuvialuit Game Council, and commissioners for the Inuvialuit-Inupiat agreement. Local knowledge, traditional knowledge, and scientific monitoring data are used to determine and recommend changes to TAH levels to meet management objectives. Depending on the subpopulation(s), these recommendations may be subject to final acceptance by the relevant territorial and federal ministers (Joint Secretariat, 2017).

Polar bears in the ISR are managed under a quota that includes all human-caused mortality, and community compliance is high. The number of female bears killed must not exceed one-third of the quota. Set hunting seasons ensure pregnant females are free to establish maternity dens. Harvest of bears in a den, constructing a den, or accompanied by a cub is prohibited. Hunting tags, harvest reporting, and sample collection (including proof of sex and a tooth) are mandatory. Inuvialuit are permitted to transfer their exclusive hunting rights to guided hunters. A hunting tag that was allocated to a guided hunter cannot be reallocated if the hunt is unsuccessful (Joint Secretariat, 2017).

The total hunting quota was reduced from 103 to 96 animals for the 2013/14 hunting season and did not change in subsequent years (Table 2). The number of bears hunted never exceeded the quota for any season, and in most seasons was significantly lower than the quota.

A total of 451 polar bears were killed in the ISR in the ten hunting seasons 2011/12–2020/21. The numbers killed ranged from a high of 83 (in 2011/12) to a low of 16 (in 2020/21). Overall, the numbers of bears killed in the ISR declined throughout the study period, with a short anomalous peak in the 2015/16 season (Table 2; Fig. 1). Of the 451 kills, 398 were for subsistence, 26 for sport and nine for defence. There was one illegal kill in 2012/13 and one miscellaneous kill in 2016/17. Subsistence hunting accounted for 91% of all kills, while sport hunting allocations accounted for 6% (Table 2; Fig. 2). All the bears killed in 2020/21 were hunted for subsistence.

Sport kills occurred in every season except for 2016/17 and 2020/21 but were never very numerous (Table 2; Fig. 2). The maximum number of sport kills in any one year was seven in 2011/12. In most years there were four or fewer bears killed for sport.

A total of 280 male and 155 female bears were killed in 2011/12–2019/20, accounting for 64% and 36% of kills (respectively). Most of the bears hunted for sport (23 out of 26) were male, whereas most of the bears killed for defence (8 out of 9) were female (Table 2; Fig. 2).

Table 2. Polar bear quotas and kills in the Inuvialuit Settlement Region, 2012–2021

Hunting Season	Category	Males	Females	Total
2011/12	Quota	69	34	**103**
	Subsistence kills	45	31	**76**
	Sport kills	7	0	**7**
	Total kills	52	31	**83**
2012/13	Quota	69	34	**103**
	Subsistence kills	40	20	**60**
	Sport kills	1	-	**1**
	Defence kills	-	1	**1**
	Illegal kills	-	1	**1**
	Total kills	41	22	**63**
2013/14	Quota	64	32	**96**
	Subsistence kills	30	15	**45**
	Sport kills	1	-	**1**
	Defence kills	-	1	**1**
	Total kills	31	16	**47**
2014/15	Quota	64	32	**96**
	Subsistence kills	23	14	**37**
	Sport kills	1	-	**1**
	Total kills	24	14	**38**
2015/16	Quota	64	32	**96**
	Subsistence kills	29	24	**53**
	Sport kills	4	1	**5**
	Defence kills	-	2	**2**
	Total kills	33	27	**60**
2016/17	Quota	64	32	**96**
	Subsistence kills	27	8	**35**
	Defence kills	1	3	**4**
	Miscellaneous kills	1	-	**1**
	Total kills	29	11	**40**
2017/18	Quota	64	32	**96**
	Subsistence kills	26	12	**38**
	Sport kills	3	1	**4**
	Total kills	29	13	**42**
2018/19	Quota	64	32	**96**
	Subsistence kills	20	12	**32**
	Sport kills	4	1	**5**
	Defence kills	-	1	**1**
	Total kills	24	14	**38**
2019/20	Quota	64	32	**96**
	Subsistence kills	15	7	**22**
	Sport kills	2	-	**2**
	Total kills	17	7	**24**
2020/21	Quota	64	32	**96**
	Subsistence kills	6	10	**16**
	Total kills	6	10	**16**
Grand total (quotas)		**650**	**324**	**974**
Grand total (kills)		**286**	**165**	**451**

Source: Baryluk (in litt.).

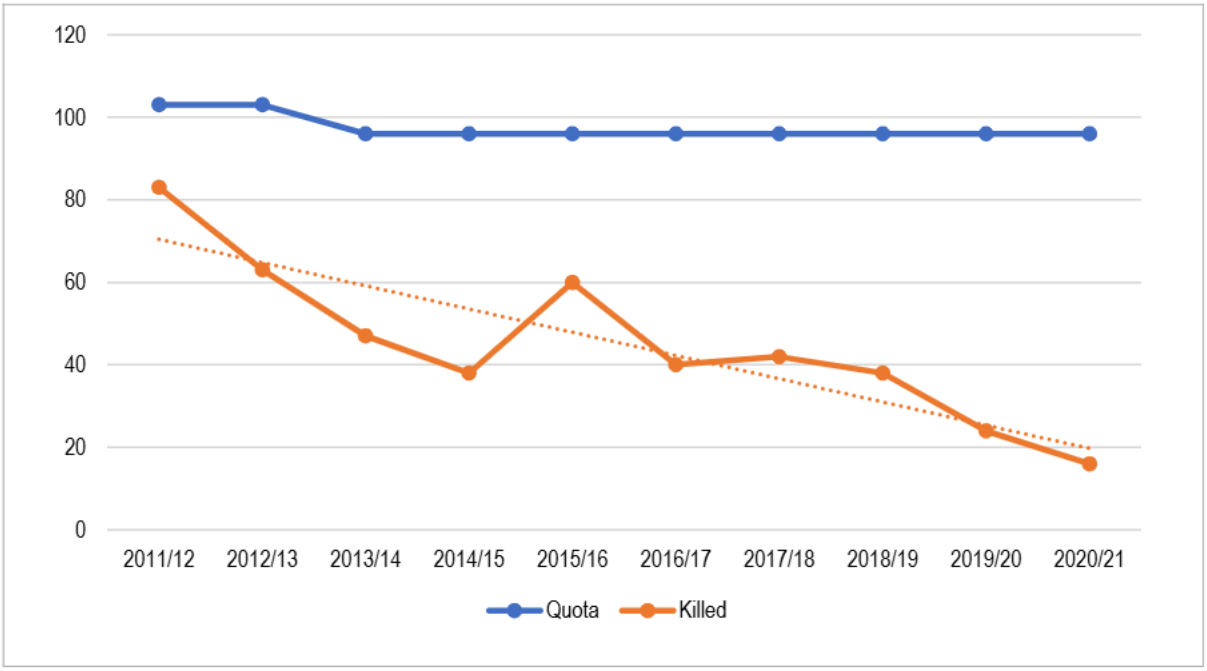

Figure 1. Hunting quotas vs kills in the Inuvialuit Settlement Region, 2012–2021
The trendline for kills is indicated by the dotted line.

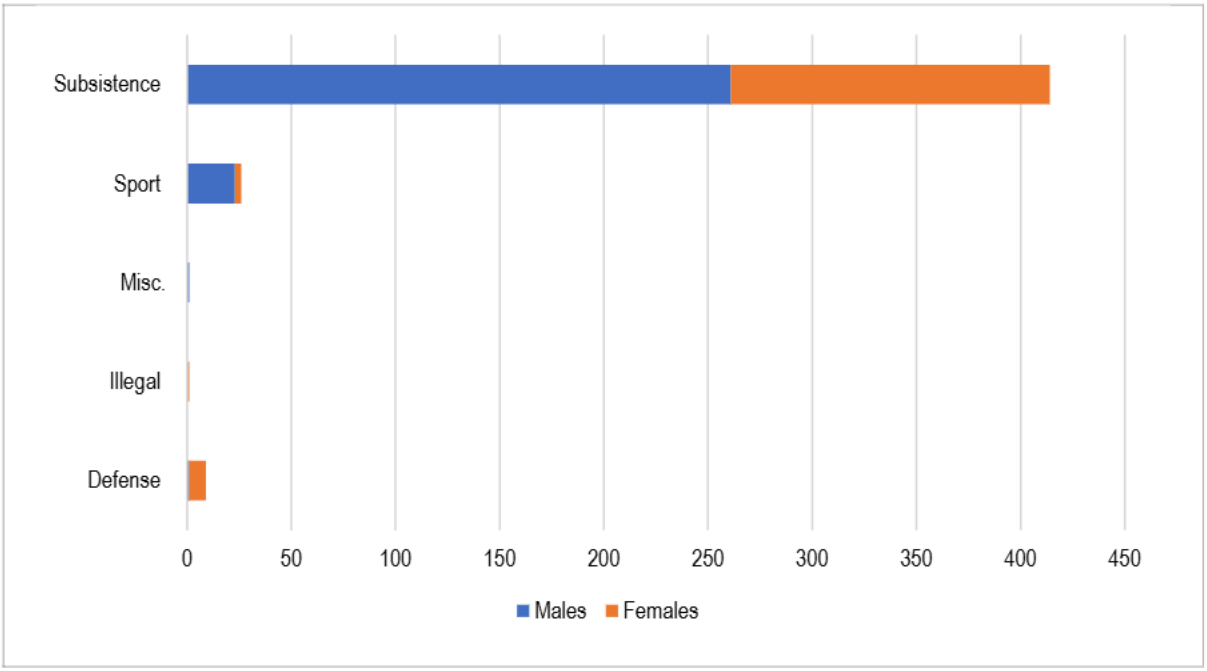

Figure 2. Bears killed in the Inuvialuit Settlement Region, by category, 2012–2021
There was one illegal (female) kill and one miscellaneous kill (male) during the period.

Manitoba

Manitoba does not permit polar bear hunting but maintains a small annual quota to account for self-defence or accidental human-caused mortalities. The annual quota was reduced from eight animals to four in 2011/2012 (Trim, in litt.).

A total of 11 polar bears were killed in Manitoba in the hunting seasons 2011/12–2020/21. The quota of four bears was not met or exceeded in any year, with the numbers killed ranging from zero to three. Seven bears were killed in defence of life and property and four were miscellaneous kills. The sexes of the bears killed consisted of four males, five females and two unknowns (Table 3).

Table 3. Polar bear quotas and kills in Manitoba, 2012–2021

Hunting Season	Category	Males	Females	Unknown sex	Total
2011/12	Quota	-	-	-	4
	Defence kills	2	-	-	2
	Total kills	2	0	0	2
2012/13	Quota	-	-	-	4
	Total kills	0	0	0	0
2013/14	Quota	-	-	-	4
	Defence kills	1	2	-	3
	Total kills	1	2	0	3
2014/15	Quota	-	-	-	4
	Miscellaneous kills	1	-	-	1
	Total kills	1	0	0	1
2015/16	Quota	-	-	-	4
	Total kills	0	0	0	0
2016/17	Quota	-	-	-	4
	Miscellaneous kills	-	1	1	2
	Total kills	0	1	1	2
2017/18	Quota	-	-	-	4
	Total kills	0	0	0	0
2018/19	Quota	-	-	-	4
	Defence kills	-	1	-	1
	Miscellaneous kills	-	-	1	1
	Total kills	0	1	1	2
2019/20	Quota	-	-	-	4
	Defence kills	-	1	-	1
	Total kills	0	1	0	1
2020/21	Quota	-	-	-	4
	Total kills	0	0	0	0
Grand total (quotas)					40
Grand total (kills)		4	5	2	11

Source: Trim (in litt.). No subsistence, illegal or sport hunting kills were recorded during the period. Manitoba has established an annual quota of four bears strictly killed for self-defence or accidental human-caused mortalities, not differentiated by sex.

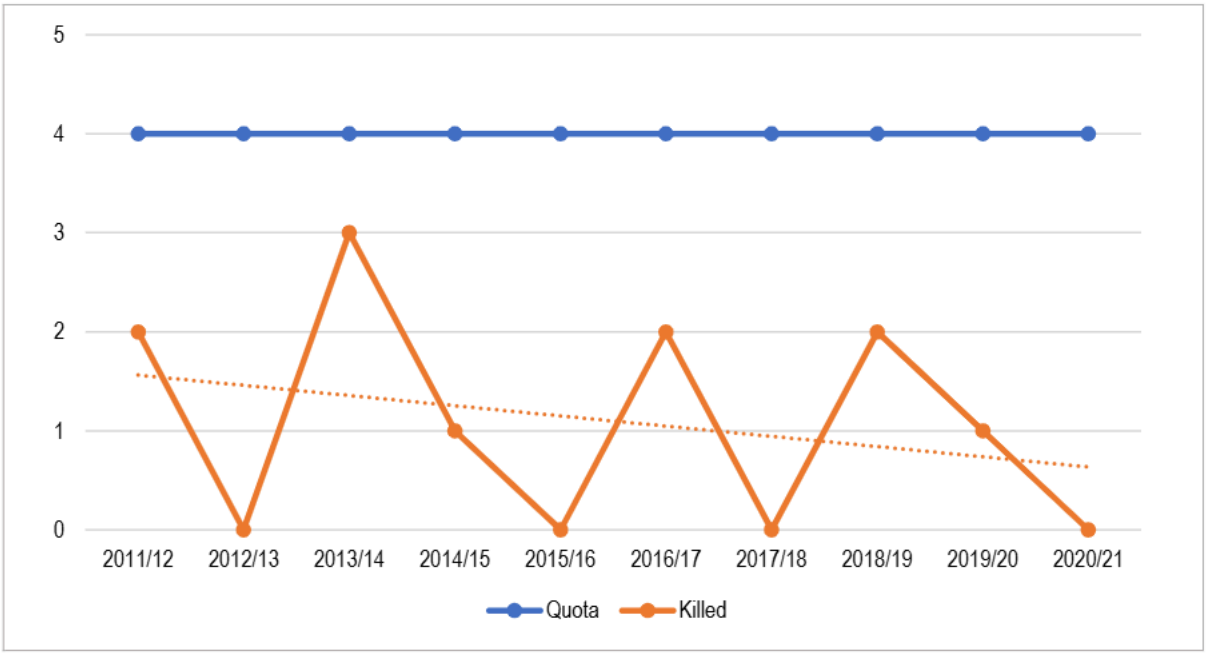

Figure 3. Hunting quotas vs kills in Manitoba, 2012–2021
The trendline for kills is indicated by the dotted line.

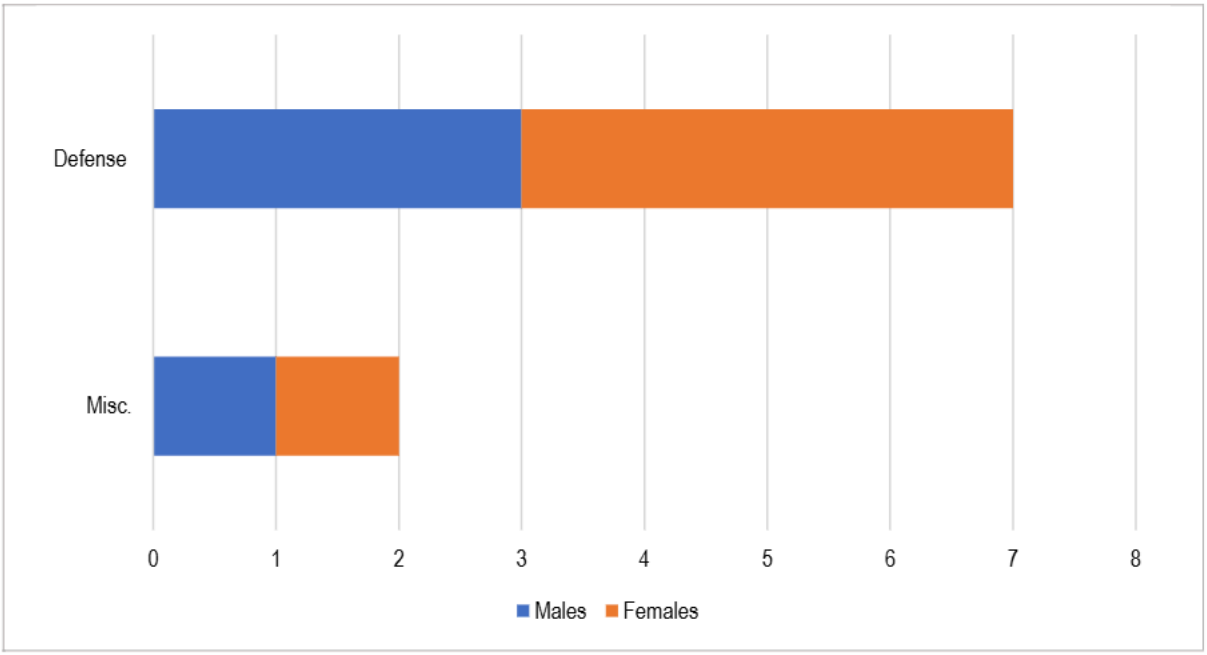

Figure 4. Numbers of bears killed in Manitoba, by category, 2012–2021
There were no bears killed for sport, subsistence or illegally during the period. Misc.= miscellaneous.

Newfoundland and Labrador

The Labrador Inuit right to harvest polar bears was originally limited to four bears due to the abandonment of Port Burwell (Killiniq) in 1978 and the division of that community's quota of eight polar bears equally between Québec, and Newfoundland and Labrador (Urquhart and Schweinsburg 1984). The initial quota of four bears was later increased to six, and then to 12 in 2012 (Dicker, in litt.). The quota is not sex-limited (Goudie, in litt.).

Under the Labrador Inuit Land Claims Agreement (LILCA), Labrador Inuit have the exclusive right to harvest throughout the Labrador Inuit Settlement Area (LISA) (Canada, 2005b). The polar bear TAH is established by the Torngat Wildlife and Plants Co-Management Board, in accordance with Part 12.9.1(a) of the LILCA. Board decisions are based on indigenous knowledge and western science, and consultation with other co-management partners and Nunatsiavut beneficiaries. In the Province, this species is managed under the LILCA as well as the Wild Life Act and Wild Life Regulations. In areas of the province that fall outside of LISA, polar bears are protected against hunting under the regulations (Dicker, in litt.).

Between 8–12 bears were hunted each season in Newfoundland and Labrador during the study period. All were taken for subsistence purposes except for two defence kills in 2011/12 and 2020/21. In most years, the quota of 12 bears was not met (Table 4; Fig. 5). The 2020/21 decline to seven kills was apparently due to poor ice conditions impairing the hunt (Goudie, in litt.). Despite the lack of a sex-selective harvest requirement, most of the bears taken in Newfoundland and Labrador were males, with more than three males killed for every female. The proportion of males to females killed varied from season to season and ranged from 64% males (in 2018/19) to 100% males (in 2020/21).

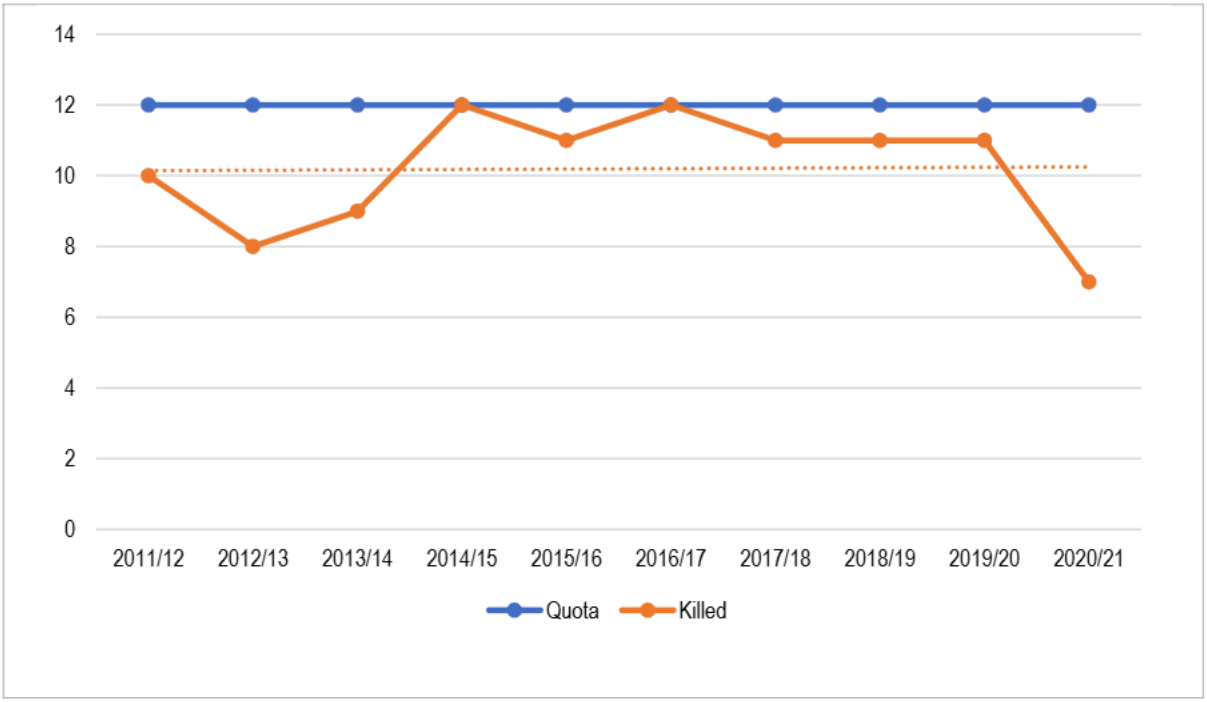

Figure 5. Hunting quotas vs kills in Newfoundland and Labrador, 2012–2021
The trendline for kills is indicated by the dotted line.

Table 4. Polar bear quotas and kills in Newfoundland and Labrador, 2012–2021

Hunting Season	Category	Males	Females	Total
2011/12	Quota	-	-	**12**
	Subsistence kills	7	2	**9**
	Defence kills	-	1	**1**
	Total kills	7	3	**10**
2012/13	Quota	-	-	**12**
	Subsistence kills	6	2	**8**
	Total kills	6	2	**8**
2013/14	Quota	-	-	**12**
	Subsistence kills	7	2	**9**
	Total kills	7	2	**9**
2014/15	Quota	-	-	**12**
	Subsistence kills	8	4	**12**
	Total kills	8	4	**12**
2015/16	Quota	-	-	**12**
	Subsistence kills	10	1	**11**
	Total kills	10	1	**11**
2016/17	Quota	-	-	**12**
	Subsistence kills	9	3	**12**
	Total kills	9	3	**12**
2017/18	Quota	-	-	**12**
	Subsistence kills	10	1	**11**
	Total kills	10	1	**11**
2018/19	Quota	-	-	**12**
	Subsistence kills	7	4	**11**
	Total kills	7	4	**11**
2019/20	Quota	-	-	**12**
	Subsistence kills	8	3	**11**
	Total kills	8	3	**11**
2020/21	Quota	-	-	**12**
	Subsistence kills	6	-	**6**
	Defence kills	1	-	**1**
	Total kills	7	-	**7**
Grand total (quotas)				**120**
Grand total (kills)		**79**	**23**	**102**

Source: Dicker (in litt.). No illegal, miscellaneous or sport hunting kills were recorded during the period. The Newfoundland and Labrador quota is not differentiated by sex.

Nunavut

Under the 1993 Nunavut Land Claims Agreement the Nunavut Inuit have the right to harvest polar bears in the Nunavut Settlement Area (NSA) (Canada, 1993). Subsequently, the Nunavut Wildlife Management Board (NWMB) was created in 1994 to work with co-management partners to manage wildlife in the NSA. Although the Government of Nunavut and Government of Canada retain ultimate responsibility for wildlife management in Nunavut, the NWMB is the main management body and regulates access to wildlife. This includes the authority to establish or modify restrictions on the hunting of polar bears—subject to approval by the relevant Nunavut Minister—within the limits set by the Nunavut Land Claims Agreement (Canada, 1993; NWMB, 2021; Shadbolt et al., 2012). The co-management partners, in addition to the NWMB and governments of Nunavut and Canada, include Nunavut Tunngavik Incorporated, Hunters and Trappers Organizations (HTOs), and Regional Wildlife Organizations (RWOs) (Nunavut, 2019a).

Nunavut uses a flexible harvest management system for polar bears based on an allowable sex ratio of bears and the estimated sustainable yield of a given subpopulation. The TAH is set by the NWMB by considering both scientific evidence and traditional Inuit knowledge. This TAH is then accepted by the minister before being divided between communities by the RWOs. Each community receives a share of the maximum sustainable harvest of bears as an annual baseline allocation from the RWOs. The HTOs may decide to hunt these animals for their own needs or to reallocate a portion to guided sport hunts. Not every community will hunt the full allocation every year. Any unused portion will be counted as credits—bears that were available to be harvested but were not taken. Credits may be used in subsequent years.

A TAH for a subpopulation may be amended based on population abundance and numbers of bears killed annually, as well as Inuit knowledge. Unused credits are zeroed when a new subpopulation estimate is generated and a new TAH is established (Nunavut, 2019a).

Every harvest season, an Annual Recommended Quota (ARQ) is calculated to incorporate a community's base allocation, any overharvests from previous seasons, and any credits used. If the numbers killed in a given season exceed the base allocation, additional tags are issued and deducted from the following year's ARQ (Nunavut, 2019a). In an overharvest situation, the next year's ARQ is reduced when there are no available credits to account for the difference (Smuk, in litt.). All human-caused polar bear deaths count towards an ARQ except for emergency (survival) kills and euthanasia of sick or injured animals. [8] Any HTO may use accumulated credits after they receive RWO approval. Credit requests that accumulate more than 25% of a subpopulation's TAH will automatically be sent to the NWMB for review due to the potential conservation concern (Nunavut, n.d.).

Prior to 2017, all Nunavut TAH's allocated two males for every female killed (Cooper, 2015; Nunavut, 2019a). In 2017, the Canada-Greenland Joint Commission on Polar Bears (JC) moved to a Baffin Bay TAH of 160 bears per year between Canada and Greenland, split evenly, at an overall sex ratio of 1:1. This decision was based on a three-year scientific study on the Baffin Bay and Kane Basin subpopulations and a Harvest Risk Assessment study completed by the Scientific Working Group (SWG) of the JC (NWMB, 2018; Regehr et al., 2017).

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[8] Emergency kills are not the same as kills for defense of life and property. An emergency kill (per the Wildlife Act) is made to prevent a person's starvation. Any such kill will be evaluated to determine that it was necessary and occurred as a last resort. Mismanagement cannot be used to justify a kill without the proper authority under the Wildlife Act. If an emergency kill is assessed as being justified and necessary it will not be deducted from the annual recommended quota (Nunavut, n.d.).

Concerns were expressed to the NWMB about the 2:1 sex ratio for other subpopulations. Communities were unhappy with the threat of increasing polar bear numbers and the penalties imposed for killing more female polar bears than allowed. Inuit hunters argued that overhunting of male bears caused an imbalance in bear populations and resulted in a population with younger, more aggressive male bears. This concern was exacerbated in 2018 after two people were killed by polar bears in Nunavut's Kivalliq region (Hutchins, 2019; Nunatsiaq News, 2018, 2019).

Nunavut subsequently changed the harvest sex ratio for all subpopulations to allow up to one female to be harvested for every male bear (1:1), beginning with the 2019/20 hunting season (Anon., n.d.). This ratio refers to the maximum number of females that may be killed, not the minimum. Up to 100% of the TAH could be filled with males. Under the system, overharvesting females will be penalised by removing the same number of females from the following year's ARQ. A community's base allocation cannot exceed 50% females. However, an ARQ could exceed 50% females if a community decides to use a portion of any accumulated female tag credits, or the male proportion of the ARQ was reduced to cover overharvest from a previous year (Ware, in litt.).

If a cub is killed for defence of life and property, the cub is counted as one-half of a tag for a male bear, regardless of its actual sex. For example, if a sow with one male cub and one female cub were all killed for defence of life and property, the sow would utilize one female tag, and the two cubs would (together) account for one male tag. However, a naturally abandoned cub that is harvested would be counted as a natural death and not counted against the ARQ (Anon., n.d.; Nunavut, 2019a).

The Nunavut Polar Bear Co-Management Plan notes the [up to] 1:1 ratio is to be followed until new information becomes available and indicates a conservation concern due to a decreased subpopulation's size or survival of females (Nunavut, 2019a). There is robust data gathering in place to support the system incorporating both western science and Indigenous Traditional Knowledge.

The TAH and ARQ for the Nunavut polar bear harvest trended upwards through the 10-year study period encompassing the hunting seasons 2011/12–2020/21. For most of those seasons the ARQ was fewer than 500 bears, but in 2019/20 it was increased to 564 bears. In 2020/21 it was increased again to 625 animals (Table 5; Fig. 6). These increases were the result of some communities requesting large numbers of polar bear credits. Most of the requests for credits went unfilled, so the higher quotas did not translate into an equivalent increase in kill numbers (Ware, in litt.).

A total of 4,268 polar bears were killed in Nunavut in the 2011/12–2020/21 hunting seasons, including 3,304 for subsistence, 415 for sport and 489 for defence. There were an additional 46 illegal kills and 14 miscellaneous kills. Subsistence hunting accounted for 77% of all the animals killed, defence accounted for 11% and sport hunting accounted for 10%. In contrast, illegal kills accounted for only 1% and miscellaneous kills for less than 0.5% (Table 5; Fig. 6).

The numbers of bears killed annually ranged from a high of 458 in 2011/12 and 2012/13, to a low of 395 in 2016/17. Although the TAH trended upwards through the period, the total numbers killed remained relatively consistent and trended very slightly downwards. However, the numbers of kills trended slightly upwards after 2017 (Table 5; Fig. 6).

The numbers killed for subsistence ranged from a low of 289 (in 2013/14) to a high of 396 (in 2020/21). Subsistence take fluctuated throughout 2012–2021, and was relatively flat for several years, but generally trended upwards. Subsistence hunting notably increased in 2019/20 and 2020/21.

The numbers of annual sport kills trended sharply upwards after the 2014/15 hunting season (Table 5; Fig. 7). Sport hunters in 2015/16–2018/19 came from 10–16 different countries per season, with most coming from the United States. The proportion of US hunters increased throughout the period, rising from 45% of the sport hunters in 2015/16 to 63% in 2018/19 (Smuk and Ware, in litt.). Sport hunting kills declined sharply by more than 50% in the 2019/20 season, and there were no sport kills in 2020/21 (Table 5; Fig. 7).

The rapid decline of sport hunting in the latter two seasons was due to the travel restrictions imposed in response to the COVID-19 pandemic. This meant fewer subsistence hunting tags were reallocated to sport hunting and increased numbers of polar bears were taken for subsistence in those seasons.

Defence kills were inconsistent, but the numbers trended down for the period (Table 5; Fig. 7).

A total of 2,758 males and 1,510 females were killed in Nunavut in 2012–2021. Males accounted for 65% of all kills and females for 35%, which is close to a 2:1 kill ratio over the decade. The proportion of males to females fluctuated year-to-year but was relatively consistent between most hunting seasons. Males accounted for only 62% in 2012/13 but increased to 70% in the 2016/17 season. The proportion of males and females killed in the 2019/20 season did not alter despite the management change to the [up to] 1:1 kill ratio. In fact, the ratio of males to females (65% to 35%) in 2019/20 was closer to an exact 2:1 ratio than in the previous four seasons. In 2020/21, 59% (n=260) of the bears killed were male and 41% (n=181) were female (Table 5; Fig. 7). This shifted the proportion of males to females to 1:1 (approximately 1.4 males were killed for each female). The increased proportion of females killed was likely due to the shift away from sport hunting (which tends to target males) and communities utilizing accumulated credits for female bears (Ware, pers. comm.).

Males accounted for 83% of all bears killed for sport, in 2012–2021, and topped 90% in some seasons. The 2019/20 season was unusual in that the number of males killed dropped much more sharply than did females.

As noted, the numbers of bears killed for defence fluctuated, but in most seasons more males were killed than females, although the numbers were typically close. However, over the entire study period the number of females killed for defence (n=250) outnumbered males (n=239) (Table 5; Fig. 7). The resulting ratio of males to females killed for defence was close to 1:1.

The pattern for subsistence kills was very similar to that for total kills (Table 5; Fig. 7).

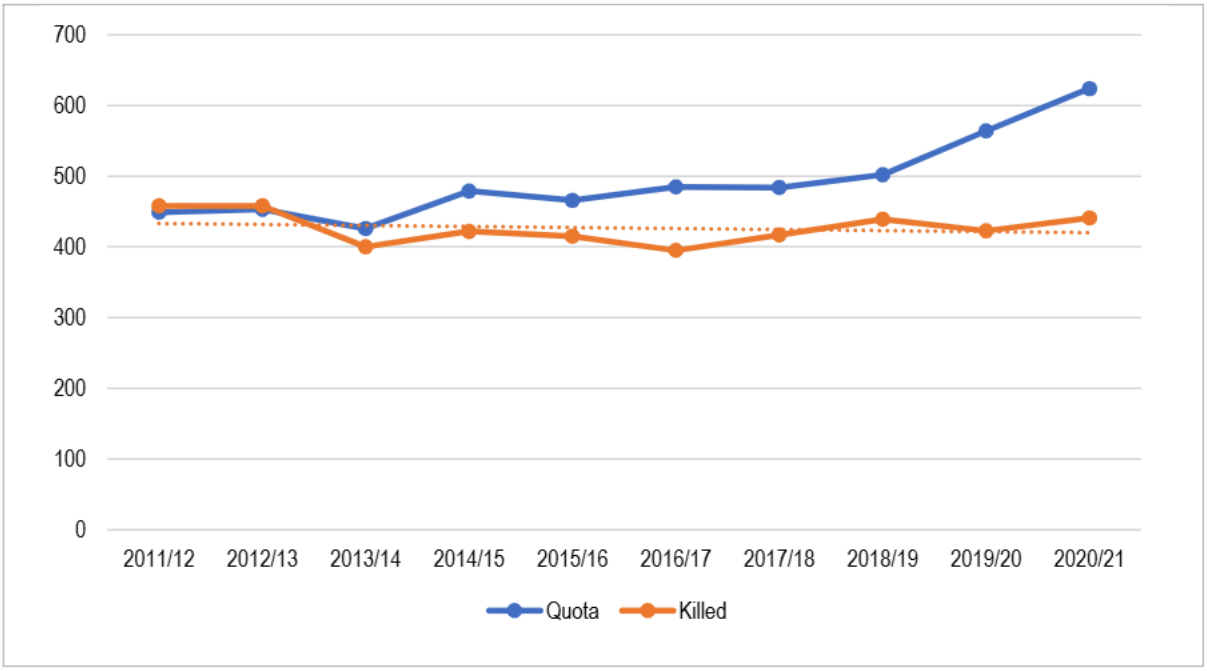

Figure 6. Hunting quotas vs kills in Nunavut, 2012–2021
The trendline for kills is indicated by the dotted line.

Table 5. Polar Bear Quotas and Kills in Nunavut, 2012–2021

Hunting Season	Category	Males	Females	Total
2011/12	Quota	310	139	**449**
	Subsistence kills	239	124	**363**
	Sport kills	34	7	**41**
	Defence kills	28	23	**51**
	Illegal kills	2	1	**3**
	Total kills	**303**	**155**	**458**
2012/13	Quota	309	144	**453**
	Subsistence kills	208	108	**316**
	Sport kills	33	11	**44**
	Defence kills	38	49	**87**
	Illegal kills	4	7	**11**
	Total kills	**283**	**175**	**458**
2013/14	Quota	291	135	**426**
	Subsistence kills	189	100	**289**
	Sport kills	41	3	**44**
	Defence kills	29	32	**61**
	Illegal kills	2	2	**4**
	Miscellaneous kills	2	-	**2**
	Total kills	**263**	**137**	**400**
2014/15	Quota	332	147	**479**
	Subsistence kills	218	114	**332**
	Sport kills	38	2	**40**
	Defence kills	20	17	**37**
	Illegal kills	3	2	**5**
	Miscellaneous kills	1	7	**8**
	Total kills	**280**	**142**	**422**
2015/16	Quota	317	149	**466**
	Subsistence kills	207	103	**310**
	Sport kills	38	7	**45**
	Defence kills	24	34	**58**
	Illegal kills	1	-	**1**
	Miscellaneous kills	1	-	**1**
	Total kills	**271**	**144**	**415**

Table 5 continued next page...

Table 5 continued...

Hunting Season	Category	Males	Females	Total
2016/17	Quota	336	149	**485**
	Subsistence kills	209	93	**302**
	Sport kills	46	5	**51**
	Defence kills	19	18	**37**
	Illegal kills	3	1	**4**
	Miscellaneous kills	-	1	**1**
	Total kills	**277**	**118**	**395**
2017/18	Quota	335	149	**484**
	Subsistence kills	200	123	**323**
	Sport kills	49	13	**62**
	Defence kills	15	13	**28**
	Illegal kills	2	1	**3**
	Miscellaneous kills	1	-	**1**
	Total kills	**267**	**150**	**417**
2018/19	Quota	331	171	**502**
	Subsistence kills	199	115	**314**
	Sport kills	48	12	**60**
	Defence kills	28	26	**54**
	Illegal kills	6	5	**11**
	Total kills	**281**	**158**	**439**
2019/20	Quota	303	261	**564**
	Subsistence kills	234	125	**359**
	Sport kills	18	10	**28**
	Defence kills	18	15	**33**
	Illegal kills	2	-	**2**
	Miscellaneous kills	1	-	**1**
	Total kills	**273**	**150**	**423**
2020/21	Quota	317	308	**625**
	Subsistence kills	239	157	**396**
	Sport kills	-	-	**0**
	Defence kills	20	23	**43**
	Illegal kills	1	1	**2**
	Total kills	**260**	**181**	**441**
Grand total (quotas)		**3,181**	**1,752**	**4,933**
Grand total (kills)		**2,758**	**1,510**	**4,268**

Sources: Dyck (in litt.); Nunavut (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019b); (Nunavut, 2021b); Smuk (in litt.); The term "Defence of Life and Property" was shortened to "Defence" for brevity. The harvest data for the 2020/21 hunting season reported here do not exactly match the data reported by Nunavut. In 2020/21 there was one male cub/yearling killed for defence of life and property and one killed illegally. Under the Nunavut system these animals were each counted as one-half of a male tag. For the purposes of this report, each of these animals was counted as a separate kill. Hence, this document counts one more male killed in 2020/21 than was reported by Nunavut.

Figure 7. Trends in numbers of polar bears killed in Nunavut, 2012–2021
Data for illegal and miscellaneous kills were excluded due to the small numbers and irregular occurrence. Trendlines are indicated as dotted lines. The trendline for male bears killed for sport is skewed due to the sharp drop in numbers taken after the 2018/19 hunting season. The numbers of males hunted for sport were trending more steeply upwards for the previous seasons. Note the charts are not presented at the same scale.

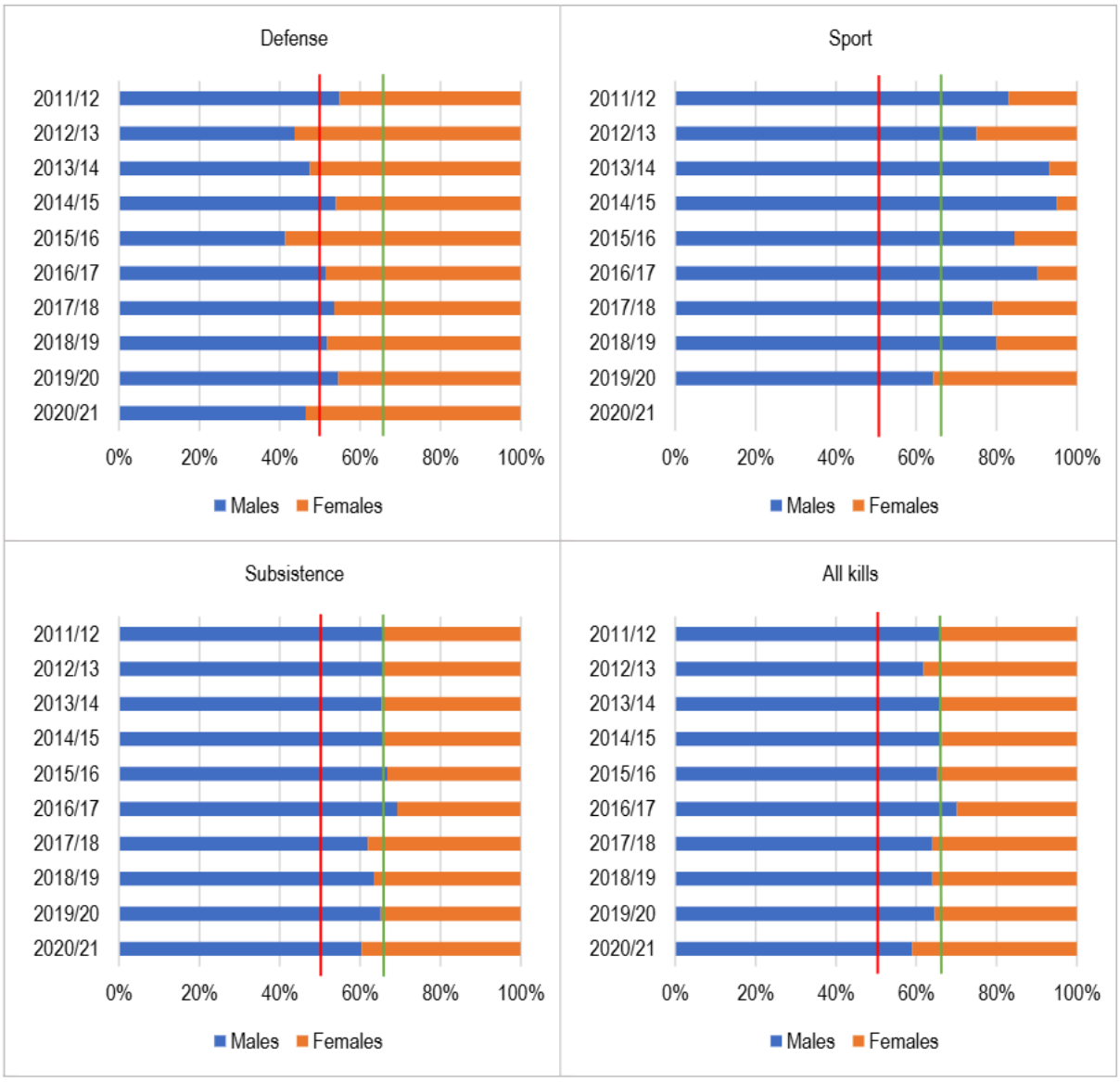

Figure 8. Male vs female bears killed in Nunavut, by hunting season, 2012–2021
Data for illegal and miscellaneous kills were excluded due to the small numbers and irregular occurrence. Vertical red lines indicate the 50% point. Vertical green lines indicate the 66% point. A 2:1 male/female sex ratio would be reached with 66% of kills in each season consisting of males. No bears were killed for sport in the 2020/21 season.

Ontario

Ontario does not have a formal quota for polar bears kills. However, only Treaty No. 9 First Nations members residing along the James Bay and Hudson Bay coast (coastal Cree) may legally hunt polar bears or possess polar bear parts in Ontario.[9] In 1976 an informal agreement was established to allow up to 30 bears to be taken per hunting season (OMNR, 2008; Tonge & Pulfer, 2011). This was not a true limit on harvest, but only 30 hides would be sealed in any year (Northrup, in litt.).[10] The sale of polar bear parts within Ontario is prohibited (Dyck et al., 2019; Ontario, 2007).

A total of 22 polar bears were killed in Ontario in the hunting seasons 2011/12–2020/21. The numbers killed per year ranged from zero to five. All were kills in defence of life and property. The sexes of the bears killed consisted of seven males, four females and 11 unknowns (Table 6).

Table 6. Polar Bears Kills in Ontario, 2012–2021

Hunting Season	Category	Males	Females	Unknown sex	Total
2011/12	Defence kills	2	-	2	**4**
2012/13	Defence kills	2	-	-	**2**
2013/14	Defence kills	-	-	-	**0**
2014/15	Defence kills	1	-	-	**1**
2015/16	Defence kills	1	-	1	**2**
2016/17	Defence kills	1	-	1	**2**
2017/18	Defence kills	-	-	-	**0**
2018/19	Defence kills	-	1	4	**5**
2019/20	Defence kills	-	2	3	**5**
2020/21	Defence kills	-	1	-	**1**
Grand total		**7**	**4**	**11**	**22**

Source: Northrup (in litt). Ontario does not have a quota for polar bears kills. Although all Ontario kills would likely be classified as defence kills, the details are not known with any certainty (Northrup, in litt.). No subsistence, illegal, miscellaneous or sport hunting kills were recorded during the period.

[9] Treaty No. 9 refers to the James Bay Treaty created in 1905 and1906 between the Crown and Ojibway, Cree, and other Indigenous Nations. The treaty covers the James Bay and Hudson Bay watersheds, about two thirds of Ontario (Canada, 1905; Ontario, 2015).

[10] Sealing refers to the to the seals or tags affixed to untanned hides by a management authority as proof of origin.

Québec

Polar bears in Québec are harvested by Nunavik Inuit and Crees of Eeyou Istchee. [11] Nunavik offshore waters and islands constitute the Nunavik Marine Region (NMR) while the waters and islands offshore of the Cree territory constitute the Eeyou Marine Region (EMR). Wildlife management in the NMR and EMR are governed by the Nunavik Inuit Land Claims Agreement and the Eeyou Marine Region Lands Claims Agreement respectively (Szor, in. litt.).

Since July 2017, a TAH of 23 bears with a 2:1 male/female harvest ratio has been established in the offshore waters (and sea ice) of the Southern Hudson Bay portion of the NMR, including the Inuit-Cree overlap area which is also part of the EMR. There are no polar bear hunting quotas established for the Eeyou Marine Region south of the Inuit-Cree overlap area nor for onshore areas subject to the James Bay and Northern Québec Agreement (JBNQA) (Dyck et al., 2019; Northrup, in litt.; Szor, pers. comm.). Similarly, no quota has been established for bears harvested within the limits of the Foxe Basin and Davis Strait subpopulations (Szor, in. litt.).

Beneficiaries of the JBNQA have a guaranteed minimum harvest of 62 polar bears shared between Nunavik Inuit (58) and the Crees of Eeyou Istchee (4) (Environment Canada, 2011; Obbard et al., 2010; Shadbolt et al., 2012). This represents the level of exploitation to be reserved for beneficiaries of the JBNQA before any other harvesting right can be issued to non-beneficiaries in the territory of application (although there is no polar bear sport hunting in Québec) (JBNQA, 1975; Szor, in. litt.).

Bears killed for protection (rather than subsistence) purposes may be reported as "investigating camp," "attracted to food/garbage," "destroyed equipment" or "endangered public safety." There are no legal consequences or different treatment in Québec for polar bears being harvested in such circumstances rather than solely for subsistence if the harvest is done by a beneficiary of the JBNQA. Bears killed for defence may be opportunistically used for subsistence and reported as killed for either purpose (Szor, pers. comm.). Reporting of polar bear hunting is voluntary in Québec, hence, the numbers presented in this report are not necessarily the total numbers killed, and constitute the *minimum* number killed (Cooper, 2015; Szor, pers. comm). However, Nunavik Inuit and Cree of Eeyou Istchee must report the polar bears they harvest and obtain a tag to be able to sell their hides to non-beneficiaries of the JBNQA (Québec, 1983). When market demand increases, there is greater incentive for hunters to report their kills. Conversely, when market demand drops, so does the incentive to report kills. In early 2021, Québec authorities completed a draft polar bear management plan which aims to revise the current harvest registration process to achieve complete and mandatory reporting of all human-caused mortalities (Szor, pers. comm.).

A total of 475 polar bears were reported killed in Québec in 2012–2021. The number of bears reported killed per season ranged from a high of 86 (in 2012/13) to a low of 10 (in 2020/21). All were killed for subsistence or defence. No illegal kills were recorded and as noted, sport hunting is not permitted in Québec (Table 7; Fig. 9). The numbers of bears reported declined substantially after 2012/13, which probably reflects both fewer bears hunted, but also fewer bears being reported. The decline in numbers reported was steeper for bears killed for subsistence than for defence (Fig. 10).

[11] Nunavik is the homeland of the Inuit in northernmost third of Québec (Nunavik, 2021). Eeyou Istchee includes 11 Cree communities represented by the Grand Council of the Crees (Cree Nation, 2021).

Subsistence hunting accounted for 63% to 90% of the polar bears killed, depending on the year (Fig. 10). Overall, 79% of the kills reported in 2012–2021 were killed for subsistence.

Despite the lack of a sex-selective harvest, 63% of the bears of known sex killed in Québec in 2012–2021 were males and 35% were females. The sex of the additional 2% was not recorded. Hence, over the study period the sex ratio of the Québec hunt was approximately 2:1. However, the proportion of males to females varied from season to season and ranged from 79% males (in 2018/19) to 52% males (in 2019/20). In most years fewer than 66% of the bears killed were males, and in 2017/18, 2019/20 and 2020/21 (three out of the most recent four seasons) the proportion of males to females approached 1:1 (Fig. 11).

Table 7. Polar Bears Kills in Québec, 2012–2021

Hunting Season	Category	Males	Females	Unknown sex	Total
2011/12	Subsistence kills	41	29	1	71
	Defence kills	6	3	-	9
	Total kills	**47**	**32**	**1**	**80**
2012/13	Subsistence kills	50	25	2	77
	Defence kills	9	-	-	9
	Total kills	**59**	**25**	**2**	**86**
2013/14	Subsistence kills	33	19	-	52
	Defence kills	17	13	-	30
	Total kills	**50**	**32**	**0**	**82**
2014/15	Subsistence kills	33	17	2	52
	Defence kills	5	3	1	9
	Total kills	**38**	**20**	**3**	**61**
2015/16	Subsistence kills	22	13	-	35
	Defence kills	4	5	2	11
	Total kills	**26**	**18**	**2**	**46**
2016/17	Subsistence kills	16	5	-	21
	Defence kills	5	3	-	8
	Total kills	**21**	**8**	**0**	**29**
2017/18	Subsistence kills	11	6	-	17
	Defence kills	1	4	-	5
	Total kills	**12**	**10**	**0**	**22**
2018/19	Subsistence kills	21	4	-	25
	Defence kills	9	4	-	13
	Total kills	**30**	**8**	**0**	**38**
2019/20	Subsistence kills	9	10	-	19
	Defence kills	2	-	-	2
	Total kills	**11**	**10**	**0**	**21**
2020/21	Subsistence kills	3	3	1	7
	Defence kills	2	1	-	3
	Total kills	**5**	**4**	**1**	**10**
Grand total		**299**	**167**	**9**	**475**

Source: Szor (in litt). Québec does not have a quota for polar bears kills. "Defence kills" represent bears that were declared as being harvested "for protection" and were either reported as "investigating camp," "attracted to food/garbage," "destroyed equipment," or "endangered public safety" (Szor, pers. comm.). No illegal, miscellaneous or sport hunting kills were recorded during the period.

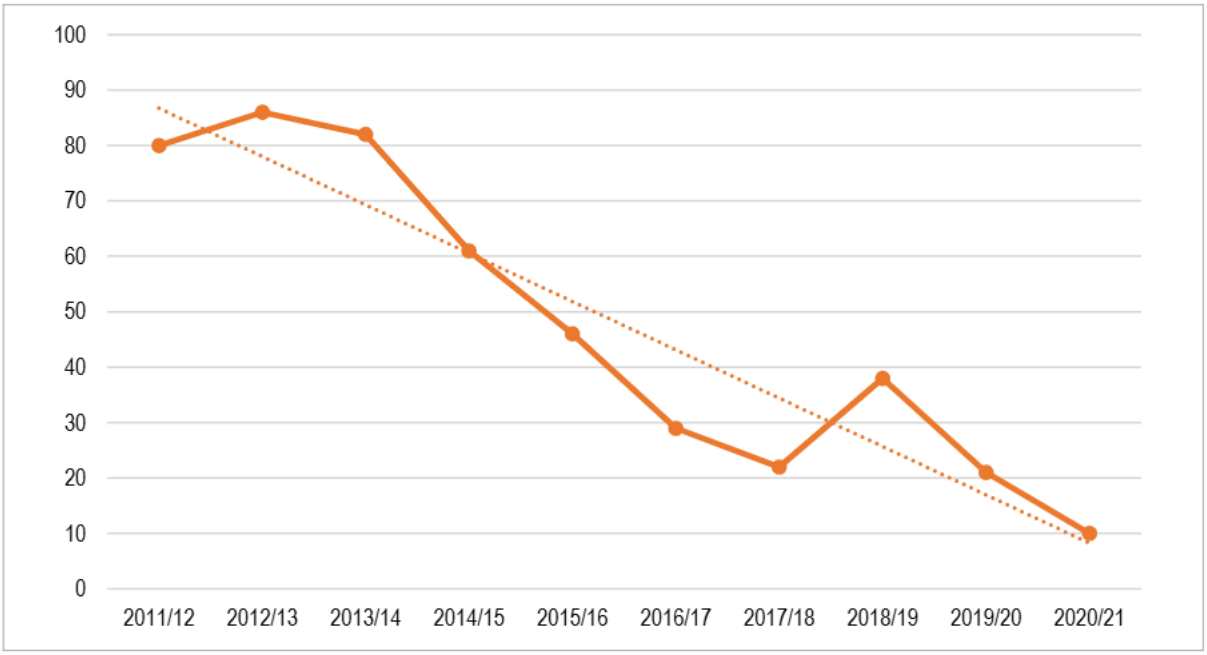

Figure 9. Reported polar bear kills in Québec, 2012–2021
There is no polar bear hunting quota for most of Québec. The trendline for kills is indicated by the dotted line.

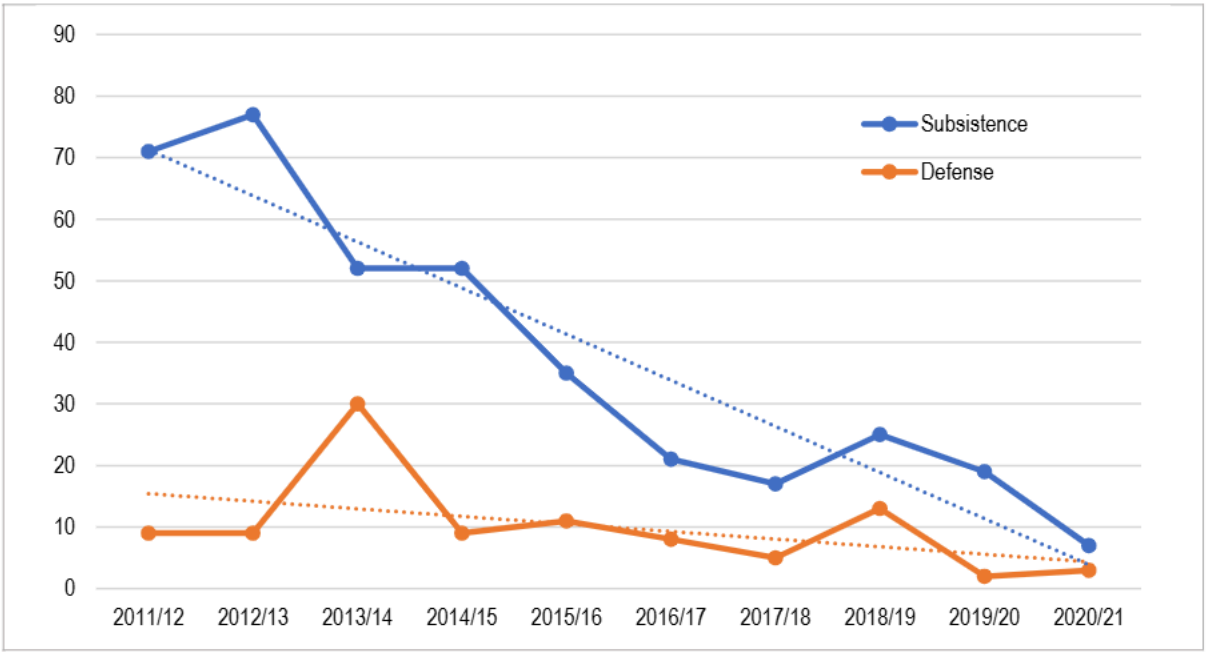

Figure 10. Reported polar bear kills in Québec, by category, 2012–2021
Trendlines for kills is indicated by dotted lines.

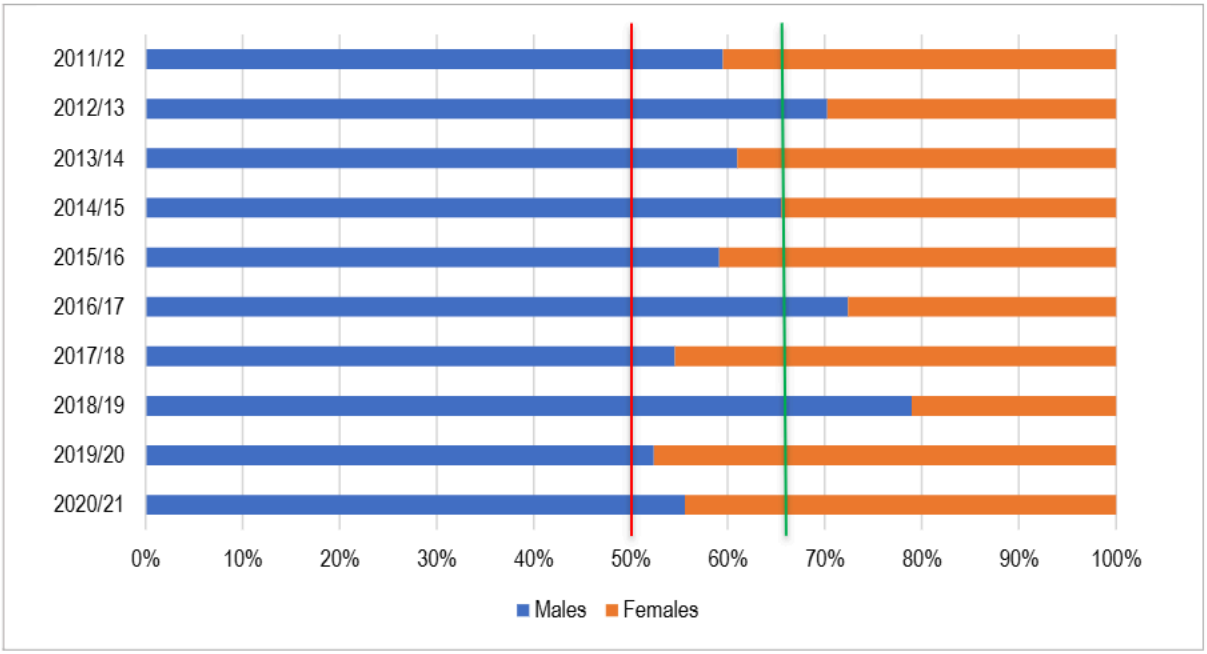

Figure 11. Male vs female bears killed in Québec, by hunting season, 2012–2021
Bears of unknown sex were excluded. The vertical green line indicates the 66% point. A 2:1 male/female sex ratio would be reached with 66% of kills in each season consisting of males.

National summary

Harvest by season

Between 2012–2021, a total of 5,329 polar bears were reported killed in Canada. Overall, the numbers killed annually trended downwards from a high of 637 in the 2011/12 hunting season, to a low of 475 in 2020/21. This was a 25% decrease over the 10-year period. A 2018/19 spike in numbers killed corresponded with a similar spike in Québec kills and a slight increase in Nunavut kills. The number of kills declined slightly in the following seasons (Table 8; Figs. 12, 13 and 14). The COVID-19 pandemic was a factor in the declining numbers killed in the 2019/20 and 2020/21 seasons.

Harvest by jurisdiction

A total of 80% (n=4,268) of all the polar bears killed in Canada in 2012–2021 were taken in Nunavut, 9% (n=475) were killed in Québec, 8% (n=451) in the ISR and 2% (n=102) in Newfoundland and Labrador. Less than 1% (n=33) were killed in Ontario and Manitoba combined (Table 9; Fig. 15).

The declining numbers of polar bears killed annually in Canada in 2012–2021 was primarily due to declining numbers killed in the ISR and Québec. The numbers for Newfoundland and Labrador, and Nunavut were much more consistent throughout the 10-year period.

Harvest by purpose

Most of the bears killed in Canada in 2012–2021 were killed for subsistence purposes and accounted for 79% (n=4,194) of all kills. Twelve percent (n=628) of kills were for defence of life or property, and 8% (n=441) were for sport. Illegal kills accounted for 1% (n=47) of all kills and less than 1% (n=19) were reported as miscellaneous kills (Table 10; Fig. 16). Although the percentages varied between hunting seasons, these basic proportions were consistent until 2019/20 and 2020/21 when sport hunting sharply declined (see below).

The 10-year trend for subsistence kills was similar to the trend for all kills together, which reflects the high proportion of bears killed for subsistence. The number of subsistence kills generally declined after the 2011/12 season (with a short peak in the 2014/15 season). However, in 2019/20 and 2020/21 subsistence kills increased despite a decrease in total numbers killed. Subsistence kills trended upwards after 2016/2017 (Table 10; Figs. 17, 18 and 19).

The numbers of bears killed for sport declined from 2011/12 to 2014/15, trended sharply upwards for the following three seasons and then dropped dramatically in 2019/20. No bears were hunted for sport in 2020/21. This abrupt crash in sport hunting was the result of the travel restrictions imposed in response to the COVID-19 pandemic. The loss of the sport hunting market likely accounts for the increase in subsistence kills in 2019/20 and 2020/21—with hunting tags being retained for subsistence hunting rather than being allocated to sport hunting (Table 10; Figs. 17, 18 and 19).

The numbers of kills for defence of life and property also trended downwards over the 10-year period but fluctuated considerably between the different seasons (Table 10; Figs. 17, 18 and 19). Miscellaneous and illegal kills were uncommon and sporadic. Approximately half of all illegal kills occurred in only two hunting seasons (2012/13 and 2018/19), and all except one of those illegal kills were in Nunavut (Table 10).

Harvest by sex

A total of 3,433 males and 1,874 females were killed in 2012–2021 (Tables 8 and 10). The sex of an additional 22 animals was not identified. The number of males killed each year steadily declined from a high of 413 in 2011/12, to a low of 278 in 2020/21 (a 33% decline over 10 years). Fewer males were killed in each season (than the previous season) except for 2018/19. The numbers of females killed annually ranged from a high of 224 in 2012/13, to a low of 141 in 2016/17. Approximately 180 females were killed in most seasons. The 2016/17 season was the only one in which fewer than 173 females were killed, while more than 200 females were killed in 2011/12, 2012/13 and again in 2020/21 (Tables 8 and 10; Figs. 13, 14, 18 and 19).

Males accounted for 65% of all polar bears killed in 2012–2021. Females accounted for 35%. This represents approximately two males for every female over the course of the study period. The proportion of males to females varied between hunting seasons but was close to a 2:1 ratio of males to females for most seasons. In 2020/21, however, only 59% of the bears killed nationally were male which reduced the kill sex ratio to 3:2 (Tables 8 and 10; Fig. 20). This shift appears to be due to the loss of sport hunting in the 2020/21 season (sport hunters predominantly target males) and Nunavut adopting the [up to] 1:1 (female/male) harvest ratio. It is difficult to assess the impact of Nunavut's revised sex ratio given the unprecedented circumstances of the 2020/21 harvest.

The proportion of males to females killed for subsistence in 2012–2021 was almost identical to that for total kills. Males accounted for 65% (n=2,720) and females for 35% (n=1,468) (approximately a 2:1 sex ratio). The sex of six animals killed for subsistence was not recorded. The 2:1 ratio of males to females was consistent throughout 2012–2020 but shifted closer to 1:1in the 2020/21 hunting season (Tables 8 and 10; Fig. 21).

More than 83% of all the bears killed for sport in 2012–2021 were males. This equates to an average of approximately 5 males killed for every female. However, the ratio of males to females varied considerably between seasons. In 2012/13, there were 34 males and 11 females killed for sport, for a sex ratio of 3:1. At the other end of the scale, in the 2014/15 season there were 39 males and only two females killed for sport, for a 20:1 sex ratio. As previously noted, in the 2019/20 hunting season the number of polar bears killed for sport declined dramatically. The number of males killed dropped from 52 (in 2018/19) to 20 (in 2019/20) corresponding to a decline of more than 60%. The number of females killed for sport in those seasons declined by only 23% in those seasons (dropping from 13 to 10). Hence, the sex ratio for sport kills increased to 2:1 (male/female) in the 2019/20 hunting season (Tables 8 and 10; Fig. 22).

The picture for defence kills was quite different, with males and females accounting for 51% (n=311) and 49% (n=304) (respectively) of the animals killed in 2012–2021 (a 1:1 sex ratio). The sexes of an additional 14 bears were not recorded.

In some seasons more female bears were killed for defence than males. The 2015/16 season was notable in that females accounted for 56% of the animals killed for defence (n=29 males and 41 females) (Tables 8 and 10; Fig. 23). Nonetheless, the proportion of males to females killed for defence was close to 1:1 for all seasons.

As noted previously, illegal, and miscellaneous kills were uncommon, and their numbers were inconsistent. The sex ratio for both illegal and miscellaneous kills was approximately 1:1 in 2012–2021 (Tables 8 and 10; Fig. 18).

Table 8. Polar Bears Killed in Canada 2012–2021, by Hunting Season

Season	Purpose	Males	Females	Unknown sex	Total
2011/12	Defence kills	38	27	2	67
	Illegal kills	2	1	-	3
	Sport kills	41	7	-	48
	Subsistence kills	332	186	1	519
	Total	**413**	**221**	**3**	**637**
2012/13	Defence kills	49	50	-	99
	Illegal kills	4	8	-	12
	Sport kills	34	11	-	45
	Subsistence kills	304	155	2	461
	Total	**391**	**224**	**2**	**617**
2013/14	Defence kills	47	48	-	95
	Illegal kills	2	2	-	4
	Miscellaneous kills	2	-	-	2
	Sport kills	42	3	-	45
	Subsistence kills	259	136	-	395
	Total	**352**	**189**	**0**	**541**
2014/15	Defence kills	26	20	1	47
	Illegal kills	3	2	-	5
	Miscellaneous kills	2	7	-	9
	Sport kills	39	2	-	41
	Subsistence kills	282	149	2	433
	Total	**352**	**180**	**3**	**535**
2015/16	Defence kills	29	41	3	73
	Illegal kills	1	-	-	1
	Miscellaneous kills	1	-	-	1
	Sport kills	42	8	-	50
	Subsistence kills	268	141	-	409
	Total	**341**	**190**	**3**	**534**
2016/17	Defence kills	26	24	1	51
	Illegal kills	3	1	-	4
	Miscellaneous kills	1	2	1	4
	Sport kills	46	5	-	51
	Subsistence kills	261	109	-	370
	Total	**337**	**141**	**2**	**480**
2017/18	Defence kills	16	17	-	33
	Illegal kills	2	1	-	3
	Miscellaneous kills	1	-	-	1
	Sport kills	52	14	-	66
	Subsistence kills	247	142	-	389
	Total	**318**	**174**	**0**	**492**
2018/19	Defence kills	37	33	4	74
	Illegal kills	6	5	-	11
	Miscellaneous kills	-	-	1	1
	Sport kills	52	13	-	65
	Subsistence kills	247	135	-	382
	Total	**342**	**186**	**5**	**533**
2019/20	Defence kills	20	18	3	41
	Illegal kills	2	-	-	2
	Miscellaneous kills	1	-	-	1
	Sport kills	20	10	-	30
	Subsistence kills	266	145	-	411
	Total	**309**	**173**	**3**	**485**
2020/21	Defence kills	23	25	-	48
	Illegal kills	1	1	-	2
	Subsistence kills	254	170	1	425
	Total	**278**	**296**	**1**	**475**
	Grand total	**3,433**	**1,874**	**22**	**5,329**

Sources: Baryluk (in litt.); Dyck (in litt.); Northrup (in litt); Nunavut (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019b); Szor (in litt); Trim (in litt.). No miscellaneous or sport kills we recorded in the 2020/21 season.

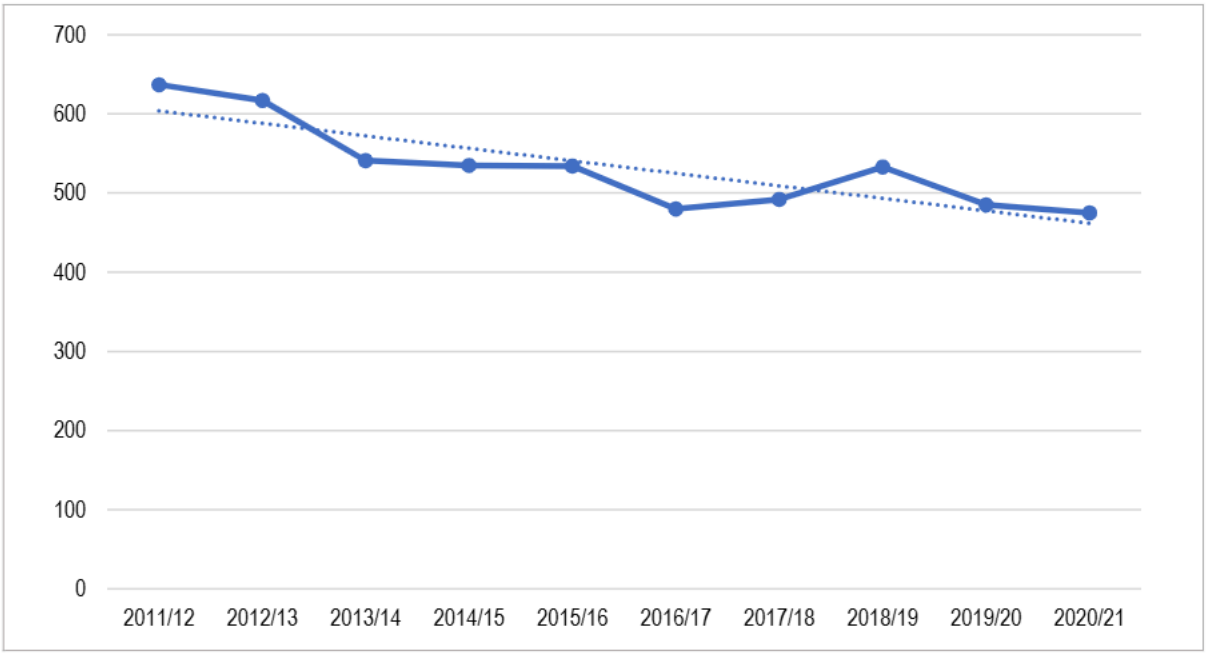

Figure 12. Numbers of polar bears killed nationally, by hunting season, 2012–2021
This chart shows the total number of polar bears killed in Canada as reported by all jurisdictions combined. The trendline is indicated as a dotted line.

Table 9. Numbers of polar bears killed in Canada by jurisdiction, 2012–2021

Year	ISR	Manitoba	Nfld. & Labrador	Nunavut	Ontario	Québec	Total
2011/12	83	2	10	458	4	80	**637**
2012/13	63	-	8	458	2	86	**617**
2013/14	47	3	9	400	-	82	**541**
2014/15	38	1	12	422	1	61	**535**
2015/16	60	-	11	415	2	46	**534**
2016/17	40	2	12	395	2	29	**480**
2017/18	42	-	11	417	-	22	**492**
2018/19	38	2	11	439	5	38	**533**
2019/20	24	1	11	423	5	21	**485**
2020/21	16	-	7	441	1	10	**475**
Total	**451**	**11**	**102**	**4,268**	**22**	**475**	**5,329**

Sources: Baryluk (in litt.); Dyck (in litt.); Northrup (in litt); Nunavut (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019b); Szor (in litt); Trim (in litt.). Nfld. is the abbreviation for Newfoundland.

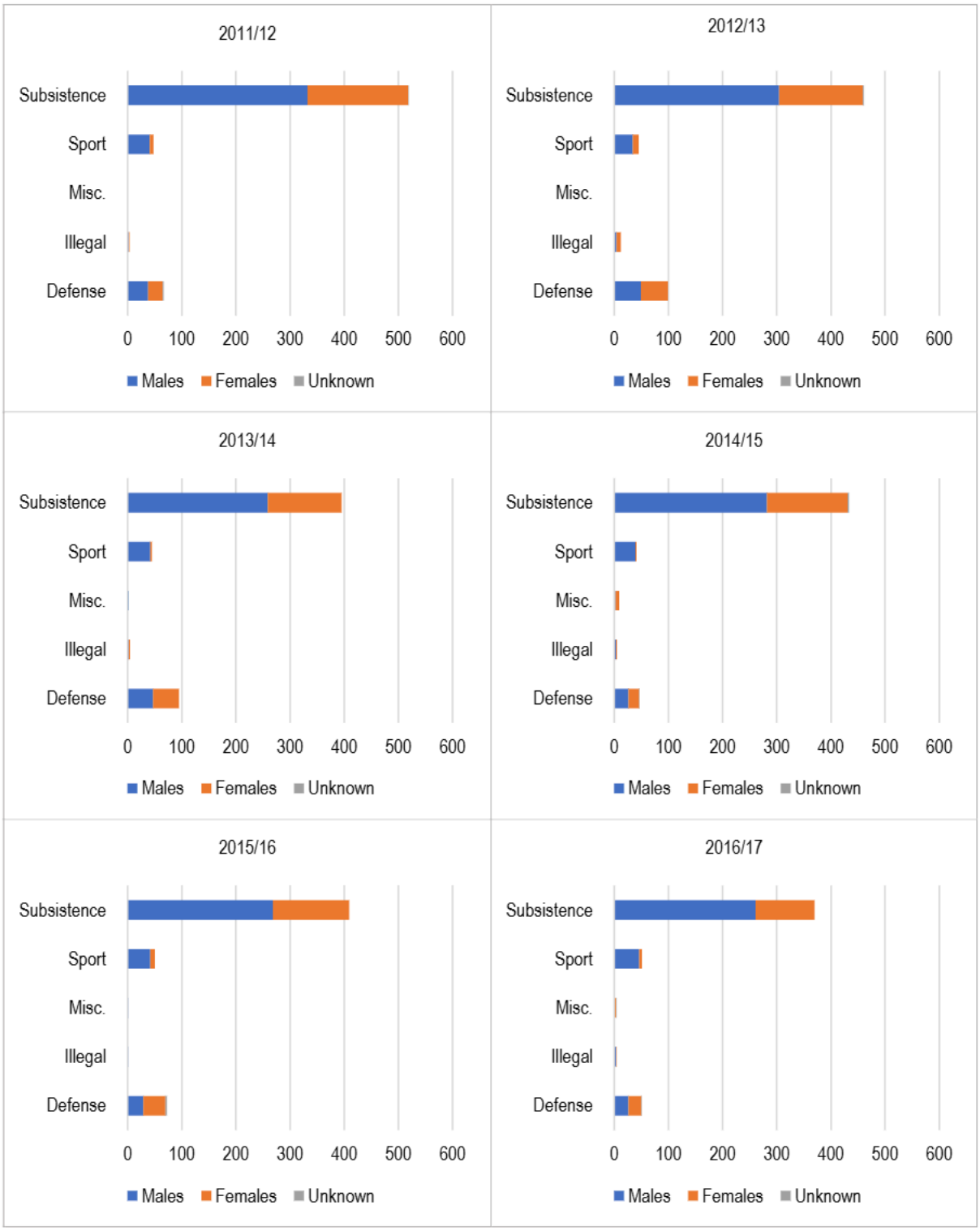

Figure 13. Numbers of polar bears killed in Canada, by hunting season, 2012–2017

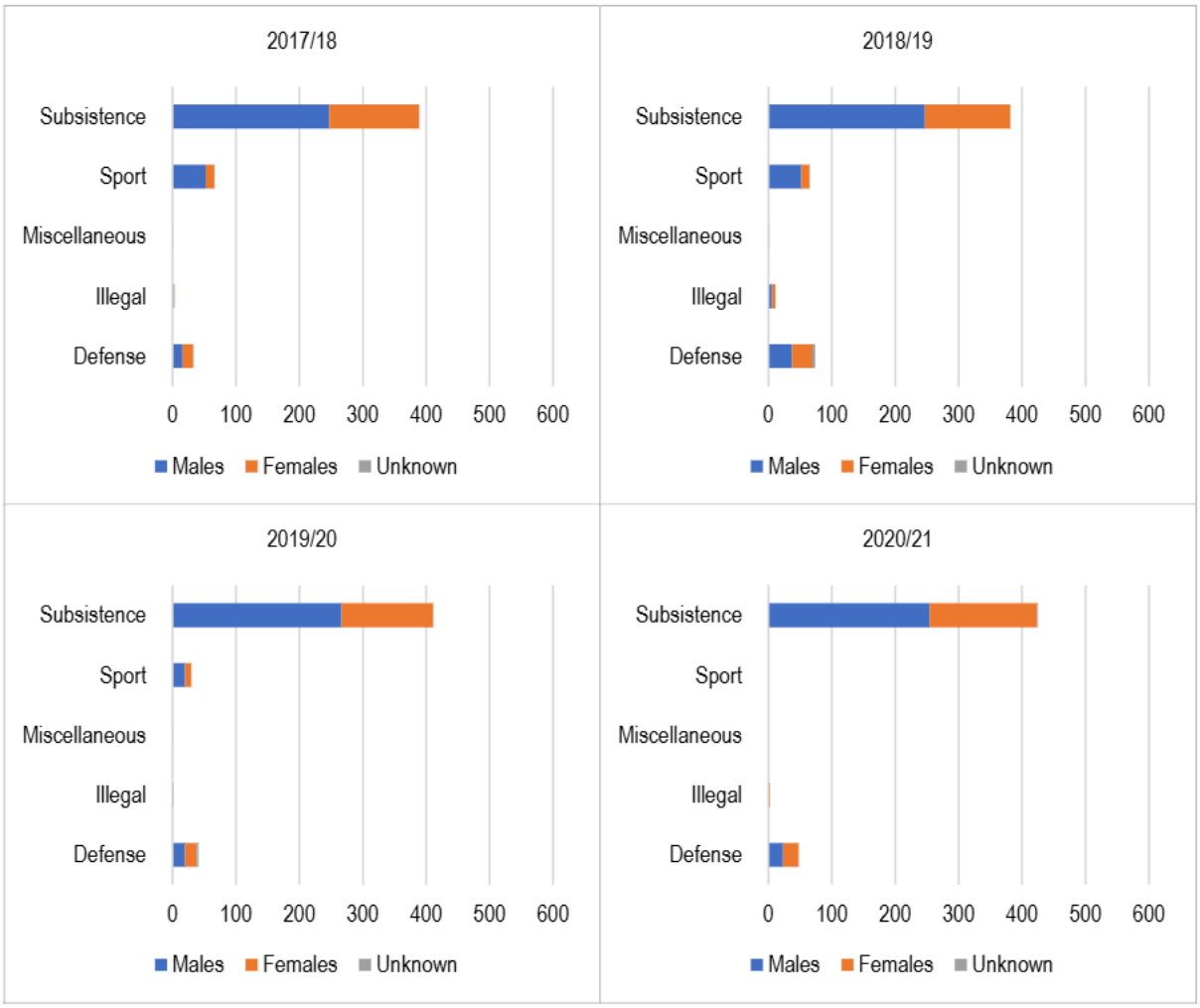

Figure 14. Numbers of polar bears killed in Canada, by hunting season, 2018–2021

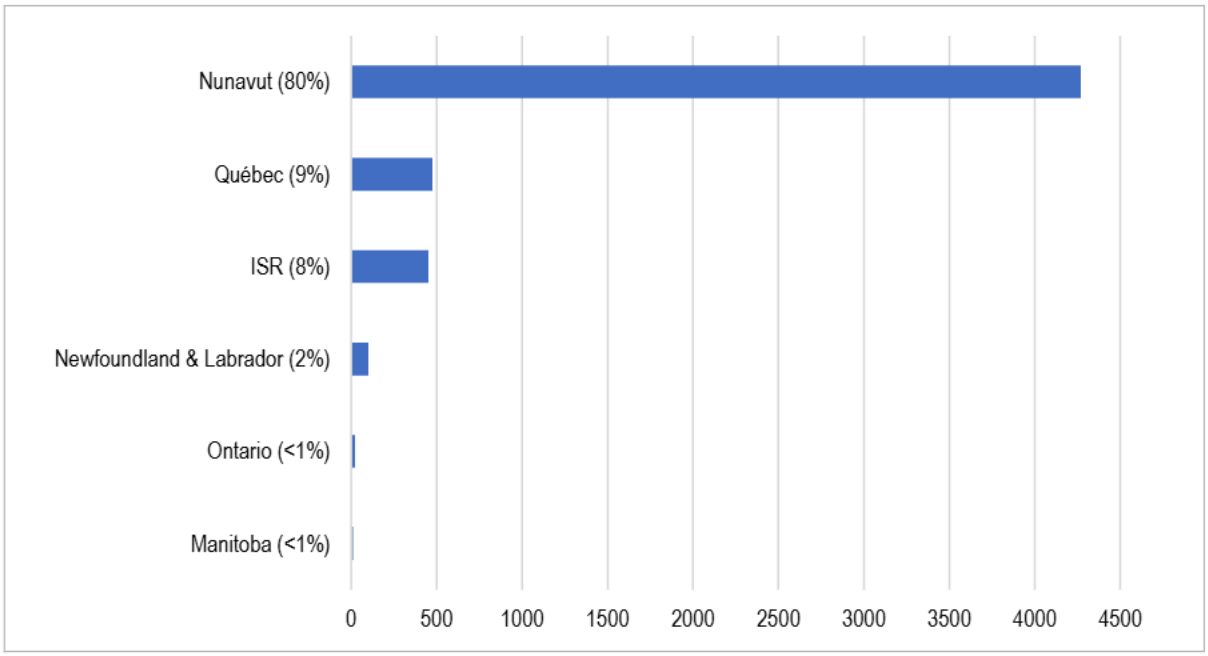

Figure 15. Numbers of polar bears killed in Canada, by jurisdiction, 2012–2021

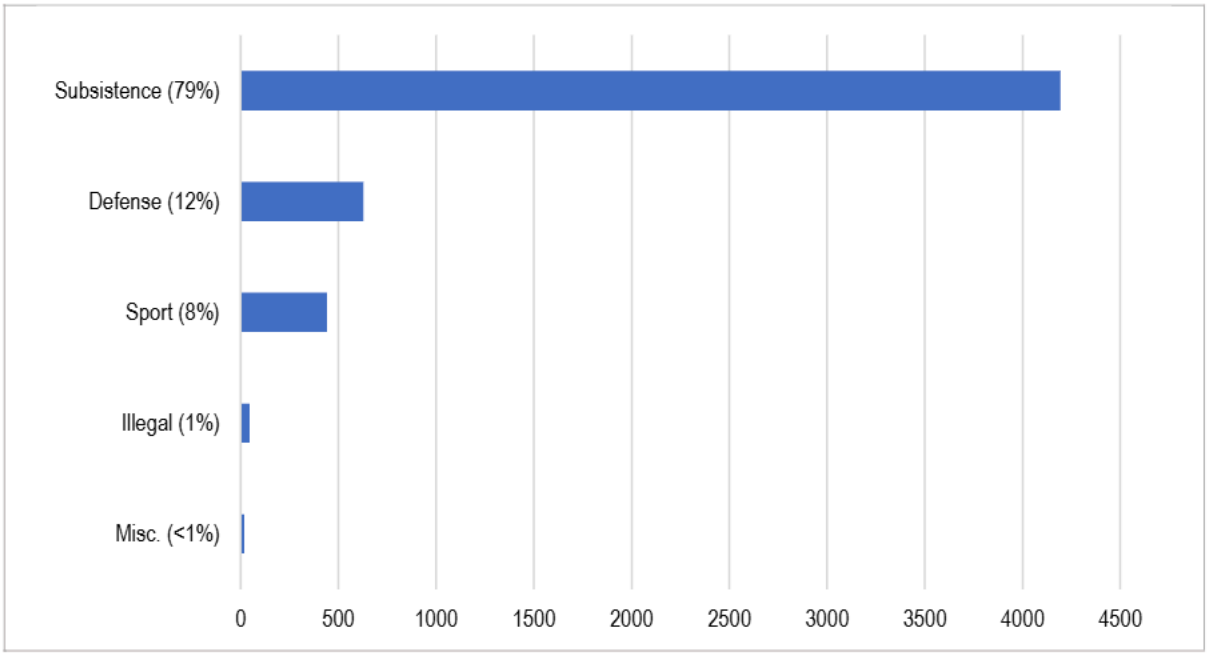

Figure 16. Numbers of polar bears killed in Canada, by category, 2012–2021

Table 10. Polar Bears Killed in Canada 2012–2021, by Purpose

Category	Hunting Season	Males	Females	Unknown sex	Total
Defence kills	2011/12	38	27	2	67
	2012/13	49	50	-	99
	2013/14	47	48	-	95
	2014/15	26	20	1	47
	2015/16	29	41	3	73
	2016/17	26	24	1	51
	2017/18	16	17	-	33
	2018/19	37	33	4	74
	2019/20	20	18	3	41
	2020/21	23	25	-	48
	Total	**311**	**303**	**14**	**628**
Illegal kills	2011/12	2	1	.	3
	2012/13	4	8	-	12
	2013/14	2	2	-	4
	2014/15	3	2	-	5
	2015/16	1	-	-	1
	2016/17	3	1	-	4
	2017/18	2	1	-	3
	2018/19	6	5	-	11
	2019/20	2	-	-	2
	2020/21	1	1	-	2
	Total	**26**	**21**	**0**	**47**
Miscellaneous kills	2011/12	-	-	-	0
	2012/13	-	-	-	0
	2013/14	2	-	-	2
	2014/15	2	7	-	9
	2015/16	1	-	-	1
	2016/17	1	2	1	4
	2017/18	1	-	-	1
	2018/19	-	-	1	1
	2019/20	1	-	-	1
	2020/21	-	-	-	0
	Total	**8**	**9**	**2**	**19**
Sport kills	2011/12	41	7	-	48
	2012/13	34	11	-	45
	2013/14	42	3	-	45
	2014/15	39	2	-	41
	2015/16	42	8	-	50
	2016/17	46	5	-	51
	2017/18	52	14	-	66
	2018/19	52	13	-	65
	2019/20	20	10	-	30
	2020/21	-	-	-	0
	Total	**368**	**73**	**0**	**441**
Subsistence kills	2011/12	332	186	1	519
	2012/13	304	155	2	461
	2013/14	259	136	-	395
	2014/15	282	149	2	433
	2015/16	268	141	-	409
	2016/17	261	109	-	370
	2017/18	247	142	-	389
	2018/19	247	135	-	382
	2019/20	266	145	-	411
	2020/21	254	170	1	425
	Total	**2,720**	**1,468**	**6**	**4,194**
Grand total		**3,433**	**1,874**	**22**	**5,329**

Sources: Baryluk (in litt.); Dyck (in litt.); Northrup (in litt); Nunavut (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019b); Szor (in litt); Trim (in litt.).

Figure 17. Trends in numbers of polar bears killed nationally, 2012–2021
Data for illegal and miscellaneous kills were excluded due to the small numbers and irregular occurrence. The hunting seasons have been abbreviated to save space. The year 2012 refers to the 2011/12 hunting season, 2013 refers to the 2012/13 season, etc. Trendlines are indicated as dotted lines. The trendline for sport kills is skewed due to the sharp drop in numbers taken after the 2018/19 hunting season. The numbers hunted for sport were trending steeply upwards for the previous seasons. Note the charts are not presented at the same scale.

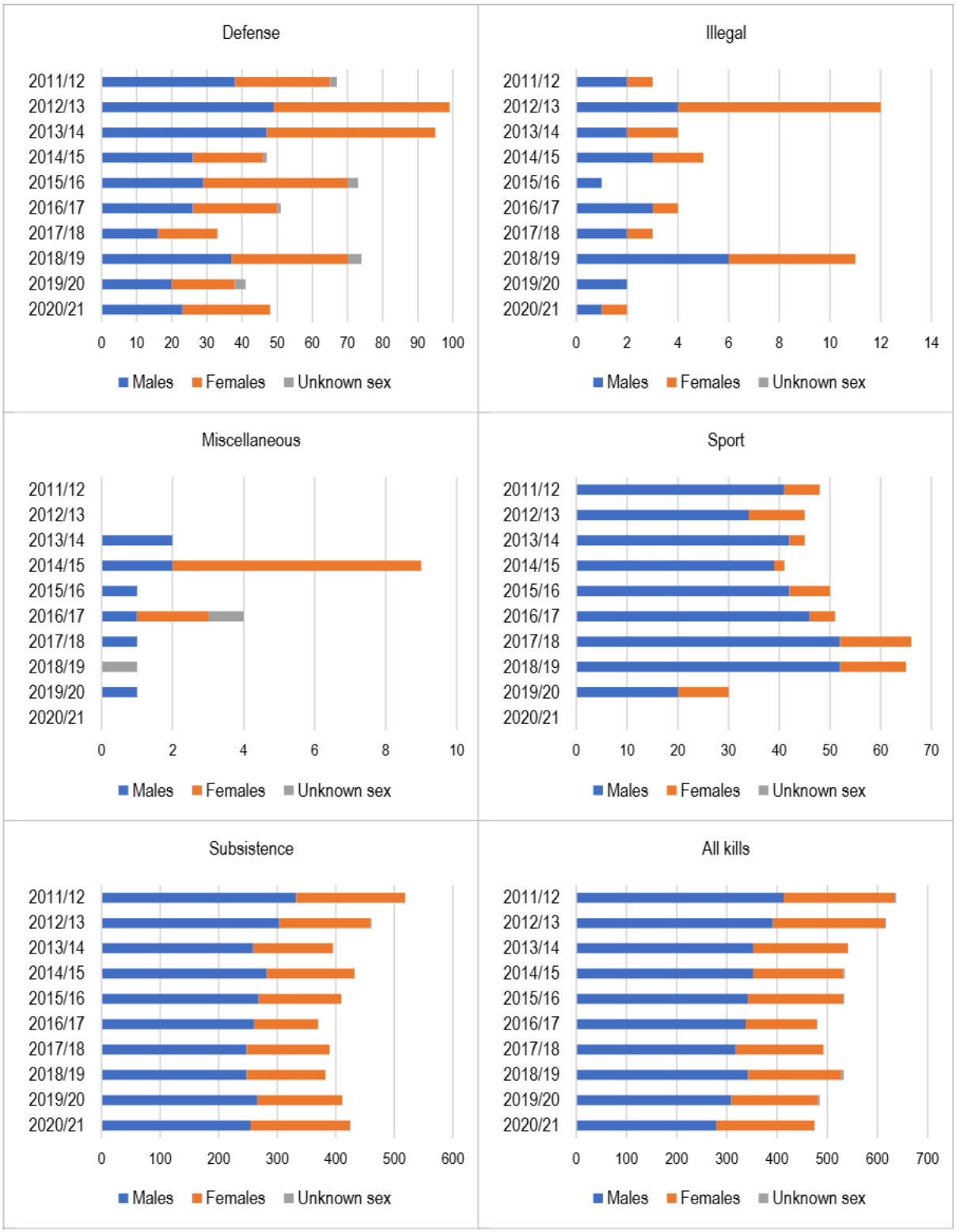

Figure 18. Numbers and sex of polar bears killed, by category of kill, 2012–2021
Note the charts are not presented at the same scale.

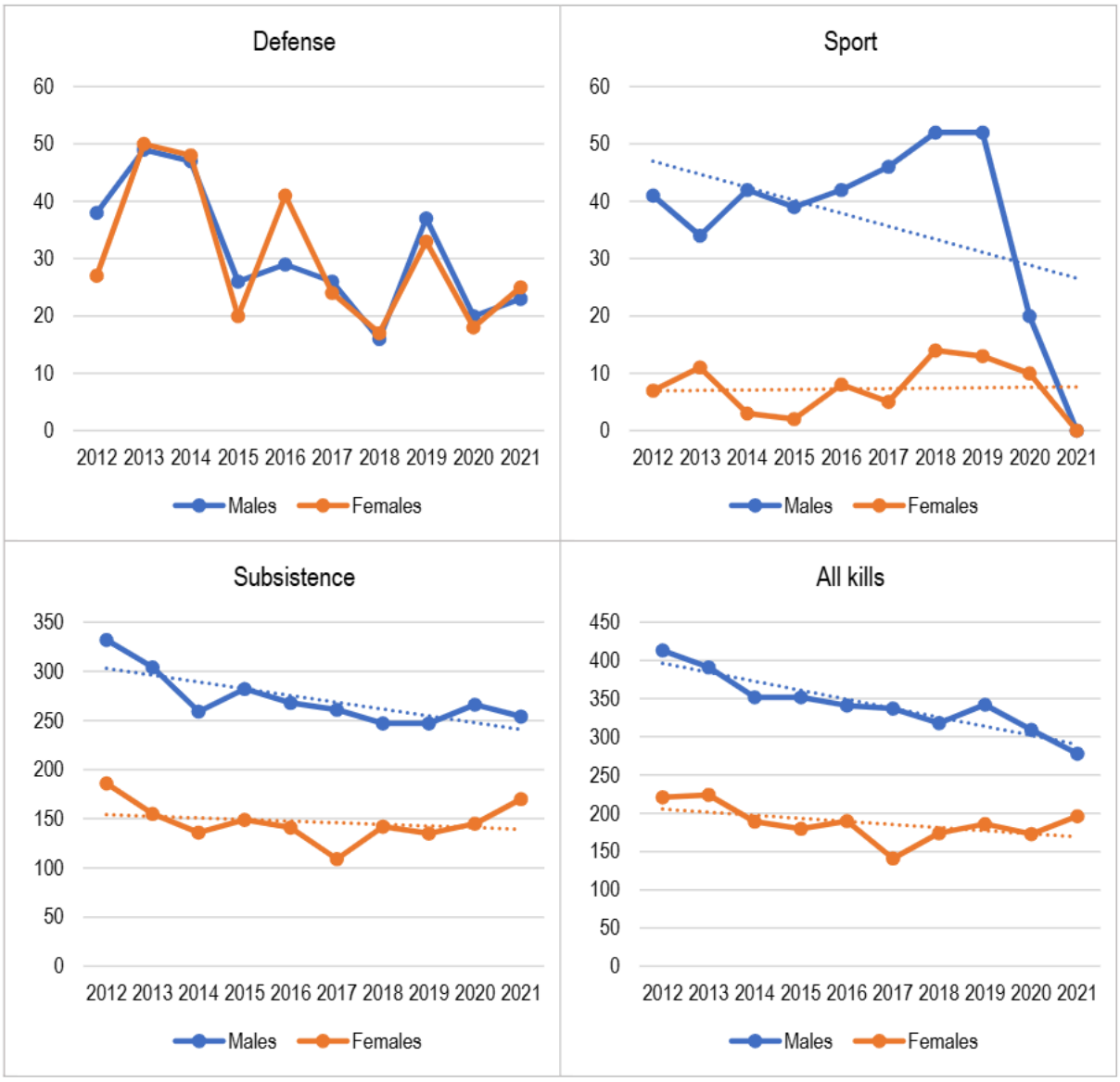

Figure 19. Trends in numbers of polar bears killed in Canada, 2012–2021
Data for illegal and miscellaneous kills were excluded due to the small numbers and irregular occurrence. The hunting seasons have been abbreviated to save space. The year 2012 refers to the 2011/12 hunting season, 2013 refers to the 2012/13 season, etc. Trendlines are indicated as dotted lines. The trendline for male and female bears killed for sport is skewed due to the sharp drop in numbers taken after the 2018/19 hunting season. Sport kills—especially of males—were trending more steeply upwards for the previous seasons. Note the charts are not presented at the same scale.

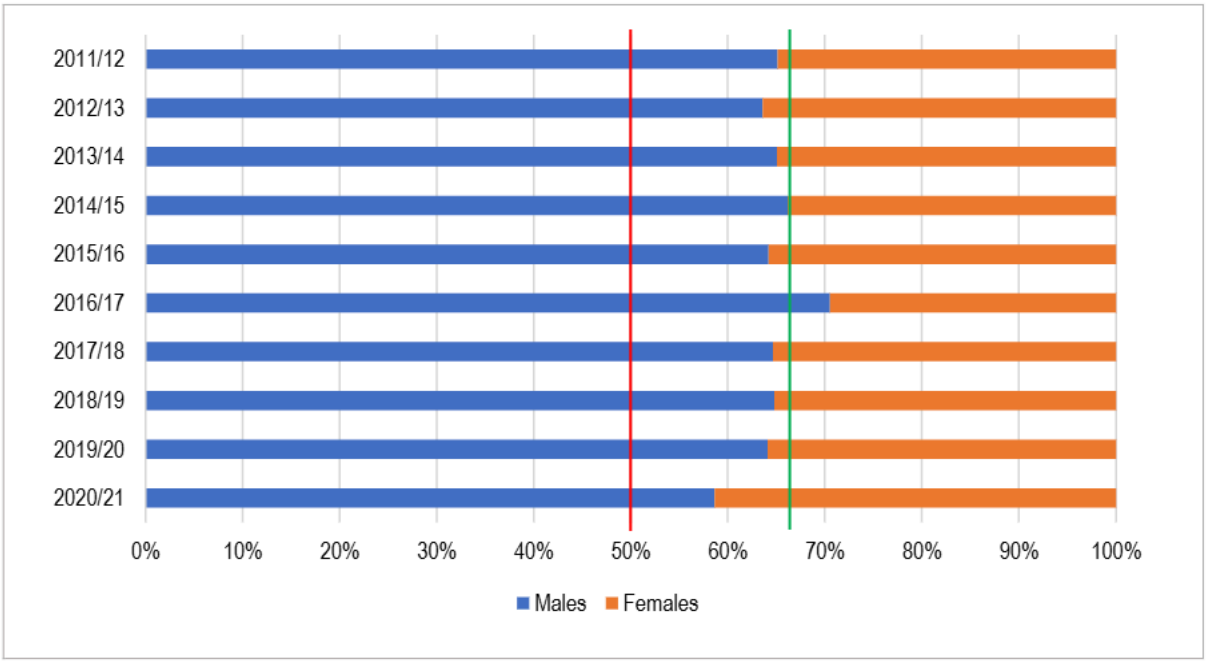

Figure 20. Sex of polar bears killed in Canada, by hunting season, 2012–2021
This chart provides the numbers of each sex killed as a percentage of all the polar bears killed in that season. Animals of unknown sex were excluded. The vertical green line marks the point at which 66% of the total were male, corresponding to a 2:1 male/female sex ratio.

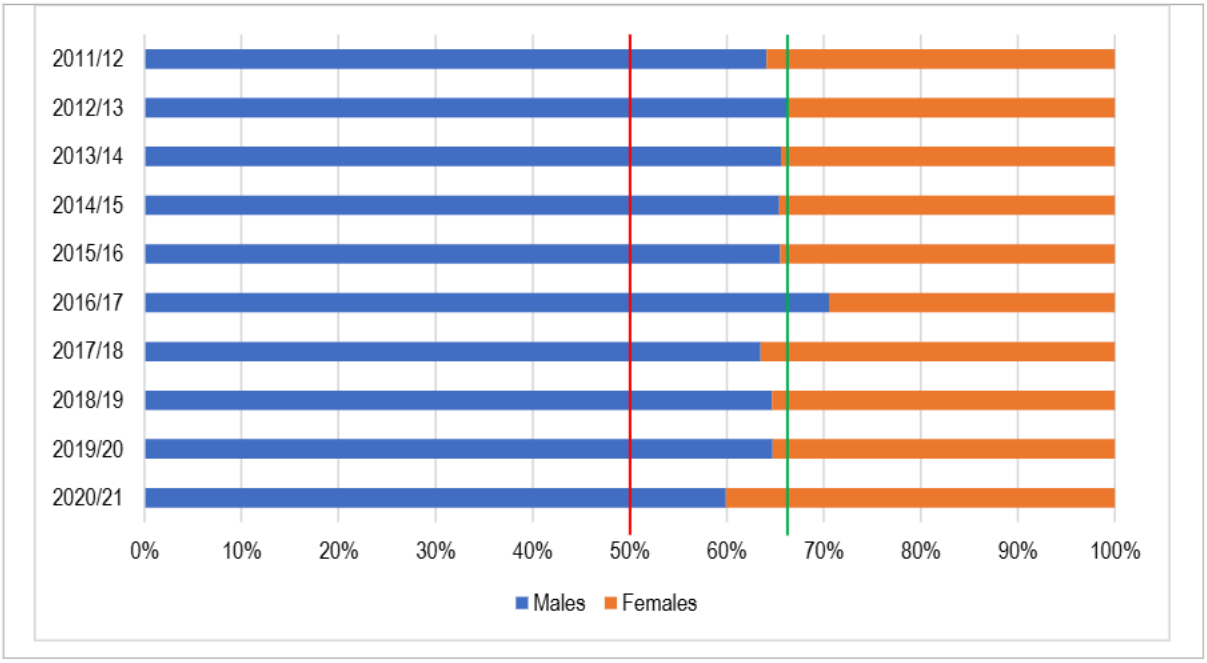

Figure 21. Sex of polar bears killed for subsistence, by hunting season, 2012–2021
This chart provides the numbers of each sex killed for subsistence as a percentage of all polar bears killed for subsistence in that season. Animals of unknown sex were excluded. The vertical green line marks the point at which 66% of the total were male, corresponding to a 2:1 male/female sex ratio.

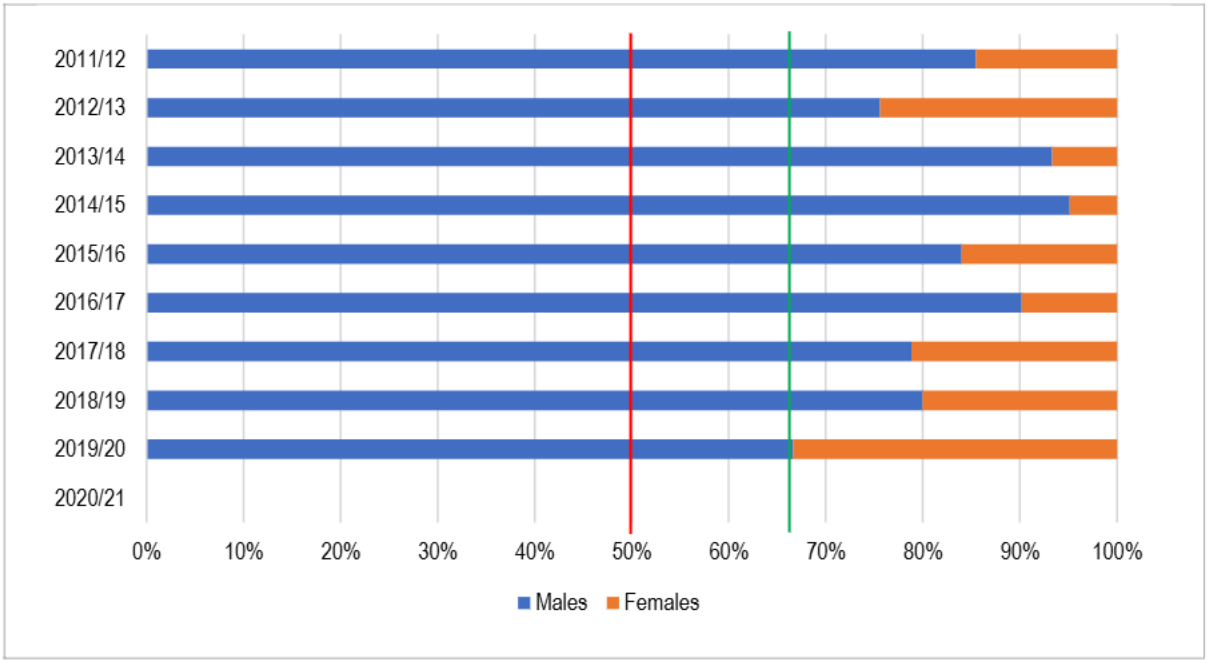

Figure 22. Sex of polar bears killed for sport, by hunting season, 2012–2021
This chart provides the numbers of each sex killed for sport as a percentage of all polar bears killed for sport in that season. Animals of unknown sex were excluded. The vertical green line marks the point at which 66% of the total were male, corresponding to a 2:1 male/female sex ratio.

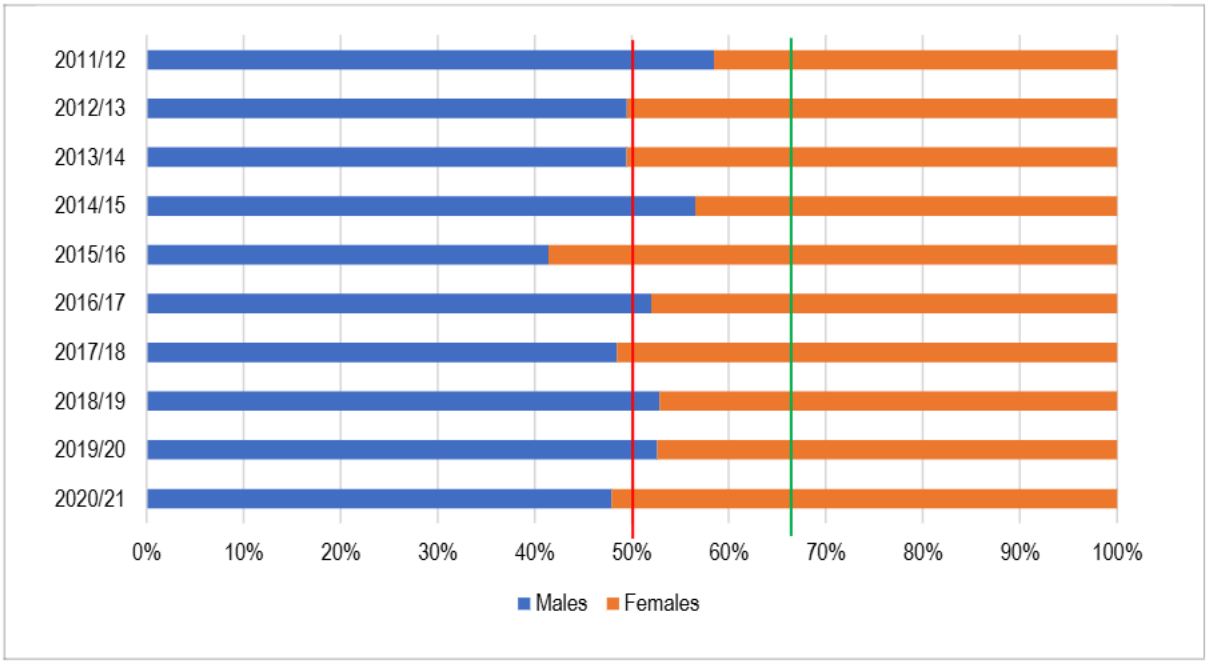

Figure 23. Sex of polar bears killed for defence, by hunting season, 2012–2021
This chart provides the numbers of each sex killed for defence as a percentage of all polar bears killed for defence in that season. Animals of unknown sex were excluded. The vertical green line marks the point at which 66% of the total were male, corresponding to a 2:1 male/female sex ratio.

5. Canadian Exports of Polar Bear Hides and Skulls

Overview

During the years 2012–2021, the total number of hides exported from Canada declined steadily year-to-year except in 2015 and 2021 in which there were spikes in exports. The largest number of hides exported was 375 in 2013. The lowest was 75 in 2020 (Table 11; Fig. 24).

The declining exports of polar bear hides correlated with a significant drop in the global market for furs (see also *Canadian polar bear auction prices*). Canadian exports of hides from other CITES-listed species, including bobcat (*Lynx rufus*), Canadian lynx (*L. Canadensis*), river otter (*Lontra canadensis*), and wolf (*Canis lupus*) also declined dramatically after 2013/2014. Exports of these species recovered markedly in 2019 before crashing again in 2020, presumably because of the COVID-19 pandemic. Exports of all four species increased again in 2021 (Fig. 25). Exports of polar bear hides did not spike in 2019, but, as previously noted, did increase in 2021 (Table 11; Fig. 24).

The number of skulls exported from Canada annually in 2012–2021 did not steadily decline as did hides. The overall trend for skull exports in the period was almost flat, but the numbers exported year-to-year fluctuated from a low of 28 in 2016 to a high of 45 in 2018. A notable spike in exports in 2015 correlates with a similar spike exhibited by exports of hides (Table 11; Fig. 24).

Purpose of trade

Hides exported

All the polar bear hides exported from Canada in 2012–2021 were exported for one of four purposes: commercial trade, personal use, as hunting trophies, or as part of a circus or travelling exhibition. Of the 1,941 hides exported in the decade, 79% (n=1,531) were commercial, 12% (n=230) were personal and nine percent (n=172) were hunting trophies. Fewer than one percent (n=8) were exported for circus or travelling exhibition (Table 11).

The 2012–2021 decline in hide exports was primarily due to a drop in numbers of commercial exports. A total of 338 polar bear hides were exported for commercial purposes in 2013 compared to only 25 in 2020. In 2021, however, commercial hide exports increased by almost 300% (from 25 to 96). Although personal and hunting trophy exports both declined in 2021, the jump in commercial exports drove a notable spike in overall exports. The number of hides exported in 2021 was still fewer than in most of the previous years (Table 11; Fig. 26).

Exports of hunting trophies and for personal purposes both declined in 2012–2021, although not as steadily as did commercial exports. The numbers of exported hunting trophies spiked slightly in 2015 (as did commercial and personal exports) and again in 2018. Exports of hunting trophies declined steady after 2018 and dropped sharply in 2021 (Table 11; Fig. 26).

Exports for personal purposes spiked in 2015 (as previously noted) and spiked again sharply in 2020 when exports doubled from 18 (in 2019) to 35 (Table 11; Fig. 26). This was the same year in which commercial exports dropped from 54 to 25—the smallest number of commercial exports in any year of the decade.

Skulls exported

In 2012–2021, skulls were exported for three purposes: for commercial trade, as hunting trophies, or for personal use. No skulls were exported for circuses or travelling exhibitions. Overall, 44% (n=163) were exported as hunting trophies, 38% (n=142) for commercial purposes and 18% for personal purposes (Table 11; Fig. 27).

The numbers of skulls exported for commercial purposes were inconsistent at the start of the decade, but trended upwards overall, and increased markedly after 2016. Whether this indicates an increasing commercial market for skulls is unclear. The numbers of skulls exported annually as hunting trophies was relatively consistent between 2013 and 2019, with the previously noted spike in 2015. The numbers then declined sharply in 2020 and 2021. Overall, exports of skulls as hunting trophies trended down for the period. Personal exports peaked in 2014 and 2017 before steadily decreasing in the following years (Table 11; Fig. 27). The declines in personal and hunting trophy exports were likely the result of COVID-19 travel restrictions

The increasing numbers of commercial exports balanced out the decreasing numbers exported as hunting trophies or for personal purposes. Hence, the trend for exported skulls stayed relatively constant throughout the period (Fig. 27). If sport hunting returns, and if the trend for commercial exports of skulls continues, then the total number of skulls exported may increase in 2022.

Table 11. Exported hides and skulls, 2012–2021

Item	Year	Purpose of export				
		Circus or travelling exhibition	Commercial	Hunting trophies	Personal	Total
Hides	2012	-	303	26	36	**365**
	2013	-	338	17	20	**375**
	2014	-	141	16	19	**176**
	2015	-	183	25	28	**236**
	2016	2	138	18	22	**180**
	2017	-	132	16	19	**167**
	2018	1	121	20	19	**161**
	2019	1	54	16	18	**89**
	2020	2	25	13	35	**75**
	2021	2	96	5	14	**117**
	Total	**8**	**1,531**	**172**	**230**	**1,941**
Skulls	2012	-	11	26	6	**43**
	2013	-	17	14	5	**36**
	2014	-	6	14	11	**31**
	2015	-	13	25	2	**40**
	2016	-	8	17	3	**28**
	2017	-	10	16	13	**39**
	2018	-	13	19	13	**45**
	2019	-	12	16	10	**38**
	2020	-	20	13	3	**36**
	2021		32	3	2	**37**
	Total	**0**	**142**	**163**	**68**	**373**

Source: CEPS. Data for hides include mounted bears.

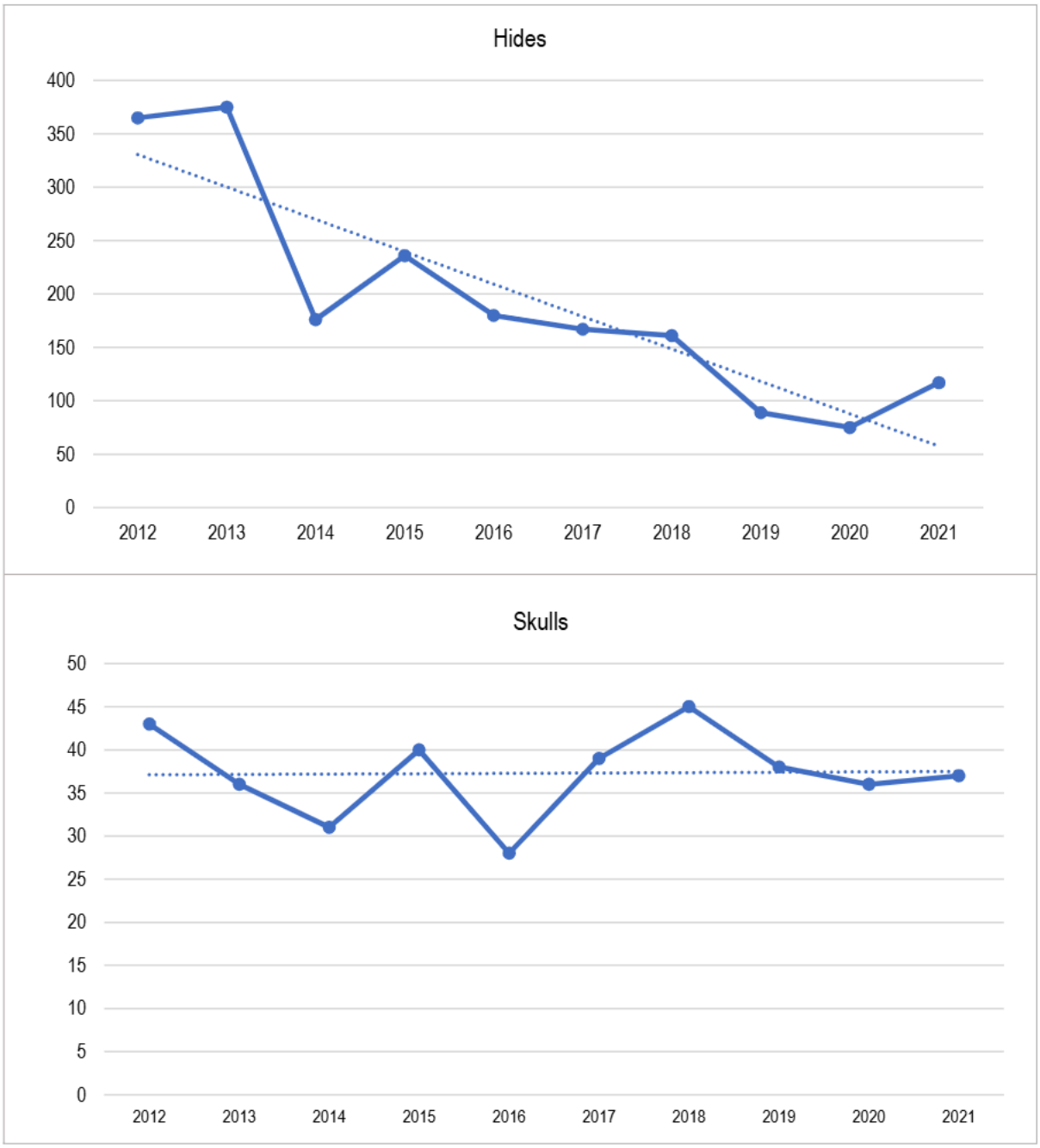

Figure 24. Numbers of exported polar bear hides and skulls, 2012–2021
Trendlines are indicated as dotted lines. Note the charts are not presented at the same scale.

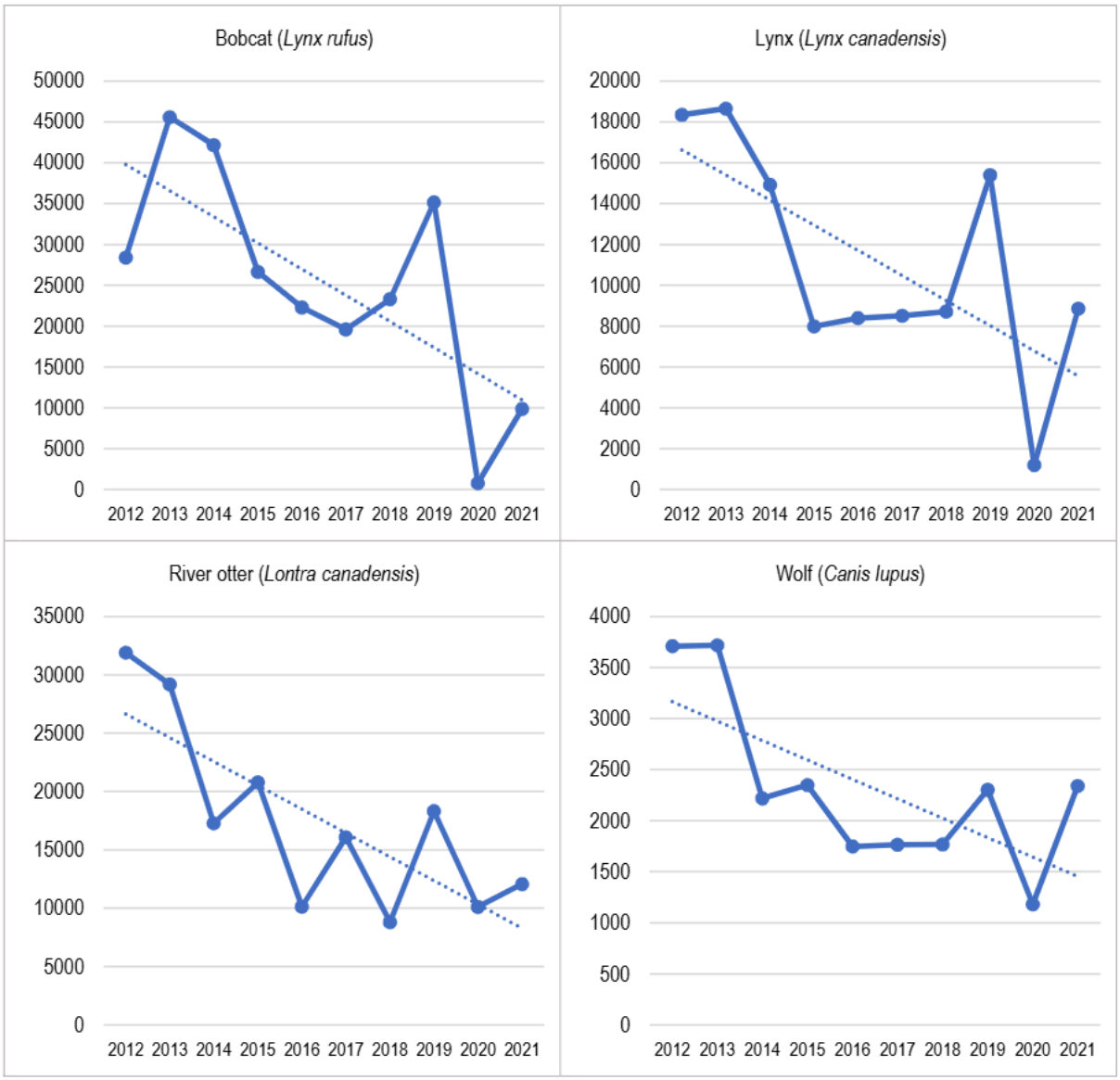

Figure 25. Canadian exports of bobcat, lynx, otter, and wolf hides, 2012–2021
Data for 2012–2018 were compiled from the Canadian export data reported in the UNEP-WCMC CITES Trade Database. Data for 2019–2021 were sourced from CEPS. The vertical axis provides the number of individual hides that were exported. Trendlines are indicated as dotted lines. Note the charts are not all presented at the same scale.

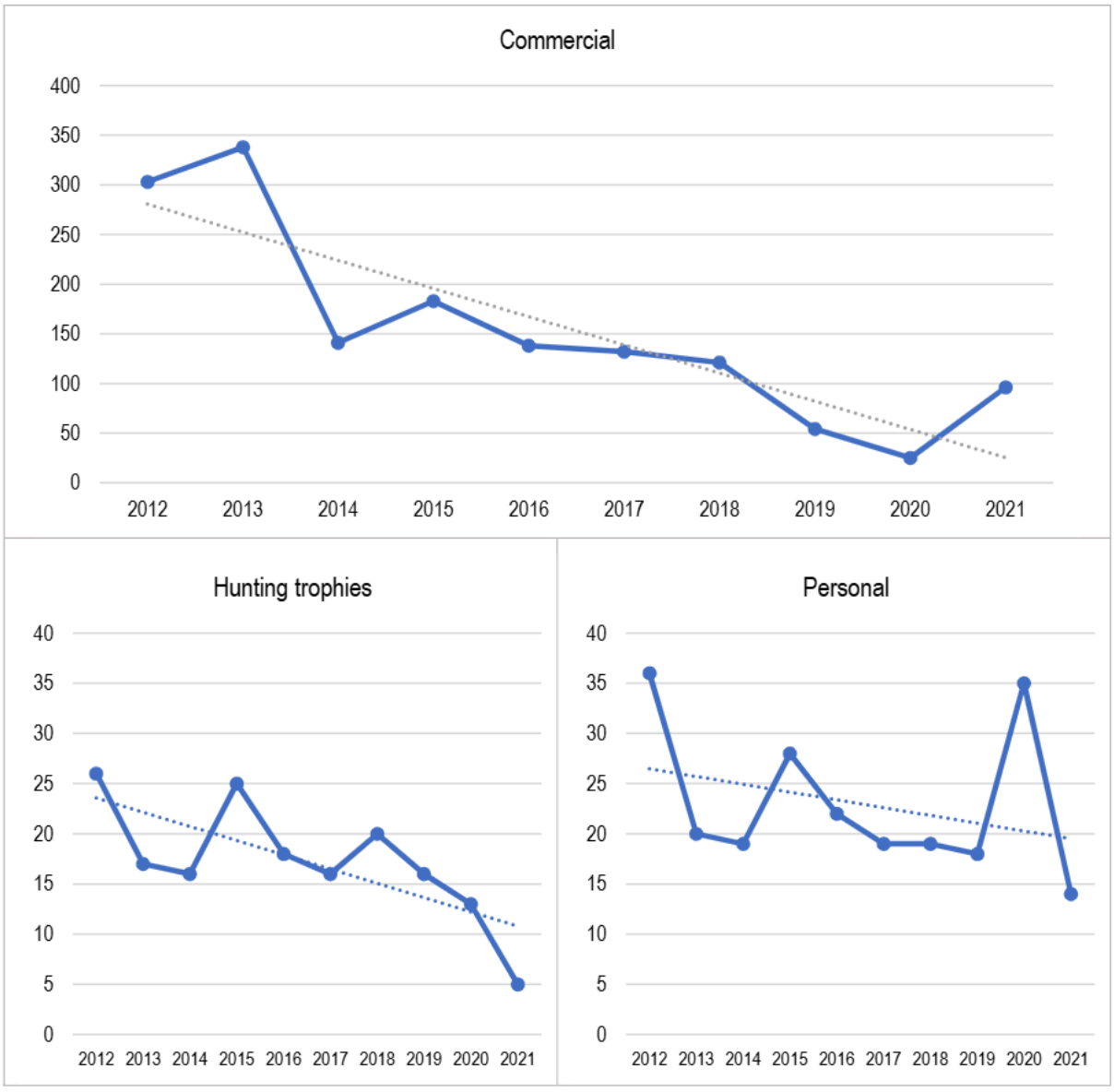

Figure 26. Numbers of exported hides by purpose of export, 2012–2021
Trendlines are indicated as dotted lines. Note the charts are not all presented at the same scale.

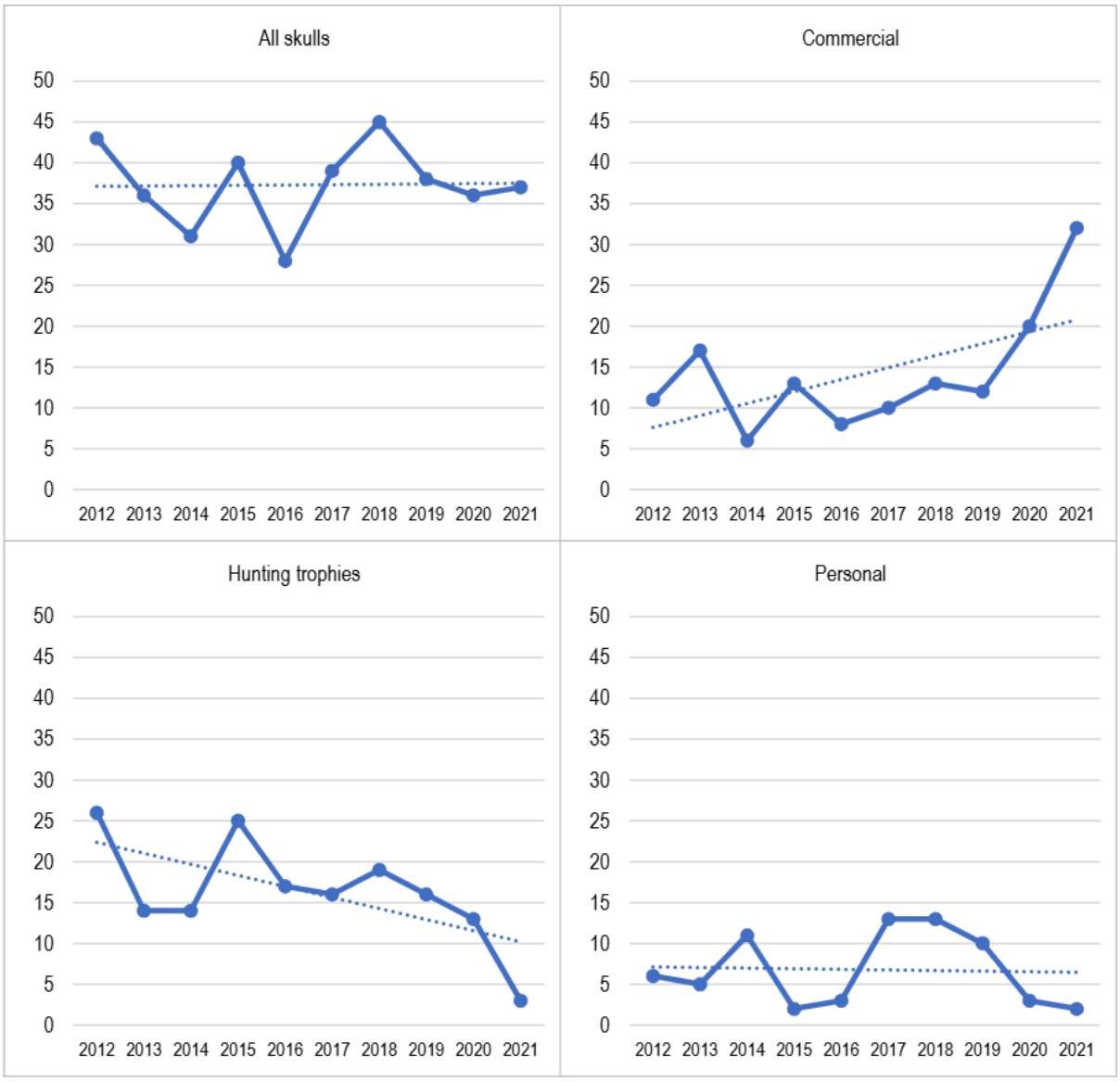

Figure 27. Numbers of exported skulls by purpose of export, 2012–2021
Trendlines are indicated as dotted lines.

Provincial and territorial exports

The provinces and territories in which bears were killed were not recorded for many of the hides and skulls exported in 2012. Therefore, the data for 2012 have not been included in this analysis.

The numbers of exports of hides and skulls in 2013–2021 reflect the harvest levels in the respective provinces and territories, with most being sourced from bears killed in Nunavut. Although the patterns of exports varied between different provinces and territories, the overall trend for each was a significant decline in the numbers of hides exported over the study period (Table 12; Fig. 28). These declines are consistent with the overall drop in Canadian exports of polar bear hides in 2012–2021.

Exports of skulls were somewhat sporadic from each jurisdiction. No skulls were exported from Newfoundland and Labrador until 2021 (Table 12; Fig. 28). Presumably the lack of exports sourced from Newfoundland and Labrador was because there is no sport hunting in the province (plus the overall low level of harvest and export). As noted previously, skulls are commonly exported as hunting trophies, although the numbers exported commercially have been increasing.

More than 50% (n=9) of the skulls exported from Québec in 2013 were exported with permits issued on the same day, and all were sent to France for commercial purposes. Presumably, these constituted a single shipment to a single dealer, which would explain the 2013 spike in exports of skulls from Québec (Table 12; Fig. 28). All the exports of skulls sourced from Québec in 2013–2021 were destined for Belgium or France, except for a single skull exported to China in 2016.

Table 12. Exported hides and skulls sorted by province or territory, 2013–2021

Hides

Hunting Season	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Not recorded	4	1	-	-	-	2	1	-	-	**8**
Inuvialuit Settlement Region	88	25	29	43	26	11	13	7	17	**259**
Newfoundland & Labrador	6	1	2	1	6	2	-	1	4	**23**
Nunavut	246	128	171	113	115	129	71	71	89	**1,133**
Québec	31	21	34	23	19	17	4	9	7	**165**
Total	**375**	**176**	**236**	**180**	**166**	**161**	**89**	**88**	**117**	**1,588**

Skulls

Hunting Season	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Not recorded	3	-	-	-	-	-	-	-	-	**3**
Inuvialuit Settlement Region	2	5	2	4	7	2	6	1	-	**29**
Newfoundland & Labrador	-	-	-	-	-	-	-	-	2	**2**
Nunavut	14	23	38	23	30	41	27	35	28	**259**
Québec	17	3	0	1	2	2	4	-	7	**36**
Total	**36**	**31**	**40**	**28**	**39**	**45**	**37**	**36**	**37**	**329**

Source: CEPS. The available data for 2012 was not complete and therefore excluded. Figures indicate the numbers of exported hides and skulls reported killed in each province or territory. No hides or skulls from Manitoba or Ontario kills, and no skulls from Newfoundland and Labrador kills, were exported in the period.

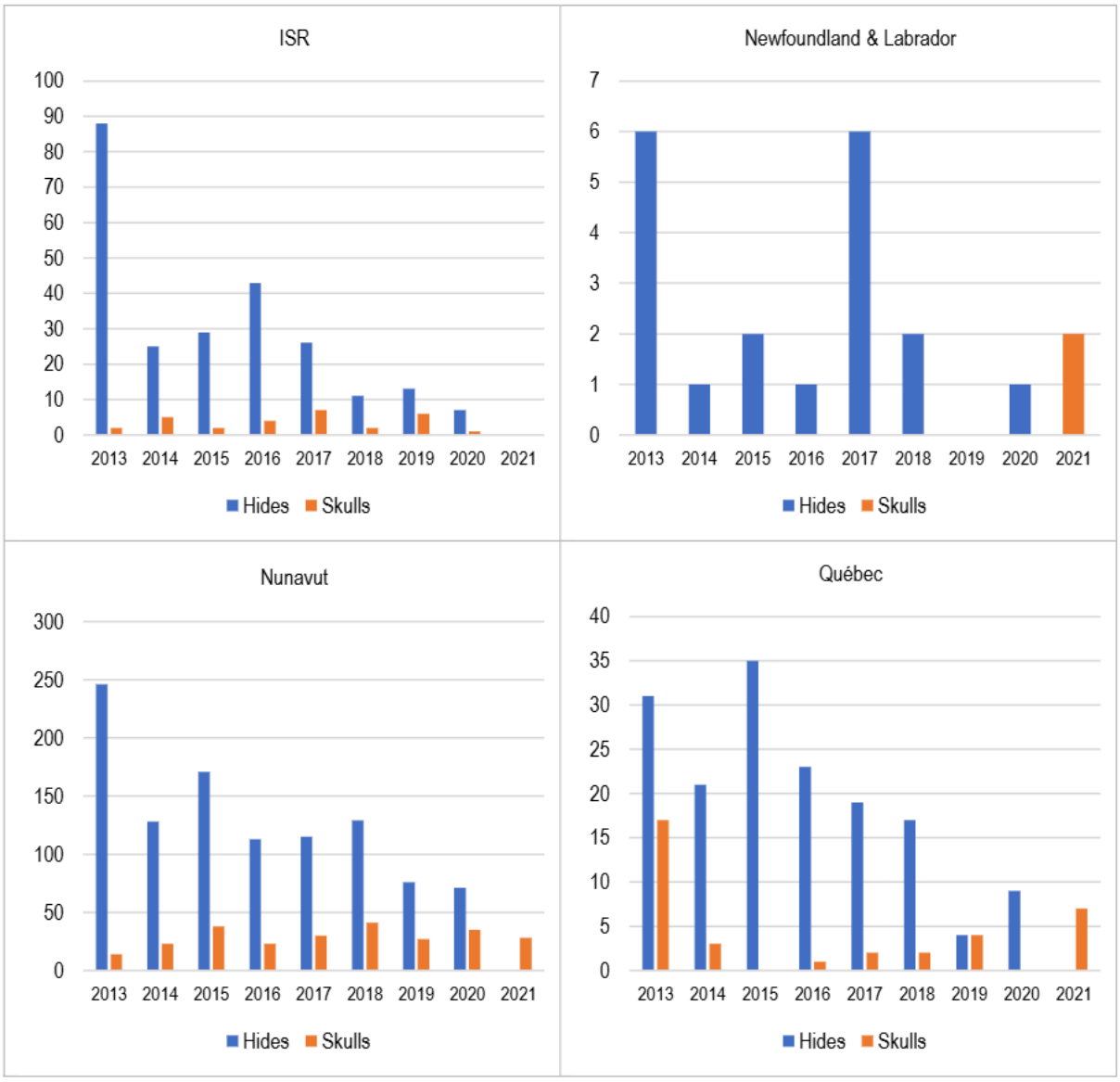

Figure 28. Exported hides and skulls by province or territory of origin, 2012–2021
Source: CEPS. The vertical axis provides the number of individual hides and skulls that were exported from that province or territory in the given year. Note the charts are not presented at the same scale.

Destination countries

Hides

In the years 2012–2021, polar bear hides were exported from Canada to a total of 52 different countries. The numbers of destination countries for Canadian polar bear hides ranged from a high of 24 in 2012 to a low of 14 in 2020. The number of destination countries for hides exported from Canada annually generally trended down for the period (Table 13; Fig. 29; Appendix A).

China was the single biggest export destination for polar bear hides in 2012–2021 and imported almost twice as many hides (n=1,264) as all other countries combined (n=677) (Table 13; Fig. 30).[12] Overall, China imported 65% of all the polar bear hides exported from Canada in the study period. China also imported the most hides in every individual year, and in most years imported more hides than all other countries combined. However, the numbers of hides exported to China peaked at 294 in 2012 and steadily declined in the following years (Table 13; Fig. 30 and 31). The overall decline in total numbers of hides exported from Canada in 2012–2021 was primarily due to rapidly decreasing annual exports to China. In 2021, the annual number of hides imported by China increased for the first time since 2013 (Table 13; Figs. 30 and 31).

Of the 1,264 hides exported to China in the years 2012–2021, 87% (n=1,098) were exported for commercial purposes and 12% (n=150) were exported for personal purposes. Exports of hunting trophies or hides for use in circus or travelling exhibitions were rare, and each comprised less than 1% of exports to China (Table 13).

Other than China, the most common destination countries for polar bear hides in 2012–2021 were Belgium, Denmark, France, Germany, Norway, and Russia (Table 13; Figs. 32 and 33). Collectively, those six countries imported 24% (n=475) of all the hides exported from Canada in 2012–2021. These countries and China collectively imported 90% of all hides in the period. An additional 45 countries imported the remaining 10% (n=202) (Table 13; Fig. 33). Exports were not consistent year-to-year, and only France, Norway, and Russia imported hides in every year of the study period. More than 50% of the hides exported to Belgium and Denmark occurred in single years (2013 and 2018, respectively) (Fig. 32). Overall, exports to countries other than China declined in 2012–2021, although they did not decline as steeply as did exports to China over the same period (Fig. 31).

The purpose of hide exports varied between the different countries. Exports to most countries were predominantly for commercial purposes. In contrast, most of the hides exported to Belgium were hunting trophies. Exports to Russia were almost evenly split between hunting trophies and for commercial purposes (Fig. 33).

More hides were exported to Norway than any other country except China (although far fewer were exported to Norway). However, exports to Norway were sporadic, with very few hides exported in 2012, 2014, 2016, and 2020, followed by sharp spikes in numbers in the immediately following years (Fig. 32). These spikes were primarily due to significant exports to one or two importers each year (Boles, in litt.). Rather than indicating changes in the Norwegian market for hides, these spikes appear to be caused by Norwegian dealers replenishing their available stock. In 2021, a total of 34 hides were exported to Norway, including 32 hides to a single Norwegian importer. The importer of the 32 hides informed the Norwegian authorities that the hides were mainly intended for re-export and that China was his primary market (Hafsmo, in litt.).

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[12] China had been the single primary importer of polar bear hides since 2008 (Cooper, 2015).

Norwegian regulations require importers of polar bear specimens to apply for a national Owner's Certificate within four weeks of import, and that the specimens be tagged or microchipped (Norway, 2018). In February 2022, the Norwegian Environment Agency inspected the importer of the 32 hides in 2021 and determined that they had failed to apply for Owner's Certificates and microchipping. Consequently, the importer was ordered to do so, and a sales ban was imposed pending the application. The importer subsequently applied to re-export the 32 hides back to the original Canadian exporter (Hafsmo, in litt.).

Table 13. Destination countries for exported hides, 2012–2021

Country	Purpose	Year										Total
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Belgium	Hunting trophies	1	37	1	1	-	-	1	2	-	-	43
	Personal	-	-	2	-	-	-	-	-	-	-	2
	Commercial	8	-	-	1	2	3	-	3	-	2	19
	Subtotal	**9**	**37**	**3**	**2**	**2**	**3**	**1**	**5**	**0**	**2**	**64**
China	Hunting trophies	-	1	2	-	1	-	1	-	-	1	6
	Personal	26	19	13	18	16	9	12	8	24	8	153
	Exhibition	-	-	-	-	2	-	-	1	2	2	7
	Commercial	250	259	135	130	91	86	62	31	14	40	1,098
	Subtotal	**276**	**279**	**150**	**148**	**110**	**95**	**75**	**40**	**40**	**51**	**1,264**
Denmark	Hunting trophies	1	-	-	1	3	-	4	1	2	-	12
	Personal	-	-	-	-	-	1	1	-	1	-	3
	Commercial	-	-	-	-	8	2	20	-	-	5	35
	Subtotal	**1**	**0**	**0**	**1**	**11**	**3**	**25**	**1**	**3**	**5**	**50**
France	Hunting trophies	2	1	-	3	-	1	2	1	1	1	12
	Personal	2	3	-	3	-	-	-	2	-	-	10
	Commercial	9	-	2	3	12	2	1	1	1	-	31
	Subtotal	**13**	**4**	**2**	**9**	**12**	**3**	**3**	**4**	**2**	**1**	**53**
Germany	Hunting trophies	1	1	2	1	-	-	3	2	-	-	10
	Personal	3	7	1	-	2	-	-	2	-	-	15
	Commercial	19	-	2	-	5	-	3	2	6	4	41
	Subtotal	**23**	**8**	**5**	**1**	**7**	**0**	**6**	**6**	**6**	**4**	**66**
Norway	Hunting trophies	1	28	2	1	2	2	-	-	1	-	37
	Personal	2	-	-	-	-	2	-	-	-	-	4
	Commercial	4	-	-	42	-	28	21	14	1	34	144
	Subtotal	**7**	**28**	**2**	**43**	**2**	**32**	**21**	**14**	**2**	**34**	**185**
Russia	Hunting trophies	4	2	1	10	2	1	2	1	4	-	27
	Personal	-	-	-	-	1	-	2	1	-	1	5
	Commercial	-	-	-	2	11	6	6	-	-	-	25
	Subtotal	**4**	**2**	**1**	**12**	**14**	**7**	**10**	**2**	**4**	**1**	**57**
Other (n=45)	Hunting trophies	16	12	8	8	12	12	9	9	6	7	99
	Personal	6	1	3	7	3	7	2	5	9	4	47
	Exhibition	-	-	-	-	-	-	1	-	-	-	1
	Commercial	10	4	2	5	7	5	8	3	3	8	55
	Subtotal	**32**	**17**	**13**	**20**	**22**	**24**	**20**	**17**	**18**	**19**	**202**
Grand total		**365**	**375**	**176**	**236**	**180**	**167**	**161**	**89**	**75**	**117**	**1,941**
No. of destination countries		**24**	**18**	**17**	**22**	**21**	**22**	**21**	**15**	**14**	**16**	

Source: CEPS. Polar bear hides were exported to a total of 52 different countries in the years 2012 to 2021. "Exhibition" refers to hides exported for the purpose of "circus or travelling exhibition."

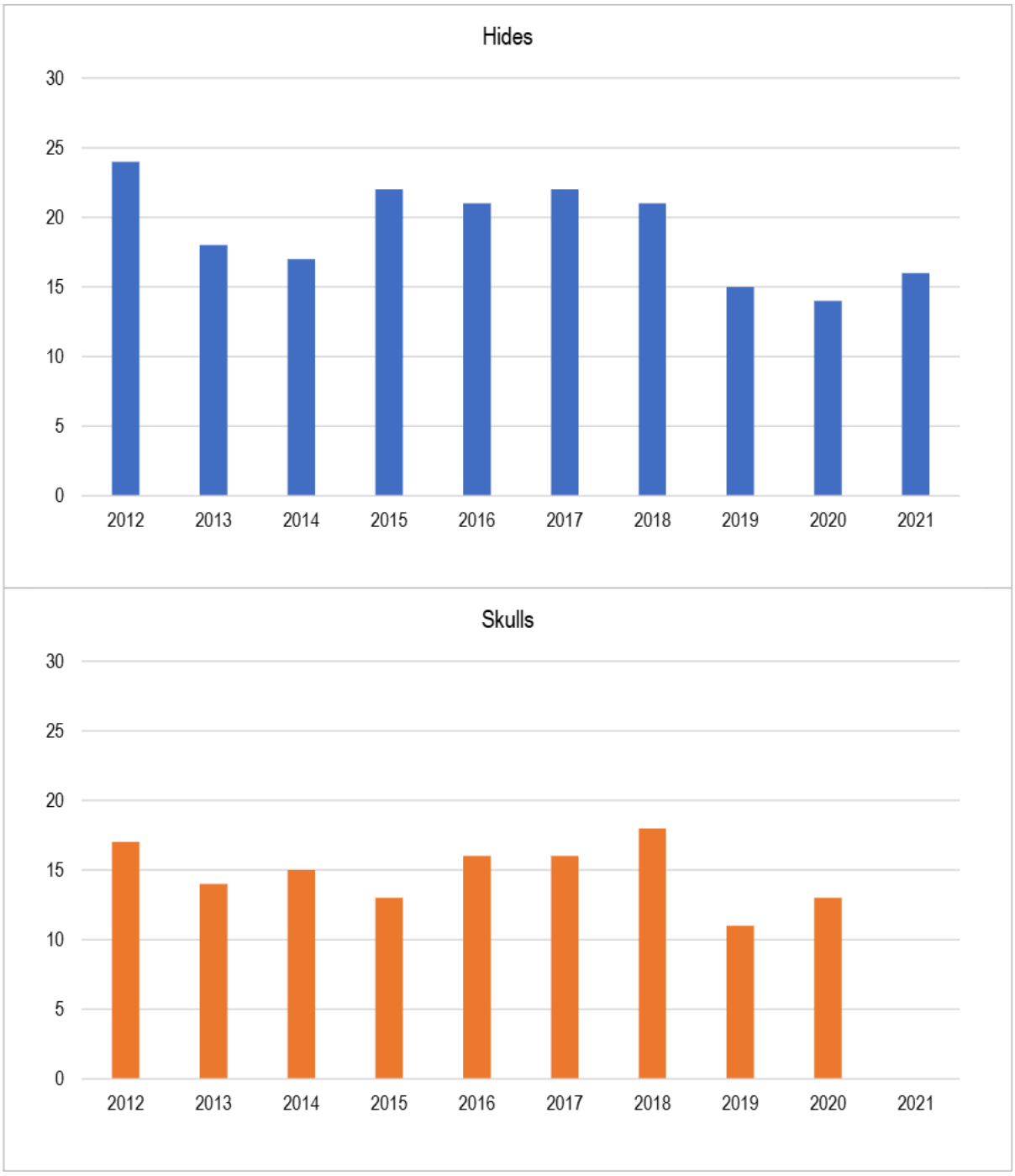

Figure 29. Numbers of destination countries for hides and skulls, 2012–2021
Polar bear hides were exported from Canada to a total of 52 different countries in these years. Polar bear skulls were exported to a total of 37 different countries.

Figure 30. Polar bear hides exported from Canada to China, 2012–2021
The top chart provides the total numbers of hides exported to China and all other countries. The bottom chart provides the numbers of exported hides as a percentage of all hides exported. Numbers in parenthesis indicate the total number of countries that imported hides in each year.

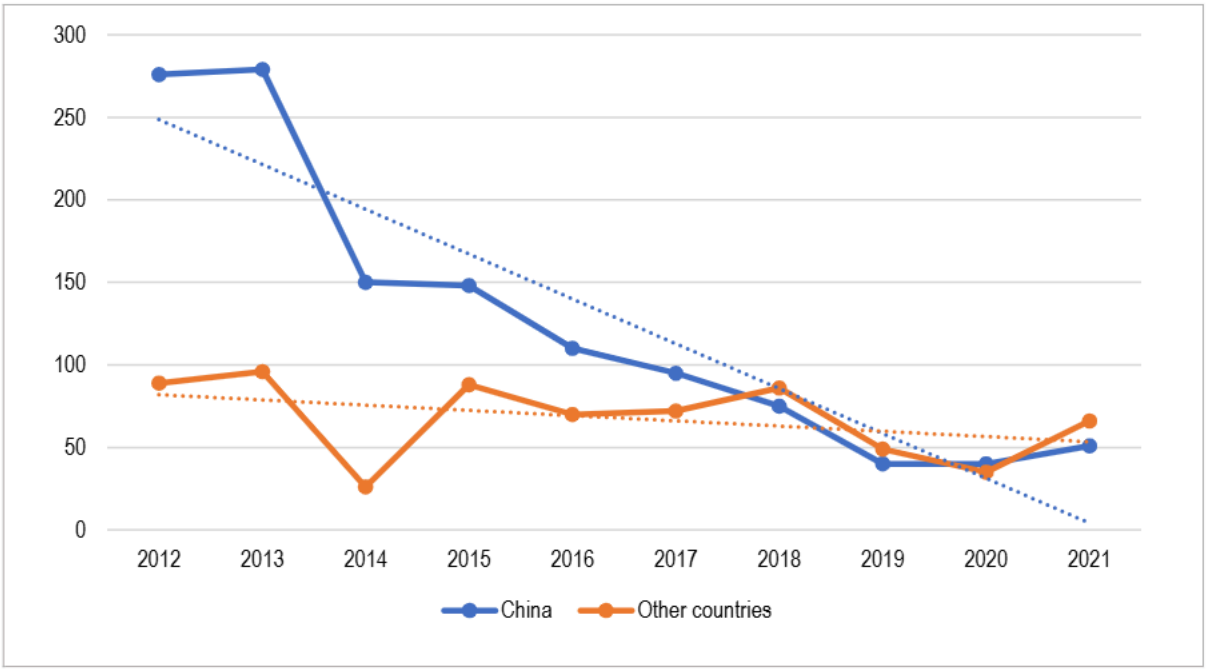

Figure 31. Hides exported from Canada to China vs other countries, 2012–2021
Trendlines are indicated as dotted lines.

Skulls

Polar bear skulls were exported from Canada to a total of 37 different countries in 2012–2021. The number of destination countries for skulls varied year-to-year and ranged from a high of 18 in 2018 to a low of 7 in 2021 (Table 14; Appendix B).

The dynamics of Canadian polar bear skull exports for 2012–2021 were quite different than that for hides, with no single country dominating trade volumes. Out of the 37 destination countries for skulls, 11 imported 10 or more skulls in the period (Table 14; Fig. 34; Appendix B). Together, these 11 countries accounted for 73% (n=273) of the skulls exported from Canada. Belgium was the destination for the largest number of skulls (n=45) and accounted for 12% of all the skulls exported. Germany was the destination for the largest number of skulls exported in a single year (19 skulls in 2021). Exports of 10 or more skulls to one country in a single year were rare (Table 14; Appendix A).

Skulls were mainly exported to Austria, Denmark, Norway, Russia, and Spain as hunting trophies, while most exported to Belgium, China, France, Germany, and Italy were for commercial purposes. In contrast, most of the skulls exported to Australia were for personal purposes (Table 14; Fig. 34).

The 2021 uptick in commercial skull exports was primarily due to spikes in exports to Belgium and Germany. However, commercial exports of skulls to these countries were inconsistent throughout the years 2012–2021, and few skulls had been exported to Germany prior to 2021. It is, therefore, unclear whether the commercial market for skulls is growing or whether the overall increase was the result of coincidental and sporadic exports in 2020 and 2021.

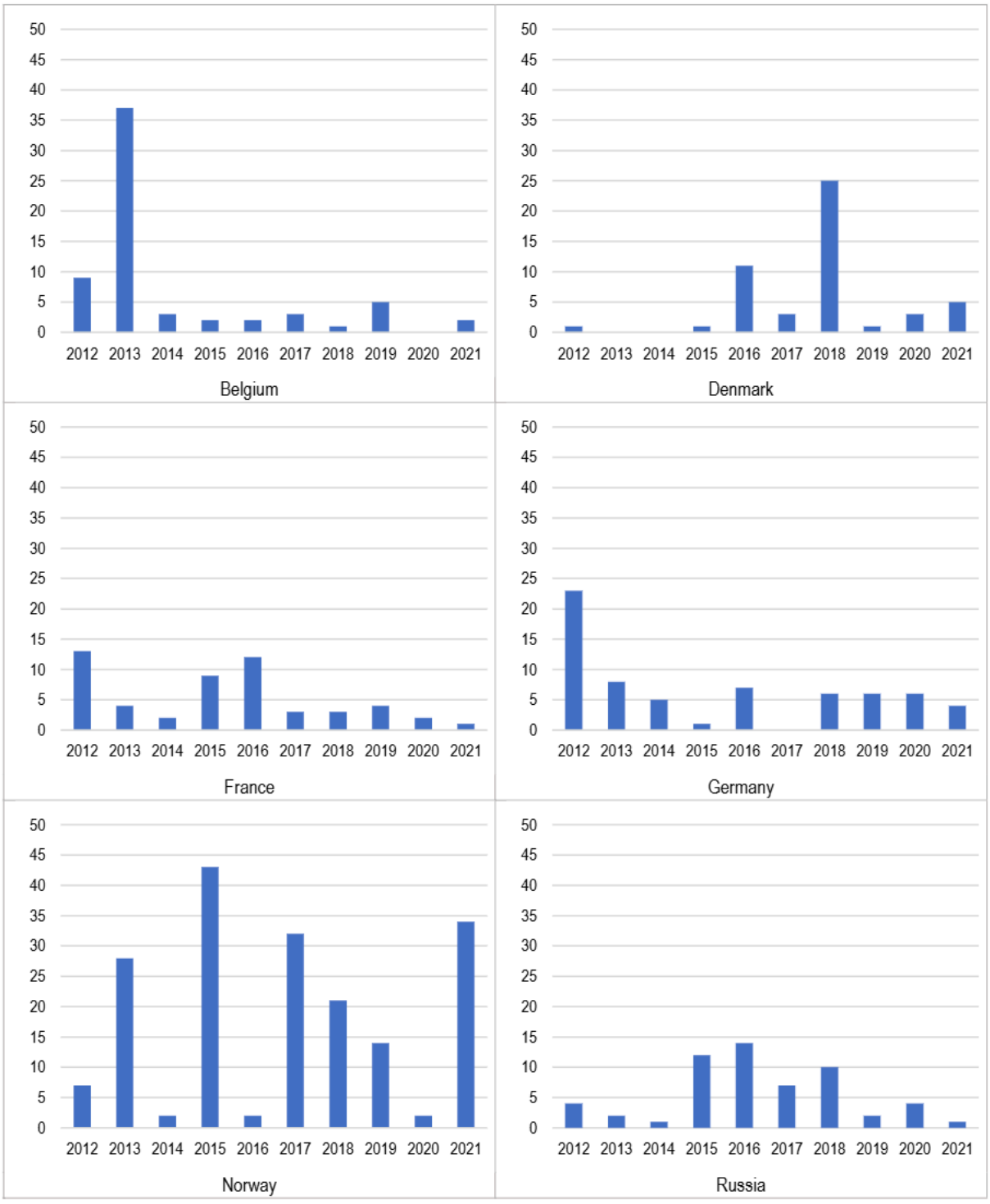

Figure 32. Numbers of polar bear hides exported to selected countries, 2012–2021

Collectively, the countries shown above imported 24% of the polar bear hides exported from Canada in 2021–2021. China (not shown) imported 65% of hides and other countries (not shown) imported the remaining 10%.

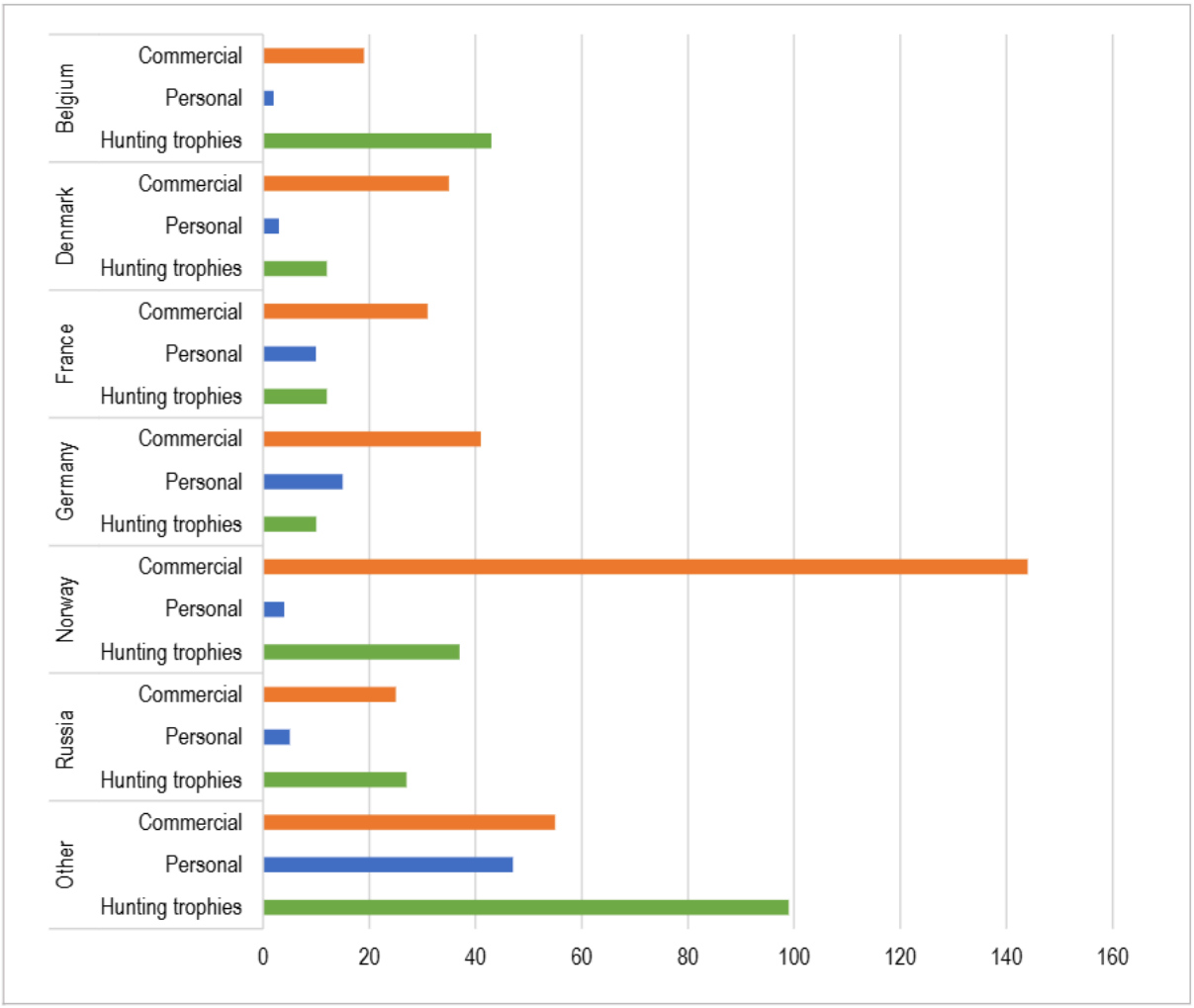

Figure 33. Exports of hides to countries other than China in 2012–2021, by purpose
Exports for for circus or travelling exhibitions were rare and not included in this chart. Polar bear hides were exported from Canada to a total of 52 different countries in these years. As a group, the six countries specifically named here accounted for 24% of the hides exported from Canada during 2012–2021.

Table 14. Destination countries for exported skulls, 2012–2021

Country	Purpose	Year										Total
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Australia	Hunting trophies	-	1	2	1	1	1	2	1	-	1	10
	Personal	-	1	5	2	-	5	-	6	-	1	20
	Commercial	-	-	-	-	-	2	-	-	-	-	2
	Subtotal	**0**	**2**	**7**	**3**	**1**	**8**	**2**	**7**	**0**	**2**	**32**
Austria	Hunting trophies	-	2	-	1	3	1	-	3	1	-	11
	Personal	-	-	-	-	1	-	-	-	-	-	1
	Commercial	-	-	-	-	-	-	-	-	-	-	0
	Subtotal	**0**	**2**	**0**	**1**	**4**	**1**	**0**	**3**	**1**	**0**	**12**
Belgium	Hunting trophies	1	-	1	1	-	-	1	2	-		6
	Personal	-	-	3	-	-	1	-	-	-		4
	Commercial	1	6	-	1	1	6	-	6	3	11	35
	Subtotal	**2**	**6**	**4**	**2**	**1**	**7**	**1**	**8**	**3**	**11**	**45**
China	Hunting trophies	-	-	1	-	1	-	-	-	-	1	3
	Personal	-	-	-	-	-	-	-	-	-	-	0
	Commercial	-	-	-	6	2	-	9	-	11	-	28
	Subtotal	**0**	**0**	**1**	**6**	**3**	**0**	**9**	**0**	**11**	**1**	**31**
Denmark	Hunting trophies	1	-	-	1	3	-	4	1	2	-	12
	Personal	-	-	-	-	-	-	1	-	-	-	1
	Commercial	-	-	-	-	-	-	-	-	-	-	0
	Subtotal	**1**	**0**	**0**	**1**	**3**	**0**	**5**	**1**	**2**	**0**	**13**
France	Hunting trophies	1	1	2	3	-	1	2	1	-	-	11
	Personal	-	1	-	-	-	1	-	2	-	-	4
	Commercial	2	11	3	-	1	1	2	1	-	-	21
	Subtotal	**3**	**13**	**5**	**3**	**1**	**3**	**4**	**4**	**0**	**0**	**36**
Germany	Hunting trophies	1	1	2	1	1		3	2	-	-	11
	Personal	1	-	-	-	-	-	-	1	-	-	2
	Commercial	1	-	-	-	1	-	-	1	5	19	27
	Subtotal	**3**	**1**	**2**	**1**	**2**	**0**	**3**	**4**	**5**	**19**	**40**
Italy	Hunting trophies	1	-	-	-	1	-	1	-	-	-	3
	Personal	1	1	-	-	1	-	-	-	-	-	3
	Commercial	-	-	1	-	2	-	-	-	1	-	4
	Subtotal	**2**	**1**	**1**	**0**	**4**	**0**	**1**	**0**	**1**	**0**	**10**
Norway	Hunting trophies	3	-	2	1	-	2	-	-	1	-	9
	Personal	-	-	-	-	-	-	-	-	-	-	0
	Commercial	-	-	-	5	-	-	-	-	-	-	5
	Subtotal	**3**	**0**	**2**	**6**	**0**	**2**	**0**	**0**	**1**	**0**	**14**
Russia	Hunting trophies	1	2	1	10	2	1	2	1	4	-	24
	Personal	-	-	-	-	-	-	-	-	-	-	0
	Commercial	-	-	-	-	-	-	-	-	-	-	0
	Subtotal	**1**	**2**	**1**	**10**	**2**	**1**	**2**	**1**	**4**	**0**	**24**
Spain	Hunting trophies	1	2	-	2	1	1	-	3	3	-	13
	Personal	-	-	-	-	-	-	-	1	-	1	2
	Commercial	-	-	-	-	-	-	-	1	-	-	1
	Subtotal	**1**	**2**	**0**	**2**	**1**	**1**	**0**	**5**	**3**	**1**	**16**
Other (n=26)	Hunting trophies	16	5	5	4	5	9	8	2	2	1	57
	Personal	11	2	1	-	-	6	8	-	3	-	31
	Commercial	-	-	2	1	1	1	2	3	-	2	12
	Subtotal	**27**	**7**	**8**	**5**	**6**	**16**	**18**	**5**	**5**	**3**	**100**
Grand total		**43**	**36**	**31**	**40**	**28**	**39**	**45**	**38**	**36**	**37**	**373**
No. of destination countries		**17**	**14**	**15**	**13**	**16**	**16**	**18**	**11**	**13**	**7**	

Source: CEPS. Polar bear skulls were exported to a total of 37 different countries in the years 2012 to 2021.

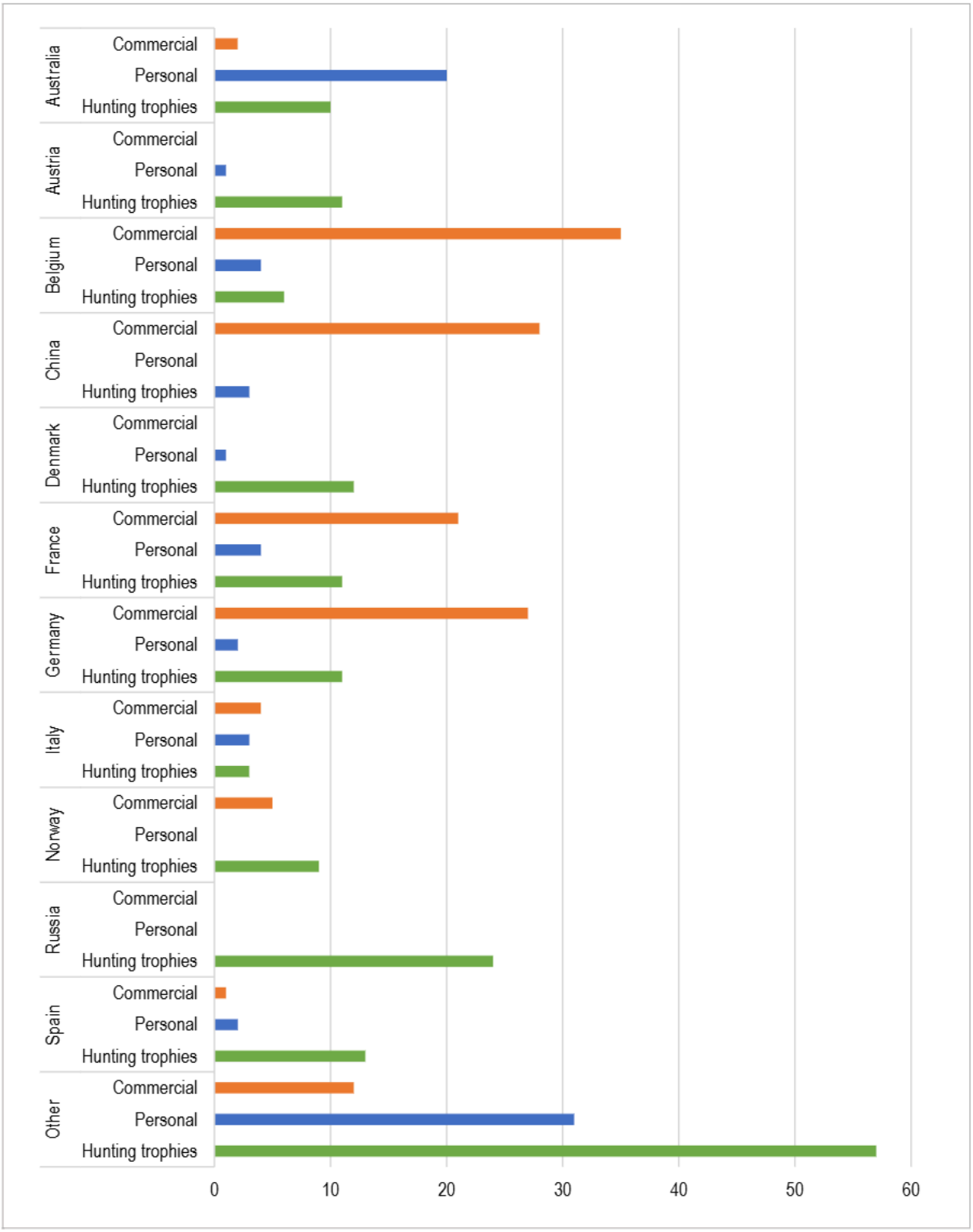

Figure 34. Exports of skulls to countries other than China in 2012–2021, by purpose
Polar bear skulls were exported to a total of 37 different countries in the years 2012 to 2021. Collectively the 11 countries specifically named imported 73% of the skulls exported from Canada during 2012–2021.

Numbers of bears exported from Canada

The export data available in the CEPS for most years included tag numbers for every hide and skull, allowing for an exact count of how many individual bears were exported. In 2012–2021, 100% of the skulls exported as hunting trophies could be matched to hides exported on the same date, for the same purpose and destination. Skulls exported as hunting trophies were, therefore, excluded from calculations to determine the number of bears exported from Canada each year. The data for most years included entries with missing tag information. As such, the numbers of exported bears for those years were expressed as minimum and maximum. Only the 2013 data had more than two entries with missing tag information.

The skulls and hides of 2,088–2,155 polar bears were exported from Canada in 2012–2021, ranging from a high of 394 in 2012 to a low of 91 in 2020. The number of exported bears declined year-to-year throughout the period except for spikes in exports in 2015 and 2021 (Table 15; Figs. 35 and 36).

Significantly more polar bears were killed in Canada each year than were exported as hides and/or skulls. The closest the maximum number of bears exported came to the total Canadian kills was in 2013, when 617 bears were killed and 390 were exported—a difference of 227 animals (Fig. 37). It is important to note the hides and skulls exported each year do not necessarily come from bears killed in that year, so there is no direct correlation between the numbers exported and killed for a particular year (see *Exports from Canada, by hunting season*, below).

Table 15. Numbers of polar bears exported from Canada, 2012–2021

Year	Hides with tag #	Skulls with unique tag #	Hides & skulls with no tag #	Minimum # of bears exported	Maximum # of bears exported
2012	365	10	-	**394**	**394**
2013	358	13	19	**371**	**390**
2014	175	15	1	**190**	**191**
2015	236	12	-	**248**	**248**
2016	179	6	2	**185**	**187**
2017	167	16	-	**183**	**183**
2018	160	21	1	**181**	**182**
2019	88	15	2	**103**	**105**
2020	75	16	-	**91**	**91**
2021	117	25	2	**142**	**144**
Total	**1,920**	**149**	**27**	**2,088**	**2,115**

Source: CEPS. Data for hides include mounted bears. The minimum number of bears exported was calculated as the sum of the number of hides and skulls having unique tag numbers. The maximum number of bears exported was calculated as the minimum number of bears exported plus the number of hides and skulls for which there was no tag number.

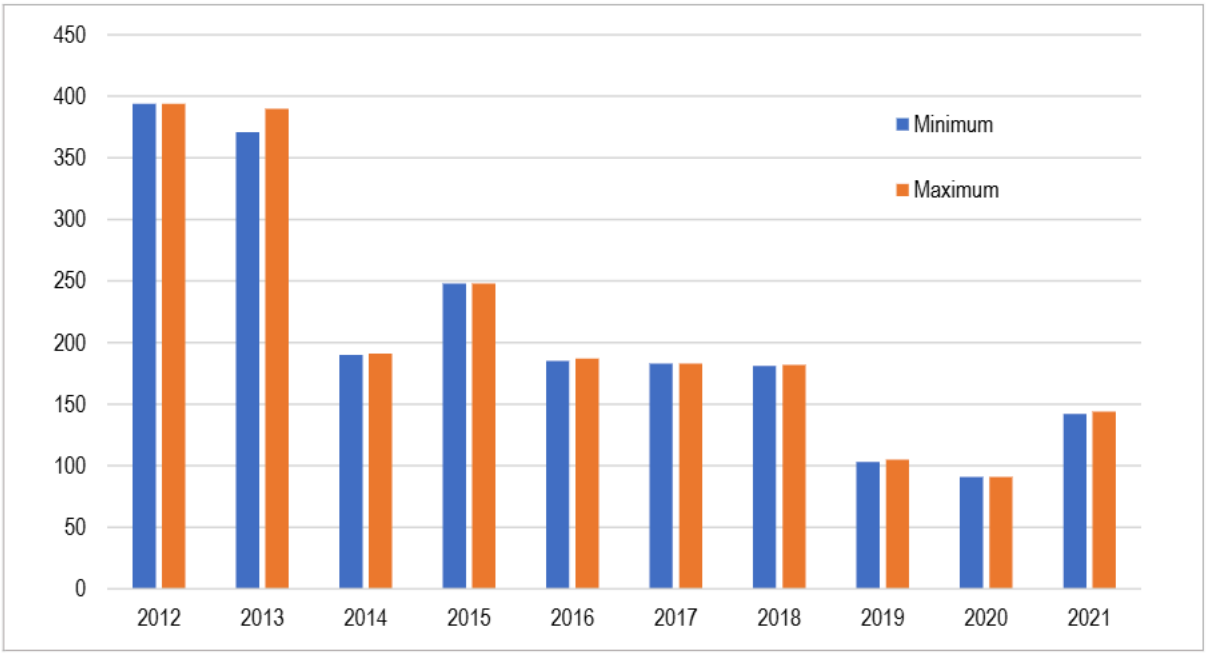

Figure 35. Numbers of polar bears exported as hides and skulls, 2012–2021
Quantities were calculated from numbers of exported hides and skulls cross-referenced against hunting tag numbers. Differences between the minimum and maximum were the result of tag numbers being unrecorded or unavailable for some exports. Only the 2013 data had more than two entries with missing tag information.

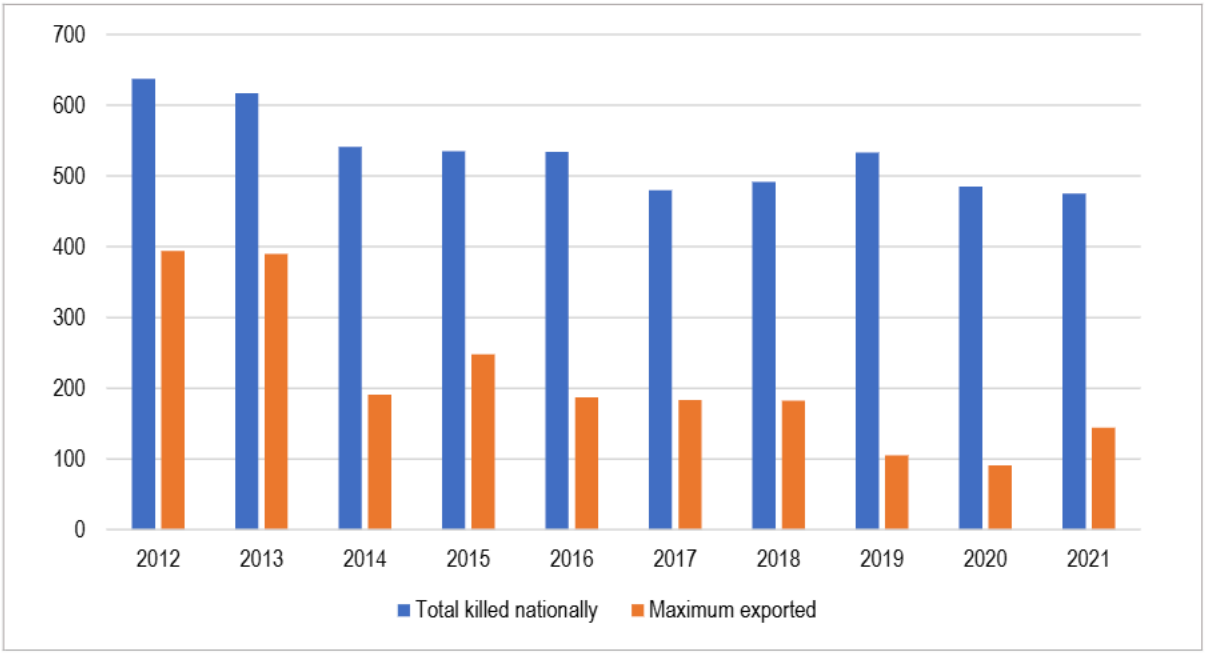

Figure 36. Numbers of polar bears exported vs killed nationally, 2012–2021
Export quantities were calculated from numbers of exported hides and skulls cross-referenced against hunting tag numbers. A small number of exports did not have the tag numbers recorded. This resulted in a minimum/maximum range for the number of bears exported in some years. This chart displays only the maximum number that may have been exported. The hides and skulls exported each year do not necessarily come from bears killed in that year.

Exports from Canada, by hunting season

The hunting seasons in which bears were killed were not recorded for many of the 2012 exports. Therefore, the data for 2012 exports have not been included in the following analysis.

Skulls exported

The skulls exported from Canada in 2013–2021 came from bears killed in at least 16 hunting seasons and dated back to at least 1975. Few older skulls were exported in the period and except for the single specimen from 1975, all the exported skulls were from 2005/06 or later seasons (Table 16).

Most of the skulls exported each year were from the hunting season that ended in the year of export. Many, therefore, came from bears killed less than a year previously (Table 16). A total of 80% to 93% of the skulls exported each year were from bears killed in the three preceding hunting seasons. The shorter period between kill and export for skulls would presumably be due to the reduced time and effort required to prepare, market and transport skulls compared to hides. Plus, hides that go to auction may be held for an extended period before being sold. Out of the 328 skulls exported in 2013–2021, 91% (n=300) came from bears killed in the 2011/12 and later seasons, with the numbers widely distributed amongst the seasons (Table 16).

Hides exported

The hides exported from Canada in 2013–2021 were the results of kills over a span of 31 different hunting seasons dating back at least to 1975. However, the number of older hides exported each year dropped as annual exports declined. Most of the hides sourced from the 2007–2008 or older hunting seasons were exported in 2013 (Table 17).

Most of the hides exported in any given year were *not* from the hunting season that ended in that year.[13] Instead, most came from bears killed a year or more previously (Table 17). The majority were sourced from bears hunted in the three immediately preceding hunting seasons. For example, 88% (n=329) of the hides exported in 2013 were the results of kills in the 2010/11–2012/13 hunting seasons. This was true for each year of the study period except for 2021. However, the proportion of exported hides from the previous three seasons decreased year-to-year. By 2020, only 64% (n=56) of the exported hides were from kills in the preceding three hunting seasons. The hides exported in 2021 were from a greater range of hunting seasons, and only 44% (n=52) were from bears taken in the three immediately preceding.

The proportions of hunting seasons represented in exported hides changed with more elapsed time, and 81% to 94% of the hides exported in most years were from bears hunted in the *five* immediately preceding hunting seasons. The exception, again, was 2021 in which 57% of the exported hides were sourced from the five preceding seasons. Exports in 2021 were unusual in that a large proportion were from bears killed more than five years previously. Specifically, 27% (n=32) of 2021 exports were from bears killed in the 2012/13 and 2013/14 hunting seasons.

A total of 75% (n=1,183) of all the hides exported in 2013–2021 were from bears killed in a period of six hunting seasons (2010/11–2015/16). The 296 hides from bears taken in 2012/13 were the most exported from a single season (Table 17).

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[13] For example, a bear killed in the 2012/13 hunting season and exported in 2013 would have been exported in the same year as the season ended. The 2011/12 hunting season would be considered the preceding season.

Bears exported

As discussed previously, 5,329 polar bears were reported killed in Canada in the 2011/12–2020/21 hunting seasons (see *National summary*). Of these, 27% (n=1,446) were exported from Canada as hides and/skulls (Table 18). Less than one-half of the bears killed in any one season were subsequently exported. The highest proportion of exports to kills was recorded for the 2012/13 hunting season. In that season 617 polar bears were killed across Canada (see *National summary*) and by December 2021, 48% (n=297) had been exported (Table 18; Fig. 37). Exports of bears killed in the different seasons will increase as additional hides and skulls still in Canada are eventually exported. This will especially apply to those taken in the more recent hunting seasons.

The numbers of bears exported generally declined from the older to the more recent hunting seasons (Table 18; Fig. 37). This would be expected given the decline in polar bear exports in 2013–2021 plus bears hunted in the later seasons are less likely to have been exported (at the time of writing). Similarly, the numbers of bears exported for purposes other than as hunting trophies declined as did the numbers of bears killed in each season for reasons *other* than sport. It is notable, however, that the numbers of bears exported as hunting trophies generally declined gradually throughout the period, with a slight spike in 2017/18. This even though the numbers of bears killed for sport increased steadily from 2014/15 to 2018/19. This indicates a substantial number of hunting trophies from bears killed for sport in the 2014/15 to 2018/19 seasons were not subsequently exported (Table 18; Fig. 38).

Table 16. Exported Polar bear skulls sorted by hunting seasons, 2013–2021

Hunting Season	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Not recorded	1	-	-	-	-	-	1		2	**4**
1975	-	-	-	1	-	-	-	-	-	**1**
2005/06	1	-	-	-	1	-	-	-	-	**2**
2006/07	-	-	-	1	-	-	2	-	-	**3**
2007/08	1	3	-	-	-	2	1	-	-	**7**
2008/09	-	-	-	2	-	-	-	1	-	**3**
2009/10	-	-	1	-	-	-	-	-	1	**2**
2010/11	1	2	2	1	-	-	-		-	**6**
2011/12	13	5	2	-	2	-	-	-	-	**22**
2012/13	19	13	8	1	1	-	-	-	-	**42**
2013/14	-	8	8	1	1	-	-	-	1	**19**
2014/15	-	-	18	7	1	-	-	-	-	**26**
2015/16	-	-	1	14	9	3	4	2	4	**37**
2016/17	-	-	-	-	24	8	1	4	1	**38**
2017/18	-	-	-	-	-	31	13	1	3	**48**
2018/19	-	-	-	-	-	1	15	12	6	**34**
2019/20	-	-	-	-	-	-	-	16	6	**22**
2020/21	-	-	-	-	-	-	-		12	**12**
Total	36	31	40	28	39	45	37	36	36	**328**

Source: CEPS. The available data for 2012 was not complete and therefore excluded. Hunting seasons in which no skulls were sourced for export are not shown. Cells highlighted in yellow indicate the hunting season from which the largest number of skulls were exported each year.

Table 17. Exported Polar bear hides sorted by hunting seasons, 2013–2021

Hunting Season	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Not recorded	2	3	-	-	1	3	1	-	-	**10**
1975	-	-	-	1	-	-	-	-	-	**1**
1979/80	-	1	-	-	-	-	-	-	-	**1**
1985/86	1	-	-	-	-	-	-	-	-	**1**
1990/91	1	-	-	-	-	-	-	-	-	**1**
1991/92	1	-	1		-	-	-	-	-	**2**
1992/93	2	-	-	-	-	-	-	-	-	**2**
1993/94	1	1	-	-	-	-	-	-	-	**2**
1995/96	1	-	-	-	-	-	-	-	-	**1**
1996/97	-	-	-	-	-	1	-	-	-	**1**
1998/99	2	-	-	-	-	1	-	-	-	**3**
1999/00	1	-	1	1	1		-	-	-	**4**
2000/01	1	-	-	-	-	-	-	-	-	**1**
2001/02	-	-	1	-	1	1	-	-	-	**3**
2002/03	3	1	-	-	-	1	-	-	-	**5**
2003/04	1	-	1	-	-	-	-	-	-	**2**
2004/05	1	-	-	-	-	-	-	-	-	**1**
2005/06	2	1	2	1	-	1	-	-	-	**7**
2006/07	5		2	1	-	1	-	1	-	**10**
2007/08	2	2		3	1	1	-	-	-	**9**
2008/09	7	11	1	1	1	-	-	-	-	**21**
2009/10	12	2	5	-	-	-	-	-	-	**19**
2010/11	74	10	16	4	7	-	-	1	1	**113**
2011/12	154	32	21	6	9	3	1	1	6	**233**
2012/13	101	67	65	26	14	4	3	3	13	**296**
2013/14	-	45	75	46	20	16	8	3	19	**232**
2014/15	--	-	44	48	23	24	4	4	4	**151**
2015/16	-	-	1	42	55	38	12	5	5	**158**
2016/17	-	-	-	-	34	33	7	10	10	**94**
2017/18	-	-	-	-	-	33	34	8	15	**90**
2018/19	-	-	-	-	-	-	19	23	15	**57**
2019/20	-	-	-	-	-	-	-	16	22	**38**
2020/21	-	-	-	-	-	-	-	-	7	**7**
Total	375	176	236	180	167	161	89	75	117	1,576

Source: CEPS. Hunting seasons were not recorded for many of the hides and skulls exported in 2012, and therefore 2012 data was excluded from this analysis. One hide exported in 2013 was recorded as pre-1990 and was included in these data as "not recorded." Hunting seasons in which no hides were sourced for export are not shown. Cells highlighted in yellow indicate the hunting season from which the largest number of hides were exported in that year.

Table 18. Purpose of export for bears sorted by hunting seasons, 2012–2021

Hunting Season	Circus or travelling exhibition	Commercial	Hunting trophies	Personal	Total
2011/12	-	218	13	14	**245**
2012/13	-	247	20	31	**298**
2013/14	2	194	16	22	**234**
2014/15	-	117	18	19	**154**
2015/16	1	122	16	28	**167**
2016/17	2	66	15	28	**111**
2017/18	1	60	23	22	**106**
2018/19	-	42	14	13	**69**
2019/20	1	26	11	5	**43**
2020/21	-	19	-	-	**19**
Total	**7**	**1,111**	**146**	**182**	**1,446**

Source: CEPS. Export quantities were calculated from numbers of exported hides and skulls cross-referenced against hunting tag numbers. A small number of exports did not have tag numbers recorded but were included to provide the maximum number that may have been exported from each season. The numbers exported for any given hunting season will likely increase in future years, especially for the later hunting seasons.

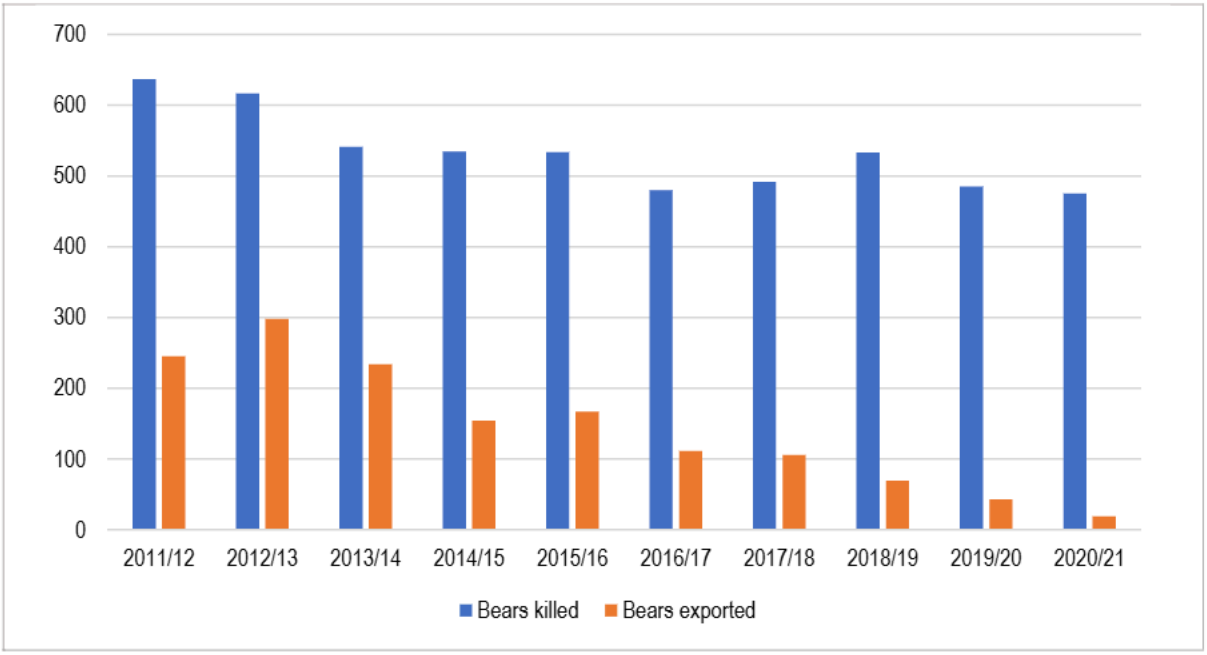

Figure 37. Polar bears killed per hunting season vs numbers exported, 2012–2021
The numbers exported are not the final numbers to be exported for any given hunting season and will be expected to increase in future years, especially for kills in the later hunting seasons.

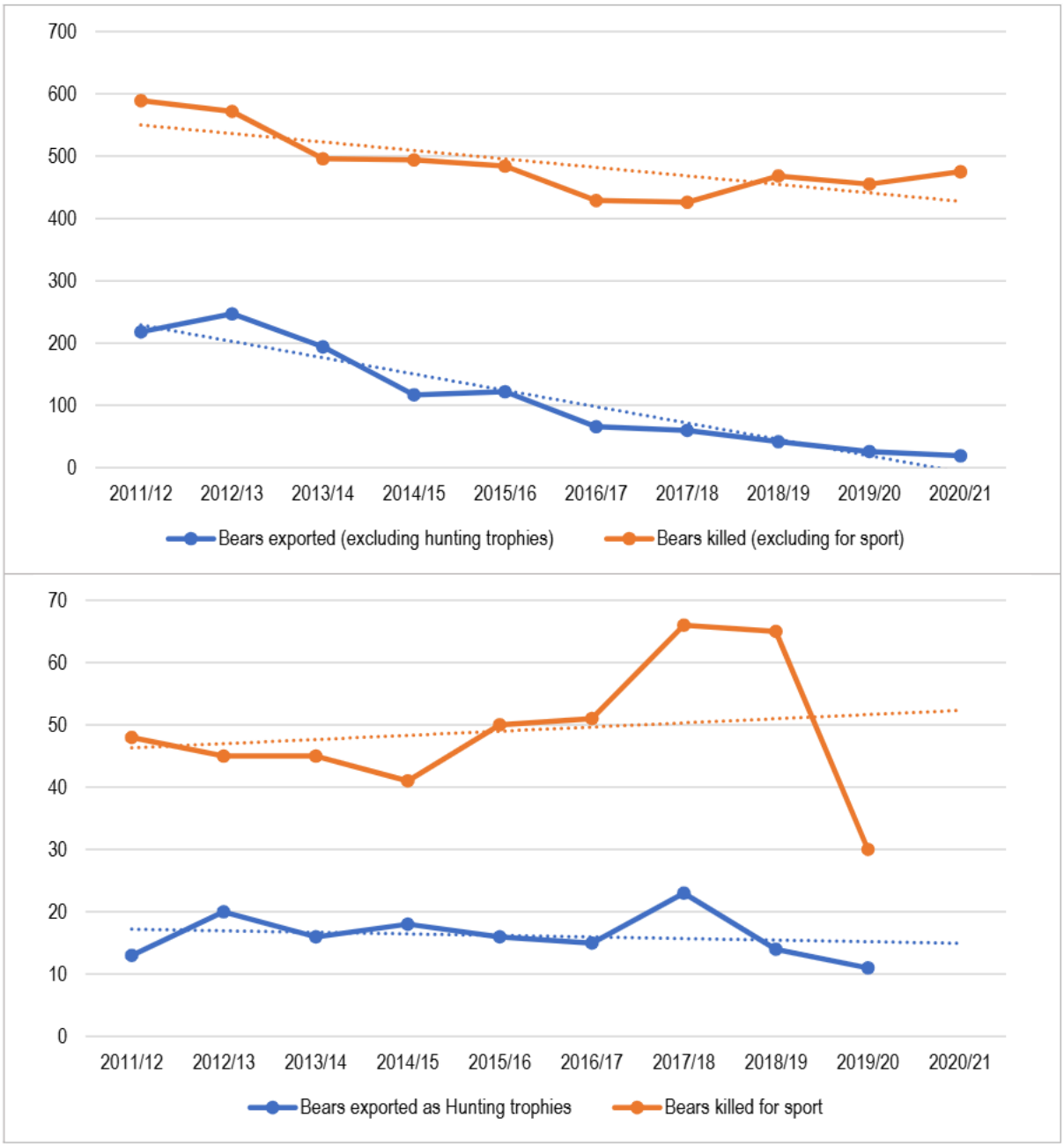

Figure 38. Polar bears killed per hunting season vs purpose of export, 2012–2021
The upper chart shows the numbers of bears killed in each season for reasons *other* than sport compared with the numbers of bears killed *in that season* and exported for purposes *other* than as hunting trophies. The lower chart shows the numbers of bears killed in each season for sport compared with the numbers of bears *killed in that season* and exported as hunting trophies. There were no polar bears killed in Canada for sport in the 2020/21 hunting season and no bears killed in 2020/21 had been exported by December 31, 2021. Trendlines are indicated as dotted lines. The trendline for sport kills is skewed due to the sharp drop in numbers taken after the 2018/19 hunting season. The numbers hunted for sport were trending steeply upwards for the previous seasons.

6. Canadian Polar Bear Auction Sales and Prices

In the years 2012–2021, a total of 612 polar bear hides were sold at auction by FHA. The number of hides offered for sale at the auction increased steadily from 183 in 2010 to 355 in 2016 (with a slight dip in 2015) (Table 19; Fig. 39). Hides that do not sell at one auction may be offered again for sale at subsequent auctions. Therefore, the numbers of hides offered for sale in any year would be a combination of new hides offered for sale for the first time plus hides held over from previous auctions. The numbers of hides offered for sale remained at more than 300 per year until 2021 when the number was reduced to 142 (Table 19; Fig. 39) after the auction house arranged with Nunavut to return many unsold hides for traditional use within the territory (Noseworthy, in litt.).

The largest number of hides sold in a single year was 165 (in 2012). Despite the ready availability of hides for sale, the numbers sold decreased steadily in the following years, with a notable drop of more than 70% of sales in 2015. Fewer than 45 hides were sold annually in the following years and reached a low of 19 hides in 2021 (Table 19; Fig. 39). The greatest difference between the numbers of hides offered vs the numbers sold was in 2017, when 37 hides were sold out of 354 offered for sale—a difference of 317 hides.

Average and top prices for polar bear hides followed similar trends. Both average and top prices peaked in 2013, dropped in 2014, recovered slightly in 2015, then generally declined in the following years. Average prices showed a single-year increase in 2019 and top prices started to increase slightly after 2019. The highest price paid for a polar bear hide in 2013 was CAD 21,115 (USD 20,506), and the average price paid in that year was CAD 7,069 (USD 6,865) (Table 19, Figs. 40 and 41). In 2021, the average price for a hide was CAD 2,320 (USD 1,855), which was a 67% drop in value since 2013.

The declining numbers of hides sold, and prices paid for hides correlated with declining exports of hides and numbers of polar bears killed in Canada after 2013, suggesting the global market for polar bear hides began to collapse in 2014 (Fig. 42).

As noted previously (see *Canadian Exports: Overview*), this collapse correlated with a diminishing global fur market. Prices for farmed mink hit record highs in 2013 when they were selling for approximately CAD 110 (USD 100) $100 USD per skin. Prices then declined by more than 50% in 2014. Wild fur prices followed the downward trend for mink prices (Noseworthy, in litt.). By early 2020 farmed mink was selling for approximately CAD 40 (USD30) per skin, which was below the cost of production (Noseworthy, in litt.). The low prices for fur significantly impacted the industry. In 2018, American Legend Cooperative, an auction house owned by US mink farmers, ceased operations and was acquired by North American Fur Auctions Inc. (NAFA) in Canada. Subsequently, in 2019, NAFA sought and was granted creditor protection by the Ontario Superior Court of Justice under the Companies' Creditors Arrangement Act (NAFA, 2019). At the time of writing, FHA was the only fur auction house remaining in North America (Jubinville, in litt.).

On November 4, 2020, in the wake of COVID-19 outbreaks on mink farms, the Danish government, ordered all mink in the country to be killed. Approximately 17 million minks were destroyed (BBC, 2020). At the time, Kopenhagen Fur, owned by Danish mink farmers, was the largest fur auction house in the world. The company's management subsequently decided to institute a controlled shutdown of the company over a period of 2-3 years (Kopenhagen Fur, 2020). In November 2021, the Canadian province of British Columbia announced a permanent end to mink farming due to the risk created for spreading COVID-19. Breeding mink was banned across the province and keeping live mink on farms was prohibited, starting April 2023 (CBC, 2021).

In late 2020, farmed mink prices jumped, at least partly due to the declining production of mink in some countries, especially Denmark. Wild fur followed that trend with significant increases in the prices and demand for several wild fur species (Noseworthy, in litt.). Whether the increasing prices for fur will stimulate sales and exports of polar bear hides remains to be seen in the coming years.

The extent to which the prices for polar bear hides influence the numbers of bears killed appears to vary by jurisdiction, as follows:

- *Newfoundland and Labrador*: prices did not seem to be a factor for harvest levels in Newfoundland and Labrador, where the numbers killed reflected the available quota and, in 2021 at least, ice conditions.
- *Nunavut*: Despite the dramatic rise and fall of hide prices, the numbers of polar bears killed in Nunavut remained constant throughout the period. This suggests prices for hides sold at auction did not significantly impact hunting levels. However, the Nunavut government provides hunters with an advance payment for hides to be sold at auction (see *Canadian Domestic Trade Chain* for details). This mitigates the impact of a diminishing market for hides, making lower prices less of a disincentive on hunting.
- *ISR*: The Northwest Territories also provides hunters with advance fees for good-quality hides (see *Canadian Domestic Trade Chain* for details). Nonetheless, the numbers of polar bears killed in the ISR declined for most of the study period. The extent to which the incentive to hunt was impacted by hide prices is unclear.
- *Québec*: as previously noted, the reporting of polar bear kills is voluntary in Québec, but hunters cannot sell hides unless they are properly reported. The number of bears hunted per year was greatest in the 2011/12 to 2013/14 hunting seasons, when prices were highest, then declined in the following years as the market cooled. The high prices for hides provided Québec hunters with the incentive to both hunt polar bears and report the kills. The subsequent declining prices and diminishing opportunities for exporting polar bear hides will have provided less incentive to hunt, but also to report kills. This suggests the decline in bears reported killed hunted in Québec after 2014 may be due to a combination of both fewer bears killed, and poorer kill reporting.

Table 19. Prices and numbers of hides sold at the FHA auction, 2012–2021

Year	No. of hides offered	No. of hides sold	Average price		Top price	
			CAD	USD	CAD	USD
2012	183	165	5,597	5,598	16,500	16,504
2013	200	132	7,069	6,865	21,115	20,506
2014	306	105	6,122	5,546	11,550	10,463
2015	274	30	6,460	5,058	12,000	9,396
2016	355	39	5,074	3,831	9,045	6,830
2017	354	37	3,832	2,956	5,160	3,980
2018	355	44	2,972	2,293	4,788	3,694
2019	330	20	4,113	3,100	4,608	3,473
2020	326	21	2,344	1,750	5,248	3,918
2021	142	19	2,320	1,855	6,000	4,799

Sources: Beaulieu Blanchette, in litt.; Ghazal, in litt.; Imrie, in litt.; and Noseworthy, in litt. The precise numbers of hides offered for sale in 2016–2021 were not available. The numbers reported here for 2016–2021 are the highest numbers of hides offered at any sale in the given year. In a typical year, polar bear hides are available at two or three different sales, and hides that do not sell at one, may be offered again at subsequent sales. A total of 612 hides were sold at auction in 2012–2021. Prices in USD are based on the average CAD/USD exchange rate for each year (OFX, 2021).

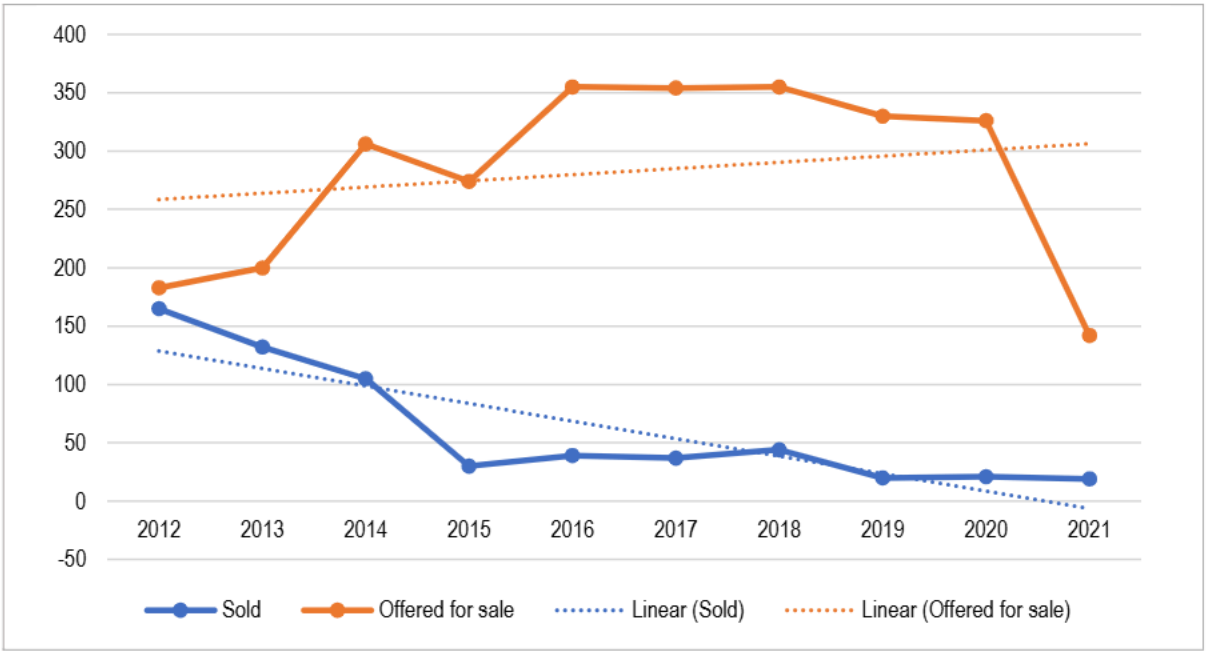

Figure 39. Polar bear hides offered for sale and sold at the FHA auction, 2012–2021
In a typical year, polar bear hides are available at two or three different sales, and hides that do not sell at one, may be offered again at subsequent sales. A total of 612 hides were sold at auction in 2012–2021. Trendlines are indicated as dotted lines.

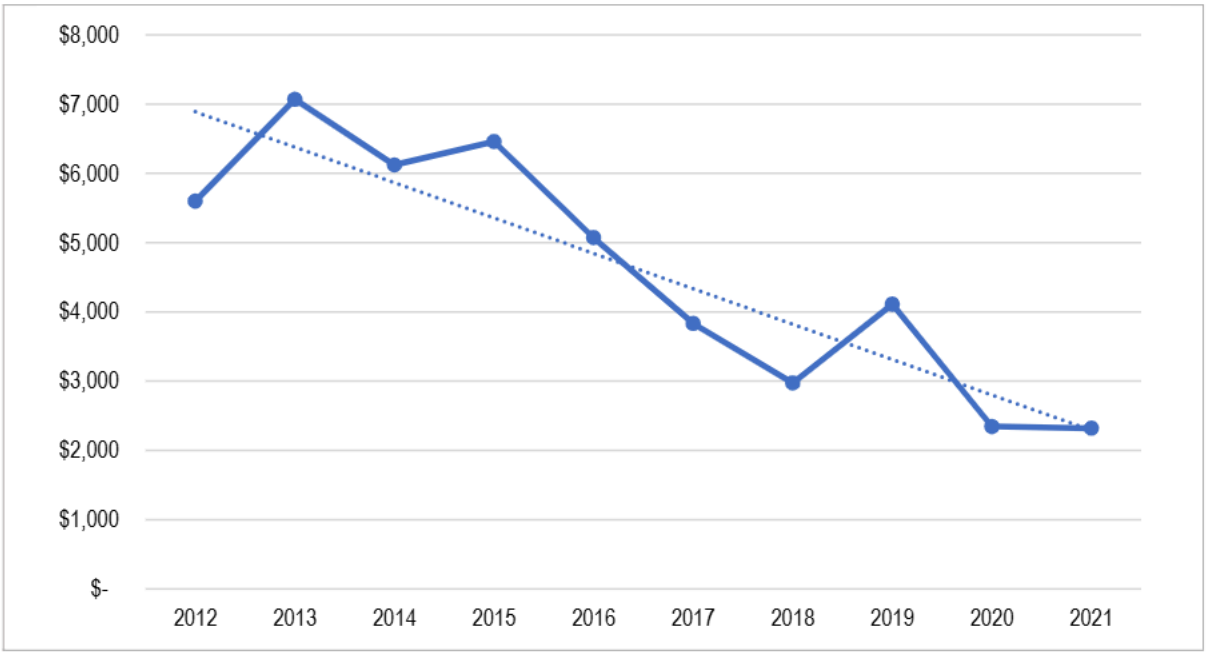

Figure 40. Average prices for polar bear hides sold at the FHA auction, 2012–2021
Prices are in CAD. The trendline is indicated as a dotted line.

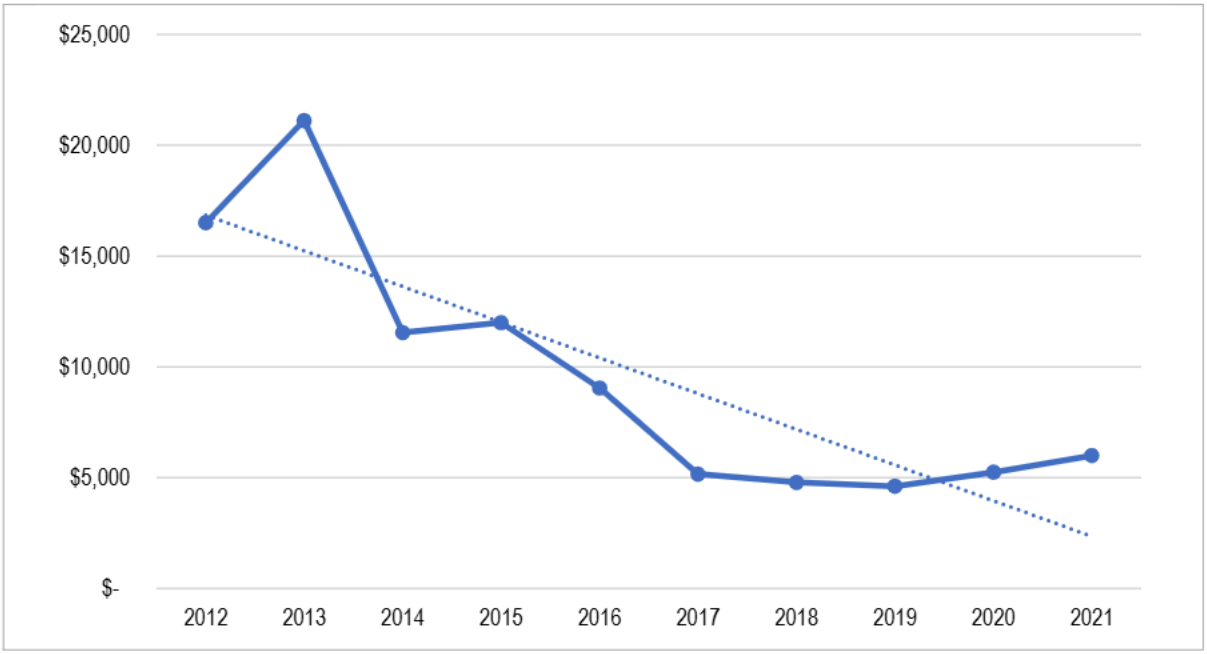

Figure 41. Top prices paid for polar bear hides sold at the FHA auction, 2012–2021
Prices are in CAD. The trendline is indicated as a dotted line.

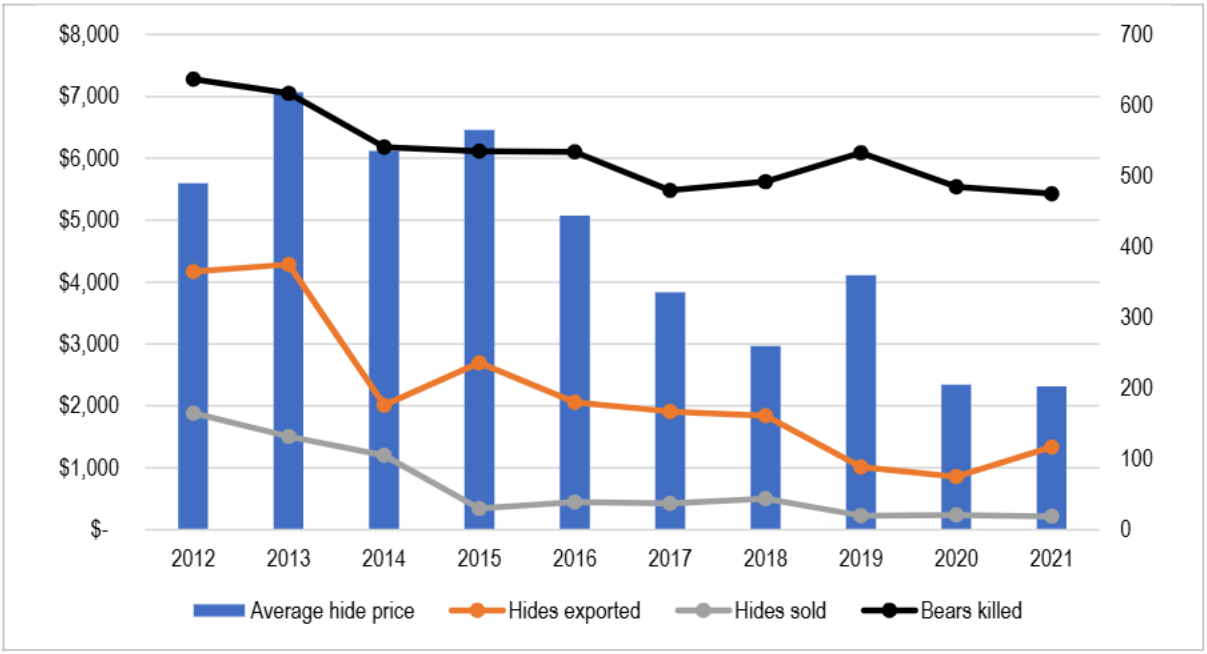

Figure 42. Polar bear hide prices vs hides sold, hides exported, and kills, 2012–2021
Prices in CAD are indicated on the left side, numbers of hides sold or exported, and numbers of bears killed, are indicated on the right. Bears killed refers to the total number killed nationally in the hunting season ending in that year.

7. Canadian Domestic Trade Chain

The trade chain for polar bear hides destined for export from Canada varies slightly between the different provincial and territorial jurisdictions (Figs. 43, 44 and 45). As previously discussed, most of the polar bears killed in Canada are taken in Nunavut, and most of the polar bears exported from Canada come from Nunavut. In the Inuvialuit Settlement Region and Nunavut, subsistence hunting tags may be reallocated to sport hunting (Fig. 43).

After a successful subsistence or sport polar bear hunt, a kill must be registered with the appropriate provincial or territorial authority (except for Québec). A sport hunter can then arrange to have the hide tanned and if not from Canada, the hide and skull exported to the hunter's home country.

The Northwest Territories has established the Genuine Mackenzie Valley Fur (GMVF) Program to support harvesters and traditional lifestyles by facilitating access by hunters and trappers to the international fur auction market. The Program actively markets and promotes fur at international venues and provides advance fees for good quality hides to be sold at the FHA auction. The fee provided depends on the anticipated market performance and pre-determined values for each species (NWT, 2022). The amount advanced for polar bear hides has not varied as the market for polar bear hides has declined (Halle, in litt.). If a hide sells at auction for more than the advance fee the hunter or trapper receives the additional funds. A successful sale may also entitle a hunter or trapper to a Prime Fur Bonus payment as an incentive to deliver quality hides. If a hide sells at auction for less than the advance, the GMVF program absorbs the difference (NWT, 2022). At the time of writing, most polar bear hides from the ISR were being marketed through direct private sales rather than being sold at auction, and few were being submitted through the GMVF program (Baryluk, in litt.).

In Newfoundland and Labrador, the approach taken by hunters has changed in recent years. In 2015, most hunters sold their hides at auction, although some sold privately. The declining market for polar bear hides in the following years resulted in a shift away from auctions and a drop in private sales. By 2021, some hides were still sold privately but most were kept for personal use. Low prices made auctions not worth the effort required to prepare and transport hides. At the same time, the region has experienced a resurgence in traditional arts and crafts, which encourages the mindset that using a hide for personal purposes outweighs the potential monetary gain of selling it (Goudie, in litt.).

Nunavut has established the Seal and Fur Programs Policy to provide financial support to hunters for furs (including polar bear hides), facilitate access to markets, and support traditional economic activities. The program works similarly to the GMVF of the Northwest Territories. Hunters must take their hide(s) to their local Wildlife Office for grading by a Conservation Officer. Hunters will be offered a one-time advance payment for hides of suitable quality. The size of the advance is based on market conditions which are subject to change and are proportional to the quality of the hide. The maximum payment to be advanced is 75% of the assessed value of the fur. If a hide sells for more than the advance fee, the additional proceeds will be paid to the hunter. The Department of Environment also covers the cost of shipping furs to designated marketing agents on behalf of hunters. Any commissions charged by a marketing agent will be paid by the Government of Nunavut. There is no limit to the number of hides a hunter may submit to the program, but the total funds available for fur advances may be limited due to budgetary constraints. Hides will be returned to a hunter upon written request and payment for the advance and shipping costs incurred by the Department of Environment. The Seal and Fur Programs policy was last revised in July 2021 and will remain in effect until March 31, 2025 (Nunavut, 2021a).

In Québec, the Kativik Regional Government (KRG) has been buying hides from hunters and selling them at the FHA auction since 2014.[14] The goal was to ensure hunters would receive fair prices for their hides. However, KRG has noted there is now a minimal market for polar bear hides and a surplus of hides is available (Gilbert, in litt.). Hunters have the option of selling directly to taxidermists or other buyers if they prefer.

Once a hide or skull has been sold, the trade chain is identical between jurisdictions (Fig. 44).

A CITES Export Permit must be issued before any part of a polar bear may be legally exported. Applicants must complete application forms which may be downloaded from a Government of Canada website. There are separate forms for exports of hunting trophies, parts or products of harvested animals, and fur garments or products. Bears that are sport-hunted by foreigners are normally exported as hunting trophies. A sport-hunted bear could be given away and subsequently exported for commercial or personal purposes, but this is uncommon (Jubinville, in litt.).

There are no fees for Canadian CITES permits. Permits may be picked up at Canadian permitting offices or the permits will be delivered through the mail, along with instructions on how to use them. These instructions emphasize the need to have export permits validated by the CBSA upon export. CBSA officers retain and forward copies of CITES export permits to the ECCC national CITES Management Authority (CBSA, 2017). Canada is developing a new permitting system that will allow applicants to apply online and track their applications online (Cooper, 2021).

Before an Export Permit is issued, the national Management Authority must determine the items to be exported were legally acquired, and that their export will not be detrimental to the survival of the species. These are commonly referred to as the legal acquisition finding and non-detriment finding (NDF) and are requirements of Article IV of the Convention (Anon., 1973). These findings are prepared with the assistance of the national CITES Scientific Authority, WED, and relevant authorities with the province or territory from which the item(s) originated (Fig. 45).

In 2009, Canada developed a standing NDF for polar bear exports (Canada, 2018). On March 10, 2010, the NDF was amended after the national CITES Scientific Authority determined the export of polar bears from the Baffin Bay subpopulation was detrimental to the survival of the species. This decision was based on the available population information, which indicated the harvest from this subpopulation (shared with Greenland) was not sustainable. Hence, no export permits were issued for bears harvested from Baffin Bay after March 10, 2010 (Canada, 2022).

The polar bear standing NDF was revised after completion of a 2016 Baffin Bay population study. The CITES Scientific Authority concluded the Baffin Bay subpopulation harvest could be considered sustainable as of July 1, 2013, when harvest quotas were reduced jointly with Greenland. Hence, polar bears from the Baffin Bay subpopulation legally taken prior to March 10, 2010, or after July 1, 2013, were considered sustainably harvested and to therefore qualify for CITES export permits. Conversely, polar bears taken from the Baffin Bay subpopulation between March 10, 2010 and June 30, 2013 may not be exported (Canada, 2018, 2022). The NDF was last updated in 2018. ECCC plans to update the NDF in 2022.

Once an applicant has received a CITES Export Permit, they can export the items specified in the permit. Any terms and conditions stated in the permit must be adhered to and the item(s) must be exported before the expiry date provided or the permit will be invalidated. Permits that are not used may be cancelled. The original permit must accompany the item(s) during shipping. Before leaving Canada, the permit must be presented at the border and validated by a CBSA officer (Fig. 45).

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[14] The KRG was formed in 1978 pursuant to the JBNQA to deliver public services to Nunavimmiut (the Inuit inhabitants of Nunavik) (KRG, 2021).

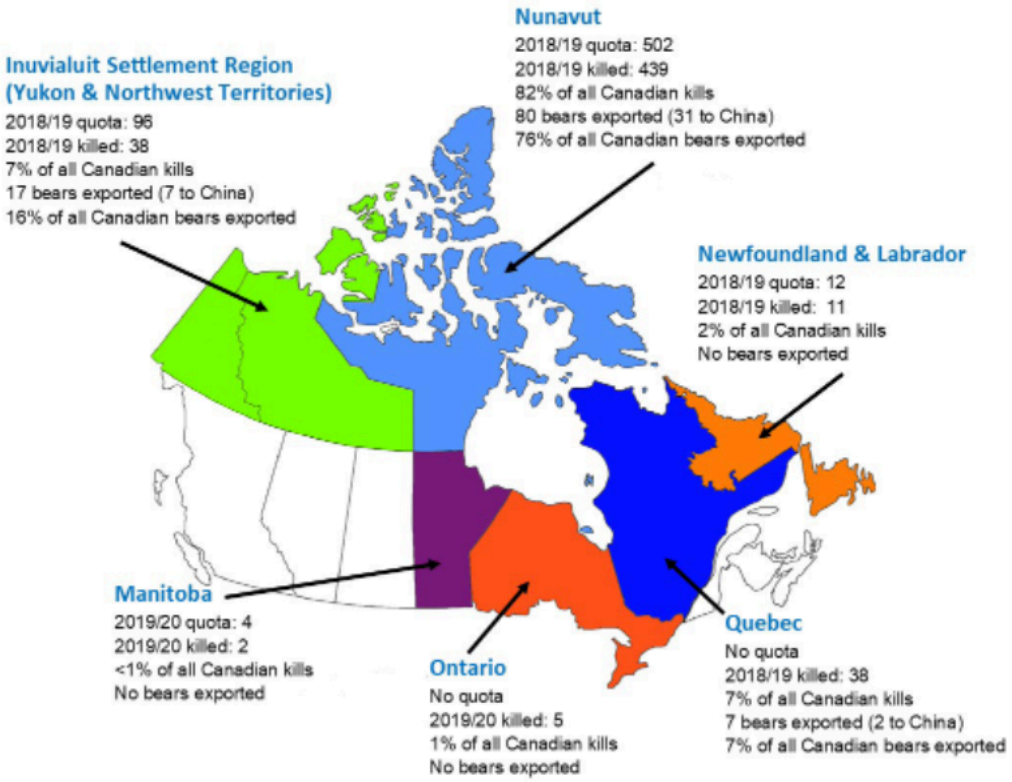

Figure 43. Polar bear hunting and exporting activities, by jurisdiction, 2019
The year 2019 was chosen as the most recent representative year of polar bear hunting and trade activities in Canada. Hunting and export activities were disrupted in the following years due to the COVID-19 pandemic. Hunting quotas and numbers of bears killed were as reported for the 2018/19 hunting season. Numbers of bears exported were calculated from hides and skulls exported cross-referenced via comparison of hunting tag numbers. The numbers of bears exported included all bears exported in 2019, and not just those hunted in 2018–2019. Sources: CEPS; Baryluk (in litt.); Dyck (in litt.); Northrup (in litt);(Nunavut, 2019b); Szor (in litt); Trim (in litt.).

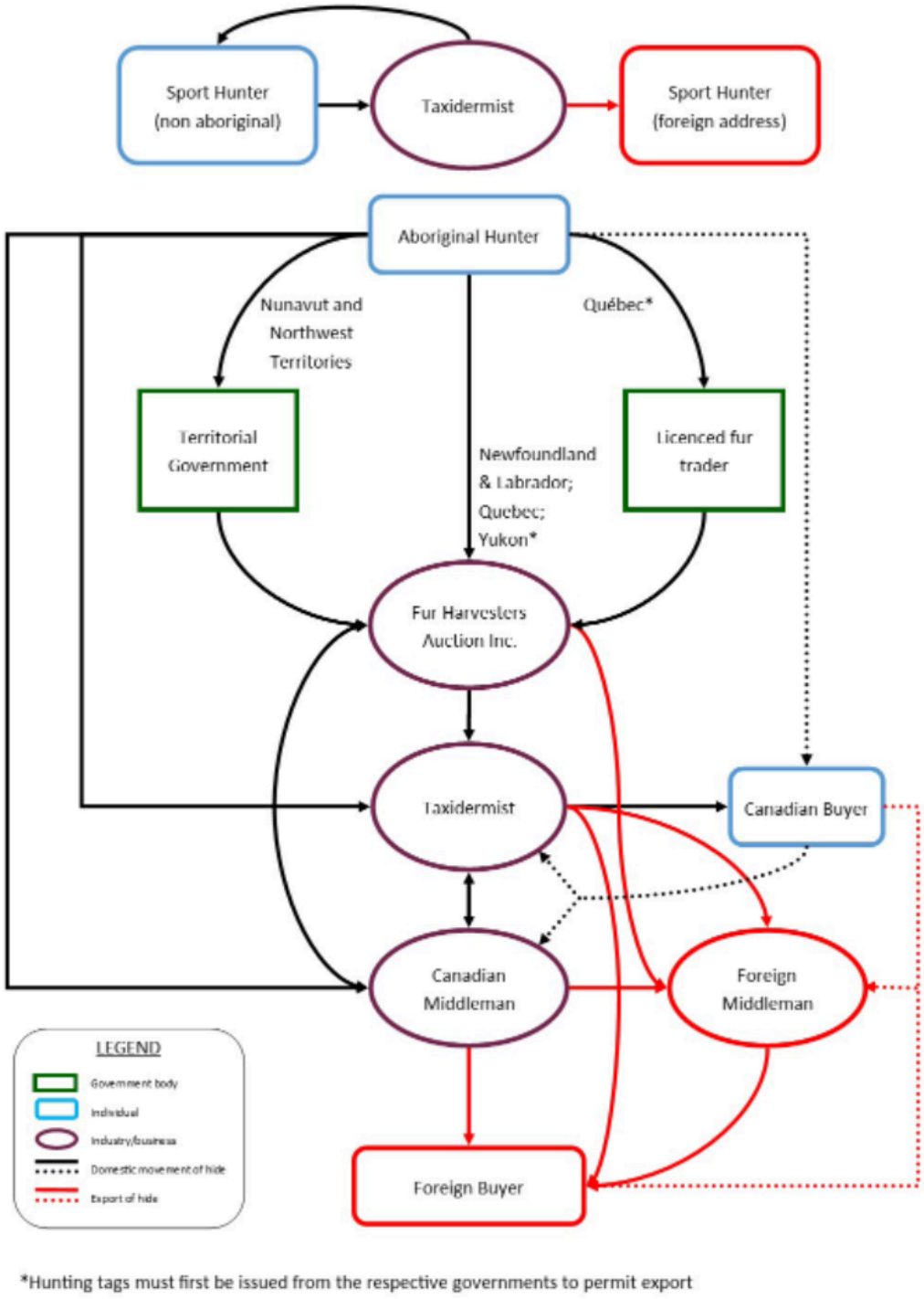

Figure 44. Trade chain for exporting Canadian polar bear hides
This diagram shows the possible movement of a hide from hunter to final destination. Hides from bears killed in Manitoba and Ontario are not shown as they may not be exported. Hides purchased at auction by one taxidermist may be sold to another, who will then process it and sell it per the diagram. Canadians that purchase hides could in turn sell them to Canadian or Foreign buyers, but this is not common, and these movements are shown with dashed lines. Relevant regulatory requirements are shown in a separate diagram (see Fig. 45).

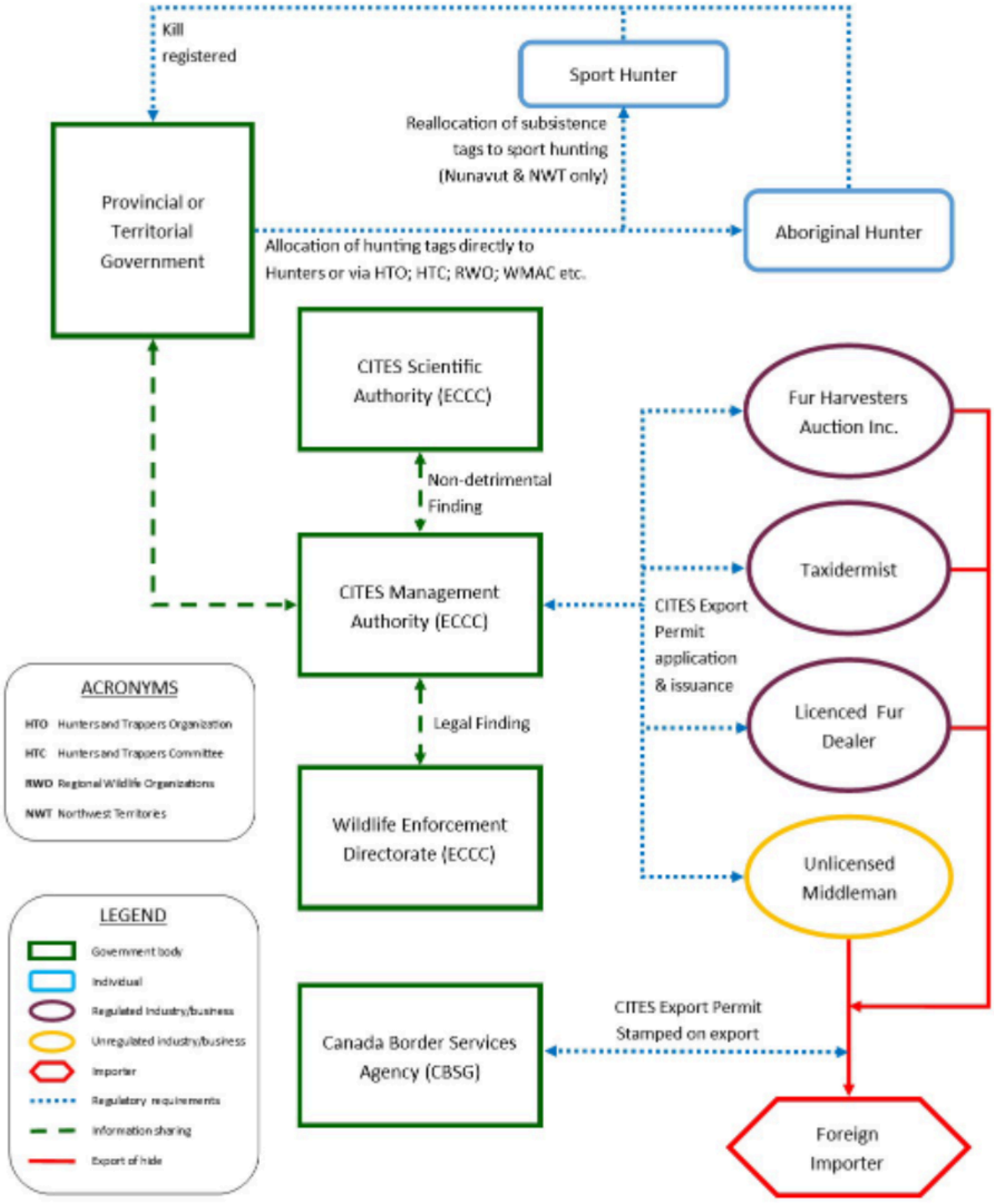

Figure 45. Regulatory process for exporting Canadian polar bear hides
Hides may or may not go directly from the aboriginal hunter to the fur auction. As of 2021, FHA was the only Canadian fur auction still in business. The trade chain diagram for movement of Canadian polar bear hides before export is shown in a separate diagram (see Fig. 44).

8. Discussion and Conclusions

Conservation impact of Canadian polar bear trade

Two previous studies have provided in-depth reviews of polar bear trade. Shadbolt et al. (2012) reviewed management in the five polar bear range States and summarized the global trade in all polar bear products. Cooper (2015) focused specifically on exports of polar bear hides and skulls from Canada, arguing that Canada is home to most of the world's polar bears and is the only country that allows commercial exports of polar bear parts and products. Therefore, if Canadian trade is conducted at sustainable levels, then trade is not a threat to the species overall. Both studies concluded that international polar bear trade was not a significant threat to the species.

Seven years have passed since Cooper (2015) was produced and the main purpose of this study was to again review Canadian polar bear trade and examine what had changed in the interim. The central question was whether trade is still not a threat to polar bear conservation.

This study reviewed polar bear trade dynamics for the years 2012–2021 and looked at the annual numbers of hides and skulls exported, the purpose of trade, and countries of destination. The numbers of hides sold at auction and the prices for those hides were documented to provide insight into the evolving market for polar bear hides. Finally, the actual numbers of bears represented by exports of skulls and hides were calculated and compared with the numbers of bears killed across Canada.

A total of 1,941 polar bear hides and 373 polar bear skulls were exported in 2012–2021. Exports of hides boomed in 2012 and 2013 before the market for polar bear hides crashed in 2014. Exports dropped significantly and continued to decline in the following years. In 2020, only 75 hides were exported. This was fewer than exported in any of the preceding years and comprised an 80% drop from the 2012 peak numbers. Sales of polar bear hides at auction showed a similar boom and bust, both as numbers sold and prices realized. By 2021, only 19 hides were sold at the FHA auction (compared to the 165 sold in 2012) at an average price that was approximately one-half of the 2012 average price. The decline in the international market for polar bear hides correlated with declining markets for furs from other species and Canadian exports were particularly impacted by the rapidly declining Chinese market for hides. This occurred after the Chinese market fueled the rapid increase in commercial exports of hides in the years 2008–2013.

In 2021, a total of 117 hides were exported. This was 42 more than were exported in 2020, and the first increase in hide exports since 2015. This increase was fueled by a spike in commercial exports. Conversely, both exports for personal purposes and of hunting trophies declined in 2021.

A significant proportion of the 2021 increase consisted of hides exported to a single Norwegian importer. Spikes in exports to one or two Norwegian importers occurred several times in 2012–2021 and were likely caused by dealers replenishing their available stock rather than a resurging international market for polar bear hides. Exports of hides to China also increased in 2021. The increase was modest—only 11 hides more than were exported to China in 2020. But it was also the first increase in Chinese imports since 2013. Canadian exports of hides from other species also spiked in 2021, and this followed increased prices paid for mink and wild furs in 2020. It is possible the 2021 upturn in exports signified a resurging market for polar bear hides, but more likely it was the result of export delays in 2020 caused by the COVID-19 pandemic.

During the years 2012–2021, 5,329 polar bears were reported to have been killed in Canada. Throughout this period, the number of bears killed annually always exceeded the number of bears exported as hides and skulls by a considerable margin. The closest annual exports came to the number killed was in 2013, when 617 bears were killed and 390 were exported. However, the hides and skulls exported in 2012–2021 were taken from bears killed over a span of 31 different hunting seasons, dating back to 1975. Most exports were sourced from bears killed in the three to five immediately preceding hunting seasons. Most of the bears exported in the peak years of 2012 and 2013 would have been killed in years prior to the study period. The skulls and hides exported in 2012–2021 were sourced from 1,382–1,403 individual polar bears out of the 5,329 killed in the same period. Approximately 26% of the bears killed in 2012–2021 had been exported by the end of 2021.

Given that most of the polar bears killed annually in Canada are not exported and considering the severe decline in Canadian exports in the past decade, and very low numbers of polar bears exported as hides and skulls in recent years, it seems apparent that trade does not currently constitute a significant threat to the conservation of polar bears.

The evolving market for polar bear hides

The nature of Canadian polar bear hide trade has changed considerably since the early 2000s when exports were evenly split between hunting trophies and commercial exports. Between 2002–2006, 492 hides were exported as hunting trophies compared to 512 exported for commercial purposes. Fewer than 150 hides were exported for commercial purposes in any year and in some years hunting trophies outnumbered commercial exports. An average of 85 hides were exported commercially each year compared to an average of 82 hides exported as hunting trophies.

Prior to 2008, the United States was the single biggest importer of polar bear hides, mainly as hunting trophies. The number of hides exported as hunting trophies spiked in 2007 as US hunters moved to acquire their trophies before the US ESA listing of the polar bear and MMPA import prohibition entered into force (Cooper, 2015). Sport hunting of polar bears by US hunters then dropped markedly (Weber et al., 2015) and exports of polar bear hides to the United States effectively ceased by 2010. The numbers of hides exported from Canada as hunting trophies declined in the following years to an average of approximately 19 hides per year.

Coincidental to the ESA listing, the numbers of hides exported for commercial purposes rose sharply after 2007. This increase was driven by the rising Chinese market for hides. Exports of polar bear hides to countries other than China and the United States peaked in 2004, before starting to decline. The decline was not consistent, and exports fluctuated in volume from year-to-year. Nonetheless, exports of polar bear hides to other countries declined even as exports to China increased.

In 2005, only 12 polar bear hides were exported to China, and only three of those were exported for commercial purposes. In 2008, the year of the ESA listing, the number of hides exported to China increased to 46, with 36 being for commercial purposes. In 2009, the year that polar bear exports to the United States ended, exports of hides to China more than doubled, and almost all were for commercial purposes. By 2010, commercial exports of hides to China exceeded the numbers exported to all other countries combined. In the following years, China imported increasing numbers of hides, and took an increasingly large share of the market (Cooper, 2015). Exports of hides for commercial purposes eventually peaked at 338 hides in 2013. At that point commercial exports accounted for 90% of all hide exports and more than 80% were destined for China.

Exports of hides boomed in 2012 and 2013 before the market for polar bear hides crashed in 2014 when commercial exports of hides dropped by 58%. Except for a slight spike in 2015, exports continued to decline in the following years, primarily due to the rapidly declining Chinese market for polar bear hides. As previously noted, exports to other countries had already been declining for years. In 2018, for the first time since 2010, China imported fewer hides than did all other countries (combined). The decline continued and in 2020, only 75 hides were exported. This was the fewest since before 2002 and constituted an 80% decline since the 2013 peak in exports. Additionally in 2020, exports for commercial purposes comprised only 38% of all exported hides and were exceeded by the number of hides exported for personal purposes.

The diminishing exports of polar bear hides after 2013 correlated with changes in the global market for wild furs. Chinese imports of river otter, bobcat, and Canadian lynx (*L. Canadensis*) hides increased dramatically in 2011 and 2012, and prices for farmed mink hit record highs in 2013. Farmed mink prices then declined by more than 50% in 2014 and prices for wild furs (including polar bear hides) followed. Canadian exports of bobcat, Canadian lynx, river otter, and wolf hides subsequently declined dramatically after 2013.

As previously noted, in 2021, exports of polar bear hides increased for the first time since 2015. This increase was fueled by a spike in exports for commercial purposes and may have been due to exports being delayed from 2020 to 2021.

Impact of hide prices on polar bear hunting

The results for sales of polar bear hides effectively mirror the trend for commercial hide exports. Both the number of hides sold annually, and the average price paid for hides increased sharply from 2007–2012 before sales dropped even more sharply after 2013. The booming sales of polar bear hides that began after 2007 were over by 2015 when only 30 hides were sold (compared to 105 in 2014). The 19 hides sold in 2001 were the fewest in any year since 2007.Average prices followed sales numbers and peaked in 2013 after sales (and exports) were already dropping. Prices stayed relatively high through to 2015 despite the drastic drop in numbers sold. However, prices declined in the subsequent years (with an anomalous spike in 2019) and by 2020 the average price of hides was very close to the average price in 2007.

Overall, the booming commercial market for polar bear hides lasted only about six years, from 2009–2014, with prices for hides lagging sales by one or two years. If polar bear hunting in Canada was unduly influenced by the market for hides, then the numbers of bears killed in the same years could be expected to exhibit similar dynamics.

The numbers of polar bears killed annually in Canada fluctuated somewhat throughout 2007–2021 but did not display the steep increase and decrease exhibited by the average prices for polar bear hides. The notable exceptions were the years 2011–2013 when kills increased to the highest numbers during the 15-year period. The market for polar bear hides was booming in those years, which suggests the hot market provided some incentive for polar bear hunters. However, the relationship between prices and kills may not be that simple. Higher rates of hunting would potentially make more high-quality hides available, and when the number of hides sold is high, could drive up the average price paid for hides.

In the 2018/19 hunting season, the number of bears killed in Canada spiked, as did the average price paid for hides in 2019. During hunting season, hunters would not know that auction prices would be high in the following months. If hunters were responding to higher prices, one would not expect both numbers of kills and prices to spike in the same year. This suggests the possibility that increased prices in 2019 may have resulted from an increased availability of high-quality hides, rather than the other way around.

The boom-and-bust market for hides was not reflected in the numbers of bears killed in Nunavut. The numbers of bears killed in Nunavut were relatively consistent throughout 2007–2021 and ranged between 400–500 bears per year. It is important to note, however, that Nunavut provides hunters with an advance payment for hides to be sold at auction via the Seal and Fur Programs Policy. This mitigates the impact on the hunting effort of a changing market for hides. Potentially, this policy encourages a higher hunting effort than would be realized if guaranteed advance payments were not available when the market demand for hides was very low.

Given that most polar bears killed in Canada are taken in Nunavut (80% in 2012–2021), it is not surprising the numbers of bears killed nationally did not vary substantially as prices fluctuated.

The numbers of bears killed in Newfoundland and Labrador varied in response to changes to the annual hunting quota and (in 2020/21) ice conditions. It is not clear to what extent the market for hides affected hunting dynamics in the province. The diminishing opportunity to sell hides has resulted in the region experiencing a resurgence in traditional arts and crafts, and increasingly the use of a hide for personal purposes outweighs the monetary gain of selling it (Goudie, in litt.).

In contrast, the numbers killed in Québec have followed a pattern very similar to that of hide sales and prices. Plus, the 2018/19 spike in kills nationally primarily resulted from a spike in the number of bears taken in Québec. This suggests Québec hunters have tended to hunt more polar bears when the market for hides was hot and fewer bears when the market cooled. Alternatively, Québec hunters may have had greater incentive to report kills when the market was hot to be able to sell their hides. When the market cooled and the opportunity to sell hides dropped, the incentive to report successful kills also dropped. The fluctuating numbers for Québec may, therefore, reflect a combination of both hunting pressure and the variability in self-reporting of successful kills. Either way, it appears the market for polar bear hides does impact the numbers of polar bear kills recorded for Québec. If the market increases substantially in the future, the Québec harvest could be expected to increase.

The data for the ISR suggest some correlation between the market for hides and the numbers of bears killed. But the correlation is not as apparent as shown for Québec, and other factors would seem to be at play. What those factors may be was not clear at the time of writing. Like Nunavut, the Northwest Territories has established a program (the GMVF) to provide advance fees for hides to be sold at the FHA auction. It seems likely that hide prices do provide an incentive for hunters in the ISR to target polar bears, but the GMVF program ensures hunters can always benefit from hide sales, even when the sales and prices are low. Hence, a cool market for hides provides less of a disincentive for hunting polar bears. Whether there are other factors at play was not clear.

Sport hunting resurgence

Prior to the 2008 listing of the polar bear on the ESA, sport hunting was increasing in Canada and hunting trophies comprised a significant portion of Canadian exports. In 2002–2006, an average of 74 polar bears were hunted for sport each year in Nunavut alone (Nunavut, 2002, 2003, 2004, 2005, 2006), and an average of 98 hides were exported annually as hunting trophies (see *Appendix C*).

Sport kills in Nunavut peaked at 120 bears in the 2006/07 hunting season and 201 hides were exported as hunting trophies in 2007. More than 50% of these exports were destined for the United States. Both the numbers of polar bears hunted for sport and the numbers of exported trophies rapidly declined after 2008 and polar bear exports to the United States ended by 2010 (Cooper, 2015). In 2011, only 26 polar bears were hunted for sport in Nunavut and 21 hides were exported as trophies.

In the 2015/16 hunting season, the numbers of bears hunted for sport in Canada began to increase. Sport kills increased steadily to 66 and 65 bears in the 2017/18 and 2018/19 seasons (respectively).

Despite the resurgence in sport hunting, the numbers of hides and skulls exported as hunting trophies did not increase. Instead, exports of both decreased steadily after 2015. Approximately one-half of the Nunavut sport kills in the 2015/16–2018/19 seasons were made by US hunters who could not take their trophies back to the United States because of the ESA. This was the source of the discrepancy between the trend in sport hunting and hunting trophy exports. US hunters who successfully hunt a polar bear may give away the hide, skull, and other parts of the carcass, or they can store their trophies in Canada in hopes the US import prohibition is removed in the future. This occurred in 1994 when the US Congress amended the MMPA to allow for the import of sport-hunted trophies of polar bears legally taken in Canada. The USFWS subsequently established the application requirements and permit procedures for importing polar bear hunting trophies in 1997 (USFWS, 1997). US hunters took advantage of the new rules to import trophies that had been in Canadian storage, in some cases for years (Cooper, pers. obs.). Canadian exports of polar bear hunting trophies jumped from zero in 1996 to 158 in 1997, including 75 hides and 63 skulls (CITES, 2022). Exports continued in the following years until the prohibition was re-established in 2008.

At the time of writing there was no indication the United States would be permitting the import of polar bear trophies in the future. And it may be that US hunters may be satisfied with the experience of hunting a polar bear without a trophy to display.

Impact of COVID-19 on trade

As noted, sport hunting for polar bears seemed to be gaining popularity after the 2014/15 hunting season, with the numbers killed for sport trending sharply upwards in the following three seasons. These numbers then dropped dramatically in 2019/20 and no bears were hunted for sport in 2020/21. This abrupt shift was the result of the travel restrictions imposed in response to the COVID-19 pandemic. The loss of the sport hunting market also likely accounted for the increased numbers killed for subsistence in 2019/20 and 2020/21—with hunting tags being retained for subsistence hunting rather than being allocated to sport hunting. The loss of sport hunting opportunities may result in some pent-up demand and a spike in sport hunting when (if) travel restrictions are relaxed.

The fur industry was also impacted by the COVID-19 pandemic. Exports of bobcat, Canadian lynx, river otter and wolf hides all spiked in 2019 before crashing again in 2020, presumably because of the COVID-19 pandemic. Also in 2020, outbreaks of COVID-19 were discovered amongst populations of farmed mink. Denmark's extensive mink farming industry was abruptly shut down, and mink farming was curtailed in other parts of the world as well.

The loss of mink fur production caused mink prices to jump in late 2020, and prices for wild furs followed. Exports of bobcat, Canadian lynx, river otter, and wolf hides all subsequently increased in 2021, possibly due to pent-up market demand resulting from the low numbers exported in 2020 and stimulated by the higher prices.

Exports of polar bear hides did not spike in 2019, and exports also did not decline appreciably in 2020. Whether rising prices for wild furs will stimulate the market for polar bear hides remains to be seen. There is a fundamental difference between the market for polar bear hides and the market for furs from other wild species. High-quality polar bear hides sell for much higher prices than the more common species and are used to make expensive luxury rugs. They are not typically cut-up and made into garments in the way that most furs are. The upsurge in wild fur prices may not, therefore, translate into higher numbers of polar bear hides sold at auction or traded internationally.

Underreporting of Québec kills

As noted, there is a degree of uncertainty in the numbers of polar bears reported killed in Québec. The province does not have a total allowable take of polar bears outside of the offshore waters of the Southern Hudson Bay portion of the NMR and reporting of harvest by Inuit and Cree hunters is currently not mandatory. The degree to which the apparent decline in the numbers of polar bears killed in Québec resulted from underreporting is an important issue. Accurate harvest numbers are central to management of the species and the Québec harvest directly impacts management efforts in adjacent jurisdictions sharing polar bear subpopulations.

The market price of polar bear hides appears to influence both the number of bears being harvested as well as the degree of reporting. A poor market is a disincentive for reporting as hunters are less likely to want to sell their hides and may not see the value of reporting their harvest or requesting a tag for their hide. Hence, reporting rates appear to drop when the market is poor. However, reporting rates vary between subpopulations and communities. Reporting seems to be consistently higher in the Southern Hudson Bay, where more local efforts have been invested since the implementation of the TAH in the NMR (Szor, in. litt.). Once the province has established the necessary framework to implement mandatory reporting of all polar bear kills, a more accurate picture of hunting in the province will be available.

Although underreporting occurs, it is apparent the actual Québec harvest numbers have been declining. There are very few specialized polar bear hunters left in the region and hunting specifically for polar bears is expensive. The reduced market value for polar bear hides has diminished the incentive to target polar bears. Given the poor market and low prices paid for polar bear hides in recent years, it appears (at the time of writing) that many of the polar bears being killed in Québec are incidental harvests or bears that approached too close to communities (Gilbert and Szor, in. litt.).[15]

Sex-selective harvest

More males than females can be sustainably harvested from a subpopulation because males can breed with multiple females in each breeding season. Plus, after giving birth, cubs remain with their mother for a two-year period, during which females are unavailable for mating (Taylor et al., 2008). Different things may affect the ratio of male and female polar bears taken in a particular area each year. For example, males are, at times, more available in certain areas that hunters go to, and females with cubs are protected (Dyck, in litt.).

The sex ratio of polar bears taken by a community or region may also be influenced by the reason for hunting. Polar bears are sexually dimorphic with adult males being up to twice the size of females (Derocher et al., 2005). Males, therefore, make more impressive trophies and are more desirable to sport hunters. Similarly, the value of a polar bear hide is dependent on several attributes, including the colour and quality of the fur and the size of the hide. Larger hides sell for more money than smaller hides of similar quality. However, the meat of smaller bears and especially female polar bears is considered more palatable (Dyck and Goudie in litt.; Ware pers. comm). In areas where sport hunting is common, more males will be taken. And a strong market for polar bear hides may encourage hunters to target males in preference to females to capitalize on the opportunity to make much needed funds. Conversely, a weak market for polar bear hides would encourage hunters to target bears for traditional purposes, which may result in fewer males and more females being killed.

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[15] Incidental harvesting refers to situations where a hunter encounters a polar bear while hunting another species and decides to take the bear too.

Neither Newfoundland and Labrador, nor Québec restrict polar bear hunting by sex. Despite this, more males than females were killed annually in both provinces. Over the study period the sex ratio of the Québec hunt was approximately 2:1 (male/female) while the Newfoundland and Labrador hunt averaged more than 3:1 (male/female). The reasons for the male-dominated harvest in the two provinces are probably complex and include both biological and cultural aspects. The long-standing protection of females with cubs may have influenced the sex ratio of the harvest in those provinces resulting in more males being hunted than females. However, trade also seems to have been a factor. As discussed previously, the market for polar bear hides appears to have influenced polar bear hunting in Québec, and that in turn might have resulted in more males than females being hunted in the province. The hot commercial market for hides early in the past decade probably influenced the sex of polar bears killed in Newfoundland and Labrador as well, although to what extent is not apparent. The poor market for commercial hides coupled with regional resurgence in traditional use of polar bears could result in proportionately more females being killed. That might already be the case in Québec where the numbers of males outnumbered females by only one animal in each of the most recent hunting seasons. Nonetheless, the total numbers of females reported killed in 2019/20 and 2020/21 were relatively few compared to earlier seasons in the decade.

Polar bear hunting in the ISR and Nunavut is managed through sex-selective quota systems that maximize the number of animals available for annual harvest while promoting sustainability by restricting the number of females that may be killed. Historically, both imposed a 2:1 (male/female) quota. However, beginning in the 2019/20 hunting season, the Nunavut harvest was changed to allow up to one female bear to be killed for every male.

Despite moving to the [up-to] 1:1 female/male sex-selective quota, almost two males were killed for every female in Nunavut in 2019/20. That changed in 2020/21 when the proportion of males to females shifted closer to 3:2. Due to the significance of the Nunavut harvest, the sex ratio for bears killed nationally in 2020/21 was reduced to 3:2 (males/females). An important factor affecting the sex ratio for the 2020/21 Nunavut harvest was the loss of sport hunting due to the COVID-19 pandemic. Hunting tags that in past years would have been reallocated for sport were instead used for subsistence. The extent to which the shift in the sex ratio was the result of the revised Nunavut harvest sex ratio is unclear. The expected return of sport hunting in 2021/22 will adjust the sex ratio accordingly. Whether the ratio of males to females killed will move closer to pre-2020/21 levels remains to be seen.

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Appendix A: Destination Countries for Hides Exported from Canada

Country	Year									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Andorra						X				
Argentina			X							
Australia	X	X	X	X	X	X	X	X	X	X
Austria	X	X	X	X	X	X		X	X	
Belgium	X	X	X	X	X	X	X	X		X
Bermuda				X						
Brazil					X		X			
Bulgaria		X								
China	X	X	X	X	X	X	X	X	X	X
Costa Rica									X	
Cuba						X				
Czech Republic	X		X		X	X	X			
Denmark	X			X	X	X	X	X	X	X
Estonia	X					X	X	X		
Finland				X		X				
France	X	X	X	X	X	X	X	X	X	X
Germany	X	X	X	X	X		X	X	X	X
Greece				X						
Hong Kong	X	X			X					
Hungary	X		X		X		X			X
Iceland				X						
Italy	X		X		X		X	X	X	X
Kuwait										X
Latvia	X									
Lithuania	X	X		X		X				
Luxembourg			X			X				
Mexico							X			
Mongolia	X								X	
Netherlands		X								
New-Zealand				X			X	X	X	
Norway	X	X	X	X	X	X	X	X	X	X
Panama									X	X
Philippines				X	X				X	
Poland	X	X	X							
Republic of Korea	X				X				X	
Romania	X		X			X				
Russia	X	X	X	X	X	X	X	X	X	X
Saudi Arabia		X								
Slovakia							X			
Slovenia				X						
South Africa	X	X		X	X					
Spain	X	X		X	X	X	X	X	X	X
Sweden		X	X		X	X				
Switzerland	X			X		X				
Taiwan				X						X
Thailand			X	X	X	X				X
Turkey							X			
Ukraine						X		X		
United Arab Emirates										X
United Kingdom	X	X			X	X	X	X		
United States							X			
Vietnam							X			

Appendix B: Destination Countries for Skulls Exported from Canada

Country	Year									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Argentina			X							
Australia		X	X	X	X	X	X	X		X
Austria		X		X	X	X		X	X	
Belgium	X	X	X	X	X	X	X	X	X	X
Brazil					X					
Bulgaria		X								
China			X	X	X		X		X	X
Costa Rica									X	
Czech Republic	X		X		X	X	X			
Denmark	X			X	X	X	X	X	X	
Estonia	X						X	X		
France	X	X	X	X	X	X	X	X		
Germany	X	X	X	X	X		X	X	X	X
Hungary	X		X		X		X			
Italy	X	X	X		X		X		X	
Japan								X		
Latvia	X									
Lithuania	X	X		X		X				
Mexico							X			
Netherlands		X				X	X			
New-Zealand							X		X	
Norway	X		X	X		X			X	
Panama									X	X
Philippines									X	
Poland	X	X	X							
Romania	X		X			X				
Russia	X	X	X	X	X	X	X	X	X	
Slovenia				X						
South Africa	X				X					
Spain	X	X		X	X	X	X	X	X	X
Sweden		X	X		X	X				
Switzerland	X	X	X	X						
Taiwan							X			X
Thailand					X	X				
Turkey							X			
Ukraine						X		X		
United Kingdom						X	X			

Appendix C: Twenty-year review of Canadian hide exports

Purpose of trade

Between 2002–2006, almost as many hides were exported as hunting trophies (n=492) as were exported for commercial purposes (n=512). Fewer than 150 hides were exported for commercial purposes in any year and in some years hunting trophies outnumbered commercial exports. An average of 85 hides were exported commercially each year compared to an average of 82 hides exported as hunting trophies. The number of hides exported as hunting trophies spiked in 2007 (n=201), declined sharply in 2008 (n=78) and then declined steadily in the following years. Between 2010–2021, no more than 34 hides were exported as hunting trophies in any one year, and in most years were limited to 20 or fewer (Table 20; Fig. 46).

The numbers of hides exported for commercial purposes rose sharply after 2007, peaking at 338 hides exported in 2013. At that point, commercial exports accounted for 90% of all hide exports. Commercial exports then declined rapidly in the following years. In 2020, only 25 hides were exported for commercial purposes, which was the fewest exported in any year of the study period. (Table 20; Fig. 46).

In 2014, commercial exports of hides dropped by 58%. Except for a spike in 2015, exports of hides for commercial purposes continued to decline in the following years. By 2020, only 75 hides were exported—the lowest number since before 2002. This was an 80% decline since the 2013 peak in exports. Exports of hides for commercial purposes in 2020, comprised only 38% of all exported hides, and for the first time since 2002 (Cooper, 2015) the number of hides exported for personal purposes exceeded the number exported for commercial purposes (Table 20; Fig. 46).

In 2021, the number of hides exported increased for the first time since 2015, entirely due to a spike in commercial exports, which comprised 82% of the hides exported in that year (Table 20; Fig. 46).

Table 20. Hides exported from Canada, 2002–2021, by purpose of export

Year	Commercial	Hunting trophies	Personal	Other	Total
2002	52	93	58	-	**203**
2003	113	68	72	1	**254**
2004	105	129	48	-	**282**
2005	94	105	65	-	**264**
2006	148	97	48	-	**293**
2007	71	201	43	-	**315**
2008	141	78	59	-	**278**
2009	195	61	41	2	**299**
2010	240	34	42	-	**316**
2011	273	21	43	-	**337**
2012	303	26	36	-	**365**
2013	338	17	20	-	**375**
2014	141	16	19	-	**176**
2015	183	25	28	-	**236**
2016	138	18	22	2	**180**
2017	132	16	19	-	**167**
2018	121	20	19	1	**161**
2019	54	16	18	1	**89**
2020	25	13	35	2	**75**
2021	96	5	14	2	**117**
Total	**2,963**	**1,059**	**749**	**11**	**4,782**

Sources: UNEP-WCMC Trade Database (2002–2010); CEPS and NEMISIS (2011); CEPS (2012–2021).

Destination countries

Prior to 2008, the United States was the single biggest importer of polar bear hides, mainly as hunting trophies. In 2009 only 3 hides were exported to the United States. No hides were exported to the United States in the following years except for a single hide exported in 2018 for use in a circus or travelling exhibition (Table 21; Fig. 47).

The boom in commercial exports of hides after 2007 was driven by the rising Chinese market for hides. In 2008, a total of 46 hides were exported to China, with 36 being for commercial purposes. In 2010, 194 hides were exported to China, and exceeded the numbers exported to all other countries combined. Most of the exports to China were for commercial purposes. In 2013, when hide exports peaked, 82% of all hide exports were destined for China, and almost all were for commercial purposes (Table 21; Figs. 47 and 48).

In the following years, the steady decline in numbers of hides exported was primarily due to the rapidly declining Chinese market for polar bear hides. In 2018, China imported fewer hides than did other countries (combined) for the first time since 2010. China imported only 40 hides in each of 2019 and 2020. The 40 hides exported to China in 2019 were the fewest in any years since 2007. Despite the lower export numbers, China has been the single biggest destination country for polar bear hides exported from Canada in every year since 2008 (Table 21; Fig. 47 and 48).

In 2021, the number of hides exported to China increased for the first time since 2015, although the increase was small (from 40 in 2020 to 51 in 2021) (Table 21; Fig. 47 and 48).

Exports of polar bear hides to countries other than China and the United States peaked in 2004, then declined in the following years. The decline was not consistent, and exports fluctuated in volume from year-to-year (Table 21; Fig. 47). It is notable that the marked increases in numbers exported in 2013, 2015, 2017 and 2021 were primarily due to exports of 28–43 hides destined primarily for one or two Norwegian importers. The 2018 spike in exports was due to both an export of 21 hides to Norway and an anomalous export of 25 hides to Denmark (see also *Destination countries*).

Table 21. Hides exported from Canada, 2002–2021, by country of destination

Year	China	United States	Other countries	Total
2002	3	66	134	**203**
2003	1	36	217	**254**
2004	4	25	253	**282**
2005	12	73	179	**264**
2006	23	77	193	**293**
2007	42	125	148	**315**
2008	46	42	190	**278**
2009	104	3	192	**299**
2010	194	-	122	**316**
2011	217	-	120	**337**
2012	276	-	89	**365**
2013	279	-	96	**375**
2014	150	-	26	**176**
2015	148	-	88	**236**
2016	110	-	70	**180**
2017	95	-	72	**167**
2018	75	1	86	**162**
2019	40	-	49	**89**
2020	40	-	35	**75**
2021	51	-	66	**117**
Total	**1,910**	**448**	**2,425**	**4,703**

Sources: UNEP-WCMC CITES Database (2002–2010); CEPS and NEMISIS (2011); CEPS (2012–2021).

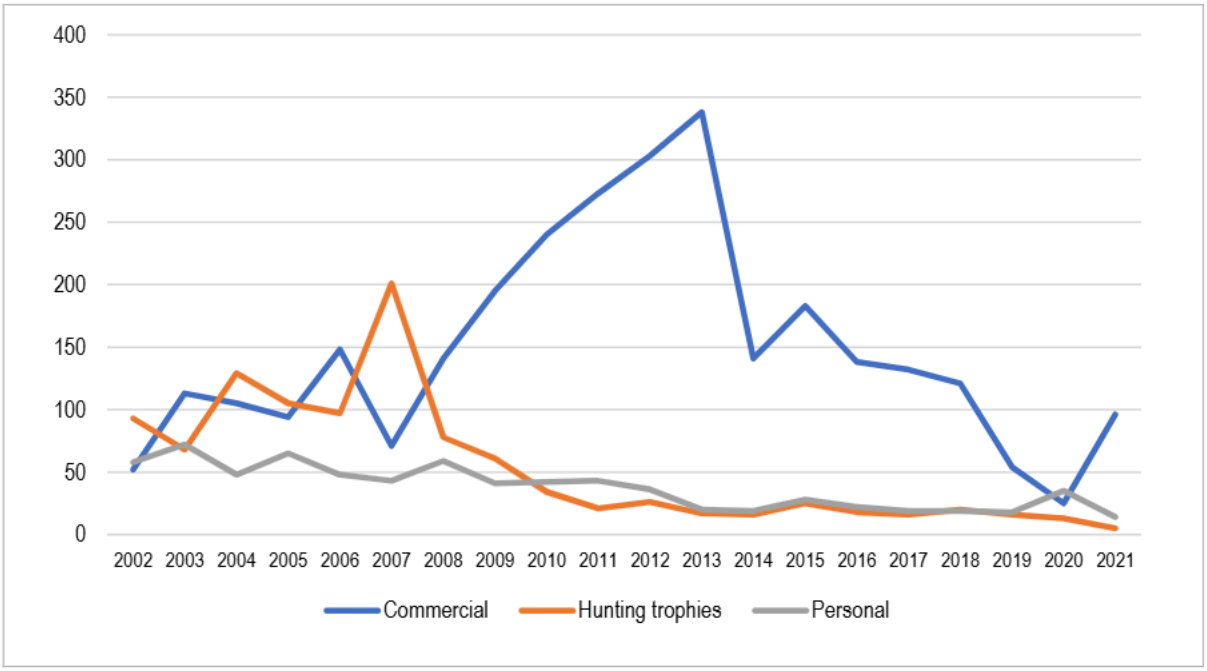

Figure 46. Purpose of export for Canadian polar bear hides, 2002–2021
Exports for education, display or law enforcement were rare and excluded from the data. Data for 2002–2011 were sourced from the UNEP-WCMC CITES Trade Database and Cooper (2015).

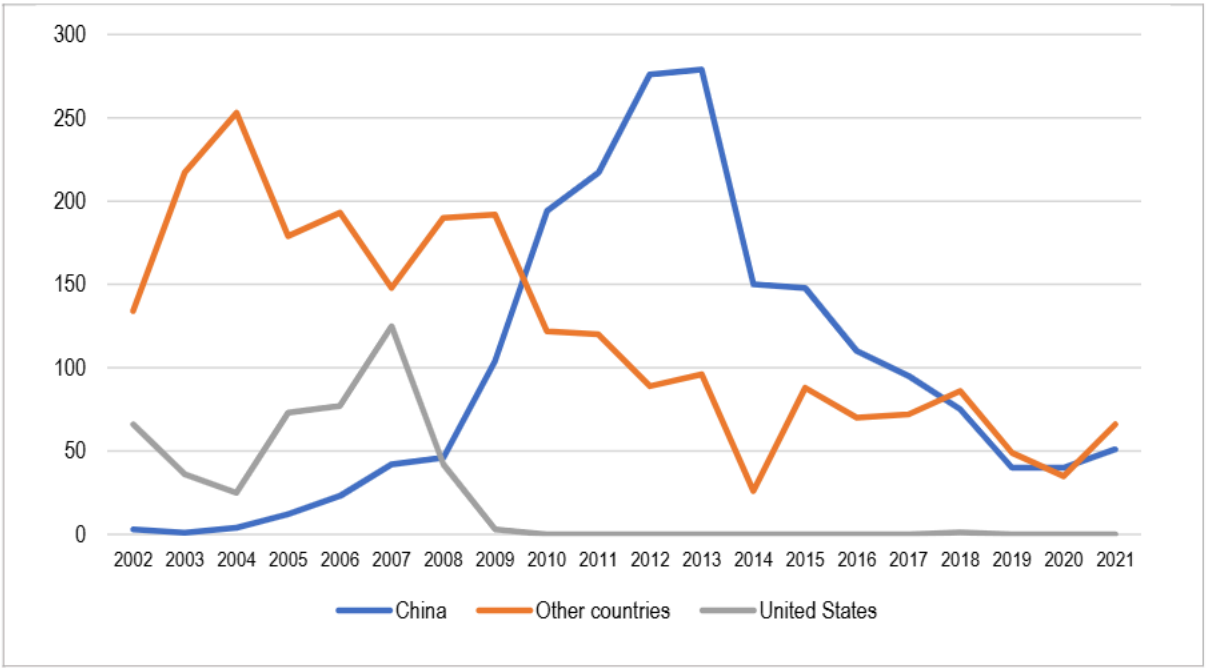

Figure 47. Destination countries for Canadian polar bear hides, 2002–2021
Exports for education, display or law enforcement were rare and excluded from the data. The number of "other" countries varied between years and ranged from 20 to 35. Data for 2002–2011 were sourced from the UNEP-WCMC CITES Trade Database and Cooper (2015).

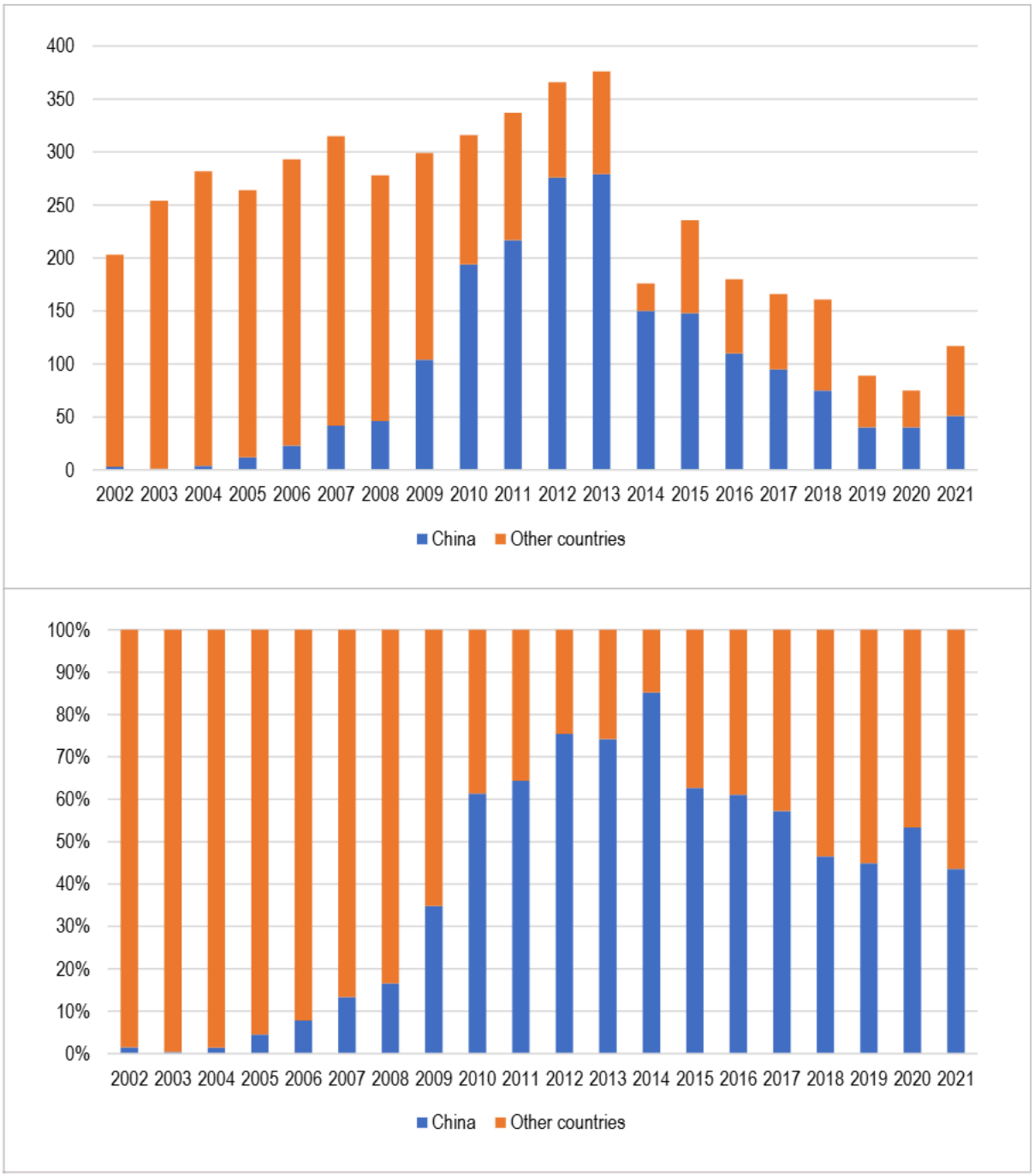

Figure 48. Exports of hides to China vs other countries, 2002–2021
The top chart provides the total numbers of hides exported to China and all other countries. The bottom chart provides the numbers of exported hides as a percentage of all hides exported.

Appendix D: Fifteen-year review of hide sales

Both the number of hides sold annually, and the average price paid for hides increased from 2007–2012. In 2013, the number of hides sold dropped slightly, although prices continued to increase. In 2014, both hide prices and the number sold declined. In 2015, the number of hides sold dropped sharply, while the average price increased. Between 2015–2018, the numbers sold annually remained consistent. In 2019 the number sold dropped again and remained at that level for the following years. The average price declined steadily after 2016 except for an anomalous spike in 2019. The 19 hides sold in 2021 were the fewest sold in the fifteen-year period, and the average price paid for hides in 2021 was the lowest since 2007 (Table 22; Fig. 49).

The numbers of hides exported from Canada in 2007–2021 for commercial purposes followed a trend very similar to that of hides sold up until 2021. Both increased from 2007–2012 and declined in the following years, with exports tending to lag sales by about a year. In 2021, hide exports spiked despite sales having been flat since 2019 (Table 22; Fig. 50). The 2021 spike in exports may have been at least partially due to exports of hides sold in 2020 being delayed due to the COVID pandemic.

The boom-and-bust trend for sales and prices of hides was not reflected in the numbers of bears killed across Canada in 2007–2021, although the highest numbers of bears killed were in 2011 – 2013, when hide sales and prices were booming. However, the numbers killed dropped in 2014 when prices were still high and did not decline in subsequent years as did sales and prices (Table 23; Fig. 51). The consistent number of kills across Canada was due to the equally consistent harvest of polar bears in Nunavut, which accounts for 80% of the polar bears taken in Canada annually. The numbers of bears killed in Nunavut between 400–500 bears per year in 2007–2021 (Table 23; Fig. 52). These numbers correlate with the annual quotas set in those years, with kills rarely exceeding the quota.

The numbers of bears killed in Newfoundland and Labrador also did not vary in response to hide prices. Annual kills increased in 2007–2011, but this appears to be the result of changes to the annual hunting quota rather than a response to the market for hides. For the hunting seasons 2006/07 to 2009/10 the annual quota for Newfoundland and Labrador was six bears. The quota was increased to 11 bears in 2010/11 and then increased to 12 bears in 2011/12. In most seasons fewer bears were killed than allowed under the quota. The two seasons in which the quota was exceeded (2008/09 and 2010/11) flank a season in which only two out of six bears were killed (Table 23; Fig. 52). Over those three seasons, 23 bears were killed which matched the combined quota of 23 for those years.

In Québec, hunters reported more polar bears being killed in years when the market for hides was hot and fewer bears when the market cooled. When charted, the curve for bears killed per year resembles the curves for hide sales and prices in the years 2007–2021 (Table 23; Fig. 52). As discussed previously, the reporting of kills is not mandatory in Québec, but hunters must report their kills if they want to sell a hide. Therefore, when the market was hot, hunters had an incentive to hunt bears to acquire valuable hides and to report the kills. There was less incentive for both when the market cooled and the opportunity to sell hides declined. No matter whether the numbers of bears reported killed in Québec reflect actual hunting pressure, rate of voluntary reporting, or a combination of both, the market for polar bear hides did appear to influence polar bear hunting in the province.

In the ISR, annual kills did tend to increase when the market was booming and decreased when the market cooled. But these increases and decreases were not as consistent with the trends exhibited by sales and prices (Table 23; Fig. 52). And the correlation between sales and bears killed was not as clear as was exhibited by the Québec data.

As previously discussed, Manitoba and Ontario do not permit the sale of polar bears.

Table 22. Polar bear hide auction sales, prices, and exports 2007–2021

Year	Number of hides sold at FHA auction	Average price at FHA auction		Hides exported for commercial purposes
		CAD	USD	
2007	38	2,223	2,079	71
2008	71	2,597	2,452	141
2009	118	2,761	2,430	195
2010	124	3,506	3,403	240
2011	134	4,677	4,731	273
2012	165	5,597	5,598	303
2013	132	7,069	6,865	338
2014	105	6,122	5,546	141
2015	30	6,460	5,058	183
2016	39	5,074	3,831	138
2017	37	3,832	2,956	132
2018	44	2,972	2,293	121
2019	20	4,113	3,100	54
2020	21	2,344	1,750	25
2021	19	2,320	1,855	96
Total	**1,097**	**n/a**	**n/a**	**2,451**

Hides exported refers to total exports from Canada, not from the FHA auction. Sources for auction results: Beaulieu Blanchette, in litt.; Ghazal, in litt.; Imrie, in litt.; and Noseworthy, in litt. Sources for hide exports: CEPS and Cooper (2015).

Table 23. Polar bears killed by jurisdiction, hunting seasons 2006/07–2020/21

Season	ISR	Manitoba	Nfld. & Labrador	Nunavut	Ontario	Québec	Total
2006/07	45	3	4	498	3	26	**579**
2007/08	33	1	6	446	5	20	**511**
2008/09	43	6	8	463	3	31	**554**
2009/10	20	0	2	418	1	60	**501**
2010/11	77	0	13	442	-	101	**633**
2011/12	83	2	10	458	4	80	**637**
2012/13	63	-	8	458	2	86	**617**
2013/14	47	3	9	400	-	82	**541**
2014/15	38	1	12	422	1	61	**535**
2015/16	60	-	11	415	2	46	**534**
2016/17	40	2	12	395	2	29	**480**
2017/18	42	-	11	417	-	22	**492**
2018/19	38	2	11	439	5	38	**533**
2019/20	24	1	11	423	5	21	**485**
2020/21	16	-	7	441	1	10	**475**
Total	**451**	**11**	**102**	**4,268**	**22**	**475**	**5,329**

Sources for 2006/07–2010/11: Direction de la gestion de la faune du Nord-du-Québec, Québec; Government of Nunavut, Department of Environment; Government of Northwest Territories, Environment and Natural Resources; Government of Newfoundland and Labrador, Dept. of Environment and Conservation; Government of Canada, Environment Canada. Sources for 2011/12–2020/21: Baryluk (in litt.); Dyck (in litt.); Northrup (in litt); Nunavut (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019b); Szor (in litt); Trim (in litt.). Nfld. is the abbreviation for Newfoundland.

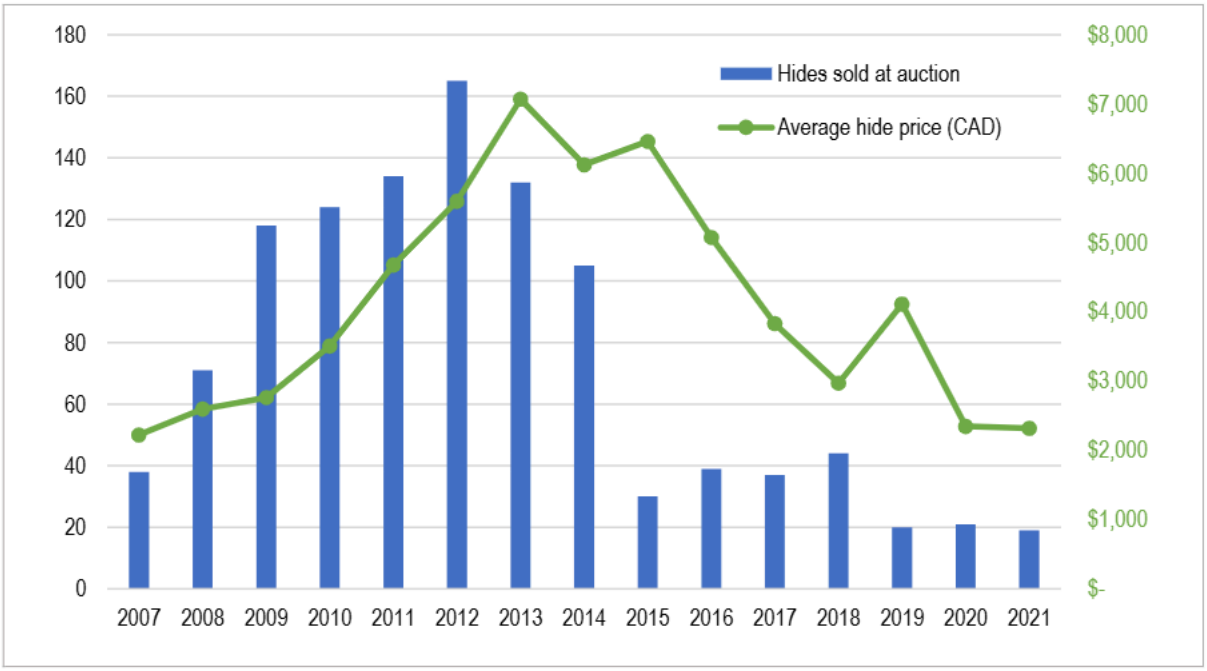

Figure 49. Auction sales of Canadian polar bear hides, 2007–2021
Numbers of hides sold at the FHA auction are indicated on the left side. Average prices paid for polar bear hides in CAD are indicated on the right.

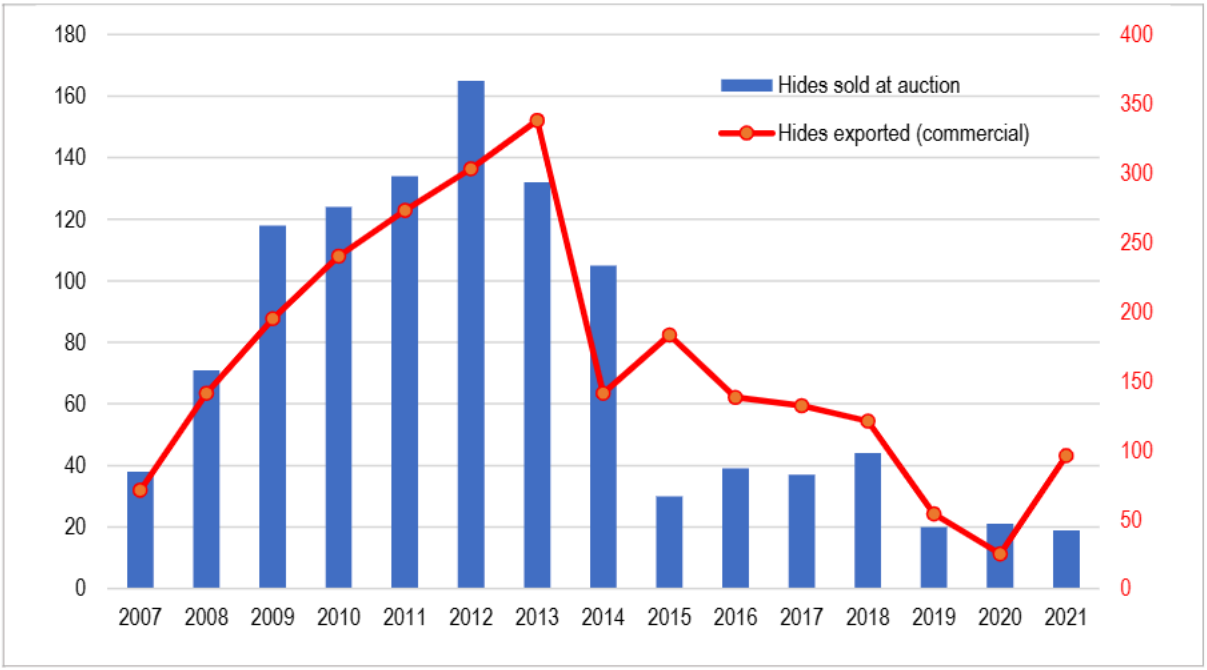

Figure 50. Hides sold vs hides exported for commercial purposes, 2007–2021
Numbers of hides sold at the FHA auction are indicated on the left side. Numbers of hides exported for commercial purposes are indicated on the right.

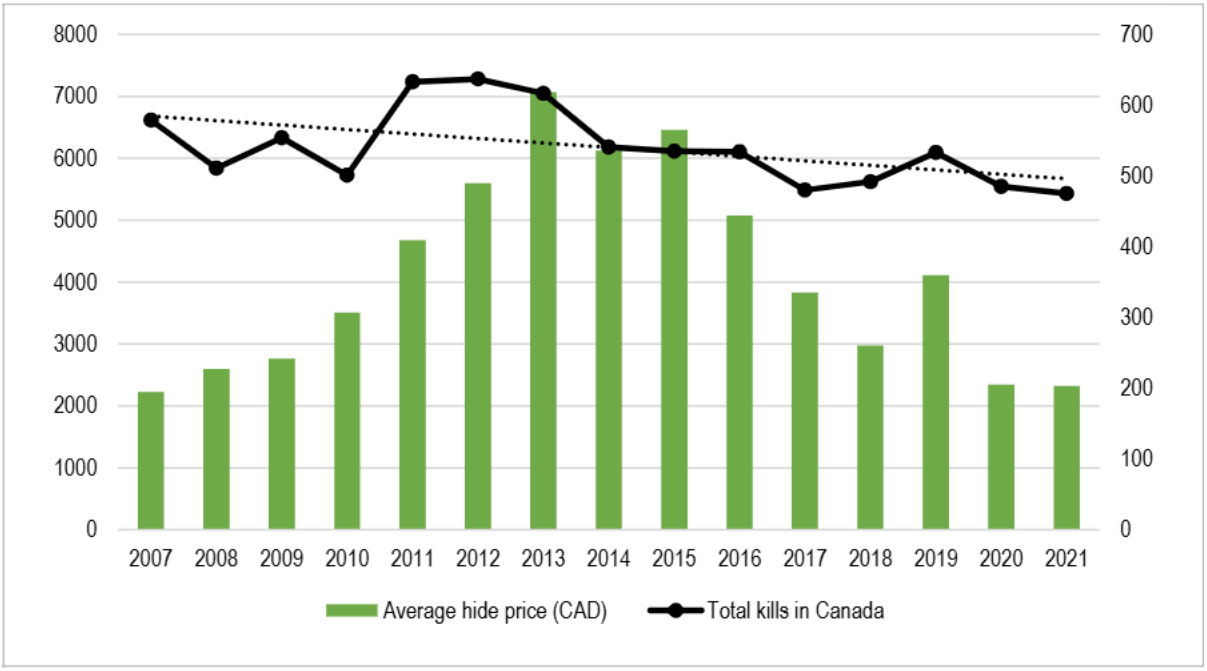

Figure 51. Hide auction prices vs polar bears killed in Canada, 2007–2021
Average prices paid for hides sold at the FHA auction are indicated in CAD on the left side. The total numbers of polar bears killed in Canada per year are indicated on the right. The trendline for numbers of bears killed is shown by the dotted line.

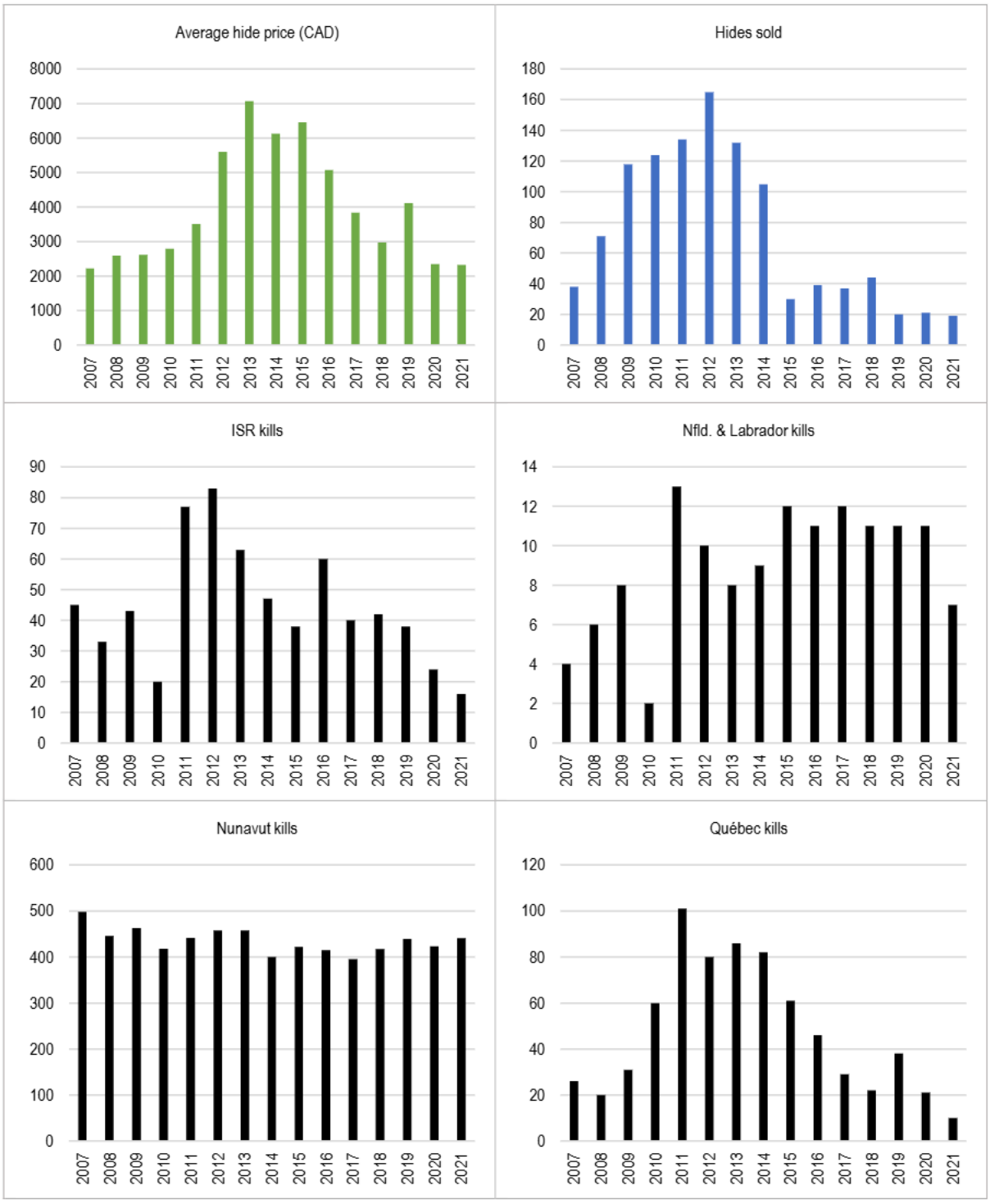

Figure 52. Polar bears killed by jurisdiction, hide sales and prices, 2007–2021
"Average hide price" refers to the average prices (in CAD) paid for polar bear hides at the FHA in the given year. "Hides sold" refers to the number of hides sold by FHA each year. The numbers of polar bears killed are plotted by hunting seasons, which have been abbreviated to save space. The year 2007 refers to the 2006/07 hunting season, 2008 refers to the 2007/08 season, etc. Note the charts are not presented at the same scale.

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