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# Aboriginal harvest of waterfowl in the Maritimes

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Anne R. Benoît

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Atlantic Region

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## **Aboriginal harvest of waterfowl in the Maritimes**

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# Aboriginal<sup>1</sup> harvest of waterfowl in the Maritimes

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## Abstract

In preparation for establishing a co-management regime for waterfowl in the Maritimes region, I undertook a number of collaborative projects with Mi'kmaq, Maliseets, and Passamaquoddy in Nova Scotia, New Brunswick, and Prince Edward Island to assess their current harvest levels of waterfowl. This technical report provides data on the harvesting areas and timing of harvest, estimates numbers of Aboriginal hunters and lists numbers and species of waterfowl killed between 1993 and 2004. Given the interest and concerns of Mi'kmaq, Maliseet and Passamaquoddy peoples for wildlife, and given the low level of Aboriginal harvest of waterfowl shown by this report's findings, the federal government will need to consider ways to build the management capacity of Mi'kmaq, Maliseet and Passamaquoddy and help them re-invigorate their traditional waterfowl harvest practices among their community members. These should serve to help build the capacity of Mi'kmaq, Maliseet and Passamaquoddy to negotiate a better co-management regime for waterfowl in the Maritimes region.

## Introduction

The Migratory Bird Convention and Parkville Protocol between the United States of America and Canada are "*intended to conform [...] with the aboriginal and treaty rights of the Aboriginal peoples of Canada*" and further state that "*Migratory birds and their eggs may be harvested throughout the year by Aboriginal peoples of Canada having aboriginal or treaty rights...*" In Canada, Environment Canada's Canadian Wildlife Service is the management agency responsible for managing migratory bird populations. Typically, the Canadian Wildlife Service estimates waterfowl harvest based primarily on the national hunting permit database (Gendron and Collins 2005). This database contains information from hunters who have applied for waterfowl hunting permits. Given that Aboriginal individuals for the most part do not require permits to harvest waterfowl, little of their harvest information is captured in the waterfowl harvest estimates prepared by the Canadian Wildlife Service. The waterfowl harvest by Aboriginal communities is known for some Northern Aboriginal communities usually through specific short-term and local studies (e.g., Berkes 1982, Bromley 1996, Dickson and Byers 2001). These studies were requested mainly to estimate the impact of spring harvest from these Northern Aboriginal communities on waterfowl populations, either

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<sup>1</sup> In this report, the term "Aboriginal peoples" is used to refer to all people of Aboriginal ancestry, regardless if the individuals are recognized by Canada's *Indian Act*. The term "First Nation" is used instead of the term "Indian" (or status Indians as per *Indian Act*). A First Nation community is used instead of the terms "Indian Band" or "Indian reserve" (as per *Indian Act*).

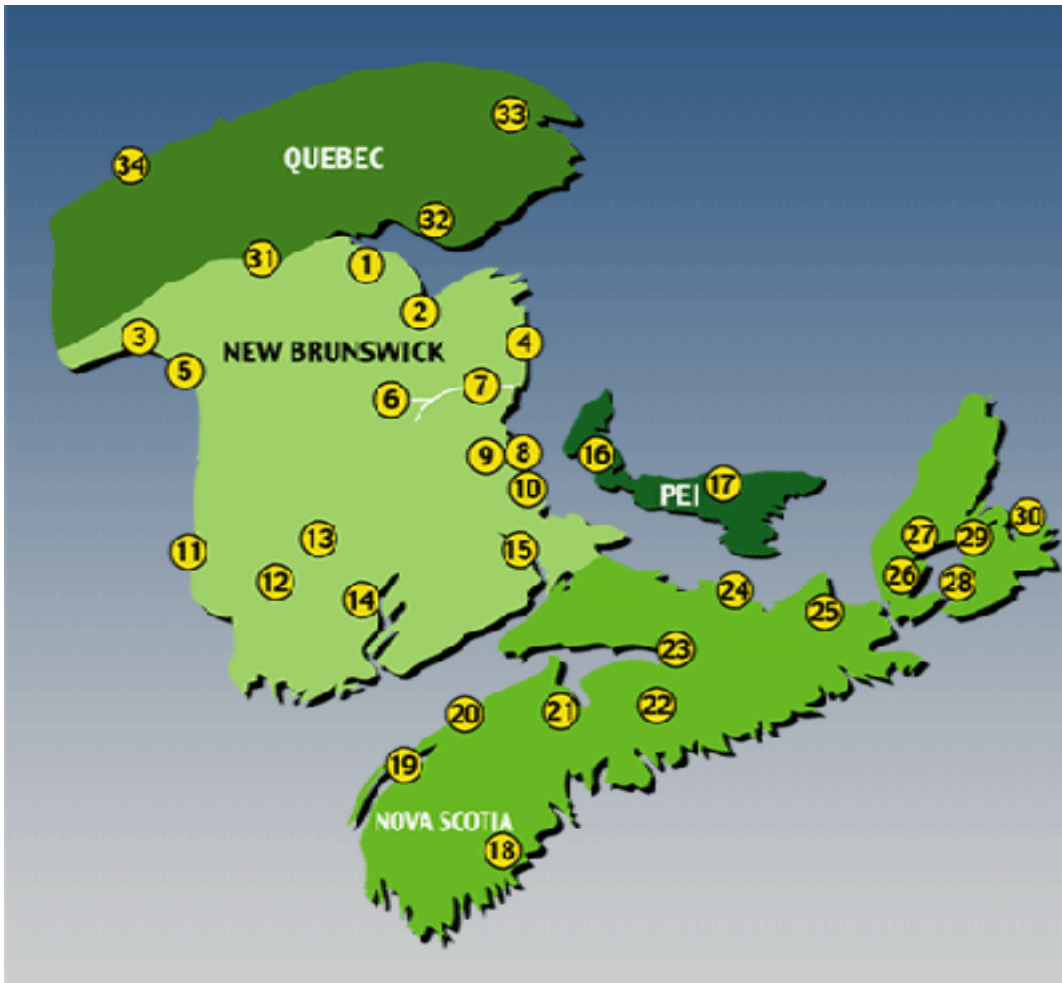
prior or after the amendment to the Migratory Bird Convention (i.e, the Parksville Protocol).

The number of Canadian waterfowl hunters and the total harvest of waterfowl have been decreasing since at least 1978 (Lévesque and Collins 1999, Gendron and Collins 2005), but it is unknown how the number of Aboriginal hunters in the Maritimes and their harvest have changed over the same time period. If the trends in Aboriginal and non-Aboriginal harvest differ, estimates of the waterfowl harvest may be inaccurate, depending on the magnitude and direction of these trends (see similar concerns expressed by Berkes 1982). Furthermore, it is well known that many Northern Aboriginal peoples in Canada and Alaska hunt waterfowl during their spring migration (Berkes 1982, Bromley 1996) but little is known about the timing of waterfowl harvest by Aboriginal communities in the Maritimes. Given that spring harvesting can have a dramatically different impact on the waterfowl population (Canadian Wildlife Service 1980), gaining information about the timing and extent of Aboriginal harvest can only improve the Canadian Wildlife Service's management decisions regarding waterfowl (Finney 1979, Bromley 1996).

Negotiations of Aboriginal rights usually entail a description of the nature and scope of wildlife harvest rights (including waterfowl) and the co-management regime for wildlife of interest to the Aboriginal group. For instance, many of the land claims negotiated with Northern Aboriginal groups have established a wildlife co-management board to address wildlife management issues (e.g., Agreement between the Inuit of the Nunavut Settlement Area and her Majesty the Queen in right of Canada, Gwich'in Comprehensive Land Claim Agreement). Following the Marshall Supreme Court of Canada decision on fishing rights, Indian and Northern Affairs Canada received a mandate to negotiate treaty and Aboriginal rights with the Mi'kmaq and Maliseet peoples in the Maritimes and Gaspé regions. In preparation for establishing a co-management regime for waterfowl in the Maritimes region, the Canadian Wildlife Service undertook a number of collaborative projects with Mi'kmaq, Maliseets, and Passamaquoddy in Nova Scotia, New Brunswick, and Prince Edward Island to assess their current harvest levels of waterfowl. This technical report will serve as a baseline to determine what steps are needed prior to the establishment of a co-management regime for waterfowl in the Maritimes region.

## **Methods**

In the Canadian Maritimes region, there are three Aboriginal groups: Mi'kmaq, Maliseet and Passamaquoddy. Though Passamaquoddy communities are situated in Maine, USA, there are still individuals living in Canada. The Mi'kmaq, Maliseet and Passamaquoddy territory in Canada includes all of New Brunswick, Nova Scotia, Prince Edward Island and the Gaspé Peninsula of Québec (see First Nation community locations in Figure 1). Mi'kmaq and Maliseets were hunter-gatherer societies while the Passamaquoddy in addition to being hunter-gatherers also relied on agriculture: bean, corn, squash (Canadian Canoe Museum, 2006). All three Aboriginal groups have harvested large and small mammals, fish and birds and traditionally, were community harvesters which meant that only a few hunters would be sent to hunt for each community (Houghton Mifflin, 2006).



Legend

- |  |   |
|--|---|
| 1: Eel River Bar First Nation            | 18: Acadia First Nation                       |
| 2: Pabineau First Nation                 | 19: Bear River First Nation                   |
| 3: Madawaska Maliseet First Nation       | 20: Annapolis Valley First Nation             |
| 4: Burnt Church First Nation             | 21: Glooscap First Nation                     |
| 5: Tobique First Nation (Maliseet)       | 22: Indian Brook First Nation                 |
| 6: Metepenagiag First Nation             | 23: Millbrook First Nation                    |
| 7: Eel Ground First Nation               | 24: Pictou Landing First Nation               |
| 8: Indian Island First Nation            | 25: Afton First Nation                        |
| 9: Elsipogtog First Nation               | 26: Waycobah First Nation                     |
| 10: Bouctouche First Nation              | 27: Wagmatcook First Nation                   |
| 11: Woodstock First Nation (Maliseet)    | 28: Chapel Island First Nation                |
| 12: Kingsclear First Nation (Maliseet)   | 29: Eskasoni First Nation                     |
| 13: Saint Mary's First Nation (Maliseet) | 30: Membertou First Nation                    |
| 14: Oromocto First Nation (Maliseet)     | 31: Listuguj Mi'gmac First Nation (in Quebec) |
| 15: Fort Folly First Nation              | 32: Micmacs of Gesgapegiag First Nation       |
| 16: Lennox Island First Nation           | 33: La Nation Micmac de Gespeg                |
| 17: Abegweit First Nation                | 34: Première Nation Malécite de Viger         |

Figure 1: Mi'kmaq and Maliseet First Nation communities in Canada (from Fisheries and Oceans Canada's website: [www.dfo-mpo.gc.ca](http://www.dfo-mpo.gc.ca)).

This report includes harvest level data collected between 2002 and 2005 by the Native Council of Nova Scotia, the Mi'kmaq Confederacy of Prince Edward Island, the Confederacy of Mainland Mi'kmaq, the Unamaki Institute of Natural Resources, and the New Brunswick Aboriginal Peoples Council. Some of these organizations have also interviewed elders and older community hunters to assess past harvest levels. Given the sensitive nature of the information collected, most organizations only provided general trend information while others provided annual harvest rates for individual waterfowl species. The Native Council of Nova Scotia is the only Aboriginal organization in the Maritimes that is known to issue community harvest permits to their members and to systematically collect harvest information from their community hunters through hunters questionnaire survey. In 2004, the Native Council of Nova Scotia provided the waterfowl biologist of the Canadian Wildlife Service an opportunity to revise their questionnaire to meet objectives for this study and to mimic the approach used by the Canadian Wildlife Service with the Canadian waterfowl hunter surveys.

#### The Native Council of Nova Scotia (NCNS)

Members of this Aboriginal organization are off-reserve status Indians (status is as defined by the *Indian Act*) and non-status Indians. In 1987, the NCNS established the Netukulimkewe'l Commission as their "natural life management authority". In 2004, the Commission issued community harvest permits to 306 members. The results section of this paper draws heavily on the Commission's harvest reports given that they provided extensive information on the timing and location of harvest, in addition to number of individuals and species harvested over more than one year. Given the organization's location in Nova Scotia, I am assuming that their harvest reports were based primarily on information provided by Mi'kmaq hunters.

#### The Mi'kmaq Confederacy of Prince Edward Island

This organization represents all Mi'kmaq individuals living in Prince Edward Island, regardless of whether these are recognized as Indians by the *Indian Act* or whether they live on or off-reserves. For this study, they have provided only general information because they felt that the detailed and historical information about Mi'kmaq harvest of waterfowl should only be used in the Aboriginal and treaty rights negotiations with Canada and the Province of Prince Edward Island.

#### The Confederacy of Mainland Mi'kmaq

This organization provides environmental, wildlife and technical advice and services (among other services) to six Mi'kmaq First Nation communities: Afton, Annapolis Valley, Bear River, Glooscap, Millbrook and Pictou Landing. They also have provided only general information because it was a condition imposed by the Ethics Watch of the Mi'kmaq Grand Council. The Ethics Watch reviews all projects involving the collection of traditional ecological knowledge from Mi'kmaq elders to ensure that the Mi'kmaq knowledge is protected and used appropriately by organizations requesting such knowledge.

#### Unamaki Institute of Natural Resources

This First Nation institute provides scientific support for the five Cape Breton Mi'kmaq First Nation communities. It concentrates primarily on wildlife and environmental issues in the Bras D'Or watershed. They also provided only general harvest information.

#### The New Brunswick Aboriginal Peoples Council



This Aboriginal organization provides services, programs and political support to the Mi'kmaq, Maliseet and Passamaquoddy individuals living off-reserve in New Brunswick. They could only provide general information of a preliminary survey of 55 participants conducted at their annual general meeting.

Results from this work came mainly from Mi'kmaq hunters though the proportion of Maliseet and Passamaquoddy hunters is undefined and most likely small to negligible since it would have been captured only by the preliminary survey conducted by the New Brunswick Aboriginal Peoples Council.

#### Data Analysis

Only the Native Council of Nova Scotia provided exact number of waterfowl hunters. The other organizations provided percentage of hunters which was converted to number of hunters based on the total membership of the organization provided on their websites or the Indian and Northern Affairs Canada website ([www.ainc-inac.gc.ca](http://www.ainc-inac.gc.ca)).

Statistical tests were calculated with the Microsoft Office Excel program's data analysis capabilities. Change of harvest levels from 1993 to 2004 for Aboriginal hunters and non-Aboriginal hunters was calculated with a simple regression.

## **Results**

#### Waterfowl Harvesting Areas

Mi'kmaq hunters interviewed by the Confederacy of Mainland Mi'kmaq reported a number of areas spread throughout mainland Nova Scotia where they harvested waterfowl (Figure 2). Black ducks (*Anas rubripes*) were harvested by these Mi'kmaq hunters in all but one of the identified areas and mallards (*Anas Platyrhynchos*) in all but three areas (Figure 2). In 2003 and 2004, members of the Native Council of Nova Scotia harvested waterfowl in only five locations along the Southern Nova Scotia coast (Figure 2).

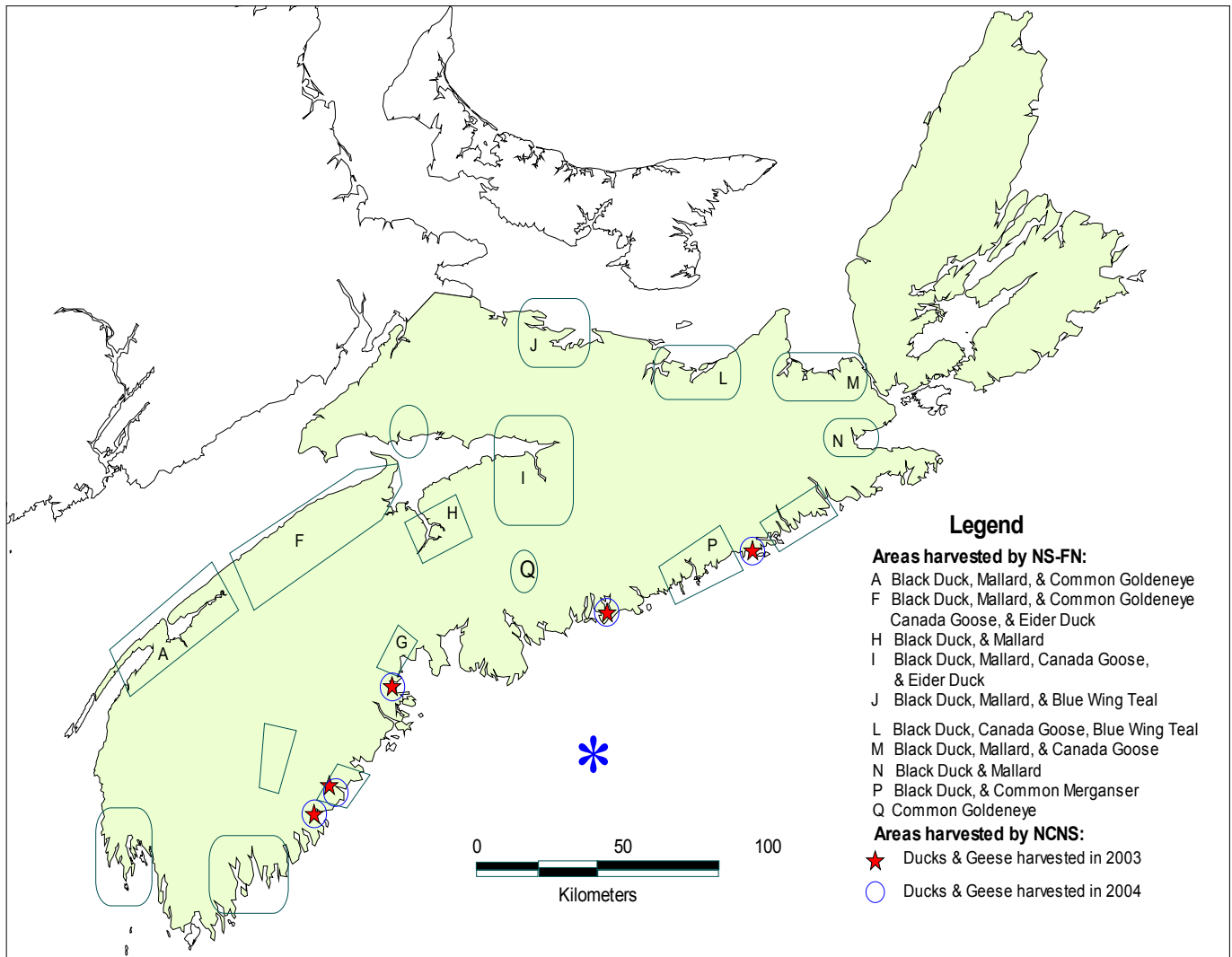


Figure 2: Waterfowl hunting areas identified by Mi'kmaq hunters of the Native Council of Nova Scotia in 2003 (stars) and 2004 (blue circles) and by Confederacy of Mainland Mi'kmaq hunters in 2004. The Confederacy of Mainland Mi'kmaq identified for some areas the species typically harvested by its members, those areas are identified by a letter code.

#### Number of Aboriginal hunters

Little information was provided regarding the current number of Aboriginal hunters. The Native Council of Nova Scotia reported five hunters in 2003 and four hunters in 2004 actively harvesting (successfully or not) waterfowl. Historical number of Aboriginal hunters was also difficult to gather from reports provided by the other organizations. There was also little information provided to the time span of the historical interest of Aboriginal peoples to waterfowl. I have estimated 17 waterfowl hunters in Prince Edward Island, 44 in Nova Scotia and 19 in New Brunswick (Table 1). Given the small number of surveyed members, these are most likely minimal numbers of Aboriginal hunters.

The estimated numbers of Mi'kmaq, Maliseet and Passamaquoddy hunters calculated in this study represent ~1% or less of the average number of hunters in Nova Scotia, New Brunswick, or Prince Edward Island (Table 1).

Table 1: Comparison of numbers of Aboriginal and non-Aboriginal hunters in New Brunswick, Nova Scotia and Prince Edward Island. Averages of non-Aboriginal hunters are calculated with 2002 to 2005 estimates. The proportions of Aboriginal hunters are calculated per province from estimates calculated from Aboriginal organizations participating in this study and mean estimates of non-Aboriginal hunters.

	Numbers of Non-Aboriginal hunters					# estimated Aboriginal hunters	% Aboriginal hunters
	2002	2003	2004	2005	Mean		
New Brunswick	4824	4422	4287	4307	4460	19	0.43%
Nova Scotia	4322	3962	3825	3548	3914	44	1.15%
Prince Edward Island	2379	2385	1885	2097	2186	17	0.78%

#### Number and species of waterfowl harvested by Aboriginal hunters

Aboriginal harvesting of waterfowl ranged from 26 to 249 birds between 1993 and 2004 (Table 2). The highest levels of harvest by Aboriginal hunters were recorded in 1995 and 1996 which represented 0.11% of the waterfowl harvested in the Maritimes by non-Aboriginal hunters (Table 2). During that same time period, non-Aboriginal harvest was also more successful in 1995 for New Brunswick and in 1993 and 1995 for Nova Scotia hunters but in 1999 for Prince Edward Island's hunters (Table 2).

Table 2: Total number of waterfowl harvested by non-Aboriginal and Aboriginal hunters in New Brunswick, Nova Scotia, and Prince Edward Island from 1993 to 2004. In 2003 and 2004, the total Aboriginal harvest is based on both the Native Council of Nova Scotia and the Unamaki Institute of Natural Resources estimates (2003) and on both the Native Council of Nova Scotia and the Confederacy of Mainland Mi'kmaq estimates (2004). The non-Aboriginal harvest was gathered from Canadian Wildlife Service harvest reports (Gendron and Collins 2005).

year	New Brunswick	Nova Scotia	Prince Edward Island	Total Maritimes reported harvest	Total Estimated Aboriginal harvest	% Aboriginal harvest from Maritimes reported harvest
1993	58004	108492	41924	208420	128	0.061%
1994	59703	98661	46528	204892	112	0.055%
1995	79738	101525	44859	226122	249	<b>0.11%</b>
1996	62531	89062	41709	193302	212	<b>0.11%</b>
1997	56740	81744	38140	176624	46	0.026%
1998	66456	92986	39142	198584	74	0.037%
1999	63494	99188	52867	215549	26	0.012%
2000	60893	82695	39473	183061	114	0.062%
2001	47273	69030	42951	159254	138	0.087%
2002	48237	72949	37777	158963	132	0.083%
2003	55857	60703	35620	152180	69	0.045%
2004	38841	53767	24972	117580	111	0.094%

The total reported harvest in the Maritimes declined steadily between 1993 and 2004 (Figure 3). That decline was significant ( $r^2 = 0.70$ ,  $F_{1,10} = 23.16$ ,  $p < 0.001$ ) while the apparent decline of harvest from Aboriginal hunters was not significant ( $r^2 = 0.10$ ,  $F_{1,10} = 1.12$ ,  $p = 0.3$ ). Given the Aboriginal harvest was estimated on three or four Mi'kmaq hunters, one would not expect a significant change in harvest levels unless the access to the waterfowl population changed.

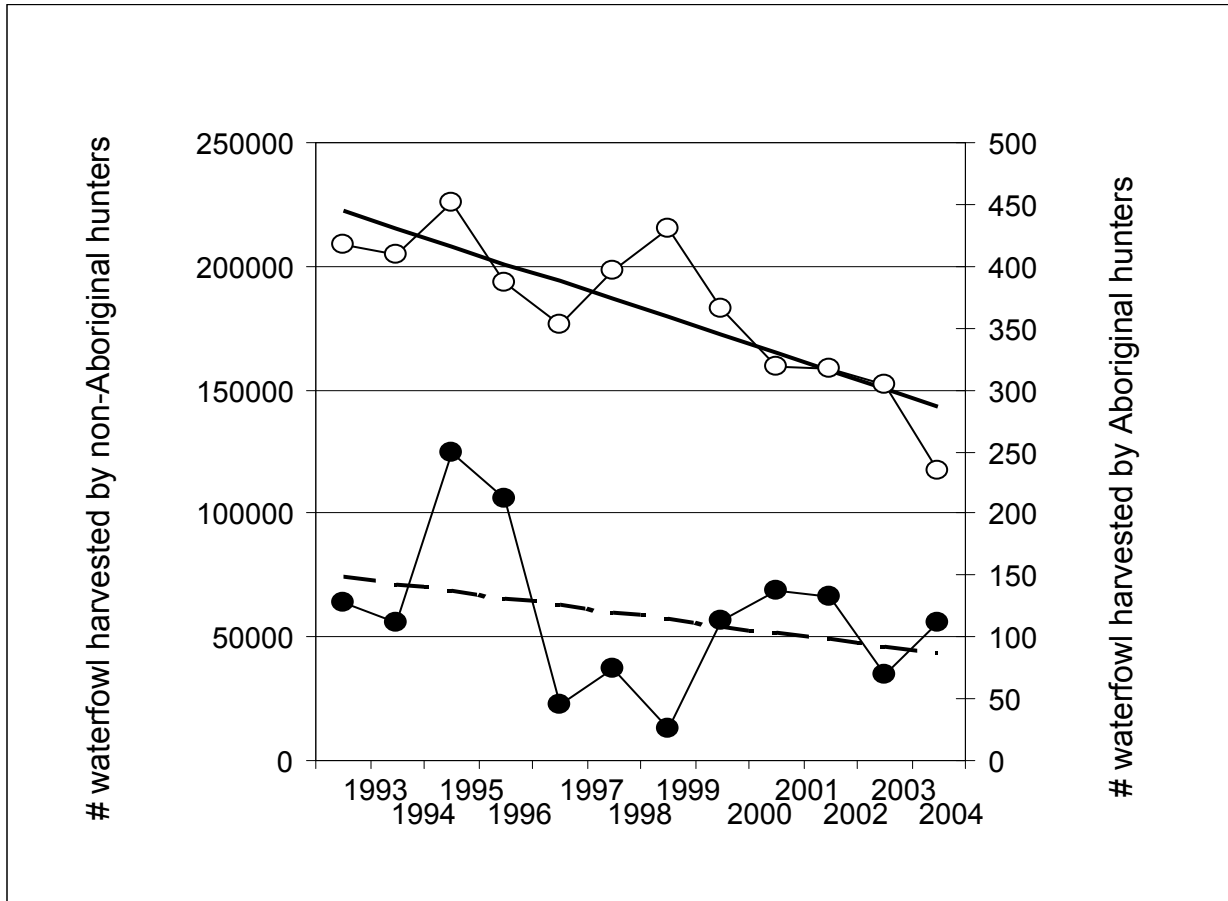


Figure 3: Total estimated number of waterfowl harvested by non-Aboriginal hunters (left axis, open circles) and by Aboriginal hunters (right axis, black circles) in the Maritimes.

The waterfowl species most hunted by the members of the New Brunswick Aboriginal Peoples Council were Canada geese (*Branta Canadensis*) and black ducks which were hunted by 35% and 27% of the respondents respectively. Woodcock (*Scolopax rusticola*) and Common snipe (*Gallinago gallinago*) were the other species targeted by 23% and 12% of the respondents while 8% reported other species as mallards and teal ducks.

The waterfowl species most hunted by the members of the Native Council of Nova Scotia were black ducks and goldeneye species which comprised more than 50% of reported harvest (Table 3). The relative species composition was not much different between Aboriginal hunters and Nova Scotia hunters except for Goldeneye species which were more targeted by Aboriginal hunters and Geese and Mallards which seem to

be more targeted by Nova Scotia hunters. Aboriginal hunters harvested more seaducks (52%) than other waterfowl (43%) or other game birds (5%) combined (Table 3).

Table 3: Relative composition of species harvested from Aboriginal hunters and from non-Aboriginal hunters, cumulative from 1993 to 2004 in Nova Scotia. The geese and snipe harvests for Nova Scotia were calculated with the General Harvest Data (Gendron and Collins 2005) while the rest of the species harvest for Nova Scotia were calculated with the Harvest Estimates by Waterfowl Species (Gendron and Collins 2005). The Aboriginal harvest was based on estimates provided by the Native Council of Nova Scotia.

Species	Aboriginal harvest	Non-Aboriginal harvest
Goldeneye (Barrow's and Common)	30%	40%
Mergansers (Red-breasted, Common and Hooded)	24%	2.6%
Scaup (Greater and Lesser)	10%	1.1%
Scoter (Black, White-winged and Surf)	8%	6.2%
Eider (Common and King)	7%	7%
Geese	7%	11.4%
Long-tailed duck	4%	1.1%
Northern Pintail	2%	0.67%
Snipe	1%	0.67%
Mallard	1%	6.7%
Other	1%	22.6%

#### Timing of Aboriginal harvesting of waterfowl

In 2003, five members of the Native Council of Nova Scotia harvested waterfowl a total of 40 days from September to January while in 2004, four members of the Native Council of Nova Scotia harvested waterfowl a total of 22 days (Figure 4). The peak months for waterfowl harvesting by these hunters were October and November for both 2003 and 2004 (Figure 4). Despite that hunters were out longer in 2003, they killed more birds in 2004 (Figure 4).

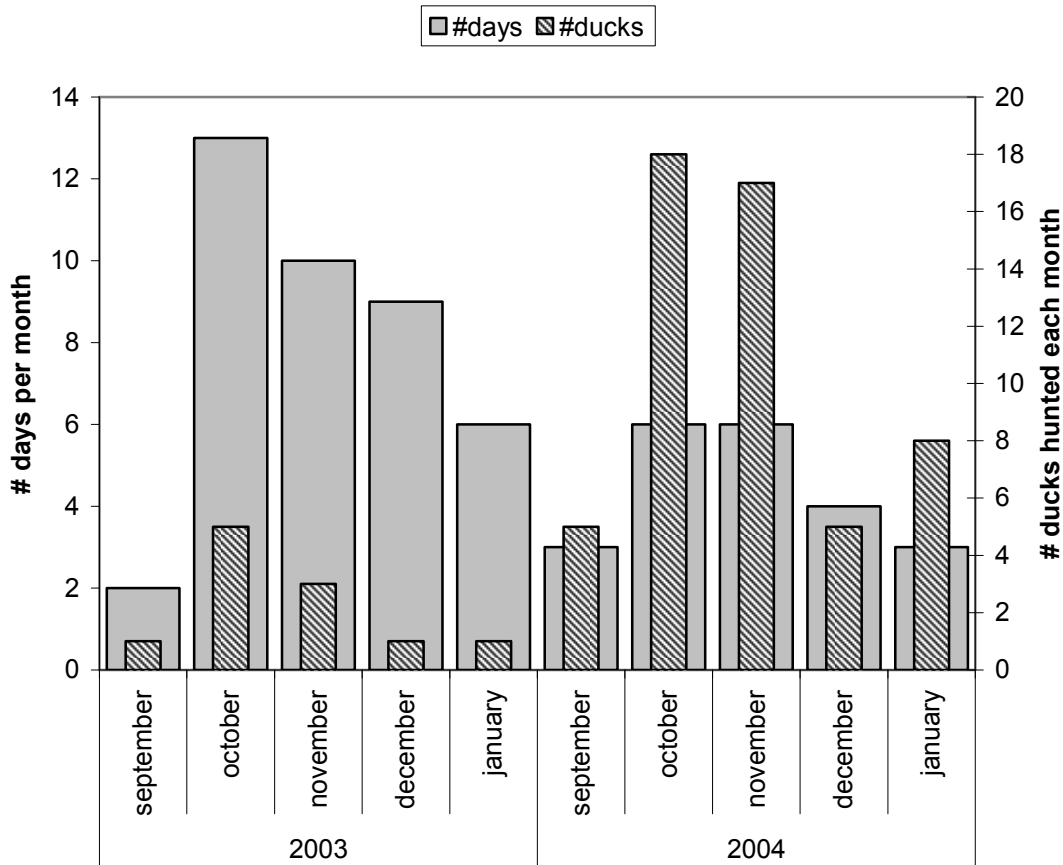


Figure 4: Timing of harvest and number of ducks harvested by the Native Council of Nova Scotia's permitted hunters in 2003 and 2004.

## Discussion

The timing of the harvest by Maritime Aboriginal peoples (September to January) coincides with that of the non-Aboriginal harvest with the exception of a few hunting days in late September. This harvest is occurring in the post breeding portion of the waterfowl life cycle so should not raise any conservation concerns and should not affect the Canadian Wildlife Service's decision regarding the timing and extent of the permitted harvest season for waterfowl.

The location of First Nations hunting sites in Nova Scotia, as reported by the Confederacy of Mainland Mi'kmaq, reflects the coastal staging areas close to First Nation lands, while the distribution of hunting sites identified by the Native Council of Nova Scotia members is typical of the coastal distribution of waterfowl and sites used by non-Aboriginal hunters.

The level of harvest reported by individual Aboriginal hunters and the estimated total harvest for all Aboriginal individuals in the Maritimes is very low and would likely not cause population level impacts for any of the species identified as being of interest to Aboriginal hunters. Baseline studies such as this and annual harvest surveys by

Aboriginal groups are important in order to track future trends in Aboriginal use of the waterfowl resource and should be encouraged.

The results of this study rely heavily on the Native Council of Nova Scotia's handful of waterfowl hunters. Despite an overall decline in non-Aboriginal waterfowl hunters, one would not expect to find a similar trend for a handful of hunters nor would we expect to find huge variations in overall hunting returns unless the waterfowl population became inaccessible to Aboriginal hunters or if one or more individual hunter was highly unpredictable in its harvest returns

I caution readers to not interpret the current low level of waterfowl harvest in Mi'kmaq communities as a reflection of their interest in co-management opportunities for wildlife and waterfowl. It is believed that many of the Mi'kmaq practices related to waterfowl harvest were lost with the passing of the *Indian Act* and its subsequent policies to integrate Indians within the mainstream society (personal conversations with Mi'kmaq leaders). Given the interest and concerns of Mi'kmaq, Maliseet and Passamaquoddy peoples for wildlife, and given the current low level of Aboriginal harvest of waterfowl, the federal government will need to consider ways to build the management capacity of Mi'kmaq, Maliseet and Passamaquoddy and help them re-invigorate their traditional waterfowl harvest practices among their community members. These should serve to help build the capacity of Mi'kmaq, Maliseet and Passamaquoddy to negotiate a better co-management regime for waterfowl in the Maritimes region.

## **Acknowledgements**

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