Summary of the 2018 Off-Reservation Treaty Waterfowl Season

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INTRODUCTION

The fall of 2018 marked the 34th year of off-reservation treaty migratory bird hunting by Great Lakes Indian Fish and Wildlife Commission (GLIFWC) member tribes on lands ceded in the treaties of 1837 and 1842 (Figure 1). Participating tribes included Bad River, Lac Courte Oreilles, Lac du Flambeau, Mole Lake, Red Cliff and St. Croix in Wisconsin, Keweenaw Bay and Lac Vieux Desert in Michigan, and the Mille Lacs Band in Minnesota. In addition, 2018 marked the 28th year of off-reservation treaty waterfowl hunting in the 1836 treaty area by the Bay Mills Indian Community in Michigan.

Hunting regulations advanced by GLIFWC, as authorized by tribal governments, were reviewed by the U.S. Fish and Wildlife Service (USFWS) after consultation with GLIFWC and the Departments of Natural Resources of Wisconsin (WDNR), Michigan (MiDNR) and Minnesota (MnDNR), and published in the Federal Register for public comment. The final regulations approved by the USFWS are summarized below; they included two new harvesting techniques under special experimental seasons: the use of electronic calls, and the taking of waterfowl by hand or hand operated nets.

Although tribal harvest is relatively minor, GLIFWC has conducted periodic harvest surveys to document tribal harvest. Annual surveys to estimate the number of hunters, harvest, and effort by tribal waterfowl hunters were conducted by mail from 1985 to 1994 and by telephone from 1995 to 1998. Due to the low harvest estimates and minimal biological impact of the harvest, GLIFWC then began to conduct waterfowl harvest surveys on a 3-year cycle, or when significant changes in regulations suggested a benefit from additional data collection. Telephone surveys were subsequently completed after the 2001, 2004, and 2007, 2008, 2011 and 2012 seasons.

Harvest estimates for 2015 were again based on mail surveys, due to increasing difficulties associated with conducting phone surveys (see Methods section below). The 2018 survey was conducted by mail, similarly to the 2015 survey, but additional follow-up phone surveys were also conducted. Harvest estimates made by mail surveys may not be directly comparable to those made by phone, since mail surveys introduce a possible response bias not present in phone surveys, since a response is gained from each individual successfully contacted, while individuals who are surveyed by mail may choose to respond or not, and non-active individuals tend to respond at a lower rate than active ones.

REGULATIONS

Season dates and bag limits for various migratory birds are summarized in Table 1. All cranes and swans harvested were required to be registered: cranes could be registered in-person or by phone while swans were required to be registered in-person to allow identification of the species. 2018 was the first year that cranes could be hunted in the 1836 ceded territory.

Table 1. Summary of the 2018 migratory bird seasons and bag limits.

Species		Season Dates	Daily Bag Limit
Zhiishiibag	Ducks	September 1 - December 31	50 in the 1837 and 1842 ceded territories, and 30 in the 1836
			20 (in aggregate with gallinules)
Aajigadeg	Coot		20 (all species combined)
Manoominikeshiinh	Rails		2 in the 1837 and 1842 ceded territories and 1 in the 1836
Gopii ajiijaak	Sandhill crane		
Jiichiishkwenh or ginwaa'okojiis	Snipe		16
	Mergansers		10 (all species combined)
	Gallinules		20 (in aggregate with coots)
Nikag	Geese		20 (all species combined)
Badashka'anzhi	Woodcock	September 4 - December 31	10
Miimii or omiimii	Mourning dove	September 1 - November 29	15 (1837 and 1842 ceded territories only)
Waabizii	Tundra and trumpeter swans	September 1 - December 31 or until 10 trumpeters were registered	5 (in the aggregate)

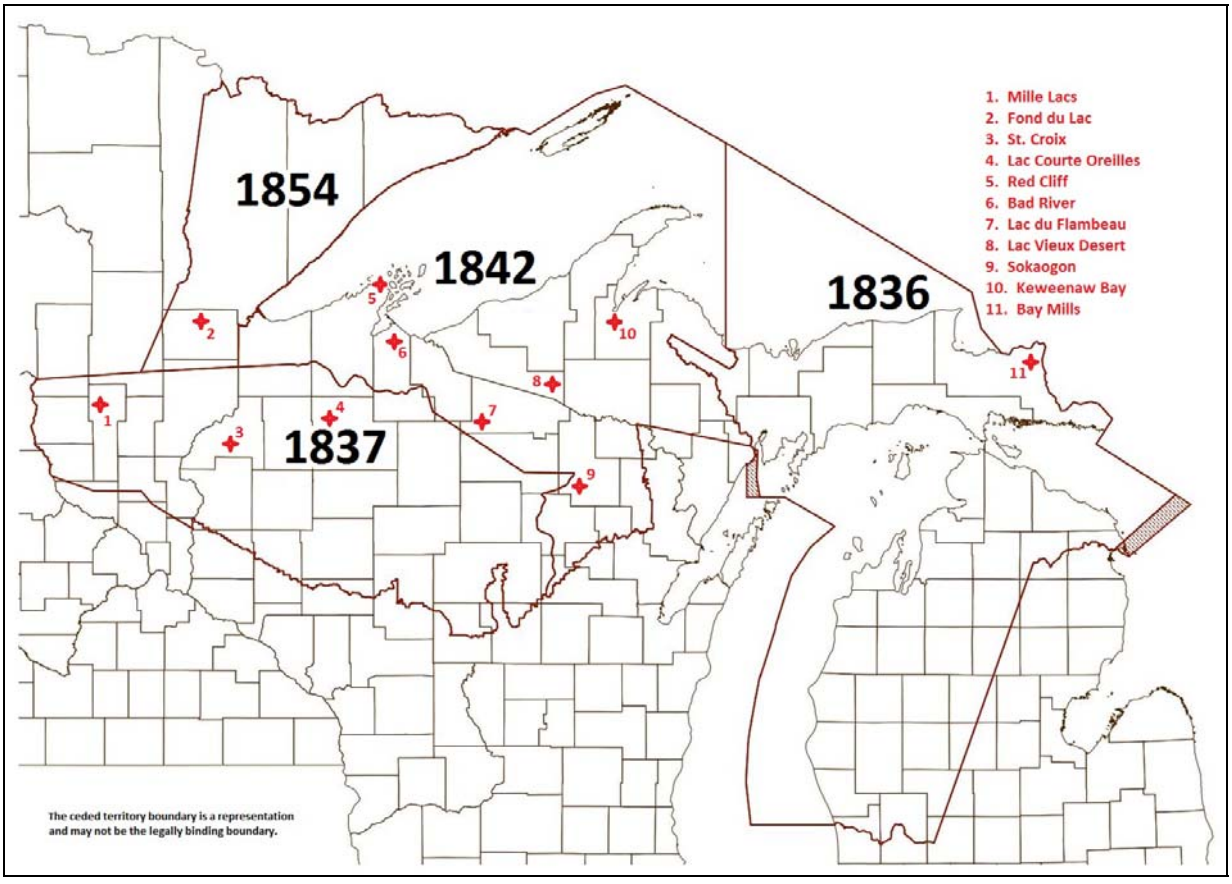

Figure 1. Map of the territories ceded in the treaties of 1836, 1837, 1842 and 1854 with approximate reservation locations.

All federal and state closed areas and method restrictions were adopted, with the exceptions of state open water hunting restrictions, Michigan state restrictions on decoy use, and shell limit restrictions on shotguns. Shooting hours were from ½ hour before sunrise to ½ hour after sunset.

Two methods were made available to tribal hunters for the first time in 2018 in the 1837 and 1842 treaty territories: use of electronic calls (e-calls), and harvesting by hand or hand-operated nets. Both methods required the hunter to obtain a special permit for that activity, and entailed special harvest reporting requirements. A maximum of 50 permits could be issued for the use of e-calls; the number of hand-harvesting permits issued was not limited.

SURVEY METHODS

Tribal migratory bird hunters were required to possess a natural resource harvesting permit. All tribes with the exception of Keweenaw Bay (KB) used an off-reservation migratory bird harvesting permit provided by GLIFWC. This permit was obtained by 1,400 individuals. When tribal members obtained this permit they were asked if they harvested waterfowl (either on- or off-reservation) the previous year, and this information was used to group permit holders into "high-activity" and "low-activity" groups. Harvest surveys were mailed to all of the 221 individuals in the high-activity group and to a randomly selected sample of 48% of the low-activity group (562 of 1,179 individuals).

Separate participation and harvest estimates were then calculated for each group, and added to develop total harvest estimates.

This is the second time since 1994 that harvest surveys were conducted by mail rather than phone. The original switch to phone surveys was done in an effort to reduce response bias in the survey. Traditionally, a low percentage (generally less than 15%) of tribal permit holders actively hunt waterfowl off-reservation in any given year, but these active hunters are believed to return mail surveys at a higher rate than individuals who did not hunt, inflating harvest estimates. Phone surveys eliminated this bias. However, changes in phone technology (i.e. caller ID and message recorders) have made it increasingly expensive and difficult to conduct phone surveys. Thus, as in 2015, a mail survey was the primary technique used, but as a result, harvest estimates for 2015 and 2018 are likely not directly comparable to years when phone surveys were used.

Hunters were asked how many days they hunted waterfowl by county. The total number of days hunted was estimated separately for the high and low-activity groups, and summed. This number was then distributed by county in proportion to total reported hunting days, with all respondents pooled (i.e. hunting days were not distributed separately for the high-activity and low-activity groups).

The Keweenaw Bay Indian Community issues a general, life-long hunting/fishing/trapping permit to their tribal members who participate in any of these activities, including migratory bird hunting. As a result, the waterfowl hunting activity rate among permit holders is very low: a mail survey sent to 350 of the 636 KB permit holders after the 2007 waterfowl season yielded only 4 active waterfowl hunters among 82 responses (David, 2008), and this number may be biased high by a positive response rate among active waterfowl hunters. As a result, KB tribal members were not surveyed in 2018 and no estimate of their 2018 harvest is included in this report.

Identification of the species harvested in 2018, as in previous years, is based on the hunters' skills and recollection, and may not be comparable to estimates from surveys based on parts collections. In this report, the composition of the duck bag is only broken down for a few common species (mallards, wood ducks, scaup, and blue-winged teal); all others are grouped.

Special efforts were also made to estimate harvest taken by the use of e-calls or by hand or hand-operated nets, through the use of hunter diaries and follow-up phone calls. See results section for details.

Finally, the harvest of sand-hill cranes and swans (all species) was not estimated, but compiled from the registration records required for these species.

It can be difficult to use the tribal waterfowl harvest data to draw solid inferences about the impact of particular harvest regulations. Estimates based on a small number of hunters can be greatly influenced by random variation and data outliers. Waterfowl harvest also tends to be influenced by weather, the strength of the fall flight, local wetland conditions, and other factors. The interplay of these variables can make it difficult if not impossible to discern the individual effect of any one, particularly in a given year. In general, tribal harvest estimates may be best used to evaluate long-term trends.

RESULTS

Effort and Harvest

Although the GLIFWC-issued tribal migratory bird harvesting permits were obtained by 1,400 individuals in 2018, the proportion of permit holders who hunt waterfowl is low. In 2018, 197 (14.1%) of the permit holders were estimated to have hunted waterfowl (Table 2).

The 14 active survey respondents in the "high-activity" group reported harvesting 180 ducks, 65 geese and 1 coot, in 179 days, yielding total harvest estimates of 2,384 ducks, 357 geese and 64 coots in 1,323 days for this group. The 6 active respondents in the "low-activity" group reported harvesting 17 ducks, 14 geese and 4 coots in 43 days, yielding total harvest estimates of 343 ducks, 282 geese and 81 coots in 867 days for this group. Summing these totals yields a total estimated harvest of 2,727 ducks, 639 geese (all but 16 of which were Canada geese) and 145 coots in 2,190 hunting-days by 297 hunters (Tables 3 and 4).

Table 2. Summary of the 2018 tribal off-reservation waterfowl harvest survey sampling.

Activity Group	Permits Issued	Surveyed Number	Surveyed %	Returned Number	Returned %	Number Active	% Active	Estimated Total Number Active
High-Activity*	221	221	100	43	19.0	14	32.6	72
Low-Activity*	1,179	562	48	66	11.7	7	10.6	125
Total	1,400	783	56	109	13.8	21	19.3	197

* Activity grouping is based on self-reported activity the previous year; see discussion in text.

The estimated numbers of active hunters and harvest assume there is no response bias in the survey. While it is not possible to measure the extent of any response bias which may exist in this survey, there are strong indications that active waterfowl hunters are more likely to return mail surveys than those who have not hunted. Where true activity rates are low, this bias can lead to an over-estimate of harvest.

Table 3. Estimated 2018 tribal off-reservation waterfowl harvest.

Activity Group	Respondent Reported Harvest				Total Estimated Harvest			
	Ducks	Geese	Coot	Days	Ducks	Geese	Coot	Days
High-Activity*	180	65	1	179	926	334	5	921
Low-Activity*	59	9	0	28	1,054	161	0	500
Total	239	74	1	207	1,980	495	5	1,421

* Activity grouping is based on self-reported activity the previous year; see discussion in text.

There is evidence of response bias within the 2018 survey. Hunters in the "high-activity" group were 1.6x more likely to return surveys than individuals in the "low-activity" group (19.0% returned versus 11.7%, Table 1). In addition, as in 2015, the percentage of respondents estimated to have hunted in 2018 in the high-activity and low-activity groups (32.6% and 10.6% respectively) was far higher than the average estimates from the 2012 and 2008 surveys, which were conducted by phone (20.2% and 1.4% respectively) (David, 2013; 2010). (The 2011 survey did not separate permit holders into high activity and low activity groups.) These figures suggest that estimates of harvest and effort for 2018 are likely biased high.

Table 4. Estimated treaty waterfowl harvest and effort in years surveyed from 1996-2018.

Year of Harvest	Estimated # of Hunters	Estimated # of Days	Estimated Harvest			Ducks Per Day
			Ducks	Geese	Coot	
2018*	197	1,421	1,980	495	5	1.4
2015*	297	2,190	2,727	639	145	1.2
2012*	86	1,090	1,799	822	36	1.7
2011*	89	394	759	28	0	1.9
2008*	76	504	1,124	213	137	2.2
2007	146	780	1,644	535	892	2.1
2004*	63	421	645	84	91	1.5
2001	75	353	1,014	81	146	2.9
1998	92	625	599	177	172	1.0
1997	151	951	1,022	183	164	1.1
1996	125	572	1,278	72	57	2.2
1996-2015 Average	120	788	1,261	283	184	1.6

*2004, 2008, 2011, 2012, 2015 and 2018 estimates do not include the Keweenaw Bay Tribe.

All sandhill cranes and swans harvested had to be registered, so they were not included in the harvest survey. A total of thirty-one sandhill cranes and two swans, both trumpeters, were registered in 2018, all from Burnett County in Wisconsin.

About 92% of the estimated hunting days took place in Wisconsin, with the remainder occurring in Michigan (Figure 2). As in past years, most hunting took place in or near counties with reservations.

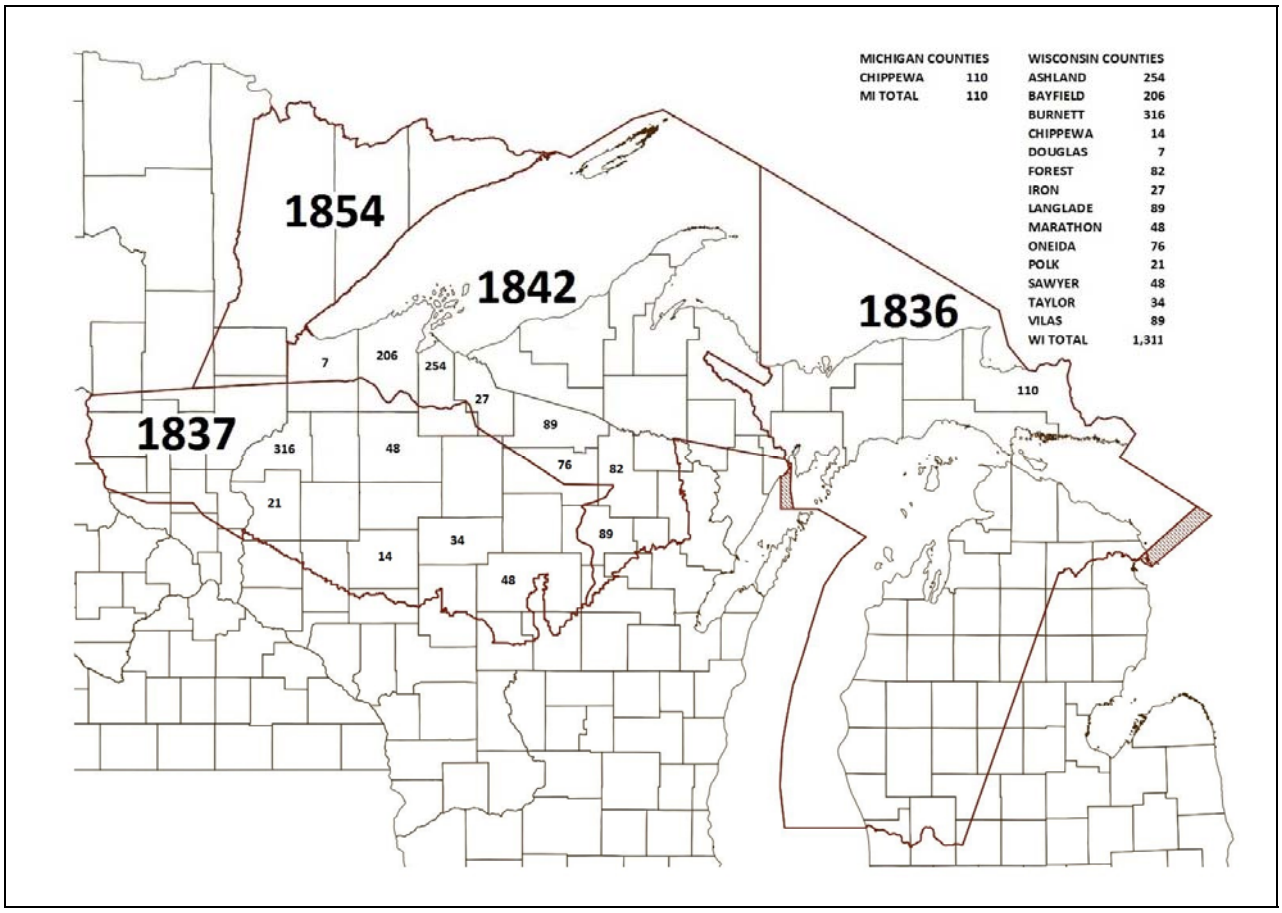

Figure 2. Estimated waterfowl hunting days by county in 2018.

Among the 109 survey respondents, 4 reported hunting woodcock, with a collective harvest of 7. No respondent reported hunting doves, snipe, or rails.

As in the previous 5 harvest surveys, hunters were asked to report the largest number of ducks and geese they harvested on a single day of hunting. For 2018, the greatest number of ducks reported harvested in a single day was 10, while the average harvest was 1.4 ducks per hunting-day. The highest number of geese reported taken on a single outing was 7, and the average harvest was 0.35 geese per hunting-day. These responses are similar to what was reported in previous years (Table 5). It is clear that hunter harvest is generally determined by factors other than the bag limit. Although total duck harvest remained low in 2018 even with a 30 - 50 bird bag limit, the large bag limit is important to tribal hunters because it may allow those individuals who do locate ducks on a particular hunting trip a greater opportunity to meet their subsistence needs.

Survey respondents were asked to report the composition of their duck harvest. The reported composition in 2018 differed in some respects from the collective composition from the

15 previous surveys (Figure 3). The percentage of mallards and scaup in the bag were below the long-term average, while the percentage of wood ducks, and "other" species (including mergansers) in 2018 were above the long-term average (Figure 4). Blue-winged teal, which made up 13% of the bag were near the long-term average of 10%. Ring-necked ducks, buffleheads and green-winged teal made up 80% of the "other" category in 2018.

Table 5. Highest single day duck and goose harvest as reported by active respondents in 2007, 2008, 2011, 2012, 2015 and 2018.

Year	Number of active hunters reporting:							
	Number of Ducks Taken on Best Day				Number of Geese Taken on Best Day			
	0-3	4-6	7-10	10+	0-3	4-6	7-10	10+
2018	12	4	4	0	17	2	1	0
2015	26	8	5	0	36	3	0	0
2012	18	6	1	0	23	1	1	0
2011	16	2	2	2	22	0	0	0
2008	18	6	3	3	27	2	1	0
2007	17	9	1	1	25	2	1	0
Total	107	35	16	6	150	10	4	0
Percent	65.2%	21.3%	9.8%	3.7%	91.5%	6.1%	2.4%	0.0%

Over time, the percentage of scaup in the duck harvest has been declining, while the percentage of blue-winged teal and "other" ducks has been slowly trending upwards (Figure 4). Wood ducks and mallards have shown great variability, but no clear long-term trend.

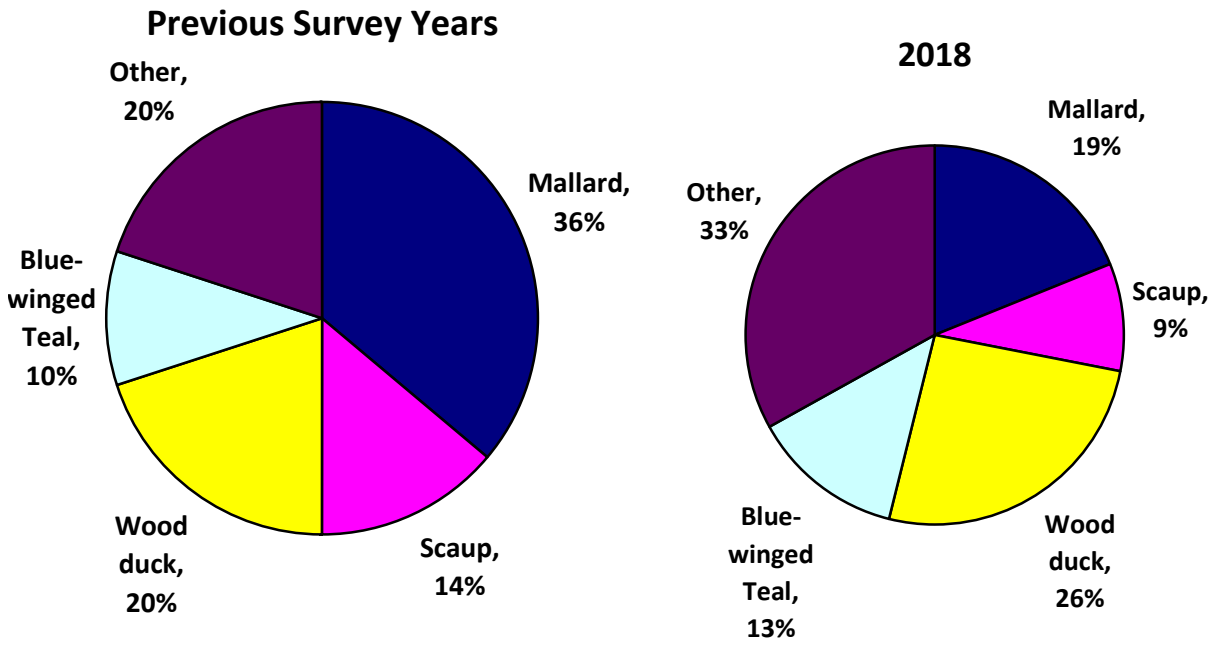

Figure 3. Species composition of the treaty duck harvest in 2018 versus the collective estimated harvest from the 15 previous survey years (1991-1998, 2001, 2004, 2007, 2008, 2011, 2012 and 2015 combined).

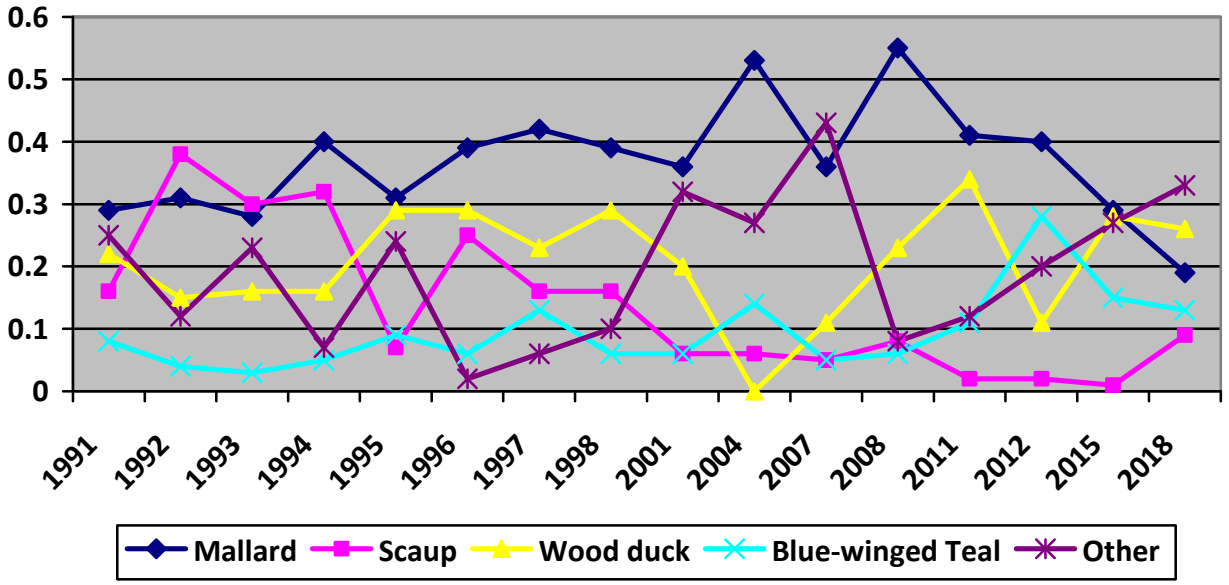

Figure 4. Duck harvest species composition by survey year.

Respondent Opinions

Among active hunters with an opinion (n=17): 0% felt the 2018 fall flight was much better than in an average year, 12% felt it was better, 53% felt it was about the same, 24% thought it was worse, and 12% thought it was much worse. Individuals who did not hunt, but still indicated an opinion (n=40) overwhelmingly rated the flight as about average: 0% felt it was much better, 10% felt it was better, 75% felt it was about the same, 7.5% felt it was worse, and 7.5% felt it was much worse.

Permit holders were asked how likely they would be to use electronic calls if they became permanently legal. Of the 104 individuals who responded to the question, 24% indicated "very likely", 12% indicated "moderately likely", 42% indicated "not very likely" and 22% indicated they were not sure. Responses to a similar question in 2015 (before e-calls were legal to use) were 12% very likely, 15% moderately likely, 51% not very likely, and 22% not sure. This suggests that interest in this method is increasing, even if actual use during the first year of the experimental season was very limited (see below).

Not surprisingly, interest is higher among active hunters. Among the 21 active hunters in 2018 who expressed an opinion, 33% responded very likely, 29% moderately likely, 29% not very likely and 9% not sure.

For the first time, permit holders were also asked how likely they might be to use hand-harvesting techniques if this option became permanently legal to use. Overall, there was somewhat less interest in these techniques at this time. Of the 104 individuals who responded to the question, 15% indicated "very likely", 11% indicated "moderately likely", 48% indicated "not very likely" and 26% indicated they were not sure.

Permit holders were asked what changes from existing regulations they thought would most likely increase their harvest of migratory birds. Only 14 suggestions were offered, and no concept was advanced by more than 2 individuals. Suggestions made twice were: allow hunting on private

land with landowner permission; permanently allow e-calls; higher bags for cranes and swans; allow baiting; and allow spring seasons.

E-calls and Hand Harvesting Techniques

In 2018, e-call and hand harvesting techniques were legal for the first time under special experimental conditions. Both activities required the hunter to obtain a special permit. The number of e-call permits to be issued was limited to 50; there was no limit placed on the number of hand harvesting permits issued. Hunters were supposed to submit a special hunt diary each time either method was used; paper copies of the diary were available at registration stations, but hunters were encouraged to use an on-line form developed using the KoBoToolbox application. Individuals who never used the special technique after getting a permit were instructed to submit one diary at the end of the year indicating the method had not been utilized. However, it is apparent that several problems arose in initiating and evaluating these special seasons.

Only 15 e-call permits were issued, all to members of a single tribe. Only 3 e-call diaries were received from these individuals. Two indicated they never used the technique. One diary indicated that an e-call had been used on a single trip, with 3 individuals hunting together; they reported a total harvest of 2 mallards and 4 wood ducks. The respondent indicated he felt the call made little difference, but that he would definitely use it again. He also reported there was another hunting party a few hundred yards away, but they could not determine if the calls impacted the other party's hunting experience.

Hand harvesting permits were issued to 165 individuals (including all of the 15 who obtained e-call permits). However, it again appears that many of these permits were issued not at the request of the hunter, but were issued by license agents who routinely issued all available permits to every person seeking a permit for any activity. This seems to be a particular problem at 2 specific registration stations; while 7 different registration stations issued at least one hand harvesting permit, 101 of the 165 were issued at a particular station, and 32 were issued at a second.

Only a single diary was returned by a hand-harvesting permit holder; that individual reported attempting to harvest by hand a single time with a party of 3. They harvested no birds, but indicated a desire to try the method again.

GLIFWC then attempted to contact a sample of other e-call and/or hand harvesting permit holders by phone, but only 5 of 53 contact attempts were successful. None of these 5 individuals reported doing any migratory bird hunting. Discussions with those individuals indicated several possible issues. As noted above, several individuals stated they had not requested the e-call permit, but were given it by the licensing clerk, and another indicated that he believed only one individual in a party needed to submit a diary on behalf of the party.

One individual seemed to have some familiarity with the KoBo application, and believed he had submitted a diary, suggesting that the diary was somehow not completed or accepted by the application. However, during a subsequent test of the application by GLIFWC, it appeared to work normally. Additional communication directly with special permit holders will occur if additional reports of this issue are received.

Some of the problems that are apparent with the implementation of the experimental season likely are due in part to a lack of familiarity with the new opportunities by many tribal members.

Greater effort will be put forth to provide information to hunters explaining the new regulations and what is required to participate in the hunt. It is also apparent that registration clerks need additional training to discourage them from issuing permits that the recipient is unlikely to use. If this issue persists, it may be necessary to restrict issuance of these special permits in some manner.

However, while efforts to monitor the harvest taken by the special methods clearly need to improve, it is also clear that utilization of these methods in 2018 was minimal, and did not result in a biologically detrimental level of harvest.

LITERATURE CITED

David, P. 2013. Summary of the 2012 Off-Reservation Treaty Waterfowl Season. Great Lakes Indian Fish and Wildlife Commission Administrative Report 13-07. 8 pp.

David, P. 2010. Summary of the 2008 Off-Reservation Treaty Waterfowl Season. Great Lakes Indian Fish and Wildlife Commission Administrative Report 10-05. 7 pp.

David, P. 2008. Summary of the 2007 Off-Reservation Treaty Waterfowl Season. Great Lakes Indian Fish and Wildlife Commission Administrative Report 08-09. 7 pp.