

2020 St. Clair Flats Wildlife Area Annual Report



Harvested ducks and a dog in flooded corn field. Photo by N. Durik





Harvested duck in flooded corn field. Photo by M. Eovaldi

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ST. CLAIR FLATS WILDLIFE AREA 2019 MANAGEMENT REPORT

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INTRODUCTION

The St. Clair Flats State Wildlife Area (SCFWA) is located at the southern tip of St. Clair County. The SCFWA contains the Harsens Island unit (including bottomlands and marshes associated with this island complex), the St. Johns Marsh Unit, and Dickinson Island.

The marshlands and islands within SCFWA are a river delta formation resulting from St. Clair River flow into Lake St. Clair. Located between the St. Clair and Detroit Rivers, Lake St. Clair has a total area of 430 mi² and is a significant portion of the connecting waters between Lakes Huron and Erie. Approximately two-thirds of Lake St. Clair lies within Canadian boundaries. Waters of the Lake St. Clair / St. Clair River system are an annual ancestral migration route for thousands of ducks, geese, swans and various shore and wading birds.

SCFWA lands adjoining this river delta system provide habitat for numerous other terrestrial and aquatic species of wildlife. White-tailed deer, ring-necked pheasants, raptors, coyotes, red foxes, squirrels, rabbits, muskrats, various amphibians and reptiles, and neo-tropical migrant songbirds are some of the other wildlife species found within the SCFWA. The diverse habitat of this wetland delta system allows for suitable habitat for many different species. While SCFWA is widely known for its outstanding waterfowl hunting opportunities, other recreational opportunities exist such as upland hunting, trapping, boating, canoeing, kayaking, and wildlife viewing. SCFWA provides critical habitat for many rare, threatened, and unique species including sandhill cranes, black terns, osprey, bald eagles, king rails, eastern fox snakes, common loon, short-eared owl, snowy owl, yellow spotted turtle and eastern bluebird. SCFWA provides an incredible amount of habitat value and recreational opportunities outside of its well-known waterfowl benefits.

SCFWA GOALS AND MANAGEMENT EMPHASIS

Management goals and directions of the St. Clair Flats are guided by several commitments and documents. These range from the statewide level down to our local master plan. These are:

- Department of Natural Resources (DNR) mission statement and goals
- Wildlife Division mission statement
- Wildlife Division Guiding Principles and Strategies (GPS)
- Southeast Region Operational Plan
- St. Clair Flats Wildlife Area Master Plan

Our local master plan details the direction of these documents as they relate to us and details what tasks and goals we will achieve to meet these directives. Additionally, it spells out the following sections of the GPS that focus on our managed wetland areas.

GUIDING PRINCIPLES AND STRATEGIES (GPS)

In 2010, the Wildlife Division created a document detailing our division wide goals and priorities known as the Guiding Principles and Strategies (GPS) to better focus our efforts and allow us to more easily report our goals, objectives and accomplishments. After 5 years of use, the document was revised and updated in 2016. The GPS is currently undergoing its next revision. Our primary goals on the St. Clair Flats Wildlife area are to:

- Manage game populations and provide hunting and trapping opportunities while maintaining populations in balance with available habitat, land use practices, and stakeholder values (GPS Goal 1)
- Improve and preserve wetland habitat for game and non-game species (GPS Goal 2)
- Provide a refuge and food supply for migrating waterfowl, shorebirds and wading birds (GPS Goal 2)
- Provide sportsmen/women with excellent hunting opportunities balanced with quality hunting experiences (GPS Goal 4)
- Meet the Wildlife Division's goal of providing statewide wildlife recreational opportunities for the citizens of Michigan and visitors from other areas (GPS Goal 4)
- Increase collaborations with conservation partners and volunteers to implement wildlife goals (GPS Goal 5).

HARSEN ISLAND UNIT

Land purchase on Harsens Island (HI) began in 1950. Original development of the HI management unit began in the late 1950's and is a continuous operation. Currently, there are 10 diked agricultural units totaling 1150 acres; two diked marsh units, each approximately 800 acres; approximately 300 acres of marsh within the management unit on the Little Muscamoot bay shore (over which there is no water level control); and 305 acres of upland area.

ST. JOHNS MARSH UNIT

In 1976, the Michigan Natural Resources Commission approved and dedicated the 3,000-acre wetland/upland complex as the St. Johns Marsh Wildlife Area (SJMWA). It is located along the northeastern shoreline of Lake St. Clair (Anchor Bay), adjacent to Highway M-29 and four miles west of the city of Algonac.

The SJMWA has been recognized as an important ecological area, with many distinct habitat types. Upland areas support mixed stands of oak, hickory, white ash, aspen, cottonwood, and associated shrub species. Areas formerly under tillage support dense growths of old field succession-type shrubs and herbs. Areas subject to intermittent flooding have a cover of sedges, annual weeds, water tolerant grasses and lowland shrubs. A unique area of wet prairie-type vegetation exists along the southeast border of St. Johns Marsh.

Seven diked impoundments have been developed as well as a prairie pothole complex. These seven units include three flooded agriculture units, two flooded timber units, and two hemi-marsh and moist soil units. The greater un-diked portions of SJMWA are dominated by dense stands of invasive plants *phragmites* and narrow leaf cattail, with some small remnant areas of button brush and dogwood. In many areas, these stands are too dense to provide quality habitat for most species.

LAND ACQUISITION

No lands were acquired or divested on the St. Clair Flats this year.

CORONAVIRUS PANDEMIC IMPACTEDS

The biggest story worldwide in 2020 was the coronavirus pandemic. Our normal operations were severely impacted throughout the season, but especially during our farming season. Our full-time staff were put on mandatory work from home status starting on March 24th. This continued through April 24th, when staff were laid off for two weeks. Work from home orders continued through May, until we could return to field work on June 1st. No part-time staff were hired, and full-time staff were furloughed on Fridays through July 24th, leaving only 32 hours a week to work. Obviously, these time challenges greatly impacted our ability to accomplish our management goals for the area. We were fortunate to not lose many field days to rain or weather and were able to catch up, though corn planting was severely delayed. Our office was closed to the public the entire year, creating procedural challenges for the draw, and eliminating bag checks.

The pandemic also created massive financial challenges statewide and for the area, with drastic spending restrictions and a 90% reduction in our operating budget. We were approved to spend money on diesel, the ferry, and electricity for our pumps. Thankfully, we have great partners in Harsens Island Waterfowl Hunters Association and Saint Clair Flats Waterfowlers, Inc. who carried a huge portion of our financial burden for our farming operation. Together, they donated over \$65,000 between the two groups. This paid for all our seed, fertilizer, and herbicide for the cropland operation this year.

Our response to the COVID-19 pandemic continued into hunting season, with drastic changes to rules and operations for the draw. These will be covered in the waterfowl and deer hunting sections.

WEATHER, WATER, AND WILDLIFE PRODUCTION

WEATHER

Spring 2020 was much more pleasant than the cold, wet spring of 2019. However, we did have a cold snap in mid-May that brought hard frost and some snow. June and July were very dry, with us only losing one full day of farming to rain during the month of June. The extremely dry weather through July really slowed our crop growth, particularly with small grains and our corn would have recovered better from its very late start with more moisture in July.

While September was a bit cooler than normal, the warm, dry weather carried into the fall. We had comfortable, warm weather for most of October, though we did have good windy days on the 15th, 23rd and November 1st. We had very warm temperatures the first two weeks of November with highs in the 70s some days leading up to a massive rainstorm on the 15th. Temperatures remained mild before finally dropping on the 22nd and having a bit of snowfall. We had no significant ice until the 29th of November when we finally had temperatures consistently around or below freezing.

WATER LEVELS

The record high water levels in Lake St. Clair continued into 2020. Lake levels in February and March were near the all-time high and new records were set in April and May, before leveling off at almost identical levels as 2019 in June and July. The lake dropped steadily through the late summer and fall, ending up below the 2019 levels for the hunting season. Roads were again flooded and closed throughout the island, including Krispin, Columbine and Voakes roads. The high water levels through the winter resulted in a lot of muskrat damage to our dikes, which eventually caused multiple dike failures and leaks.



Voakes road flooded over, May 20. Photo by J. Darling

NESTING CONDITIONS AND WILDLIFE PRODUCTION

The cold snap in mid-May likely reduced nesting production this year. Observed wood duck and mallard production were both lower locally than in 2019. Wood duck production remains limited by many wood duck boxes either flooded out or destroyed by ice in the winter of 2019-2020. Mallard broods around the island and on the flats were smaller than in 2019 as well. Mallard production throughout the local region were lower than usual, with inland banding sites only having 100-150 mallards on bait sites during September compared to 300-400 in a usual year. Goose productivity remains extremely high. When we first started putting significant goose banding effort into Harsens Island in 2014, we had one large flock of approximately 300 geese. This year we had approximately 1,000 geese split between three different areas with 200-350 geese on the fields at a time, as well as several smaller groups composed of one or two family groups. Sandhill crane nesting was average, with a handful of family groups scattered throughout the area.

Deer numbers on the island were about average but down from 2019. Very poor conditions for our winter aerial survey did not allow for an accurate count. The flooded conditions in the upland areas and marshes consolidated our deer herd and restricted them to living in our fields for the most part. While there were a number of fawns seen during our farming season, by the fall there were large groups of adult does with no fawns and only two fawns were harvested during the hunting season. It is likely that coyote predation is having an impacted on fawn survival. It is also possible that with very limited unflooded cover available, does are just moving their fawns elsewhere on the island for rearing.

WILDLIFE PRODUCTION ON HARSENS ISLAND MWA

1. Number of breeding ducks = approximately 150
 - a. Number of young produced = approximately 600
2. Number of breeding geese = approximately 250
 - a. Number of young produced = approximately 900
3. Size of September 1st deer herd = approximately 350
4. Size of pheasant flock on September 1st = approximately 15
5. Other game = Coyote numbers are up from 2019. Squirrel and rabbit numbers are down due to flooding in upland areas.

HABITAT WORK

CROPLAND PROGRAM

2020 gave new meaning to 'challenging conditions'. In a normal year, we finish planting our corn around Memorial Day. This year, we were on mandated work-from-home status until June 1st and could not even start working ground until that time. Additionally, we had no seasonal employees and could not use volunteers to help. Despite that, we were able to hit the ground running and had all the corn planted by June 18th. We were helped by a much drier May and June than 2019 so we were able to pump down quickly and keep the fields dry enough to work. We were lucky and thankful to only lose one day of farming opportunity to bad weather. Our millet and buckwheat were planted close to our normal end of June/early July windows. Like 2019, we faced drought conditions in July and early August which further stunted our late corn and negatively impacted our buckwheat.

Goose, deer and crane damage remains our biggest struggle year to year. This year we had over 700 geese in our crop fields at different points throughout the day. There was a flock of 300+ in zones 25-27 and 30 each day, another 200 in zones 4, 17 and 18, a different flock of 150 in zones 12 and 13 and several smaller family groups scattered throughout the area as well. Harassment of geese to protect the crops is normally one of the duties of our seasonal employees and despite our best efforts we could not keep up with hazing while also trying to fulfill our planting and dike maintenance goals. There was extreme deer damage in zones 1-4 again, resulting in extremely poor cover and low yields in 2-4. With the high water levels, deer are congregated in the few dry areas they can live in and properties to the northwest of our crop fields are some of those. This results in heavy pressure on 1-4 as they are the closest zones to that area. Crane damage was largely mitigated again this year with the use of Avipel, but as we have seen in the past, they will still focus on one or two areas and hit them hard. A lot of times this coincides with areas that experienced some level of flooding, such as we have seen in low areas of 24 and 25 in recent years. This year they focused on the buffer between 15 and 16 and wiped it out. There was also crane damage in zone 28, though considerably less than other zones have had in the past.



Field showing corn to sprout, June 9th. Photo by J. Darling

UPLAND HABITAT

Due to high water levels, none of our upland food plots were planted on Harsens Island. The uplands remained flooded throughout the fall and provided some fair duck hunting opportunities, especially early in the year.

MARSH UNITS

Both units were left open to lake level again owing to the high water pressure and our inability to address maintenance issues on both dikes during the spring or summer. By late summer we were able to repair muskrat damage around the entire east marsh dike. The lake dropped enough to allow us to repair the west marsh bay shore dike in December. For most of the summer, the west marsh dike was completely flooded over from 74 down to the bay shore dike. After the lake dropped quickly through September, both marshes were about 2" shallower for the hunting season than in 2019.

With the high water, there was very limited expansion of cattail or phragmites in either unit. There were, however, a lot of detached floating cattail islands in the west marsh that made navigation difficult at times. The east marsh saw significantly more wild rice production in some potholes than in years past. Several of the areas that we had aerially treated for phragmites in recent years have now opened, due in part to high water levels and ice shear removing a lot of standing dead phragmites and have filled in with a variety of native plants including pickerelweed, arrowhead, wild rice and various sedges. Zones 95, 72, 32, 37 and 40 are all good examples of this growth this year. Several of these zones had greatly increased duck usage this year as well.

AREA MAINTENANCE

Though significantly delayed, all our annual maintenance goals were met. We had two separate dike failures during our layoff and work from home time which had to be addressed immediately. All dikes except the two outer marsh dikes were repaired by August. Muskrat damage was extensive throughout the area and there were several areas damaged by beaver in both marsh dikes. Our signage obligations were met throughout the area. No new maintenance or improvement activities were undertaken.

DEER HUNTING

Deer hunting was severely impacted by the high water again this year, as well as by our changes to draw operations. The youth hunt and bow season were both entirely self-registered with no assigned zones as we did not have approval to run draws yet at those times. This confusion may have led to lower participation in both hunts. Upland zones remained flooded throughout the entire year, limiting areas that deer could live, and hunters could access. For firearm season, we only held one draw each day for these limited areas, which largely explains the 54% decline in hunter trips for firearm season. The harvest fell 80% during firearm season due to high water levels, warm weather, and low deer movement.

There were significant changes to the muzzleloader season on public land in zone 3 this year. First, all firearms legal for use in zone 3 were legal to use during 'muzzleloader' season and the season was shortened by a full week (Dec. 4 – Dec. 13). More importantly for us, hunters could use muzzleloaders to hunt on public land during the timeframe of the late season private land antlerless hunt (Dec. 14 – Jan. 1). This effectively extended our old muzzleloader season by two weeks. Some hunters took full advantage as we had higher participation during these dates than any other season, as well as higher harvest. It is also likely that some hunters were unaware of the change as it was the first year of the new opportunity. Antlerless tags were sold at all license agents and online, so we do not have a local count on doe tags sold for the island this year.

DEER HUNTING PARTICIPATION

Season	Hunter Parties	Deer Harvested
Youth Hunt	6	2
Archery	75	6
Firearm	68	3
Muzzleloader	80	4
Late Antlerless**	106	9
Total Parties and Deer Harvest	335	24
DMU 174 Antlerless Licenses Sold	NA	NA

With our office closed to the public, bag checks eliminated, and deer check effort drastically scaled back, we had much coarser age/sex data for our deer harvest this year. To minimize time spent interacting in-person, we only recorded the sex of the animal and age at fawn or adult. Our overall harvest was down 20% from 2019. Fawns only comprised 8% of the harvest compared to 17% in 2019. Ten of the 24 deer harvested were bucks, approximately 42%, down from 57% in 2019. The location of harvest shifted this year as well, primarily because of limited

opportunities in the uplands due to water levels. Also, thanks to extended opportunities to hunt the corn fields late season, a greater number of deer were taken in the cropped zones than in recent years. 54% of deer taken were harvested in the crop zones in 2020 compared to only 33% in 2019 and the majority of these were taken during the late season.

DEER HARVEST DATA FOR DMU 174-MANAGED AREA

Age	Female	% of Harvest	Male	% of Harvest	Total	Total %
Fawn	1	4%	1	4%	2	7%
Adult- Unaged	13	54%	9	38%	22	73%
Totals	14	NA	10	NA	24	NA

SMALL GAME AND TRAPPING

Small game hunting opportunities on the island remained limited by high water in 2020. The upland areas that squirrels and rabbits live in were all flooded to some extent this year, with large areas knee deep. There was very little observed hunting effort on the open hunting areas and only one permit issued for a pheasant hunter this year. Zones 95 and 98 had been decent pheasant habitat up until a couple years ago, but this year were so flooded that 95 was one of our best marsh zone duck areas.

Muskrat trapping effort has dwindled as fur prices have fallen, but a handful of trappers put a lot of effort in on the area. Overall muskrat harvest was similar in 2019-2020 to 2018-2019 and a small number of beavers were taken from the area as well. So far in 2020-2021, we have 7 trappers on the area. Muskrat burrowing damage has been very high and there are some areas damaged by beaver bank dens each year. Raccoon prices are at rock bottom and there is little to no trapping effort put into removing these animals. The increased raccoon numbers complicate our duck banding efforts in the summer considerably. Coyote numbers on the island are up in 2020 over 2019, with two different groups of pups seen this summer on the managed area and at least two other packs on other parts of the island. Coyote trapping is difficult due to potential conflict with dog walkers.

RECREATIONAL AND EDUCATIONAL ACTIVITIES

Activity	User Trips
Waterfowl Hunting	5,414
Deer Hunting	335
Small Game Hunting	2
Trapping	7 permits
Educational Tours	0

As part of the state’s response to the coronavirus pandemic, all our in-person meetings and tours were cancelled this year. Normally we conduct several field trips for both school groups and conservation partners. However, the statewide restrictions involved in the pandemic drove more people to outdoor recreation which we saw here as well. Numbers of shore fishermen were up around the area, there was consistent kayak use of the waterways, and our boat

launches on the south channel side of the island were again used regularly. With the high water, the boat launches at Snooks Highway and the end of Anchor Bay Drive were again closed, so our launches were the closest launches to Muscamoot Bay and the Flats.

WATERFOWL HUNTING

The 2020 season was the 50th year of managed hunting on Harsens Island. The waterfowl season was 60 days in length for the 24th consecutive year. There was a split season again, with two days of the general season taking place on December 26th and 27th. The regular waterfowl season opened on October 10th and closed December 6th. The bag limit was a liberal six duck limit framework including no more than four mallards, of which up to two could be hens. The black duck daily limit remained two and pintails remained at one per day. There was a significant change to the scaup daily limit, with one allowed per day for the first 15 days, followed by two per day for the remainder of the season.

The state's response to the coronavirus pandemic forced us to make some huge changes this year to be approved to safely run a hunt. Permits were issued by self-registration for the early teal, goose, and youth hunts. We were very close to having an entirely self-registered hunt this year and were only able to operate the draw after taking the steps we did. The changes made were as follows:

- Only 1 draw per day for an all-day hunt.
- Closed to all hunting on Wednesdays.
- All registration and the draw were conducted outside. We built a check-in window in a cargo trailer and used an FM transmitter to announce the rules and draw order.
- The office was closed to public and no bag checks were performed; hunters self-reported their bag and returned their permits to a drop box at the end of their hunts.
- All zones were changed to 1-4 hunters per zone.
- Licenses were not checked or sold at the draw. No stamp cards were issued.
- Only the party leader could approach the trailer to register their party and had to present the names of all party members at that time.
- Anyone approaching the registration trailer must wear a facemask and everyone was to maintain six feet of social distance outside.



Outdoor draw registration trailer. Photo by J. Owens

EARLY GOOSE, TEAL AND YOUTH/VETERAN SEASONS (16 DAYS, SEPT. 1-16 AND 2 DAYS, SEPT 19 AND 20)

The early teal season was quite a bit better this year than last. We had some cooler temperatures bring some teal down and had a decent number stay. Goose numbers are always sporadic during the early season and this year was no different. While we do not flood our fields for the early season and our marsh units were for the most part deeper than teal would like, we had several areas in the upland zones flooded almost perfectly for teal which helped keep them around. Hunting pressure and success were both steady, with a small number of teal and geese taken each day but no truly incredible hunts. The youth season was hard to judge overall since it overlapped with teal season as well as the new veteran and active-duty hunt. We heard of no conflicts between hunters this year for this hunt.

REGULAR DUCK HUNTING SEASON (58 DAYS, OCTOBER 10-DECEMBER 6)

The 2020 season cannot be compared to previous seasons. With only one draw per day for an all-day hunt and the area closed on Wednesdays, we went from 14 hunt periods a week to only 6. This obviously had a significant impact on hunter effort and opportunity as well as our overall harvest totals. Outside of the opening weekend reserved hunt, we had nearly the same total number of parties in the draw this season (3,314) as we did in 2019 (3,369) despite only having 6 draws all week. We averaged 69 parties per draw during 2020 compared to 30 parties per draw in 2019. There was understandably a lot of frustration from hunters unable to get a spot to hunt, though many were understanding that the alternative was no draw and self-registration instead. Since our office was closed and we were not checking in ducks each day, we had less opportunity for comment from hunters than we normally do. Most comments expressed frustration for only having one draw each day and how hard it was to get a good zone or expressed how much they liked the FM transmitter for the draw. We had less comments than anticipated on the change to 1-4 parties for all zones, but some hunters expressed appreciation for the change. We know that some groups were able to slip through the cracks and get multiple cards in a draw, especially on busy days, but this was relatively rare, and we believe we caught most instances of such attempts. Whether we return to checking licenses next year or some other system of check in such as was used at the Saginaw Bay areas, we will tighten down on this.

With such drastic changes in overall draw numbers, it is hard to say whether that change had any effect on participation of single hunters. We had a total of 5,414 hunter trips for the season (-26.5% from the previous 5-year average) and harvested a total of 6,251 ducks (-29.1% from 5-year average) for a duck per hunter trip average of 1.15 (-3.6% from the 5-year average).

For much of the year, the weather was very mild and, outside of a couple days with very little skim ice in sheltered spots, we had no meaningful ice until November 29th. Not only do warm temperatures impact migration, but it limits daytime activity by making nighttime waterfowl feeding comfortable and easy. This season compares very closely to 2018, when we also had a lot of warm, southerly wind days and a stagnant refuge count. In both years, we reached a decent refuge count quickly, then that count remained largely unchanged for the rest of the season. We also had a lot of early season success then dwindled down from there in both years. This year we averaged 165 ducks/day in October compared to only 98 per day in November. Years in which we have higher total harvests almost always have higher November success, with November accounting for 50-55% of the harvest in those years instead of 40-45%. Our best week of the season was the last week of October, in which we averaged 1.84 ducks/trip and shot a total of 1,325 ducks. Our worst week was the week of Thanksgiving, harvesting only 348 ducks all week and averaging 0.69 ducks/trip.

Mallard harvest declined this year, making up only 57.5% of the harvest compared to 60-65% in most recent years. Pintails and black ducks were our second and third most harvested, at 7.8% and 7.1% respectively. Wigeon and gadwall rounded out the top five species at 5% and 4.9% with wood ducks just behind at 4.7%. Even though our total harvest was down 27% from 2019, five species increased in harvest with pintails, gadwall and ringnecks all increasing 6-10% over their 2019 totals. We more than doubled the number of ruddy ducks shot this year, from 54 in 2019 to 118 in 2020. Scaup harvest increased from 26 in 2019 to 46 in 2020, but these are a very small percentage of our total harvest. Our largest decline by percentage was green-wing teal, which dropped 45% from 2019 and only had 209 harvested total. There were considerably more teal in the refuge during 2020 than in 2019 and they were night feeding heavily, so it is likely they felt little need to leave the refuge during daylight hours to provide shot opportunities. The mallard harvest was 62% drake and 38% hen.

The overall harvest trends in the cropped zones were nearly the same as a normal two draw/day year, with zones 15, 16, 23-26 and 29 leading the way in total harvest and ducks/hunter trip. Zone 15 was the best zone for the year with 379 ducks harvested and 25 was just behind at 354. We had hoped to see an increase in harvest in our less successful zones with the reduced pressure from one draw per day and a quiet day but that did not materialize, as most other zones ended up accounting for less of the overall harvest than they had in previous years. Zones 8 and 12 were eliminated this year. 12 had no cover and would have hurt success in 11 and 70. Zone 8 became redundant as single hunters could hunt all zones and had very limited cover as well, so was eliminated to simplify draw rules as much as possible. This allowed us to advertise all zones as open to 1-4 hunters.

The big surprise this year was the success of the marsh zones. In total, marsh units (including the flooded upland units) accounted for 1,935 ducks in 1,846 hunter trips, an average of 1.05 ducks/trip. This surpasses 2019 by over 400 ducks and is the third highest harvest in the marsh since 1985, topped only by 2001 and 1999 in total harvest. The 1.05 duck/trip average is the highest ever recorded in the marsh units. The west marsh outperformed the crop zones in ducks/hunter trip with 1.26 ducks/trip compared to 1.21 ducks/trip in the corn zones. Some of this increased harvest is due to more people hunting the marshes (1,846 hunter trips in 2020 compared to 1,456 in 2019). But the lingering mild temperatures and lack of ice also helped keep birds in the marshes for the full season and provided more opportunity. Additionally, the increase in wild rice and other native food source plants in both marshes in recent years certainly improves duck usage.

DECEMBER LATE SPLIT (2 DAYS, DECEMBER 26 AND 27)

Duck numbers dwindled rapidly as we pumped down the fields after the regular season and some ice started to form. This year, however, we did not get lucky with the weather and had some very cold temperatures and snow roll in on Christmas, making very challenging conditions for the split. We had 52 hunter trips harvest 44 ducks over the two days, with 39 of those ducks shot the first day and the vast majority of those only harvested in a handful of zones.

GOOSE HUNTING

Goose hunting success remained steady through the regular season, harvesting 123 geese. This is barely down from the 134 harvested during 2019's regular season. Three quarters of the goose harvest came in October, with only 31 of the 123 taken during November and December.

MIGRATION AND WATERFOWL NUMBERS

Refuge numbers built gradually and steadily through October before plateauing in November. Through the month of November and the very mild temperatures we had then we saw very little change in refuge numbers and few new ducks arriving each day. This led to some very educated and stale birds. As expected, our best weeks of hunting were during October when new birds were arriving each day. Our peak refuge count this year was just under 25,000 birds, very comparable to 26,000 birds at peak in 2019. However, the 2019 migration had a much sharper increase and decrease in total numbers whereas we saw a gradual increase and then a stagnant month in 2020. Pintail and green-wing teal numbers were up in the refuge from 2019 and wood ducks more than doubled to some of the highest counts I have seen in our refuge. Mallards and black ducks were both down, with nearly half the black ducks in the refuge at peak counts than there were in 2019.

WEEKLY REFUGE COUNT

Week Ending	Mallard	Black	WD	Pintail	GWT	Others	Total Ducks
Sept. 5	40	0	100	0	6	52	198
Sept. 12	300	12	300	4	25	100	741
Sept. 19	600	45	450	40	60	130	1325
Sept. 26	2200	200	600	80	350	62	3492
Oct. 3	3500	250	800	75	400	176	5201
Oct. 10	3700	325	1500	400	500	386	6811
Oct. 17	8500	450	1250	425	550	780	11955
Oct. 24	18000	700	700	2000	800	1431	23631
Oct. 31	19000	900	450	1900	750	1668	24668
Nov. 7	18500	900	400	1000	700	1670	23170
Nov. 14	18750	1000	200	1300	1000	1655	23905
Nov. 21	18000	1000	150	1100	1000	1086	22336
Nov. 28	19000	900	20	1000	950	915	22785
Dec. 5	12000	800	10	700	100	722	14332
Dec. 12	6000	200	4	100	45	110	6459
Dec. 19	400	100	0	30	0	0	530
Dec. 26	250	50	0	0	0	0	300

ST. JOHN'S MARSH UNIT

WATERFOWL NUMBERS AND CONDITIONS

St. John's Marsh (SJM) is a lower priority for our staff than the Harsens Island unit. Since we had such a late start to the field season, we were unable to plant corn at SJM and our buckwheat was planted extremely late. While the drought conditions hurt crops at Harsens, the timing worked out well for the different soils at SJM. Our buckwheat ended up with a decent food supply which was boosted by a lot of native moist soil production as well, thanks to the late soil disturbance and moist conditions prior to us pumping down to farm. Refuge numbers were up from 2019, with a peak on October 9th of 800 ducks.

HUNTING SEASON

St. John's received heavy pressure for most of the year, especially in the early season when wood ducks are plentiful. While numbers of wood ducks were down in the various units at SJM this year, it is likely a lot of these birds were at Harsens and accounted for the huge increase in wood duck numbers there compared to most years. As usual, pressure tapered off as the season wore on.

A portion of the impoundments in Units 1 and 2 are posted as refuge with signs reading "Wildlife Refuge - Do Not Enter, September 1 - End of Waterfowl Season". The 445 acre Blue Water Isles tract on the west side of M-29 remains posted as seasonal refuge with the same refuge dates. The refuge was opened to access starting December 7th. With the lengthened late goose seasons and the late split, these refuge dates cause confusion and enforcement difficulties. One of our goals for this year is to change these to a fixed date to simplify hunter understanding and law enforcement.

Due to the spending restrictions in response to the coronavirus pandemic, the Michigan Pheasant Hunting Initiative was halted this year and there were no pheasant releases at SJM. It remains to be seen if SJM will be part of this initiative going forward.

BANDING

Due to safety restrictions from the pandemic, our banding efforts looked much different this year. Without hiring seasonal employees and unable to use volunteers, all our banding efforts in the region were done with full time employees and reduced crew sizes. Additionally, staff could put little time into scouting for geese in the local area as we were focused on farming during June. In areas we knew we had geese, such as the fields at Harsens, we would not have been able to put together a crew big enough to successfully herd and trap them. For the first time in decades, we banded no geese out of the Harsens Island or Mount Clemens offices. Instead, staff assisted at smaller sites at Pte. Mouillee and Bay City for two days.

Duck banding on the other hand was scaled back but very effective. We banded a total of 561 ducks using walk-in and swim-in confusion traps and floating wood duck traps. Most of our mallards were banded at mainland sites using walk-in confusion traps. Staff from the Waterloo, Holly, and Point Mouillee offices came and helped on these days as we had lots of birds to process. Our wood ducks were all banded on Harsens using either floating traps or swim-in confusion traps. We had one significant mink predation event in a floating trap this year.

HARSENS ISLAND WATERFOWL BANDING TOTALS

Year	Mallards	Wood Ducks	Others	Total Ducks	Geese	Total Bands
2016	328	222	0	550	336	886
2017	342	310	1 hybrid	653	265	918
2018	309	226	0	535	293	828
2019	247	34	1 Black duck, 1 Hybrid	283	361	644
2020	276	283	1 Pintail, 1 Wigeon	561	0	561

ECONOMIC IMPACTEDS

BENEFITS TO LOCAL ECONOMY

The town of Algonac and the community on Harsens Island rely on tourism dollars to drive the local economy. Many businesses thrive on the business brought in during the summer by boating and fishing enthusiasts. Instead of the economic flow slowing after the normal summer boating months end, the St. Clair Flats, St. Johns Marsh and the Harsens Island Managed Hunting Unit continues to draw in a regular stream of income to the local economy here. Our managed operation on the island alone usually sees 6,500-8,000 hunter trips a year, apart from the thousands of trips made by hunters on the surrounding St. Clair Flats area.

This year that impacted was especially needed and welcome after all the economic challenges of the pandemic. We still had nearly the same number of parties come through the draw and over 5,000 hunter trips on the area. Those hunters brought a lot of money to the ferry and the few businesses left on the island, as well as all the businesses on the mainland hunters frequent to purchase snacks, drinks, and gas.



Family having lunch in a boat at Harsens Island. Photo by J. Darling

FUTURE RECOMMENDATIONS

What follows are several recommendations to improve habitat and recreational opportunity in the St. Clair Flats region.

- **Return to two draws per day.** Massive party sizes make it very hard to get an opportunity to hunt the best zones and hunters expressed a lot of frustration and dissatisfaction. While other managed areas saw significant changes in bird behavior and hunter success going to one draw per day, we saw no such benefits this year. Hopefully pandemic challenges are eased next year, and we can return to normal.
- **Keep all zones 1-4 hunters per party.** We did not notice a significant change in the number of single hunters this year and this change makes the draw easier for new hunters to understand and feel comfortable in.
- **Resolve crop damage issues at Harsens Island.** Crop damage from geese, deer and cranes is our biggest challenge to producing cover and corn yields. We can minimize some crane damage with Avipel but need solutions to deer and especially geese. Each year we have more geese on the area in the spring and our current hazing efforts are only partially effective.
- **Evaluate changes to waterfowl migration, local behavior, and local numbers.** Refuge numbers are still a fraction of what they were 25 years ago. With new statewide research beginning this year hopefully we can begin to learn some answers.
- **Develop water control over a larger portion of St. Johns Marsh.** Improving the habitat from its current *phragmites* monoculture is critical. This will also provide considerably more year-round recreational opportunities.
- **Monitor impounded marsh habitat and hunter success.** Two years of high success rates in the marsh show promising trends. We will monitor plant responses, water levels, and hunting trends to see if this continues in future years.
- **Remain staffed throughout the waterfowl season.** Changes this year were outside of our control, but the interaction with hunters is a valuable education opportunity and provides useful feedback for us as well. Having staff perform bag checks at least for the morning hunt is our desire.
- **Evaluate changes in deer numbers and hunter success.** The flooding has created new challenges for our deer hunters, but the late muzzleloader season provided new opportunities. As we work to limit deer impacted on crops and waterfowl habitat, we will continue to evaluate options for increased deer harvest and hunting opportunities.
- **Acquire a Marsh Master.** We have used the marsh master to successfully expand hunting opportunities and accomplish habitat work. While continuing to rent a marsh master is a viable option, if the opportunity came to acquire one, we could put it to good use. With our financial challenges, this is a long-term acquisition goal.
- **Monitor pheasant population on Harsens Island and St. John's Marsh.** With the high-water levels, pheasant numbers have crashed on Harsens Island and remain very low at St. John's Marsh. We will continue to work with Pheasants Forever to try and implement habitat changes to benefit pheasants as well as other species.
- **Change St. John's Marsh refuge closure to a fixed date.** We will work with Law Enforcement Division and our local partners to establish a consistent date for the refuge to open in December, eliminating hunter and enforcement confusion.

PROMINENT PARTNER GROUPS

This year, the support of our partners was especially critical in the face of huge financial challenges and uncertainty. We would like to thank our many volunteers and partners for their many years of assistance with habitat management, hunting access improvements, waterfowl banding, public events, and youth hunts, and all the other help we receive at the Managed Waterfowl Area. Hopefully, we can begin some of these projects again in 2021. Without everyone pulling together, we would not be able to operate the way we do, and we are grateful for all our local support. The following is a list of organizations and agencies that have aided in the past year to accomplish our management goals:

HARSENS ISLAND WATERFOWL HUNTERS ASSOCIATION

As our sharecropping partner, they provide equipment, equipment repairs and financial assistance for the cropping program. With our statewide budget reductions this year, HIWHA along with St. Clair Flats Waterfowlers paid for all our farming costs apart from staff time, diesel and electricity for pumps.

ST. CLAIR FLATS WATERFOWLERS, INC.

Provides us with significant financial support, volunteer hours, and normally hosts the November youth duck hunt. Together with HIWHA they shared the cost of the entire farming operation apart from staff time, diesel and electricity paying for fertilizer, herbicide, and seed.

MICHIGAN DUCK HUNTERS ASSOCIATION, BLUE WATER CHAPTER

Provides financial support and volunteer hours. With the restrictions on volunteer use, they were unable to assist with our projects this year.

DUCKS UNLIMITED

Continue to work with us on project planning for St. John's Marsh as well as replacement and improvement of pump three at Harsens Island.

MUCC DISTRICT 8

The Huron Point Conservation Club hosts the Saturday afternoon hunt during the early Federal September youth hunt. With us unable to run draws or participate this year, they still organized themselves for the youth hunt, provided lunch and took a large number of youths out for the early hunt.

PHEASANTS FOREVER

With all the uncertainty of the pandemic, our projects with Pheasants forever were paused this year. However, improvements at St. John's Marsh and Port Huron State Game Area are still planned.

NATIONAL AUDUBON SOCIETY

Our black tern banding project with Audubon continued this year once their staff received return to field approvals. This project continues to provide great wetland information on the Flats for us. We are continuing planning for the east marsh restoration grant that they received and plan to begin cutting of cattail this summer to open up new potholes and expand existing ones.

The following are charts and data from Harsens Island MWA for 2020

WATERFOWL SPECIES HARVEST TOTALS

Species	Total	% of Harvest
Mallard	3596	57.5%
Pintail	488	7.8%
Black Duck	441	7.1%
Wigeon	310	5.0%
Gadwall	309	4.9%
Wood Duck	292	4.7%
Ring-Neck	221	3.5%
Green-Wing Teal	209	3.3%
Ruddy Duck	118	1.9%
Redhead	66	1.1%
Bufflehead	46	0.7%
Scaup	46	0.7%
Shoveler	34	0.5%
Hooded Merg	32	0.5%
Blue-Wing Teal	29	0.5%
Canvasback	8	0.1%
Goldeneye	5	0.1%
Unknown	1	0.0%
Geese	123	NA
Coot	30	NA

PREVIOUS 5 YEAR ANNUAL HARVEST AND USE COMPARISON

Year	Parties in Draws	Hunter Trips	Ducks	Ducks/ Trip	Cripples	Geese
2015	4576	8044	9172	1.14	1609	106
2016	4183	7541	7701	1.02	1521	113
2017	3997	7569	10556	1.39	1847	86
2018	3571	6883	8054	1.17	1537	114
2019	3458	6801	8603	1.26	1412	134
Previous Five Year Average	3957	7368	8817	1.20	1585	111
2020	3446	5414	6251	1.15	1186	123
% Change from Previous Five Years	-12.9%	-26.5%	-29.1%	-3.6%	-25.2%	11.2%

MONTHLY HARVEST AND PARTICIPATION STATISTICS

Month	Number of Days	Ducks Harvested	Hunter Trips	Ducks per hunter trip	Ducks per Day	Hunters per Day	% of Harvest	Geese
Oct.	19	3136	2291	1.37	165	121	50.2%	92
Nov.	26	2544	2521	1.01	98	97	40.7%	28
Dec.	6	527	550	0.96	88	92	8.4%	3

WEEKLY HARVEST AND PARTICIPATION STATISTICS

Date	Number of Days	Hunter Trips	Hunters per Day	Ducks Harvested	Ducks per day	Ducks per hunter trip	Geese Harvested
Oct. 10 - Oct. 18	8	1056	132	1229	154	1.16	58
Oct. 19 - Oct. 25	6	679	113	910	152	1.34	16
Oct. 26 - Nov. 1	6	721	120	1325	221	1.84	24
Nov. 2 - Nov. 8	6	621	104	526	88	0.85	6
Nov. 9 - Nov. 15	6	546	91	612	102	1.12	8
Nov. 16 - Nov. 22	6	576	96	476	79	0.83	5
Nov. 23 - Nov. 29	6	504	84	348	58	0.69	2
Nov. 30 - Dec. 6	6	659	110	781	130	1.19	4
Dec. 26 - Dec. 27	2	52	26	44	22	0.85	0
Totals	52	5414	104	6251	120	1.15	123



Man and woman smiling with harvested duck. Photo by B. Bergen

DAILY HARVEST AND PARTICIPATION STATISTICS

Date	Parties	Hunters	Cumulative Hunters	Ducks	Cumulative Ducks	Geese	Cripples
10/10 AM	27	99	99	179	179	12	45
10/10 PM	23	76	175	39	218	3	7
10/11 AM	27	89	264	89	307	1	25
10/11 PM	28	90	354	44	351	0	13
10/12	75	114	468	152	503	8	34
10/13	54	100	568	116	619	4	22
10/14	NA	NA	NA	NA	NA	NA	NA
10/15	92	125	693	234	853	12	31
10/16	61	108	801	123	976	5	24
10/17	83	123	924	109	1085	6	27
10/18	117	132	1056	144	1229	7	19
10/19	56	91	1147	125	1354	0	22
10/20	49	92	1239	120	1474	5	15
10/21	NA	NA	NA	NA	NA	NA	NA
10/22	72	118	1357	121	1595	4	27
10/23	84	121	1478	195	1790	3	32
10/24	75	124	1602	154	1944	2	23
10/25	78	133	1735	195	2139	2	37
10/26	50	94	1829	180	2319	4	27
10/27	68	96	1925	209	2528	1	46
10/28	NA	NA	NA	NA	NA	NA	NA
10/29	86	120	2045	204	2732	6	36
10/30	86	128	2173	223	2955	1	39
10/31	86	118	2291	181	3136	6	25
11/1	106	165	2456	330	3466	6	59
11/2	83	123	2579	166	3632	4	34
11/3	73	120	2699	109	3741	2	26
11/4	NA	NA	NA	NA	NA	NA	NA
11/5	67	100	2799	111	3852	0	14
11/6	34	85	2884	31	3883	0	8
11/7	60	108	2992	65	3948	0	14
11/8	41	85	3077	42	3990	0	13
11/9	26	53	3130	44	4034	0	7
11/10	41	96	3226	71	4105	0	10
11/11	NA	NA	NA	NA	NA	NA	NA
11/12	44	70	3296	82	4187	0	11
11/13	68	97	3393	115	4302	5	20
11/14	82	110	3503	84	4386	0	25
11/15	117	120	3623	216	4602	3	39

Date	Parties	Hunters	Cumulative Hunters	Ducks	Cumulative Ducks	Geese	Cripples
11/16	66	87	3710	88	4690	0	16
11/17	61	80	3790	133	4823	1	20
11/19	72	96	3886	47	4870	1	10
11/20	50	83	3969	50	4920	0	10
11/21	55	103	4072	49	4969	0	11
11/22	98	127	4199	109	5078	3	29
11/23	49	78	4277	36	5114	2	17
11/24	48	86	4363	40	5154	0	9
11/25	NA	NA	NA	NA	NA	NA	NA
11/26	58	81	4444	56	5210	0	7
11/27	56	82	4526	65	5275	0	9
11/28	61	83	4609	77	5352	0	14
11/29	51	94	4703	74	5426	0	13
11/30	84	109	4812	254	5680	1	40
12/1	89	116	4928	198	5878	0	35
12/2	NA	NA	NA	NA	NA	NA	NA
12/3	69	97	5025	87	5965	3	17
12/4	63	115	5140	77	6042	0	15
12/5	95	115	5255	105	6147	0	14
12/6	75	107	5362	60	6207	0	14
12/26	16	35	5397	39	6246	NA	1
12/27	11	17	5414	5	6251	NA	NA

2020 SEASON HARVEST BY AREA

CROPPED FIELDS-HARVEST BY AREA

Area	Hunter Trips	Ducks	Cripples	Other	Ducks per Hunter Trip	Cripples per Hunter Trip	Cripples per Duck
1	52	20	0	NA	0.38	0.00	0.00
2	92	26	6	NA	0.28	0.07	0.23
3	120	62	9	NA	0.52	0.08	0.15
4	105	68	18	NA	0.65	0.17	0.26
5	111	51	5	1 Canada Goose, 2 Coot	0.46	0.05	0.10
6	128	137	16	2 Canada Geese	1.07	0.13	0.12
7	152	171	31	NA	1.13	0.20	0.18
8	NA	NA	NA	NA	NA	NA	NA
9	140	67	20	1 Canada Goose	0.48	0.14	0.30
10	133	48	13	NA	0.36	0.10	0.27
11	133	45	19	2 Canada Geese	0.34	0.14	0.42
12	NA	NA	NA	NA	NA	NA	NA
13	144	135	30	5 Canada Geese	0.94	0.21	0.22

Area	Hunter Trips	Ducks	Cripples	Other	Ducks per Hunter Trip	Cripples per Hunter Trip	Cripples per Duck
14	144	214	38	1 Canada Goose	1.49	0.26	0.18
15	159	379	61	4 Canada Geese	2.38	0.38	0.16
16	143	304	54	8 Canada Geese	2.13	0.38	0.18
17	137	206	37	3 Canada Geese, 1 Coot	1.50	0.27	0.18
18	117	51	18	NA	0.44	0.15	0.35
20	98	98	10	NA	1.00	0.10	0.10
21	146	38	11	1 Canada Goose	0.26	0.08	0.29
22	142	154	26	NA	1.08	0.18	0.17
23	144	272	47	3 Canada Geese	1.89	0.33	0.17
24	148	305	59	5 Canada Geese	2.06	0.40	0.19
25	150	354	58	7 Canada Geese	2.36	0.39	0.16
26	154	278	50	11 Canada Geese	1.81	0.32	0.18
27	141	195	30	7 Canada Geese, 1 Coot	1.38	0.21	0.15
28	157	214	45	5 Canada Geese	1.36	0.29	0.21
29	147	270	41	9 Canada Geese	1.84	0.28	0.15
30	131	154	15	2 Canada Geese	1.18	0.11	0.10
TOTAL	3568	4316	767	77 Canada Geese, 4 Coot	1.21	0.21	0.18

EAST MARSH-HARVEST BY AREA

Area	Hunter Trips	Ducks	Cripples	Other	Ducks per Hunter Trip	Cripples per Hunter Trip	Cripples per Duck
31	106	110	26	1 Canada Goose	1.04	0.25	0.24
32	42	20	6	1 Canada Goose, 1 Coot	0.48	0.14	0.30
33	73	36	9	3 Canada Geese	0.49	0.12	0.25
35	100	52	16	2 Canada Geese	0.52	0.16	0.31
36	57	25	13	2 Canada Geese	0.44	0.23	0.52
37	27	10	3	NA	0.37	0.11	0.30
38	39	19	9	NA	0.49	0.23	0.47
39	42	25	2	5 Canada Geese	0.60	0.05	0.08
40	45	43	9	1 Canada Geese	0.96	0.20	0.21
41	2	0	0	NA	0.00	0.00	0.00
43	8	2	0	NA	0.25	0.00	0.00
44	2	0	0	NA	0.00	0.00	0.00
45	5	0	0	1 Coot	0.00	0.00	0.00
46	14	3	2	2 Coot	0.21	0.14	0.67
47	13	3	1	NA	0.23	0.08	0.33

Area	Hunter Trips	Ducks	Cripples	Other	Ducks per Hunter Trip	Cripples per Hunter Trip	Cripples per Duck
TOTAL	575	348	96	15 Canada Geese, 4 Coot	0.61	0.17	0.28

WEST MARSH-HARVEST BY AREA

Area	Hunter Trips	Ducks	Cripples	Other	Ducks per Hunter Trip	Cripples per Hunter Trip	Cripples per Duck
60	19	7	2	NA	0.37	0.11	0.29
62	4	0	0	NA	0.00	0.00	0.00
63	16	5	2	NA	0.31	0.13	0.40
64	2	1	0	NA	0.50	0.00	0.00
65	6	2	0	NA	0.33	0.00	0.00
66	23	22	3	NA	0.96	0.13	0.14
67	57	45	14	2 Coot	0.79	0.25	0.31
68	116	180	41	7 Canada Geese	1.55	0.35	0.23
70	121	110	21	7 Canada Geese	0.91	0.17	0.19
71	140	186	45	5 Canada Geese, 1 Coot	1.33	0.32	0.24
72	144	249	51	1 Canada Goose	1.73	0.35	0.20
73	155	190	41	3 Canada Geese	1.23	0.26	0.22
74	133	225	43	3 Canada Geese	1.69	0.32	0.19
75	71	57	15	2 Canada Geese	0.80	0.21	0.26
76	40	25	9	NA	0.63	0.23	0.36
80	82	115	20	1 Canada Goose	1.40	0.24	0.17
TOTAL	1129	1419	307	27 Canada Geese, 3 Coot	1.26	0.27	0.22

UPLAND AREAS

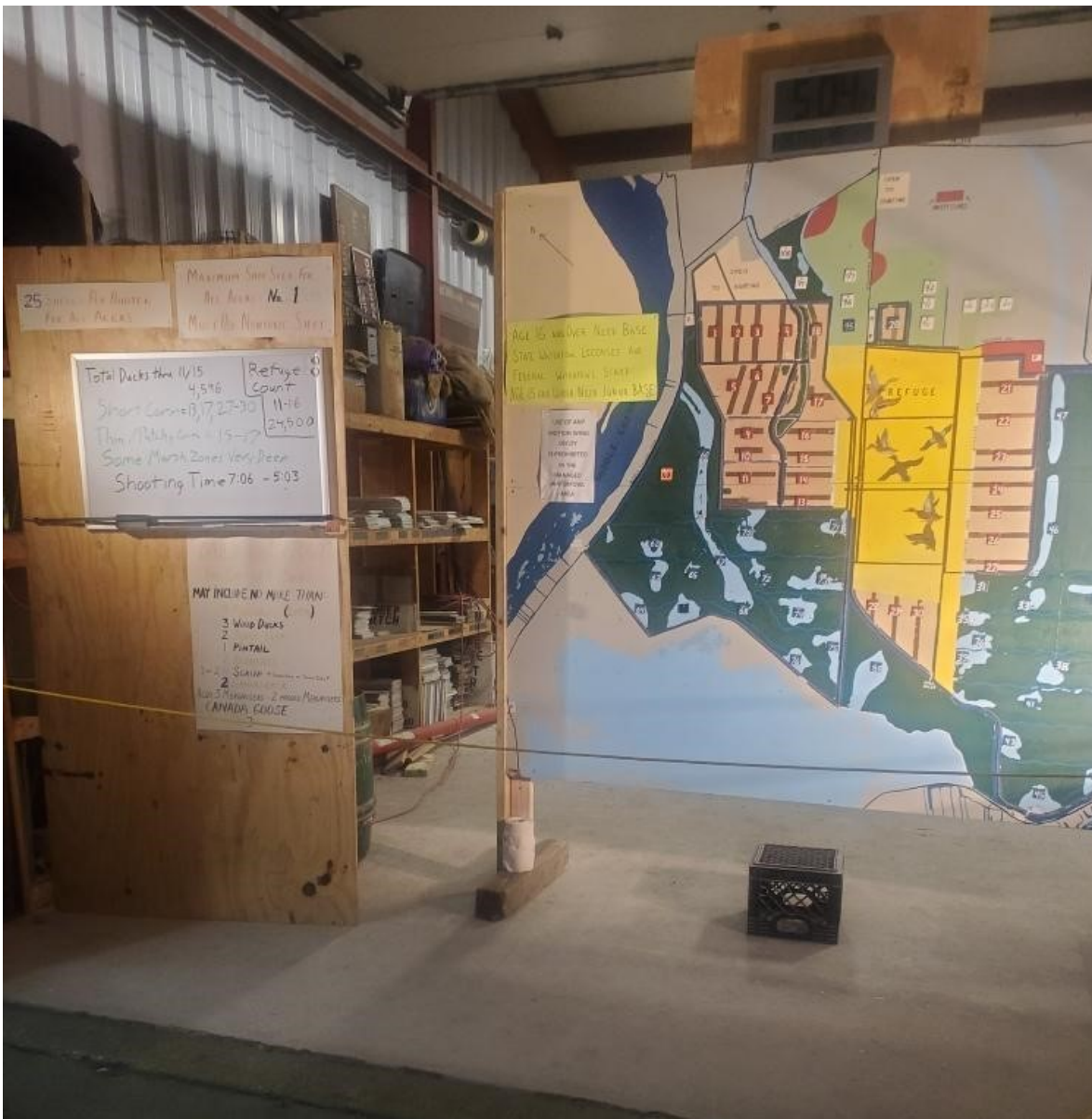
Area	Hunter Trips	Ducks	Cripples	Other	Ducks per Hunter Trip	Cripples per Hunter Trip	Cripples per Duck
90-92	43	62	8	NA	1.44	0.19	0.13
95-97	81	92	7	2 Canada Geese, 19 Coot	1.14	0.09	0.08
98-100	18	14	1	NA	0.78	0.06	0.07
TOTAL	142	168	16	2 Canada Geese, 19 Coot	1.18	0.11	0.10

GRAND TOTALS

Area	Hunter Trips	Ducks	Cripples	Geese	Ducks per Trip	Cripples per Duck
Crops	3568	4316	767	77	1.21	0.18
West	1129	1419	307	29	1.26	0.22
East	575	348	96	15	0.61	0.28
Uplands	142	168	16	2	1.18	0.10
Totals	5414	6251	1186	123	1.15	0.19

MALLARD AND BLACK DUCK AGE/SEX DATA

Since we did not perform bag checks this year, the annual mallard and black duck age/sex sample was not taken



Zone wall map and area information in outdoor barn. Photo by J. Owens

EQUIPMENT LIST

Two (2) outboard motors
10-yard dump truck
1979 2-1/2 ton truck
1977 9600 tractor
1978 4630 John Deere tractor
2012 6230 John Deere loader tractor
2005 7320 John Deere tractor
2008 7430 John Deere tractor
2017 8245R John Deere tractor
2008 17'4" John Deere disc
2011 150 gallon skid mount sprayer
15 ft. Meyers canoe
1977 6-bottom plow
16 ft. Go-Devil Boat w/motor
13' 9" John deere disc
8-row corn planter
6-row corn planter
16-ft. disc
12-ft. grain drill
1978 Sprayer
1952 14-ft. boat
1990 batwing mower
6 ft. 3 pt. mower
2009 10 foot mower
16 ft. Glenco soil finisher
2018 John Deere 250 GLC Excavator
2019 Komatsu D39PX-24 Dozer
1983 backblade
1987 16-ft. boat