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HUNTER SUCCESS IN THE CRESTON

HUNTER SUCCESS IN THE CRESTON VALLEY WILDLIFE MANAGEMENT AREA

by
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Submitted to
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SUMMARY

Forty-nine hunters were surveyed in the Six Mile Slough and Duck Lake Units during the 1984 waterfowl hunting season to determine the hunter success. The hunter success decreased slightly this year compared to last year (1.9 compared to 1.6 birds bagged per hunter per day). Also, the hunter success varied considerably between the two units. Twenty-six hunters were surveyed in the Six Mile Slough Unit, resulting in a success rate of 2.3 birds bagged/hunter/day. Twenty-three hunters were surveyed in the Duck Lake Unit and had a success rate of 0.9 birds bagged/hunter/day. Species composition changed as the season progressed, resulting in fewer species within the hunter's bag during the last half of the season. Overall, crippling losses increased this year from 13.6% to 30.8%. Also, the crippling loss was found to be higher in the Duck Lake Unit as opposed to the Six Mile Slough Unit (27.0% compared to 35.1%). Skybusting was not a problem in the beginning of the season, but increased as the season progressed. Also, there appeared to be more skybusting in the Duck Lake Unit as opposed to the Six Mile Slough Unit. Generally, the hunters using the Six Mile Slough Unit possessed better equipment and usually used more equipment to improve shooting conditions and insure better retrieval of waterfowl.

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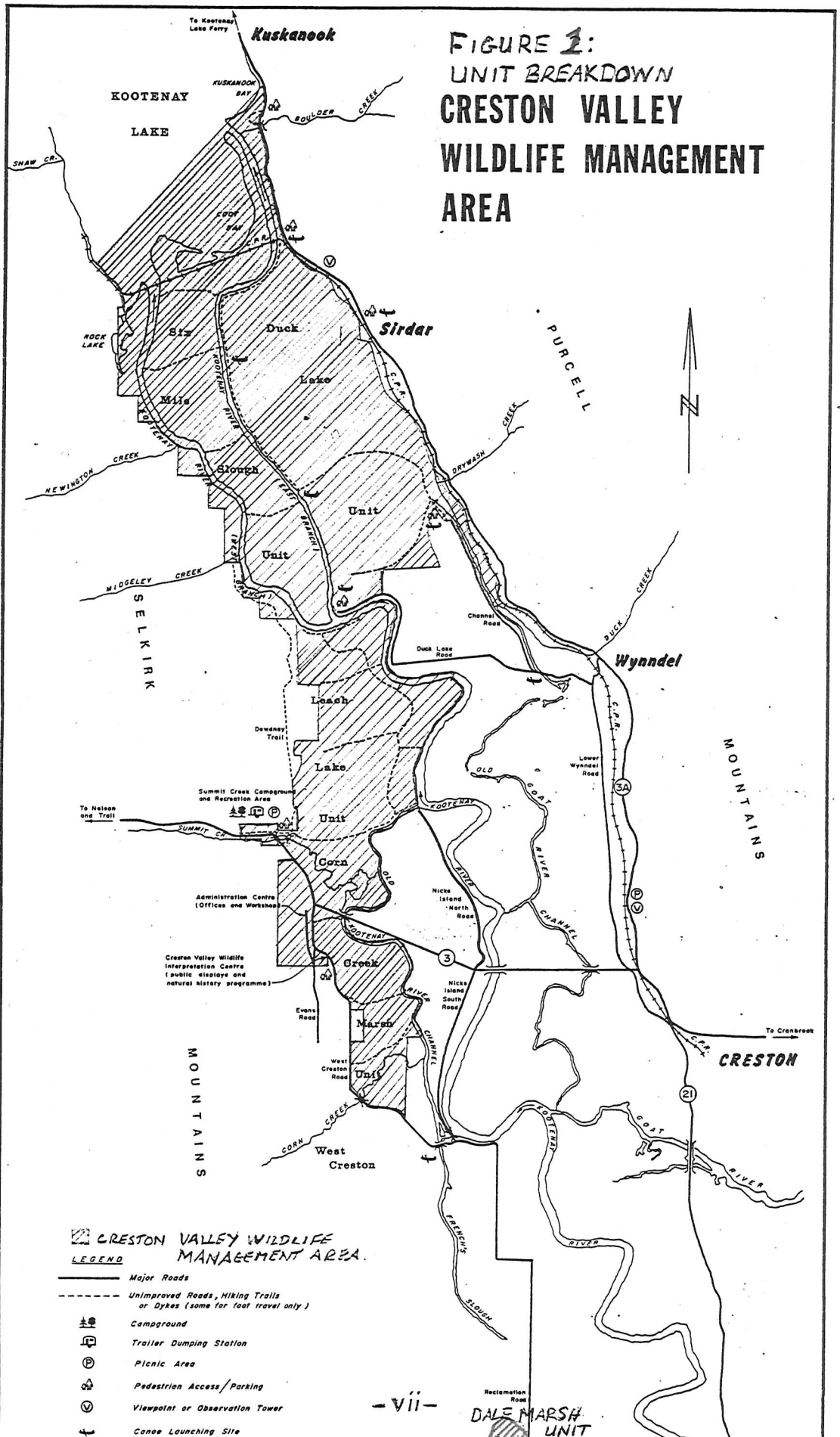
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**FIGURE 1:
UNIT BREAKDOWN
CRESTON VALLEY
WILDLIFE MANAGEMENT
AREA**



HUNTER SUCCESS IN THE CRESTON VALLEY WILDLIFE MANAGEMENT AREA

INTRODUCTION

This report, which is being done in conjunction with Dwight Moore of the Creston Valley Wildlife Management Area (hereafter referred to as the CVWMA), is a study to determine the waterfowl hunter success within the Management Area. This study is only a small portion of a larger study that is done annually in the Management Area.

The report discusses the history of the Management Area, funding, area description and location, existing facilities, and present users. Also, the report covers the management considerations and issues, general restrictions on the area, as well as existing and proposed limitations in regard to hunting in the Management Area.

Data for the report will include number of birds bagged/hunter/day, species composition of the hunter's bag, and crippling loss. Also, hunter behaviour will be observed. Sky busting and equipment used will be noted to determine success and crippling loss of various hunting methods.

1.0 BACKGROUND

1.1 Location

The Creston Valley Wildlife Management Area is

located eight kilometers west of Creston on the Creston Flats. The Management Area includes the south end of Kootenay Lake, Duck Lake, Six Mile Slough, Leach Lake, and Corn Creek Marsh in one area, as well as the Dale Marsh which is located on the United States border.

1.2 History

In 1942, action was taken to delineate part of the Creston Valley for the CVWMA. In 1966 the act was completed and the CVWMA was formed. (1)

Funding for the CVWMA, until late 1984, was provided from four sources. Both the Federal and Provincial Government provided \$75,000.00 per year. Ducks Unlimited contributed \$10,000.00 annually, which maintains the facilities they have provided for the area. Also, the CVWMA has an annual income of approximately \$35,000.00. This income is produced from the Summit Creek Campground, land and building rental, and land lease. (1) Current funding is under review.

1.3 Area Description

The CVWMA is approximately 6,400 hectares in size.

Approximately fifty percent of the land base is upland and fifty percent is wetland, marsh, rivers and lakes. (1)

All of the land within the CVWMA is owned by the crown. (1)

The land within the Management Area is divided into five units:

- Six Mile Slough Unit
- Leach Lake Unit
- Duck Lake Unit
- Corn Creek Unit
- Dale Marsh Unit

Refer to Figure 2, page vii, UNIT BREAKDOWN

1.4 Existing Facilities

Presently, there is a wide variety of facilities in the Management Area.

The Creston Valley Wildlife Interpretation Center, which is funded by the Canadian Wildlife Service, is located at the north end of the Corn Creek Marsh Unit. The Wildlife Interpretive Center provides the visitor with a variety of interpretation of the wildlife found within the mountain region of Western Canada.

A campground is located at Summit Creek, which is operated and maintained by the CVWMA.

Other facilities such as dykes, water pumping stations, and ditches are located throughout the CVWMA. These facilities have been provided by Ducks Unlimited and allow the CVWMA to conduct extensive management for waterfowl within the area. (1)

Also, nesting habitat has been constructed at the southern portion of the Duck Lake Unit. This provides prime spring nesting habitat for the waterfowl.

1.5 Users

The Management Area accommodates a wide variety of users.

Canoeists and bird watchers take advantage of the wetlands and marshes which provide quite a variety of bird species. Also, campers and picnickers frequently use the facilities at Summit Creek Campground as well as the Wildlife Interpretation Center.

Approximately forty hectares of land are leased annually for the purpose of farming. Land is also rented for producing hay crops for cattle. (1)

Cattle grazing makes up a fair percentage of use within the area. Nine-hundred hectares of land are leased for cattle grazing annually. Permits are issued to local farmers for the purpose of cattle grazing throughout various locations of the area. The amount of land used for cattle grazing has decreased slightly since 1970 as permit holders are not replaced as they drop out. (1)

Hunting is also an important use within the area because the area covers a large amount of the prime hunting area within the Creston Valley. Waterfowl hunting makes up the biggest portion of the hunting activities in the Area. This is because of the amount of prime waterfowl habitat. The main species of waterfowl in the hunters' bag include Mallards, American Widgeon, Pintails, Blue Wing Teal, Green Wing Teal, and Canada Geese. Some upland gamebird species include the Ruffed Grouse and Ring-necked Pheasants. Also, some big game hunting is done at various locations. Big game species include White-tailed Deer and Elk.

1.6 Management Considerations and Issues

The multiple use of the Management Area allows the

area to accommodate quite a variety of users. Users of the area include local farmers (farming and cattle grazing), canoeists, campers and picnickers, hikers, bird watchers, and hunters. The main management consideration of the Management Area is to provide as many of these users with the facilities they require, without limiting the use of any of the users. (1)

The main objective of the CVWMA is to provide suitable habitat for waterfowl during all seasons. (1) Although this objective limits some of the users, it has been carried out satisfactorily. Some of the general restrictions in effect are:

- no outboard motors on Duck Lake as ~~they~~ affect the newly established grebe colonies on the lake. (2)
- motor boats in swamps and marshes will not exceed the maximum of a five horsepower motor. (2)
- the pond around the interpretive center will be closed to the public from September 1 until freeze up as it affects the migratory birds in the area. (2)
- muskrat trapping is only permitted during the winter months. (1)

- a permit is required for all snowmobile use on the Management Area. (2)
- vehicle access is closed at Duck Lake (north east side) during nesting season of the Great Blue Heron. (2)

Some of the existing limitations in effect in regard to hunting are:

- the vehicle access is decreased into Leach Lake Unit from eight kilometers to 0.8 kilometer. (1,2)
- area closures at the interpretive center and the administrative buildings. (1)
- hunting season closed on ungulates until after the first week of the waterfowl season (not applied in the 1984/85 hunting season). (1)
- a permit is required for firearms discharge (except September 10 to December 15) for hunting of all animals or target practice. (2)

Limitations that have been proposed in regard to hunting are:

- shell limitations to twenty-five shells per day per hunter, resulting in less sky busting and a lower crippling loss. (2)
- decrease hunting days to two days per week in the Leach Lake Unit starting the third week in October. (2)

- closing Duck Lake nesting area for the first two weeks of the waterfowl season (except for senior citizens). (1)

2.0 PROCEDURES

The waterfowl harvest assessment surveys were completed in October to December of the 1984 waterfowl hunting season. The survey forms are the same as those used in other years and were provided by Dwight Moore of the CVWMA.

The surveys were done in two of the five units within the Management Area. The surveys in the Duck Lake Unit were completed at various parking areas along the Duck Lake Dyke. The Six Mile Slough surveys were completed within the Six Mile Slough Unit and at the center boat access in the Six Mile Slough Unit, located on the dyke at the west side of Duck Lake.

The surveys were completed by stopping various hunting parties and asking the required questions. The data required included:

- date of survey
- management unit area
- number of hunters in group
- number of hours hunted
- retrieval methods

- equipment used
- number of birds crippled
- number of birds bagged
- number of shells fired
- species of birds bagged

Also, hunter behaviour and equipment used in the field were noted.

All surveys were completed in the morning between one and three hours after legal shooting time commenced.

3.0 FIELD DATA ANALYSIS

3.1 Hunter Success

Forty-nine hunters were surveyed in the Six Mile Slough and Duck Lake Units to determine the overall success within the Management Area as well as the success within each unit.

The following table indicates the hunter success this year compared to previous years.

TABLE 1: HUNTER SUCCESS WITHIN THE CVWMA (3)

| <u>Year</u> | <u>Number of birds bagged/hunter/day</u> | <u>Number of hunters surveyed</u> |
|-------------|--|---------------------------------------|
| 1967 | 2.6 | 154 |
| 1968 | 1.5 | 352 |
| 1972 | 1.9 | 197 |
| 1973 | 1.8 | 263 |
| 1974 | 1.4 | 279 |
| 1975 | 2.0 | 193 |
| 1976 | 1.4 | 254 |
| 1977 | 2.0 | 327 |
| 1979 | 1.4 | 307 |
| 1980 | 2.3 | 302 |
| 1981 | 1.5 | 312 |
| 1982 | 1.0 | 347 |
| 1983 | 1.9 | 261 |
| 1984 | 1.6 | 49* |

*The number of hunters surveyed was low as this is part of a larger study done by the CVWMA.

As the table indicates, the success has varied from 2.6 birds bagged/hunter/day to 1.0 birds bagged/hunter/day. This year's survey's average is calculated at 1.6 birds bagged/hunter/day.

The overall success has decreased slightly during the period 1977 to 1984 as compared to 1967 to 1976 (1.8 birds bagged/hunter/day versus 1.67 birds bagged/hunter/day).

The hunter success varied considerably within the two units surveyed. There were twenty-three hunters surveyed in the Duck Lake Unit and twenty-six hunters surveyed in the Six Mile Slough Unit. The Hunter success within each unit is as follows:

- Duck Lake Unit
0.9 birds bagged/hunter/day
- Six Mile Slough Unit
2.3 birds bagged/hunter/day

The varying success within each unit may be attributed to a number of factors. Due to its difficult boat access, the Six Mile Slough Unit attracts more dedicated waterfowl hunters. Usually, hunters in Six Mile Slough are shooting over decoys, therefore luring the birds much closer and getting better shooting conditions as compared to wing shooting from the dyke at the Duck Lake Unit.

(Wing shooting may be classified as shooting birds as they are going to or returning from feeding or resting areas. When the hunter is wing shooting, birds are usually flying much higher and are therefore harder to hit or are hit insufficiently. This increases the crippling loss and decreases the number of birds in the hunters' bag).

The
The hunter success also varied considerably as the hunting season progressed. From opening day (October 1) to October 19 the success within the two units was 2.1 birds bagged/hunter/day as compared to 1.1 birds bagged/hunter/day between October 20 and November 18. This may be due to

fewer birds within the area and the waterfowl becoming more aware of the hunters' presence.

The following table shows the waterfowl hunter success of the CVWMA compared to Provincial averages in Western Canada.

TABLE 2: COMPARISON OF HUNTER SUCCESS (3)

| Year | CVWMA | Area | | |
|------|-------|------|-------|-------|
| | | B.C. | Alta. | Sask. |
| 1966 | 2.6 | 1.8 | 2.5 | 2.2 |
| 1968 | 1.5 | 1.9 | 2.0 | 1.6 |
| 1972 | 1.9 | 1.4 | 2.1 | 2.2 |
| 1974 | 1.4 | 1.4 | 2.2 | 2.2 |
| 1975 | 2.0 | 1.6 | 2.1 | 2.3 |
| 1976 | 1.4 | 1.6 | 2.1 | 2.3 |
| 1977 | 2.0 | 1.6 | 2.0 | 1.9 |

The CVWMA has the third highest waterfowl hunter success when compared to all British Columbia, Alberta, and Saskatchewan figures. This may be attributed to the smaller flyway and less breeding habitat within British Columbia. The hunter success within the CVWMA is higher than British Columbia's overall average. This may be due to extensive habitat improvement projects on the CVWMA, which have attracted and retained birds in the area for a longer period.

3.2 Species Shot

A total of 78 ducks and geese were accounted for

in the surveys. The following table shows the number and total percent of the species shot in the two Management Units, as well as the cumulative totals for the CVWMA.

TABLE 3: SPECIES SHOT

| Species | Management Unit | | | | Total | |
|-----------------|---------------------|----------------------|---------------------------|----------------------------|--------|---------|
| | Duck Lake Number | Duck Lake Percent | Six Mile Slough Number | Six Mile Slough Percent | Number | Percent |
| Mallard | 10 | 42 | 15 | 28 | 25 | 32 |
| Pintail | 2 | 8 | 2 | 4 | 4 | 5 |
| Wigeon | 4 | 17 | 16 | 29 | 20 | 26 |
| G.W. Teal | 2 | 8 | 8 | 15 | 10 | 13 |
| B.W. Teal | 0 | 0 | 6 | 11 | 6 | 8 |
| Shoveler | 0 | 0 | 3 | 5 | 3 | 4 |
| Redhead | 1 | 4 | 2 | 4 | 3 | 4 |
| L. Scaup | 0 | 0 | 1 | 2 | 1 | 1 |
| Goldeneye | 0 | 0 | 1 | 2 | 1 | 1 |
| Bufflehead | 1 | 4 | 0 | 0 | 1 | 1 |
| Canada Geese | 4 | 17 | 0 | 0 | 4 | 5 |

As the table indicates, Mallards, Wigeons, and Green Wing Teal are the most common species in the hunter's bag.

The following table shows the percentage of the four major species of the hunter's bag within the CVWMA.

TABLE 4: FOUR MAJOR SPECIES (3)

| Year | Mallard | Wigeon | Species | | Pintail |
|------|---------|--------|------------|------|---------|
| | | | Green Wing | Teal | |
| 1972 | 19 | 35 | | 14 | 10 |
| 1973 | 21 | 28 | | 15 | 10 |
| 1974 | 21 | 36 | | 14 | 7 |
| 1975 | 42 | 25 | | 8 | 8 |
| 1976 | 21 | 21 | | 16 | 8 |
| 1977 | 37 | 15 | | 20 | 11 |
| 1979 | 43 | 14 | | 10 | 7 |
| 1980 | 61 | 11 | | 4 | 16 |
| 1981 | 25 | 12 | | 3 | 3 |
| 1982 | 28 | 22 | | 8 | 6 |
| 1984 | 32 | 26 | | 13 | 5 |

As the table shows, the Mallard and Wigeon make up the largest part of the hunter's bag.

3.3 Changes in Species Composition

As the hunting season progressed, the species composition of the hunter's bag changed. Species that were present in the hunter's bag at the beginning of the season were absent during the latter part of the season. As the following table shows, some species decreased while other species increased in the hunter's bag.

TABLE 5: CHANGES IN SPECIES COMPOSITION

| Species | % of Species within the Hunter's Bag | |
|------------|--------------------------------------|--------------------|
| | Oct. 1 to Oct. 19 | Oct. 20 to Nov. 17 |
| Mallards | 24 | 50 |
| Wigeon | 29 | 17 |
| Pintails | 7 | 0 |
| G.W. Teal | 15 | 8 |
| B.W. Teal | 11 | 0 |
| Shoveler | 4 | 4 |
| Redhead | 4 | 4 |
| L. Scaup | 2 | 0 |
| Goldeneye | 0 | 4 |
| Bufflehead | 2 | 0 |
| Canada | | |
| Geese | 2 | 13 |

3.4 Crippling Losses

Crippling loss may be considered as birds that are either killed or wounded and are not included in the hunter's bag. The crippling loss of waterfowl may fluctuate due to a number of factors.

Retrieval methods are important factors that may decrease the crippling loss significantly. A well trained retrieving dog may decrease lost or crippled birds to almost nil. Hip waders or chest waders help in retrieval but their use may be restricted because of high water levels.

The type of cover a hunter is shooting in is also an important factor to retrieval. Birds may be lost simply because of thick cover which restricts

the hunter's sight. Many more birds will be lost in thick cover as opposed to open water.

The hunting method must also be considered in determining crippling loss. Shooting over decoys will result in birds being much closer to the shooter, therefore providing better shooting conditions. Wing shooting will generally increase the the number of cripples. Birds will be flying much higher, and therefore are harder to hit and kill sufficiently. If birds are wounded, they may glide for a long distance before landing, thus decreasing the chance of a successful retrieval.

The size of shot the hunter shoots should also be considered. The smaller the shot, the less velocity the shot will retain. The less velocity the shot has, the less chance there is of a clean kill, which once again increases the crippling loss.

The following table shows the crippling loss in each unit surveyed.

TABLE 6: CRIPPLING LOSS IN UNITS SURVEYED

| | Management Unit | |
|-----------------------|-----------------|-----------------|
| | Duck Lake | Six Mile Slough |
| Number birds bagged | 24 | 54 |
| Number birds crippled | 13 | 20 |
| Number birds killed | 37 | 74 |
| Crippling loss % | 35.1 | 27.0 |

As the table indicates, the crippling loss was lowest in the Six Mile Slough Unit. This is due to most hunters shooting over decoys, more open water, less cover, and retrieval methods that are more suited to the conditions.

The following table shows the crippling loss in the CVWMA over the past decade or so.

TABLE 7: CRIPPLING LOSS IN THE CVWMA (3)

| Year | Number birds to bag | Number birds crippled | Number birds killed | Crippling loss (%) |
|------|---------------------|-----------------------|---------------------|--------------------|
| 1972 | 3515 | 1443 | 4958 | 29.1 |
| 1973 | 3433 | 578 | 4011 | 14.4 |
| 1974 | 3438 | 1304 | 4742 | 27.5 |
| 1975 | 4760 | 1520 | 6280 | 24.2 |
| 1976 | 4253 | 853 | 5106 | 16.7 |
| 1977 | 4506 | 1205 | 5711 | 21.1 |
| 1979 | 3765 | 1268 | 5033 | 25.2 |
| 1980 | 4931 | 750 | 5681 | 13.2 |
| 1981 | 1881 | 700 | 2581 | 27.1 |
| 1982 | 1468 | 549 | 2017 | 27.2 |
| 1983 | 2877 | 454 | 3331 | 13.6 |
| 1984 | 78 | 33 | 107 | 30.8 |

3.5 Hunter Behaviour/Characteristics

3.51 Sky Busting

Sky busting is shooting at birds that are out of range. Sky busting results in more crippled birds as there is an insufficient amount of shot at the required velocity to cleanly kill the birds.

Hunters were observed while in the field to determine the reason for sky busting.

Overall, there was very little sky busting during the beginning of the hunting season. The frequency of sky busting increased as the season progressed. This is due to fewer birds flying within range as the season progressed, which resulted in some hunters shooting at anything that would fly over them.

Generally, there was more sky busting on the dyke at Duck Lake as opposed to the Six Mile Slough Unit. This may be due to different hunting methods and more dedicated, concerned hunters occupying the Six Mile Slough area.

Overall, only a small portion of hunters were noted to be continually sky busting.

3.52 Equipment Used

Once again, the hunters within the Six Mile Slough Unit seemed to have better quality equipment and more of it for waterfowl hunting. The standard equipment used by hunters occupying Six Mile Slough was approximately one dozen duck decoys (number of decoys varied from half a dozen to 2 dozen), duck calls, and hip or chest waders. Very few retrieving dogs were used in the Six Mile Slough Unit (unless hunters shot off the dykes). Hip or chest waders were used for retrieving quite successfully because of low water levels and open water. This resulted in easy retrieval of birds.

On the Duck Lake dyke, very few dogs were used for retrieval. Hip or chest waders were only moderately successful due to deep water levels on the north side of the Duck Lake dyke. Some canoes and rubber rafts were used for retrieval from the dyke with fairly

good success. Some hunters along Duck Lake dyke were noted to have no means of retrieval, and retrieved only those birds that landed on or beside the dyke.

4.0 CONCLUSIONS

The waterfowl hunter success has decreased slightly over the last seven years. Hunter success also varied considerably within the two units surveyed. The Six Mile Slough Unit had an overall success of 2.3 birds bagged/hunter/day as opposed to 0.9 birds bagged/hunter/day in the Duck Lake Unit. Hunter success decreased in both units as the season progressed, this resulting from fewer birds being within the area and the waterfowl becoming more aware of the hunters' presence.

The species composition of the hunter's bag also changed as the season progressed. There were fewer species in the hunter's bag in the latter part of the season as opposed to the beginning of the season.

The crippling loss increased this year compared to previous years. Also, there was a difference in the crippling loss between the two units. This is a result of the different hunting method used in each unit, amount of cover, and various retrieval methods used.

During the beginning of the season, sky busting was not a problem. However, the sky busting increased as the season progressed. The main cause ~~was~~ fewer birds to shoot at and birds flying higher. Generally there was less sky busting in the Six Mile Slough Unit. The main reason for this ~~was~~ the hunting method.

Generally, the hunters using the Six Mile Slough Unit were better equiped and used more equipment to improve shooting conditions and ensure better retrieval of waterfowl.

5.0 RECOMMENDATIONS

I feel the following restrictions should be considered to improve the hunter success, decrease sky busting and reduce the crippling losses.

- retrieving dogs or boats should be mandatory if hunting on the dyke at Duck Lake or any water body over three feet deep to improve retrieval.
- restrict number of shells/hunter/day to 25 on the Duck Lake dyke during the last half of the season to decrease sky busting and crippling losses.
- discourage hunting in thick cover unless retrieving dogs are used for retrieval of birds.

- encourage use of decoys in the Six Mile Slough Unit or other areas where possible to improve shooting conditions and decrease crippling losses.

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- (2) MOORE, DWIGHT. 1984. Interview about general restrictions and limitations on the Creston Valley Wildlife Management Area. December 11.
- (3) MOORE, DWIGHT D. & STUSHNOFF, BRIAN G. 1983. A Summary of the Fall, 1982, Waterfowl Hunting Questionnaires and Associated Comments and Related Background Information, Creston Valley Wildlife Management Area. Annual Report. 15 p.

APPENDIX A
SURVEY FORMS

Date _____

Checked by _____ (Notes on back) Dog Used? _____

Area _____ No. Birds Crippled _____

No. of Hunters in Group _____ No. Birds to Bag _____

No. of Hours Hunted _____ No. Shells Fired _____

| Species | Adult Male | Adult Female | Juvenile Male | Juvenile Female | Total |
|---------------|---------------|-----------------|------------------|--------------------|-------|
| Mallard | | | | | |
| Pintail | | | | | |
| Shoveler | | | | | |
| Baldpate | | | | | |
| Gadwall | | | | | |
| B. W. Teal | | | | | |
| G. W. Teal | | | | | |
| Wood Duck | | | | | |
| Redhead | | | | | |
| Canvasback | | | | | |
| Lesser Scaup | | | | | |
| Greater Scaup | | | | | |
| Bufflehead | | | | | |
| Goldeneye | | | | | |
| C. Goose | | | | | |
| Others | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Total | | | | | |