Alberta Waterfowl Crop Damage Prevention Program, 2005

Alberta Conservation Association

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EXECUTIVE SUMMARY

The Waterfowl Crop Damage Prevention Program (WCDPP), administered by the Alberta Conservation Association (ACA), assists Alberta cereal grain producers in preventing and/or controlling damage to crops from waterfowl during the fall migration period. The WCDPP activities include 1) direct assistance to producers through installation and maintenance of waterfowl scaring equipment on affected crops, 2) the provision of alternate feed for waterfowl at bait stations, and 3) the operation of distribution centres that provide scaring equipment free of charge for producers to borrow.

In each year, program activities begin in early August and continue until approximately 70% of cereal crops are harvested, typically, by mid October. In order to reduce conflicts with recreational waterfowl hunting opportunities, effort is made to terminate the waterfowl feeding program operations by the Friday preceding the October Thanksgiving weekend. In 2005, cool, rainy weather delayed harvest of agricultural crops and program activities, including feeding stations located in the Peace River, St. Paul, Red Deer, and Lethbridge areas continued until mid October.

In 2005, eight field personnel worked in 15 active control areas located in the Peace River, Grande Prairie, Athabasca, St. Paul, Vegreville, and Red Deer areas. Scaring equipment was available through 35 distribution centres located in local businesses and Alberta Sustainable Resource Development (ASRD) offices. Fifty-two potential cases of waterfowl damage were handled by ACA field staff, while distribution centres issued scare cannons for use on 163 potential waterfowl damage locations. The number of reported waterfowl damage cases in 2005 was 35% lower than in 2004.

In 2005, the ACA operated 11 bait stations and established one lure crop to provide alternate food sources for waterfowl. A total of 21,267 bushels of barley were provided at the bait stations with an estimated duck-use of 2,045,093 days and a consumption rate of 0.55 pounds/duck/day. Total duck-use days at the bait stations in 2005 was 3% higher than that in 2004.

Program expenditures for 2005 totaled $347,432, which was cost-shared equally by the Alberta Conservation Association and Environment Canada.

Key words: waterfowl, crop damage prevention, Alberta, cereal grain, ducks, geese, cranes.

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1.1 General introduction

Alberta is a major nesting and staging area for many species of waterfowl, including ducks, geese, and cranes (Salt et al. 1976, Poston et al. 1990, Federation of Alberta Naturalists 1992). Waterfowl are opportunistic feeders and their fall migration period tends to coincide with the harvest season for cereal grains in Alberta (Federation of Alberta Naturalists 1992). This creates the potential for significant waterfowl damage to unharvested grain crops across the province. Most grain producers will tolerate a certain amount of waterfowl damage to their crops, however when that damage becomes severe or recurrent, they become intolerant of waterfowl and the damage that they cause (Hudson 2005). This, in turn, causes producers to be less receptive to programs aimed at enhancing or protecting waterfowl and their habitat.

1.2 Waterfowl crop damage compensation

In 1961, the Government of Alberta established the Wildlife Damage Fund, funded by sportsman's license fees, to make compensation for crop damage caused by waterfowl available to Alberta grain producers without the payment of crop insurance premiums. Initially, the compensation payable was the lesser of $15/acre or one half of the value of the lost crop. In 1973 the rate was increased to the lesser of $25/acre or three quarters of the value of the lost crop. The rate was adjusted once more in 1978 to the lesser of $50/acre or three quarters of the value of the lost crop. From 1983 to 1990 the compensation rate was adjusted annually with a maximum payment of three quarters of the value of the lost crop. The signing of the North American Waterfowl Management Plan (NAWMP) in the late 1980s increased the need for an improved compensation program. Discussions between various governments, producers, and crop insurance agencies culminated in the development of a compensation program that paid a flat 80% of the value of the crops lost to waterfowl damage from 1991 to 1999. In 2000, waterfowl damage compensation was changed to the present rate of 100% of the commercial value of the crop damaged (Ken Lungle, ASRD, pers. comm.).

1.3 Waterfowl crop damage prevention

In 1970, an experimental waterfowl damage prevention program was initiated by the Alberta Government in the Grande Prairie area (Burgess 1973). The purpose of this program was to determine if a waterfowl scaring program in combination with the provision of feeding sites would prevent or minimize crop damage. Additionally, the goal was to establish if the prevention program would be economically efficient, by preventing crop damage instead of making compensation payments after the damage was done. With the success of the experimental program, a waterfowl damage prevention program was expanded into areas of the province where depredation losses had been both severe and recurrent. Today the Waterfowl Crop Damage Prevention Program (WCDPP) delivers damage prevention assistance in all grain producing areas of the province. Mallards (*Anas platyrhynchos*), northern pintails (*Anas acuta*), Canada geese (*Branta canadensis*), white-fronted geese (*Anser albifrons*) snow geese (*Chen caerulescens*), and sandhill cranes (*Grus canadensis*) are the primary waterfowl species targeted by the WCDPP.

The Alberta Conservation Association (ACA) has been responsible for delivering Alberta's Waterfowl Crop Damage Prevention Program since 1997. Cost of the 2005 program was shared equally between ACA and Environment Canada. This report summarizes the WCDPP activities for 2005.

2.0 STUDY AREA

The WCDPP is delivered throughout the white (settled) area of Alberta (Figure 1). Depending on the severity and recurrence of crop damage, prevention assistance is provided through Crop Damage Control (CDC) areas, bait stations, and distribution centres (Figure 1).

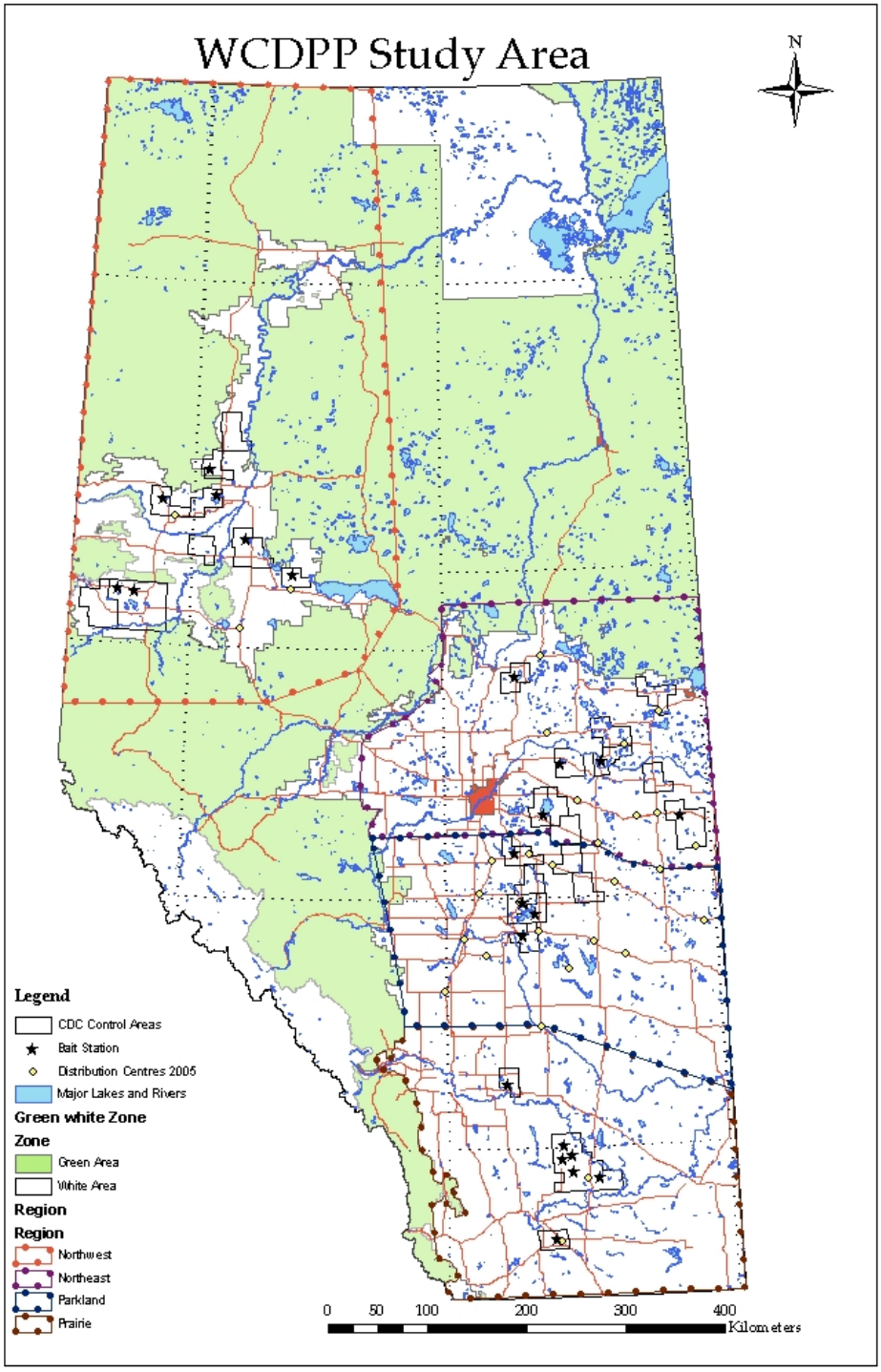

Figure 1. Map of Alberta Waterfowl Crop Damage Prevention Program 2005 operational areas, showing Crop Damage Control areas, bait stations, and distribution centres.

3.0 MATERIALS AND METHODS

3.1 Regional organization

Four regional coordinators (Northwest, Northeast, Parkland, and Prairie regions; Figure 1) deliver the WCDPP under the direction of a provincial coordinator. In the Northwest, Northeast, and Parkland regions, WCDPP activities include operation of CDC areas, bait stations (alternate feed), and distribution centres. In the Prairie region waterfowl damage prevention activities consist of provision of alternate food for waterfowl through bait stations and one lure crop, and the operation of scare cannon distribution centres.

3.2 Direct assistance in Crop Damage Control areas

Crop Damage Control (CDC) areas have been developed in Alberta where crop losses to waterfowl depredation were both severe and recurrent. These areas are typically six to seven townships in size and usually contain a significant staging lake. Where an appropriate water body is available, a bait (feeding) station is established to provide an alternate food source for waterfowl and is operated to complement scaring activities.

ACA field staff carry out waterfowl crop damage prevention activities within these CDC areas, typically, from early August to mid or late October. ACA field staff learn of potential damage from direct contact with producers, by observing the damage during regular patrols, or as a result of a telephone complaint from a producer. Field staff are responsible for responding to producers' reports of waterfowl damage by visiting the producer, assessing the waterfowl damage, and applying the appropriate damage prevention activity - typically installation of scare cannon(s) and occasionally use of pyrotechnics (scare cartridges that can be fired by a launcher using 0.22 calibre regular blanks). Zon scare cannons, manufactured by DAZON BV and distributed in Alberta by Margo Supplies Ltd. have been used by the WCDPP for 30 years. These cannons provide reliable, timed explosions similar in sound to a shotgun blast, which typically scare waterfowl out of the cereal crop. Field staff record relevant information (crop type, number and species of waterfowl damaging crop, extent of damage, producer cooperation, etc.) on each damage site. Field staff also patrol CDC areas during peak

waterfowl feeding periods (dusk and dawn) and inform producers of possible waterfowl damage.

In 2005, direct waterfowl damage prevention assistance was provided to producers in the Beaverhill East, Beaverhill West, Brosseau, Derwent, Flat Lake, Holden, McCullough, and Whitford CDC areas in the Northeast Region (Hudson 2005) and Grande Prairie, Beaverlodge, Eaglesham, Fahler, Grimshaw, Dixonville, and Manning CDC areas in the Northwest Region (Jackson 2005). A summary of the 2005 sites is provided in Appendix 1.

3.3 Provision of alternate feed

Provision of alternate feed for waterfowl consists of either a bait station, where shelled barley is spread along a portion of lakeshore, or a lure crop where a mature barley crop is swathed and left in the field for waterfowl to feed on. Bait stations are used primarily by ducks, while both ducks and geese use lure crops. Hunting in feeding areas is prohibited in order to avoid disturbing birds that have adjusted to the area.

3.3.1 Bait station

Ten bait stations have been established in combination with CDC areas over the development of the program (Appendix 1). However, in 2005, feeding operations took place at four stations only (i.e., La Glace, Buffalo, Lac Cardinal, and Lac Brosseau bait stations), due to low water levels at five stations and a cost-reduction strategy at one station. The effectiveness of bait stations is somewhat dependent on water levels. Ducks are reluctant to feed at sites where they cannot swim within a short distance of the actual bait. Excessive vegetation growth between the open water and the bait station that is usually associated with low water levels appears to be a barrier to ducks. Although water levels were sufficient for operation at the Flood bait station, it was not operated in 2005 as part of a cost reduction strategy begun in 2004 (Jackson 2005). Water levels at the Beaverhill, Flat, Kenilworth, Whitford, East Buffalo, and Bittern lake bait stations were insufficient for effective operation (Hudson 2005; Potter 2005). While not quantified, provision of alternate feeding sites combined with active scaring of waterfowl (see section 3.2) has been effective in reducing damage and loss of cereal

crops from ducks in the past, hence, active scaring was conducted concurrently with baiting at all four bait stations.

Bait station operation is accomplished by a local producer who is contracted to spread barley daily on the bait station. The contractor records the amount of barley placed on the bait station each day. The amount placed depends on the number of ducks feeding. The target is for all barley placed out one day to be consumed before the next feeding in order to avoid wasting barley through spoilage, sprouting, or trampling. During the entire feeding period, the contractor maintains contact with ACA staff and reports any sick ducks observed, any unauthorized entry on the bait station, and the status of barley on hand for feeding.

Termination of the baiting program begins when 70% of barley, wheat, and pea fields in the local area have been harvested. The amount of barley spread at bait stations is tapered off for the final few days of feeding to allow ducks attending the stations to disperse in small numbers. The proportion of crop harvested (harvest progression) is monitored by weekly surveys along transects in each program area. Field staff identify a route (road) of approximately 100 km, which gives a good representation of crop types within each CDC area. Each week, staff drive along this route and record the harvest status (standing, swathed, or combined) of each field of wheat, barley, and peas adjacent to the road. Harvest progression is represented by the percentage of these crops that are standing, swathed, or combined and is calculated weekly in each area. Because swathed crop constitutes the most vulnerable category to depredation, differences in the percentage of swathed crops provides a general comparison of the potential for depredation between regions of the province. The status of harvest was also used as a guideline for termination of programs within each CDC area.

Field staff visit the bait stations at least twice a week during peak feeding periods to visually estimate the number and species of ducks using the sites, and to monitor for disease outbreaks. At most bait stations, small blinds are erected to facilitate counting of ducks. Observation begins approximately 0.5 hours before sunrise and continues until either new birds cease to arrive at the bait stations or the number of birds arriving is considered insignificant in relation to the peak abundance, typically 1.5 – 2 hours after sunrise. Evening observations begin approximately 1.5 hours before sunset and

continue until 0.5 hours after sunset or until it is too dark for observation. An estimate of number of ducks is made in a cumulative manner for each observation visit. Upon arrival, the number of ducks feeding on the bait station and the number of dabbling ducks, (particularly mallard, pintail, and widgeon) swimming in the water within approximately 100 m of the bait station are estimated. Estimates of additional flocks landing or swimming into the bait station area are added to the original estimate. Estimated number of ducks can vary considerably among field staff therefore, field staff estimates of bird numbers are used in conjunction with barley consumption information recorded by the bait station feeders to develop an estimate of ducks feeding on any one day. The WCDPP uses a consumption estimate of 0.5 pounds of barley per duck per day for grain consumption by ducks at a bait station (Ken Lungle, ASRD, pers. comm.).

In addition to the above four bait-active scaring stations, seven feeding-only bait stations (Bashaw, Lost Lake, Grantham Lake, San Diego Lake, Badger Lake, Stirling Lake, and Namaka Lake) were established in response to producer concerns about development, securement, or enhancement of waterfowl habitat (Appendix 2). The WCDPP operates these stations in support of the Wetlands for Tomorrow Program, the Buck for Wildlife Program, the North American Waterfowl Management Plan (NAWMP), the Bow River Irrigation District (BRID), and the Raymond Irrigation District (RID).

3.3.2 Lure crop

Lure crop operation consists of a local producer being contracted to plant and swath the crop of barley used for luring waterfowl. When the feeding period at the lure crop is completed, the contractor combines the remaining swaths and transports the barley to nearby WCDPP granaries. Due to unpredictable use by birds, lure crops have been discontinued in all areas except one operated at Prouty Lake in the BRID (Appendix 2).

3.4 Scare cannon distribution centres

In 1992, an NAWMP initiative purchased scare cannons for use in the WCDPP. A network of scare cannon distribution centres was set up throughout agricultural areas of Alberta where no other damage prevention activity existed. In addition, scare cannon distribution centres replaced direct field staff delivery of scaring activities in some areas.

The decision to replace direct field staff delivery of scaring activities with a distribution centre was typically based on a review of complaint data from recent years, observed crop trends, water levels and number of wetlands in the area, logistics for field staff deployment, and budget availability. Some CDC areas established in the early 1970s have experienced many years of modest precipitation (i.e. below average levels of precipitation), resulting in a reduction in the number of wetlands and size of waterfowl staging lakes and have typically resulted in a reduction in number of waterfowl in the area. Production of cereal crops in some of the CDC areas has been reduced in favour of forage crop production, reducing the potential for fall waterfowl crop damage, therefore, CDC areas exhibiting low numbers of waterfowl complaints annually were considered for conversion to a distribution centre. In 2005, provision of direct assistance to grain producers in the High Prairie and Kenilworth CDC areas was discontinued. Scare cannon distribution centres were established in High Prairie and Paradise Valley to provide cannons for local producers to help themselves. In the Parkland region the Bashaw, Bittern Lake, East Buffalo, Edberg, Erskine Forestburg, and Wavy CDC areas were operated at a reduced staff effort. ACA staff conducted waterfowl and crop harvest monitoring while producers reporting waterfowl damage were referred to distribution centres located at Bashaw, Bawlf, Bentley, Camrose, Pine Lake, and Stettler (Hudson 2005, Potter 2005, Jackson 2005).

Scare cannons may be borrowed, free of charge, by producers with waterfowl damage problems. Cannons are stored at many of the distribution centres located either in local businesses or ASRD district offices. In some cases where the distribution centre does not have storage capacity, cannons were shipped to them from another distribution centre via Greyhound bus service when required. Distribution centres located in local businesses were contracted by ACA to provide scare cannons to producers. In 2005, distribution centre contracts typically paid $100 for storing cannons for the season plus $10 for each cannon distributed; ASRD offices that served as distribution centres provide this service to ACA for free. In the Prairie region, Irrigation District offices also distributed scare cannons. In 2005, scare cannons were made available to agricultural producers through 35 distribution centres (Appendix 3).

3.5 Program duration

Damage prevention activities typically commence with the start of the harvest season or approximately during the second week of August, depending on local crop maturity.
The target for terminating programs using field staff is when crop transect reports indicate 70% of harvest completion. To avoid conflicts with recreational waterfowl hunters, every effort is made to terminate feeding programs by the Friday preceding the Thanksgiving weekend in October. In extreme circumstances, feeding and scaring activities may be extended beyond this date depending on local harvest conditions, harvest potential, and remaining budget. In most areas, scare cannons continue to be available for producers to administer themselves during the entire harvest season. Distribution centre activities typically end by 31 October but may be extended depending on budgets and harvest status.

3.6 Development of waterfowl hunting/viewing web page

Crop producers often wish to contact waterfowl hunters but do not know where to access them, while waterfowl hunters desire access to land with waterfowl concentrations. Waterfowl hunters can provide waterfowl scaring assistance to crop producers with damage problems. Hunting waterfowl in a field that is sustaining damage typically frightens them from the field. If hunting takes place in fields where scarecrows and/or scare cannons are being used, it enhances the effectiveness of that equipment in deterring waterfowl from returning to the fields. In 2005, we tested a pilot project using an internet-based reporting tool to identify areas where the WCDPP was receiving requests for assistance with waterfowl crop damage. A web page contained on the Alberta Conservation Association internet site (http://www.ab-conservation.com/cdc/) was set up to visually display the relative number of requests for waterfowl crop damage prevention assistance. A map of the province displayed the four ACA regions. Each region was colour-coded according to the total number of requests for waterfowl crop damage prevention assistance received in that region during the previous week. The viewer was able to click on a region of interest and view more detailed information based on individual reporting areas (distribution centres or field crew areas). Contact information for Regional CDC coordinators was listed and viewers were encouraged to contact the appropriate CDC coordinator for additional information.

The number of requests for assistance can indicate areas of waterfowl concentration. By viewing the web page, waterfowl enthusiasts could identify areas of waterfowl concentrations both regionally and locally. Hunters wishing to contact farmers looking for hunters in areas of crop damage could do so through regional WCDPP coordinators. Information on the web page was updated weekly from 1 September to 24 October in 2005.

3.7 Cost of damage control

Two significant factors have always been taken into account when describing yearly program costs. First, costs for large equipment (scare cannons, granaries) purchased for the program and initial development or major upgrading of bait stations are amortized over 10 years as these items are used beyond the year in which they were purchased. When annual program costs are determined, the amortized amount rather than the purchase price of the equipment is used. For example, 100 cannons purchased for $23,600 in 1998 were reported as a $2,360 annual expense for years 1998 – 2007. Second, barley for bait stations is purchased throughout the feeding period as required. A final purchase of barley for each bait station for use in the following year is usually made after feeding activities have ceased. This final purchase is not accounted for in the year that it was made, since it is for the next year's operation. All costs for barley purchases are accounted for in the year that the barley is used, regardless of when the actual purchase was made. To allow for yearly comparisons, costs in this report are accounted for in this manner to be consistent with previous years' reporting method (Ken Lungle, ASRD, pers. comm.).

4.0 RESULTS

4.1 Cost of damage control

The total cost of the field operations for the 2005 damage prevention program was $197,016, comprised of: $88,370 for ACA staff-delivered waterfowl scaring activities, $90,849 for waterfowl feeding, and $17,797 for scare cannon distribution centre operations (Tables 1 and 2).

Table 1. 2005 Costs for Waterfowl Crop Damage Prevention Program activities in Crop Damage Control areas, bait stations, and lure crops in Alberta.

Damage Control Area	Scaring Cost ($)	Feeding Cost ($)	Total Cost ($)
Beaverhill East	4,646		4,646
Beaverhill West	4,646		4,646
Brosseau	4,770	8,626	13,396
Derwent	4,770		4,770
Flat Lake	4,721	400	5,121
Holden	4,646		4,646
McCullough	4,770		4,770
Whitford	4,646		4,646
Grande Prairie (La Glace)	6,034	10,430	16,464
Beaverlodge (Buffalo)	6,034	16,184	22,218
Manning	4,511		4,511
Dixonville	4,511		4,511
Grimshaw (Lac Cardinal)	8,555	11,830	20,385
Falher	3,767		3,767
Eaglesham	3,767		3,767
Bittern Lake	1,943	84	2,027
East Buffalo	1,943		1,943
Edberg	1,943		1,943
Erskine	1,943		1,943
Forestburg	1,943		1,943
Wavy	1,943		1,943
Bashaw	1,918	7,693	9,611
San Diego		9,370	9,370
Grantham		4,271	4,271
Badger		3,823	3,823
Lost		6,481	6,481
Stirling		3,791	3,791
Namaka		4,133	4,133
Prouty		3,317	3,317
Grand Total	88,370	90,433	178,803

Table 2. 2005 costs for Waterfowl Crop Damage Prevention Program activities at scare cannon distribution centres in Alberta.

Distribution Centre	Scaring Costs ($)
Atmore	104
Bonnyville	166
Mannville	166
Paradise Valley	228
Smoky Lake	110
St. Paul	0
Vegreville	550
Vermilion	518
Viking	217
Northeast General Operation	734
Northeast Amortized Equipment	1,833
Fairview	650
High Prairie	1,464
Valleyview	184
La Crete	194
Northwest Amortized Equipment	2,358
Bashaw	385
Bawlf	365
Bentley	303
Byemore	417
Camrose	437
Castor	365
Lougheed	499
Pine Lake	168
Provost	499
Stettler	334
Camrose	168
Coronation	168
Drumheller	168
Olds	168
Ponoka	168
Provost	168
Red Deer	168
Stettler	168
Wetaskiwin	168
Parkland Amortized Equipment	3,035
Grand Total	17,797

4.2 Damage complaints

Field personnel dealt with a total of 52 damage complaints involving 83 different quarter sections of cropland (Table 3). This is considerably lower than in 2004 when 191 damage complaints were reported. Of the 52 complaints in 2005, 49 (94%) were received via phone calls from producers, two (4%) were direct observation by field crew during regular patrols, and one (2%) was reported directly to a field crew by a producer. Twenty-six (31%) of the quarter sections had already sustained sufficient crop damage to warrant a damage compensation claim. Within areas serviced by cannon distribution centres, producers borrowed scare cannons to deal with 163 potential waterfowl damage cases (Table 4).

Table 3. Summary of waterfowl damage complaints received by ACA field staff during 2005 Waterfowl Crop Damage Prevention Program by CDC area, including number, complaint source, and extent of damage.

Damage Control Area	Days of operation	No. of complaints	No. of quarters involved	Quarters damaged before notification		Source of complaints					
						Phone		Patrol		Field contact	
				No.	%	No.	%	No.	%	No.	%
Beaverhill East	66	2	4	1	25		0	2	100		
Beaverhill West	66	2	2	1	50	2	100				
Brosseau	66	2	3			2	100				
Derwent	66	3	9			3	100				
Flat Lake	66	2	2	1	50	2	100				
Holden	66	2	2			2	100				
McCullough	66	4	7			4	100				
Whitford	66	3	9	1	11	3	100				
Grande Prairie	66	8	8	4	50	8	100				
Beaverlodge	66	9	9	4	44	9	100				
Grimshaw	57	3	5			3	100				
Falher	57	2	10	10	100	1	50			1	50
Eaglesham	57	0									
Manning	57	9	12	4	33	9	100				
Dixonville	57	1	1		0	1	100				
Total		52	83	26	31	49	94	2	4	1	2

Table 4. Summary of damage complaints handled by scare cannon distribution centres for the 2005 Alberta Waterfowl Crop Damage Prevention Program.

Distribution centre	Dates of operation	Number of days	Number of cannons used	Number of complaints	Number of owners	Number of quarter sections
Atmore	Aug 16 - Nov 24	101				
Bonnyville	Aug 19 - Nov 10	84	6	6	4	8
Mannville	Aug 5 - Nov 7	95	6	5	4	6
St. Paul	Year round		8	3	3	3
Smoky Lake	Aug 10 - Nov 10	93	1	1	1	1
Paradise Valley	Aug 12 - Nov 7	88	12	7	7	11
Vegreville	Aug 11 - Dec 8	120	45	24	21	35
Vermilion	Aug 11 - Nov 8	89	40	17	17	40
Viking	Aug 5 - Nov 4	92	11	11	8	19
Fairview	Aug 16 - Oct 15	60	23	8	8	11
High Prairie	Aug 23 - Oct 15	53	65	16	16	24
Valleyview	Aug 24 - Oct 15	52	4	1	1	2
La Crete	Aug 24 - Oct 15	52	2	1	1	1
Bashaw	Aug 1 - Nov 1	92	11	6	6	11
Bawlf	Aug 1 - Nov 1	92	4	3	3	4
Bentley	Aug 10 - Oct 26	78	1	1	1	1
Byemore	Aug 1 - Nov 1	92	14	8	6	14
Camrose	Aug 10 - Oct 26	78	11	8	8	8
Castor	Aug 1 - Nov 1	92	4	3	3	3
Lougheed	July 15 - Nov 9	116	17	9	9	12
Pine Lake	Aug 1 - Nov 1	92	6	5	4	4
Provost	July 15 - Nov 9	116	17	9	9	13
Stettler	Aug 1 - Nov 1	92	1	1	1	1
Camrose (F&W)	Aug 1 - Nov 1	92				
Cornation (F&W)	Aug 1 - Nov 1	92	2	1	1	1
Drumheller (F&W)	Aug 1 - Nov 1	92	2	1	1	1
Olds (F&W)	Aug 1 - Nov 1	92				
Ponoka (F&W)	Aug 1 - Nov 1	92				
Provost (F&W)	Aug 1 - Nov 1	92				
Red Deer	Aug 1 - Nov 1	92	9	6	6	9
Stettler (F&W)	Aug 1 - Nov 1	92				
Wetaskiwin (F&W)	Aug 1 - Nov 1	92	2	1	1	1
BRID	Year round			1	1	1
Stirling	Year round					
Namaka	Year round					
Total			324	163	151	245

The 2005 program operated with reduced number of field staff and an increase in scare cannon distribution centres. Eight CDC areas that were serviced by field crew in 2004 were operated through scare cannon distribution centres in 2005. Producers requiring waterfowl scaring assistance in the Kenilworth, High Prairie, Bittern Lake, Forestburg, and Wavy CDC areas were serviced through scare cannon distribution centres located in Paradise Valley, High Prairie, Camrose, Lougheed, and Bawlf, respectively while producers in the East Buffalo, Edberg, and Erskine CDC areas were serviced by the Bawlf, Pine Lake, and Bentley distribution centres.

In total, the WCDPP dealt with 215 cases of waterfowl depredation of unharvested grain in 2005; the total number of damage cases handled in 2004 was appreciably higher, at 330. This difference between years supports observations from regional coordinators, field crew, and scare cannon distribution centre operators who all observed lower than expected requests for waterfowl damage prevention assistance considering the wet weather during the harvest period in 2005.

4.3 Waterfowl use of alternate feeding sites

In the Prairie region during 2005, the Prouty Lake lure crop in the BRID was swathed on 2 August when it was mature and left as a potential lure for waterfowl. The crop was combined on 5 October and the salvaged grain was hauled to bait station granaries. An estimated 100 bushels of barley were consumed on the lure crop providing 11,750 duck days of use. Feeding activities at the Badger Lake, Grantham Lake, Lost Lake, Stirling Lake, and San Diego Lake bait stations commenced on 3 August while feeding at Namaka Lake commenced 8 August. The Stirling Lake bait station was the first feeding station to report 70% crop harvest in the surrounding area and waterfowl feeding terminated on 8 September. The Lost and Badger Lake bait stations terminated on 29 and 30 September, respectively. Feeding terminated at Grantham Lake on 1 October and at San Diego Lake on 5 October. Feeding at the Namaka Lake bait station continued until 12 October. The average number of ducks feeding per day at these bait stations was marginally higher in 2005 (average = 2,563) than in 2004 (average = 2,483). The bait stations provided an estimated 778,203 days of duck-use with approximately 6623 bushels of barley fed at the six bait stations. The 2005 duck-use of bait stations was similar to that of 2004 (843,533 days of duck-use and 7,179 bushels of barley consumed).

In the Parkland region, only one (Bashaw) out of three bait stations was operational in 2005. Feeding did not take place at the East Bufflo and Bittern Lake bait stations because of low water levels. Duck feeding operations commenced on 2 August and were completed by 12 October. Bait station operation over 72 days provided a total of 272,400 duck feeding days. Average daily duck-use at the Bashaw bait station was 3783 birds, 25% lower than in 2004.

In the Northeast region, one bait station (Lac Brosseau) out of four was operational in 2005. Feeding at the Beaverhill, Flat, and Whitford Lake bait sites was not attempted because of low water levels and/or excessive emergent vegetation between the feed pad and open water. The Lac Brosseau bait station provided an estimated 175,400 days of duck-use in 2005 with a total of 1641 bushels of barley consumed over 66 days of operation. Whitford Lake has been virtually dry for the last 10 years. Feeding at Whitford Lake is not expected to resume because of current low water levels and potential for diseases (e.g., botulism). Therefore, the granary at Whitford Lake was sold in 2005.

In the Northwest region, three out of four bait stations were in operation (La Glace, Buffalo, and Lac Cardinal). Feeding was not initiated at the Flood bait station as a cost reduction strategy. Feeding at bait stations commenced in mid August and was completed by 15 October. In total, the three bait stations provided 181 days of feeding with an estimated 819,089 days of duck-use. Duck-use at these bait stations was 37% higher than in 2004.

Throughout the province, bait stations operated for an average of 61 days. The eleven bait stations and one lure crop provided a total of 21,167 bushels of barley with an estimated 2,045,093 days of duck-use (Table 5). This resulted in a consumption rate of 0.50 pounds/duck/day, at an average cost of 4.26 cents per duck day. The total estimated duck-use of feeding stations in 2005, measured by duck-days, was 3% higher than that reported in 2004.

Table 5. Summary of waterfowl use of bait stations and lure crop during the 2005 Waterfowl Crop Damage Prevention Program bait stations.

Feeding site	Days of feeding	Start date	End date	Total duck days	Grain consumed (bu)	Grain consumed/ duck/day	Feeding costs ($)	Cost/duck/ day (cents)
Feeding sites in CDC areas								
La Glace	62	15-Aug	15-Oct	227390	2600	0.55	10,430	4.59
Buffalo (G.P.)	62	15-Aug	15-Oct	368682	4700	0.61	16,184	4.39
Lac Cardinal	57	16-Aug	11-Oct	223017	3400	0.73	11,830	5.30
Lac Brosseau	66	16-Aug	20-Oct	175400	1641	0.45	8,626	4.92
Feeding sites operated to support waterfowl habitat initiatives								
Prouty	65	2-Aug	5-Oct	11750	100	0.40	237	2.02
Lost Lake	59	2-Aug	29-Sep	168025	1430	0.40	6,481	3.86
San Diego	65	2-Aug	5-Oct	294925	2510	0.40	9,370	3.18
Badger	60	2-Aug	30-Sep	67445	574	0.40	3,823	5.67
Grantham	62	2-Aug	1-Oct	68503	583	0.40	4,271	6.23
Stirling	38	2-Aug	8-Sep	105163	895	0.40	3,791	3.60
Namaka	66	8-Aug	12-Oct	74143	631	0.40	4,133	5.57
Bashaw	72	2-Aug	12-Oct	272400	2000	0.35	7,693	2.82
Total				2056843	21064	0.49	86,869	4.22

4.4 Harvest chronology

A summary of harvest progression is provided in Table 6. In the Prairie region, harvest operations for 2005 began in early August but were hampered by cool, wet weather well into September; by 12 September, only 50% of crops had been combined. The Stirling Lake area had 70% harvest completed by the third week of September and the Lost Lake, San Diego Lake, Badger Lake, Prouty Lake, and Grantham Lake areas reached 70% harvest completion the next week. Namaka Lake reached 70% harvest completion 12 October. The percentage of crops in the most vulnerable state (swathed) was fairly consistent across the region throughout the harvest period, and generally did not exceed 30% in any individual area.

Crop transects were conducted in identified CDC areas in the Parkland region even though there were no field personnel providing direct assistance in these areas. Weather conditions for harvest in 2005 were poor in the Parkland region. Only 25% of crops were combined when 13 cm of rain fell in early September. Additional heavy rain during the latter portion of September kept fields too wet to be harvested until the second week of October. Most of the remaining crops were harvested during the second and third week of October. Combining of crops kept pace with swathing for the most part. Except for the Erskine area where swathed crops accounted for 48% during the week of 22 September, regionally crops lying in swath remained under 27%.

Cereal grain harvest activities in the Northeast region were hampered by cool, wet weather during August, September, and early October. Regionally, the amount of barley, wheat, and field peas harvested did not reach 50% until the second week in October, unusually late for the region. Fortunately, combining kept pace with swathing activities and so reduced the potential for waterfowl damage to crops laying in swath. Typically, program activities delivered by field personnel within control areas terminate when 70% of crops in the control areas have been combined. In 2005 these activities were terminated before all control areas reached 70% of crop harvest because field crew were not receiving any complaints of crop damage.

In the Northwest region harvesting in 2005 commenced in mid- to late August. A generally dry fall period allowed farmers to harvest the majority of crops by the week of 10 October. The Beaverlodge area experienced wet and snowy conditions in October which prevented farmers from harvesting their crops until the week of 24 October. Regionally, less than 18% of crops were in swath throughout the harvest season.

Table 6. 2005 Waterfowl Crop Damage Prevention Program weekly harvest progression expressed as a percentage of field peas, barley, and wheat crops standing, swathed, and combined by region.

Harvest category	Weekly harvest progression (%)											
	3-Aug	8-Aug	15-Aug	22-Aug	29-Aug	5-Sep	12-Sep	19-Sep	26-Sep	2-Oct	9-Oct	16-Oct
Prairie region												
Standing	100	97	88	75	59	37	28	26	23			
Swathed	0	3	9	17	23	21	21	20	14			
Combined	0	1	3	8	18	42	51	54	63			
Parkland region												
Standing				98	84	64	63	51	27	20	13	13
Swathed				2	10	17	17	26	26	24	17	15
Combined				0	6	19	20	23	46	56	70	72
Northeast region												
Standing			100	99	92	83	76	65	41	28	18	9
Swathed			0	1	3	9	13	22	34	38	33	22
Combined			0	0	4	8	12	14	25	35	49	69
Northwest region												
Standing			96	95	90	79	75	56	39	22	13	
Swathed			1	2	5	9	9	17	17	15	13	
Combined			3	2	5	12	16	28	44	63	74	

4.5 Waterfowl web page

The web page received a total of 429 visits from September to November 2005. Use was highest in October with 255 visits, compared to 56 visits in September and 118 in November. Regional coordinators reported few direct contacts for information as a result of the web page (i.e. one in NW region, three in Parkland region). The NE coordinator was contacted by three individuals requesting waterfowl damage location information but not as a result of the web page. Enhancement of information on the web page and increased advertisement of the web page are planned for 2006.

4.6 Program expenditures

The 2005 program expenditure represents the total amount of funds spent on the WCDPP between 1 April 2005 and 31 March 2006. This amount differs from program costs as described in section 4.1. Program expenditures include the purchase price of amortized equipment and all grain purchased in 2005 whether fed in that year or not. Program expenditures also include supervisory expenditures. While supervisory expenditures are an important component in the operation of the WCDPP, they have not been attributed to the cost of the program in any specific CDC area, feeding site, or distribution centre (Tables 1 and 2) to be consistent with the previous 30 years program report format.

Data and information provided by field personnel indicate that the total WCDPP program expenditure during 2005 amounted to $347,458 (Table 7). Thus, the 2005 WCDPP was delivered within the approved budget of $390,205.

Table 7. Alberta Waterfowl Crop Damage Prevention Program expenditures for 2005.

	Expenditures ($)	Sub total ($)
Scaring Operations		
Field Technicians salaries/benefits	44,065	
Staff training	330	
Mileage	0	
Meal allowance	606	
Vehicle operations	31,756	
Propane	1,204	
Office supplies	150	
Phone (cell and long distance)	802	
Equipment replacement	0	
Equipment repairs	611	
Field supplies/equipment	105	
		79,628
Feeding Operations		
Field Technician salaries/benefits		
Vehicle operations	6,082	
Bait station site rental	1,916	
Bait station feeding contracts	25,778	
Bait station grain	47,952	
Lure crop	3,317	
Field supplies/equipment	735	
		85,780
Scare Cannon Distribution		
Distribution centre contracts	5,809	
Cannon shipping	762	
Phone (cell and long distance)	375	
Vehicle operations	1,767	
Field supplies/equipment	2,211	
		10,924
Administration		
Regional Programming		
Coordinator Salaries/benefits	88,731	
Vehicle	13,508	
Phone (cell and long distance)	842	
Office/field supplies	1,510	
Travel expenses	1,108	
		105,699
Provincial Coordination		
Salaries/benefit	15,774	
Vehicle operation	2,131	
Travel expenses	654	
Equipment purchase	44,789	
Office supplies	2,079	
		65,428
Total Budget		**347,458**

4.7 Recommendations

Over the past several years, the cost of providing direct assistance to producers through field personnel has increased because of increasing costs associated with vehicle operation, propane, and wages, while the number of requests for direct assistance with waterfowl crop damage (requests) that field personnel received has decreased (Figure 2). The number of requests is typically reflective of the harvest weather in the fall, with an increase in frequency of waterfowl damage often accompanying harvest seasons prolonged because of wet weather. However, the past two years have not held true to this trend, especially with reference to requests received by field crew. The willingness of producers to help themselves if provided the opportunity has been noted by regional coordinators and field staff. Finally, the budget available for the WCDPP has remained static or decreased over the past 10 years. Taking these factors into consideration, it is proposed that the 2006-07 WCDPP in Alberta expand the current network of scare cannon distribution centres to those areas which have traditionally been serviced by field personnel. Advertisement of this change will be carried out in the months prior to commencement of harvest and regional coordinators will monitor and report on all comments received regarding this change.

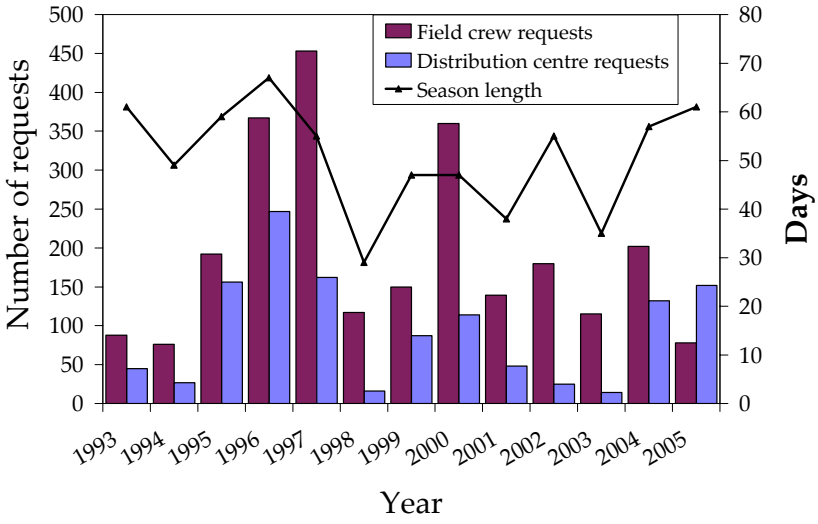

Figure 2. Number of requests for waterfowl crop damage prevention assistance received by field crew and distribution centres from 1993 to 2005 in relation to length of harvest season – based on 70% harvest completion as end of season.

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6.0 APPENDIX

Appendix 1. 2005 Crop damage control (CDC) areas and alternate feeding sites.

CDC area	Area covered	Bait station	Bait station land location
Beaverhill East	Twp 50 Rg 17 Twp 51-52 Rg 16-17 Twp 53 Rg17 W4		
Beaverhill West	Twp 50-51 Rg 18-19 Twp 52-53 Rg 18, pt 19 W4	Beaverhill Lake[1]	NE 3-51-18 W4
Brosseau	Twp 55-56,Rg 11-12 Twp 57 Rg 9-1 pt. Rg 12 W4	Lac Brosseau	NE 13-56-12 W4
Derwent	Twp 53-55 Rg 6-7 W4		
Flat Lake	Twp 64 Rg 20-21 Twp 65 Rg 19-21 Twp 66 Rg 19-20 W4	Flat Lake[1]	NE 22-65-20 W4
Holden	Twp 48-49 Rg 15-17 Twp 50 Rg 15-16 W4		
Kenilworth[2]	Twp 47-49 Rg 2-4 Twp 50 Rg 2-5 Twp 51 Rg 4-5 W4		
McCullough	Twp 58 Rg 9-11 Twp 59 Rg 9-12 Twp 60 Rg 11-12 W4		
Whitford	Twp 55-57, Rg 14-16 W4	Whitford Lake[1]	NW 14-56-16 W4

CDC area	Area covered	Bait station	Bait station land location
Grande Prairie	Twp 73-74 Rg 4-9	La Glace	NW 7-74-8-W6
	Twp 73-74 Rg 4-9	Buffalo Lake	NE 2-74-7-W6
	Twp 70-72 Rg 4-8 W6		
Beaverlodge	Twp 70-71 Rg 9-11		
	Twp 72 Rg 9-12		
	Twp 73 Rg 10-12		
	Twp 74 Rg 10 W6		
Eaglesham	Twp 77 Rg 25 W5		
	Twp 78-79 Rg 25-26 W5		
	Twp 78-79 Rg 1 W6		
Falher	Twp 77 Rg 19-22		
	Twp 78-79 Rg 20-22		
	Twp 80 Rg 21-22 W5		
Grimshaw	Twp 82 Rg 26 W5	Lac Cardinal	SW 15-84-24 W5
	Twp 83 Rg 24-26 W5		
	Twp 84 Rg 24-25 W5		
	Twp 82-83 Rg 1 W6		
Dixonville	Twp 86 Rg 23-25	Flood Lake[1]	NE 35-86-25 W5
	Twp 87 Rg 24-25		
	Twp 88 Rg 24 W5		
Manning	Twp 89 Rg 21-23		
	Twp 90-92 Rg 22-23 W5		
High Prairie[2]	Twp 75 Rg 15-17 W5		
	Twp 76 Rg 16-17 W5		

CDC area	Area covered	Bait station	Bait station land location
Bittern Lake[2]	Twp 46 Rg 19-22 Twp 47 Rg 20-22 Twp 48 Rg 22 W4	Bittern Lake[1]	SE 8-47-21 W4
East Buffalo[2]	Twp 40 Rg 19-21 Twp 41 Rg 18-20 Twp 42 Rg 19 W4	East Buffalo Lake[1]	SE 36-40-20 W4
Edberg[2]	Twp 43 Rg 19-21 Twp 44 Rg 19-20 Twp 45 Rg 20 W4		
Erskine[2]	Twp 37 Rg 20-21 Twp 38 Rg 20-22 Twp 39 Rg 20 W4		
Forestburg[2]	Twp 42 Rg 13-15 Twp 43-44 Rg 14-15W4		
Wavy[2]	Twp 45, Rg 15-17 Twp 46-47, Rg 15-16 W4		

[1]no feeding at bait station in 2005.
[2]complaints handled through distribution centre.

Appendix 2. 2005 Waterfowl Crop Damage Prevention Program bait stations and lure crop operated to support waterfowl habitat initiatives.

Area	Bait station	Land location
Bashaw	Bashaw	SE 2-42-21 W4
Bow River Irrigation District	Lost Lake	E 6-14-17 W4
	Grantham Lake	SE14-13-15 W4
	San Diego Lake	SW29-15-17 W4
	Badger Lake	NE29-16-18 W4
	Prouty Lake (lure crop)	SE18-15-18 W4
Raymond Irrigation District	Stirling Lake	NE 6-7-19 W4
Namaka	Namaka Lake	NE 12-23-24 W4

Appendix 3. 2005 Waterfowl Crop Damage Prevention Program distribution centre locations.

Distribution Centre	Type of Business
Atmore	Contracted Business
Bonnyville	Contracted Business
Mannville	Contracted Business
Paradise Valley	Contracted Business
Smoky Lake	Contracted Business
St. Paul	ACA Office
Vegreville	Contracted Business
Vermilion	Contracted Business
Viking	Contracted Business
Wainwright	Contracted Business
Fairview	Contracted Business
High Prairie	Contracted Business
Valleyview	Contracted Business
La Crete	Contracted Business
Bashaw	Contracted Business
Bawlf	Contracted Business
Bentley	Contracted Business
Byemore	Contracted Business
Camrose	Contracted Business
Castor	Contracted Business
Lougheed	Contracted Business
Pine Lake	Contracted Business
Provost	Contracted Business
Stettler	Contracted Business
Camrose	Fish & Wildlife Office
Coronation	Fish & Wildlife Office
Drumheller	Fish & Wildlife Office
Olds	Fish & Wildlife Office
Ponoka	Fish & Wildlife Office
Provost	Fish & Wildlife Office
Red Deer	ACA Office
Stettler	Fish & Wildlife Office
Wetaskiwin	Fish & Wildlife Office
Bow River Irrigation District	Fish & Wildlife Office
Raymond Irrigation District	Fish & Wildlife Office

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