Overview of Crowsnest Conservation Society`s Bear-Resistant Garbage Bin Program

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crowsnest
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1. Introduction

Shortly after the inception of the Alberta BearSmart program in May 2006, Crowsnest Conservation Society initiated a bear-resistant garbage bin demo program in the Crowsnest Pass to provide residents a tangible solution to BearSmart garbage management. The following report describes the operation of the Crowsnest Conservation BearSmart Bear-Resistant Garbage Bin Program, experience with several styles of bins, and measures of program effectiveness. This report is intended to share information that may be useful for other community BearSmart groups and government agencies interested in starting or improving a bear-resistant bin loan program.

2. Details of Program Operation

Crowsnest Pass Waste Handling - The garbage handling system in the Crowsnest Pass involves manual curbside pickup at individual residences by an independent contractor. In 2013 a municipal BearSmart bylaw was passed requiring storage of garbage in a secure location until 6:00am on the morning of pick-up, unless stored in an animal-proof waste container.

Demo Component - The Bear-resistant Garbage Bin Program has two elements: a demo component and a purchase component. The demo component is targeted to (1) residents who have had a recent bear-in-garbage conflict and require an immediate short-term solution and (2) residents who are considering a bear-resistant bin purchase but would like to experience a bin first and see if it would meet their needs before a significant cash outlay. The demo component name was recently changed from a "Loan Program" to a "Demo Program" to convey the concept that residents would receive the opportunity to try a free bin for a designated period of time with the option to purchase, the preferred long-term solution. As funding became available, the number of bins available for demo was increased from an initial stock of 20 bins in 2006 to 38 bins in 2014.

Purchase Component - The purchase component of the Bear-resistant Garbage Bin program serves residents wishing to embrace this garbage management solution for the long-term. Bulk orders of bins are coordinated to reduce the per unit price and associated freight costs and to arrange delivery to a facility capable of off-loading and handling pallets. Where possible, grant funding is used to provide subsidies on the bin cost for purchasers. A grant-funded sale price of $100 per bin proved very popular in 2012-2013, and used demo bins similarly sold off quickly at $75. Residents are appreciative of a small grant-funded subsidy ($40 on a $330 bin) available in 2014-2015, but the bin cost remains too high for the majority.

Advertising and Bin Placement - The Bear-resistant Garbage Bin program is advertised locally in the newspapers, on the radio, through social media, at the local trade show, and through

Crowsnest Conservation events and eNewsletter. Local Fish and Wildlife officers also refer residents, particularly those experiencing a current conflict, to the program.

Bin Delivery - While both demo and purchase bins were initially delivered by Crowsnest Conservation's BearSmart Program Coordinator and proved manageable with approximately 25 bins circulated annually, subsequent increases in the number of purchased bins, number of demo bins, and shorter loan times increased the time and mileage budgets required to sustain the Bear-resistant Garbage Bin Program. Accordingly, residents are now directed where to pick-up a bin, although deliveries are still offered for those unable to pick one up themselves.

Funding – Since the start of the Bear-resistant Garbage Bin Program, annual funding has been drawn from various funding sources including grants, municipal government, provincial government, and Crowsnest Conservation volunteer fundraising activities. Sustainable multi-year funding remains elusive.

3. Bin Styles and Performance

3.1. Bin Styles

Three styles of bins have been used over the past eight years of the program: UnBearAble bins, BearSaver bins, and Bearicuda Stealth II bins. All three styles are certified under the Interagency Grizzly Bear Committee's testing and certification program

UnBearAble Bins were one of the early bear-resistant, polycart garbage bins available on the market and were from an AB supplier based in Bragg Creek. This model required the user to latch scissor clips to prevent bear access (Figure 1). With over 30 bins used within the community from 2006 onwards, 7% of bins were known to have had performance issues within their first three years of service, primarily with broken scissor clips. In one instance, the clip was broken by a bear who subsequently accessed the garbage stored inside (Figure 2). Field repairs were relatively easy with this bin style as the cables and clips could be purchased at a local hardware store. The clips would occasionally ice up and require a warm hand to melt the ice before opening, and we did observe on several occasions unlatched bins curbside on non-garbage days and concluded this bin style was not ideal for the less motivated users. Overall, we were happy with the performance of these bins and their simple latch mechanism.

Although two bin sizes (65 ga and 95 ga) were initially purchased, manual access of bags in the bottom of the larger size bin proved challenging given its depth. Accordingly, we now promote use of the 65 ga size, with larger bins brought in by request only. Note that the 95 ga bins may have utility for acreage or farm owners who store and haul their own garbage less frequently.

Figure 1. UnBearAble Bin with scissor clip latch.

Figure 2. Failure of an UnBearAble Bin latch resulting in subsequent garbage access by a black bear (photo credit: John Clarke).

BearSaver bins were introduced to our program beginning in 2012 as we sought a self-latching style of bin to ensure garbage was inaccessible even if the user forgot or was less motivated to secure the bin. This style was also conveniently supplied by an Alberta-based company, Haul-All Equipment Ltd. in Lethbridge, AB. BearSaver bins have a dual latch mechanism hidden under a front apron to keep it inaccessible to bears and tabs on the front of the lid which insert into this mechanism (Figure 3, Figure 4).

In total, we brought in 52 of these bins for personal use or for our demo program; however, we have noted a 23% failure rate within the first three years of service. Latch problems (e.g., icing up and subsequent stress on mechanism when trying to open, loss of locking ability on one or both sides of bin, seizure of latch and inability to open) were most common, although the wheel/axle connection failed on one bin, some lids were skewed impeding closure without forcing, and brackets/rivets holding steel reinforcement on the lids sometimes intercepted the steel reinforcement around the top of the can again leading to difficulties in closing or latching (e.g., see Figure 5, Figure 6). The apron and riveting used to secure the latch mechanism render field repairs very difficult for the average user. The warranty period was one year and Haul-All customer service fixed/replaced bins with latch issues provided we could get the bin to them. Overall, we were disappointed with the performance of these bins and have discontinued any sales, though existing bins remain in use around the community.

Figure 3. BearSaver bin with steel reinforcement and front apron concealing latch.

Figure 4. Dual tabs of BearSaver latch.

Figure 5. BearSaver bin with poor assembly such that bracket/rivet placement prevents closure.

Figure 6. BearSaver bin with right side latch not securing lid.

Bearicuda Stealth II bins are also a self-latching style with a single steel mechanism bolted under the lid and attaching to a U clip on the front inside of the bin (Figure 7, Figure 8). Our supplier was Bearicuda Bins out of Litchfield, CT, and we now have 28 bins in service throughout the community (and 12 more in our inventory for spring sales). The appeal of these bins was the self-latching mechanism for which field repairs involved removal/replacement with only three screws (the warranty on the bin is three years, though only 90 days on steel parts). We first ordered these bins in spring 2014 and so cannot assess their failure rate through the first three years of service. To date, one user required a replacement latch while another has indicated sluggishness in the latch when temperatures were cold but it continued to function.

Figure 7. Bearicuda Stealth II bin with pedestal handle (latch trigger inside pedestal).

Figure 8. Latch mechanism inside lid of Bearicuda Stealth II bin.

3.2. Bin Effectiveness

To date, we have tracked known bin failures per 100 bins in service as a measure of bin reliability. This informal measure relies upon residents informing us of problems instead of a standardized follow-up call each year (for purchasers) or at the end of the loan period (for those borrowing a bin). Accordingly, our measure may underestimate the failure rate of bins.

We also currently do not collect any information on whether bins function to deter bears at residences with previous conflicts, though this could be valuable data to show the effectiveness of the bin program for participating residents (note that this would have to be assessed at an individual residence level as a bear may simply move to an alternate location in the neighbourhood). One possible measure of bin effectiveness would be the percent of residents experiencing repeat visits by bears in search of garbage after placement of a bear-resistant bin compared to percent of residents experiencing repeat visits by bears when they chose to continue with their existing garbage management practices (i.e., did not adopt a bear-resistant bin solution). This could be assessed through short-term follow-up calls in the days/weeks following bin placement, through government occurrence reports for that location (assuming the resident is reporting bear issues), or through placement of a corresponding trail camera at the residence to determine any subsequent bear activity.

4. Program Effectiveness

Perhaps the greatest success of the Crowsnest Conservation BearSmart Bear-Resistant Garbage Bin Program is in the increased awareness of proper garbage management through visible bins distributed around the community. Although data from the earliest years of the program were not available, several measures of program effectiveness have been tracked in recent years. Both annual demo uptake and annual purchase uptake in the community have increased substantially (Figure 9). In 2012 and 2013, Shell FuellingChange grant funding allowed us to offer a subsidy on bin purchases and old demo bin stock was also sold off at a significantly reduced rate. These factors contributed to a spike in purchases.

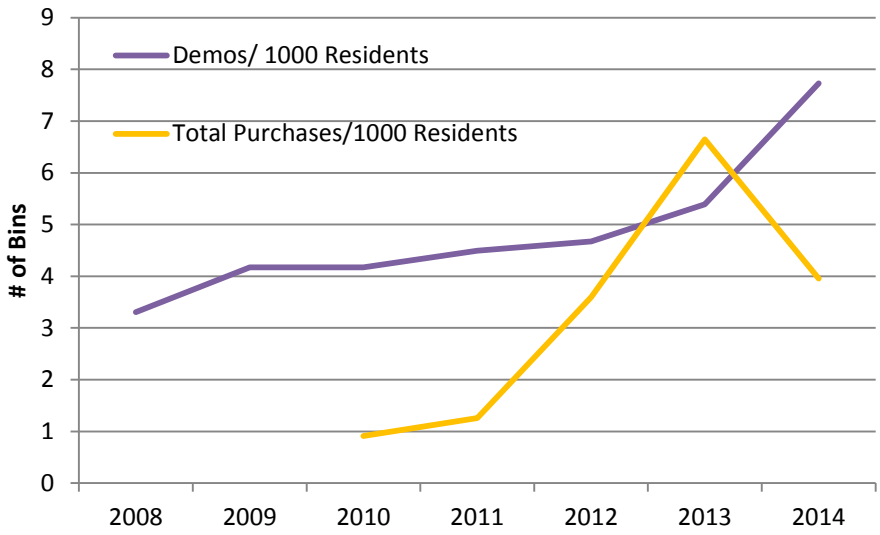

Figure 9. Annual demo and purchase uptake in the Crowsnest Pass, standardized to 1000 residents.

At the start of the program, no residents purchased bins without first having experienced a bin on loan; in the last two years, approximately 80% of purchases were to residents who did not have prior experience with a demo bin. Many other interested residents also inquired about bin purchases but ultimately decided not to purchase (tracking of these inquiries only started in 2014). The cumulative number of purchases continues to grow in a linear fashion (Figure 10) and has not yet started to asymptote, indicating there are still residents interested in bear-resistant bins as a long-term garbage management solution.

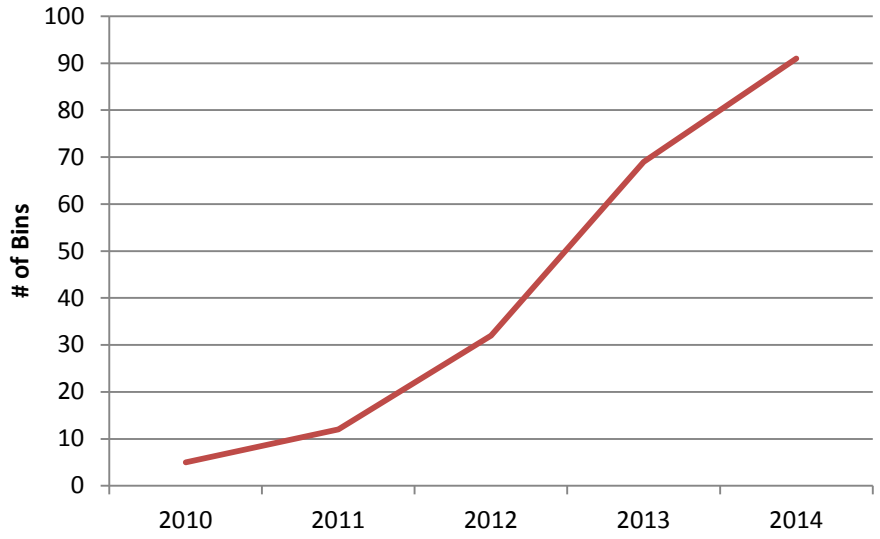

Figure 10. Cumulative number of bear bins purchased through the Bear-Resistant Garbage Bin Program.

In addition to the measures outlined above, residents' perception of the program or bear-resistant garbage bin value could be assessed through a simple annual survey administered to a random selection of residents who either loaned or purchased bins in the previous bear season. Questions could include:

- Did this program meet your garbage management needs? (on scale of 1=not at all to 5=fully met needs)
- How did you find the bin to use? (on scale from 1=very difficult to 5=very easy)
- Since purchasing/using bin, have the number of wildlife visits at your location changed? (on scale of 1=increased significantly to 5=decreased significantly)
- Have neighbours noticed or commented on your bin? (on scale from 1=no comments to 5=many comments)
- Would you recommend purchasing/loaning bin to a friend or neighbour? (on scale of 1=would not recommend to 5=highly recommend)
- Other comments

Crowsnest Conservation BearSmart did conduct a similar survey at the onset of the demo program; however, the initiative was unfortunately not maintained in subsequent years.

One final factor that should be considered in any bear-resistant bin program involving manual waste pick-up is ease of use by the garbage handlers. As wheeled bear-resistant garbage bins of the styles discussed here are too heavy to lift, garbage must be removed one bag at a time. Some residents complained that the handlers would not empty bags from the bottom of the bin. We subsequently adapted our education when distributing bins to ensure residents appreciated the need to place smaller individual bags inside one or two larger bags that were quick for the handler to grab or alternatively use a milk crate in the bottom to lift the bags higher if they were not using the entire capacity on a weekly basis.

5. Summary

The Crowsnest Conservation BearSmart Bear-Resistant Garbage Bin Program has proven successful over its eight years of operation and has benefited many residents. We have seen an annual increase in the number of bins purchased as a permanent garbage management solution, and feel the demo and purchase components are helping build a social norm of responsible BearSmart garbage management around the community, particularly in some high-conflict neighbourhoods. As the program moves forward, we continually seek bin styles that balance residents' requirements, provide the best performance, and are cost efficient. Furthermore, we continue to liaise with our local municipal government on improvements to the system that would increase access to secure garbage management options for all residents (e.g., transfer of bin purchase program to municipality with ability to purchase more bins at reduced prices and/or amortize cost on utility bills; overhaul of waste management system to embrace adoption of centralized neighbourhood bear-resistant dumpsters).