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USING AIRCRAFT FOR CONTROLLING BLACKBIRD/SUNFLOWER DEPREDATIONS

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ABSTRACT: Although not a new idea, using aircraft to control blackbird damage to sunflowers has provided some relief for sunflower growers in North Dakota. The numerous scaring devices and limited frightening agents have not proven effective in controlling blackbird damage to sunflowers. In response to a congressional directive to provide assistance in controlling blackbird/sunflower depredations in North Dakota, a blackbird hazing program was developed. The program utilized fixed-wing aircraft and shooting to expedite the migration of blackbirds through North Dakota.

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INTRODUCTION

Blackbird/sunflower depredations in North Dakota, which produces approximately 72% of sunflowers grown in the United States, have become a major concern of the sunflower industry. Economic losses to the sunflower industry by blackbirds in North Dakota alone reached a high of $6.5 million in 1980. This figure represents seed loss only and does not take into consideration additional costs of monitoring fields and the use of scare devices. Sunflower growers have used a number of techniques to minimize damage. These include an assortment of scare devices from propane exploders and inflated scarecrows to amplified blackbird distress calls. All of these devices are expensive, labor intensive and were felt to be a waste of time. Avitrol, a frightening agent which was registered in 1972, is no longer considered effective in reducing damage.

Very limited information was available on controlling blackbird damage to sunflowers with aircraft. Personal comments were solicited from ADC Specialists in North Dakota, commercial aerial applicators, sunflower growers and Denver Research Center personnel prior to the development of the aerial hazing program.

In August of 1986, the blackbird hazing program was implemented. Six districts were established with one ADC Specialist and aircraft assigned to each district. Each district covered approximately 7,000-10,000 square miles. Piper Super Cubs, PA-18's, were selected because of their maneuverability and low operating costs. Each aircraft was equipped with radio communications and altered to allow the ADC Specialist to shoot out of the left side.

The program was made public through the extension service, local newspapers and television stations. Sunflower growers suffering blackbird damage were instructed to contact the state Animal Damage Control office and provide the following information:

1. Name
2. Address
3. County
4. Legal description of land where damage was occurring
5. Approximate number of bird

The information was then given to the responsible ADC Specialist for action.

The problem of how to locate the individual fields, which were often miles from any landmarks, was solved by using county atlases. Each ADC Specialist was provided an atlas for the counties within his assigned area. Locating the proper fields required the cooperative efforts of both the pilot and the ADC Specialist. To further ease this difficult task, we asked all of the growers who requested our assistance in 1987 to flag the end of fields sustaining blackbird damage. This proved to be very beneficial and made the job of the aircraft crew much easier.

Initially the ADC Specialists were to act as ground crews and assist the aircraft in moving depredating flocks. As the project progressed we realized the ground crews could not respond to the large number of requests and would have to accompany the aircraft. The number of requests per district is critical in scheduling aircraft and establishing a realistic response time. Results and comments received from the first two years of the hazing program indicate that fields suffering damage by blackbirds must be flown a minimum of three times a week, preferably on a daily basis. Fields not holding birds following three to six inspections were often dropped from the scheduled route. Growers were immediately notified and instructed to call if the birds reappeared.

The number of requests from sunflower growers increased by 59% from 1986 to 1987. A total of 392 requests were received in 1986 and 623 requests in 1987. The sharpest increase in 1986 occurred during the period of August 20 to August 30. The sharpest increase in 1987 occurred during the period of August 10 to August 20 (Fig. 1). The sharp increase in the total number of requests from 1986 to 1987 made scheduling of aircraft difficult. We found that each district could reasonably respond to sixty to seventy requests. Anything over that increased the response time and reduced effectiveness.

The techniques used to move depredating blackbirds varied among the districts. The basic approach is to harass the flocks with low level flying, supplemented by shooting with a 12-gauge shotgun. Once the birds are airborne the

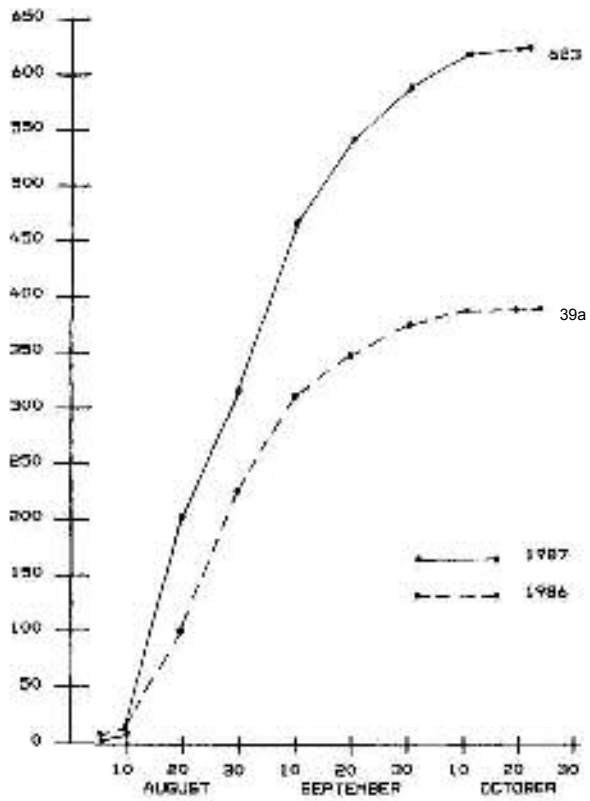

Fig. 1. The number of requests received from sunflower growers during 1986 and 1987.

pilot must maintain an altitude that keeps the aircraft between the birds and the ground and slightly behind. Flying too close to the birds will simply break them up into small groups preventing long-range movement.

Preventing the birds from landing in shelterbelts and marshes often required the assistance of a ground crew. Whenever possible we would have the growers assist by shooting and driving from field to field. Unfortunately during August and September many farmers are busy harvesting and are unable to provide assistance.

Several factors affect the ability of an aircraft to move depredating blackbirds in sunflowers. They include resident or migrating birds, the period of time birds have been feeding in the field, wind direction, general weather conditions, prior harassment activities and the time of year. Optimum conditions were:

1. Working with migrating birds.
2. Feeding had just begun; no feeding patterns established.
3. Northwesterly winds 10 to 12 mph.
4. Overcast skies.
5. Birds had been previously harassed with aircraft.
6. Time of year mid-September through October.

Efforts to move depredating birds in August and early September were not as effective as in mid-September and October. Blackbirds that are responsible for damage in August and early September we refer to as residents. These are blackbirds that have spent the summer months in North Dakota, have had sufficient time to establish feeding patterns and are completing their annual molt. When you combine these factors, moving resident birds any considerable distance is very difficult.

The location of sunflower fields in relation to the nearest roosting site must be considered when working with resident birds. Sunflower growers will often plant sunflowers adjacent to cattail marshes, creating an ideal blackbird habitat. A large percentage of the sunflower fields are located within 1/2 mile of a marsh. Harassment activities aimed at resident birds will often force the birds to retreat to a selected roosting site rather then leaving the area. Once the birds are in the cattails, it is very difficult to force them out.

The effectiveness of using aircraft to reduce blackbird damage to sunflowers is difficult to determine. In an attempt to evaluate the hazing program conducted in 1986, growers who participated in the program were asked to complete a survey. Sixty-four percent of growers who responded reported a reduction in the amount of damage caused by blackbirds.

The use of fixed wing aircraft to reduce blackbird/sunflower depredations, has proven to be marginally effective when trying to prevent damage caused by resident blackbirds. Harassment efforts must be continuous from the time the sunflower seeds become vulnerable until they are harvested. Using aircraft to prevent damage caused by migrating blackbirds, however, can be effective, providing blackbird flocks have not been allowed to establish feeding patterns and weather conditions are favorable