

Alberta Conservation Association 2017/18 Project Summary Report

Project Name: Piping Plover Recovery Program

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Partnerships

Alberta Environment and Parks
Cooperating landowners
Department of National Defence
Delta Waterfowl
Government of Canada
University of Manitoba

Key Findings

- We collaborated with other organizations to survey 29 waterbodies and located 112 adult piping plovers, the lowest count since comprehensive annual surveys began in 2000. This decline may be due to the substantial reduction in available breeding habitat since 2012 resulting from vegetation encroachment on some lakes, and from flooding of nesting habitat on other lakes.
- We conducted aerial reconnaissance flights to identify lakes that may contain suitable piping plover breeding habitat. We flew for approximately 15 hours (2,100 kilometres) and looked at 97 potential lakes. For lakes that looked suitable from the air, we conducted ground surveys and found three lakes that appeared capable of supporting plovers, and one lake where a piping plover was detected.
- We detected one breeding pair on the gravel habitat we created in 2015, the first time breeding activity has been recorded on this habitat.
- We enhanced over 58 kilometres of shoreline habitat since 2002, with the majority considered “critical” breeding habitat.

Introduction

The piping plover is a small, black and white, stubby-billed *Endangered* shorebird requiring gravel-strewn beaches for nesting and rearing broods. We address threats facing piping plover populations through the enhancement of habitat and through education and outreach initiatives. We also conduct annual surveys on core breeding lakes to monitor numbers, their distribution, and the success of our recovery actions.

In 2017/18, our primary objectives were to survey at least 25 core breeding lakes for adult piping plovers, conduct aerial reconnaissance flights to identify new lakes that may contain suitable piping plover breeding habitat and complete at least two enhancement projects. All of these objectives are supported by the *Alberta Piping Plover Recovery Plan 2010 – 2020* (Alberta Piping Plover Recovery Team 2010).

Methods

We conducted adult surveys by walking along select beaches approximately two-thirds of the distance between the water's edge and the inshore vegetation line (Goossen 1990). We recorded and mapped the location, number, and breeding activity of adult plovers. We conducted aerial reconnaissance flights in a fixed-winged aircraft over a large portion of the core breeding range in Alberta following methods outlined by Prescott (2001). We recorded the location of lakes, assigned a habitat suitability ranking, and then conducted ground surveys to confirm habitat suitability. On known breeding lakes, we assessed select shorelines for habitat damage and prioritized enhancement needs according to type, severity and size of damage, likelihood of continued damage, and available mitigation options. We also worked with a graduate student from the University of Manitoba (funded by Delta Waterfowl) for two nights to test the effectiveness of aerial drones in detecting piping plover nests.

Results

In 2017/18, we worked with Alberta Environment and Parks, and the Department of National Defence to survey 29 waterbodies. We recorded 112 adults on 18 lakes, with ten or more adults found on three of these lakes. We recorded 11 fewer piping plovers during the 2017 count than we did during the 2016 International Piping Plover Census where survey coverage was more extensive ($n = 123$) (Figure 1), and 51 fewer piping plovers than we did during the 2015 count ($n = 163$) (Figure 1), which amounts to a decrease of 9 percent and 31 percent, respectively. This apparent decline may be due to the substantial reduction in available breeding habitat since 2012 resulting from vegetation encroachment on some lakes, and from flooding of nesting habitat on other lakes where water levels remain at their highest level in more than a decade. We detected one breeding pair on the gravel habitat we created in 2015, the first time breeding activity has been recorded on this habitat.

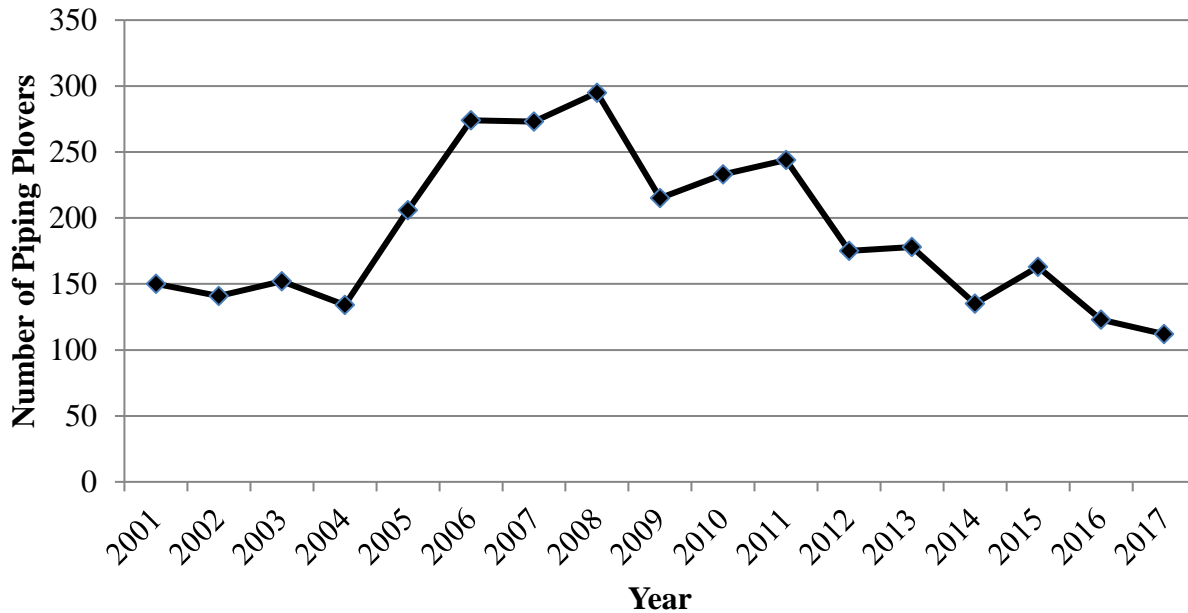


Figure 1. Piping plover counts in Alberta since 2001, with large-scale recovery efforts beginning in 2002. Survey effort is comparable among years, except for international census years 2001, 2006, 2011, and 2016 where survey coverage was more extensive.

We conducted aerial reconnaissance flights to identify new lakes that may contain suitable piping plover breeding habitat. We flew for approximately 15 hours (2,100 kilometres) and looked at 97 potential lakes. Of those 97 lakes, we followed up with 15 ground surveys to confirm their habitat suitability, and found three lakes that appeared capable of supporting plovers, and one lake where a plover was detected. We also evaluated habitat on 29 lakes that piping plover surveys were completed and contacted over 25 landowners during the piping plover breeding season. We reduced vegetation encroachment through the implementation of seasonal grazing and chemical and mechanical control. Overall, we improved over five kilometres of shoreline habitat for plovers in 2017 (Figure 2). Since 2002, we have enhanced over 58 kilometres of shoreline habitat to improve plover breeding habitat with the majority of this enhanced through fencing schemes. Most known piping plover habitat in Alberta has now been protected through the cooperation of many landowners.

Results from the two-night drone trial were mixed. We discovered that piping plovers are very well insulated when sitting on eggs, thus making nests nearly impossible to detect from a drone. If the adult is not on the nest, and the eggs are exposed, the eggs show up very well. However, to meet our goals of minimizing disturbance, the hope was that the nest would be detectable while the adult plover was still incubating the eggs. More detailed results on the effectiveness of drones in finding nests will be available for piping plovers and several other species on the graduate research is complete.

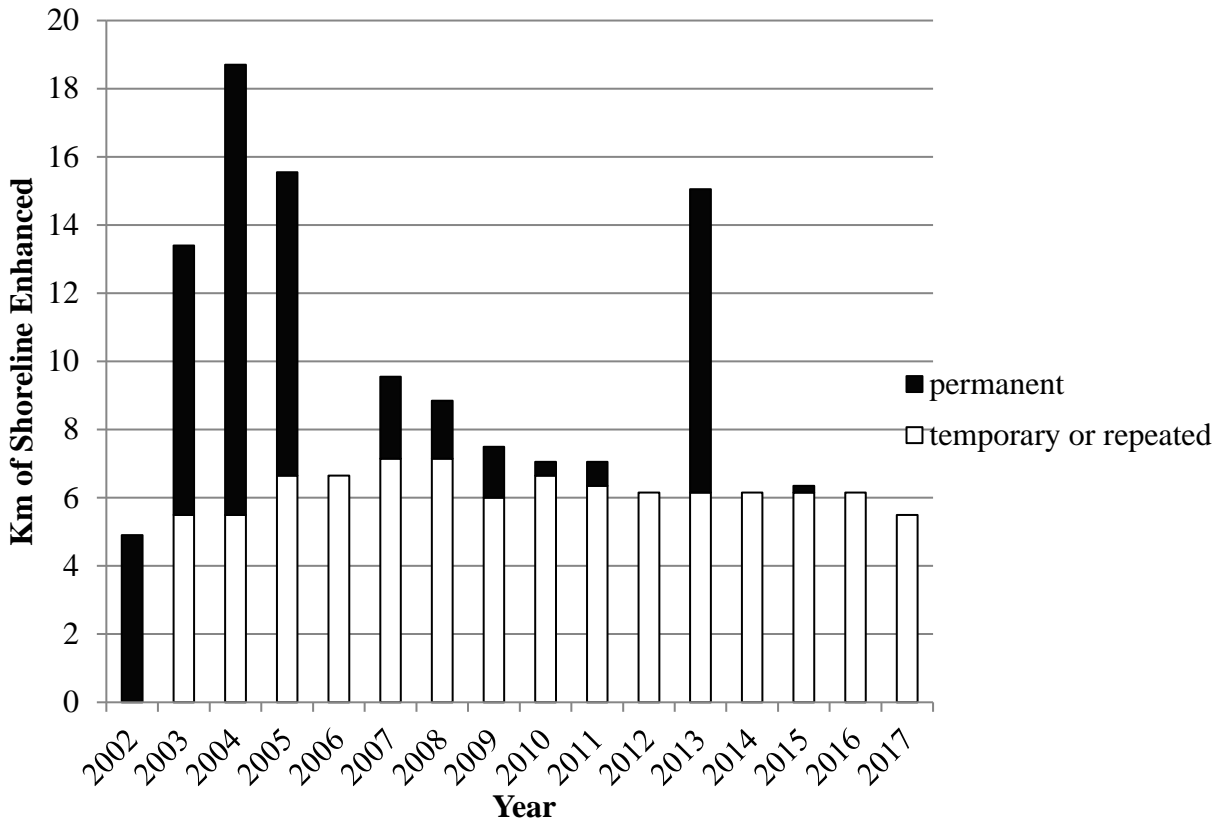


Figure 2. Kilometres of shoreline enhanced through temporary and permanent projects from 2002 to 2017.

Conclusions

The population count in 2017 was the lowest since comprehensive annual surveys began in 2000. Unusually high water levels over the past six years in southcentral Alberta have greatly reduced available breeding habitat on key lakes, while shoreline vegetation encroachment in northcentral areas have further reduced available breeding habitat. High water levels can have a detrimental effect on the population in the short-term, but are crucial in helping keep vegetation from encroaching on habitat and making it unsuitable for nesting. When water levels recede, there should be an abundance of high quality, vegetation-free habitat available for nesting. We will continue to monitor Alberta’s piping plover population and associated habitat conditions each spring. We will also continue to explore alternative techniques for reducing vegetation encroachment on important breeding habitat.

Communications

- Distributed annual Alberta Piping Plover Recovery Team newsletter to landowners and cottagers.
- Provided an update on our work at a federal Piping Plover Recovery Team meeting.
- Conducted a field tour with Michael Short where he shot a video on the piping plover nesting habitat that we created in 2015.

Literature Cited

Alberta Piping Plover Recovery Team. 2010. Alberta piping plover recovery plan, 2010 – 2020. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Recovery Plan No. 18, Edmonton, Alberta, Canada. 28 pp.

Goossen, J.P. 1990. Prairie piping plover conservation: second annual report (1989). Unpublished report, Canadian Wildlife Service, Edmonton, Alberta, Canada. 20 pp.

Paige, C. 2008. A landowner's guide to wildlife friendly fences. Landowner/Wildlife Resource Program, Montana Fish, Wildlife and Parks, Helena, Montana, USA. 44 pp.

Prescott, D. R. C. 2001. Aerial reconnaissance surveys for piping plover habitat in east-central Alberta, May 2001. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Report No. 26, Edmonton, AB. 10 pp.

Photos



ACA employee Dan Sturgess surveying piping plover habitat suitability. Photo: Corey Rasmussen



Aerial view of Reflex Lake, a piping plover breeding lake. Photo: Amanda Rezansoff



Piping plover nest camouflaged in breeding habitat. Photo: Amanda Rezansoff