

Blogging The Battle

Piping Plover Conservation in the Battle River and Sounding Creek Watersheds

By Stephanie Shyshka (University of Alberta Community Service-Learning student)



Piping plover monitoring at Reflex (Salt) Lake, 2025

Battle River Watershed Alliance (BRWA) is dedicated to preserving and enhancing land, water, and biodiversity within the Battle River and Sounding Creek watersheds. These watersheds span vast areas of land, encompassing many kilometers of environmentally significant areas. [Killarney, Dillberry, and Leane Lakes Important Bird Area \(IBA\)](#) is one such location; a unique cluster of alkali lakes close to the AB/SK border. It is a current candidate for redesignation as the Reflex, Killarney, and Freshwater Lakes Key Biodiversity Area (KBA) because of its critical importance for the protection and monitoring of the *Endangered* Piping Plover.

The Piping Plover is a migratory shorebird endemic to North America, listed as *Endangered* through [COSEWIC](#) since 1985. The interior subspecies, *Charadrius melodus circumcinctus*, breeds on Canadian prairies in very sparse, specific locations. The proposed Reflex, Killarney and Freshwater Lakes KBA supports a nationally significant breeding population of Piping Plover, with portions of the existing IBA already designated as critical habitat for this species. Historic IBA boundaries of the Killarney, Dillberry and Leane Lakes site included Leane and Dillberry lakes; Leane last had plovers in 2001, and Dillberry has never had plovers recorded. Redesignation to a KBA would delineate more recent locations of known nesting sites and enhance conservation efforts in these key ecological areas. Proposed new boundaries include several important lakes for the Piping Plover: Reflex (Salt) Lake, Cipher Lake, Killarney Lake, and Freshwater Lake (see Figure 1).

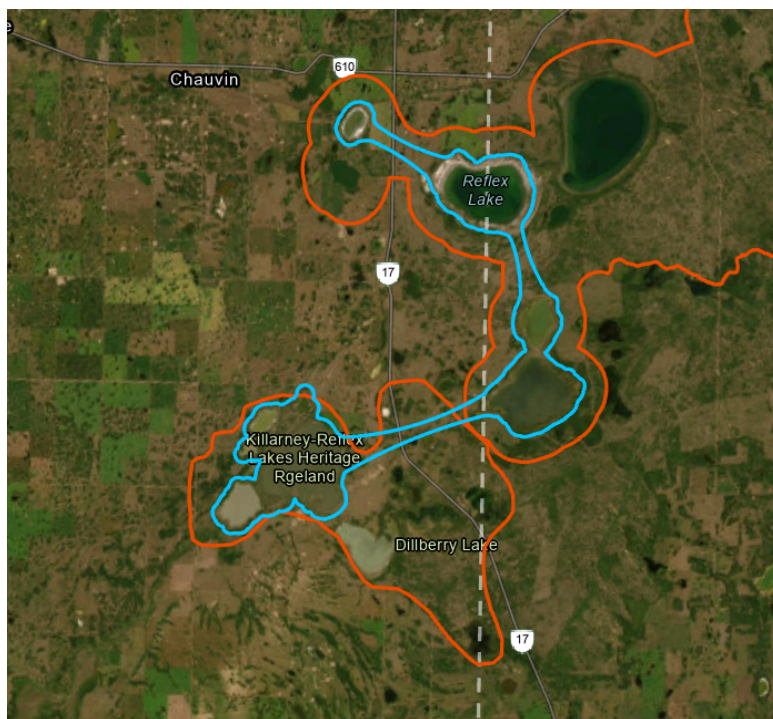


Figure 1. Proposed boundaries of the Reflex, Killarney, Freshwater Lakes KBA (new boundaries in blue, old boundaries in orange).

IBAs and KBAs Defined

IBAs are “places of global significance for the conservation of birds and other biodiversity” ([Birdlife](#)). In Canada, nearly 600 IBAs have been identified as part of a global effort to identify, monitor and conserve the world’s most critical sites for birds and biodiversity ([IBA Canada](#)). Sites identified as IBAs are known to support significant populations of at-risk species and help establish conservation reserves, guide land use decisions, and engage stewards throughout the IBA [Caretaker Network](#). These locations are foundational in determining KBAs,

sites contributing significantly to the global persistence of biodiversity ([KBA Canada](#)). KBAs harbor threatened and geographically restricted biodiversity; have high ecological integrity; support biological processes such as breeding, migration and staging; and/or are irreplaceable ([Birds Canada](#)). KBA data is consolidated into one comprehensive global database, which can be used to determine target areas for stewardship, enhanced management, formal protection and/or other conservation measures ([KBA Canada](#)).

BRWA is the local caretaker of the existing Killarney, Dillberry and Leane Lakes IBA, actively participating in its responsible management and protection of ecological integrity. The IBA and proposed KBA boundaries are located within the Sounding Creek watershed. Local land uses range from private agricultural land to public recreation areas, including Dillberry Lake Provincial Park. This mixed land-use designation makes environmental management dynamic and complex. Increasingly so, once biodiversity and at-risk species management are considered.

Piping Plover Habitat and Population Trends



Adult Piping Plover. Photo credit: Alberta Conservation Association

The Piping Plover is one of many important bird species that migrate to and nest within this region (see Figure 2 for the species distribution map). In Alberta, Piping Plovers arrive in early May, and the breeding season lasts through mid-August. These ground-nesting birds are particular about their nesting habitat, often returning to the same areas over several consecutive years. During nesting season, four eggs are typically laid, and they may re-nest if their first nest fails.

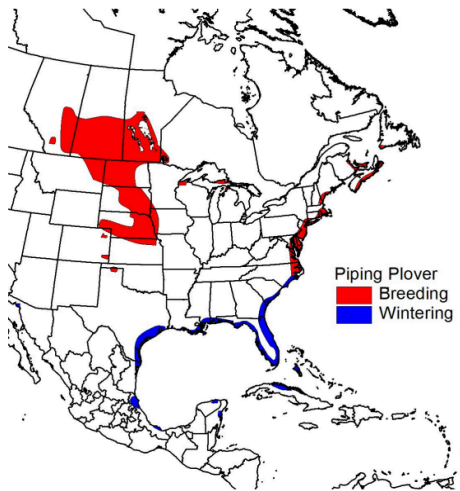


Figure 2. Distribution map for Piping Plover breeding and wintering ranges. Found in the [COSEWIC Assessment and Status Report \(2013\)](#).

Very specific requirements must be met for plovers to deem an area suitable for nesting. They prefer rocky, sandy shorelines with wide beaches comprised of a mix of substrates. Beaches must have minimal vegetation coverage. Alkali lakes are their preferred habitat in Alberta, though plovers have also been found at reservoirs and freshwater lakes. Several lakes in the Battle River and Sounding Creek watersheds provide important Piping Plover habitat (see Figure 3).

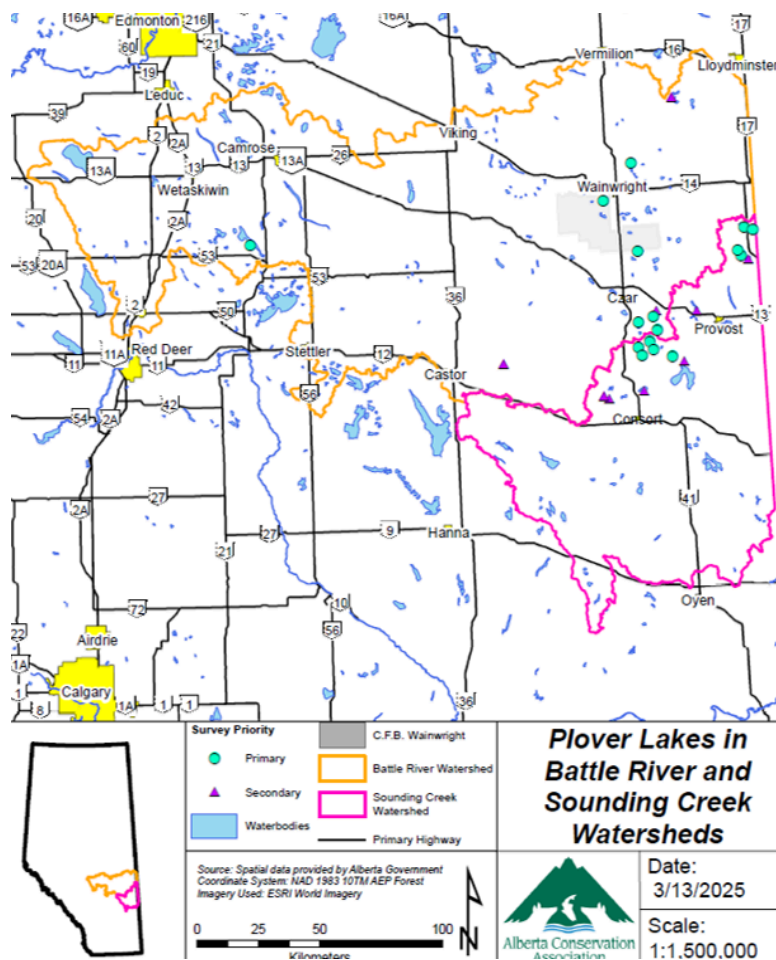


Figure 3. Piping Plover lakes in the Battle River and Sounding Creek watersheds. Map created by Alberta Conservation Association (ACA).

Plover counts have occurred annually in Alberta since 2001, with large-scale recovery efforts beginning in 2002 through the combined efforts of the Alberta Conservation Association (ACA) and the Alberta Government. The plover population has been on a steady decline over the past 15 years and has only recently shown signs of stabilizing (Figure 4). In 2025, 32 mature individuals were reported in the proposed KBA, emphasizing the critical importance of this area for the protection of Piping Plovers.

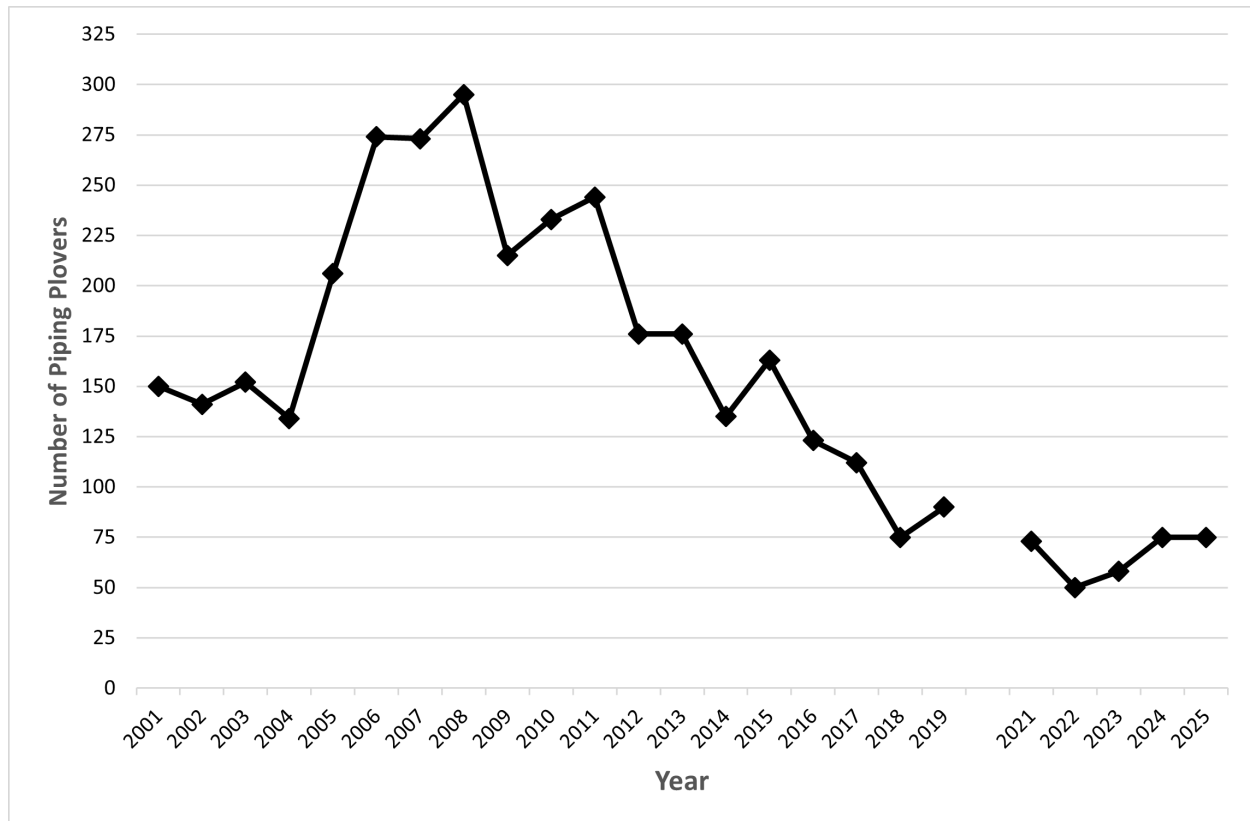


Figure 4. Annual Piping Plover counts in Alberta since 2001; data not collected during 2020 due to the COVID-19 Pandemic. Data provided by ACA.

Piping Plover Threats and Challenges

Ongoing threats and challenges to Piping Plovers are largely a result of predation, human disturbance, and habitat loss and/or degradation. Predation threats are often against eggs and chicks; common predators include foxes, skunks, coyotes, gulls, crows, and other corvids. Human disturbance can be direct (e.g. driving ATVs over nests) or indirect (e.g. distracting birds from nesting or feeding, leaving tire tracks on beaches which can increase vegetation encroachment). Habitat loss and degradation may be attributed to a number of factors, including human disturbance, development, resource extraction, recreational use, grazing livestock, and declining water levels (see Figure 5 and 6). Severe weather events can also impact Piping Plovers. Changing precipitation patterns impact water levels in key habitat areas, and fluctuating water levels are important for Piping Plovers. High water levels flood beaches and kill vegetation, then when water levels recede large expanses of unvegetated habitat are exposed. However, prolonged drought or sustained high water can reduce breeding habitat, either through vegetation encroachment during drought or through persistent flooding of beaches. Migratory patterns and food availability are also a concern due to increasing variability in annual weather patterns ([COSEWIC](#)).



Figure 5. Vegetation encroachment exacerbated by human disturbance (ATV tracks). Photo credit: ACA



Figure 6. Livestock impact sensitive shoreline soils. Partnering with landowners to put up fencing helps protect Piping Plover habitat from disturbance. Photo credit: ACA

Taking Action to Support Piping Plovers

In the face of looming threats, caretaker activity is increasingly important. The [Caretaker Network](#) is a major pillar of the IBA program. This network is comprised of on-the-ground volunteers who are local to, and knowledgeable about, their conservation areas. Caretakers monitor their IBA for changes and/or threats to ecological integrity, documenting any concerns and working to have them resolved ([IBA Canada](#)). These individuals are stewards of the land, taking action to care for and maintain ecosystem and biodiversity health. Caretaker activities vary depending on site characteristics and interests but can include: collecting bird data; population counts; conducting site assessments - monitoring, reporting on threats; habitat restoration; raising community awareness; and other stewardship efforts ([IBA Canada](#)).

Beneficial land management practices support conservation of key ecosystems and species-at-risk like the Piping Plover. Land use practices have a profound impact on surface water quality because contaminants may be carried from upland areas into water bodies ([BRWA](#)). Community engagement and outreach are crucial components in developing effective land management practices. Many key ecosystems are located on privately owned land across the watershed, and as such, it is paramount that conservation efforts are collegial. Many steps can be taken to improve watershed health and protect critically important ecological habitats.

- 1) In agricultural settings, limiting livestock grazing and activity in and around plover habitats is important for habitat health and maintenance, especially during the plover's breeding season (early May through mid-August). Livestock hoof prints can alter the characteristics of the habitat, disrupt breeding behavior, trample chicks and eggs, and leave hoof prints deep enough to trap chicks. Dugouts near shorelines may also accelerate vegetation encroachment and impact nesting beaches. Landowners have been very proactive in helping support the protection of key Piping Plover habitat in Alberta.
- 2) Habitat enhancement and protection are critical. Reducing human disturbance in and around plover nesting sites can increase hatching success, which is especially important from May through July. ATV disturbance is a particular concern for nest survival and hatching success.

Partners in Conservation



Piping plover monitoring at Killarney Lake, 2025

Many partner organizations work to help conserve and maintain the biodiversity of important ecosystems. Some key players in local conservation efforts include:

- 1) [Bird Life International](#) is a global alliance of non-governmental organizations (NGOs) dedicated to the conservation of birds, their habitats and diversity. They are an official source of information for birds on the International Union for Conservation of Nature's list of threatened species.
- 2) [Birds Canada](#) is known as "Canada's voice for birds," our only national organization dedicated to bird conservation. This organization believes that [education is key](#) for the understanding, appreciation and conservation of birds in Canada.
- 3) [Nature Canada](#) was founded in 1939 and is one of the oldest nature conservation charities in Canada. The organization has aided in more than 110 million acres of parks and wildlife protection over the past 80 years.
- 4) [Nature Alberta](#) is an NGO dedicated to increasing nature appreciation and conservation in Alberta. Founded in 1970, it is heavily involved in outreach programs and education.
- 5) [Alberta Conservation Association](#) is an NGO founded in 1997 that works to conserve, protect, and enhance fish and wildlife populations and their habitats. Their efforts have been instrumental in supporting Piping Plover monitoring and management in Alberta.
- 6) [Battle River Watershed Alliance](#) is an NGO founded in 2006, dedicated to community education and outreach, watershed management, and stewardship. Their [State of the Watershed Report](#) provides a thorough overview of ongoing efforts and concerns.
- 7) Local landowners. Without the support of landowners, maintaining the biodiversity of important ecosystems would not be possible.

Many opportunities exist to join in conservation efforts and help conserve and maintain ecological integrity within our watersheds. Please see the following sources for more information on environmental conservation, such as [bird counts and banding](#), [education programs](#), and caretaking activities. The [Caretaker Network](#) has multiple resources available.

Thank you to ACA for their review of the content of this blog, and for inviting BRWA staff to join their Piping Plover monitoring efforts in Spring 2025.