

FORTIS ALBERTA

Avian Protection Plan

2026



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Corporate Commitment

At FortisAlberta it is our commitment to provide reliable electrical service to its customers in an environmentally responsible manner. FortisAlberta's environmental performance is demonstrated daily, from choices made in our supply chain for wooden poles to our robust release response program, FortisAlberta is committed to continual improvement and continually evaluate our performance.

FortisAlberta's official Environmental Commitment Statement can be found on the Company's website at this link to the [Environmental Commitment Statement](#).

1.0 Introduction

FortisAlberta is committed to providing electrical service to over 615,000 residential, farm and business customers in Alberta. FortisAlberta serves more than 240 communities with more than 133,000km of distribution power lines. The service territory includes three national parks, several provincial parks and recreation areas, twenty First Nations and 2 Metis settlement lands, three military bases and various provincial and federal land management agency jurisdictions.

Birds interact with the electrical distribution system in several ways, most notably through collisions, electrical contact and nesting behavior. FortisAlberta's Avian Protection Plan designed to reduce impacts to birds and increase the reliability of the electrical grid.

1.1 Scope

The purpose of an Avian Protection Plan (APP) is to provide the framework for a utility specific program that will reduce impacts on raptors and migratory birds, minimize operational risks and ensure compliance with environmental legislation. FortisAlberta's APP is designed specifically to the location and geographic extent to which our utility operates and the attributes of our facilities. The benefits of an APP are enhanced service reliability, reduced bird mortality, favourable public perception and the maintenance of positive working relationships with regulatory agencies.

This Avian Protection Plan ("the Plan") places emphasis on preventing avian electrocution and collision mortality by identifying high-risk areas and prioritizing remedial actions based on the combined level of biological and engineering risk. The Plan provides guidance for the consideration of raptors and migratory birds that nest on or proximate to FortisAlberta's facilities, increasing species protection and ensuring due diligence with wildlife related legislation. Avian electrocution risk assessments are used to provide a proactive approach to avian electrocution issues while reducing the number of power outages attributed to bird interactions with power lines. Additionally, the Plan includes a review of construction standards to ensure that avian-safe considerations are incorporated into new designs where possible.

1.2 Principles of an APP

The Plan is voluntary and was developed based on the principles outlined in the Avian Protection Plan Guidelines, prepared by Avian Power Line Interaction Committee (APLIC) and the U.S. Fish and Wildlife Service (2005). Although a similar document standard has not been published in Canada to guide avian protection for electrical utilities, the APLIC Guidelines represent a universal tool kit that can be applied

to FortisAlberta's business. Several of APLIC's principles will be used to guide and implement this Plan both to align with a recognized industry standard and to complement FortisAlberta's practical focus on asset management and reliability initiatives.

1.3 Goals of the Plan

FortisAlberta has implemented avian protection in the form of perch deterrents, collision deterrents, cover-ups, and artificial nesting platforms for over twenty years. Avian protection efforts are focused on meeting reliability standards imposed by the Alberta Utilities Commission and on reducing customer outages to increase the overall reliability of the distribution system. Ad-hoc avian protection is applied to remove "bird traps" during line patrols and during routine maintenance work. Targeted maintenance programs, such as Bird Proof Main Line Apparatus, focus on main line structures to reduce sustained and multiple customer outages.

The Plan supports practices of avian protection and includes standards that can be applied to existing infrastructure and future installations. Implementation of these standards serves the overall purpose of reducing the potential for unintentional impacts to raptors and migratory birds associated with FortisAlberta's distribution system. The goals of the Plan are to:

- Assist FortisAlberta in compliance with federal and provincial legislation regarding avian species to avoid the threat of penalties and fines
- Aid in the recovery of species at risk by prioritizing mortality reduction measures in sensitive habitats
- Improve service reliability and reduce repair costs by reducing power outages due to avian interactions with the power line
- Identify and mitigate where electrocution and collision mortalities have occurred or have the highest risk of occurring, using risk assessment methodology, to minimize future incidents
- Reduce the potential for electrocution impacts to raptors and other bird species by implementing a mortality reduction program (retrofits, rebuilds, line burial)
- Ensure new distribution line construction implements bird-safe standards

1.4 Implementation of the Plan

A phased approach is necessary to implement the Plan to account for FortisAlberta's vast service territory and relatively dense network of distribution infrastructure. To assist in setting priorities to best meet the goals of the Plan, a coarse scale assessment of FortisAlberta's service territory was conducted. The assessment considered species' status and geographic ranges, number and density of past outages and several social factors including the locations of urban centers, parks and protected areas, and designated habitat areas. Prioritization based on the combination of environmental, economic and social factors ensures that resources are directed where the greatest benefit to both birds and electricity customers is realized.

1.5 Governance of the Plan: The Avian Protection Committee

The Avian Protection Committee serves as FortisAlberta's cross-functional forum for guiding, supporting, and continually improving the implementation of the Avian Protection Plan. The committee brings

together representatives from Environment, Engineering, Field Operations, Asset Management, Training, and external subject matter experts to share updates, discuss challenges, identify opportunities for improvement, and ensure alignment with internal requirements and applicable provincial and federal legislation. Through regular collaboration, the committee promotes consistent communication, advances avian stewardship initiatives, incorporates industry best practices, and supports the effective delivery of programs that reduce avian interactions with electrical infrastructure while maintaining FortisAlberta's commitment to environmental responsibility

2 Justification

2.1 Reliability and Customer Service

Service reliability is a core commitment to customers and one of the key facets of the Company's overall business plan. Birds can have a significant impact on electrical distribution system reliability because utility structures provide attractive locations for perching, nesting, roosting, and hunting. When birds interact with energized equipment, they can create electrical faults that lead to customer outages, equipment damage, and in some cases wildfire ignition. Large raptors are particularly susceptible because their wingspans can bridge energized components and grounded hardware, resulting in electrocutions and power interruptions. Avian-related outages are often concentrated during migration and nesting seasons when bird activity near infrastructure increases.

FortisAlberta will continue to make investments that improve service reliability in the communities the Company serves. Weather events and bird interactions with power lines continue to represent the greatest proportion of outages.

2.2 Legal Background

The voluntary implementation of an avian protection plan supports compliance with the *Migratory Birds Convention Act*, the *Species at Risk Act* and Alberta's *Wildlife Act*. Noncompliance with these acts and/or failure to take reasonable measures to avoid impacting avian species during construction, operation, and maintenance of an electrical distribution system may result in fines and other penalties.

2.2.1 Migratory Birds Convention Act and Regulations

The *Migratory Birds Convention Act* (MBCA) protects the nests, eggs, and individuals of most migratory birds in Canada except for rock dove, European starlings, house sparrows and other non-indigenous birds. Birds not falling under federal jurisdiction within Canada include grouse, quail, pheasants, ptarmigan, hawks, owls, eagles, falcons, cormorants, pelicans, jays, and kingfishers.

Industries across Canada have a growing concern with respect to prohibitions under the Migratory Bird Regulations (MBR) pertaining to the destruction or disturbance of nests and eggs. Electrical distribution and transmission utilities are potentially exposed to prosecution and penalties under the MBR in instances where the nests, eggs, and young of migratory birds are accidentally impacted. This inadvertent disturbance, destruction, impact, removal or hunting of nests, eggs, and young or adult migratory birds has been termed "incidental take" by Environment and Climate Change Canada (ECCC).

Currently, there is no legal mechanism available to authorize via a permit or exemption the incidental take of individuals, nests or eggs of migratory birds that may occur because of industrial activities (Environment Canada 2011). To maintain compliance with prohibitions in the current MBR, ECCC provides recommendations to avoid potentially destructive activities during key nesting periods and to minimize or mitigate impacts on nests. Any disturbance to nests or eggs, whether intentional or unintentional, and regardless of the scale of the activity, the level of potential impacts on bird populations, or the nature of mitigation measures taken, would constitute an offense. These offenses are considered strict liability offenses, meaning that a corporation can defend itself by proving that all reasonable steps were taken to avoid or mitigate disturbance or destruction of the nests and eggs of migratory birds. The Canadian Electricity Association has developed a beneficial management standard to assist utilities in creating programs to reduce the risk of incidental take.

2.2.2 Species at Risk Act

The federal *Species at Risk Act* (SARA) provides protection to species designated as endangered, threatened or extirpated. The Act provides for two types of protection; a basic prohibition against killing or harming the species and its residence and a separate prohibition protecting critical habitat.

SARA applies in the first instance to federal jurisdiction species, including aquatic species and migratory birds, wherever they occur in Canada. SARA protection for all other endangered, threatened and extirpated species may apply automatically to private and Crown lands if protection provided under provincial or territorial legislation is deemed inadequate and emergency orders or other 'safety net provisions' are invoked.

In the context of an APP, a person, including a corporation, is prohibited from killing or harming a listed bird and from damaging or destroying a listed bird's nest. Intentional or unintentional death, injury, disturbance or destruction would constitute an offense. These offenses are considered strict liability offenses, meaning that a corporation can defend itself by proving that all reasonable steps were taken to avoid or mitigate the death, injury disturbance or destruction of a listed bird and its nest. Birds listed under SARA that occur in Alberta are summarized in Table 1 (S.3.1.4)

2.2.3 Wildlife Act

Most birds not offered protection under the MBCA, including raptors, are protected under Alberta's *Wildlife Act*. The Act and regulations prohibit a person, including a corporation, from willfully molesting, disturbing or destroying an individual, house, nest, or den of prescribed wildlife at prescribed times. This prohibition includes the nests of endangered and threatened birds, raptors, upland game birds, all birds protected under the MBCA and nest of birds in wildlife or game bird sanctuaries.

3 Species and Areas of Management Concern

Of the 437 species on the Official List of the Birds of Alberta (Royal Alberta Museum, 2026) relatively few require special management around electric utility structures, outside of the utility demonstrating due diligence under relevant provincial and federal wildlife legislation. Those that do are presented below. In

the same manner, FortisAlberta's service area is broad and crosses a wide range of habitat types. There are some that are more sensitive and require more specific management than others. These are discussed here in further detail.

3.1 Species of Management Concern

3.1.1 Raptors

Raptors, or birds of prey, which include hawks, owls, eagles, falcons, osprey, and usually, vultures, are a key group of management concern for FortisAlberta. They are highly susceptible to electrocution mortality because of a combination of their large body size, and their tendency to use distribution power poles for hunting, resting, feeding, and nesting, and other purposes. This, combined with their legal protection, can present some unique challenges for FortisAlberta. However, raptors in general, and more specifically, their use of power lines, have been well-studied, and this collective body of knowledge can be applied to provide effective management solutions.

3.1.2 Greater Sage Grouse

Greater sage grouse generally have strong avoidance responses to distribution power lines as the poles create vertical structures in otherwise open sagebrush landscapes. These structures provide perches and nesting opportunities for predators such as ravens and raptors, increasing perceived predation risk and often reducing sage-grouse use of nearby habitat. Consistent with this, FortisAlberta's sage-grouse habitat reports note that powerline removal improves habitat by eliminating vertical structures that grouse avoid and by reducing predator perching opportunities; consequently, pole removals and relocations have been used as mitigation measures within protected sage-grouse habitat areas.

3.1.3. Other Species of Management Concern

Ducks, geese, swans, pelicans and other water birds: These are the birds most likely to collide with power lines. This is especially prevalent with power lines that are located over or near lakes, ponds, rivers, wetlands, and other waterbodies, or between wetlands and feeding areas (e.g., agricultural fields) where birds make regular flights, particularly at dawn and dusk.

Ravens: Ravens are often involved in avian incidents on FortisAlberta's infrastructure. Ravens are very large (approximately the same size the largest owls in Alberta), often build nests on power poles, and are relatively curious and intelligent, leading them to behave differently around power poles than other birds. They also tend to congregate in large groups.

Nesting Birds: Any nests built on or near FortisAlberta's infrastructure may require management if nesting activity conflicts with safe and reliable operation of the service. Examples include osprey or red-tailed hawk nests on power poles, woodpeckers nesting in power poles, ground-nesting birds in the right of way, or songbird or other nests in trees in a planned right of way. FortisAlberta has developed a best practice for nest management (Section 6).

3.1.4. Species at Risk

There are twelve birds listed as *Threatened* or *Endangered* under the *Alberta Wildlife Act*; eight of those are also federally listed. There are an additional twelve federally listed *Threatened* and *Endangered* Birds

that occur in Alberta (see Table 1). These species, as well as provincially and federally designated Special Concern species, breed or spend part of their time in FortisAlberta's service regions, and most of them are predominantly found in the Grasslands Natural Region.

While all species at risk must be considered in the full spectrum of FortisAlberta business, a handful of *Endangered*, *Threatened*, and *Special Concern* species are at a higher risk of direct mortality through electrocution and collision. Specifically, electrocution risk is higher for ferruginous hawks, peregrine falcons, and short-eared owls, while collision risk is higher for whooping crane and trumpeter swans, relative to other species.

Table 1: Provincially and federally¹ designated Endangered, Threatened and Special Concern Birds occurring in Alberta as of December 2025.

Species	Provincial Status ²	Federal Status ³	Risk of Direct Mortality ⁴	Predominantly Grasslands Species
Barn Swallow	SC	TH-1		
Bank Swallow	NA	TH-1		
Barred Owl	SC	NA		
Baird's Sparrow	SC	TH-1		
Bobolink	NA	TH-1		
Black Tern	SC	NA		
Buff-breasted Sandpiper	NA	SC-1		
Black-throated Green Warbler	SC	NA		
Black Swift	NA	EN-1		
Burrowing Owl	EN	EN-1		•
Canada Warbler	NA	TH-1		
Cape May Warbler	SC	NA		
Chestnut-collared Longspur	NA	EN-1		
Common Nighthawk	SC	SC-1		•
Eskimo Curlew	NA	EN-1		
Evening Grosbeak	SC	SC-1		
Ferruginous Hawk	EN	TH-1	•	•
Golden-winged Warbler	TH	TH-1		
Greater Sage Grouse	EN	EN-1		•
Harlequin Duck	SC	NA		
Horned Grebe	SC	NA		
Least Tern (interior)	EN	NA		
Loggerhead Shrike	SC	TH-1		•
Long-billed Curlew	SC	SC-1		•
Mountain Plover	EN	EN-1		•
Nelson's Sparrow	SC	NA		
Olive-sided Flycatcher	SC	SC-1		

Peregrine Falcon	TH	SC-1	•	
Piping Plover	EN	EN-1		•
Prairie Falcon	SC	NA	•	•
Rusty Blackbird	SC	SC-1		
Sage Thrasher	NA	EN-1		•
Short-eared Owl	SC	SC-1	•	•
Sprague's Pipit	SC	TH-1		•
Thick-billed (McCown's) Longspur	TH	TH-1		•
Trumpeter Swan	TH	NA	•	
Western Grebe	TH	SC-1		
White-winged Scoter	SC	NA		
Whooping Crane	EN	EN-1	•	
Wood Thrush	SC	TH-1		
Yellow Rail	SC	SC-1		

¹ As designated by COSEWIC; COSEWIC lists are updated biannually.

² As designated by ASRD. "EN" (*Endangered*) and "TH" (*Threatened*) species are listed as such under the provincial *Wildlife Act*. "NA" is applicable to species that are not listed under the Alberta *Wildlife Act*.

³ "EN" = *Endangered*; "TH" = *Threatened*; "SC" = *Species of Special Concern* as determined by COSEWIC; "1" and "3" refer to the schedule under which they are currently listed in the SARA. "N/A" = Not applicable, species is not designated as *Endangered*, *Threatened* or *Special Concern*

⁴ Indicates whether bird demonstrates relatively high use of power poles, or has higher relative likelihood of collision

By prioritizing mitigation work in ferruginous hawk core habitat and marking lines near wetlands and food sources, FortisAlberta's APP directly supports the objectives and strategies of Alberta's recovery plans for these species. (Alberta Ferruginous Hawk Recovery Team 2009).

3.2 Areas of Management Concern

3.2.1 Broad scale

Native Prairie: Southeastern Alberta is the most wildlife-sensitive area within FortisAlberta's service territory, affecting operations in two main ways.

First, much of the native prairie in the Grasslands Natural Region has been converted to agricultural land over the past century. As a result, this region now contains the highest density of *Endangered* and *Threatened* species in Alberta, requiring additional care during route planning, construction, and maintenance.

Second, grasslands provide few natural perches. As a result, power lines strongly attract eagles, hawks, and other raptors, increasing the risk of electrocution and raptor-related outages compared with forested service areas.

Migration Corridors: Alberta lies within the “Central Flyway”, which extends from southeastern Alberta northwest across much of FortisAlberta’s service area. The eastern edge of the “Pacific Flyway” also follows the Rocky Mountain foothills through western portions of the service territory.

Thousands of birds move through these corridors during spring and fall migration, with numbers typically highest in fall when young birds are also migrating. During these periods, avian-caused outages, disturbances, and collisions often increase, particularly around wetlands used as staging areas.

Natural Landscape Funnels: Some landscape features concentrate bird movement during migration or daily travel, especially when features run north to south. These include the eastern slopes of the Rockies, large valleys in hilly or mountainous terrain, coulees, river valleys, and the edges of large lakes. Power lines that cross these features may face higher risks of collision and electrocution.

3.2.2 Fine scale

Knowledge of certain habitat features (Table 2) that attract wildlife can assist with planning FortisAlberta’s business, including new routing, application of electrocution and collision mitigation, and construction on a fine scale. FortisAlberta maps the nesting locations of species known to return to the same nest sites (osprey, ferruginous hawks) and tracks these locations for avoidance in when siting new projects.

Table 2: Examples of fine scale habitat features that attract certain species or family groups.

Species/Families	Habitat features
Osprey (and bald eagles, to a lesser extent)	Fish-bearing water bodies
Ferruginous hawks	Grasslands, power lines in treeless areas
Greater sage grouse	Mixed grasslands, silver sagebrush, open fields
Waterfowl and waterbirds	Wetlands, agricultural fields adjacent to wetlands

4 Avian Use of Electrical Distribution Structures

4.1 Causes of Avian Mortality

Raptors, ravens, and other birds have been utilizing power poles since they were first built in the 1800s. Avian collision was first reported in 1876 (Coues 1876), while electrocution of eagles were reported at least as early as the 1920s (Hallinan 1922). Birds would not use power poles without some derived benefit; the structures allow birds an elevated location from which to hunt, feed, rest, seek shade or shelter, and in some cases, nest. The value of power poles to birds is even more pronounced in ecosystems with few natural perches (e.g., native prairie).

Certain features in the environment serve as attractants to birds, drawing them in to available perches, such as power poles. Factors that draw raptors to FortisAlberta’s power poles include:

- Rural areas (lower density human infrastructure)
- Food supply – ground squirrels, small mammals, fish, waterbirds, and roadkill
- Heterogeneous habitat – boundaries or edges between two land uses (e.g., native prairie, cropland, wetland, roadsides, etc.)
- Lack of available natural perches (grasslands, other relatively open prairie)

4.1.1 Electrocutions

Electrocution occurs when a bird simultaneously contacts two energized conductors or other energized equipment causing a phase-to-phase fault, or when it contacts an energized part of the pole and a grounded component, such as a ground wire, transformer box, or uninsulated guy wire, causing a phase-to-ground fault. Some electrocutions cause outages, but incidents on tangent and dead-end structures often trip the system only briefly before it resets automatically and therefore may not appear in outage data. Although electrocution can occur on transmission lines, it is much more common on lower-voltage distribution lines where energized components are spaced more closely together. Environmental and biological factors that influence electrocution risk are summarized in Table 3.

Table 3: Conditions that increase the likelihood of electrocution and collision.

Factor	ELECTROCUTION	COLLISION	Mitigation Used
Age	Juveniles	N/A	Bushing covers, extended crossarms, perch diverters, nesting platforms
Sex	Females	Males, if during breeding season	No gender specific mitigation
Time of year	Nesting season (April – August)	Breeding , moulting and migration	Nest clearing, flight deterrents, perch deterrents, nesting platforms
Time of day	Primarily dawn/dusk for diurnal birds; night for nocturnal species	Dawn and dusk	Flight deterrents have low-light visibility enhancements
Flocking behaviour	N/A in Alberta	Large groups travelling together	Flight deterrents, routing & siting
Topographical Placement	Has the most commanding view of the landscape (usually the highest pole)	Power line crosses perpendicular to linear migratory corridor	Routing & siting, nesting platforms, flight deterrents

Weather	Inclement conditions (wind, precipitation)	Inclement conditions (wind, fog, precipitation)	Flight deterrents have low-light visibility enhancements
Habitat	Open areas with few trees (grasslands, prairie);	Within 500 m of high bird use areas (wetlands - lakes, reservoirs, rivers and streams)	Flight deterrents, perch deterrents, nesting platforms
Food Availability	Healthy supply of prey (small mammals, birds, etc.)	Near feeding areas (wetlands, conservation areas, grain fields, garbage dumps, etc.)	Flight deterrents, perch deterrents, nesting platforms
Line Placement	Rural areas; especially where two land uses meet (e.g. crop & native prairie)	Intersecting feeding, breeding or resting areas; line not obscured by vegetation.	Routing & siting, nesting platforms, flight deterrents
Vegetation	Power poles higher than surrounding trees	Conductors above tree height	Flight deterrents, perch deterrents, nesting platforms

Understanding these risk factors, FortisAlberta's construction standards emphasize designs that maximize conductor separation or use insulating cover-up on poles in open habitats.

4.1.2 Collisions

Power line collisions usually involve ducks, geese, and other heavy-bodied waterbirds such as swans, herons, grebes, and pelicans. While the issue is more prevalent on transmission lines, collisions with distribution lines, especially those near wetlands, do occur and can have severe impacts on a localized scale. The Alberta Trumpeter Swan Recovery Plan 2012 – 2017, found that the primary cause of decline in trumpeter swans, a provincially-listed *Threatened* species, is power line collisions with distribution lines. Risk is especially high in situations where a distribution line intersects two feeding areas, such as a wetland and an agricultural field, where birds make flights back and forth several times throughout the day, and often during low light conditions (dawn and dusk). A summary of factors that influence the incidence of power line collision is shown in Table 3, above.

Mitigation techniques such as bird flight diverters can substantially reduce collisions and are implemented where required by legislation or in identified collision areas.

4.1.3 Bird Nesting

With a vast network of infrastructure crossing through a wide variety of habitats, birds inevitably nest on, in, or near FortisAlberta's system, and impact many areas of the Company's business. The most frequent avian issue for FortisAlberta is active nest management. Various raptors regularly target distribution poles for nesting, especially those with double crossarms, as these poles make an attractive base for building nests. This is especially true of those power lines near fish-bearing waterbodies where osprey frequent. Osprey often create bulky nests that can threaten the integrity of FortisAlberta's system and the birds themselves. FortisAlberta also frequently encounters nests of other species on its infrastructure (including woodpecker nests in wooden poles and hawk nests on transformers).

FortisAlberta implements nest removals in strict accordance with MBCA/MBR allowances and provincial permits. Any removal of nests will occur in compliance with federal regulations and FortisAlberta's best operating practices which have been updated to reflect the 2022 Migratory Birds Regulations.

5 Electrocution & Collision Risk Assessment

5.1 Construction Standards Assessment

Since 1981, APLIC, a U.S. based consortium of utility industry members from the U.S. and Canada, wildlife management agencies, conservation groups, and vendors, has recommended that utilities provide 60" (1 524mm) of horizontal spacing and 40" of vertical spacing among energized components, and between energized components and grounded components for power lines 60kV or less (Olendorff et al. 1981; APLIC 2006). If these clearances cannot be met by framing alone, APLIC recommends the use of cover up specifically designed to prevent avian contacts on power systems.

Typically, electrocutions are more prevalent on equipment structures with minimal clearances such as transformers, overhead to underground riser poles, and cutout structures which are typically reflected in outage data. Electrocutions on dead-end and tangent structures, particularly with eagles, is not uncommon, however these interruptions are usually automatically reset by the system and are thus not reflected within utility outage data.

In keeping with the goals of the APP, an assessment of FortisAlberta's *Distribution Structure Manual 2011* was completed to determine which structures required further avian protection to meet APLIC's standards (Kemper 2011b).

Avian protection in the form of bushing covers, lightning arrestor caps, guy links, and longer crossarms have been added to the standards in recent years. However, potential contact points were identified on several structures. This desktop assessment was completed for electrocution risk only (not collision; see subsequent section).

5.2 Field Risk Assessment

5.2.1 Justification

The purpose of a field Risk Assessment (RA) for electrocution risk is to determine which structures pose the most immediate risk to raptors and to FortisAlberta's system, such that they can be prioritized for remediation. The intent is not to assign an electrocution risk or priority to every structure in Fortis' distribution system but to provide a snapshot in time that uses the best information available at that time to inform the Company of relative risk.

It is recognized that all structures that physically lack the appropriate clearances to prevent raptor electrocution pose some degree of risk to birds. However, from a mitigation standpoint, it is not cost effective or necessary to retrofit all existing FortisAlberta structures. Alternatively, attempting to narrow the high priority structures based on configuration alone would result in a list of thousands of poles that would potentially require mitigation in the short term. The purpose of the RA is to single out which poles or areas pose the highest, or most immediate, risk to raptors and to FortisAlberta's system, so that they receive priority for mitigation. These poles are identified by incorporating data on past outages, land use, proximity to nesting raptors, local topography, and evidence of avian use of the pole.

5.2.2 Field Methods

Field investigations identify specific poles determined to have a higher risk of an avian-caused outage and/or electrocution mortality. Data are collected on biological, engineering, and environmental features at each site, and specific recommendations are made on avian protection measures needed to ensure poles meet avian protection standards set out by APLIC. Individual poles identified in the field were assigned a priority based on the following:

- Priority 1 or 2: Highest risk poles identified through field review.
- Priority 3: Poles identified through pattern analysis that require longer-term mitigation.
- Priority 4: Equipment poles requiring mitigation as part of a longer-term mitigation plan.

While the focus of the RA is on electrocution risk, an assessment of collision risk is also included and focuses on power line orientation in relation to surrounding habitat features. More details on methods used can be found in Kemper (2011a).

5.2.3 Risk Assessment Priorities

FortisAlberta's Risk Assessments are conducted using a phased approach to assess the 133,000 kilometers of distribution power line and over one million structures encompassed within the service territory. A field RA is being focused in areas that experience pockets of bird-related outages, or an overall high count of bird caused incidents. Individual service points are prioritized for field surveys based on the consideration of four main criteria; the occurrence of species of management concern, previously documented avian mortalities, presence of highly suitable raptor habitat, and the five-year average count of past outages. Final reports detailing methodology, approach and results will be included under separate cover for each service point. Field results, specifically individual structures and

recommendations for mitigation will be entered into FortisAlberta's EPOCH field software to prioritize and align remedial work with pre-existing maintenance programs.

5.3 Electrocution & Collision Mitigation

FortisAlberta uses a variety of approved products to minimize risk of electrocution and collision to birds that interact with its infrastructure. This includes insulative covers, nest deterrents, and perch deterrents, extended crossarms and conductor markers.

6 Nest Management

Issues with bird nesting can come up during any stage of FortisAlberta's business, including, but not limited to:

- Finding nests of species at risk during route selection for new construction;
- Working within Alberta Environment and Protected Areas guidelines for timing of construction or maintenance to avoid disturbing birds during critical breeding times;
- Finding active nests on FortisAlberta's infrastructure in the spring or late summer;
- Woodpecker nests excavated from FortisAlberta's poles; and
- Finding ground-nesting birds in the power line right-of-way.

The legal protection of bird nests through the *Species at Risk Act*, *Migratory Birds Convention Act* and the *Wildlife Act* (see Section 2.2) warrant special management protocols for birds nesting in, on, or in very close proximity to, FortisAlberta's infrastructure. FortisAlberta has a set of internal guidelines for when and where nest surveys are required, timing restrictions around construction and maintenance activities, and protocols for dealing with active nests.

Each year, FortisAlberta power line technicians encounter several osprey nests or nest starts that pose serious risks related to reliability, fires, public perception and bird electrocutions. Specific guidelines for the removal of problem nests, siting and placement of nesting platforms and application of nest deterrents, are completed under the guidance of the Avian Protection Plan and in conjunction with FortisAlberta's retained contract avian biologist.

7 Planning New Distribution Right of Ways

FortisAlberta's standard practice is to site distribution power lines parallel to existing linear disturbances whenever possible. This approach supports the principles of integrated land management and represents capital and operating costs savings from reduced right-of-way clearing. Environmental risks are often reduced or entirely mitigated at the outset of a project by avoiding cross country or green field routing.

8 Incident Reporting

There is currently no regulatory mechanism in Alberta to guide the reporting of avian mortalities that result from interactions with power lines. FortisAlberta voluntarily reports known raptor electrocution mortality to the local Fish and Wildlife Division where the incident occurred.

Outages caused or suspected from bird interactions are entered under the cause “birds or animals”. Information that must be entered is the date, time, approximate location of the fault and the faulty component. Documenting bird species mortalities supports continual improvement of the risk assessment process by identifying problem areas or high risks associated with species of management concern; further, it provides feedback on the success of mitigation efforts to date.

9 Communications

9.1 Training and Awareness

To effectively implement this plan, training and awareness will be incorporated into the following:

- Corporate messaging to enhance general employee awareness;
- Material and standards updates rolled out to Operations by the Distribution Standards team;
- Field training on detailed line patrol and general visual inspection delivered by the Asset Management planning team;
- Capital Delivery teams receive training for increased awareness of bird related issues when siting;
- Environmental training and awareness of the APP and Operational Control Documents; and
- Environment, Land and Forestry related training sessions for Capital Delivery teams.

9.2 Stewardship

FortisAlberta is proud of its multi-year partnership with the Alberta Birds of Prey Foundation. 2026 marks twenty years of this partnership where a \$50,000 per year financial commitment has helped offset the cost of operating and expanding the facility located in Coaldale, Alberta. Educational and outreach programs delivered from this partnership highlight FortisAlberta’s commitment to environmental stewardship and demonstrate the value of avian protection planning to customers and stakeholders.

As part of FortisAlberta’s commitment to sustainability, greater emphasis is placed on projects and initiatives related to land use and biodiversity. Wildlife and habitat stewardship opportunities, both completed and planned, are summarized in Table 4, below.

Table 4: Summary of recent wildlife and habitat stewardship initiatives supported by FortisAlberta.

Year	Agency or Group	Stewardship Activity
2010	Alberta Environment and Sustainable Resource Development	Fish and Wildlife Division – installed 2 nesting platforms for ferruginous hawk on private lands near Dunmore
2010	Alberta Environment and Sustainable Resource Development Alberta Conservation Association	Project Resting Swan – line burial adjacent to trumpeter swan staging wetland
2011	Eagle Lake Campground	Bat Houses at Eagle Lake Campground
2011	City of St. Albert	Big Lake – installed line markers on underbuilt power line that spans confluence of Sturgeon River and Big Lake
2012	Alberta Environment and Sustainable Resource Development	Sage-grouse Recovery – invest in translocation of Greater sage grouse from Montana to augment <i>Endangered</i> Alberta population
2012	Nature Conservancy of Canada (NCC)	NCC – installed 1 nesting platforms for osprey on Nature Conservancy lands in Crowsnest
2013	Alberta Environment and Sustainable Resource Development	FortisAlberta begins streaming live video from an Osprey nest near Exshaw. The artificial nesting platform at this location has been active since the mid-1980s.
2015	Alberta Conservation Association Alberta Fish & Game Association	FortisAlberta installed an artificial nesting platform for ferruginous hawks in support of Operation Grassland Community in the Cardston area.
2016	Medicine River Wildlife Centre	FortisAlberta installs an artificial nesting platform for a bald eagle pair that lost their nest in a serious spring storm. Three fledglings were rescued from the site and relocated to other nests.
2016	Mountain View County Sarcee Fish and Game Association	Three bat boxes were installed at a popular day use area fishing pond near Olds.
2018	Nature Conservancy of Canada Alberta Conservation Association	One artificial nesting platform was installed on a NCC managed property in the Milk River Ridge area.

2019	Beaverhill Bird Observatory Society	Donation to support the activities at the Beaverhill Bird Observatory.
2019	FortisAlberta	Update and renewal of the APP to current standards.
2022	Banff National Park	Fortis replaced and moved an existing osprey platform at the request of the Town of Banff. The nesting pole was moved to a better location for the osprey, and an artificial nesting platform was added to the pole. A bat box was also installed at the base of the pole.
2022	FortisAlberta	An audit conducted by a third party biologist was completed on FortisAlberta service areas where Risk Assessments had been completed previously to ensure bird repairs were being properly installed in locations recommended in the Risk Assessments.
2023	FortisAlberta	Established the APP Committee with a mandate to oversee, guide and improve FortisAlberta's APP by reducing mortality, minimizing bird related outages, ensuring regulatory compliance and advancing stewardship initiatives.
2024	WildNorth	Established partnership supporting avian rescue and rehabilitation. Ten FortisAlberta avian advocates received training to assist with bird rescue and promote avian awareness across service areas.
2024	Fulcrum Air	Completed aerial drone diverter pilot installing bird diverters on long-span river crossings using RPAS technology to reduce bird collisions and improve habitat connectivity.
2024	Lethbridge County Cows and Fish	Donation and installation of two ferruginous hawk platforms on poles to Lethbridge County to promote biological control with local landowners.
2025	Spruce Grove Fish & Game Association	Evaluated and supported community-led raptor habitat enhancement initiatives through discussions regarding a raptor nesting project.
2026	Alberta Birds of Prey Foundation	Celebrated 20 years of partnership supporting raptor conservation, environmental education, and community outreach programs. Event included local schools, municipal leaders, and avian education initiatives.
2026	FortisAlberta	The APP Committee developed a nesting matrix to assist power line technicians in determining next steps when encountering a new nest on a power pole.
2026	FortisAlberta	Update and renewal of the APP to current standards.

10 Conclusion

FortisAlberta's Avian Protection Plan has guided measurable reliability improvements and conservation outcomes over the past decade. By incorporating the specific updates detailed in the Plan, addressing regulatory changes, updating internal data and practices, and reinforcing governance and accountability - the 2026 update of the APP supports compliance by aligning current best practices with corporate reliability metrics to increase system reliability and reduce avian mortality.

Appendix A – Literature Cited

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Appendix B – Common and scientific names of species

Species Common Name	Scientific Name
Bald eagle	<i>Haliaeetus leucocephalus</i>
Barn swallow	<i>Hirundo rustica</i>
Barred owl	<i>Strix varia</i>
Black-throated green warbler	<i>Dendroica virens</i>
Burrowing owl	<i>Athene cunicularia</i>
Canada goose	<i>Branta canadensis</i>
Canada warbler	<i>Wilsonia canadensis</i>
Chestnut-collared longspur	<i>Calcarius ornatus</i>
Common nighthawk	<i>Chordeiles minor</i>
Common raven	<i>Corvus corax</i>
Ferruginous hawk	<i>Buteo regalis</i>
Greater sage grouse	<i>Centrocercus urophasianus</i>
Golden eagle	<i>Aquila chrysaetos</i>
Harlequin duck	<i>Histrionicus histrionicus</i>
Horned grebe	<i>Podiceps auritus</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Long-billed curlew	<i>Numenius americanus</i>
Mountain plover	<i>Charadrius montanus</i>
McCown's longspur	<i>Calcarius mccownii</i>
Olive-sided flycatcher	<i>Contopus cooperi</i>
Osprey	<i>Pandion haliaetus</i>
Peregrine falcon	<i>Falco peregrinus</i>
Piping plover	<i>Charadrius melodus</i>
Prairie falcon	<i>Falco mexicanus</i>
Rusty blackbird	<i>Euphagus carolinus</i>
Sage thrasher	<i>Oreoscoptes montanus</i>
Short-eared owl	<i>Asio flammeus</i>
Sprague's pipit	<i>Anthus spragueii</i>
Trumpeter swan	<i>Cygnus buccinator</i>
Western grebe	<i>Aechmophorus occidentalis</i>
Whooping crane	<i>Grus americana</i>
Yellow rail	<i>Coturnicops noveboracensis</i>