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**Subject: East Coulee Berm (Drumheller) Pre-Construction Survey (Wildlife and Nest Sweep) – N-29-27-18-W4M and S-32-27-18-W4M Drumheller, AB**

## 1 INTRODUCTION

At the request of the Drumheller Resiliency and Flood Mitigation Office (Town of Drumheller), WSP Canada Inc. (WSP) completed a pre-construction wildlife sweep and nesting bird survey relating to construction in N-29-27-18-W4M and S-32-27-18-W4M, near Drumheller, Alberta. The Project area was comprised of two areas, a laydown and the berm along the riverbank (Appendix A).

A wildlife sweep and nesting bird survey was required to support compliance with nesting timing restrictions and/or setback requirements in relation to the Wildlife Act<sup>1</sup> and in consideration of the Migratory Birds Convention Act<sup>2</sup>. The nesting activities of migratory bird species that may breed in the Project area occur within Nesting Zone B4, which is from April 19 to August 29<sup>3</sup>.

Current best practices that will help to achieve compliance with the MBCA and AWA are listed below based on general guidelines from Environment and Climate Change Canada (ECCC)<sup>4</sup> and Alberta Environment and Parks (AEP):

- If clearing and construction activities are proposed during the migratory bird nesting period, qualified avian biologists experienced in migratory bird behavior and conducting migratory bird surveys should conduct a search for evidence of nesting. The survey should consist of a focused

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<sup>1</sup> Province of Alberta (2000). *Wildlife Act*. Revised Statutes of Alberta, 2000. Chapter W-10. Alberta King's Printer.

<sup>2</sup> Statutes of Canada (1994). *Migratory Birds Convention Act*, 1994. Chapter 22. Minister of Justice.

<sup>3</sup> Environment and Climate Change Canada (2018). General nesting periods of migratory birds in Canada. <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html>

<sup>4</sup> Environment and Climate Change Canada (2019). Guidelines to reduce risk to migratory birds. <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html#toc5>

search for birds exhibiting breeding behaviour, such as paired birds, birds carrying nesting material, birds carrying food, or territorial singing.

- If active nests (i.e., nest under construction or constructed, with or without eggs present) are found or suspected to be present based on bird behaviour, then each confirmed or suspected nest location requires a setback distance appropriate to the species. A buffer zone is determined by a setback distance which varies greatly according to the degree of tolerance of the species, previous exposure of birds to disturbance, the level of disturbance and the landscape context. Appropriate setback distances are determined on a case-by-case basis based on the distance at which nesting birds react to human disturbance and expert opinion, which is often used to supplement scientific data. There are two benchmark measurements to determine an effective setback distance. **Alert distance** is the distance at which the bird adopts an alert posture or emits alarm calls. Birds usually perceive humans as potential predators. They may leave their nests in response to being approached, or abort nesting because of stressful situations. **Flush distance** is the distance at which a bird takes flight or moves away from a threat, performs distraction displays (such as feigning a broken wing or sitting down on a non-nesting site to draw attention away from the nest), and/or actively defends the nest. Setback distances should be adjusted to the activities causing the greater amounts of disturbance.
- Setback distance examples provided by ECCC range for different types of birds: 1-5 metre (m) up to 10-50 m or more for most nests of songbirds and other small birds; 10-25 m up to 50 m or more for swallow colonies, and 10-30 m up to 50 m or more for most waterfowl nests. The shorter distances are more reflective of urban backyard birds and the longer distances are more reflective of rural or natural habitats. Construction or work activities may not be conducted within this buffer until young have fledged and left the nest. An avian biologist must complete a second pre-clearing nest sweep to determine that the nest is no longer active, and that no new active nests are present before clearing can occur.
- Raptors and upland game birds are provincially mandated species and are not protected under the MBCA. If active raptor (e.g., owl, hawk) nests are found in areas to be cleared, then each nest location should be buffered by a distance appropriate to the species, following provincial guidance with a minimum buffer of 100 m<sup>5</sup>. Clearing may not be conducted within this buffer until young have fledged. An avian biologist must complete a second migratory bird nesting survey to determine that the nest is no longer active, and that no new active nests are present before clearing can occur.
- Federally listed Species at Risk and COSEWIC listed species may have species-specific timing restrictions which need to be observed. The Canadian Wildlife Service should be consulted in these cases. The *Species at Risk Act* prohibits the killing, harming or harassing of listed species; the damage and destruction of their residences; and the destruction of critical habitat.
- Non-intrusive surveys should be timed to occur before any clearing or construction activities during the migratory bird nesting period. The lowest risk for clearing or construction to cause incidental take of new nests occurs immediately after the nest survey. Birds can establish nests in a matter of days.

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<sup>5</sup> GOA. 2021a. Master Schedule of Standards and Conditions. [updated April 2021]. Available from: <https://open.alberta.ca/dataset/133e9297-430a-4f29-b5d9-4fea3e0a30c2/resource/37d91717-08ab-4998-a13f-ce5c103c0735/download/aep-master-schedule-of-standards-and-conditions-2021-04.pdf>.

- If active nests cannot be avoided, clearing activities should be suspended until after the breeding season is over.

Wildlife sweeps are required to meet the Alberta Master Schedule of Standards and Conditions<sup>6</sup>. A wildlife sweep is to be conducted by a qualified professional as close to the first day of construction as possible to assess the proposed Project area and surrounding site to identify important wildlife features (e.g., nests, dens) that must be avoided during associated activities.

The wildlife sweep was conducted on July 10, 2023, and the nesting bird survey was conducted on July 11, 2023, by qualified personnel (Kylli Morgan, B.Sc., BIT and Jeff Kenny, B.Sc.). Surveys were conducted to identify potential nesting locations and wildlife features within the area of the proposed works. All birds identified during the survey were recorded and behavioral observations were noted to determine breeding status. Habitat identified in the area consisted of a stand of deciduous trees bordered by grass and shrubs along the riverbank and the laydown area.

## 2 RESULTS

### 2.1 WILDLIFE SWEEP

A wildlife sweep was conducted by two qualified biologists on July 10, 2023 between the hours of approximately 11:45 and 16:30, they walked the Project area plus a 100 m buffer around the Project area to search for evidence of wildlife signs (i.e., tracks, scat), sensitive habitat features (e.g., mineral licks, dens, burrows, nests), and wildlife observations (i.e., visual, and auditory observations). Weather conditions were acceptable with a moderate to strong breeze, clear but smoggy skies and temperatures from 28°C to 32°C.

Wildlife signs and features observed during the wildlife sweep are displayed in Table 1. Features showed no sign of activity at time of survey.

**Table 1. Wildlife Signs and Features Observed During the Wildlife Sweep on July 10, 2023**

Wildlife Sign/Feature	Waypoint Number	UTM Zone 12U		Photo Number
		Easting	Northing	
Deer tracks	160	396114	5688583	Appendix A, Photo 2
Deer tracks	161	396076	5688599	-
Inactive burrow	162	395971	5688615	Appendix A, Photo 3
Deer scat	163	396006	5688650	-
Egg	165	395927	5688698	Appendix A, Photo 4
Deer scat	43	395332	5689165	-
Inactive cavities	168	395352	5689164	Appendix A, Photo 10
Old beaver stumps	170	395344	5689127	Appendix A, Photo 11
Beaver tracks	173	395361	5688991	Appendix A, Photo 12

<sup>6</sup> GOA. 2021b. Wildlife Sweep Protocols: Sensitive species inventory guidelines. [updated January 2021]. Available at: <https://open.alberta.ca/publications/wildlife-sweep-protocols-sensitive-species-inventory-guidelines>.

Wildlife observations included savannah sparrow (*Passerculus sandwichensis*), clay-colored sparrow (*Spizella pallida*), vesper sparrow (*Poecetes gramineus*), American robin (*Turdus migratorius*), gray catbird (*Dumetella carolinensis*), Baltimore oriole (*Icterus galbula*), American goldfinch (*Spinus tristis*), house sparrow (*Passer domesticus*), cedar waxwing (*Bombycilla cedrorum*), and mourning dove (*Zenaida macroura*).

## 2.2 NESTING BIRD SURVEY

A pre-construction nesting bird survey was conducted by two qualified biologists on July 11, 2023, between the hours of approximately 05:30 and 10:15. Weather conditions were acceptable for conducting nesting surveys with no precipitation, minimal wind and temperatures of 13°C.

Four active and two inactive nests were identified based on exhibited breeding behaviors associated with maintaining, preparing, or defending an active nesting territory. All observations are summarized in Table 2.

**Table 2. Species Observed during the Pre-Construction Nesting Bird Survey on July 11, 2023**

Scientific Name	Common Name	Provincial Status <sup>7</sup>	Notes
<i>Spizella pallida</i>	Clay-colored sparrow	Secure	Flight capable fledglings observed in laydown area.
<i>Turdus migratorius</i>	American robin	Secure	Flight capable fledglings observed near river bank.
<i>Turdus migratorius</i>	American robin	Secure	<b>Active nest (12U 395674 5688531, EC_NEST01). Adults observed feeding nestlings in the nest. 30m buffer installed.</b>
<i>Troglodytes aedon</i>	House Wren	Secure	Flight capable fledglings observed near river bank.
<i>Turdus migratorius</i>	American robin	Secure	<b>Active nest (12U 395588 5688634, EC_NEST02). Adults observed carrying food. 30m buffer installed.</b>
-	Bird species	-	Inactive stick nest (12U 395338 5689090, EC_IN01)
-	Bird species	-	inactive stick nest (12U 395376 5689148, EC_IN02)
<i>Turdus migratorius</i>	American robin	Secure	<b>Active nest (12 U 395518 5688709, EC_NEST03). Adults observed feeding nestlings in the nest. 30m buffer installed.</b>
<i>Bombycilla cedrorum</i>	Cedar waxwing	Secure	<b>Active nest (12U 395540 5688687, EC_NEST04). Adult observed sitting on nest, likely on eggs. 30m buffer installed. Appendix A, Photo 13.</b>

Incidentals included downy woodpecker (*Dryobates pubescens*), hairy woodpecker (*Dryobates villosus*), black-capped chickadee (*Poecile atricapillus*), clay-colored sparrow (*Spizella pallida*), red-winged blackbird (*Agelaius phoeniceus*), least flycatcher (*Empidonax minimus*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), gray catbird (*Dumetella carolinensis*), blue jay (*Cyanocitta cristata*), house wren (*Troglodytes aedon*), yellow warbler (*Setophaga petechia*), cedar waxwing (*Bombycilla cedrorum*), American goldfinch (*Spinus tristis*) and gull species (*Laridae spp.*).

<sup>7</sup> Alberta Environment and Parks (2020). *Alberta Wild Species General Listing – 2020*. <https://www.alberta.ca/lookup/wild-species-status-search.aspx>

### 3 CONCLUSION

#### 3.1 WILDLIFE SWEEP

No important wildlife features requiring setbacks were observed during the wildlife sweep.

#### 3.2 NESTING BIRD SURVEY

Field surveys confirmed that four active nests are present within the proposed construction site. It is recommended that no clearing activities occur until after the bird nesting window, as proposed work areas could not be fully swept due to dense vegetation along the river and the presence of tall trees inside residential property lines. Biologists often had to resort to observing from a distance with binoculars. The nesting activities of migratory bird species that may breed in the Project area occur within Nesting Zone B4, which is from April 19 to August 29. To minimize risk of disturbing or harming the nests of migratory birds, any work activities that the Town of Drumheller chooses to undertake should occur as soon as possible after the nest survey, which was completed on July 10-11, 2023. Note that work should be stopped if birds become agitated (e.g., flushing from nest, alarm calling, diving at workers).

Pre-construction nesting bird surveys are only considered valid for seven days from the search date, a follow-up nesting bird survey will be required on July 18, 2023. Consultation with Alberta Environment and Parks and Canadian Wildlife Service are required in the event that construction activities are scheduled prior to nest fledging to ensure compliance with the relevant regulations.

If you have any questions regarding the content of this report, please contact Rachael Firminger at +1-403-352-2188 or by email at [Rachael.Firminger@wsp.com](mailto:Rachael.Firminger@wsp.com).

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**Attachments:**  
Attachment A Photo Plate



## CERTIFICATION OF WORK

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The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

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# Attachment A

PHOTO PLATE





**Photo 1: Looking north from the center of the laydown.**



**Photo 2: Deer tracks.**



**Photo 3: Inactive burrow.**



**Photo 4: Bird egg.**



**Photo 5: Looking east along riverbank.**



**Photo 6: Looking east along riverbank.**





Photo 7: Looking east along the berm.



Photo 8: Looking west at vegetation south of berm.

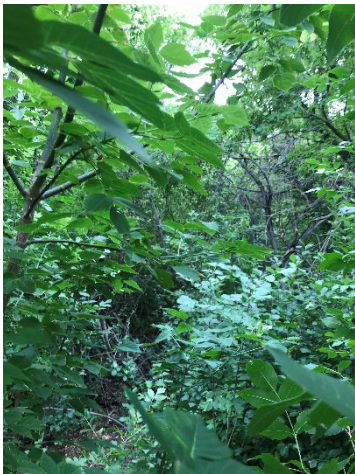


Photo 9: Dense vegetation in riverbank area.



Photo 10: Inactive cavities.



Photo 11: Beaver sign.



Photo 12: Beaver tracks.



Photo 13: EC\_NEST04, active cedar waxwing nest.



Photo 14: AMRO nest buffer.



Photo 15: Bird nest buffer.