2020

Management Plan

Rusty Blackbird (*Euphagus carolinus*)

Department of Fisheries, Forestry and Agriculture

Forestry and Wildlife Branch

Newfoundland Labrador

What is the *Endangered Species Act*?

The *Endangered Species Act* was enacted in 2001 to ensure that species at risk of extinction in Newfoundland and Labrador, as well as their residence and habitat critical to their survival and recovery, receive protection. Furthermore, the *Endangered Species Act* ensures that efforts to recover these species are initiated. This legislation applies to species, sub-species and populations that are native to the province, but does not include marine fish, bacteria, or viruses. It also does not apply to introduced species, except in extraordinary circumstances. The *Endangered Species Act* fulfills the province's commitments to the *Accord for the Protection of Species at Risk*. The *Species at Risk Act*, was enacted in June 2003 as the federal government's contributing piece of legislation to the Accord.

What is recovery?

For species at risk of continued population decline or extinction, such as those listed in the *Endangered Species Act* as endangered, threatened, or vulnerable, recovery is the process by which its population decline is stopped, stabilized, and reversed. This occurs when a threat to the whole population or individuals is removed or reduced. A species is not considered to be recovered, and thereby removed from the *Endangered Species Act*, until its long-term persistence in the wild is secured. It is possible that a species will always be considered rare. This typically occurs when the species is restricted to an extremely unique or uncommon habitat or habitat loss has been extensive. For each species listed as endangered or threatened a recovery team is put in place to oversee the recovery process and write a recovery plan. For each species listed as vulnerable a management plan is written to guide the recovery process.

What is a management plan?

A management plan is developed by staff of the Forestry and Wildlife Branch in conjunction with species experts. It sets the goals and actions deemed necessary to prevent a species from further decline and identifies threats to the species' recovery. Section 24 of the *Endangered Species Act* states that a management plan will identify measures for the conservation of a species and include information that may be prescribed in a regulations made by the minister under subsection 44(2). A management plans are reviewed regularly and updated approximately every five years, if necessary.

What's the next step?

Implementing the plan! Many people work towards implementing the actions outlined in a management plan, including people from municipal, provincial, and federal governments, Indigenous groups, industry, universities, interest groups, and local communities. Each play a significant role in the implementation of the management plan. Success in species conservation and recovery depends on the commitment and cooperation of many different people and requires all responsible jurisdictions, as well as all Newfoundlanders and Labradoreans, to work together to support and implement management plans.

Disclaimer

A species listed as vulnerable under the Newfoundland and Labrador *Endangered Species Act* requires the development of a management plan. These management plans are prepared in cooperation with jurisdictions responsible for the species. Implementation of the goals and actions identified in this document ultimately depends on the ongoing program priorities and budgetary constraints of the participating jurisdictions and organizations. The goals and actions identified in a management plan are based on the best existing knowledge and are subject to modifications resulting from new findings and revised objectives. They do not necessarily represent the official positions of the governmental or non-governmental organizations, or individuals, involved.

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Cover Photograph

Rusty Blackbird in Main River, NL photo credit: Darroch Whitaker.

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Authors

Previous drafts of this plan were prepared by Emily Herdman with updates by Shelley Garland and Bruce Rodrigues (Wildlife Division, Government of Newfoundland and Labrador). The provincial and North American distribution maps were provided by Adam Durocher of the Atlantic Canada Conservation Data Centre. The Newfoundland and Labrador Landbird Recovery Team provided significant input to the development of the management plan.

Acknowledgements

We wish to thank the author and editor of the COSEWIC assessment and status reports on the Rusty Blackbird (*Euphagus carolinus*) in Canada, Carl Savignac and Marty Leonard. Much of the information in this document originates from those status reports and references therein. Members of the International Rusty Blackbird Technical Group have completed most of the more recent research on Rusty Blackbirds and their contributions to our knowledge and understanding of this species have greatly improved this document. Thank you also to P. Thomas, D. Whitaker and T. Chubbs for providing photos included in this document. Although the Newfoundland and Labrador Landbird Recovery Team did not prepare this plan, members provided significant input and advice, for which we are very grateful.

Finally, we would like to acknowledge the contributions of Gordon Parsons who, during his time on the recovery team, provided a great wealth of knowledge of the birds of western Labrador that will benefit species conservation for many years to come and will be missed.

Responsible Jurisdictions

Government of Newfoundland and Labrador

Environment and Climate Change Canada

Parks Canada Agency

Nunatsiavut Government

Executive Summary

The Rusty Blackbird is a medium-sized blackbird. It has been listed as Vulnerable under the Newfoundland and Labrador Endangered Species Act and as Special Concern under the federal Species at Risk Act.

The Rusty Blackbird breeds in forested wetlands in all provinces and territories of Canada, as well as in the northeastern US and Alaska. It is thought to occur irregularly in appropriate habitat throughout Newfoundland and Labrador, though knowledge of distribution is hampered by limited access to more remote areas of the province. This species winters primarily in the southeastern US with the Newfoundland and Labrador population likely migrating to the Atlantic coastal plain.

The Canadian Rusty Blackbird population has undergone a consistent long-term decline, which started as early as the 1920s. More recent data from the North American Breeding Bird Survey have suggested average range-wide declines of -2.77% per year since 1970. Historic declines have been attributed to mortality during blackbird control efforts and loss of wintering habitat. In recent years, loss of appropriate habitat on the wintering grounds has slowed, and in some cases been reversed. As of 2011, the U.S. Fish and Wildlife Service has instituted a permitting process for any control efforts directed at this species and now requires the use of non-toxic shot or bullets for use in all control efforts.

Potential threats to Rusty Blackbirds in Newfoundland and Labrador have not been studied. However, habitat loss or degradation, disease transmission, increased competition with other species, and climate change effects have been identified as potential threats.

The purpose of this management plan is to establish the goals and actions required to ensure the long-term persistence of Rusty Blackbird as a self-sustaining, viable species throughout its current and, where possible, historical range in Newfoundland and Labrador. To this end, the following four goals have been identified:

> **Goal 1.** Increase capacity to collect data and improve data storage methods.
>
> **Goal 2.** Complete research to close gaps in our understanding of Rusty Blackbird demography and ecology in Newfoundland and Labrador.
>
> **Goal 3.** Improve understanding of local threats and mitigate identified threats to the extent possible.
>
> **Goal 4.** Increase awareness and engage the public in Rusty Blackbird conservation in Newfoundland and Labrador.

Specifically, these goals will be achieved by completing the following objectives:

- Encourage reporting of Rusty Blackbird sightings.
- Encourage Rusty Blackbird surveys and monitoring.
- Describe the distribution, abundance, and trends of the Rusty Blackbird population in Newfoundland and Labrador.
- Define habitat requirements and availability of suitable habitat for the Rusty Blackbird in the province.

- Identify and mitigate threats to individual survival and reproductive success of Rusty Blackbirds.
- Identify and mitigate threats to Rusty Blackbird habitat.
- Increase public awareness about Rusty Blackbird biology and conservation.

Success in the conservation of this species will depend on the commitment and cooperation of the agencies and partners involved in the implementation of the plan.

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Assessment and Legal Status

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<tr><td colspan="2">Provincial Listing (ESA): Vulnerable (2007)</td><td colspan="2">Federal listing (SARA): Special Concern (2009)</td></tr>
<tr><td>Global Ranking:
G4- Apparently Secure (NatureServe)
Vulnerable (IUCN Red List)</td><td>National Ranking:
N4B, N4M – Apparently Secure (NatureServe)</td><td colspan="2">Provincial Ranking:
Newfoundland:
S2S3B – Imperiled/ Vulnerable (NL General Status/ NatureServe)

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<tr><td colspan="2">SSAC assessment date: N/A</td><td colspan="2">COSEWIC assessment date: April 2017 (Special Concern)</td></tr>
<tr><td colspan="2">SSAC assessment history: N/A</td><td colspan="2">COSEWIC assessment history: April 2006 (Special Concern)</td></tr>
<tr><td colspan="4">Reason for designation: More than 70% of the breeding range of the species is in Canada’s boreal forest. The species has experienced a severe population decline that appears to be ongoing, albeit at a slower rate than during earlier declines. There is no evidence to suggest that this trend will be reversed. Known threats occur primarily on the winter range, and include habitat conversion and blackbird control programs in the United States.</td></tr>
<tr><td colspan="4">Newfoundland and Labrador occurrence: Rusty Blackbirds are associated with forested wetlands and are thought to occur irregularly in appropriate habitat in Newfoundland and Labrador. Their northern distribution in Labrador is likely limited by the extent of forested habitat.</td></tr>
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Description

The Rusty Blackbird is a medium-sized member of the Icteridae family (Orioles, Blackbirds, Cowbirds and Allies) (ITIS 2011). Individuals average 23 cm in length and have a mass of 64 grams (Avery 2013) with a slightly rounded tail that is as long as its wings (COSEWIC 2017). Rusty Blackbirds have fine black bills, black feet and pale yellow irises (COSEWIC 2017). Males in breeding plumage are completely black, with an iridescent green gloss on their bodies and a violet gloss on their heads and necks. Non-breeding males have rusty plumage on their head, breast and back and rust coloured margins on their tertiary feathers, scapulars, and wing coverts. Females are a dull brownish-gray during the breeding season, and change to a rust colour with dark grey back, tail and wings during the winter (Pyle 1997). Immature birds are similar in colouration to non-breeding adults (Pyle 1997), with the exception that they have a dark iris (COSEWIC 2006).

Male Rusty Blackbirds can be distinguished from the similar male Brewer's Blackbirds (*E. cyanocephalus)* by their longer, finer and slightly curved bill and shorter legs and tail. Female Brewer's Blackbirds have dark irises and tend to be browner than the more grey-coloured female Rusty Blackbird (Pyle 1997).

Rusty Blackbirds are a member of the *Euphagus* genus, which consists of up to five species world-wide, and are one of the two that are found in North America (NatureServe 2010). This species is most closely related to the Brewer's Blackbird (Lanyon and Omland 1999).

There are two recognized subspecies of Rusty Blackbird: *E. c. carolinus*, which occurs throughout most of the species' range and *E. c. nigrans*, which breeds in Newfoundland and Labrador, Nova Scotia, Quebec's Magdalen Islands, and possibly eastern New Brunswick (COSEWIC 2006, NatureServe 2010, Avery 2013). The division of these two subspecies is based on small differences in plumage (Pyle 1997) and genetic work to distinguish among subspecies has not been completed to date (Lanyon and Omland 1999). This management plan will not distinguish between these subspecies.

Figure 1. Rusty Blackbird in the fall at Cape Race, NL. Photos courtesy of P. Thomas.

Distribution

Global

Rusty Blackbirds are confined to North America and breed in northern temperate and boreal forests throughout Canada and in Alaska, Minnesota, Michigan, Vermont, New Hampshire, Maine, New York, and Massachusetts (Avery 1995; Figure 2). Rusty Blackbirds winter in the United States including Massachusetts, New York, Pennsylvania, Virginia, Ohio, Michigan, Wisconsin, Iowa, Kansas, Oklahoma and the Atlantic coast states (Avery 1995; Figure 2). It has also been reported as a rare winter species in southern Canada (Avery 1995).

National

At least seventy percent of the Rusty Blackbird's breeding range is located in Canada, where it breeds in all provinces and territories (COSEWIC 2006; Figure 2). Its breeding range is closely associated with the boreal forest and taiga terrestrial ecozones and extends north to the treeline. The range occurrence of the Rusty Blackbird is close to continuous and fragmentation of the range is low (Godfrey 1986). Extent of occupancy has been calculated as 5.3 million km^2 and area of occupancy is unknown (COSEWIC 2006).

Provincial

Rusty Blackbirds are associated with forested wetlands and thought to be distributed irregularly in appropriate habitat in Newfoundland and Labrador. Their distribution in northern Labrador likely coincides with the limits of forested habitat. Extent of occurrence and area of occupancy have not been calculated for Rusty Blackbird in the province.

Although some information is known about the relative distribution and abundance of Rusty Blackbird in the province, many sightings have been limited to areas accessible by road and Rusty Blackbirds are found in inaccessible areas as well (Greenberg 2008; Figure 3). Rusty Blackbirds have been reported from Breeding Bird Surveys (BBS) but it is thought that BBS protocol results in fewer detections of individuals than are present (Stewart 2010). Incidental sightings have been reported from much of insular Newfoundland and from more populated areas in Labrador – likely demonstrating accessibility rather than actual distribution. Rusty Blackbirds were observed at 209/1961 (10.7%) survey points in the Main River watershed (2016 and 2017), with an estimated occurrence rate of 11.9% (Jenna McDermott, Memorial University, unpublished data). Prior to Fall migration, aggregations of Rusty Blackbirds have been reported in areas around Happy Valley-Goose Bay (T. Chubbs, pers. comm.; Figure 4) and Labrador City (G. Parsons, pers. comm.). Rusty Blackbirds from Newfoundland and Labrador likely winter along the Atlantic coastal plain of the United States (Hobson et al. 2010).

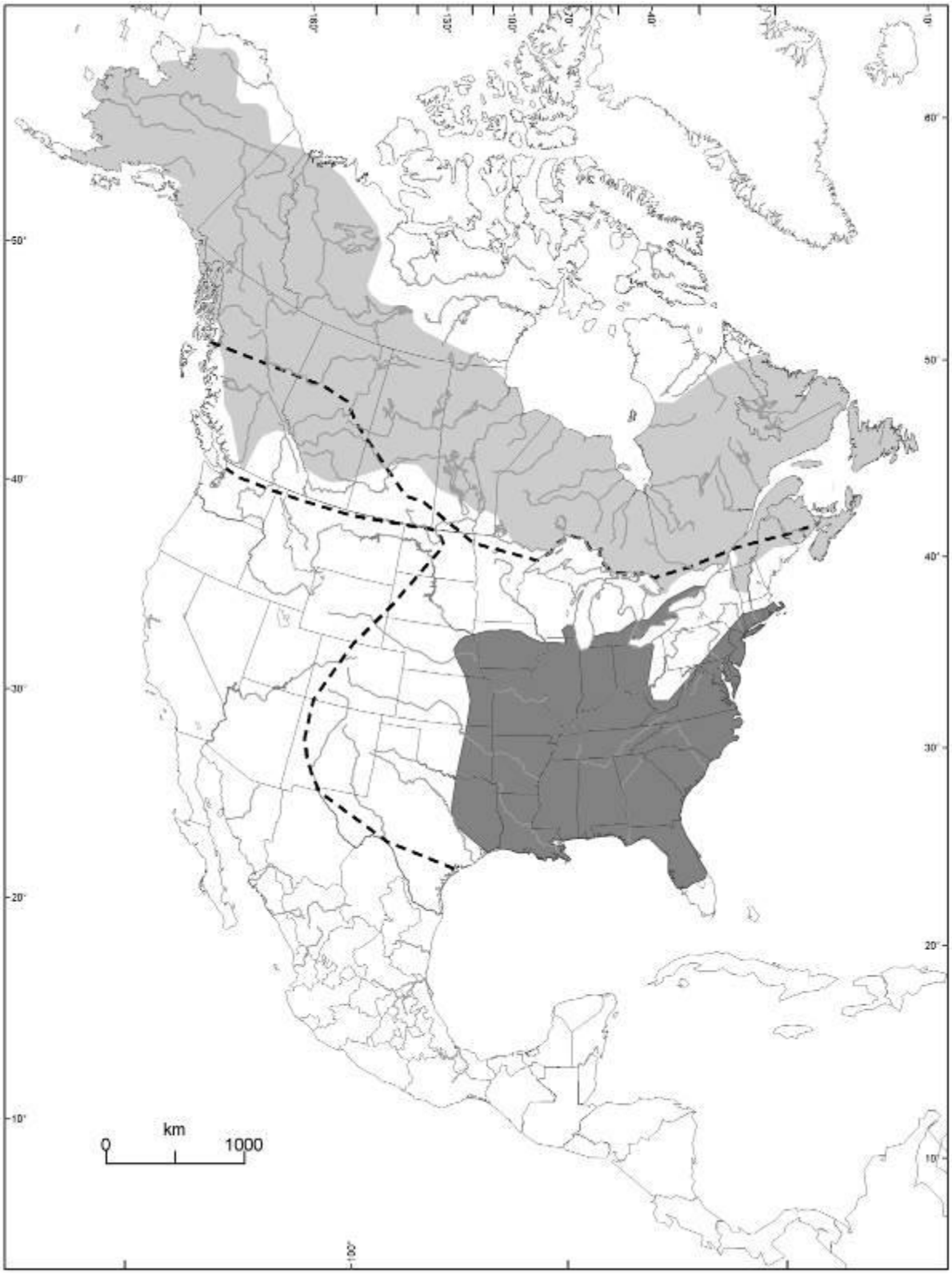

Figure 2. Rusty Blackbird distribution in North America (adapted from COSEWIC 2006) in the breeding (light grey) and wintering (dark grey) seasons. Map prepared by Adam Durocher (Atlantic Canada Conservation Data Centre).

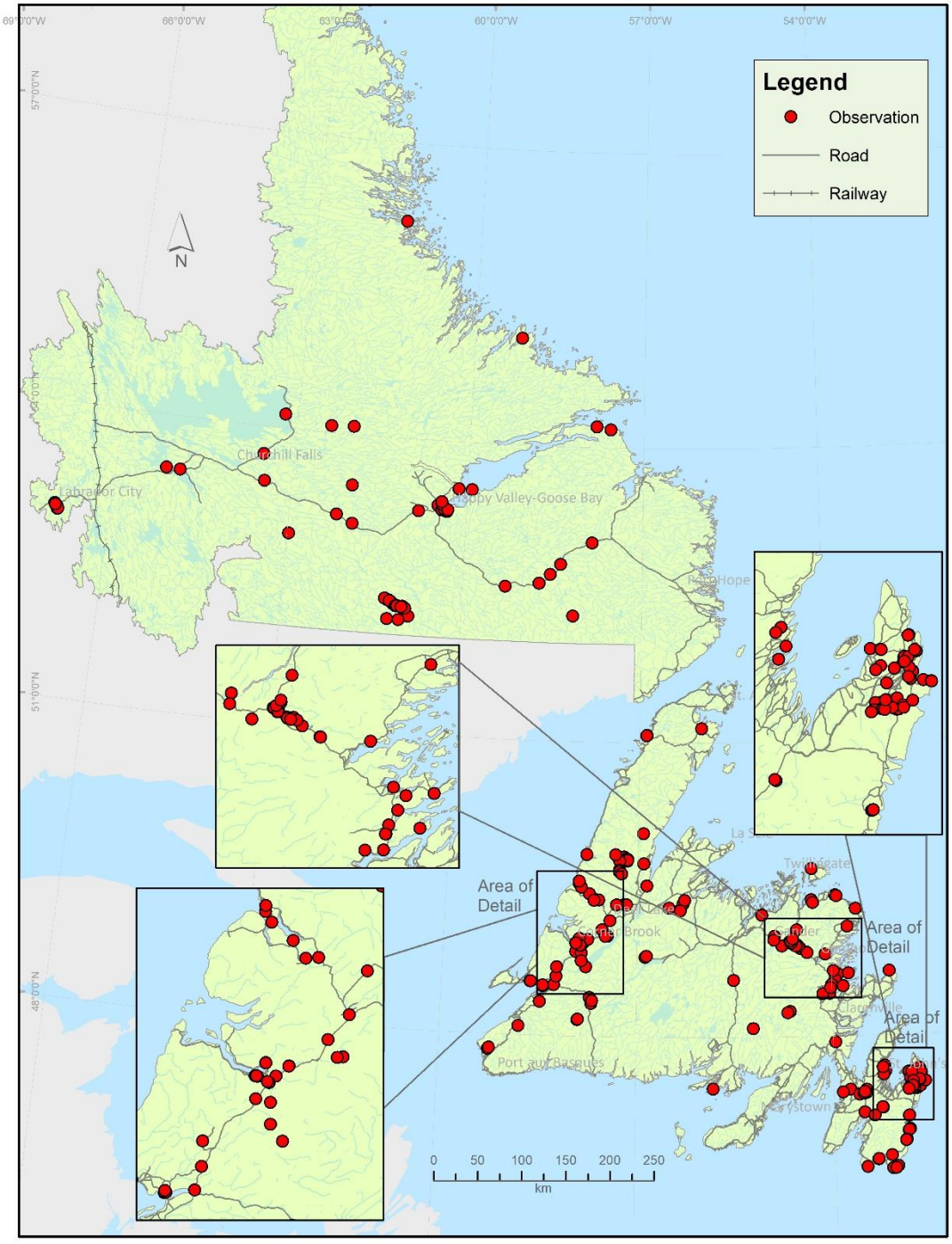

Figure 3. Sightings reported for Rusty Blackbird in Newfoundland and Labrador (1944-2020). Sightings are mostly limited to areas accessible by road and thus likely underestimate the actual distribution of the Rusty Blackbird in the province. Map prepared by Adam Durocher (Atlantic Canada Conservation Data Centre).

Life History

Rusty Blackbirds are normally solitary breeders and are generally monogamous, though they may form loose colonies in some areas (Avery 2013, COSEWIC 2017). Nests are primarily located in conifers close to water bodies (less than 30m away) particularly in black spruce (*Picea mariana)* in Canada and Alaska though they can also be found in deciduous trees (Avery 1995, Matsuoka et al. 2010b). An early study found that nests were at least 400 m apart (Kennard 1920), and a more recent study reports home ranges of 37.5 ha ± 12.6 ha (Powell et al. 2010a).

Rusty Blackbirds produce one clutch per year, though they may re-nest if the first nest is lost. Eggs are incubated by the female exclusively, who is provisioned by the male during that time (Avery 2013). Incubation lasts for 14 days from when the first egg is laid (Bent 1958). On average there are 4.47 ± 0.08 eggs per clutch (range: 3-6; Avery 1995). Young fledge at around 13 days of age and are fed by both parents (Bent 1958, Gauthier and Aubry 1995, Campbell et al. 1997). Nestling survival rates vary among studies, with reports of 25% to 93% of nests producing at least one fledgling (Campbell et al. 1997, COSEWIC 2006, Shaw 2006, Matsuoka et al. 2010b). Matsuoka et al. (2010a) found that nest success was higher in small conifers than larger conifers, which could be associated with red squirrel (*Tamiasciurus hudsonicus*) predation, though it is difficult to determine the species of predator responsible in most cases. Both avian and mammalian predators have been implicated (Shaw 2006).

Birds begin arriving on the southernmost portion of the breeding grounds in the northern U.S. and southern Canada in early April and most arrive by mid-April; arrival in more northern areas (northern Canada and Alaska) occurs in mid-May (Avery 2013, Cyr and Larivee 1995, Campbell et al. 1997, Sinclair et al. 2003).

There is some evidence that Red-winged Blackbirds (*Agelaius quiscula*) and Common Grackles (*Quiscalus quiscula*) may displace Rusty Blackbirds on the breeding grounds, in particular in areas where loss of wet woodland habitat has taken place (Avery 2013). However this is likely of limited importance in Newfoundland and Labrador, where Red-winged Blackbirds are extremely rare breeders and Common Grackles are strongly associated with communities.

There have been very few studies on adult survival (COSEWIC 2017). Matsuoka et al. (2010a) observed wide variation in adult annual survival rate between consecutive years in an Alaskan population, with 34% survival in 2008 and 70% survival in 2009. It has been suggested that American Marten (*Martes americana*), Northern Harrier (*Circus cyanaeus*) and Sharp-shinned Hawk (*Accipiter striatus*) may be predators on adult Rusty Blackbirds (COSEWIC 2006).

Rusty Blackbirds have the most specialized feeding ecology of all the North American blackbirds, feeding predominantly in shallow waters located within forested habitat (Avery 1995). On the breeding grounds, Rusty Blackbirds consume mainly aquatic insects and other invertebrates, with some consumption of terrestrial insects, amphibians and fishes (Terres 1980). This species will consume seeds, grains and small fruits and may attack passerines and shorebirds in severe winters when other food items are scarce (Bent 1958, Avery 1995). Rusty Blackbirds will roost with other

blackbird species (IRBTG 2009) and forage in single species flocks or with Common Grackles (Avery 1995).

Rusty Blackbirds gather in groups in late July prior to migration (Avery 1995). Migration occurs as early as the start of October (COSEWIC 2006) and birds arrive on wintering grounds from February to April (Terres 1980). Rusty Blackbirds from Newfoundland and Labrador are thought to migrate along an eastern route, though flyways have not been clearly identified (Hobson et al. 2010). During migration and on the wintering grounds, Rusty Blackbirds are often found in mixed flocks with other blackbird species (Avery 1995, COSEWIC 2006).

Habitat

Wintering Habitat

The Rusty Blackbird foraging strategy means that it is strongly associated areas having shallow water and abundant emergent vegetation, and primarily uses forested wetlands throughout its range (Avery 2013). However it is also known to use some human-made habitats including pastures, fields, and sewage treatment ponds (Avery 1995, Campbell et al. 1997, Sinclair et al. 2003), and one study in the Mississippi Alluvial Valley shows extensive use of nearby agricultural fields (Luscier et al. 2010). Habitat loss and degradation on the wintering grounds have been substantial and have been implicated in the decline of this species, though the loss of bottomland woodlands has slowed and even been reversed in recent years (Greenburg and Matsuoka 2010, Hobson et al. 2010).

Breeding Habitat

Breeding habitat for the Rusty Blackbird is much more specific than that of other blackbirds. This species is found throughout the boreal forest and taiga terrestrial ecozones nesting in conifer forest wetlands, swampy and scrub riparian habitat, beaver ponds and alder/willow thickets (Gunn et al.1977, DesGranges and Houde 1989, Gauthier and Aubry 1995). They will make use of riparian areas in cutovers and burned areas, treatment ponds in forested areas and areas surrounding hydroelectric reservoirs, however it is not clear if use of these habitat areas affects reproductive success (COSEWIC 2006).

In Newfoundland the species is often in areas having a matrix of forest cover and wetland openings including spruce bogs, alder thickets, beaver ponds, marshes and fens, and shorelines of ponds, lakes, streams, and rivers (Whitaker and Montevecchi 1997; Darroch Whitaker, personal observation). Breeding habitat is probably widespread throughout forested areas in Newfoundland and Labrador; habitat quality is not known and may be difficult to assess because it appears to depend on several criteria/characteristics (Hannah 2005). Habitat loss, degradation and fragmentation are likely more of a problem on the Island of Newfoundland than in Labrador because of higher development and forest harvest pressures, though Rusty Blackbirds have been observed foraging in pools and ditches along forest resource roads and in regenerating

clearcuts, and also to use riparian buffer strips alongside clearcuts (Whitaker and Montevecchi 1999; Darroch Whitaker, personal observation). Degradation in more remote areas may be caused by acidification or high mercury levels related to acid rain and industrial pollution, or in relation to climate change effects (Edmonds et al. 2010, Greenberg and Matsuoka 2010). Acidification and high mercury levels are unlikely to be a significant threat to the birds or habitat in Newfoundland and Labrador.

Figure 4. Examples of Rusty Blackbird habitat in Newfoundland and Labrador. a) Foraging habitat in the Main River watershed (photo courtesy of D. Whitaker). b) Habitat used during migration east of Labrador City, off the Trans Labrador Highway (photo courtesy of T. Chubbs).

Abundance and Population Trends

Estimates of abundance based on Partners in Flight (PIF) data have put the Canadian populations at 5.9 million individuals (COSEWIC 2017), though the limited number of BBS routes in the Rusty Blackbird breeding range means these estimates are rough at best (NatureServe 2010). BBS data indicate an average of 0.27 birds/route (Sauer et al. 2005), with densities higher in northwestern than Atlantic Canada (NatureServe 2010). However BBS data indicate that this species is more abundant in northern boreal forest types than in more southerly, temperate ecoregions, and as a result densities are higher in Newfoundland and Labrador than elsewhere in Atlantic Canada.

Rusty Blackbirds have experienced one of the most rapid population declines among birds detected in the BBS (Blancher 2003). Greenberg and Droege (1999) analyzed literature on the distribution of Rusty Blackbirds, which showed a consistent long-term decline in the qualitative abundance of this species starting in the early 1900s. This species was once common and observed in large flocks during the winter, but is now considered uncommon and occurs in small groups (Greenberg 2008). Breeding Bird Survey and Christmas Bird Count (CBC) data on wintering grounds also show large declines (85% to 90%) in the population since 1970 (COSEWIC 2017). Surveys in some northern US states and in the Canadian Maritimes have shown that Rusty Blackbirds are no longer detected in some areas of their former breeding range (Greenberg 2008). Though coverage is incomplete, particularly for Labrador, BBS data indicate that in

Newfoundland and Labrador Rusty Blackbirds declined at a rate of 4.82% per year from 1976 to 2017 (95% confidence interval: -1.96% per year to -7.31% per year), suggesting an overall population decline of 86.8% over this 42 year period (95% confidence interval: -55.6% to -95.6%) (Smith at al. 2019)

Rusty Blackbird was given high scores for both concern (a measure of vulnerability and population trend) and responsibility in Canada based on a ranking system developed by the Canadian Wildlife Service (Dunn et al. 1999). This coarse filter suggests that improved monitoring of Rusty Blackbirds is warranted and conservation partnerships should be pursued. Information on Rusty Blackbirds is inadequate to determine the cause of these long-term and more recent declines (IRBTG 2009). It has been suggested that declines in abundance may be related to habitat loss or degradation (especially wintering habitat), loss of individuals during blackbird control (high losses in 1960s-1970s), disease transmission from other blackbirds, increased competition with other blackbird species because of forced changes in feeding ecology, acidification effects on food resources, mercury accumulation, climate change and other factors not yet known. Though it is not clear what threats are most important in Newfoundland and Labrador, habitat loss and degradation, and competition with other species are possibilities.

Traditional and Ecological Knowledge

Austin (1932) indicated that the Innu-aimun name for Rusty Blackbird was ‘Suk I tee yoo’, while the Inuktitut name was ‘Tullugarsuk’, which he translated as “the little raven” (‘Tullugak’)

Information on the Rusty Blackbird was solicited from representatives of the Federation of Newfoundland Indians (now Qalipu First Nation) and Miawpukek First Nation at the Fall 2010 meeting of the Newfoundland and Labrador Landbird Recovery Team meeting. However that indicated that they did not have any traditional ecological knowledge to share on this species.

The Wildlife Division and the Newfoundland and Labrador Landbird Recovery Team will continue to seek traditional ecological knowledge for this species from these and other Indigenous organizations.

Existing Protection and Management

The Rusty Blackbird is listed as Vulnerable under the Newfoundland and Labrador Endangered Species Act and as Special Concern under Canada’s Species at Risk Act. These listings do not confer direct protection to this species or its habitat, but require the creation of management plans by the provincial and federal governments. In Newfoundland and Labrador, this species is also protected under the Wild Life Act and associated regulations, which require individuals to obtain permits in order to possess, import or engage in control of this species. Rusty Blackbirds are not protected under the Migratory Bird Convention Act.

Rusty Blackbirds were removed from the US Fish and Wildlife Service Depredation Order for Blackbirds, Cowbirds, Grackles, Crows, and Magpies in 2011, which allowed

control actions of these taxa. A permit is now required to conduct control actions on this species and only nontoxic shot or bullets can be used for any of the other species included under this order; reporting requirements on depredation efforts have increased as a result (USFWS 2010). These changes should all result in a decrease in the take of Rusty Blackbirds during control efforts and negative effects caused by the control of other species covered under this order.

The Rusty Blackbird's habitat is protected in national and provincial parks as well as in ecological, wilderness, and wild life reserves in Newfoundland and Labrador. These areas cover about 2,998,800ha in the province but only a portion of those areas would be considered suitable habitat for the species. Though Rusty Blackbirds do not occur in Torngat Mountains National Park of Canada, they are found in Gros Morne National Park of Canada (180,500 ha) and Akami-uapisk^{u} – KakKasuak – Mealy Mountains National Park Reserve of Canada (1,070,000 ha), where they and their habitat are protected under the Canada National Parks Act. Succession, disturbance and climate change effects may result in loss or degradation of Rusty Blackbird habitat in these protected areas. Rusty Blackbird habitat is also protected by lands that are owned and managed by the Nature Conservancy of Canada.

MANAGEMENT GOALS, OBJECTIVES AND ACTIONS

The overall goal for management of species at risk is to ensure the long-term persistence of species as self-sustaining viable populations throughout their current, and when possible, historical ranges. The following details the goals, objectives, and actions needed to fulfill this purpose, all of which are summarized in Table 1. The following four goals have been identified as important to the long-term persistence of the Rusty Blackbird in Newfoundland and Labrador:

Goal 1. Increase capacity to collect data and improve data storage methods.

Goal 2. Complete research to close gaps in our understanding of Rusty Blackbird demography and ecology in Newfoundland and Labrador.

Goal 3. Improve understanding of local threats and mitigate identified threats to the extent possible.

Goal 4. Increase awareness and engage the public in Rusty Blackbird conservation in Newfoundland and Labrador.

GOAL 1. INCREASE CAPACITY TO COLLECT DATA AND IMPROVE DATA STORAGE METHODS

The provincial Breeding Bird Survey (BBS) routes are currently the only long-term monitoring programs capable of capturing data on Rusty Blackbird in Newfoundland and Labrador. Though the Christmas Bird Count (CBC) provides data on wintering bird populations Rusty Blackbirds do not regularly occur in the province during winter. Both of these programs have been important in identifying the declines of this species on continental and regional scales (Stewart 2010) and volunteer programs are likely to remain important for continued monitoring of Rusty Blackbird. Many recent locations of this species have been recorded through incidental sightings reported to the Wildlife Division or through online tools. There is little information available on this species in Newfoundland and Labrador; increased knowledge will allow the development and implementation of effective management actions.

Monitoring programs outside the province, such as the North American BBS and CBC can provide information regarding how this species is faring at national and international scales. Factors affecting populations elsewhere, such as habitat loss on the wintering range, can have a significant influence on breeding populations in this province.

Objective 1. Encourage reporting of Rusty Blackbird sightings.

Many of the sightings recorded in Newfoundland and Labrador have been incidental observations. Birders in Newfoundland and Labrador are concentrated on the Avalon Peninsula of insular Newfoundland, as well as other populated areas. As a result, sightings are also skewed towards these areas; recorded observations are thus unlikely to fully represent actual distribution.

It is possible that many sightings are not being reported because those observing the birds do not know how or when to report their observations. Web-based reporting systems (e.g. eBird.org) are useful tools to compile information about sightings by members of the public which can be easily accessed for incorporation into provincial databases. Use of these systems has already been adopted by many birders and is seen as a valuable resource (NLLRT 2010).

In addition to location data, other information (e.g. habitat, breeding activity, time of day, behaviour) is needed to direct management of this species. The development of easy-to-use protocols for incidental sightings will allow consistent collection and enhanced sharing of this information.

The number of knowledgeable birders in Labrador is limited and sightings may increase substantially if members of the public are educated on how to identify and where to find Rusty Blackbirds. Additional education opportunities may be available by partnering with initiatives already in place, for instance by including Rusty Blackbird in other species at risk education materials.

> Action 1: Encourage the use of web-based reporting (e.g. eBird.org, Project NestWatch) for recording sightings.
>
> Action 2: Develop protocol(s) for data collection associated with incidental sightings.
>
> Action 3: Develop audience-specific communication and education products to aid identification and enhance reporting of sightings by the public.

Objective 2. Encourage Rusty Blackbird surveys and monitoring.

Protocols that can be easily incorporated into on-going field programs by resource professionals (e.g. timber harvesters, conservation officers) working in Rusty Blackbird areas may increase the number of sightings and area surveyed. This could greatly increase our knowledge of the distribution of Rusty Blackbird in the province. For instance, more information about Rusty Blackbirds may be collected from waterfowl surveys conducted in Labrador (e.g. USGS surveys, Black Duck Joint Venture surveys) and incidental sightings are commonly reported by fisherman (J. Clarke, pers. comm.).

Rusty Blackbirds are regularly recorded on BBS Routes, but the current distribution of routes does not adequately monitor the extent of the population e.g., the current BBS network is strongly biased towards lower elevations and there is no coverage above ~400 m elevation. Although continued monitoring using current BBS routes, re-activation of former routes and the addition of new routes will provide on-going and valuable information, the additional resources required for more route coverage may be better applied to survey Rusty Blackbird habitat in remote areas. It is not expected that resources would be available to conduct single-species Rusty Blackbird surveys, so any such effort would need to afford data for a suite of avian species occupying similar habitats. The Off-road Breeding Bird Survey (ORBBS) and the Alaska Landbird Monitoring Survey (Hannah 2004, NatureServe 2010) are examples of programs already in place in other areas to access more remote areas. The Newfoundland and Labrador Boreal Bird Monitoring Initiative (NLBBMI) is a program that used a robust

survey design to address distribution, abundance, and trends of boreal birds in the province over time. This initiative was designed to capture valuable information on as many species as possible and the effort was spearheaded by the Canadian Wildlife Service with the intent for it to expand to a larger cooperative effort including other federal departments and/or agencies, provincial government departments, NGOs, industry, and other relevant stakeholders. This program ran from 2011 to 2017. Canadian Wildlife Service piloted the Boreal Monitoring Strategy (BMS) in 2018 and 2019 in Newfoundland, Saskatchewan and the Yukon modified to a slightly different technique from the Newfoundland and Labrador Boreal Bird Monitoring Initiative (NLBBMI), and now also includes the use of automated recording units (ARUs)(P. Thomas, pers. comm).

Breeding ecology has not been studied for Rusty Blackbirds in the province. Identification and monitoring of nesting areas will provide insight into habitat requirements and what, if any, factors may be affecting nest success. Because of their scattered and predominantly remote distribution, nest monitoring will be challenging but should be attempted whenever opportunities arise.

A Breeding Bird Atlas is underway for Newfoundland, and could provide considerable information on the breeding distribution and abundance of Rusty Blackbirds on the island.

Action 4: Recruit and train people/organizations and partner with survey efforts already on the landscape.

Action 5: Develop a protocol for effective targeted surveys.

Action 6: Identify nesting areas and monitor nest success.

Action 7: Support the implantation of a Newfoundland Breeding Bird Atlas.

GOAL 2. COMPLETE RESEARCH TO CLOSE GAPS IN OUR UNDERSTANDING OF RUSTY BLACKBIRD DEMOGRAPHY AND ECOLOGY IN NEWFOUNDLAND AND LABRADOR

The International Rusty Blackbird Technical Group was formed in an effort to help address the large declines of this species and to develop research priorities and to share and collaborate on research efforts throughout breeding and wintering ranges. Research efforts have been initiated to address several issues that need to be resolved before conservation efforts can be directed effectively including the cause(s) of the initial and continued declines, threats to individuals and habitat, and basic biology (IRBTG 2009). The objectives and actions in this section highlight areas where data important to management of this species is still lacking. These objectives focus on areas of importance suggested by the International Rusty Blackbird Technical Group (2009) and/or the Newfoundland and Labrador Landbird Recovery Team (2010).

Our ability to identify and implement management actions in support of Rusty Blackbird conservation within the province is limited due to our lack of knowledge about the size of the population, species habitat requirements, specific distribution within the province, and the relative impact or importance of potential threats.

Objective 1. Describe the distribution, abundance, and trends of the Rusty Blackbird population in Newfoundland and Labrador.

Analysis of trends for migratory birds in North America is commonly conducted using Breeding Bird Survey (BBS) information. Unfortunately, BBS data in the province is inadequate for the evaluation of trends in abundance or to refine the estimated distribution. The development of a monitoring program targeting more of the Rusty Blackbird's range in the province (Goal 1) will provide a better understanding of the distribution and abundance of this species. Collaboration with researchers from other jurisdictions currently investigating demographics of Rusty Blackbird across their range will allow standardization of data collection and may provide further insights into the causes of changes in abundance and distribution. The collection of information from the Labrador population may be particularly important because it may act as a benchmark given that it is likely to be less impacted relative to other parts of North America (NLLRT 2010).

Rusty Blackbird populations have shown very large declines across their range over the last century. These declines have been associated with range retractions in some provinces (Greenberg 2008). Ongoing evaluation and mapping of monitoring data will identify any changes in the distribution of this species and can be used to help target mitigation efforts (Goal 3).

Action 1: Regularly evaluate and analyze data to determine abundance and trends of Rusty Blackbird.

Action 2: Use collected data to monitor any changes to the distribution of Rusty Blackbird in Newfoundland and Labrador.

Action 3: Support the implantation of a Newfoundland Breeding Bird Atlas to document the breeding distribution of Rusty Blackbirds on the island.

Objective 2. Define habitat requirements and availability of suitable habitat for the Rusty Blackbird in the province.

Information on the habitat used by Rusty Blackbird is available from other portions of their range; however it is not clear that habitat use in Newfoundland and Labrador is the same. Sightings information has provided some insight into habitat use and potentially important factors determining habitat requirements and will become clearer as analysis continues. Collection and analysis of habitat characteristics during observations (Goal 1) can further refine our understanding of Rusty Blackbird habitat requirements in the province. In addition, some existing quantitative survey and research datasets likely already include many Rusty Blackbird observations, and could yield considerable information on habitat use through focused analyses. Alternatively, collection of community level or species-specific survey data could also yield insights into the distribution and habitat requirements of this species. A key element of habitat studies should be assessment of use of anthropogenic habitats (e.g. clearcuts, buffer strips) by Rusty Blackbirds, as this information could contribute directly to protection and recovery efforts.

Action 4: Complete a literature review and collect expert opinion to define habitat parameters, and develop a protocol to record coarse and fine-scale habitat variables during surveys for inclusion in observations database. The protocol should identify how birds are using the habitat (e.g. nesting, foraging, pre-migration).

Action 5: Develop or adopt a protocol to record nest site habitat information.

Action 6: Assess characteristics, distribution, abundance, and trends of habitat in Newfoundland and Labrador using remote sensing and land classification products.

Action 7: Support studies of Rusty Blackbird habitat use in the province, both through implementation of quantitative field studies and analysis of existing data.

GOAL 3. IMPROVE UNDERSTANDING OF LOCAL THREATS AND MITIGATE IDENTIFIED THREATS TO THE EXTENT POSSIBLE

Threats to Rusty Blackbird include conversion of wintering and breeding habitat (e.g., loss of wetlands and clearing of riparian zones), bird control programs, habitat degradation on breeding grounds (climate change, acidification, mercury contamination, and possibly forest management) and possibly competition with Red-winged Blackbirds, Common Grackles and other species more dominant than Rusty Blackbirds. Causes of historical and current declines are not fully understood (IRBTG 2009). For instance studies in Alaska have suggested that recent declines are the result of low recruitment into the breeding population, possibly related to low survival rates of young birds overwinter, though the cause of low survival is not clear (Matsuoka et al. 2010a). Co-ordination with other researchers through the International Rusty Blackbird Technical Group to collaborate on research into threats will reduce duplication of effort and will increase the likelihood of identifying range-wide threats. A greater understanding of threats will highlight mitigations appropriate for local populations of Rusty Blackbird.

Objective 1. Identify and mitigate threats to individual survival and reproductive success of Rusty Blackbirds.

Rusty Blackbirds were culled on the wintering grounds during blackbird control programs in the 1960s-1980s designed to reduce crop damage. Recent changes to regulations in the US now prohibit targeting of this species for control but the species may suffer some loss as they form mixed-species flocks with species that are still targeted (Avery 1995, Greenburg and Matsuoka 2010). Sources of mortality on the breeding grounds are less understood and may include impacts of Brown-headed Cowbird (*Molothrus ater*) nest parasitism, competition with Red-winged Blackbirds or Common Grackles and the impact of wetland acidification or mercury contamination (Greenberg and Droege 1999, Greenberg and Matsuoka 2010). The impacts of cowbirds, grackles, and Red-Winged Blackbirds will be limited in Newfoundland and Labrador due to the restricted distributions of those species in the province.

Mercury contamination has been suggested as a cause of on-going declines in Rusty Blackbird populations (Greenberg and Matsuoka 2010) and research has found high levels of mercury in Rusty Blackbirds from a number of locations, primarily in northeastern North America (Edmonds et al. 2010). More research is required to determine if these high concentrations of mercury are negatively impacting survival or reproduction of Rusty Blackbirds.

Forest harvesting is likely to cause disturbance to Rusty Blackbirds during the breeding season and may impact nesting success. Additionally, Rusty Blackbirds may suffer more nest predation in areas that have been recently logged (Powell et al. 2010b). Recent research has demonstrated that Rusty Blackbirds use larger portions of upland habitat for foraging than wetland habitats, suggesting that small wet areas in forested habitat surrounding wetlands may be as important to Rusty Blackbirds for foraging as the wetland areas themselves (Powell et al. 2010a). A review of forest management practices may be warranted given these recent changes in our understanding of Rusty Blackbird habitat use.

Action 1: Based on monitoring of known nest sites, assess nesting success and causes of failure.

Action 2: As threats to individuals and reproduction are identified, develop mitigative measures.

Action 3: Develop and/or review best management practices to prevent disturbance during the breeding season.

Objective 2. Identify and mitigate threats to Rusty Blackbird habitat.

In wintering areas, loss of forested wetlands has likely negatively impacted the species (Greenberg and Matsuoka 2010). However, loss of these areas has slowed and may not be adequate to explain more recent and on-going population declines. Changes to habitat quality and availability on breeding grounds may be implicated in Rusty Blackbird population declines in recent decades (Greenberg and Droege 1999, Greenberg and Matsuoka 2010). Assessment of use of anthropogenic habitats (e.g. clearcuts, buffer strips) by Rusty Blackbirds is also a fundamental precursor to identifying and mitigating threats to the species' habitat (see Goal 2, Objective 2).

Action 4: Identify threats to habitat using GIS-based tools which include up-to-date information on land cover/land use within the identified breeding range.

Action 5: Identify areas within breeding range which are protected as municipal stewardship agreements, federal and provincial protected areas, or private conservation lands.

Action 6: Develop best management practices for landowners and land managers to protect habitat from degradation.

Action 7: As threats to habitat are identified, develop mitigative measures.

GOAL 4. INCREASE AWARENESS AND ENGAGE THE PUBLIC IN RUSTY BLACKBIRD CONSERVATION IN NEWFOUNDLAND AND LABRADOR

The two main audiences for education and stewardship initiatives for Rusty Blackbird are the public and resource professionals (e.g. timber harvesters, conservation officers). Both of these groups can actively participate in the collection of information about the distribution, habitat use, threats, and reproduction of the Rusty Blackbird.

Objective 1. Increase public awareness about Rusty Blackbird ecology and conservation.

Because Rusty Blackbirds are predominantly found in inaccessible or remote areas, the public will mostly be unaware of this species. An informed and educated public will be in a better position to be supportive of conservation actions for this species. They may be motivated to report sightings, participate in bird monitoring programs, or support habitat conservation measures.

Methods to directly inform and engage the public include various forms of media, such as online tools, brochures, posters, radio and television spots and community newsletters. Addition of this species to on-going species at risk stewardship programs can take advantage of resources already committed to species conservation. Resource professionals already working within Rusty Blackbird habitat (e.g. foresters, Indigenous guardians, fishermen, fisheries officers and guardians) would be excellent candidates for education and training.

Action 1: Ensure education is targeted at audiences that can positively influence Rusty Blackbird conservation.

Action 2: Encourage the inclusion of Rusty Blackbird information in ongoing stewardship and education programs.

Action 3: Coordinate education programs with Indigenous groups.

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APPENDIX A

Newfoundland and Labrador Landbird Recovery Team Members

(at the time of document completion)

Disclaimer: The recovery team did not prepare this document but did review it and provide significant input.

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