



Common Name: **Blackpoll Warbler**
Scientific Name: **Dendroica striata**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S4S5B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? No

Assessment Narrative:

The breeding distribution for Blackpoll Warbler appears to not have changed much in last 25 years. However, data indicates significant changes within the distribution have occurred. This is also the case in Vermont. The species occupied 33 priority 1 blocks during the first Vermont atlas (1982) and 28 priority 1 blocks during the second atlas (2013). But during that interval, priority block gains numbered 8 while losses numbered 13. Blackpolls are found largely among the high elevation spruce-fir forests of the Green Mountains. Elevations greater than 2800 feet most often provide the greatest area of montane forest, the blackpoll's preferred habitat. Although the population appears to have been static during the last 30 years threats such as habitat loss to human development and accumulated environmental toxins such as mercury are likely an important factor in the species' long-term status. Current climate change models project the warbler's preferred montane forest habitat will decrease in size as it recedes northward. This suggests a seriously imperiled future for the species.

Distribution

This species is a high elevation species that breeds above 2800 feet in Vermont. It is detected throughout Vermont during spring and fall migration. Recent work by VCE biologists and biologists in Nova Scotia used geotrackers to show these birds fly non-stop over the Atlantic Ocean an average of 2540 km to the Greater Antilles or the northeastern coast of South America.

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Confident	Vermont Valley	Confident
Northern Green Mtns	Confident	Southern Green Mtns	Confident
Northern VT Piedmont	Confident	Taconic Mtns	Confident
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

In Vermont Blackpoll Warblers breed in dense thickets within montane forests dominated by balsam fir, with lesser amounts of spruce, white birch, and mountain ash.

Habitat Types:

Spruce Fir Northern Hardwood

Early Succession Spruce-Fir



Common Name: **Blackpoll Warbler**
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Species Group: **Bird**

Current Threats

Habitat Threats:

Conversion of Habitat
Energy Infrastructure and Development
Habitat Alteration
Habitat Fragmentation
Climate Change

Description of habitat threat(s): Audubon's climate model suggest that this species will be effected by climate change as the spruce-fir habitat is shifting upslope, requiring the and the species breeding range to contract or shift north. Other potential problems include loss and fragmentation of montane forests from ski area, wind power and telecommunications development. Collision mortalities have been documented with wind energy facilities and telecommunication towers.

Non-Habitat Threats:

Pollution
Trampling or Direct Impacts

Description of non-habitat threat(s): Atmospheric pollution, including airborne mercury, could impact the species directly, as well as damage its habitat. Collision mortalities have been documented with buildings.

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Common Name: **Blackpoll Warbler**
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Research and Monitoring Needs

Type	Need	Priority	Description
Research	Habitat Requirements	Medium	Habitat needs reasonably well known, although population structure in different sub habitat types (krummholz, regenerating chronically disturbed forests, taller stature and more open forests, transitional spruce-fir-birch forests) not well known.
Research	Basic Life History	High	Demographics and breeding success need more study, especially in different sub habitat types.
Research	Distribution and Abundance	Medium	Fairly well known, although relative abundance in different sub habitat types needs to be better quantified. Conduct research that will enable robust predictions of breeding densities in different sub-habitat types, which can be extrapolated across breeding range to derive population estimates. Documenting shift range may be necessary if climate change has a big impact on Vermont's high elevation habitat.
Research	Threats and Their Significance	High	1) Species' susceptibility and response to habitat fragmentation and conversion from development (ski area, wind turbines, telecommunications facilities) needs to be better understood. Evaluate impacts of human development (ski area expansion/construction, wind power, telecommunications facility) on montane forest habitat, and use results to guide future development. 2) Impacts of atmospheric pollutants (e.g. mercury) and possible role of calcium depletion should be studied.
Research	Population Genetics	Low	Genetic structure of breeding populations in Northeast, and relation to core breeding populations in Canada interesting, but probably not crucial for conservation.
Research	Taxonomy	Low	Genetic structure of breeding populations in Northeast, and relation to core breeding populations in Canada interesting, but probably not crucial for conservation.
Monitoring	Population Change	High	Species poorly monitored by traditional methods like BBS. VCE Mountain Birdwatch program monitors adequately, but must be maintained for long-term. Very important to monitor this species as an avian indicator of montane forests. Continue long-term monitoring at a minimum of 15-20 sites in VT to document population trends. Support for gathering data from citizen scientists important.
Monitoring	Habitat Change	High	Important to document habitat changes in concert with population changes.
Monitoring	Range Shifts	Medium	This should be covered by a regional monitoring program (i.e. Mountain Birdwatch).
Monitoring	Monitor Threats	Medium	Important to monitor limiting factors like development, atmospheric pollution, mercury burdens, climate change, impacts of collisions.

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Common Name: **Blackpoll Warbler**
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 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Planning & Zoning	Medium	Develop a planning process whereby explicit mitigation and management guidelines are specified. Further develop a means to ensure that these are followed, and results monitored, both in short- and long-term.			
Research	High	Monitor development, atmospheric pollution, mercury burdens, climate change, impacts of collisions.		VCE, Audubon, BOVM, FWS	SWG
Habitat Restoration	High	Identify 10-15 core breeding sites and ensure that a long-term protection plan exists for each.	The number of sites protected		

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Common Name: **Cerulean Warbler**
Scientific Name: **Dendroica cerulea**
Species Group: **Bird**

Conservation Assessment

Final Assessment: Medium Priority

Global Rank: G4

Global Trend:

State Rank: S1B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

Strong significant long-term decline (-4.2%) based on survey-wide BBS data. No data from Vermont.

Historic population at the mouth of the Lamoille River appears to be extirpated. In 2002-2004, singing males have been located in Niquette Bay State Park, Highgate, and near Colchester Pond. More populations may be discovered as Vermont's forests continue to mature (and the second breeding bird atlas is completed), however declines throughout its range suggest that this species will never be common in Vermont. Preliminary survey data from the wintering range suggest that it can be found in a diversity of forest types in Columbia, Venezuela, Ecuador, and Peru (Hamel 2000).

Distribution

Data from Ellison (1985).

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Unknown
Champlain Hills		Vermont Valley	Unknown
Northern Green Mtns	Unknown	Southern Green Mtns	Unknown
Northern VT Piedmont	Unknown	Taconic Mtns	Unknown
Northeastern Highlands	Unknown		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

As summarized by Hamel (2000), this species requires a closed canopy, presence of scattered tall, old growth canopy trees, and distinct layering of foliage from ground cover to canopy. Area sensitivity varies by area with minimum patch size 20-30 ha in Ohio to 700 ha in Middle Atlantic States to 1,600 ha in the Mississippi Alluvial Valley, but breeding occurs in 10 ha patches in Ontario (summarized by Hamel 2000).

Habitat Types:

Northern Hardwood

Oak-Pine Northern Hardwood

Floodplain Forests



Common Name: **Cerulean Warbler**
Scientific Name: **Dendroica cerulea**
Species Group: **Bird**

Current Threats

Habitat Threats:

Conversion of Habitat

Habitat Fragmentation

Description of habitat threat(s): Area sensitive in parts of its range, suggesting fragmentation a problem to population. Development or harvest of mature upland forests will decrease available habitat.

Description of non-habitat threat(s):

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Habitat Requirements	Medium	Species has been relatively well-studied on its breeding range, including recent studies from Ontario. However, better summaries of this information may lead to directed searches for new populations in Vermont. Better information about habitat requirements
Research	Basic Life History	Medium	Also relatively well-studied, however more information about non-breeding social system, particularly as to whether or not they are an obligate flock follower.
Research	Distribution and Abundance	High	1) Directed surveys in Vermont are necessary to better understand their present status in the state. 2) Better information on distribution in Vermont will be critical to conserving the species and predicting future distribution. Intensively monitor (as le
Research	Threats and Their Significance	Low	Presumably habitat quality in Vermont will increase as forests mature. However, some information on minimum patch size would help in understanding the effects of development.
Monitoring	Population Change	High	Population trends in Vermont will be difficult to assess without more information on distribution. But all known local populations should be carefully monitored.
Monitoring	Habitat Change	Low	As forest regenerates from abandonment of agricultural lands, habitat will become available through succession. Population response of CERW will be difficult to assess. Forest growth models might be useful in helping to predict future occurrences in the s

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 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Habitat Restoration	Medium	Identify contiguous forests blocks w/mature components & encourage their conservation via easements or other financial incentives on private lands. Conserve contiguous forest blocks on public lands via appropriate long-range management plan designations.	Number and distribution of core forest blocks conserved on private and public lands	ANR, USFS, USFWS, VHCB, VLT, TNC	SWG, PR, VHCB
Easements	Medium	Maintain of large forest tracts, particularly in Champlain Valley and Taconic regions.	Maintenance of large forest tracts, particularly in Champlain Valley and Taconic regions.	TNC, VFWD, Forest Legacy program	TNC

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Common Name: **Canada Warbler**
Scientific Name: **Wilsonia canadensis**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S4B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

In Vermont the results from the second Breeding Bird Atlas indicate this bird is declining in Vermont. Block occupancy dropped 31% between the Atlases. Regional atlases and breeding bird surveys have also demonstrated a decline throughout the region over the past 30 years. As the climate and the forests change this species may be at a greater risk, not only on its breeding grounds, but also on its wintering grounds.

Distribution

Canada Warblers are found throughout Vermont. The Canada Warbler is considered a neotropical migrant and migrates from its breeding grounds to northern South America

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Confident	Vermont Valley	Confident
Northern Green Mtns	Confident	Southern Green Mtns	Confident
Northern VT Piedmont	Confident	Taconic Mtns	Confident
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

A wide range of coniferous and deciduous forests, and mixed forests at all elevations, but especially mid-slopes in Green Mountains. Uses both mature and regenerating forest. Seem to prefer a dense understory with moss, and an uneven forest floor. Hummocks, roots, and debris are used to hide the nest and fledglings. Clearcuts and shelterwood cuts received more use than mature forest in northern New Hampshire. First appear in clearcuts 5 years after harvest, become common after 15 years and remain abundant until the next cutting cycle.



Common Name: **Canada Warbler**
Scientific Name: **Wilsonia canadensis**
Species Group: **Bird**

Habitat Types:

Spruce Fir Northern Hardwood
Northern Hardwood
Softwood Swamps
Early Succession Boreal Conifers
Early Succession Spruce-Fir

Current Threats

Habitat Threats:

Conversion of Habitat
Habitat Succession
Habitat Alteration
Habitat Fragmentation
Climate Change

Description of habitat threat(s): Forest succession, loss of forested wetlands, and development all may influence suitable nesting sites. Climate change may alter the plant structure increasing the likelihood that the birds move further north (and out of Vermont to breed). Significant problems may occur on South American wintering grounds (mid-slope of Andes Mts)

Non-Habitat Threats:

Trampling or Direct Impacts
Pollution

Description of non-habitat threat(s): Atmospheric pollution, including airborne mercury, could impact the species directly, as well as damage its habitat. Although not well documented, collisions with glass buildings and wind towers can be a source of mortality for migrating, especially with birds that migrate at night



Common Name: **Canada Warbler**
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Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S4B

State Trend: Declining

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Northeastern Highlands	Confident		

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Northern Hardwood
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Early Succession Boreal Conifers
Early Succession Spruce-Fir

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Habitat Threats:

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Habitat Succession
Habitat Alteration
Habitat Fragmentation
Climate Change

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Common Name: **Canada Warbler**
 Scientific Name: **Wilsonia canadensis**
 Species Group: **Bird**

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Habitat Requirements	Medium	These are reasonably well known overall, but important to understand ecological and demographic differences in core populations that inhabit in prime habitats vs. smaller, more peripheral populations in patchy, secondary habitats
Research	Basic Life History	High	Nest success and productivity are poorly understood, as is age structure of populations in different habitat types. Need to understand demographics in secondary habitats (i.e. small patches) vs. those in core habitats
Research	Distribution and Abundance	Low	
Research	Threats and Their Significance	High	Need continued research on effects of forestry practices on populations in both prime and secondary habitats. Research on effects of climate change.
Research	Taxonomy	Low	Taxonomic research led to the recent name change.
Monitoring	Population Change	High	Need to ensure a long-term monitoring program that adequately samples this species, to clearly document declines or increases. Support of Vermont ebird for gathering data from citizen scientists important.
Monitoring	Habitat Change	High	Important to know how species responds to both natural and human-caused habitat changes
Monitoring	Range Shifts	Medium	Ability to shift range may be necessary if climate change has a big impact on Vermont forests
Monitoring	Monitor Threats	medium	

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Habitat Restoration	Medium	Design and implement forest management strategies to enhance habitat suitability.	Area of potential habitat with long-range management plans which provide for beneficial forms of active forest management.	VFWD, USFS, USFWS	SWG, PR
Planning & Zoning	Medium	Conserve large tracts of core breeding habitats (mid-slope mixed forests, cedar swamps, red maple-conifer swamps).	Number of large forest tracts conserved via public ownership, easements, or town planning/zoning	ANR, USFS, USFWS, Town and RPCs	SWG, PR

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Common Name: **Canada Warbler**
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Species Group: **Bird**

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Common Name: **Eastern Towhee**
Scientific Name: **Pipilo erythrophthalmus**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S5B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

Species declining across region due to conversion of necessary early successional/shrub dominated habitats to either non-forest condition or via maturation of forest cover to an unsuitable forest age structure.

Distribution

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills		Vermont Valley	Confident
Northern Green Mtns	Confident	Southern Green Mtns	Confident
Northern VT Piedmont	Confident	Taconic Mtns	Confident
Northeastern Highlands	Unknown		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Early-successional/shrub/edge habitats, both mesic and xeric, characterized by dense shrub-small tree cover near ground and well-developed litter layer. Cover may be continuous or discontinuous patches interspersed w/in more open ground. Overstory trees may or may not be present, however open-canopied woodlands are favored over closed canopy coverage.

Habitat Types:

Shrub Swamps

Early Succession Boreal Hardwoods

Early Succession Pine and Hemlock

Early Succession Northern Hardwoods

Early Succession Upland Oak

Grasslands, Hedgerows, Old Field, Shrub, or Orchard

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Common Name: **Eastern Towhee**
 Scientific Name: **Pipilo erythrophthalmus**
 Species Group: **Bird**

Current Threats

Habitat Threats:

- Conversion of Habitat
- Habitat Succession
- Habitat Alteration
- Inadequate Disturbance Regime
- Habitat Fragmentation

Description of habitat threat(s):

Description of non-habitat threat(s): Possible nest parasitism by cowbirds.

Research and Monitoring Needs

<i>Type</i>	<i>Need</i>	<i>Priority</i>	<i>Description</i>
Research	Basic Life History	High	Studies on reproductive success and demography especially desirable in northeastern U.S. To acquire baseline data via marked birds.

Species Strategies

<i>Strategy Type</i>	<i>Strategy Priority</i>	<i>Strategy Description</i>	<i>Performance Measure</i>	<i>Potential Partners</i>	<i>Potential Funding Sources</i>
Conservation Finance	Medium	Create a state-funded, private lands, early successional habitat improvement initiative (modeled on NH's Small Landowner Grant program). Fund for > \$50,000/yr with revenues from state lands forest management. This could offset landowner EQIP obligations.	Level of funds raised.	FWD	SWG, PR
Awareness Raising and Communications	Medium	Initiate public education campaigns to highlight the need for active, even age forest management on public and private lands to create and maintain seedling/sapling forest habitat complexes.	Number of media outlets reached, number of audiences reached, number of media products developed, number of participants in programs.	VCE, VA, USFS	SWG, PR
Habitat Restoration	Medium	Determine appropriate old field habitat targets for state lands and restore and maintain old field habitats where needed to increase suitable ES songbird habitat.	Number of acres positively affected by management. Population response to management.	ANR, USFS, Audubon, Forest Products Association, VT Loggers	PR, EQIP

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Common Name: **Eastern Towhee**
Scientific Name: **Pipilo erythrophthalmus**
Species Group: **Bird**

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Common Name: **Field Sparrow**
Scientific Name: **Spizella pusilla**
Species Group: **Bird**

Conservation Assessment

Final Assessment: Medium Priority

Global Rank: G5

Global Trend:

State Rank: S5B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

Significant long-term population declines in Vermont of 5.3 percent annually 1966-2003, and 4.3 percent annually in the ten years following the first SWAP, 2004-2013 (Sauer et al. 2014). Atlas block occupancy declined by 39% between the first (1979-85) and second (2003-07) Vermont breeding bird atlases (Renfrew 2013).

Distribution

Widely distributed in eastern and western Vermont on either side of the Green Mountains, except in the Northeastern Highlands (Renfrew 2013).

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Confident	Vermont Valley	Confident
Northern Green Mtns	Confident	Southern Green Mtns	Confident
Northern VT Piedmont	Confident	Taconic Mtns	Confident
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Grasslands with scattered, shrubby vegetation with elevated perches. Habitat declines as woody encroachment progresses. Can be found in orchards and Christmas tree farms (Carey et al. 1994). Areas close to suburban development are avoided (Carey et al. 2008). In Vermont, often found in overgrown meadows dominated by juniper (Renfrew 2013).

Habitat Types:

Grasslands, Hedgerows, Old Field, Shrub, or Orchard

Current Threats

Habitat Threats:

Conversion of Habitat

Habitat Succession

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Common Name: **Field Sparrow**
Scientific Name: **Spizella pusilla**
Species Group: **Bird**

Description of habitat threat(s): Primary problems to the species are likely due to succession of old fields and conversion of agricultural habitat to urban/suburban development.

Non-Habitat Threats:

Predation or Herbivory

Description of non-habitat threat(s): Parasitism is a possible limiting factor, more information needed.

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Habitat Requirements	High	A better understanding of optimal stem densities and mowing rotations would inform specific management strategies. Better habitat-specific demographics would enable a more thorough understanding of when and why habitat decreases in quality for FISP.
Research	Threats and Their Significance	Medium	Species could be heavily parasitized by cowbirds. More intensive demographic data would elucidate BHCO limiting factor.
Monitoring	Population Change	High	Improved monitoring would elucidate population distribution and trends. A BBS-type survey route for early successional species could help monitor FISP, BWWA, GWWA, BRTH, PRAW, etc.

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Common Name: **Field Sparrow**
 Scientific Name: **Spizella pusilla**
 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Conservation Finance	Medium	Create a state-funded, private lands, early successional habitat improvement initiative (modeled on NH's Small Landowner Grant program). Fund for > \$50,000/yr with revenues from state lands forest management. This could offset landowner EQIP obligations.	Level of funds raised.	VFWD	PR
Habitat Restoration	High	Stabilize declining population trend for Field Sparrows.	Population response to management, BBS surveys.	VFWD, NRCS, TNC.	NRCS
Awareness Raising and Communications	Medium	Initiate public education campaigns to highlight the need for active, even age forest management on public and private lands to create and maintain seedling/sapling forest habitat complexes	Number of media outlets reached, number of audiences reached, number of media products developed, number of participants in programs.		
Habitat Restoration	High	Determine appropriate old field habitat targets for state lands and restore and maintain old field habitats where needed to increase suitable ES songbird habitat.	Number of acres positively affected by management. Population response to management.	ANR, USFS, Audubon-VT, Forest Products Association, VT Loggers	PR, EQIP

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Common Name: **Vesper Sparrow**
Scientific Name: **Poocetes gramineus**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S3B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

In Vermont a 10.9 percent per year decline in 1966-2003, and losses of 7.2 percent annually in the decade since the first SWAP, 2004-2013 (Sauer et al. 2014). Vermont atlas block occupancy declined from 35 to 11 (69%) from the first (1979-85) to second (2003-07) atlas (Renfrew 2013). Also long-term decline survey-wide (Sauer et al. 2014). The generally small size of farming operations in VT seem as though they should create sufficient habitat to support a larger population in the state. The relative rarity of this species suggests that their habitat requirements may be somewhat more specialized than currently understood.

Distribution

An uncommon breeder in Vermont that is sparse and widely distributed. Most records are from the southwestern Champlain Valley (Renfrew 2013).

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Confident	Vermont Valley	Unknown
Northern Green Mtns	Probable	Southern Green Mtns	Unknown
Northern VT Piedmont	Confident	Taconic Mtns	Unknown
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Breeds in dry, open habitats with short, sparse, and patchy herbaceous vegetation; some bare ground; and low to moderate shrub or tall forb cover. In the East, suitable habitats include reclaimed surface mines, crop and haylands, weedy roadsides, natural meadows, and grasslands (Jones and Cornely 2002). In Vermont, suitable habitat generally occurs in agricultural and other human-modified landscapes such as airports, and should be at least 20 hectares (Renfrew 2013).



Common Name: **Vesper Sparrow**
Scientific Name: **Pooecetes gramineus**
Species Group: **Bird**

Habitat Types:

Open Peatlands
Marshes and Sedge Meadows
Wet Shores
Shrub Swamps
Grasslands, Hedgerows, Old Field, Shrub, or Orchard
Lawns, Gardens, and Row Crops

Current Threats

Habitat Threats:

Conversion of Habitat

Habitat Succession

Description of habitat threat(s): Early hay harvest and more intensive management of other row crops substantially reduces nesting success. Conversion of agricultural habitats to urban/suburban development also a problem. Old field succession and farm abandonment also decreasing habitat availability.

Description of non-habitat threat(s):

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Habitat Requirements	High	Better information about precise habitat requirements, in particular nest site selection would be helpful for ascertaining potential habitat and developing management recommendations.
Research	Distribution and Abundance	High	Conduct focused surveys, including in areas where they were found during the second atlas, to obtain better information about population distribution in VT.
Monitoring	Population Change	High	Population monitoring, particularly in response to changing agricultural and development practices.
Monitoring	Habitat Change	Medium	Understanding habitat-specific demographic parameters would help us assess management options.

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Common Name: **Vesper Sparrow**
 Scientific Name: **Poocetes gramineus**
 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Technical Assistance, Training, Learning Networks	High	Educate agricultural community and general public about grassland birds and management options to protect habitat.	Develop a grassland bird outreach program	VFWD, Audubon-VT, VCE, UVM	SWG, PR
Market Forces	Medium	Enroll land into EQIP, CRP Grassland as well as FRPP programs to reduce the Impact of development on this species.		NRCS, VHCB	NRCS
Conservation Payments/Financial Incentives	Medium	Conserve grassland/shrubland habitats on private lands.	Number and total area of sites conserved.	USDA, USFWS, VHCB	FSA, SWG, VHCB

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Common Name: **Grasshopper Sparrow**
Scientific Name: **Ammodramus savannarum**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S2B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

Currently listed as Threatened in Vermont. Species has declined throughout region due primarily to loss of grassland habitat and agricultural intensification (early mowing regimes). BBS data show a significant long-term (1966-2012; -2.86%/year) and short-term (2002-2012; -2.79%). The species is too rare to assess trends in Vermont; data from the second breeding bird atlas showed a 75% decline in number of blocks with breeding evidence, but the sample size is small (4 blocks to 1 block; Renfrew 2013). Only two or three locations in Vermont consistently support more than a few breeding pairs.

Distribution

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Probable	Vermont Valley	Unknown
Northern Green Mtns	Probable	Southern Green Mtns	Confident
Northern VT Piedmont	Unknown	Taconic Mtns	Unknown
Northeastern Highlands	Unknown		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Grasslands, pastures, old fields and airports with minimal grass and litter cover and patches of bare ground. Specific habitat use patterns vary geographically (Vickery 1996). In most locations the species is area-sensitive, with occupancy significantly reduced in patches less than 30 ha (Vickery et al. 1994).

Habitat Types:

Grasslands, Hedgerows, Old Field, Shrub, or Orchard

Other Cultural

Current Threats

Habitat Threats:

Conversion of Habitat

Habitat Succession

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Common Name: **Grasshopper Sparrow**
Scientific Name: **Ammodramus savannarum**
Species Group: **Bird**

Habitat Alteration

Habitat Fragmentation

Description of habitat threat(s): Direct loss of nesting habitat due to habitat conversion and agricultural intensification (mowing regimes)

Non-Habitat Threats:

Trampling or Direct Impacts

Description of non-habitat threat(s): Early and frequent mowing regimes directly impact nesting and reproductive success. Insufficient information on statewide population size.

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Habitat Requirements	Medium	Determine habitat requirements specific to Vermont
Research	Basic Life History	Low	
Research	Distribution and Abundance	High	Accurately determine population size and location of breeding pairs statewide
Research	Threats and Their Significance	High	Determine impacts of habitat loss and agricultural practices on distribution and nesting success.
Research	Population Genetics	Low	
Monitoring	Population Change	High	Accurately determine population size and trend information throughout the state and particularly at known nesting locations (airports).
Monitoring	Habitat Change	High	Determine statewide changes in grassland habitats and agricultural practices. Identify habitat changes at known nesting locations (airports)
Monitoring	Monitor Threats	High	Monitor limiting factors at current nesting locations (airports) including habitat loss due to development of the site and mowing practices.

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Common Name: **Grasshopper Sparrow**
 Scientific Name: **Ammodramus savannarum**
 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Technical Assistance, Training, Learning Networks	High	Educate agricultural community and individuals with grasslands about grassland birds and management options.	Development of a grassland bird outreach program	VFWD, Audubon-VT, VINS, UVM	
Protected Area Management	High	Maintain nesting habitat throughout breeding season by developing site-specific conservation plans which include restricting field mowing until after July 15th on publicly owned lands (WMAs and state airports)	Maintain and increase current acreage under management on state lands	VFWD, Audubon-VT, NRCS, Vtrans	VFWD, Vtrans
Conservation Payments/Financial Incentives	High	Maintain nesting habitat throughout breeding season by restricting field mowing until after July 15th	Increase protection of available habitat through enrollment in EQIP and CRP Grassland	VFWD, Audubon-VT, NRCS	
Habitat Restoration	High	Maintain grassland habitat in suitable locations through active management of woody vegetation within Grassland Bird Focus Areas.	Increase and maintain available habitat in suitable locations	VFWD, private landowners	
Conservation Payments/Financial Incentives	High	Protect privately owned known nesting sites and suitable grassland habitat from development and agricultural intensification by creating Grassland Bird Focus Areas to concentrate management efforts (see the Vermont Grassland Bird Management Plan).	Development of Grassland Bird Focus Areas and increase protection of available habitat through enrollment in EQIP and CRP Grassland.	VFWD, Audubon-VT, NRCS, private landowners	USFWS
Conservation Payments/Financial Incentives	High	Maintain large tracts (> 100 acres) of suitable grassland habitat for entire suite of grassland bird species.	Increase protection of available habitat through enrollment in EQIP and CRP Grassland	VFWD, Audubon-VT, NRCS	

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Common Name: **Bobolink**
Scientific Name: **Dolichonyx oryzivorus**
Species Group: **Bird**

Conservation Assessment

Final Assessment: Medium Priority

Global Rank: G5

Global Trend:

State Rank: S5B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

Significant long-term population declines both in VT and survey-wide. Although Vermont atlas block occupancy changed little (Renfrew 2013), abundance declined by 2.6 percent annually from 1966 to 2003, and 2.4 percent per year since the first SWAP, 2004-2013 (Sauer et al. 2014). Much of VT hayed grasslands are likely population sinks. Main threats are loss and degradation of quality habitat, including fragmentation, due to field succession and conversion to development after farms are lost, and intensive management of hay fields (more frequent mowing).

Distribution

Distributed throughout Vermont, most abundant in lowlands of Champlain Valley, less so in other areas of the state in open landscapes that include fields not under intensive rowcrop production.

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Confident	Vermont Valley	Confident
Northern Green Mtns	Confident	Southern Green Mtns	Confident
Northern VT Piedmont	Confident	Taconic Mtns	Confident
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Grasslands, primarily managed for hay or to a lesser extent, low-intensity grazing. Generally avoids alfalfa, row crops, and grass habitats with standing water. More common in larger (> 5ha), more blocky (as opposed to linear) fields, and in relatively less forested landscapes with large expanses of grassland habitat. Social attraction also plays a role in habitat selection.

Habitat Types:

Marshes and Sedge Meadows

Grasslands, Hedgerows, Old Field, Shrub, or Orchard



Common Name: **Bobolink**
Scientific Name: **Dolichonyx oryzivorus**
Species Group: **Bird**

Current Threats

Habitat Threats:

Conversion of Habitat
Energy Infrastructure and Development
Habitat Succession
Habitat Alteration
Habitat Fragmentation
Invasion by Exotic Species
Climate Change

Description of habitat threat(s): Greatest problems are the frequency and timing of hayfield mowing, the succession of agricultural land, and the conversion of agricultural land to development. Fragmentation of grasslands limits patch size and openness of landscape, which is important for nesting Bobolinks. Bobolink distribution expected to shift northward due to climate change, although models need to be refined. Takeover of hayfields and other grasslands by exotic plants such as parsnip and chervil renders habitat unsuitable

Non-Habitat Threats:

Pollution
Trampling or Direct Impacts
Predation or Herbivory

Description of non-habitat threat(s): Pesticides on migration and wintering grounds, predation of eggs and nestlings, direct mortality from mowing

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Threats and Their Significance	Medium	1) Demographic model of climate change impacts to predict future distribution. 2) Determine relative contribution of seasonal survival of juveniles and adults, and immigration/emigration, to improve assessments of relative importance of productivity and survival in determining population size
Research	Other Research	High	Determine most effective use of resources to maximize acreage of quality nesting habitat using combination of approaches for different types of landowners and interests.
Monitoring	Population Change	High	Determine if the Champlain Valley is a source or sink for Bobolink.
Monitoring	Habitat Change	High	Better information is necessary regarding the timing of hay mowing in landscapes with various proportions of agriculture throughout VT.

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Common Name: **Bobolink**
 Scientific Name: **Dolichonyx oryzivorus**
 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Easements	Medium	Reduce the amount of grassland habitat being lost to development through strategic acquisition of grassland easements.	Grassland acreage enrolled in easements	NRCS	NRCS, USDA.
Conservation Payments/Financial Incentives	High	Decrease nest losses due to early mowing regimes on fields used for animal forage via EQIP conservation payments. Continue outreach to landowners about incentive programs	Increase in proportion and total area of grasslands in which hay cutting is delayed.	NRCS, UVM, VCE, Audubon-VT	NRCS, USDA
Species Restoration	High	Implement the Vermont grassland bird management and recovery plan (LaBarr et al. 2013)		VFWD, UVM, TNC, NRCS.	SWG, PR, NRCS
Technical Assistance, Training, Learning Networks	High	Improve outreach to (and exchange of information among) landowners with flexibility (e.g., those primarily interested in preventing succession).	Number of acres under a late-mowing management regime, number of landowners contacted	UVM, NRCS, Audubon-VT, VCE	NRCS, USDA

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Common Name: **Eastern Meadowlark**
Scientific Name: **Sturnella magna**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S5B

State Trend: Declining

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

Upgraded from medium to high priority. One of the most severely declining population trends of grassland bird species throughout its range. In Vermont Eastern Meadowlark populations have declined by 9.6 percent annually from 1966 to 2003 (Sauer et al. 2014), and since the first SWAP, meadowlarks have disappeared from much of Vermont except in the Champlain Valley, which supports most of the remaining population. Between the first and second Vermont Breeding Bird atlas, the species was lost from 63 of 155 (55%) blocks (Renfrew 2013). Regrowth of abandoned farmlands and agricultural intensification resulting in grassland habitat loss, fragmentation, and degradation are the primary causes of declines.

Distribution

Sparsely distributed in relatively large open agricultural (or airfield) areas throughout much of the state, except in the Champlain and Vermont valleys, where it is fairly common in open, agricultural areas with suitable nesting habitat. Nearly absent from southeastern Vermont (Renfrew 2013).

Distribution by Biophysical Region:

Champlain Valley	Confident	Southern VT Piedmont	Confident
Champlain Hills	Confident	Vermont Valley	Confident
Northern Green Mtns	Unknown	Southern Green Mtns	Unknown
Northern VT Piedmont	Confident	Taconic Mtns	Confident
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Meadows, old fields, hayfields with thick layer of dead grass. Requires large, open landscapes, large patches of grasslands (>10ha). Can occur at airports with compatible mowing program.

Habitat Types:

Grasslands, Hedgerows, Old Field, Shrub, or Orchard

Other Cultural



Common Name: **Eastern Meadowlark**
Scientific Name: **Sturnella magna**
Species Group: **Bird**

Current Threats

Habitat Threats:

Conversion of Habitat
Energy Infrastructure and Development
Habitat Succession
Habitat Alteration
Habitat Fragmentation
Invasion by Exotic Species

Description of habitat threat(s): Loss and degradation of habitat due to frequent mowing of hayfields, habitat loss due to succession of farmland to forest, conversion of grassland habitat to development and potentially, solar panel arrays. Takeover of hayfields and other grasslands by exotic plants such as parsnip and chervil renders habitat unsuitable.

Non-Habitat Threats:

Trampling or Direct Impacts

Description of non-habitat threat(s): Direct mortality due to mowing.

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Other Research	Medium	Determine whether Vermont habitats in the Champlain Valley are sources or sinks
Monitoring	Population Change	High	Species no longer tracked well with BBS methods. Carry out more intensive, standardized monitoring scheme to track population status in the state and determine important breeding areas and compatible management practices.

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Common Name: **Eastern Meadowlark**
 Scientific Name: **Sturnella magna**
 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Conservation Payments/Financial Incentives	High	Maintain nesting habitat by delaying mowing until after July 15th	Increased protection of habitat through enrollment in EQIP and CRP Grassland	VFWD, Audubon VT, NRCS	
Technical Assistance, Training, Learning Networks	High	Educate agricultural community, landowners, and general public about grassland birds and management options to protect habitat	Continue grassland bird outreach and networking programs	VFWD, Audubon, VCE, UVM	SWG, PR
Protected Area Management	High	Maintain nesting habitat throughout the breeding season by developing site specific conservation plans which include restricting mowing until after July 15 on publicly owned lands (WMAs, state airports).	Maintain and increase current acreage under management on state and federal lands	VFWD, Audubon-VT, VCE, USFWS NRCS Vtrans	SWG, NRCS
Habitat Restoration	High	Maintain grassland habitat in suitable locations through active management of woody vegetation within focal grassland areas.	Increase and maintain available habitat in suitable locations	VFWD, Audubon-VT, VCE, NRCS, USFWS	USFWS, NRCS
Conservation Finance	High	Decrease nest losses due to early mowing regimes on fields used for animal forage via EQIP conservation payments. Continue outreach to landowners about incentive programs.	Increase in acreage in which hay cutting is delayed.	NRCS, UVM, VCE, Audubon-VT	NRCS
Conservation Finance	High	Focus efforts on relatively large fields (>50 acres) of suitable grassland habitat in open landscapes	Strategic enrollment in EQIP	NRCS	NRCS

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Common Name: **Rusty Blackbird**
Scientific Name: **Euphagus carolinus**
Species Group: **Bird**

Conservation Assessment

Final Assessment: High Priority

Global Rank: G5

Global Trend:

State Rank: S3B

State Trend: Unknown

Extirpated in VT? No

Regional SGCN? Yes

Assessment Narrative:

The continental Rusty Blackbird population has undergone a precipitous decline since the 1966 beginning of the Breeding Bird Survey (BBS) and most significantly in the last 20 years. In eastern North America its decline has been most significant at the southern edge of its breeding range (Maine, New Hampshire, and Vermont). From BBS estimates, Partners in Flight (PIF) estimates there are 5,000,000 Rusty Blackbirds in North America with 20% of them residing in the US. PIF categorizes this estimate as a medium quality. This is likely due to the species' preference for remote boreal coniferous forests near water's edge. The Second Atlas of Breeding Birds of Vermont (2002-07) reported a 26% decline in occupied blocks. The majority of the decline occurred within the Northern Vermont Piedmont biophysical region. In addition to the significant loss of population there is concern among biologists that climate change projections estimate a decline in boreal forest that includes the blackbird's New England habitat. In light of these foreboding estimates Vermont listed the species as endangered in 2014.

Distribution

"Rusty Blackbirds are local and uncommon summer residents of the Northeast Highlands, the North Central region, and the Green Mountains." (Nichols 1985)

Distribution by Biophysical Region:

Champlain Valley	Probable	Southern VT Piedmont	Probable
Champlain Hills	Probable	Vermont Valley	Probable
Northern Green Mtns	Probable	Southern Green Mtns	Confident
Northern VT Piedmont	Confident	Taconic Mtns	Probable
Northeastern Highlands	Confident		

Distribution by Watershed:

Habitat Description

Habitat Information is based on the following:

Limited Local Knowledge Extensive Local Knowledge Regional Literature General Literature

Wooded swamps, tree-bordered marshes, beaver ponds, boreal bogs and stream borders with alder and willow thickets (DeGraff and Rudis 1986). "Disturbance can be favorable to this species; e.g., nests found in modest openings regenerating from clearcuts (Ellison 1990)" (Avery 1995).



Common Name: **Rusty Blackbird**
Scientific Name: **Euphagus carolinus**
Species Group: **Bird**

Habitat Types:

Hardwood Swamps
Softwood Swamps
Shrub Swamps
Early Succession Boreal Conifers
Early Succession Spruce-Fir
Early Succession Northern Hardwoods

Current Threats

Habitat Threats:

Conversion of Habitat

Description of habitat threat(s): Permanent residence and/or vacation home development on lakeshores/pondshores may reduce available habitat.

Non-Habitat Threats:

Harvest or Collection

Description of non-habitat threat(s): "Substantial mortality to local populations may occur when Rusty Blackbirds are in mixed-species winter roosts subjected to blackbird control in the s. U.S.(Stickley et al. 1986)" (Avery 1995).

Research and Monitoring Needs

Type	Need	Priority	Description
Research	Basic Life History	Low	Some evidence of colonial nesting, however nesting by widely-separated individuals seems to prevail in Vermont. Factors governing how habitat might influence whether Rusty Blackbirds nest singly or colonially should be investigated (Avery 1995).
Research	Distribution and Abundance	Medium	More complete surveys of the distribution of breeding Rusty Blackbirds in Vermont are warranted to obtain a better estimate of its true status.
Research	Threats and Their Significance	Low	
Monitoring	Population Change	Medium	
Monitoring	Habitat Change	Low	
Monitoring	Monitor Threats	Medium	Shoreline development in the Rusty Blackbird strongholds in Vermont should be monitored.

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Common Name: **Rusty Blackbird**
 Scientific Name: **Euphagus carolinus**
 Species Group: **Bird**

Species Strategies

Strategy Type	Strategy Priority	Strategy Description	Performance Measure	Potential Partners	Potential Funding Sources
Easements	Medium	Known nesting habitats should be monitored over time to track impacts from development. Easements should be considered to protect important breeding habitats from development. PIF Vermont target population is 226 breeding individuals.	Number of sites identified and conserved.	VFWD, VCE, VA, VHCB	SWG, VHCB
Policy & Regulations	Low	Assist PIF with efforts to reduce mortality from pesticides used on wintering grounds.	Reduction in mortalities due to pesticides	PIF, USFWS	USFWS, USDA, SWG

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