

SHRUBLAND PASSERINE MANAGEMENT SYSTEM

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INTRODUCTION

This document describes the process used by the Department of Inland Fisheries and Wildlife (MDIFW) to implement research and management programs for songbirds that inhabit shrub-dominated communities. The species composition of this group of birds was defined by Hodgman (1998) in an assessment of research and management needs. From this assessment, a public working group, convened during summer of 2000, established goals and objectives for management of Maine's shrubland Passerines. In addition, an evaluation of the desirability, feasibility, capability of the habitat, and possible consequences have been identified, and a series of problems and strategies for overcoming limitations of the goals and objectives has been drafted.

Among the 120, or so, Passerines that occur in Maine at various times of the year, roughly 30 percent can be considered obligate shrubland species. These shrub-dependants include 37 species covering 7 families (see Appendix 1); four species reside in Maine throughout the year, 28 occur in Maine only during the breeding season, and five species are present in Maine only during the winter. Three species were omitted from the Shrubland Passerine Assessment (Hodgman 1998), and therefore, were not directly considered during development of goals and objectives. Carolina Wren and Blue-winged Warblers are rare breeding species in southern Maine and both may be slowly expanding their ranges. White-crowned Sparrow also has been omitted as they neither breed nor overwinter in Maine. Instead, they stopover during spring and fall

migrations. Despite these omissions, habitat management and outreach that will result from this system will assuredly benefit all of these species.

MANAGEMENT GOALS AND OBJECTIVES

The strategic planning process employed by MDIFW solicits public input in the development of goals and objectives for species management. The following were developed for shrubland Passerines:

Goal: Increase or maintain the populations of shrubland Passerines, and increase the understanding and appreciation of shrubland Passerines and their habitat requirements in Maine.

Population Objective 1: Identify shrubland Passerines whose populations in Maine are declining, and stabilize and begin to reverse the decline by 2017. Priority should be given to those species that have greater than 5% of their global populations breeding in Maine.

Population Objective 2: Through 2017, maintain and monitor shrubland Passerines whose populations have been stable or increasing since 1980.

Assumptions

- Objectives set at the state scale can effect population change given the complex life history of these long-distance migrants.
- When using North American Breeding Bird Survey (BBS) data to indicate population trend, we must assume that trend estimates based primarily on counts of singing males are representative of trends for the entire population.
- Sufficient BBS data exist for all species, but especially “priority species” (e.g., those with >5% of their global breeding population in Maine).

- The threshold of 5% of global breeding population is indeed appropriate.
- For species with a declining trend or evidence of a declining trend, assume that management activities in Maine can contribute to reversing the trend even though the most limiting factor may not be known.
- 1980 is an appropriate date from which to base population change. Use of 1980 reflects the beginning of the latter half of the BBS survey period. Prior to 1980, few routes were conducted in northern Maine, therefore, trend estimates based on data collected before 1980 may be subject to limited sample size.
- For species in decline for which evidence of cause is closely linked to forces outside Maine, assume detailed monitoring of the population is Maine's greatest contribution to conservation of the species.

Habitat Objective: Maintain and enhance sufficient amount of high quality habitat to prevent and reverse population declines of shrubland Passerines in Maine.

Assumptions

- "Sufficient amount" of habitat is known or can be determined for all priority species.
- Determinants of habitat quality are known or can be determined for all priority species.
- Limitations in either quantity or quality of habitat in Maine are influencing population trends.
- A mechanism for inventorying and monitoring quantity and quality of shrub-dominated habitat exists or can be developed in Maine.

- The amount of conservation land (all lands currently under conservation ownership or easement) in Maine is inadequate to achieve long-term habitat (and population) objectives for all species in this group.

Outreach Objective: By 2005, develop and begin implementing an outreach program that increases the understanding and appreciation of shrubland Passerines and their habitat requirements in Maine.

Assumptions

- “Understanding” refers to an individual’s knowledge of a species life history, niche, and conservation status in Maine.
- “Appreciation” refers to an individual’s awareness of the difficulties involved in managing a species population or habitat, given current social, political, and financial constraints.
- An appropriate (and receptive) audience can be identified and targeted by above plan.
- A formal outreach plan, however brief, is actually needed.

MANAGEMENT DECISION-MAKING PROCESS

The following three-part management system provides the framework for managing populations and habitats of shrubland Passerines in Maine. Further, it identifies a system for improving public understanding and appreciation of this group of birds.

POPULATION MANAGEMENT SYSTEM

Decision Criteria

The following criteria determine the sequence of procedures used to conserve shrubland Passerine populations in Maine (Fig. 1). Although this system applies to all species described above, it operates on an individual species basis (i.e., each species is to be run through each criterion separately). Furthermore, this approach is to be carried out in the form of an annual review, because of the dynamic nature of species priority/special concern lists, population trend estimates, etc.

Criterion A: *Have all species been reviewed for priority status?*

This criterion addresses whether each of the 37 species in this group have been reviewed by this agency to determine the relative urgency of conservation action. The Passerine Working Group recommended using a threshold of 5% of global population breeding in Maine as a criterion for prioritization. However, various organizations and agencies since the 1980s have developed, sometimes elaborate, ranking systems to focus attention on certain species (NESWDTC 1999, Carter et al. 2000). These lists of priority birds, in addition to the 5% threshold, are the source of “data” to respond to this criterion.

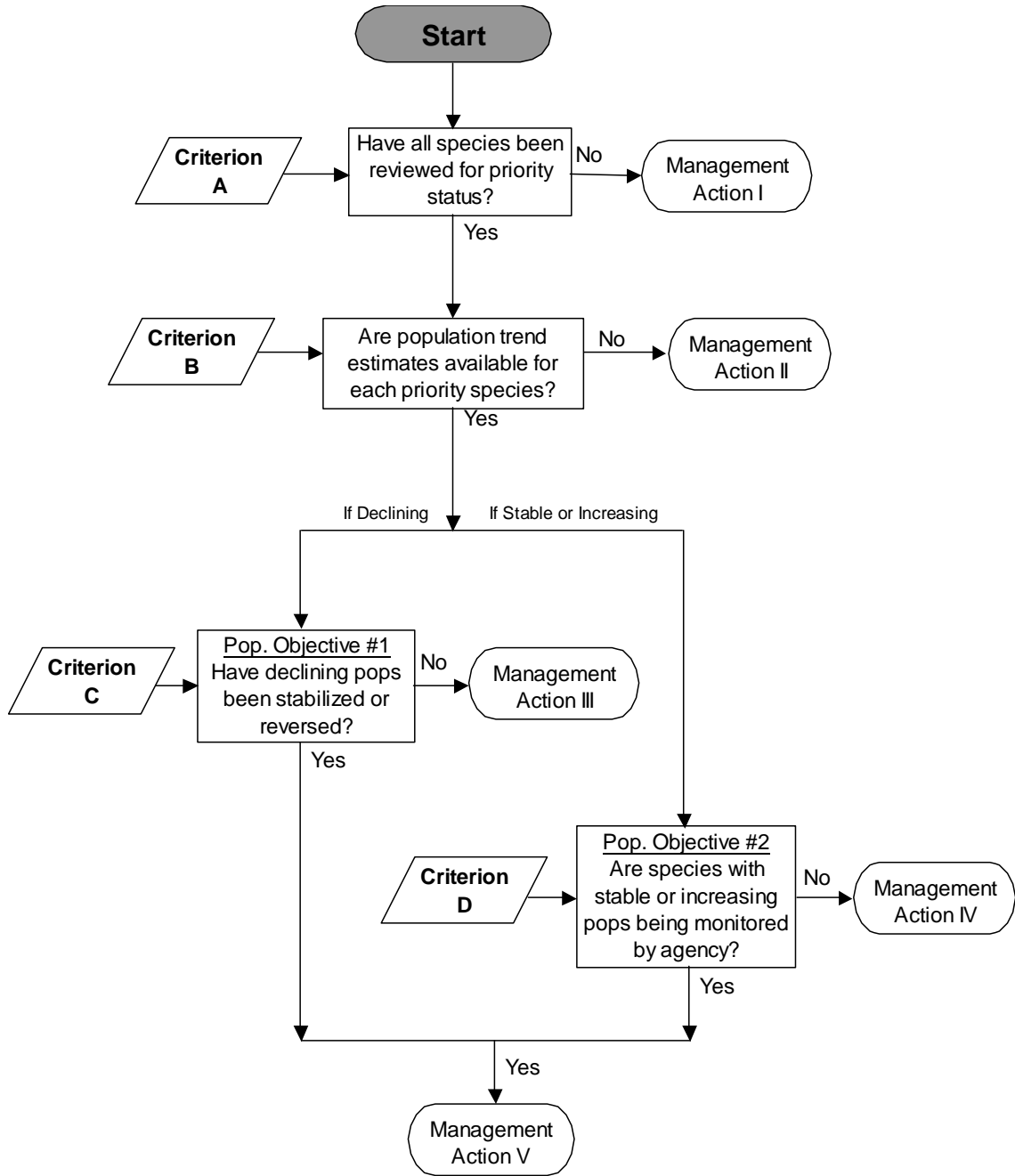


Figure 1. Flow diagram depicting decision criteria for Population Management System for Shrubland Passerines in Maine.

Rule of Thumb: Species will be considered a priority, and thus addressed by this management system, if upon annual review:

1. They are recognized by Partners in Flight (PIF) as priority birds in categories (see Appendix II for further explanation):
 - IA (High Continental Priority – High Regional Responsibility),
 - IB (High Continental Priority – Low Regional Responsibility),
 - IIA (High Regional Concern),
 - IIB (High Regional Responsibility), and
 - IIC (High Regional Threats)for either the Northern Spruce- Hardwood Forest (Rosenberg and Hodgman 2000), Northern New England (Hodgman and Rosenberg 2000), or Southern New England (Dettmers and Rosenberg 2000) Physiographic Regions, or,
2. They are listed as a Highest, High, or Moderate Priority within Bird Conservation Regions 14 (see Appendix III) or 30 by the North American Bird Conservation Initiative, or,
3. They are listed by the U.S. Fish & Wildlife Service (USFWS) as a species of management concern, or,
4. They are listed by the Northeast Endangered Species and Wildlife Diversity Technical Committee as a species of conservation concern (NESWDTC 1999), or,
5. They have a Natural Heritage global rank of G1, G2, G3 or state rank of S1 or S2, or,

6. They are considered by MDIFW to be a species of special concern,
or if,
7. >5% of their global population occurs in Maine.

An affirmative response will require that all appropriate prioritization lists (see “Rule of Thumb” above) and population data have been reviewed (annually) to determine if any of the species in this group qualify. A list of these species will be prepared annually.

Criterion B: *Are reliable population trend data available for all priority species?*

This criterion addresses the adequacy of current monitoring programs in Maine. Currently, the BBS provides the primary source of data and trend estimates for Passerines breeding in Maine. Also, National Audubon’s Christmas Bird Count (CBC) provides data and trend estimates for winter residents.

An affirmative response will require statistically reliable trend estimates based on BBS and/or CBC data.

Rules of Thumb: *If species trend estimates are only available from the*

BBS:

Trend will be based on at least 14 routes in Maine with $P \leq 0.10$ from the most recent half of the BBS period (i.e., currently 1980-2002). If <14 routes were reported from Maine in that time period, use trend estimates (same P -value and time frame) for Northern New England or Eastern Spruce/Hardwood regions (switch this to BCR 14 when available) if based on ≥ 30 routes for either region.

If species trend estimates are only available from the CBC:

Trend will be based on ≥ 10 circles for Maine.

If species trend estimates are available from both BBS and the CBC:

Use estimate with greatest power according to geographic rule described above.

Trends not conforming to these rules of thumb are not reliable.

Rule of Thumb: A declining trend is a statistically significant ($P \leq 0.10$) estimate of negative (-) population growth.

Criterion C: *Have declining populations been stabilized or reversed?*

This criterion addresses whether species with documented declines are no longer in decline. Trend estimates from the BBS and CBC will be the primary sources of data for this criterion.

An affirmative response will require statistically reliable trend estimates.

Rule of Thumb: Populations have stabilized when a species' declining trend ceases to be significant (i.e., $P > 0.10$) for three consecutive yearly updates to either the BBS or CBC. However, estimates must have been based on at least 14 routes or 10 CBC circles (5 mi radius) (or 30 routes for Northern New England or Eastern Spruce Hardwood regions when Maine data is unreliable) for 3 consecutive years. Population declines have reversed (i.e., increasing) when a species' declining trend (or nonsig. trend) becomes positive (+) and significant at $P \leq 0.10$ for three consecutive yearly updates to either the BBS or CBC. Estimates must be based on at least 14 routes (10 CBC circles) for Maine, or if Maine data are insufficient, 30 routes for Northern New England or Eastern Spruce Hardwood regions.

Criterion D: *Are species with stable or increasing populations being monitored by agency?*

This criterion addresses whether populations of any of the priority species covered by this management system are stable or increasing and are considered a priority under Criterion A. Further, it asks if these populations are being monitored by MDIFW Staff, or its volunteers, partner organizations, or agencies. Sources of data for this Criterion arise from the BBS, CBC or other (i.e. regional) monitoring programs. Trend estimates from these programs provide the data to evaluate this criterion.

An affirmative response will require statistically reliable trend estimates (see “Rule of Thumb” under Criterion B) based on BBS, CBC, or other data.

Rule of Thumb: A stable trend is an estimate of population growth that is either positive (+) or negative (-), but not statistically significant (i.e., $P > 0.10$). An increasing trend is one where population growth is positive (+) and statistically significant (i.e., $P \leq 0.10$). Note: adequate data (number of routes or circles) are critical to making these judgments, so the “Rule of Thumb” under Criterion B must be followed closely.

Management Actions

The following management actions are the recommended procedures for accomplishing the 3 population objectives. Specific management actions result from responses to decision criteria identified in Figure 1.

Management Action I

- 1) Annually, determine if any species covered by this management system meet priority criteria listed in “Rule of Thumb” under Criterion A.
- 2) Prepare list of species that will be considered a priority for this management system.

Management Action II

- 1) If possible, improve BBS coverage by:
 - a. Encouraging long-term commitments by current participants (i.e., to decrease route “down time”; when routes are assigned to new observers, the first 3 years data are not used. This is considered a *de facto* training period).
 - b. Increasing actual participation among currently assigned routes. Increase participation rate to $\geq 90\%$ or at least 54 of 60 routes run each year. Participation has waned over the past several years: 1995 (90% of routes were run), 1996 (100%), 1997 (80%), 1998 (82%), 1999 (70%), 2000 (63%), and 2001 (57%). Accomplish this via:
 - i. Send letter to all observers thanking them for their volunteer participation and explaining the importance of BBS data to monitoring species populations.
 - ii. Make follow up phone call to volunteers who have not run their assigned route two or more times since 1997. Encourage these individuals to resume survey or relinquish route to another interested individual.
 - iii. Provide other IFW-sponsored incentives (e.g., volunteer art print, Partners in Flight poster) to volunteers

- c. If possible, increase total number of routes available in Maine. This is not likely for the foreseeable future as the number of routes was recently increased for the 2001 survey.
- 2) If priority species is only a winter resident, encourage increased participation in CBC by:
 - a. Determine levels of participation in each Maine circle.
 - b. Work to increase participation in circles with few volunteers, especially those in remote locations.
 - c. Ensure that data from all circles are submitted for analysis by contacting delinquent compilers (if any).
 - d. Identify areas that can support additional circles.
 - e. Identify individuals who can serve as “new” compilers.
 - f. Work with local NGO’s to generate volunteers to count in “new” circles.
- 3) Develop separate monitoring programs for species not adequately monitored by the BBS or CBC if they are recognized as a priority under Criterion A. This will require additional volunteer support and may be coordinated with Maine Audubon.
- 4) If unsuccessful or deemed to have too little power to detect trend using BBS at state scale, build partnerships in northeast region to:
 - a. Expand BBS coverage regionally using above steps, and/or
 - b. Develop regional monitoring program specifically targeting poorly monitored species (e.g., Project Mountain Birdwatch).

Management Action III

- 1) Determine factors contributing to population decline
- 2) Differentiate between factors that can be affected in Maine and those that cannot.
- 3) For habitat-related factors, establish partnerships to improve habitat for declining species by:
 - a. Identifying stakeholders.
 - b. Seeking consensus among experts regarding highest priority approaches to recovery.
 - c. Refer to Habitat Management System.

Management Action IV

- 1) Review BBS and CBC trend estimates for all priority species.
- 2) List each priority species with either reliable nonsignificant trends or significant positive trends.
- 3) Monitor trend estimates annually.
- 4) Develop monitoring program for species inadequately monitored by existing programs but assumed to be stable or increasing.

Management Action V

- 1) Convene public working group to review population objectives for shrubland Passerines.

HABITAT MANAGEMENT SYSTEM

Decision Criteria

The following criteria determine sequence of procedures used to conserve habitat for shrubland Passerines in Maine (Fig. 2).

Criterion E: *Are the habitat requirements (and limiting factors) of all priority species generally understood?*

This criterion evaluates what is currently known about the habitat requirements of each of the priority shrubland Passerines in Maine. A review of literature for each of the priority species will be the source of data to answer this criterion.

An affirmative response will require that this database be completed for all priority shrubland Passerines.

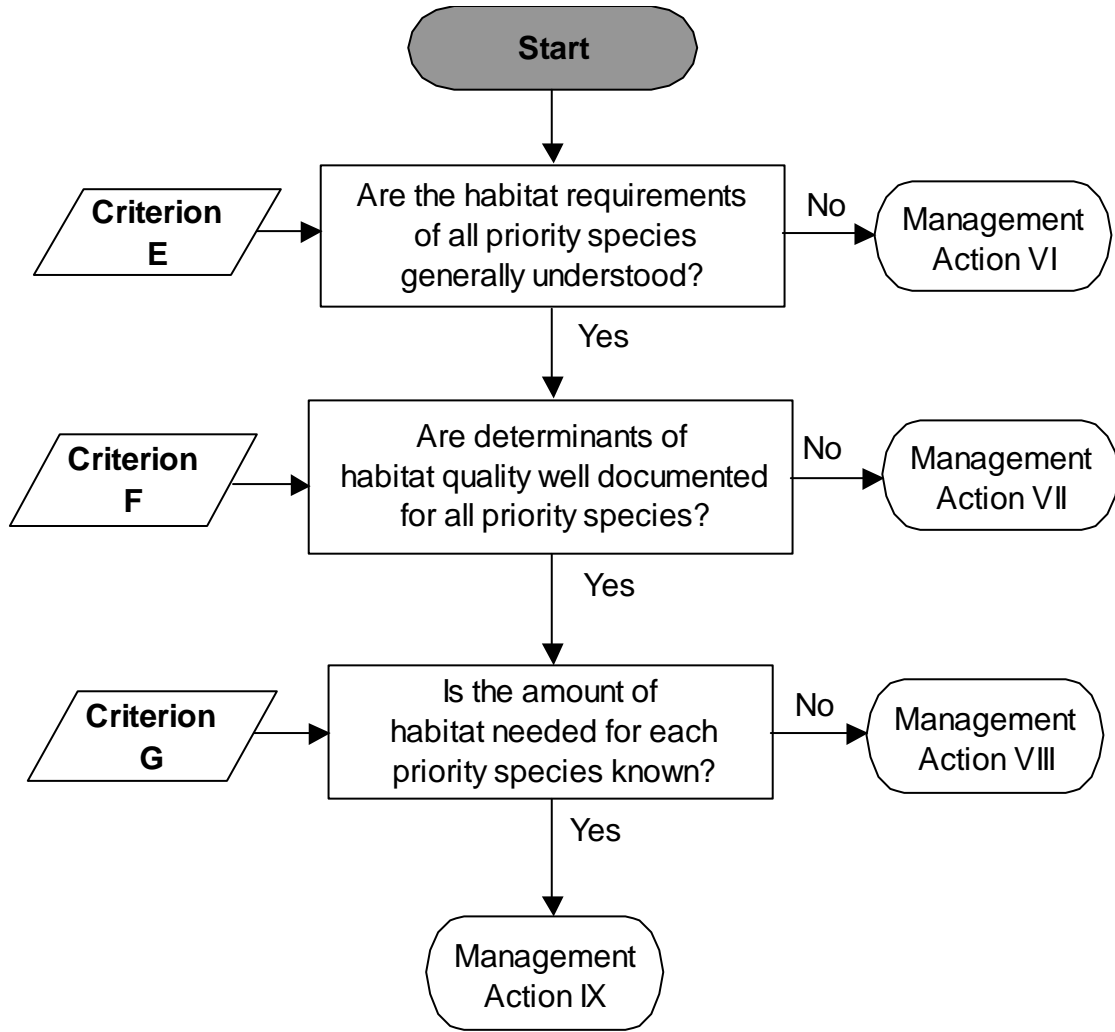


Figure 2. Flow diagram depicting decision criteria for Habitat Management System for Shrubland Passerines in Maine.

Criterion F: *Are determinants of habitat quality well documented for all priority species?*

This criterion evaluates whether the factors effecting habitat quality are well documented in the literature. A review of literature for each of the priority species will be the source of data to answer this criterion.

An affirmative response will occur when a summary document reviewing the ornithological literature on the subject of habitat quality for each priority shrubland Passerine has been prepared and reviewed by appropriate supervisors.

Criterion G: *Is the amount of habitat needed for each priority species known?*

This criterion addresses whether, given the knowledge and assumptions inherent within the three previous criteria, can the amount of shrubland habitat needed for all priority shrubland Passerines be quantified.

An affirmative response will require a spreadsheet and summary report describing calculations of habitat needs for all priority shrubland Passerines and these be reviewed by appropriate supervisors.

Management Actions

The following management actions are the recommended procedures for accomplishing habitat objectives. Specific management actions result from responses to decision criteria identified in Figure 2.

Management Action VI

- 1) Conduct literature review on habitat requirements for all priority shrubland Passerines.
- 2) Conduct additional research as needed to fill gaps in knowledge.

Management Action VII

- 1) Conduct literature review on factors affecting habitat quality for all priority shrubland Passerines.
- 2) Create database that includes the following fields:
 - a. Priority species.
 - b. Preferred habitat (e.g. old field).
 - c. Important microhabitat(s) (e.g., ground nester, “hawks” insects from elevated perches).
 - d. Important structural components of the landscape or shrubland (e.g. sensitive to patch size, prefers wet sites, etc.).
- 3) Identify significant gaps in knowledge and potential consequences.
- 4) Conduct additional research as needed to fill gaps in knowledge.

Management Action VIII

- 1) Calculate amount of habitat needed for each priority shrubland Passerine based on:
 - a. Desired population level.
 - b. NE PIF (or BCR-14) estimates adjusted for Maine.

Management Action IX

- 1) Compare amounts needed with an assessment of existing conservation lands (see Wetland Passerine Management System).
- 2) Seek partnerships with landowners to conserve/monitor additional shrubland habitat.
- 3) Convene public working group to revisit habitat objective.

OUTREACH MANAGEMENT SYSTEM

Decision Criteria

The following criteria determine the sequence of procedures to be used to improve the understanding and appreciation of shrubland Passerines in Maine.

Criterion H: *Has an outreach plan been developed?*

This criterion simply addresses whether a plan for increasing the understanding and appreciation of shrubland Passerines and their habitat requirements in Maine has been assembled.

An affirmative response will be met when a brief document describing outreach materials and a schedule for their distribution have been drafted.

Criterion I: *Has an outreach plan been implemented?*

This criterion addresses whether a plan for increasing the understanding and appreciation of shrubland Passerines and their habitat requirements in Maine has been put in place.

An affirmative response will have been achieved when outreach materials have been developed and distributed.

Management Actions

The following management actions are the recommended procedures for accomplishing outreach objectives. Specific management actions result from responses to decision criteria identified in Figure 3.

Management Action X

- 1) Identify target audience.

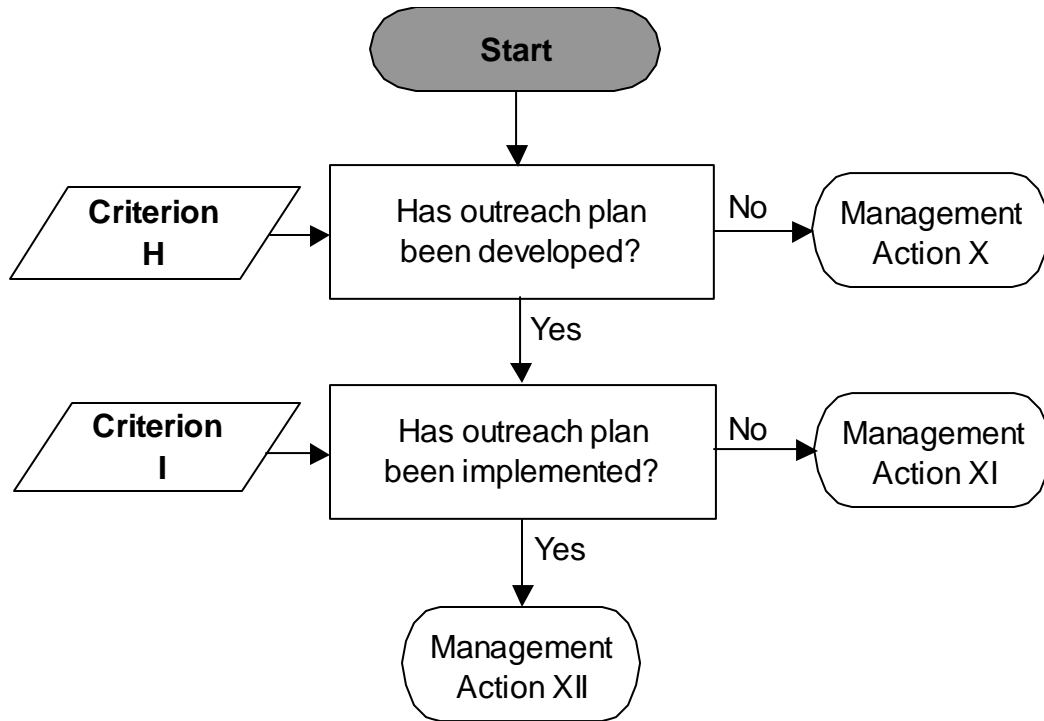


Figure 3. Flow diagram depicting decision criteria for Outreach Management System for Shrubland Passerines in Maine.

- 2) Identify components of plan.
- 3) Identify and contact potential cooperators (e.g., Maine Audubon, National Wildlife Refuges, etc.).
- 4) Determine method of delivery (e.g. radio, poster, pamphlet, articles).
- 5) Identify sites for implementation (e.g., specific refuges and nature centers, radio programs, magazines/newspapers/journalists).

Management Action XI

- 1) Prepare outreach materials as planned and scheduled in Management Action X.
- 2) Deliver outreach materials as planned and scheduled in Management Action X.

Management Action XII

- 1) Reconvene public working group and redraft outreach objective

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Appendix I. Shrubland Passerines found in Maine and included in this Management System.

Species	Residency	Community Affiliation
Alder Flycatcher	Breeding Season Only	Wetlands and Uplands
Willow Flycatcher	Breeding Season Only	Wetlands and Uplands
Eastern Kingbird	Breeding Season Only	Wetlands and Upland
House Wren	Breeding Season Only	Upland
Blue-gray Gnatcatcher	Breeding Season Only	Upland
Eastern Bluebird	Breeding Season Only	Upland
American Robin ¹	Breeding Season Only	Upland
Gray Catbird	Breeding Season Only	Wetlands and Uplands
Northern Mockingbird	Year-round Resident	Upland
Brown Thrasher	Breeding Season Only	Upland
Bohemian Waxwing	Winter Resident	Upland
Cedar Waxwing	Year-round Resident	Wetlands and Uplands
Loggerhead Shrike	Breeding Season Only	Upland
Northern Shrike	Winter Resident	Upland
Nashville Warbler	Breeding Season Only	Wetlands and Uplands
Yellow Warbler	Breeding Season Only	Wetlands and Uplands
Chestnut-sided Warbler	Breeding Season Only	Upland
Prairie Warbler	Breeding Season Only	Upland

Appendix I. Continued.

Species	Residency	Community Affiliation
Mourning Warbler	Breeding Season Only	Wetlands and Uplands
Common Yellowthroat	Breeding Season Only	Wetlands and Uplands
Wilson's Warbler	Breeding Season Only	Wetlands and Uplands
Northern Cardinal	Year-round Resident	Upland
Indigo Bunting	Breeding Season Only	Upland
Eastern Towhee	Breeding Season Only	Upland
American Tree Sparrow	Winter Resident	Wetlands and Uplands
Chipping Sparrow	Breeding Season Only	Upland
Field Sparrow	Breeding Season Only	Upland
Fox Sparrow	Breeding Season Only	Wetlands and Uplands
Song Sparrow ¹	Breeding Season Only	Wetlands and Uplands
Lincoln's Sparrow	Breeding Season Only	Wetlands and Uplands
White-throated Sparrow ¹	Breeding Season Only	Wetlands and Uplands
Common Grackle ¹	Breeding Season Only	Wetlands and Upland
Brown-headed Cowbird ¹	Breeding Season Only	Upland
Orchard Oriole	Breeding Season Only	Upland
Common Redpoll	Winter Resident	Upland
Hoary Redpoll	Winter Resident	Upland
American Goldfinch	Year-round Resident	Wetlands and Uplands

Appendix I. Continued.

¹ Small numbers of this species also may overwinter in Maine (Vickery 1978).

Appendix II. Partners in Flight Priority Species Pool

From among the breeding avifauna, a pool of species may be derived that represents priorities for conservation action within a physiographic area. Note that a species may be considered a priority for several reasons, including global threats to the species, high concern for regional or local populations, or responsibility for conserving large or important populations of the species. Justification for priority status is represented by various tiers. The primary tool for creation of this pool is the PIF prioritization process (Carter et al. 2000). This system ranks species according to seven measures of conservation vulnerability. These seven measures include four at the global scale (i.e., they do not change from area to area), as well as threats to breeding populations (TB), area importance (AI), and population trend (PT), which are specific to each physiographic area. Categories of priority status are determined by examining combinations of parameter scores, as well as the total rank score (each parameter is given a rating of 1-5 for a potential total score of 35), which is a measure of overall conservation priority. This process of identifying priority species has been standardized across all physiographic areas of North America.

There are five entry levels into the priority species pool, as follows:

Tier I. *High Continental Priority.* Species that are typically of conservation concern throughout their range. These are species showing high vulnerability in a number of factors, expressed as any combination of high parameter scores leading to an average score > 3 (the midpoint); total of 7 parameter scores will be = 22, with AI = 2 (so that species without manageable populations in the region are omitted).

Tier IA. *High Continental Priority - High Regional Responsibility.* Species for which this region shares major conservation responsibility; i.e., conservation in this region is critical to the overall health of this species. Species with AI of 4 or 5 or a high percent population (above threshold in IIC).

Tier IB. *High Continental Priority - Low Regional Responsibility.* Species for which this region can contribute to range-wide conservation objectives where the species occurs. Species with AI of 2 or 3.

Tier II. *High Regional Priority.* Species that are of moderate continental priority, but are important to consider for conservation within a region because of various combinations of high parameter scores, as defined below; total of 7 parameter scores = 19-21.

Tier IIA. *High Regional Concern.* Species that are experiencing declines in the core of their range and that require short-term conservation action to

reverse or stabilize trends. These are species with a combination of high area importance and declining (or unknown) population trend; total of 7 parameters = 19-21, with AI + PT = 8.

Tier IIB. *High Regional Responsibility.* Species, for which, this region shares in the responsibility for long-term conservation, even if they are not currently declining or threatened. These species are of moderate continental priority with a disproportionately high percentage of their total population in the region; total of 7 parameters = 19-21, with % population > threshold.

Tier IIC. *High Regional Threats.* Species of moderate continental priority that are uncommon in a region and whose remaining populations are threatened, usually because of extreme threats to sensitive habitats. These are species with high breeding threats scores within the region (or in combination with high nonbreeding threats outside the region); total of 7 parameters = 19-21 with TB + TN > 6, or local TB or TN = 5.

Tier III. *Additional Watch List.* These species are on the US national Watch List not included in the above tiers. These species score highly enough based on global criteria to warrant conservation attention wherever they occur with an AI of 2 or more.

Tier IV. *Additional Federally Listed.* Species listed under the U.S. Endangered Species Act receive conservation attention wherever they occur.

Tier V. *Additional State Listed.* Species on state endangered, threatened, or special concern lists that did not meet any of above criteria. These are often rare or peripheral populations.

Appendix III. Atlantic Northern Forest - Bird Conservation Region 14 – Priority Shrubland Passerines

Definitions (see Appendix II for details)

High Continental Concern = a continental level Watch List species

High BCR Concern = local PT ≥ 3 and (local TB ≥ 3 or local TN ≥ 3)

BCR Declines = local PT ≥ 4

High BCR Threats = local TB ≥ 4 or local TN ≥ 4

Moderate BCR Threat = local TB ≥ 3 or local TN ≥ 3

High BCR Responsibility = % pop $\geq 8\%$ or AI = 5

Moderate-High BCR Responsibility = % pop $\geq 4\%$ or AI ≥ 4

Moderate BCR Responsibility = % pop $\geq 1\%$ or AI ≥ 3

Highest Priority Landbirds

Rule 1: High BCR Concern AND High BCR Responsibility AND High Continental Concern

- No Shrubland Passerines qualify under this rule.

High Priority Landbirds

Rule 1: High Continental Concern AND Moderate BCR Responsibility

- No Shrubland Passerines qualify under this rule.

Rule 2: Moderate-High BCR Responsibility (%pop ≥ 4 or AI ≥ 4) AND BCR Declines AND Moderate BCR Threat

- Chestnut-sided Warbler

Rule 3: High BCR Responsibility (%pop $\geq 8\%$) AND BCR Declines

- No Shrubland Passerines qualify under this rule.

Moderate Priority Landbirds

Rule 1: Moderate-High BCR Priority AND BCR Decline AND Total Score ≥ 19

- No Shrubland Passerines qualify under this rule.

(Note – the following species meet the first two criteria of this rule, but have Total Score < 19: White-throated Sparrow, Gray Catbird, Eastern Kingbird, Song Sparrow, and American Robin.)

Rule 2: Moderate BCR Responsibility AND BCR Decline AND Moderate BCR Threat

- No Shrubland Passerines qualify under this rule.

Rule 3: High BCR Responsibility AND Moderate BCR Threat AND Total Score ≥ 18

- No shrubland Passerines qualify under this rule.

Rule 4: Moderate BCR Responsibility AND Uncertain BCR Trend (local PT = 3) AND Moderate BCR Threat

- No shrubland Passerines qualify under this rule.

(Note – Blue-winged Warbler would technically fit this rule, but because we know it to be expanding its range, its true PT would be increasing in this BCR even if BBS had not detected it. Therefore, BWWA does not meet this rule.)

(Additional Note – Mourning Warbler would meet Rule 4 except that it has stable or increasing PT for BCR-14 [local PT < 2].)

Rule 5: High BCR Threat (local TB ≥ 4 or local TN ≥ 4) AND poorly surveyed by BBS

- No shrubland Passerines qualify under this rule

Added for other reasons:

- Palm Warbler (Peatland habitats in parts of region are threatened)