



Maine's Wildlife Action Plan 2025-2035



Prepared by Maine Department of Inland Fisheries and Wildlife

In Collaboration with Maine Departments of Agriculture, Conservation, and Forestry and Marine Resources, and Key Conservation Partners

Maine Department of Inland Fisheries and Wildlife

Maine Department of Inland Fisheries and Wildlife (MDIFW) preserves, protects, and enhances the inland fisheries and wildlife resources of the state. Established in 1880 to protect big game populations, MDIFW has since evolved in scope to include protection and management of inland fish, non-game wildlife, and habitats, as well as restoration of endangered species like the bald eagle. In addition to its conservation duties, MDIFW is also responsible for enabling and promoting the safe enjoyment of Maine's outdoors — from whitewater rafting to boating, snowmobiling, hunting, fishing, and wildlife observation. The agency's constituents include the fish, wildlife, and people who call Maine home, as well as the visiting outdoor enthusiasts and ecotourists who call Maine Vacationland and contribute hundreds of millions of dollars each year to the state's economy.

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Key to Acronyms

AFWA	Association of Fish and Wildlife Agencies
CWCS	Comprehensive Wildlife Conservation Strategy
ESA	Endangered Species Act
E/T	Endangered and/or Threatened Species
EBTJV	Eastern Brook Trout Joint Venture
IUCN	International Union for the Conservation of Nature
MDACF	Maine Department of Agriculture, Conservation, and Forestry
MDIFW	Maine Department of Inland Fisheries and Wildlife
MDMR	Maine Department of Marine Resources
MNAP	Maine Natural Areas Program
NEHCS	Northeast Terrestrial Habitat Classification System
NOAA	National Oceanic and Atmospheric Administration
RAWA	Recovering America’s Wildlife Act
SGCN	Species of Greatest Conservation Need
STWG	State and Tribal Wildlife Grant (Program)
SWAP	State Wildlife Action Plan

SWG State Wildlife Grants (Program)
TNC The Nature Conservancy
USFWS U.S. Fish and Wildlife Service



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Acknowledgements

This revised Plan is the result of over two years of effort from numerous individuals from government entities, member of Maine's Conservation community, and the public. The Plan would not have been completed without the passion, knowledge, experience, and tireless dedication of so many individuals. Some of them deserve special recognition here.

Our approach for the 2025 Plan was to maintain the 2015 framework and update information with new data and insights collected over the past ten years. As such, the 2015 contributors crafted a solid foundation in which we were able to update, adapt, and continue improving the Plan. Thank you to the 2015 team for answering our questions, and continually providing historical knowledge, sometimes from the comforts of retirement.

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The Plan's Steering Committee acted as the primary content reviewers and offered advice and recommendations that shaped larger public meetings and Plan structure. Specific examples include the recommendation to create subcommittees dedicated to reviewing and updating information related to ecosystems. Steering Committee members generally meet every three months and provided invaluable guidance.

2025 Maine Wildlife Action Plan Steering Committee

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Staff from both the Maine Department of Marine Resources (MDMR) and Maine Natural Areas Program (MNAP) provided significant knowledge and expertise for both marine and plant species. Casey Clark, Kristen Puryear, Jesica Waller, and Rebecca Peters generously helped to coordinate taxa reviews within their respective work programs. We appreciate their flexibility, attention to detail, and efforts under abridged timelines. Maine Audubon additionally provided critical support and expertise, for which we thank Sarah Haggerty, Laura Minich-Zitske, and Sally Stockwell.

A small group individuals co-chaired four sub-committees focused on ecosystems (i.e., terrestrial and wetlands, freshwater aquatic, and marine and coastal habitats) and climate change topics in the Plan. We thank Devin Domeyer, Merry Gallagher, Corrine Michaud-LeBlanc, Kristen Puryear, Joshua Royte, Justin Schlawin, Sally Stockwell, and Angela Twitchell for taking on this advanced responsibility, in addition to many other responsibilities during Plan revision.

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2025 Maine Wildlife Action Coordination Team

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Some members of the Coordination Team served as principal authors of the Plan, assuming the responsibility of crafting and coordinating content review. We greatly appreciate their contributions.

Element 1	Phillip deMaynadier
Element 2	Kristen Puryear
Element 3	Alexander Fish
Element 4	Maine Audubon
Element 5/6	Bethany Atkins
Element 7/8	Maine Audubon

We thank Charlie Todd for authoring the Plan's Forward and for his career at MDIFW where he helped to shepherd recovery programs for Maine's Endangered and Threatened species. Overseeing the recovery of Maine's Bald Eagles and Peregrine Falcons are two noteworthy accomplishments, of which there were many during his storied career.

Finally, we would like to thank our partners in the US Fish and Wildlife Service for their guidance, encouragement and support throughout this revision. Specifically, Dee Blanton (retired), Kyle Welsh and Jennifer Ryan. Additionally, we would like to thank the Northeast Association of Fish and Wildlife Agencies' Fish and Wildlife Diversity Technical Committee for developing a set of standardized tools in support of this Plan. These tools

ensure Maine's data can be integrated into regional frameworks and support landscape level conservation efforts across the Northeast.

Maine's 2025 Wildlife Action Plan has been an ambitious project, requiring coordination among numerous conservation partners. It has been an honor and privilege to listen and learn from your feedback and contributions. We look forward to working with all of you during Plan implementation in the coming decade.

Foreword

This is the third edition of Maine's Wildlife Action Plan, last revised in 2015. States and US territories must submit a comprehensive strategy for conserving species at-risk every ten years to participate in the State and Tribal Wildlife Grants (STWG) program. Plans must address eight elements: Species of Greatest Conservation Need (SGCN), their habitats, threats to SGCN and habitats, appropriate conservation actions, monitoring of SGCN populations, periodic reviews, a communication plan, and public participation.

Ambitious? Indeed, and yet it is essential to countering the numerous threats to our flora and fauna. Having helped develop Maine's first two Plans and then retiring after a long career in endangered species conservation, another Action Plan update was certainly not on my bucket list. Yet I find the development, scope, and content of the 2025 Plan more compelling than ever. I will admit that I have read and reviewed drafts of this 2025 Plan more frequently than I was ever able to do as an employee at the Maine Department of Inland Fisheries and Wildlife (MDIFW). The Plans are increasingly relevant to most natural resources and our lives.

As a land trust member, I find myself in the "conservation partners" audience that needs and wants access to the latest status of imperiled species and the most effective strategies for conserving them in Maine. The at-large conservation community is critical to Plan implementation. Every grant proposal sought by our land trust directs us to identify the SGCN populations and habitats that stand to benefit. I am eager to share what we are doing in our organization, stay abreast of similar projects undertaken by partners, and maximize the impact of our collective conservation efforts.

Each of Maine's Wildlife Action Plans has tackled substantially more SGCN than its predecessors. In 2015, Maine's Plan newly included at risk-marine fauna not yet listed as Endangered or Threatened (E/T). The 2025 Plan is the first time that the State embraced rare plant conservation from the onset. MDIFW has worked closely with the Maine Department of Marine Resources and the Maine Natural Areas Program in the Department of Agriculture, Conservation and Forestry to review the array of species at risk in their jurisdictions. All struggle with information gaps that limit judgements of some taxa. Representatives of each state agency collaborate with their federal counterparts, academics, and conservation partners to develop this Plan. They assess taxa not considered in previous versions of the Plan as new information becomes available. The array of habitats, threats, and strategies all increase in number and complexity with an expanding SGCN list.

There are three other significant improvements in the 2025 Plan. First, the emphasis on habitat management invariably benefits multiple SGCN. The quantity, quality, and distribution of habitats are not always the immediate cause of jeopardy to populations, but inevitably play a role in their recovery. Actions for SGCN populations or guilds of similar SGCN fill in the gaps when the "coarse-filter" prescriptions for habitat are not enough. Secondly, the heightened attention to climate impacts and strategies is evident by a special effort to dovetail with Maine's Climate Plan. Climate change influences are still emerging and greatly compound many threats to SGCN and their habitats. Finally, the close coordination with Action Plans of twelve other northeastern states continues to evolve. Resource managers can readily identify regional concerns, devise over-arching strategies, and act in unison much more effectively than states acting independently. Conservation needs to act on multiple scales.

Without STWG funding, most states lacked the resources to actively implement conservation measures until a species declined to the point where listing as E/T became necessary. Wildlife Action Plans offer alternatives that

are timelier, less costly, not reliant on regulations, and more likely to succeed before extreme jeopardy of a species arises.

For many years, "Recovering America's Wildlife Act" and similar legislation has been proposed to boost the Congressional allocation for STWG to an appropriate level of funding. At present, STWG supports only 5% of the overall costs of implementing Wildlife Action Plans nationwide. A recent report (Association of Fish and Wildlife Agencies 2025) offers these economic statistics relevant to conserving species at-risk:

- \$55,272,075 = total nationwide STWG apportionment by U.S. Congress in FY 2025
- \$1,400,000,000 = annual budget necessary to implement current Wildlife Action Plans
- \$1,200,000,000,000 = annual economic benefit of outdoor recreation
- \$24,000,000,000,000 = annual economic benefit of ecosystem services within national forests and grasslands alone

Wildlife Action Plans face a mounting challenge overtime. Improved funding for implementation has not followed suit. In FY 2024, Maine received its customary 1% share of the national STWG federal allocation using a formula based on a state's area and number of citizens. For the 721 SGCN in this Plan, that budget represents an investment of only \$818 per SGCN each year in Maine. In combination with across-the-board program reductions in federal agencies, this is an ominous period for meeting the escalating challenges to biodiversity.

There is an opportunity for every conservation-minded agency, business, NGO, and interested citizen to find a supporting role. Perhaps you want to add your voice to other pleas for a significant STWG budget increase or establish new funding mechanisms. Maybe you would rather quietly help implement a meaningful conservation strategy in your community. In either scenario, it is critical that all understand current program limits and the plethora of opportunities to help.

Maine's citizens and visitors treasure the State's diverse natural heritage. The State's conservation community is well established, extremely effective, and integral to implementation of this Wildlife Action Plan. Read on if you wish to better understand and safeguard at-risk animals, plants, and the habitats and landscapes supporting them. You have come to the best venue to help conserve Maine's biodiversity.

Charlie Todd

Wildlife Biologist, Maine Department of Inland Fisheries and Wildlife, 1986 - 2020

Introduction

Welcome to Maine

Located at the northeast corner of the United States, Maine is a relatively large and rural state by eastern standards. Spanning 320 miles from north-to-south and 210 miles east-to-west (at its full extent), Maine lies halfway between the equator and the North Pole. It is the only state in the continental U.S. more connected to Canada than its border with other states. The total area (33,315 square miles) nearly equals that of the other four New England states combined. The U.S. Census Bureau estimated a population of 1.40 million people in Maine in 2024, or 42 people per square mile: the lowest population density in the East.

Maine is a land rich in contrasts between the boreal and temperate, freshwater and saltwater, upland and wetland, and alpine and lowlands. The predominant feature across this diverse landscape is 17.5 million acres of forests that cover 89% of Maine's land area. Woodlands are interspersed with rugged mountains; more than 5,600 lakes and ponds; 5,000,000 acres of wetlands; 31,800 miles of rivers and streams; 4,100 miles of coastline; and 4,613 coastal islands and ledges (Brandes 2001, Gawler et al. 1996). Maine is the most heavily forested state in the nation, but also hosts some of the most significant grassland and agricultural lands in New England.

This mosaic of diverse physical settings supports a wide diversity of wildlife. Islands in the Gulf of Maine showcase one of the most unique blends of seabird nesting colonies along the East Coast, including rare species such as Roseate and Arctic Terns (*Sterna dougallii*, *Sterna paradisaea*), Atlantic Puffin (*Fratercula arctica*), and Razorbill (*Alca torda*). Maine's relatively clean, free-flowing rivers sustain some of the best remaining populations of rare freshwater mussels and dragonflies in the East; host globally rare endemics, such as the Tomah Mayfly (*Siphonisca aerodromia*) and Roaring Brook Mayfly (*Epeorus frisoni*); and support the largest population of wild Eastern Brook Trout (*Salvelinus fontinalis*, EBTJV 2005) and a distinct population segment of the federally Endangered Atlantic Salmon (*Salmo salar*, National Oceanic and Atmospheric Administration, 2025). Maine's



Sunset on Cadillac Mountain in Acadia National Park.

mountains and forested habitats host a significant portion of the global breeding habitat of neotropical migrant birds such as the Bicknell's Thrush (*Catharus bicknelli*) and Black-throated Blue Warbler (*Setophaga caerulescens*), and includes a globally significant Important Bird Area (National Audubon Society, 2025). The state has some of the best examples of Pitch Pine-Scrub Oak (*Pinus rigida*, *Quercus ilicifolia*) forest remaining in New England, which host a suite of globally rare plants and invertebrates, and has the highest quantity and quality of wetlands in the Northeast, home to a myriad of waterfowl and wading birds.

Maine straddles an ecological transition zone, with much of its biota approaching the northern or southern limit of their ranges. It has as much climate gradient in only 3 degrees of latitude as that of 20 degrees of latitude in Europe (Jacobson 2009), setting the stage for high biological diversity in a relatively small area. The species most familiar to us – birds (475 species), non-marine mammals (59 species), non-marine reptiles (15 species), amphibians (18 species), inland fish (40 species), and marine species (>280 fishes, mammals, and other chordates) – actually comprise less than two percent of the known wildlife species in the state. Experts have documented over 15,000 species of non-marine invertebrates, 2,500 species of plants, 310 species of phytoplankton, 271 species of macrophytes, and 3,500 species of fungi, but they believe many times these numbers actually exist (McCollough et al. 2003, D. Gilbert pers. comm.). This array of flora and fauna is particularly impressive when one considers that only a handful of species were present just 15,000 years ago when a mile-high sheet of ice covered much of the state.

Fish, wildlife, and other biota play an important role in the lives of Maine people as they provide a source of enjoyment, recreation, and employment. Maine's quality of life, its traditional outdoor values, and its economy are strongly shaped by the diversity and abundance of its fish and wildlife. The Maine Department of Inland Fisheries and Wildlife (MDIFW), the Maine Department of Marine Resources (MDMR), and the Maine Natural Areas Program (MNAP) are the state agencies in which the public has entrusted its concern for Maine's diverse flora and fauna.



Sanford River

State Authority for Wildlife and Fisheries Management

The MDIFW is responsible for the stewardship of Maine's inland fisheries and wildlife resources. MDIFW conducts its management programs under the guidance of the legislature's Joint Standing Committee on Inland Fisheries and Wildlife and with the advice and consent of the Fish and Wildlife Advisory Council, a ten-member citizen's advisory group whose members are appointed by the governor and subject to legislative confirmation. MDIFW partners with the U.S. Fish and Wildlife Service (USFWS) for management of 'federal trust species:' notably migratory birds, federally-listed Endangered or Threatened (E/T) species, and species that are candidates for E/T listing.

Maine has had laws protecting its fish and wildlife since 1830. This early enforcement effort was the birth of the MDIFW (then Department of Inland Fisheries and Game). Although MDIFW's mission has always included protection of species not pursued for food or sport, there has been a continual shift in its focus from that of an agency concerned mostly with the administration of laws related to hunting and fishing to one with considerably broader responsibility for the monitoring and conservation of all inland fish and wildlife resources.

During the 1970s, the Maine legislature broadened MDIFW's mission. It enacted laws pertaining to E/T species and nongame wildlife, which clearly established that MDIFW had the authority to protect, maintain, and enhance all fish and wildlife species in the state, as well as their habitats. To reflect this, the legislature changed the name of the Department from 'Inland Fisheries and Game' to 'Inland Fisheries and Wildlife.' Beginning in the 1990s, MDIFW mainstreamed nongame responsibilities throughout its Bureau of Resource Management and these are now widely integrated throughout MDIFW's work programs. A recent re-organization at the Department helped coordinate a greater focus on both game and non-game species via establishment of three new program sections – Habitats, Wildlife Diversity (non-game), and Game Species.



Hibernating Little Brown Bat, listed as state Endangered primarily due to > 90% population decline associated with an invasive fungal disease – White-nose Syndrome. © MDIFW

The MDMR functions to conserve and manage marine and estuarine resources; to conduct and sponsor scientific research; to promote and develop Maine's coastal fishing industries; to advise and cooperate with local, state, and federal officials concerning activities in coastal waters; and to implement, administer, and enforce the laws and regulations necessary for these purposes. It is responsible for the management of Maine's marine resources from the high-water mark out to three nautical miles from the outermost islands lying offshore in the Gulf of Maine.

Management responsibilities follow guidance from the state legislature and the MDMR Advisory Council: 15 representatives from coastal fishing industries who are appointed by the governor and subject to legislative confirmation. The legislature directs development of state policy, and through the Joint Standing Committee on Marine Resources, oversees legislation regarding the conservation and development of marine resources. MDMR partners with the National Marine Fisheries Service for management of 'federal trust' fauna: inter-jurisdictional fish, marine mammals, and other species of concern including federally listed E/T species.

The MNAP is responsible for surveying and monitoring plants, natural communities, and Ecological Reserves, and provides information to landowners and other agencies about how best to protect and conserve rare, threatened and endangered species and exemplary natural communities. They also provide information and assistance on identifying and reducing problematic invasive species. MNAP works closely with the Beginning with Habitat Program at MDIFW to map and share information about the location of high value plants and animals for landowners, land trusts, and municipalities so they can integrate that information into forest management plans, stewardship plans, comprehensive plans, and open space plans.

The State Wildlife Grant Program

As the responsibilities of MDIFW have evolved over time so has the method of funding fish and wildlife conservation and management. Like other state fish and wildlife agencies, MDIFW programs rely heavily on federal aid distributed to states as established by the Wildlife Restoration (Pittman - Robertson) Act enacted in 1937 and the Sport Fish Restoration (Dingell - Johnson) Act passed in 1950. These funds are derived from federal excise taxes on firearms, ammunition, fishing equipment and tackle. The USFWS Office of Conservation Investment program is critical to state agency partners and the conservation of game fish and wildlife species. A traditional emphasis on habitat management has provided numerous secondary benefits to nongame species as well. Strategic but limited federal funding for E/T species is administered under Section 6 of the US Endangered Species Act (ESA).

MDMR has fulfilled its charge to conserve and manage marine and estuarine resources and to conduct and sponsor scientific research with the support of funding sources that have changed over the years. Since 1984, MDMR has completed projects supported by USFWS Office of Conservation Investment (Wallop - Breau Amendment). With the Federal ESA listing of some marine species, MDMR has conducted work with the aid of National Oceanic and Atmospheric Administration (NOAA) Species Recovery Grants to States (ESA, Section 6). Past programs, like the Species of Concern Grant Program, enabled the MDMR to advance research of non-listed species such as Rainbow Smelt (*Osmerus mordax*). These opportunities have provided some of the necessary funds for the agency to complete work on non-commercial species; however, work focusing on many species of conservation need have not been eligible for these programs as they are not federally listed or do not support recreational fisheries.

At the state level, there remains a need for stable and secure financial support for nongame and E/T wildlife and fish at both MDIFW and MDMR. The legislature established a voluntary income tax donation 'Chickadee Check-off' in 1984 followed by a conservation registration 'Loon Plate' (1995) and then a 'Sportsman's Plate' (2007) for vehicles as initial sources for program funding. This year, a new program called 'Make Change for Wildlife' was established by the Maine legislature that will allow businesses to offer shoppers to 'round up' their purchases by donating to the fund. These and other charitable contributions generate >90% of state funds for MDIFW nongame programs and are held in trust as the 'Endangered and Nongame Wildlife Fund'. Additionally, profits from a special lottery ticket 'Maine Outdoor Heritage Fund' help support new projects by state resource agencies via a competitive grants program. While these programs proved initially successful, after 41 years, all state funds reliant on donations have declined, programs for nongame species are still struggling, and the number of E/T species and species of concern continues to rise.

Recognizing this broad need, Congress created the State Wildlife Grant Program (SWG) in 2002 to help state and tribal resource agencies address conservation for fish and wildlife deemed to be 'Species of Greatest Conservation Need' (SGCN). SWG funds are appropriated annually by Congress and allocated to states by a formula that takes into account each state's size and population.

To be eligible to participate in the SWG program, Congress required all states and territories to develop a statewide Comprehensive Wildlife Conservation Strategy (CWCS), now formally known as a State Wildlife Action Plan (SWAP). These Plans provide a foundation for the future of wildlife conservation in each state and a stimulus to engage states and federal agencies and other conservation partners to think strategically about their individual and coordinated roles in prioritizing and accomplishing conservation actions. In 2005, states and territories submitted their first round of plans to the USFWS for review. Maine's CWCS was approved as submitted and was substantially updated and expanded in 2015.

SWG funds apportioned to Maine totaled \$5.1 million during 2015-2024. Projects undertaken with SWG funds (MDIFW 2024) have addressed many SGCN, all geographic areas of the state, and have ranged in scale from ecosystems to subspecies. Projects have varied in length from one to five years. They include baseline surveys and inventories, research, management, and habitat conservation. SWG funds also help support several full-time biologist positions. The SWG program has significantly advanced the conservation of Maine's SGCN and continues to play a critical role in minimizing reliance on E/T listings.

The Value of Maine's Wildlife Action Plan

Early successes from the first generation of SWAPs are widely chronicled (Association of Fish and Wildlife Agencies 2011, Cook et al. 2008). A summary of accomplishments from Maine's 2015 Plan (MDIFW 2015) reveals the wide array of conservation benefits for SGCN: population management, habitat management, research, surveys/monitoring, and outreach. Many ongoing efforts and most new initiatives during the past ten years were enhanced or enabled by SWG funding administered by MDIFW as outlined in the 2015 Plan.

This 2025 Plan includes a new focus on habitats and prioritization of threats and conservation actions, along with easier-to-use summaries and tables. The full document provides a pathway to detailed reports on 721 SGCN, 42 habitat macrogroups, and 48 priority threats to Maine biota. These linked reports are generated by a relational database; their content is not static and can be updated periodically during the ten-year horizon of this Plan.

The value of Maine's 2025 Plan extends far beyond the requirements of the SWG program and beyond the missions of MDIFW, MDMR, and MNAP. It is an opportunity and challenge for all agencies, programs, and their conservation partners to provide effective and visionary leadership in the conservation of the state's biodiversity. Maine's Plan is intended to supplement, not duplicate, existing fish and wildlife programs and to target species in greatest need of conservation - species that are indicative of the diversity and health of wildlife in the state - while also keeping common species common.

The Plan addresses the full array of vulnerable wildlife and their habitats in Maine: vertebrates and invertebrates in both terrestrial and aquatic habitats, plus the plants and natural communities upon which they depend. Maine law defines 'fish and wildlife' as any species of wild, free-ranging fauna, including invertebrates. The Plan builds on a long history of public involvement and collaboration among conservation partners. It is meant to be dynamic, responsive, and adaptive. Hence, Maine's Plan serves as a solid foundation for the future of wildlife conservation that will help guide the collaborative efforts of state and federal agencies, tribes, conservation partners, and individuals to ensure success.

Maine's conservation partners developed the Plan through a lengthy participatory process that included input from the general public. The Plan is non-regulatory. The suite of voluntary species and habitat conservation actions in the Plan complement, but do not compete with, existing work programs and priorities of state agencies and their partners. Indeed, conservation actions will in most cases supplement existing efforts and inspire new initiatives on behalf of Maine's SGCN.



Kennebunk Plains Wildlife Management Area provides critical habitat for a number of SGCN.

Roadmap to the Plan's Eight Elements

Congress identified eight required elements to be addressed in each state's Plan (Teaming with Wildlife Committee 2003). They also directed that strategies identify and focus on "species of greatest conservation need," yet address the "full array of wildlife" and wildlife-related issues, helping to keep common species common. Plans must address these eight elements:

1. Information on the distribution and abundance of species of wildlife, including low and declining populations as the state fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the state's wildlife;
2. Descriptions of locations and relative condition of key habitats and community types essential to conservation of species identified in (1);
3. Descriptions of problems that may adversely affect species identified in (1) or their habitats, and priority research and survey efforts needed to identify factors that may assist in restoration and improved conservation of these species and habitats;
4. Descriptions of conservation actions proposed to conserve the identified species and habitats and priorities for implementing such actions;
5. Proposed plans for monitoring species identified in (1) and their habitats, for monitoring the effectiveness of the conservation actions proposed in (4), and for adapting these conservation actions to respond appropriately to new information or changing conditions;
6. Descriptions of procedures to review the strategy at intervals not to exceed 10 years;
7. Plans for coordinating the development, implementation, review, and revision of the plan with federal, state, and local agencies and Tribal Nations that manage significant land and water areas within the state or administer programs that significantly affect the conservation of identified species and habitats; and
8. Provide an opportunity for public participation in the development of the Wildlife Action Plan.

The founding legislation and subsequent guidance emphasize that broad public participation is an essential element of developing and implementing these plans.

MDIFW led the effort to develop Maine's 2025 Plan. The Plan creates a vision for conserving the state's wildlife, and it is much more than an agency plan because of broad participation by Maine Department of Agriculture, Conservation, and Forestry (MDACF), MDMR, and dozens of Maine's conservation partners. While each state's strategy will reflect a different set of issues, management needs, and priorities, states are working together to ensure nationwide consistency and a common focus (AFWA 2012, Crisfield et al. 2013).

To facilitate development of Maine's revised Plan, MDIFW and partners addressed Elements 1, 2, 3, and 4 in unique chapters. We combined Elements 5 and 6 into a single chapter because of the considerable overlap of monitoring and adaptive management inherent in each. Similarly, we have combined elements 7 and 8 as a single chapter reflecting their mutual emphasis on collaboration and public involvement.

Executive Summary of the Plan's 8 Elements

Element 1: Species of Greatest Conservation Need

A critical dilemma facing conservation biologists and managers worldwide is the need to allocate limited dollars, staff, and programmatic resources toward a growing list of conservation challenges. Foundational to this prioritization process in Maine's Plan is the development of a list of SGCN. Biologists from MDIFW and other state agencies, with cooperation from conservation partners and species experts, developed a suite of objective criteria for designating SGCN that is transparent and science-based, and recognizes that species conservation concerns can be identified at global, regional, and local scales. Primary themes for SGCN prioritization include risk of extirpation, population trend, endemism, and regional conservation concerns. Secondary themes for SGCN prioritization include climate change vulnerability, survey knowledge, and indigenous cultural significance.

Maine's 2025 list of 721 SGCN are grouped into three priority levels: 198 Priority 1 (Highest), 260 Priority 2 (High), and 263 Priority 3 (Moderate). The 2025 SGCN list has increased from the 378 SGCN in Maine's 2015 Wildlife Action Plan and 213 SGCN in Maine's 2005 Wildlife Conservation Strategy. SGCN from each priority level are eligible for SWG funding assistance from the USFWS. The net increase in SGCN is driven primarily from a) the inclusion of plants, b) scrutiny of more inland invertebrate taxa, and c) well-documented declines in additional bird species. It is our hope that identifying a relatively comprehensive, prioritized suite of SGCN will help MDIFW and conservation partners implement meaningful conservation actions for some of Maine's most vulnerable and ecologically important elements of biodiversity.

Element 2: Key Habitats and Natural Habitats

Maine's Plan employs the Northeast Terrestrial Habitat Classification System (NETHCS), developed by NatureServe and The Nature Conservancy (TNC), to identify the extent of habitats and community types essential to the conservation of SGCN. Federal and state agencies in the Northeast have endorsed the NETHCS as a tool for assessing habitat distribution and composition. The specific version of the NETHCS used in Maine includes modifications made by the MDIFW and the MDMR to reflect Maine's landscape and coastal features. Additionally, we developed a freshwater aquatic classification system unique to Maine, as other available datasets lacked the specificity we strived for. The final habitat classification systems include two scales of ecological units that are useful for standardized mapping and conservation planning: a coarser habitat unit (i.e., macrogroup), and finer habitat unit (i.e., habitat system). There are 42 macrogroups and 157 habitat systems in Maine. Maine further consolidated the macrogroups into three broad habitat categories to facilitate development of conservation actions. The broad categories are Coastal and Marine, Terrestrial (including Freshwater Wetlands) and Freshwater Aquatic (Rivers, Lakes, and Ponds). The importance of various habitats to SGCN is not related to their statewide abundance; habitats such as pine barrens, open freshwater wetlands, and rivers and streams are disproportionately important compared to many other habitat types. We estimate that there are 4,368,826 acres of conservation land in Maine, accounting for nearly 22% of the State. Much of this conserved land lies within Focus

Areas of Statewide Significance; we identify these focus areas to help prioritize Maine's landscape for SGCN and other habitat values.



Maine's exceptional diversity of bogs and fens support many SGCN. © MDIFW

Element 3: Threats Affecting SGCN and Their Habitats

Maine's Plan focuses much attention on the habitats used by SGCN. The Plan uses a coarse filter – fine filter approach to conservation to ensure, where possible, that individual conservation initiatives benefit multiple species, while also acknowledging that some species require targeted attention. We assigned threats to both habitats and to SGCN, to clearly identify the issues that should be addressed at each level in the conservation hierarchy. As with most other states in the Northeast, we identified threats using the International Union for the Conservation of Nature (IUCN) Threat Classification Scheme. While the IUCN system is useful for categorizing stressors to SGCN and their habitats, we found that the system lacks the resolution to clearly identify the specific issues that should be considered for conservation attention. Therefore, when assigning threats we chose to adopt the primary and secondary IUCN categories, but replaced the tertiary category with a detailed narrative that fully describes the issue and its impact on the species or habitat being considered. In addition, we adapted Table 7 (Threat characteristics and categorical ratings) from The Northeast Lexicon to identify characteristics for each threat assignment (Crisfield and NEFWDC 2022).

We assigned threats to Priority 1 and 2 SGCN, and assigned Severity and Actionability characteristics for each threat – SGCN interaction. The concepts of Likelihood, Certainty and Spatial Extent were considered implicitly, and only those threats that were determined to have a moderate or high Impact for each of these characteristics were assigned. In addition, only those threats with moderate or high Severity were assigned to SGCN. We developed a simple matrix to prioritize SGCN threats, using the combination of the Impact scores for Severity and Actionability. We identified threats for terrestrial and freshwater aquatic habitats using Anderson et al. (2013) as our primary source of reference material. Because no single comprehensive source is available that describes the state of marine habitats along Maine's coast, we used a wide variety of scientific publications, as well as expert opinion, to compile information on threats. We assumed that the habitat systems within each terrestrial and marine

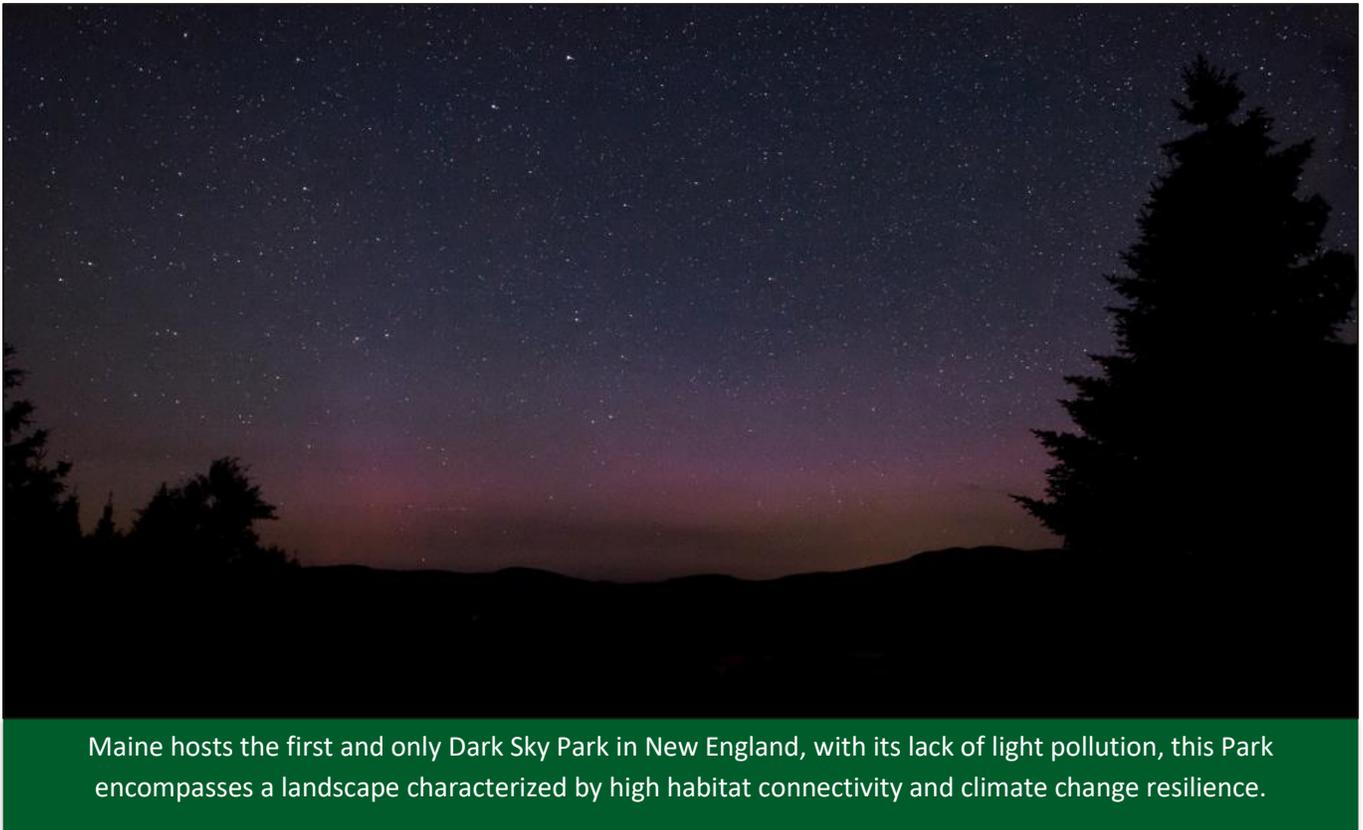
macrogroup all faced similar conservation problems; therefore we assigned threats to each macrogroup, but did not identify threats separately for each habitat system, with the exception of freshwater aquatic habitats, vernal pools, and coastal islands. Unlike our approach for SGCN, we assigned all 7 threat characteristics for each habitat – threat combination.

We assigned 46 unique threats to 256 Priority 1 and 2 SGCN species, for a total of 3,240 SGCN – threat combinations. We assigned 30 unique threats to 28 habitat macrogroups, for a total of 704 habitat – threat combinations. Residential and Commercial Development, Transportation Corridors, Climate Change, Pollution and Invasive Species were assigned to the largest number of habitats.

Element 4: Conservation Actions

The conservation actions contained in Maine's revised Plan consist of complementary coarse- and fine-filter approaches that maximize limited conservation dollars. MDIFW, MDMR, MNAP, and other conservation partners worked closely to develop a thorough catalog of coarse- and fine-filter conservation actions. We attempted to balance action specificity with flexibility so that actions can be adapted as needed to emerging issues and information. Conservation actions are non-regulatory approaches undertaken voluntarily by agencies and other conservation partners. Actions are not intended to replace current management strategies, but can be used to bolster existing efforts or inspire new ones.

The actions reflect several stages of prioritization. Conservation partners identified over 1,300 actions in the 2025 Plan. Of these, partners applied 542 actions to individual SGCN, 295 to guilds, and 36 were applied to larger taxonomic groups. We assigned 11 of these actions to all SGCN species. Conservation partners also identified 417 habitat actions, including 170 marine and coastal habitat actions, 89 freshwater aquatic habitat actions, and 158 terrestrial and wetland habitat actions. Given the volume of habitat conservation actions identified, workgroups developed several themes to organize actions into discrete groups of related actions that address common threats or use similar techniques. Actions within a theme are often complementary, and when undertaken together, may be the most effective and efficient use of conservation resources. Four super-themes emerged across habitat groups: Connectivity, Invasive Species, Mapping and Outreach, and Climate Change. Actions included in these themes will be more effective with coordinated efforts across habitats. Twenty-three landscape level conservation actions were newly developed in 2025, to address larger scale actions that overlap terrestrial, freshwater aquatic, and marine habitat groups. Each conservation action is linked to its target SGCN or habitat and the threat(s) the action is addressing in a relational database. Finally, we also identified 12 programmatic actions to help guide implementation and tracking of the 2025 Plan, broadly grouped as Outreach and Engagement, Funding and Tracking, Action Development, Regional Partnerships, and State Agency Coordination. In this chapter, we also propose criteria partners may wish to consider if evaluating how best to direct resources to conservation actions in the plan.



Maine hosts the first and only Dark Sky Park in New England, with its lack of light pollution, this Park encompasses a landscape characterized by high habitat connectivity and climate change resilience.

Element 5/6: Monitoring & Periodic Review

This chapter outlines the methods we will use to monitor SGCN and their habitats, describe how we will monitor the progress made in implementing the Plan over the next ten years, and address the procedures used to review and update the Plan moving forward. We work closely with federal, state, and private conservation partners to develop and participate in cooperative species monitoring programs. Where possible, monitoring programs target multiple species, usually within the same taxonomic group. We also describe the monitoring programs that are in place for SGCN in Maine. We include a table for each of the seven taxonomic groups this plan references.

MDIFW and partners identified habitat-scale survey and monitoring needs during development of conservation actions. We present these actions with examples of existing and general survey and monitoring techniques that partners can use to achieve these habitat-monitoring objectives.

MDIFW and partners developed 12 programmatic actions to help guide Plan implementation over the next ten years. Two of these actions address monitoring, which this chapter describes in detail.

MDIFW will use programmatic actions to periodically monitor conservation action progress. MDIFW will also establish an Implementation Committee in the winter of 2025/26 comprised of agency staff and conservation partners. This committee will review Plan accomplishments and address emerging issues or adaptive management needs. We will undertake a comprehensive plan review beginning in year eight of the 2025 Action Plan.

Element 7/8: Coordination with Partners & Public Participation

Maine has a long history of successful collaboration among conservation partners – conducting comprehensive wildlife planning and public involvement for nearly 40 years. MDIFW began assembling a Coordination team in July 2023. This core planning team developed the strategies necessary to achieve the eight required elements of the 2025 Plan. In March 2024, the Coordination Team established a Steering Committee to guide the overall development of the Plan. The Steering Committee represented the broader partner group by providing regular and timely input into the activities and proposed strategies of the Coordination Team. The Coordination Team and the Steering Committee began preparing Maine's charter early in the update; the Steering Committee officially adopted the charter in June 2024. The Coordination Team invited 214 conservation partners to participate in the preparation of Maine's 2025 Plan, representing 118 unique organizations and the public at large from December 2024 – May 2025. The partners attended two, full day conservation partner meetings at which they collaborated in the development of Elements 1-4 of the 2025 Plan.

MDIFW sought to both inform the public of its intent to revise the Plan and to encourage public participation. This was done primarily by using digital surveys, and soliciting public comments through a combination of email listservs, social media posts, and targeted requests to members of the Steering Committee, and dozens of conservation partners. Approximately 190,000 individuals were reached through email.

The success of Maine's 2025 Plan depends on continued partner and public engagement during implementation. To help guide implementation of these actions and to encourage continued public involvement, MDIFW and its partners developed five Programmatic themes that relate to Outreach and Engagement and Regional and Statewide Partnerships.



Maine has over 3,500 miles of coastline and over 2,000 coastal islands. © MDIFW

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