



Northeast Association of
Fish & Wildlife Agencies

Summary Report of the Northeast Regional Conservation Synthesis for 2025 State Wildlife Action Plans



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**Northeast Fish and Wildlife Diversity Technical Committee, Northeast Association
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By
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SUMMARY REPORT

The 2023 Northeast Regional Conservation Synthesis updates the original 2013 synthesis for State Wildlife Action Plans (Terwilliger Consulting Inc. [TCI] and the Northeast Fish and Wildlife Diversity Technical Committee [NEFWDTC] 2013). Its purpose is to support the 2025 State Wildlife Action Plan (SWAP) revisions. In addition, many associated resources are available on the www.northeastwildlifediversity.org website to support the SWAP ten-year revision cycle.

For more than fifty years, 14 fish and wildlife agencies in the Northeast United States (the Virginias to Maine) have worked together through the Northeast Association of Fish & Wildlife Agencies (NEAFWA) to conserve the region's fish, wildlife, and habitats in the greatest need of conservation. This document summarizes the strategic approach to regional conservation planning and implementation developed and applied collaboratively by NEAFWA's NEFWDTC and its key partners.

The Northeast states created a common lexicon and data framework to address the SWAP Elements. This includes:

- Regional species prioritization via Regional Species of Greatest Conservation Need (RSGCN)
- Development of shared terrestrial and aquatic habitat classifications
- Habitat condition assessments and maps
- Identification of priority regional threats
- A set of overarching actions, including assessments and monitoring of species and their habitats

Over the past decade, conservation efforts continued to address priority RSGCN and their habitats. These range from xeric woodland pollinators to rare wetland turtles and butterflies to freshwater mussels and stoneflies. It highlights how the states apply this regional conservation planning framework across boundaries to preempt federal listing under the Endangered Species Act by collaboratively implementing coordinated on-the-ground conservation.

NOTABLE ADVANCEMENTS AND INFORMATION SINCE THE 2013 SYNTHESIS

The 2013 regional conservation synthesis summarized regional conservation actions taken since 2007 through the Regional Conservation Needs (RCN), Competitive State Wildlife Grants (CSWG), and Landscape Conservation Cooperative (LCC) programs (TCI and NEFWDTC 2013). In 2017, the Regional SWAP Synthesis provided a collective summary of the conservation priorities and actions identified in the fourteen 2015 Northeast SWAPs, highlighting regional themes and priorities (TCI and NEFWDTC 2017).

The 2023 Regional Conservation Synthesis updates the inventory of RCN projects supported by NEFWDTC and CSWG projects undertaken in the Northeast region over the past decade. The LCC programs have been discontinued, so no projects were included from this program. Instead, the synthesis of existing regional conservation actions is now updated to include regional efforts of the Science Applications (SA) program of the United States Fish and Wildlife Service (USFWS), which address landscape-scale and priority species conservation.

Over the past decade, these key tools and projects were developed to support NEAFWA's NEFWDTC and SWAPs:

- Northeast SWAP Database, version 3.0 (TCI and NEFWDTC 2020)
- Northeast SWAP Synthesis (TCI and NEFWDTC 2017)
- Northeast RSGCN list updates (TCI and NEFWDTC 2013, 2018, 2023)
- RSGCN Limiting Factors Report (TCI and NEFWDTC 2020)
- Northeast RSGCN Database, version 1.0 (TCI and NEFWDTC 2023)
- Northeast Lexicon (Crisfield and NEFWDTC 2013, 2022)
- Northeast Habitat Status and Condition Assessments (Anderson et al. 2011, 2013, 2016, 2023)
- Northeast Regional Conservation Synthesis (TCI and NEFWDTC 2013, 2023)
- Northeast Climate Change Synthesis for 2025 SWAP Revisions (Staudinger et al. 2015, 2023)
- NEFWDTC website update (2023)
- 70+ new RCN, CSWG, and SA conservation projects on RSGCN and their habitats.

The document synthesizes over two thousand programs, projects, plans, resource documents, and tools to provide guidance and information that states can incorporate into their Wildlife Action Plans and beyond. Many of these were developed through NEAFWA's NEFWDTC and its RCN Grant Program as a diverse set of regional tools and best practices for addressing the key landscape and watershed-scale wildlife conservation needs of the Northeast, as prioritized by the states and their partners.

Since 2007, the RCN Grant Program, with all states contributing SWG funds to this common effort, continues to provide regionally consistent information and tools.

Individual states can use this to meet their SWAP wildlife and habitat conservation goals in the context of a regional planning and implementation framework.

DOCUMENT STRUCTURE

The 2023 Synthesis document follows the order of the required State Wildlife Action Plan Essential Eight Elements, reflecting the steps of the conservation planning framework. *Chapter 1* presents the Regional Species of Greatest Conservation Need. *Chapter 2* presents information on

their key regional habitats. *Chapter 3* synthesizes the key regional threats, and *Chapter 4* lists the regional conservation actions that address these threats. *Chapter 5* describes the regional monitoring framework, protocols, and examples. *Chapter 6* describes the SWAP review process and guidance. Finally, *Chapters 7* and *8* highlight the regional coordination, review process, and partnerships that continue to support exemplary collaboration and public engagement across the Northeast states.

REGIONAL PRIORITY SPECIES: REGIONAL SPECIES OF GREATEST CONSERVATION NEED

The 2023 Regional Conservation Synthesis update includes the fourth revision of the RSGCN list developed by NEAFWA’s NEFWDC. The original list was published in 1999 (Therres 1999) and updated by TCI and NEFWDC in 2013, 2018, and 2023. The list is developed using two main criteria: regional stewardship responsibility (proportion of the species range that occurs in the Northeast region) and conservation concern status (imperilment). It focuses action on current high-priority Northeast species as identified by the NEFWDC for 2025 SWAP development and conservation planning and implementation by state fish and wildlife agencies and their partners in hopes of preempting state and federal listing.

The 2023 RSGCN list revision identifies 382 Regional Species of Greatest Conservation Need. By using updated methods and selection criteria, 17,916 Northeast species were prescreened. More than 200 experts then provided information on 7,270 mammals, birds, reptiles, amphibians, fish (marine, diadromous, and freshwater), crayfish, freshwater mussels, marine invertebrates, terrestrial snails, Odonata (dragonflies and damselflies), Hymenoptera (bumble and solitary bees), Lepidoptera (butterflies, skippers, and moths), stoneflies, mayflies, fireflies, tiger beetles, caddisflies, and fairy, clam, and tadpole shrimp.

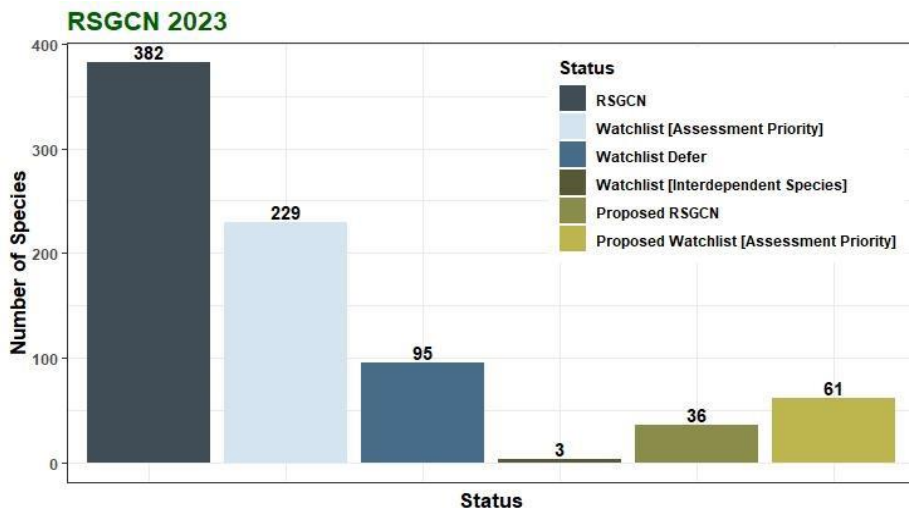


Figure ES 1 The number of Northeast species in each RSGCN category.

RSGCN and Watchlist categories total 806 species, with 47% (382) of those meeting the criteria for RSGCN status (Figure ES 1). The two “proposed” categories (Proposed RSGCN and Proposed RSGCN Watchlist Assessment Priority) represent 12% (97) of the entire list and are not currently identified as SGCN in any Northeast SWAP. However, because they meet the other RSGCN criteria, and/or their taxonomy is new or updated, including them here informs the upcoming 2025 SWAP SGCN selection as species with regional concern. The new RSGCN Watchlist Assessment Priority category contains 28% (229) of listed species highlighting those with data deficiencies, taxonomic uncertainties, or variable trends within the region. Three interdependent species met RSGCN Watchlist Interdependent Species criteria, and 95 additional species are deferred to other regions for primary stewardship in their core range. Of the 382 SGCN that met the regional responsibility and conservation concern criteria for RSGCN, Lepidoptera (Butterflies, Skippers, and Moths) is the largest taxonomic group of RSGCN, followed closely by freshwater fish. Invertebrates comprise 56% of the RSGCN, while the remaining 44% are vertebrates. This list will evolve as additional information emerges, especially for invertebrates (see *Chapter 1*).

KEY REGIONAL HABITATS ASSOCIATED WITH THE 2023 REGIONAL SPECIES OF GREATEST CONSERVATION NEED

The 2022 RSGCN Database and Northeast Lexicon contain the 24 habitat types used in the RSGCN Database, updated with new classification systems for aquatic habitats (i.e., rivers, streams, lakes, ponds, and marine areas). These 24 habitat types allow synthesis of the finer scale Key Habitats from the 14 Northeast 2015 SWAPs for SGCN and regional analysis and application to RSGCN and Watchlist species (Figure ES 2). Available information on each of these Northeast habitat types is synthesized, including:

- a. The associated RSGCN and Watchlist species
- b. Current information on habitat availability and condition
- c. Threats
- d. Relevant national and regional management plans
- e. Available best management practices
- f. Additional information and research needs

In addition, information on partner programs and initiatives and citizen science projects that engage the public in conserving each habitat are summarized (see *Chapter 2*).

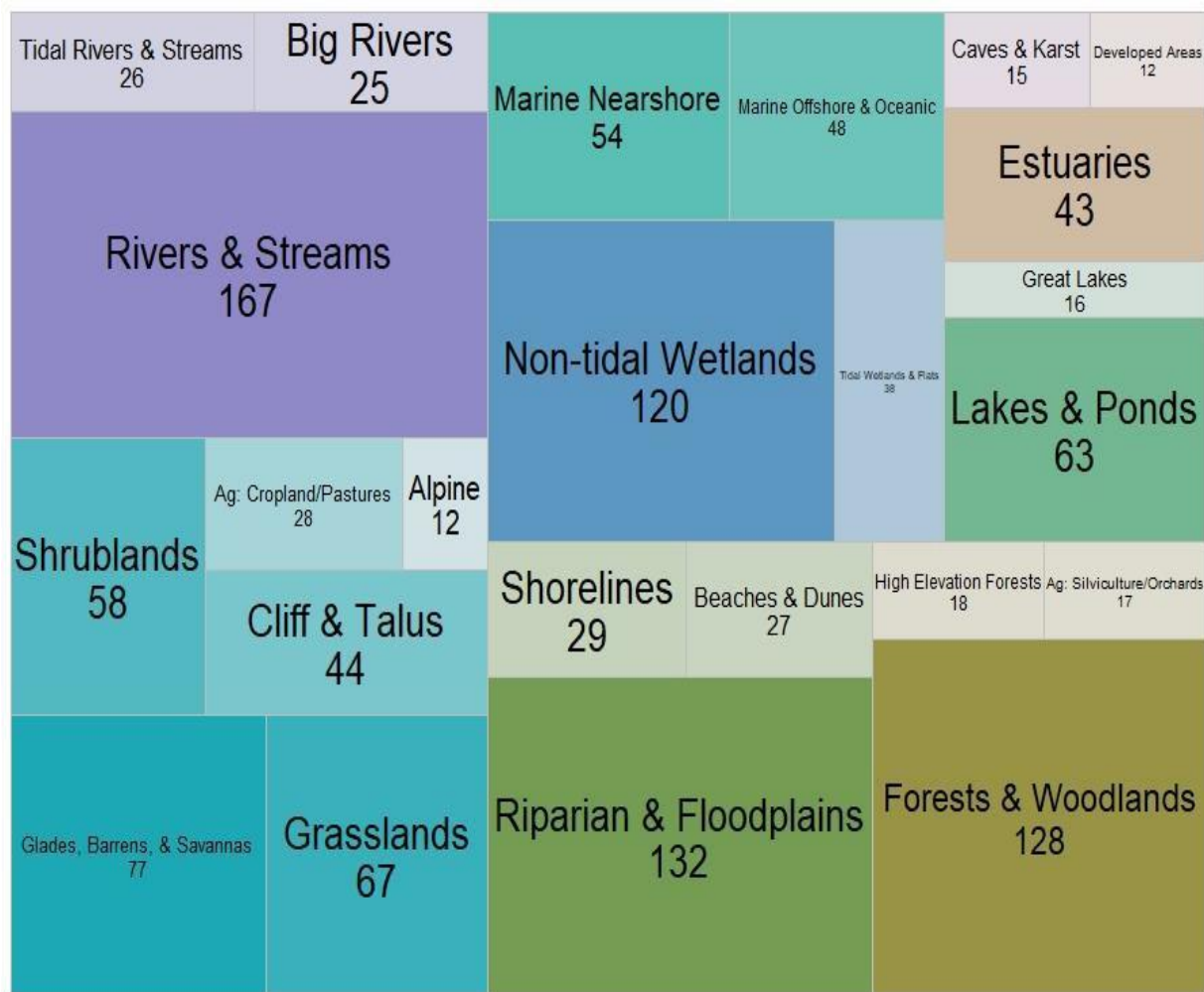


Figure ES 2 Number of RSGCN associated with the 24 Northeast habitats. Rivers and Streams, Riparian and Floodplains, Forests and Woodlands, and Nontidal Wetlands support the most RSGCN in the Northeast.

KEY THREATS IMPACTING THE RSGCN AND THEIR HABITATS IN THE NORTHEAST

Following the development of the 2015 SWAPs, the 2017 SWAP Synthesis report analyzed threats to both species and habitats identified in the 14 SWAPs (TCI and NEFWDC 2017). Regional working groups reviewed and prioritized this analysis further. As a result, the top threats to SGCN and their Key Habitats identified in the 2005 and 2015 SWAPs are the same threats identified for the 2023 RSGCN (with slight changes in rank order). The top threats to Northeast RSGCN are pollution, climate change, invasive species and disease, biological resource use, modification of natural systems, and development (Figure ES 3).

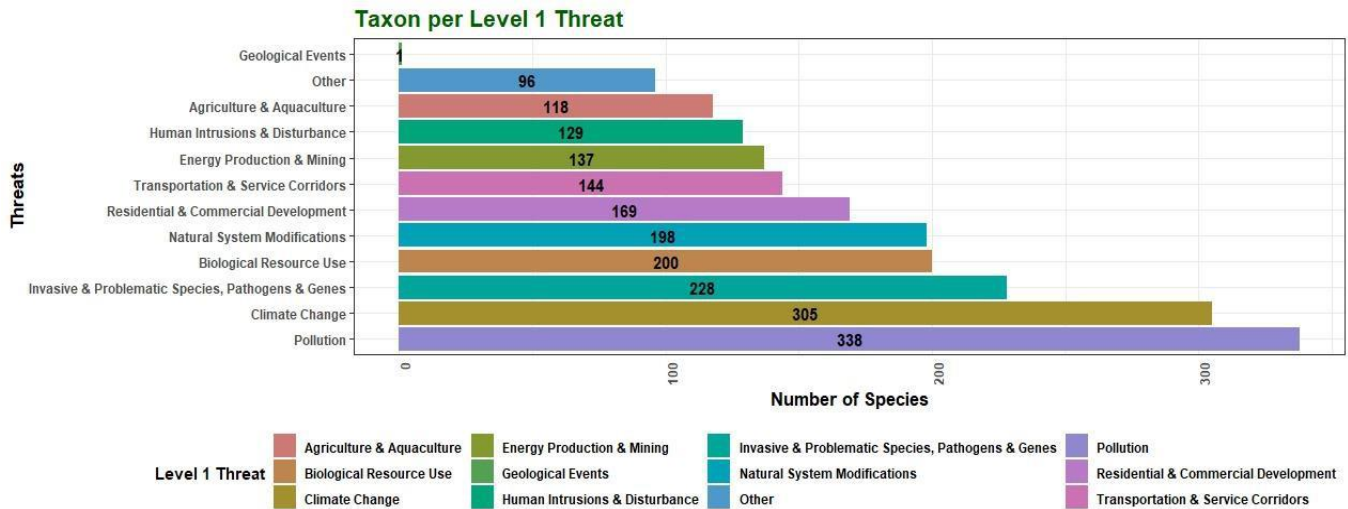


Figure ES 3 Regional threats identified in the SWAP and RSGCN process for RSGCN and Proposed RSGCN taxa (416 total species). Numbers indicate species threatened by each threat category. For an explanation of RSGCN species and categories see *Chapter 1*, for threat details see *Chapter 3* and *Supplemental Information 3*.

The regional threats classification system is consistent with the Conservation Measures Partnership (CMP) Direct Threats Classification System version 2.0 and International Union for Conservation of Nature (IUCN) updated Direct Threats Classification System, version 3.2, and advanced by Lamarre et al. in 2021. This regional classification system includes an actionable level of detail with modifications for the Northeast incorporated by TCI (*Chapter 3*). In addition, the 2022 Northeast Lexicon cites the framework as the regional threat classification scheme for the 2025 SWAPs in the Northeast.

REGIONAL PRIORITY CONSERVATION ACTIONS TO ADDRESS KEY THREATS TO RSGCN AND KEY HABITATS

The fourteen 2015 SWAPs identified and prioritized conservation actions for each state in the region. Those state-specific actions served as a solid framework for developing a set of priority actions to address top regional threats to priority species and their key habitats at the landscape, watershed, and seascape levels across the Northeast as recommended by the Landscape Conservation Report (AFWA 2021). Information was compiled from the 2015 SWAPs, the RCN program, other key regional partners, and data sources available since the 2015 SWAPs. NEFWDTC’s Technical Services project used the Northeast SWAP Database to analyze and synthesize this information in its 2017 SWAP Synthesis (TCI and NEFWDTC 2017). With additional input from its Taxonomic Teams, SWAP Coordinators, and Threat Working Groups, the NEFWDTC developed seven overarching regional conservation action themes (Figure ES 4). These broad regional actions call for developing and providing information on the Northeast conservation priorities (SWAP Elements 1 and 2), addressing the top regional threats to these priority species and habitats (SWAP Element 3), and then for evaluation of those actions (SWAP

Elements 4 and 5) to deliver the most effective conservation efforts across the region (SWAP Elements 7 and 8).

<i>Regional Priority Actions:</i>	1. Develop deliver science-based information and tools to conserve RSGCN and key habitats in the Northeast.
	2. Conserve Northeast RSGCN and their habitats from habitat loss and degradation by addressing development, natural ecosystem modifications, and biological resource use.
	3. Protect native species and habitats from the introduction and spread of disease and invasive species in the Northeast.
	4. Conserve aquatic habitats by addressing pollution and aquatic connectivity in Northeast waters.
	5. Address climate change impacts to Northeast RSGCN and their habitats.
	6. Coordinate inclusively across state boundaries to maximize efficiency and effectiveness of fish and wildlife diversity conservation in the Northeast.
	7. Develop and implement effective regional scale monitoring to inform adaptive management of regional priorities and conservation in the Northeast.

In 2016, the Conservation Measures Partnership (CMP) released the **Conservation Actions Classification, version 2.0**, which allows conservation actions to be classified and categorized in a hierarchical system (<https://conservationstandards.org>). The updated Northeast SWAP Database and the Northeast RSGCN Database are structured to incorporate species and habitat conservation actions for RSGCN and Watchlist species with Northeast-specific modifications. The 70+ new NEAFWA RCN, USFWS CSWG, and SA At-Risk Species projects that address regional priority conservation targets are summarized and linked to the action and threat they address (see *Chapter 4*).

MONITORING AND REVISION FOR ADAPTIVE MANAGEMENT OF REGIONAL PRIORITIES

New information and resources for inventorying and monitoring species (Element 1), habitats (Element 2), and threats (Element 3) have become available in the past decade. The updated Northeast RSGCN Database includes information on the availability of standardized monitoring protocols for RSGCN and Watchlist species. New regional monitoring networks developed over the period are described in *Chapter 5* of this document. Programs and projects that monitor the availability and condition of habitats are in *Chapter 2*. Monitoring programs for threats related to habitat conditions are described in *Chapter 2*. *Chapter 3* focuses on monitoring threats (e.g., invasive species, disease), and *Chapter 5* focuses on regional monitoring efforts that address

threats to multiple species, taxa, and/or habitats.

The RCN project, *Monitoring the Conservation of Fish and Wildlife in the Northeast: A Report on the Monitoring and Performance Reporting Framework for the Northeast Association of Fish and Wildlife Agencies*, provides a regional monitoring framework based on the status of SGCN and their habitats and the effectiveness of conservation projects implemented as part of SWAPs and the State Wildlife Grants program. The monitoring framework includes eight conservation targets: forests, freshwater streams and river systems, freshwater wetlands, migratory species, lakes and ponds, managed grasslands and shrublands, regionally significant SGCN, and unique habitats in the Northeast. Specific indicators and stressors are identified for monitoring to assess these conservation targets. RCN funded the original *Conservation Status of Fish, Wildlife, and Natural Habitats in the Northeast Landscape: Implementation of the Northeast Monitoring Framework* in 2011 (Anderson and Olivero Sheldon 2011) and its 2023 revision (Anderson et al. 2023; see *Chapters 5 and 6*).

STAKEHOLDER AND PUBLIC PARTICIPATION

Many partners, stakeholders, and the public participate in fish and wildlife conservation across the Northeast. *Chapter 1* of this Regional Conservation Synthesis provides information on conservation partners and their programs, projects, and initiatives that address the needs of RSGCN and Watchlist species. *Chapter 2* addresses stakeholder and public participation related to the 24 habitats that support RSGCN and Watchlist species. *Chapter 7* summarizes landscape and seascape-level conservation partnerships that address the Northeast's multiple taxonomic groups and/or habitats. This synthesis of conservation partners and their ongoing regional efforts presents opportunities to enhance collaboration, leverage resources, and synergize conservation efforts across Northeast lands and waters. Finally, *Chapter 8* summarizes available information on best practices for education and outreach activities, citizen science, and diversity, equity, justice, and inclusion initiatives. All these resources can enhance public engagement and contributions to SWAP development and implementation, addressing required Element 8 (see *Chapters 7 and 8*).

The 2023 NEFWDTC website update (www.northeastwildlifediversity.org) allows for web-enabling this Regional Conservation Synthesis, the updated Northeast RSGCN Database, and associated communication tools and products. These tools and resources will be searchable with filters to provide detailed information for specific targets, purposes, or users. In addition, by linking with other NEFWDTC programs, such as the RCN Grants Program, regional information will be integrated into a centralized online platform available to the states, conservation partners, and the public.

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