CHAPTER 6: REVIEW

SWAP Element 6

Descriptions of procedures to review the Plan at intervals not to exceed ten years.

CONTENTS

HOW TO USE THIS CHAPTER:

This Chapter provides national and regional information addressing SWAP Element 6 (above) for plan review and revision. This Regional Conservation Synthesis is updated every ten years (Section 6.0). A summary of key revisions and new guidance resources since the 2013 Synthesis are described in Section 6.1.

- Section 6.1 describes guidance documents for State Wildlife Action Plans (SWAPs) prepared by the Association of Fish and Wildlife Agencies (AFWA) and United States Fish and Wildlife Service (USFWS) over the last decade.
- Section 6.1.1 details revisions in this Regional Conservation Synthesis relating to Element 1, Species of Greatest Conservation Need (SGCN) and Regional Species of Greatest Conservation Need (RSGCN).
- Section 6.1.2 details revisions in this Regional Conservation Synthesis relating to Element 2, habitats for RSGCN.
- Section 6.1.3 details revisions in this Regional Conservation Synthesis relating to Element 3 for threats to species and their key habitats.
- Section 6.1.4 details revisions in this Regional Conservation Synthesis relating to Element 4 for conservation actions.
- Section 6.1.5 details revisions in this Regional Conservation Synthesis relating to Element 5, inventory and monitoring of species, habitats, and threats.
- Section 6.1.6 details revisions in this Regional Conservation Synthesis relating to Element 7, conservation partners.
- Section 6.1.7 details revisions in this Regional Conservation Synthesis relating to Element 8 for public engagement.

6.0 REVIEW PERIOD

The Northeast Regional Conservation Synthesis is updated and revised every ten years in sequence with the ten-year State Wildlife Action Plan (SWAP) revision cycle. The first Northeast Regional Synthesis was published in 2013, entitled **Taking Action Together: Northeast Regional Synthesis for State Wildlife Action Plans** (Terwilliger Consulting Inc. [TCI] and Northeast Fish and Wildlife Diversity Technical Committee [NEFWDTC] 2013). This document and associated resources are the second edition.

6.1 SUMMARY OF KEY REVISIONS FOR 2023

New national and regional guidance is available for 2025 SWAPs. In late 2012, the Association of Fish and Wildlife Agencies (AFWA) Teaming with Wildlife Committee issued **Best Practices for State Wildlife Action Plans: Voluntary Guidance for States for Revision and Implementation** (AFWA 2012). These best practices include guidance on all eight SWAP elements, from classification standards and systems to assessing conservation status. AFWA is currently updating this guidance for the 2025 SWAPs (AFWA *in prep*). More recently, in August 2022 AFWA provided guidance on adding plants as Species of Greatest Conservation Need to SWAPs through the minor revision process (AFWA 2022a).

In 2018, AFWA adopted a landscape conservation resolution. In 2020, the AFWA President's Task Force on Shared Science and Landscape Conservation Priorities recommended the convening of a new work group to develop recommendations on how SWAPs could become even more effective at improving range-wide conservation of Species of Greatest Conservation Need (SGCN) by leading or contributing to national and/or regional landscape conservation priorities. The AFWA SWAP and Landscape Conservation Working Group subsequently prepared the **Leading At-risk Fish and Wildlife Conservation: A Framework to Enhance Landscape-Scale and Cross-Boundary Conservation through Coordinated State Wildlife Action Plans** report in 2021 (AFWA 2021). This report summarizes five Guiding Principles:

1. Identify and apply regional and shared approaches for development, implementation and measuring progress of SWAPs, to improve effectiveness, efficiency, cost-savings, and consistency.
2. Increase consistency and alignment of SWAPs across jurisdictions so conservation can more readily be implemented at biologically relevant scales.

3. Provide support and incentives to leverage and build capacity for cross-jurisdictional and landscape conservation.
4. Ensure SWAPs are developed and implemented collaboratively and in partnership with a diverse set of partners.
5. Make SWAPs more accessible, understandable, and relevant to broad constituencies.

Each of these Guiding Principles has specific Recommended Actions, associated outcomes, and a recommended implementation framework. This Regional Conservation Synthesis implements at least 11 of the AFWA Recommended Actions:

1.1 Using clear and consistent criteria, identify priority species, habitats, landscapes, threats, and conservation actions for regional conservation.

1.2 Develop and use a common lexicon and classification system for species, habitats, threats, and conservation actions.

1.3 Develop and refine best practices for habitat and population restoration and management.

1.4 Promote the development of shared science, data, research, and monitoring protocols.

2.1 Incorporate regional priorities and approaches into SWAP development and implementation.

2.2 Work at landscape and regional scales to address key threats such as climate change, habitat loss/fragmentation, and invasive species.

2.3 Promote the use of adaptive management, best available science, and shared learning so the plans keep pace with changing conditions and innovations.

3.1 Provide funding and support for regional tool development, shared science, and landscape conservation projects.

3.3 Explore options for sharing resources, leveraging partnership contributions, and engaging non-traditional partners as well as options to lower grant match requirements and develop other incentives to encourage regional collaboration.

4.1 Increase collaboration and involvement of local, regional, and national partners in the development and implementation of SWAPs, including cross-jurisdictional efforts.

4.4 Incorporate scalable goals/strategies and priority landscapes from other planning efforts into SWAPs (i.e., State Forest Action Plans, State Comprehensive Outdoor Recreation Plans, National Fish Habitat Plan, North American Waterfowl Management Plan, TNC Ecoregional Plans, etc.).

Each of the Chapters of this Regional Conservation Synthesis addresses multiple Recommended Actions, implementing the first four of the five Guiding Principles and contributes to aspects of the fifth recommendation (see Section 6.1.6).

In December 2017 the United States Fish and Wildlife Service (USFWS) and AFWA issued a joint memorandum with updated guidance for reviewing and revising State Wildlife Action Plans (USFWS and AFWA 2017). The guidance provides detailed information regarding procedures for comprehensive, major, and minor SWAP revisions. The roles of Regional Review Teams are outlined, and examples of comprehensive, major, and minor revisions are provided.

In 2022 the **Northeast Lexicon: Terminology Conventions and Data Framework for State Wildlife Action Plans in the Northeast Region** (Crisfield and NEFWDTC 2022) was updated with recommended methods and systems to standardize SWAPs across the NEAFWA region, contributing to Recommended Action 1.2 of the AFWA landscape conservation guidance (AFWA 2021). The standardized classification systems of the 2022 Northeast Lexicon have been applied throughout this Regional Conservation Synthesis, also implementing Recommended Action 1.2.

The 2023 NEFWDTC website update (www.northeastwildlifediversity.org) allows for web-enabling this Regional Conservation Synthesis, the updated Northeast RSGCN Database (version 1.0), and associated communication tools and products. These tools and resources will be searchable with filters to provide detailed information for SGCN, RSGCN, and Watchlist species. Resources described in this Regional Conservation Synthesis, supplemental materials developed as part of the RCN 3.0 Technical Services project, the 2022 Northeast Lexicon, and RCN project resources will be centralized on one user-friendly platform with integrated links to the Northeast Climate Adaptation Science Center climate change syntheses and the habitat condition assessments prepared by The Nature Conservancy.

The following sections describe the advancements contained within this Regional Conservation Synthesis since the 2013 Synthesis for SWAP Elements 1 through 5 (TCI and NEFWDTC 2013).

6.1.1 ELEMENT 1: SPECIES

Since 2013, the Northeast Regional Species of Greatest Conservation Need (RSGCN) list has been updated twice and expanded to now include 20 taxonomic groups (see *Chapter 1*). The RSGCN list is updated every five years to include updated information on the status of species in the region and taking into account new information that has become available for additional taxonomic groups, particularly invertebrates.

In 2017 the **Northeast State Wildlife Action Plan (SWAP) Synthesis: Regional Conservation Priorities** report synthesized the 14 Northeast SWAPs of 2015, identifying regional themes and priorities for each SWAP Element (TCI and NEFWDTC 2017). These regional 2015 SWAP priorities and themes are incorporated throughout this 2023 Regional Conservation Synthesis.

In 2017 the list and status of Northeast RSGCN were added to the Northeast SWAP Database. Limiting factors for each RSGCN identified by the taxa teams and from available information sources were added to the Northeast SWAP Database, version 3.0, in 2020.

In 2019 the Southeast Association of Fish and Wildlife Agencies developed a list of RSGCN vertebrates, crayfish, freshwater mussels, and bumble bees using a slightly revised version of the Northeast RSGCN selection methodology[1]. In 2021, the Midwest Landscape Initiative and Midwest Association of Fish and Wildlife Agencies developed a list of RSGCN and Watchlist species for 13 taxonomic groups[2], again advancing the RSGCN selection methodologies of the Northeast and Southeast. In 2022-2023 the Southeast region developed the first list of RSGCN plant species in the country[3]. The Midwest region created a Midwest RSGCN Database modeled after the Northeast RSGCN Database, and the Southeast region has recently completed a SWAP Database for the region's 2025 SWAPs.

In 2022-2023, the Northeast RSGCN list was updated with several methodological advancements, informed by the RSGCN projects in the Southeast and Midwest (see *Supplementary Information 1* for detailed information). Three Watchlist categories were added, consistent with the Midwest RSGCN list: Watchlist [Assessment Priority], Watchlist [Interdependent Species], and Watchlist [Defer to an adjacent region]. All fish and wildlife species known to occur in the Northeast were pre-screened for potential identification as RSGCN or Watchlist species. Species that are not currently identified in a Northeast SWAP as a SGCN but that the taxa teams identified as meeting selection criteria are now identified as Proposed RSGCN or Proposed Watchlist species, until such time that a SWAP identifies them as SGCN.

With the updated and expanded Northeast RSGCN list, an updated **Northeast RSGCN Database** (version 1.0) was developed separately in anticipation of a new or

substantially revised **2025 SWAP Database**, a Competitive State Wildlife Grant project. The Northeast RSGCN Database includes extensive data fields on the species status, distribution, habitats, threats, limiting factors, management needs, monitoring protocols, and research needs.

This Regional Conservation Synthesis incorporates these advancements for addressing Element 1 at the regional level, as described in *Chapter 1*. Additional new information will continuously become available from the completion of Regional Conservation Needs (RCN), Competitive State Wildlife Grant (CSWG) projects, and other projects as described in *Appendix 4A*.

6.1.2 ELEMENT 2: KEY HABITATS

In the past decade, the **Northeast Aquatic Habitat Classification System** describing and mapping Northeast stream systems was finalized and then expanded to the entire eastern United States (Olivero and Anderson 2008, Olivero-Sheldon et al. 2015, McManamay et al. 2018). The **Northeast Lake and Pond Classification** for lake and pond habitats was developed and applied to the region in 2016 (Olivero-Sheldon and Anderson 2016).

The 2022 Northeast Lexicon (Crisfield and NEFWDTC 2022) reflects the 24 coarse habitat types identified for use in the Northeast RSGCN and SWAP Databases, updating the previous list of coarse habitat types with new classification systems for aquatic habitats (i.e., rivers, streams, lakes, ponds, and marine areas – see *Chapter 2* for details). These 24 coarse habitat types allow a synthesis of the finer scale Key Habitats from the 14 Northeast SWAPs for SGCN for regional analysis and application to RSGCN and Watchlist species. *Chapter 2* provides a synthesis of the available information on each of these 24 habitat types for the Northeast region, including the list of RSGCN and Watchlist species associated with each, current information on the habitat's availability and condition, threats, relevant national and regional management plans, available best management practices, and habitat information and research needs. Information on partner programs and initiatives and citizen science projects that engage the public in conservation of each habitat are summarized.

The Northeast RSGCN Database (version 1.0) includes data fields to capture habitat use and characteristics for RSGCN and Watchlist species, providing an organizational structure for collecting and sharing species and habitat information at the regional level for SWAP revisions and implementation as well as facilitating landscape level conservation across the Northeast. In many cases these habitat characteristics may serve as required habitat conditions for RSGCN and Watchlist species conservation.

In 2011, The Nature Conservancy prepared a **Conservation Status of Fish, Wildlife, and Natural Habitats in the Northeast Landscape: Implementation of the Northeast Monitoring Framework** that assessed the condition of multiple habitats in the Northeast region (Anderson and Olivero Sheldon 2011). For the 2025 SWAPs, The Nature Conservancy updated this habitat condition assessment and provided assessment data on most of the 24 coarse habitat types (Anderson et al. 2023), which has been incorporated throughout *Chapter 2* of this Regional Conservation Synthesis.

The **Map of Terrestrial Habitats of the Northeastern United States** was completed in 2013, along with detailed habitat guides and condition assessments for 140 ecological systems or macrogroups across the region (Anderson et al. 2013a, Anderson et al. 2013b, Ferree and Anderson 2013). The Nature Conservancy and partners identified **Resilient and Connected Landscapes for Terrestrial Conservation** in 2016, providing detailed analyses of the connectedness and resiliency of ecological systems or macrogroups in the Northeast and beyond to climate change (Anderson et al. 2016a, 2016b).

The **Designing Sustainable Landscapes (DSL)** project at the University of Massachusetts built upon the Map of Terrestrial Habitats of the Northeastern United States by augmenting it with additional spatial datasets and developing an Index of Ecological Integrity for more than 150 land cover types that assesses each habitat's ecological setting, intactness, connectedness, and resiliency (McGarigal et al. 2018a). **Nature's Network** launched in 2017, provides a regional habitat prioritization tool and multiple associated datasets based on the DSL datasets. The DSL project periodically releases updates of their datasets for the Northeast, including in 2020 and 2022.

This Regional Conservation Synthesis incorporates all these advancements for addressing Element 2 at the regional level, as described in *Chapter 2*, providing significantly improved information on the availability and condition of aquatic habitats across the Northeast in particular, including freshwater, estuarine and marine systems, as compared to the previous regional synthesis (TCI and NEFWDTC 2013).

6.1.3 ELEMENT 3: THREATS

The previous regional synthesis summarized regional threats identified in the 2005 Northeast SWAPs and RCN projects (TCI and NEFWDTC 2013). The 2005 SWAP threats information was classified using the **Direct Threats Classification System, version 1.1,** of the International Union for the Conservation of Nature (IUCN) and Conservation Measures Partnership (CMP), which was crosswalked to the Wildlife Tracking and Reporting Actions for the Conservation of Species (TRACS) system used by the State Wildlife Grants Program. The Wildlife TRACS system has since been revised to serve more as a grant reporting system than a threats classification system.

Following the development of the 2015 SWAPs, the Northeast State Wildlife Action Plan Synthesis: Regional Conservation Priorities report synthesized the threats to both species and habitats identified in the 14 revised regional SWAPs (TCI and NEFWDTC 2017). Regional working groups reviewed and prioritized this threats compilation. The top five most frequently identified threats to SGCN and their Key Habitats, prioritized by the regional working groups, were pollution, development, climate change, invasive species and disease, and modification of natural systems. These threats were classified with the CMP **Direct Threats Classification System, version 2.0,** which was released in 2016 with minor revisions to the IUCN-CMP version 1.1 classification.

In December 2019 the IUCN released an updated **Direct Threats Classification System, version 3.2,** with some Level 3 categories to allow for more detailed threats descriptions. In 2021 Lamarre et al. (2021) advanced a regional threats classification system consistent with both the CMP Direct Threats Classification System version 2.0 and IUCN version 3.2, releasing the **Standardized Classification of Threats to Biodiversity: Definitions for Quebec's Conservation Data Centre, version 1.0**. This regional classification system includes a third level, providing more detailed threat categories applicable to the NEAFWA region. The new Level 3 threat categories allow for an actionable level of detail, such as identifying a specific source of pollution or a specific invasive species or disease of concern. The 2022 Northeast Lexicon recommends the use of this regional threat classification scheme for the 2025 SWAPs in the Northeast (Crisfield and NEFWDTC 2022).

In December 2022, IUCN and CMP released a draft **Unified Classification of Direct Threats, version 3.3,** with Level 3 threat categories applicable at the global scale (IUCN and CMP 2022). The Level 2 categories for climate change were revised and a 12th category to capture unknown threats was added.

Climate change remains one of the top regional threats to biodiversity in the Northeast. The Northeast Climate Adaptation Science Center prepared **Integrating Climate Change into Northeast and Midwest State Wildlife Action Plans**, a synthesis of the available information on climate change projects and assessments to assist the 2015

Northeast SWAPs (Staudinger et al. 2015). This climate change synthesis is being updated in 2023 with the newest and best available information on the effects of climate change in the Northeast, available climate change vulnerability assessments and resources, and recommendations on how to make conservation actions climate-smart (Staudinger et al. 2023).

In late 2022 AFWA issued a 2nd edition of **Voluntary Guidance for States to Incorporate Climate Adaptation in State Wildlife Action Plans and Other Management Plans**, updating guidance from 2009 (AFWA 2022b). The updated guidance includes "principles and tools that can be used to plan for and implement climate change adaptation, voluntary guidance for incorporating climate change into the existing required elements of SWAPs, and case studies to demonstrate adaptation strategies deployed by states in their management efforts" (AFWA 2022b, p. 4).

This Regional Conservation Synthesis incorporates all these advancements for addressing Element 3 at the regional level, as described in *Chapter 3*. The regional threats classification system developed by Quebec (Lamarre et al. 2021) was customized to add a select number of additional Level 3 threats to fully capture the range of threats identified in the region's SWAPs and to add the 12th category for unknown threats, consistent with the 2022 Northeast Lexicon (see *Supplementary Information 3*). The Northeast RSGCN Database (version 1.0) captures species-level threats using this customized threat classification system for the updated list of RSGCN and Proposed RSGCN, with a regional analysis provided in *Chapter 3* of this Regional Conservation Synthesis.

6.1.4 ELEMENT 4: CONSERVATION ACTIONS

The previous regional synthesis summarized conservation actions implemented through the Regional Conservation Needs Grants program (TCI and NEFWDTC 2013). Since that time, the regional SWAP synthesis provided a collective summary of the conservation actions identified in the 14 Northeast SWAPs of 2015, highlighting regional themes and priorities (TCI and NEFWDTC 2017, see *Appendix 4A*).

This Regional Conservation Synthesis updates the inventory of RCN projects supported by the NEFWDTC and Competitive State Wildlife Grant projects undertaken in the Northeast region over the past decade (see *Chapter 4* and *Appendix 4A*). The synthesis of existing regional conservation actions is now updated to include information on regional projects conducted by the Science Applications program of the USFWS, all of which address RSGCN and/or Watchlist species that were also identified as At-Risk Species by the USFWS in 2021 (USFWS 2021).

In 2016, CMP released the **Conservation Actions Classification, version 2.0**, replacing the CMP and IUCN joint version 1.0 that was released in 2007 and its version 1.1 update of 2008. The classification system allows conservation actions to be classified and categorized in a hierarchical system with four levels, organized into three categories for **Target Restoration / Stress Reduction Actions, Behavioral Change / Threat Reduction Actions**, and **Enabling Condition Actions**[4]. The Northeast RSGCN Database (version 1.0) is structured to incorporate species-based conservation actions for RSGCN and Watchlist species as information becomes available, consistent with the CMP Conservation Actions Classification system and as recommended by the 2022 Northeast Lexicon for the 2025 SWAPs.

6.1.5 ELEMENT 5: INVENTORY AND MONITORING

New information and resources for inventorying and monitoring species (Element 1), habitats (Element 2), and threats (Element 3) has become available in the last decade. The Northeast RSGCN Database (version 1.0) includes information on the availability of standardized monitoring protocols for RSGCN and Watchlist species. New regional monitoring networks developed over the last decade are described in *Chapter 5* of this Regional Conservation Synthesis. Programs and projects that monitor the availability and condition of habitats are described in *Chapter 2*. Monitoring programs for threats are described in *Chapter 2* when addressing habitat condition, in *Chapter 3* when addressing singular threats (e.g., invasive species, disease), and *Chapter 5* when addressing multiple species, taxa, and/or habitats.

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 identifies a regional monitoring framework report 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 (NEAFWA 2008). The monitoring framework includes eight conservation targets:

1. Forests
2. Freshwater streams and river systems
3. Freshwater wetlands
4. Highly migratory species
5. Lakes and ponds
6. Managed grasslands and shrublands
7. Regionally significant SGCN
8. Unique habitats in the Northeast

The monitoring framework report noted at the time that additional work was needed to include coastal and marine systems in the framework, which focused limited time and resources on terrestrial and freshwater systems. Specific indicators and stressors are identified for monitoring to assess each of the eight conservation targets, with the exception of the managed grasslands and shrublands target where information was lacking.

In 2011 The Nature Conservancy assessed these eight conservation targets as part of the **Conservation Status of Fish, Wildlife, and Natural Habitats in the Northeast Landscape: Implementation of the Northeast Monitoring Framework** (Anderson and Olivero Sheldon 2011). The Nature Conservancy updated this condition assessment in 2023 with new information and analysis tools, with the exception of the RSGCN conservation target which is addressed in *Chapter 1* of this Regional Conservation Synthesis instead (Anderson et al. 2023). *Chapter 2* of this Regional Conservation Synthesis supplements the 2023 condition assessment of Anderson et al. (2023) by addressing the information need to assess the status and condition of the region's coastal and marine systems that are not currently included in the monitoring framework.

6.1.6 ELEMENT 7: PARTNERS

Guiding Principle 4 of the AFWA landscape conservation guidance states "Ensure SWAPs are developed and implemented collaboratively and in partnership with a diverse set of partners" (AFWA 2021, page 5). This Regional Conservation Synthesis contributes to three corresponding Recommended Actions, addressing SWAP Element 7:

3.3 Explore options for sharing resources, leveraging partnership contributions, and engaging non-traditional partners as well as options to lower grant match requirements and develop other incentives to encourage regional collaboration.

4.1 Increase collaboration and involvement of local, regional, and national partners in the development and implementation of SWAPs, including cross-jurisdictional efforts.

4.4 Incorporate scalable goals/strategies and priority landscapes from other planning efforts into SWAPs (i.e., State Forest Action Plans, State Comprehensive Outdoor Recreation Plans, National Fish Habitat Plan, North American Waterfowl Management Plan, TNC Ecoregional Plans, etc.).

This Regional Conservation Synthesis provides detailed information on conservation partners and their programs, projects, and initiatives that address the needs of RSGCN and Watchlist species in *Chapter 1* and each of the 24 habitats for RSGCN and Watchlist species in *Chapter 2*. Goals, priorities, and/or focal species, habitats, and actions from other planning efforts and management plans are linked to RSGCN and Watchlist species and their habitats throughout *Chapters 1, 2, 7* and *8*. *Chapter 7* of this Regional Conservation Synthesis summarizes landscape and seascape level conservation partnerships in the Northeast that address multiple taxonomic groups and/or habitats. This synthesis of conservation partners and their ongoing efforts in the Northeast present opportunities to enhance collaboration, leverage resources, and synergize conservation efforts.

6.1.7 ELEMENT 8: PUBLIC ENGAGEMENT

Guiding Principle 5 of the AFWA landscape conservation guidance states "Make SWAPs more accessible, understandable, and relevant to broad constituencies" (AFWA 2021, page 5). This Regional Conservation Synthesis contributes to two corresponding Recommended Actions:

5.1 Make SWAPs more accessible and user-friendly to both technical and general audiences by making them web-based, easily searchable, and by creating targeted products for specific users.

5.2 Improve communication and marketing to ensure SWAPs and related landscape conservation efforts are valued as an important tool for conserving biodiversity.

The NEFWDTC website[5] update in 2023 allows for web-enabling this Regional Conservation Synthesis, the 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. By linking with other NEFWDTC programs such as the RCN Grants Program, regional information will be integrated in a centralized online platform available to the states, conservation partners, and the public.

Chapter 8 of this Regional Conservation Synthesis provides a summary of available information on best practices for education and outreach activities and diversity, equity, justice, and inclusion initiatives. Citizen science projects and programs that are currently contributing to conservation of RSGCN and Watchlist species and their habitats in the Northeast are included in *Chapter 1* (species or taxa-based), *Chapter 2* (habitat-based), and *Chapter 8* (multi-taxa and/or habitat). All these resources can

enhance public engagement and contributions to SWAP development and implementation, addressing required Element 8.

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6.3 ENDNOTES

Many online resources are available for learning about topics in this chapter. However, URLs are not permanent resources; pathways may be changed or removed over time. These endnotes were all accessed in January and February of 2023, and were active at that point in time.

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[1] Southeast RSGCN List, https://georgiabiodiversity.org/natels/sersgcn.
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