

Science Applications

Bringing programs, partners, and science together to conserve lands, waters, and wildlife at risk

What we do - We coordinate with Service staff and partners to identify needs and foster collaborative conservation across large geographic areas—scales that matter for protecting natural systems people and wildlife depend upon.

How we do it - We connect science, people, and information to ensure we take the right action in the right place at the right time to tackle complex conservation challenges.

Why we do it - Because using the best available scientific information to guide conservation actions and investments can sustain the natural resources we depend upon, the fish and wildlife we care for, and the quality of life in our shared landscape.

Focusing our work

Nationally, the Service's Science Applications (SA) program focuses on these priority areas: at-risk and listed species conservation, landscape conservation, and data management. Here are some examples where we are supporting work across programs and with partners to meet those needs in the Northeast:

At-risk and listed species

SA serves as the nexus of a cross-programmatic effort within the Service to change the outcome for wildlife at risk. By coordinating strategic conservation partnerships at appropriate scales, supported by the best available science, we can stabilize or improve the status of species that need our help. Key efforts include:

Frosted elfin butterfly

- **Need:** As of this spring, 90 percent of the historic populations of the frosted elfin butterfly had not been surveyed in more than a decade. The Service needs updated information about these populations ahead of a 2023 status decision about the frosted-elfin butterfly.
- **Response:** SA helped coordinate a region-wide survey to try to find these butterflies in the places where they were last seen. Working with Ecological Services, Refuges, field offices, and partners from states and NGOs, we developed a survey protocol, led survey trainings, and funded a team of At Risk Species Conservation Fellows to provide on-the-ground capacity. Now that the surveys are complete, we are coordinating data management and analysis to inform conservation efforts with partners moving forward.

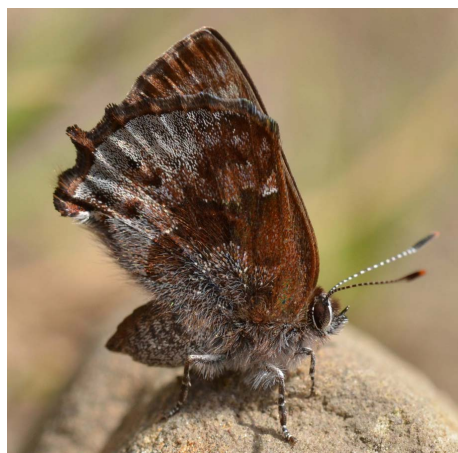


Saltmarsh sparrow

USFWS

Saltmarsh sparrow

- **Need:** The Service is leading a focused effort to conserve the saltmarsh sparrow with a target of precluding the need to list the species.
- **Response:** SA is part of a regional team working with partners to develop and implement a conservation design, refine saltmarsh sparrow habitat prioritization, quantify habitat needs, and identify management actions that will benefit the species. In this capacity, we have contributed data and expertise to help revise the Atlantic Coast Joint Venture's Saltmarsh Habitat Prioritization Tool, and to develop focal areas for saltmarsh sparrow with the Coastal Program's Strategic Plan for 2017 to 2021.



Frosted elfin butterfly

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New England Pollinator Partnership

- **Need:** Ensuring a future for the federally-endangered rusty patched bumblebee and other covered pollinators, including the petitioned yellow banded bumblebee and the monarch butterfly, requires engaging farmers and other landowners in the effort as partners while keeping their working lands working.
- **Response:** SA helped form an emerging partnership to conserve at-risk and listed pollinators in New England with a goal of reaching more

than 1,200 landowners and providing 7,500 acres of habitat. Working with each of the State NRCS offices in New England, as well as Xerces Society, and Ecological Services staff, SA helped develop a partnership agreement and regulatory assurances document to establish a partnership with private landowners for promoting pollinator conservation.

Coastal resilience and aquatic connectivity

SA facilitated the development and dissemination of coastal resilience and aquatic connectivity science by partners through the Hurricane Sandy Resiliency Program. The resulting products and partnerships benefit both wildlife and communities by strengthening natural defenses against threats from sea-level rise and intense storm events.

North Atlantic Aquatic Connectivity Collaborative

- **Need:** There are tens of thousands of outdated culverts and dams in the Northeast representing barriers to aquatic connectivity, and flooding risks to communities. Given the time and expense associated with updating these structures, the Service needed a way to prioritize.
- **Response:** SA linked the Service's Aquatic Connectivity team and other partners to the North Atlantic Aquatic Connectivity Collaborative,

a network of partners in 13 states that has developed decision support tools and a shared database of aquatic barriers that are designed for regional, state, and local priority setting.

Shared Watershed Investment Map (SWIM)

- **Need:** The Service wanted to identify areas where programs could maximize aquatic connectivity by addressing multiple barriers in specific watersheds, rather than piecemeal.
- **Response:** SA contributed data and expertise to the development of a new map that identifies watersheds where aquatic connectivity restoration should have the greatest benefits for aquatic resources based on the best available regional data, and insights from field and regional biologists.

Landscapes and watersheds

SA plays a key facilitation role in several watershed- and landscape-based partnerships that drive innovative conservation planning and actions at large geographic scales. Key efforts include:

Nature's Network

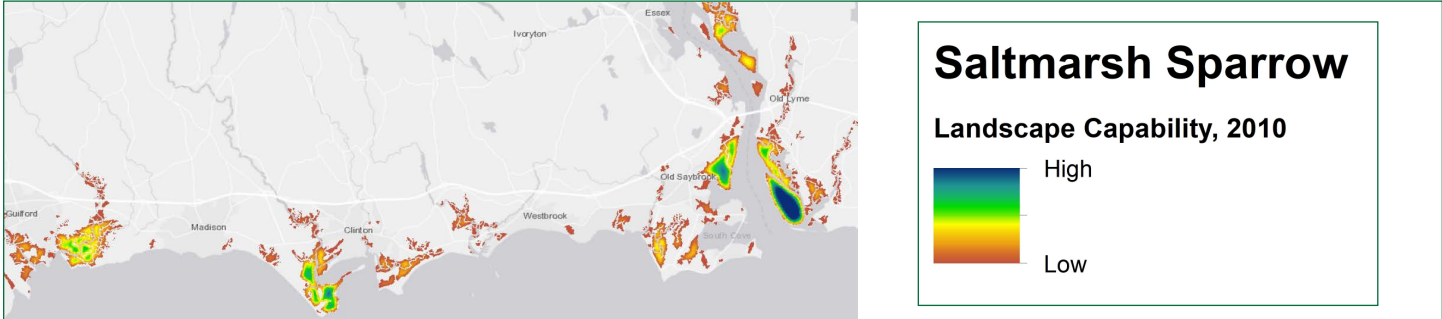
- **Need:** Representatives from state wildlife agencies in the Northeast wanted regional data and tools to carry out landscape-scale planning to support Regional Species of Greatest Conservation Need.

- **Response:** SA facilitated a team of partners representing the 13 state wildlife agencies, conservation nonprofits, and academic institutions in developing a regional landscape conservation design, Nature's Network, which reflects scientific consensus on the most important places for protecting and connecting habitat for at-risk species. Partners have used this approach as a cornerstone for priority setting and grant making by the networks of practitioners in the Chesapeake Bay, Connecticut River, and Delaware River watersheds.

Delaware River Basin Restoration Partnership

- **Need:** The passage of the Delaware River Basin Conservation Act in 2016 authorized the Service to administer a non-regulatory program designed to support and promote efforts by federal, regional, state, and local partners to take strategic conservation actions in the watershed.
- **Response:** SA is facilitating the collaborative effort to identify, prioritize, and implement science-based restoration activities within the Delaware River Basin through a grant program focused on improving water quality, wildlife habitat, flood mitigation, and public access.

For more information, contact Bridget Macdonald, U.S. Fish and Wildlife Service, bridget_macdonald@fws.gov



The Landscape Capability Model for Saltmarsh Sparrow shows the best habitat for this species, in blue and green, based on current habitat conditions.



The Saltmarsh Sparrow Habitat Prioritization Tool shows the patches that are expected to be best habitat for this species in 2080, in dark green. The future-scenario patches take into account factors like sea-level rise, tidal restrictions, and urban development.