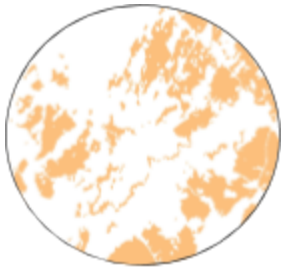
NATURE'S NETWORK
VERSION 1.0

QUICK START

Habitats for Imperiled Species

DESCRIPTION

Three related products have been developed to identify the most important places in the Northeast and Mid-Atlantic region for imperiled species of fish and wildlife, based on an analysis of habitats used by over 600 Species of Greatest Conservation Need (SGCN). Habitat Importance for Imperiled Species scores the importance of habitat types for imperiled terrestrial, wetland, and aquatic species across the region. The ecological integrity of the top one-third most important of these habitat types is estimated in the product Habitat Condition for Imperiled Species. The locations of those habitats with the highest ecological integrity are identified in Core Habitat for Imperiled Species. Core Habitat for Imperiled Species can be viewed as relatively intact areas that contain habitats likely to support high levels of imperiled terrestrial and aquatic species. This product can help to focus attention on opportunities to conserve the most intact habitats for imperiled species, often including localities where such habitats persist in otherwise degraded surrounding landscapes. These three products complement the terrestrial and aquatic core area networks, which identify intact, resilient ecosystems and habitats for a selected set of representative species, but do not explicitly focus on habitats most important for a large set of imperiled species. Areas of overlap between Core Habitat for Imperiled Species and the terrestrial and aquatic core networks are depicted in the product Nature's Network Conservation Design.



Core habitat for imperiled species

INTENDED USES

- Identify areas of ecological importance to imperiled species (Species of Greatest Conservation Need)
- Plan the recovery of populations and restore their habitats
- Conserve multi-species habitat to secure imperiled species
- Develop single or multi-species conservation strategies
- Sustain ecological value in private lands by promoting stewardship with private landowners
- Inform strategic acquisition of parcels by public or nonprofit organizations
- Identify priority locations for restoration
- Set local conservation priorities within a regional perspective

GET STARTED!

QUICK START

You can explore the Habitats for Imperiled Species map on the North Atlantic LCC Conservation Planning Atlas. Notice that the three products described above are visible: Habitat Importance for Imperiled Species, Habitat Condition for Imperiled Species, and Core Habitat for Imperiled Species. You can zoom into areas of interest using the *Zoom Tool*.

You can also get more information by turning on the individual component products that are available in the map but not activated when you open it. To see the list of these products, click on the "Layers" tab on the left side of the map. Click in the boxes to the left of the product names to activate them, and click on the arrows to the right of the product names to find out more details about the products and perform other tasks. For example, you can activate the Index of Ecological Integrity and Terrestrial and Aquatic Habitat Map (DSLland) datasets. Once a product is activated, you can also learn more about what you are seeing in the map using the *Identify Tool*.

Try using the *Identify Tool* with Habitat Importance or DSLland to identify the type of habitat present in a particular location. You can learn more about terrestrial and aquatic habitat types by referring to the Northeast Habitat Guides: A Companion to the Terrestrial and Aquatic Habitat Maps. The habitats and maps described in this document the foundation of Nature's Network, and are the source of the data used to develop DSLland.

Habitat Condition for Imperiled Species contains a possible range of values from 0-200. We cautiously *recommend* interpreting the top ⅓ of Habitat Condition as intact, the middle ⅓ as being moderately intact and the bottom ⅓ as being degraded and probably in need of restoration. The top, middle, and bottom third of the Habitat Condition layer are accordingly labelled "Protect," "Buffer," and "Restore." The labels are not a formal prescription for action; they are only meant help interpret the condition of the habitats. The Habitat Condition and Core Habitat layers identify areas of ecological importance at a regional level that organizations can combine with local or other information and data to set their own conservation priorities. Areas where Core Habitat for Imperiled Species coincide with the Terrestrial and Aquatic Core Area Networks of Nature's Network, as well as state and local priorities, may be especially promising locales for conservation action.

With a free DataBasin account, you can also upload your organization's priorities into a private map for comparison with Habitats for Imperiled Species, or you can download the Nature's Network products if your organization has GIS analysis capabilities. For example, if you have access to species locations from your state's Natural Heritage Program, you can compare their locations to the habitat condition products.

BACKGROUND

QUICK START

Habitat Importance for Imperiled Species was the first of the three imperiled species products developed and was used to create the other two. The first step in creating Habitat Importance was assembling and screening thousands of documented occurrences of over 600 Species of Greatest Conservation Need (as identified in the Wildlife Action Plans created by Northeast state fish and wildlife agencies). Next, the overlap of occurrences for each species with mapped ecosystem (habitat) types was analyzed. Then, the patterns of species' associations were summarized across all species, giving a single habitat importance score for each habitat class. These values were used to map relative habitat importance, considering the locations of all SGCN.

The top one-third of the mapped habitat importance scores (a score >77 on a scale of 0-200) are considered "Important Habitats." These habitats were then combined with a special version of the Index of Ecological Integrity (developed by UMass Amherst) to create Habitat Condition for Imperiled Species. The final result contains a possible range of values from 0-200.

The top one-third of Habitat Condition values, which are assessed to have the highest ecological integrity and are labelled "Protect," were extracted from Habitat Condition for Imperiled Species to create Core Habitat for Imperiled Species. These core areas are expected to support high levels of biological diversity, rare species, or imperiled species and are necessary to ensure their persistence.

More information about how these products were derived, and limitations and uncertainties, are available in the detailed technical documentation.

KNOWN ISSUES AND UNCERTAINTIES

As with any project carried out across such a large area, the Habitat Condition product is subject to limitations. The results by themselves are not a prescription for on-the-ground action; users are encouraged to verify, with field visits and site-specific knowledge, the value of any areas identified in the project. Known issues and uncertainties include the following:

- The results do not incorporate important social, economic, or feasibility factors.
- Users are cautioned against using the data on too small an area (for example, a small parcel of land), as the data may not be sufficiently accurate at that level of resolution.
- The identification of areas as providing habitat for imperiled species does not necessarily mean that imperiled species are actually present in those areas.
- The mapping of habitats (ecosystem types) is known to be imperfect, which consequently affects the mapped values for ecosystem integrity and species habitat. While the habitat mapping is anticipated to correctly reflect broad patterns of

ecosystem occurrence, errors in classification and placement do occur. Additionally, some specialized, small-patch habitats may be missed entirely.

- State Natural Heritage Programs may not track the same suite of species within each jurisdiction. Additionally, there are gaps in geographic coverage both within and among states with variation in survey effort. The current versions of the products do not reflect rare species data from Rhode Island. We attempted to compensate for these issues in this analysis.
- The identification of Core Habitat for Imperiled Species is predicated on the assumption that biodiversity is best supported by intact, well connected landscapes. While this assumption is soundly grounded in conservation biology theory and findings, it is recognized that many species of conservation concern may depend on habitat currently existing in a less intact state or otherwise missed by core areas. Habitat Condition for Imperiled Species, in particular, complements the core areas by identifying such areas.

LINKS FOR TECHNICAL INFORMATION

Technical documentation for imperiled species habitat products