New Jersey Landscape Project

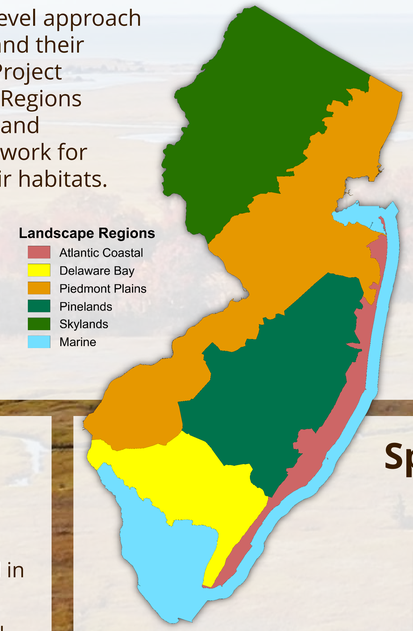
Wildlife habitat mapping for community land-use planning and species conservation

NEW JERSEY DEP
Fish and Wildlife
OFFICE OF INFORMATION SYSTEMS

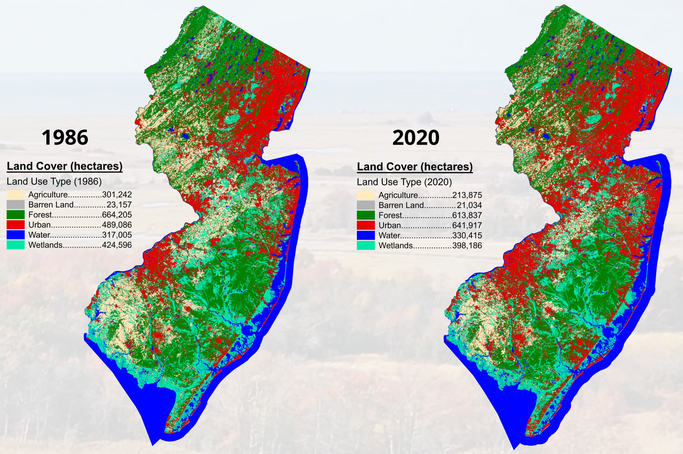
A Tool for Strategic Wildlife Habitat Conservation

The Landscape Project is a pro-active, ecosystem-level approach for the long-term protection of imperiled species and their important habitats in New Jersey. The Landscape Project categorizes New Jersey into six distinct Landscape Regions regarding the similarity of ecological communities and geographic features. This serves as a spatial framework for management and conservation of species and their habitats.

The NJDEP Fish and Wildlife (NJDEP FW) mapped habitat for endangered, threatened, and special concern wildlife within each region based on species occurrence information, Land Use/Land Cover classifications, and species habitat requirements.



Since 1986, urbanization has resulted in a loss of nearly 5,000 hectares of wildlife habitat per year. In 2007, the amount of land classified as 'Urban' surpassed the amount classified as 'Forest' for the first time. Over time, much of New Jersey's remaining wildlife habitat has become less suitable due to habitat fragmentation, which threatens imperiled wildlife species that require large, contiguous tracts of appropriate habitat.



Applications

Landscape Project maps enable state, county, municipal, and private agencies to identify important habitats and protect them in a variety of ways, including:

- Prioritizing conservation acquisition
- Guiding regulators and planners
- Providing citizens with conservation tools
- Guiding stewardship of conserved areas

Species Occurrence Areas

- Imperiled wildlife occurrence data, based on field observations from a variety of sources including Endangered and Nongame Species Program (ENSP) surveys and public reports, are stored and managed in the NJ Biotics database.
- All data must meet certain criteria and are evaluated according to an established protocol to ensure reliability.
- Feature labels are assigned to describe the type of occurrence (e.g., nest, den, etc.).
- A **Species Occurrence Area** (SOA) is a polygon generated from each species occurrence location and used to assign value to habitats. A SOA represents habitat that supports an individual occurrence and often indicates the presence of a species population *beyond* that individual occurrence.

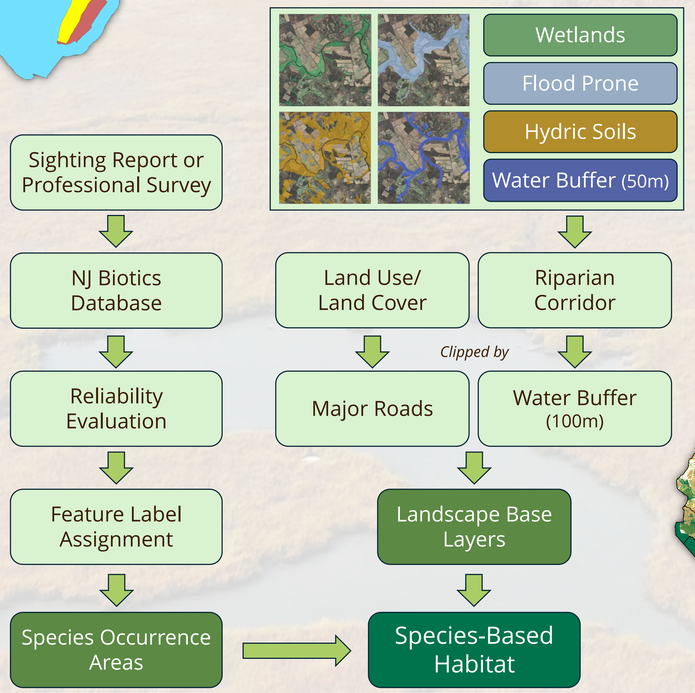
Feature Label	SOA
Hibernaculum	4 kilometer buffer
Non-breeding sighting	2 kilometer buffer
Maternity colony	2 kilometer buffer
Breeding sighting	2 kilometer buffer

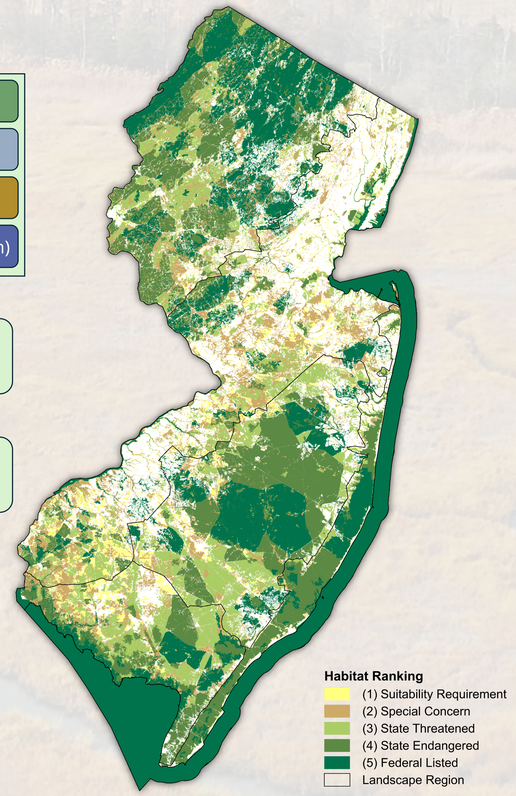
Feature labels and SOAs for the Indiana bat, *Myotis sodalis*

Landscape Base Layers

- NJDEP 2020 Land Use/Land Cover (LULC) classifications provide the foundation of the base layer.
- NJDOT Major Roadways bisect LULC classifications, serving as barriers to species movement or boundaries between contiguous LULC classes.
- Riparian Corridors are defined based on a Rutgers University Center for Remote Sensing and Spatial Analysis (CRSSA) method and multiple GIS datasets.
  - Riparian corridors are critical travel corridors for many species
- NJDEP FW and CRSSA mapped potential vernal habitat locations, which includes vernal pools and any adjacent freshwater wetlands.

Species-Based Habitat Development





Data Availability

Maps are available in ArcGIS file geodatabase format. Data are best viewed using ArcGIS Pro 3.2. Questions related to the Landscape Project Data or mapping applications should be directed to dfwgis@dep.nj.gov.

Landscape Project Products

Access NJDEP Fish and Wildlife's interactive Landscape Project products through the QR codes to the right, or online at: https://dep.nj.gov/njfw/conservation/new-jerseys-landscape-project/

Experience

Landscape Conservation Explorer

StoryMap

Patch Types

Each species-feature label combination is assigned a patch type that describes the method used to value habitat area from polygons of the Landscape base layer and construct patches of habitat:

1. *Limited extent:* values LULC polygons that directly intersect the SOA.
2. *Contiguous area:* LULC polygons are dissolved/combined into contiguous areas and then valued upon intersection with the SOA.
3. *Cardinal-proximate:* a cardinal set of LULC polygons are valued upon intersection with a SOA and a proximate set is valued based on adjacency to the valued cardinal set.
4. *Stream centerline:* valued upon intersection with an SOA. Only freshwater species use this patch type.

Habitat Ranking

SOAs are overlaid onto species-based habitat patches and patches are valued based on the status of the species present as follows:

Rank 5	Patches containing one or more occurrences of wildlife listed as endangered or threatened pursuant to the Federal Endangered Species Act of 1973.
Rank 4	Patches containing one or more occurrences of State endangered species.
Rank 3	Patches containing one or more occurrences of State threatened species.
Rank 2	Patches containing one or more occurrences of species of special concern.
Rank 1	Patches that meet habitat-specific suitability requirements for endangered, threatened, or special concern wildlife species, but do not intersect with confirmed occurrences of such species.