MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

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BIONET: Biodiversity Conservation Network

Wildlife and Heritage Service, Natural Heritage Program

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Since 1980, DNR's Natural Heritage Program (NHP) has been collecting, managing, analyzing, and distributing spatial data regarding the habitats of the state's rarest plants and animals, as well as high quality and rare natural communities and other living resources of conservation concern, including:

- 1,000 Rare, Threatened or Endangered plants and animals (over 350 of these are Endangered)
- 1,500 places where Rare, Threatened or Endangered species live (called Ecologically Significant Areas)
- 200 additional animals of Greatest Conservation Need
- 200 Watch List plants
- 27 of 75 ecological communities considered Rare in Maryland

The NHP has developed a number of digital map products designed for somewhat different purposes and different target audiences. Natural Heritage Areas, Critical Area Habitat Protection Areas, Ecologically Significant Areas, and Sensitive Species Project Review Areas are examples of products developed for various protection-related needs. For example, Sensitive Species Project Review Areas are designed specifically for reviewing proposed development projects. In 2011, NHP developed a product that better integrates rare resource information and prioritizes Maryland's vanishing natural landscapes to highlight those areas that are important to conserve the full complement of species and natural communities currently found within the State.

BioNet is a digital map (GIS shapefile) that systematically identifies and prioritizes areas for terrestrial and freshwater biodiversity conservation. It was developed as an additional tool for the Natural Heritage Program and its conservation partners to use for proactive land conservation activities, such as targeting for acquisitions and easements, locating appropriate areas for project mitigation or habitat restoration, and planning for areas that require management to sustain dwindling species and habitats. The criteria used within BioNet primarily have a dual focus on both the most irreplaceable species and habitats, as well as on the habitats that concentrate larger numbers of rare species. In addition to focusing on vanishing species and habitats, and on high quality common habitats, the criteria also were designed to incorporate the larger landscapes required for migratory animals, population dispersal, and habitat shifts resulting from climate change.

      In summary, BioNet includes and prioritizes:
- Only known occurrences of species and habitats
- Globally rare species and habitats
- State rare species and habitats

- Animals of Greatest Conservation Need
- Watch List plants and indicators of high quality habitats
- Animal assemblages (e.g., colonial nesting waterbirds, forest interior species)
- Hotspots for rare species and habitats
- Intact watersheds
- Wildlife corridors and concentration areas

These areas are prioritized into a five-tiered system:

Tier 1 – Critically Significant for Biodiversity Conservation
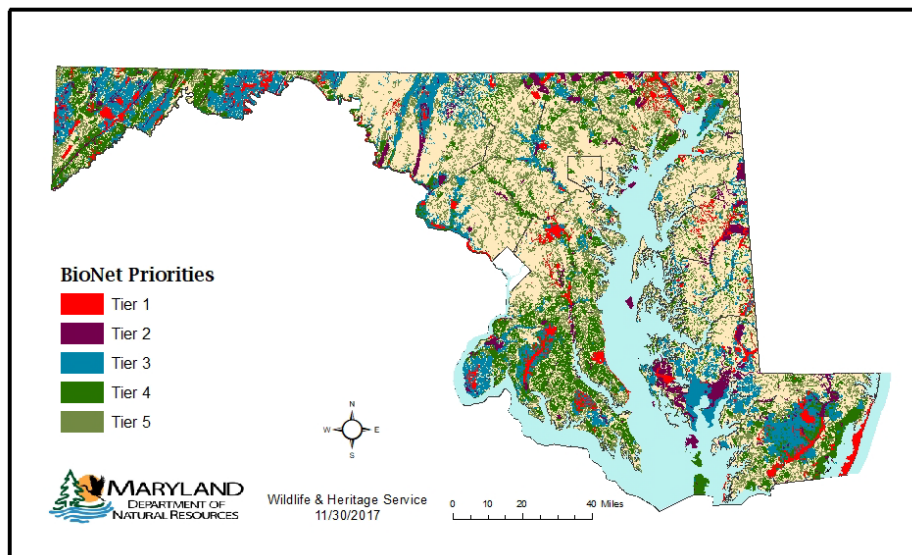**Tier 2** – Extremely Significant for Biodiversity Conservation
Tier 3 – Highly Significant for Biodiversity Conservation
Tier 4 – Moderately Significant for Biodiversity Conservation
Tier 5 – Significant for Biodiversity Conservation

This five-tiered system was designed to capture and support the full array of biological diversity within Maryland – not just those places that are one-of-a-kind, but also the places that are needed to maintain viable populations of more common species. Keeping common species common is a goal that will provide enormous benefits to both our quality of life and our economy. We simply cannot afford to wait until herculean efforts are necessary to save species from the brink of extinction. The costs of those efforts are staggering. Therefore, even Tier 5 BioNet Areas are still significant to conserve, both for the species they directly support, as well as for maintenance of the larger fabric of our natural landscape.

Biodiversity Conservation Network - - BioNet

Version two of BioNet is available, and updates are currently in progress. Several data gaps exist that we hope to address in future versions. Most of these data gaps involve animals of Greatest Conservation Need, Watchlist plants, and high-quality common habitats. For more information, contact Lynn Davidson (lynn.davidson@maryland.gov; or 410- 260-8563).

Download this GIS data layer here:
    https://data.imap.maryland.gov/datasets/maryland::maryland-biodiversity-conservation-network-bionet/about