Westmoreland Sanctuary

Natural Resource Management Plan (NRMP) – Endangered, Threatened, and Special Concern Species Management

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Mission: Westmoreland Sanctuary's mission is to conserve, restore, and manage its diverse ecosystems to enhance biodiversity, with a particular focus on endangered species and the habitats they rely on.

Property Overview: The Sanctuary spans 669 acres, including both a Wildlife Management Area (175 acres) and public access areas (494 acres). Both locations house employees to ensure land is secured.

These two land areas include intensive management areas divided into seven habitat "islands". Each "island" is chosen for their current and potential ecological value, rarity, and chance to increase the property's biodiversity. Out of these seven habitat islands, five are designated as restricted-access areas, where public entry is limited to minimize human impact. These areas are prioritized for endangered species recovery and long-term conservation work, which includes the restoration of critical habitats for species at risk of local extinction.

Endangered Species Protection: Westmoreland Sanctuary follows established international, federal, and state guidelines for classifying and protecting endangered species. Species that fall under any of the following categories are considered to warrant special attention and protection:

- **International Union for Conservation of Nature (IUCN) Red List:** A global list that categorizes species according to their risk of extinction. Species classified as Critically Endangered, Endangered, or Vulnerable are prioritized in the Sanctuary's management efforts.
- **New York State Department of Environmental Conservation (NYSDEC):** NYSDEC maintains a list of endangered species native to New York State. Species listed as Endangered or Threatened in the state are given special consideration in Westmoreland's NRMP.
- **U.S. Endangered Species Act (ESA):** A federal law that identifies species that are endangered or threatened and ensures their protection through regulatory measures.

- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):** This treaty provides global protection for species that are threatened by international trade. Westmoreland Sanctuary follows CITES guidelines, particularly for plant species that are vulnerable to illegal harvesting or trade.

Endangered Species of Concern:

- **American Elm (Ulmus americana):**
    - **Listing:** IUCN Red List (Critically Endangered), NYSDEC Special concern.
    - **Ecological Role:** The American elm is a vital component of wetland ecosystems, playing a key role in stabilizing stream beds and maintaining water quality. Its early spring blooms provide important food sources for early-season pollinators.
    - **Restoration Efforts:** The Sanctuary has been working on propagating American Elm since 2021, with plans to build a greenhouse and eventually a nursery to improve propagation success rates. Special attention is given to avoiding the spread of Dutch Elm Disease, which has decimated populations since the 1930s. Efforts include isolating new plantings and avoiding planting multiple elms in the same area.
    - **Special Protocols:** Dead trees infected with Dutch Elm Disease are burned to prevent the spread of the fungus. Chemical pesticides or herbicides are avoided, and natural methods are used for disease management.
- **Golden Seal (Hydrastis canadensis):**
    - **Listing:** CITES Appendix II (protected under international trade regulations).
    - **Ecological Role:** Golden Seal thrives in rich, moist, shaded woodland areas, which are critical for maintaining plant diversity in the forest understory. It supports native pollinators such as small bees (*Dialictus and Evylaeus*).
    - **Restoration Efforts:** Golden Seal is propagated and protected in specific areas, with deer fencing to prevent browsing. It is grown from regional sources to ensure genetic integrity and adaptation to local conditions.
    - **Special Protocols:** Foraging for Golden Seal is strictly prohibited at the Sanctuary. It is also kept away from public trails to reduce human interference.
- **Wood Turtle (Glyptemys insculpta):**
    - **Listing:** IUCN Red List (Endangered), NYSDEC Endangered, under review by the U.S. Endangered Species Act (ESA).

    - **Ecological Role:** Wood turtles help regulate the ecosystem by consuming carrions and dispersing seeds. They also contribute to water quality by foraging in aquatic habitats.
    - **Restoration Efforts:** Habitat restoration for the Wood Turtle has focused on wetland areas where turtles are known to inhabit. Restoration includes planting native vegetation, creating suitable nesting and hibernation sites, and stabilizing stream banks with natural materials such as rocks and logs.
    - **Special Protocols:** The Sanctuary participates in 'Head Start' programs, where turtle hatchlings are raised in controlled conditions before being released into the wild. This program is based on successful models for other species, including the painted turtle and snapping turtle.
- **Eastern Box Turtle (Terrapene carolina carolina):**
    - **Listing:** New York State Special Concern, IUCN Vulnerable.
    - **Ecological Role:** Eastern Box Turtles play a vital role in maintaining plant biodiversity through seed dispersal. Their burrowing behavior creates habitats for other species.
    - **Restoration Efforts:** The Sanctuary has initiated tracking programs to study Box Turtle movements and their habitat preferences. Specific actions, such as suspending mowing during the nesting season, have been implemented to protect these turtles. Additionally, habitat restoration includes planting mayapple (*Podophyllum peltatum*), a plant that provides food and cover for turtles. Box turtles also are the primary seed disperser of the mayapple as well as other plants.
    - **Special Protocols:** Public access to sensitive areas is restricted to prevent disturbance during the nesting season. Game cameras and field observations are used to track Box Turtle populations.
- **Migratory Monarch Butterfly (*Danaus plexippus*)**:
    - **Listing:** IUCN Vulnerable, under review by U.S. Fish and wildlife Service to list as threatened under Endangered Species Act (ESA).
    - **Ecological Role:** The monarch butterflies influence plant diversity and success through pollination. Additionally, they are a crucial part of the food web, providing nutrients to other insects, birds, and small mammals.
    - **Restoration Efforts:** Westmoreland Sanctuary has actively supported Monarch butterfly conservation through the maintenance and propagation of milkweed populations native to Westchester County, New York. While milkweed remains a cornerstone species for Monarch survival, current research underscores the importance of plant diversity within pollinator habitats. A diverse assemblage of native flowering plants provides prolonged

blooming periods and a broader range of nectar sources, enhancing the overall health and reproductive success of pollinators on site.

- **Special Protocols:** On site, seed collection and propagation occurs, alongside sourcing from local native plant providers. This ensures the retention of non-hybridized, local eco-type varieties proven to support Westmoreland wildlife.

Conservation Management Strategies: Westmoreland Sanctuary has established detailed protocols for habitat islands and habitat restoration projects, focusing on a comprehensive approach that considers the entire ecological system rather than individual species alone. These protocols are subject to change or adjustment based on new information gathered through ongoing field observations. Specific restoration strategies for the current growing season include:

- **Invasive Species Control Protocols:** Invasive plant species that threaten native biodiversity are removed to make way for native vegetation. Priority species for control include Japanese knotweed (*Fallopia japonica*) and multiflora rose (*Rosa multiflora*)
  1. Invasive species are removed manually, section by section, preserving the stability of topsoil.
  2. Removal of invasive species is timed before they can produce seeds to minimize the spread of non-native plants.
  3. Herbicide and pesticide use is prohibited on the Sanctuary grounds to ensure preservation of ecosystem integrity.
  4. All invasive plants are carefully bagged, quantified, and kept onsite to prevent introduction to new areas.
- **Native Planting Protocols:**
  1. Plants are locally sourced when available, ensuring compatibility with climate and soil conditions, and maximizing the chance of survival (The Lady Bird Johnson Wildflower Center, www.wildflower.org, Understanding the Importance of Genetics).
  2. Decisions made regarding plant species selection are based on the needs of endangered species. Plants that provide food, shelter, nesting sites, etc. are prioritized.

     Example: Plants such as pussy willow and American elm are planted to restore habitats for species like the wood turtle, which require wetland and forest edge habitats for foraging, nesting, stream bank stabilization, improve water quality and hibernation.

3. Pollinator habitat restoration projects are designed around a staggered blooming cycle to support seasonal ecological patterns:
    a. Cycle 1: April – May
    b. Cycle 2: May – June
    c. Cycle 3: June – August
    d. Cycle 4: August – September
4. Native plant species are grouped together to create strongholds against invasive species, provide ground cover for turtles, and to support pollinators and birds.

- **Fencing Protocols:** Prevention of white-tailed deer damage is key in any restoration project. Deer exclosure fencing is used to protect sensitive plant species, such as Golden Seal (*Hydrastis canadensis*), from browsing pressure and preserving food sources and shelter for a greater variety of wildlife.
    1. When installing fencing in larger areas, the fence should be at least six feet high to prevent deer from entering protected zones.
    2. Fences must feature openings at the bottom to allow all small wildlife to move freely in and out of the area.
    3. Fencing should be regularly inspected several times a year to ensure its durability and functionality.
    4. Fenced areas are strictly off-limits to the public to preserve the integrity of the habitat.
- **Site Work & Labor Protocols:**
    1. All volunteers, interns, and subcontractors involved in restoration or conservation activities are trained.
    2. Supervised by the Director of Conservation, with additional support from the Environmental Educator. This ensures that all activities adhere to established protocols and standards.

Creating Critical Structures for Species: Specialized structures, such as turtle hibernacula (winter shelters made with holes, leaves, stones or logs), are constructed to provide safe environments for species such as the Wood Turtle and Box Turtle. Nesting boxes and platforms may also be constructed for specific species, especially birds.

Funding and Resource Allocation: The Sanctuary maintains a policy of limited publicity regarding endangered species management to protect vulnerable species from illegal collection, poaching, or disruption. As a result, Sanctuary does not seek public donations for endangered species programs. Westmoreland Sanctuary receives funding through multiple channels to support its conservation and endangered species efforts:

- **Operating Budget:** A portion of the Sanctuary's operating budget is specifically designated for "Conservation", and within this category, funds are allocated to endangered species management. This includes both capital improvements (e.g., building greenhouses or planting nurseries) and operational costs (e.g., personnel and monitoring activities).
- **Grant Funding:** In addition to its internal budget, Westmoreland actively seeks external funding through federal, state, and private sector grants. These grants supplement general operating funds and help secure resources for larger, multi-year projects.
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Conclusion: By integrating habitat restoration with species protection, the Sanctuary is advancing efforts to protect biodiversity and enhance the resilience of local ecosystems. Through adaptive management, continuous monitoring of the Sanctuary will continue to refine its efforts and contribute to broader regional conservation goals.