

Executive Summary and Recommendations

Native plants in their native habitats are the foundation of the healthy ecosystems that support wildlife and a thriving economy, as well as having their own intrinsic value. Yet Maryland's extraordinarily rich native botanical heritage is under historically unprecedented stress. The main causes of the stress are habitat loss from development and other human activity, invasive non-native species, and the over-abundance of white-tailed deer.

The State agencies with responsibility for preserving our botanical heritage do their utmost to allocate limited resources in a responsible way. However, over the years, the resources available for conservation efforts by State agencies have dwindled to the point where tasks that Maryland citizens would expect to be done cannot be done.

The Work Group's recommendations identify steps that would make a positive difference to the preservation of Maryland's botanical heritage, while requiring realistic levels of additional resources or reallocations of resources.

Recommendations for improved conservation of natural habitats and listed (rare, threatened and endangered) species

To address the need for enhanced conservation of natural habitats, including those supporting rare, threatened and endangered plant species, we recommend reinforcing the foundations of the Natural Heritage Network. This is an international network that tracks and monitors species using consistent methodologies, and whose Maryland component is the Wildlife and Heritage Service (Service) within the Department of Natural Resources (DNR). These recommendations posit that static or declining budgets, at least in the Wildlife and Heritage Service, are likely to continue for the long term, given the manner in which the Service is funded. They also recognize that the Service has limited capacity for on-the-ground conservation management. Nevertheless, with modest additional resources it would be possible to accomplish significant conservation tasks.

Thus the Work Group makes the following specific recommendations:

- 1. We recommend expanding the active stewardship component within the Wildlife and Heritage Service to include four regional stewards.** Many of our rare, threatened and endangered plant and animal species require habitat management to maintain and protect viable populations. Currently, the Wildlife and Heritage Service can only undertake a few high priority projects per year. Regional stewards would be chiefly responsible for on the ground monitoring and management activities in each region (Eastern, Southern, Central, Western).
- 2. We recommend a short-term assistant to the State Botanist who would be responsible for assisting with updating and reviewing rank and status, annotating database records and processing herbarium data.** The Wildlife and Heritage Service employs a single full-time botanist (the State Botanist) who is responsible for setting plant conservation priorities and whose chief responsibility is maintaining the list of rare, threatened and endangered plant species. The State Botanist is continuously revising this list but progress is limited owing to additional administrative duties.

3. **We recommend assistance by a professional database management contractor (in the short term) to overhaul and eliminate the data entry backlog in Biotics that is overwhelmingly botanical in nature.** The conservation database administered by the Wildlife and Heritage Service (called “Biotics”) has a critical backlog of data for entry. This database is essential to the conservation of Maryland’s biodiversity.
4. **We recommend establishing a special projects fund, administered by the Wildlife and Heritage Service’s Director, with allocation based upon critical inventory and monitoring gaps.** Inventory and monitoring of rare and vulnerable plant species and communities are poorly funded at present.
5. **We recommend establishing a research fund, administered by the State Botanist to address critical knowledge gaps for priority species.** At present there are no specific funds available for research specifically directed at Maryland plants.
6. **We recommend encouraging State conservation programs, including easement-based programs funded through Program Open Space, to target and design for the long-term conservation of significant botanical communities.**
7. **We recommend that DNR engage and perhaps formalize relationships with volunteer-based programs like the Maryland Master Naturalists to reduce the number of administrative hours shouldered by DNR biologists and ecologists.** Administrative and database tasks usurp the time of specially trained professional DNR staff. We caution, however, that volunteers cannot perform every task and that there will be tradeoffs between work accomplished and an increase in the workload to manage and coordinate those volunteers.
8. **We recommend that dedicated funding be allocated to the Norton Brown Herbarium at the University of Maryland, College Park in order to maintain its critical functions.** Recognizing the irreplaceable nature of the biodiversity collection and the uncertainty regarding its future, we strongly recommend that the State sustain essential funding for core staff comprising the director of the herbarium, a curator and collections manager.
9. **We recommend considering an update to the list of Nontidal Wetlands of Special State Concern.** This list, maintained by Maryland Department of the Environment, identifies nontidal wetlands that are subject to more stringent review requirements than other nontidal wetlands, often resulting in protection for rare plant species and/or high quality natural communities.

Recommendations to address the over-abundance of white-tailed deer

Effective control of white-tailed deer abundance is a necessity if we are to preserve Maryland’s botanical and wildlife heritage. This challenging and complicated issue will require the cooperation of a broad range of partners including government agencies, sportsmen, farmers, and citizens seeking innovative ways to reduce deer numbers for the benefit of native habitats, suburban landscapes, the economy, public safety, and the well being of Maryland’s deer herd.

The Maryland White-tailed Deer Plan 2009-2018 (here after referred to as the Plan) presents a thorough and comprehensive approach to a variety of management opportunities and techniques. The Work Group encourages DNR and other land managers (as applicable) to actively pursue these opportunities with emphasis on the following.

1. **We recommend modifications in hunting laws/regulations/practices.** This would include: season/bag limits adjustments to very localized flexibility (Community Based Deer Management), and adjusting safety zones for archery pursuits.
2. **We recommend increased outreach and education on Maryland's Landowner Liability and Recreational Access Law.** Private landowners are more likely to invite hunters onto their lands if they are aware of the protection from liability that this law affords.
3. **We recommend encouraging efforts by state lands managers to reduce white-tailed deer damage on public lands.** This may be done, for example, by increasing hunter access, giving more hunters more time afield, and by developing management plans directed at restoring regeneration of forest trees and other native plants.
4. **We recommend encouraging and facilitating more managed deer hunt programs with volunteer hunters and more programs with certified sharp shooters after regular seasons.**
5. **We recommend investigating and as appropriate implementing methods to increase donation of harvested deer for community food banks and homeless shelters.**
6. **We recommend fostering education, public awareness, and endorsement of hunting as a management tool necessary for habitat conservation, protection and control of the deer herd, and for the positive impact of hunting on State and local economies.**
7. **We recommend continuing to monitor research and development in deer biological fertility controls.** While unlikely to be effective to treat Maryland's large, free-ranging white-tailed deer population, fertility management could have a role, albeit a limited one, among various management techniques.

The Work Group also makes the following recommendation.

8. **We recommend an investigation under DNR's leadership of permitting a regulated commercial market in Maryland for wild-harvested venison, with input and open discussion from all interested stakeholders.** Input from DNR advisory committees, other stakeholders within state government, sportsmen and conservation groups, as well as non-traditional partners, may provide the way in which over-saturated bag limits per hunter (as viewed by some) can benefit the State, native habitats, and the local economy.

Recommendations to combat the threat of invasions by non-native species

The spread and the establishment of invasive species is altering and destroying Maryland's botanical heritage and natural ecosystems, as well as inflicting major and long-lasting harm to the State's agriculture, human health and economy.

1. **We recommend that resources be allocated and prioritized toward prevention, early detection and rapid response to control newly introduced or discovered invasive species before they have a chance to spread, become entrenched and are exorbitantly costly to control.** Some portion of these resources should be designated for mapping invasive species on and adjacent to high priority sites. An emergency response system

similar to the Incident Command System and an emergency pool of funds to use for immediate control work should be established.

2. **We recommend that Maryland State agencies continue to participate in the Maryland Invasive Species Council (MISC).** Although an informal organization, MISC is able to function as a coordinating body for emergency response to new invasive species, as a consensus-building organization, and as an information resource.
3. **We recommend increased support of research on and implementation of invasive species biological controls and organism release programs.** The existing program within Maryland Department of Agriculture (MDA) has been significantly cut in recent years and should be restored at least to prior levels.
4. **We recommend increased support of research on the direct and indirect impacts of invasive species on native species and ecosystems.** Research documenting and detailing the characteristics of invasive species and the harm they inflict would greatly assist in planning and funding invasive species control efforts.
5. **We recommend funding for additional ongoing assessments by the Invasive Plant Advisory Committee and for inspections by MDA under Maryland's Invasive Plants Prevention and Control Act.** Currently, funding is only available for one year for assessments of non-native plants likely to be invasive and thus subject to regulation under the law. MDA will ultimately assume responsibility for enforcement as part of its regular nursery inspection program along with the existing responsibilities of nursery inspectors. If inspections are to continue at the current frequency (already reduced from prior years), additional staff will be needed.
6. **We recommend that Maryland citizens be encouraged and provided with incentives to become involved in stewardship of lands adjoining high priority natural areas.** This is to ensure that invasive species are eradicated or reduced to a maintenance level so that they do not serve as sources for reinvasion of targeted conservation areas.
7. **We recommend establishment of a staff position for invasive species education in University of Maryland Extension Service programs including Master Gardeners.** Public awareness, especially among gardeners, is essential to lessen the spread of non-native invasive species.

Recommendations to increase the use of native plants in restoration and landscaping

The use of native plants in restoration, landscaping, and gardening should be encouraged in order to enhance biodiversity in partial compensation for the loss of natural biodiversity, and to avoid spreading non-native invasive species. This includes planting under the auspices of State agencies such as the State Highway Administration (SHA) and Maryland Department of the Environment (MDE).

1. **We recommend continuing coordination among MDE, DNR and SHA with respect to state-sponsored planting protocols where appropriate.** Those agencies recognize the value of using native plants where possible for restoration, roadsides, and other situations, and the need to avoid invasive non-native plants.

2. **We recommend supporting programs to encourage landowners to maintain gardens and landscapes for the benefit of native wildlife and to avoid invasive non-native plants.** Although there has been coordinated outreach to landowners, many members of the public remain unaware of the effects—both negative and positive—of private gardens and landscapes on our natural environment. Proactive strategies will be required to address this information gap.
3. **We recommend discussion among MDA, SHA, MDE, and DNR of the potential for an enhanced native plant and seed industry in Maryland.** Based on examples from other states and preliminary research in Maryland, there may be potential for the State, in partnership with industry, to assist in the development of an enhanced native plant and seed industry to serve Maryland customers, potentially benefitting native plant conservation and local business as well as Maryland consumers. It is understood that further development and enhancement of a Maryland-based native plant and seed industry should be industry driven and that additional dedicated funding for state agencies to providing testing, certification, licensing, and other support functions will be required for program creation and development. A possible model is included as Appendix 4.



*Figure 4. The region's largest water-willow shrublands, with endangered American Frog's-bit (*Limnobium spongia*) and other important species, in a diverse ecological community at Chapman Forest in Charles County. Photo by R H Simmons.*