

**Summer Botanical Assessment:
Biasioli Forest**

August 2014

Property: Biasioli Forest
Greene and Albemarle Counties, Virginia

Prepared for:
500-Year Forest Foundation
Durham, NC

SUMMARY

On July 31st and August 1st 2014, Virginia Forestry and Wildlife Group conducted a botanical survey on approximately 107 acres* of mostly forested land owned by Frank and Eleanor Biasioli. This assessment of the property's floristic diversity was conducted in agreement with a conservation easement through the 500-Year Forest Foundation. Data collected though this mid-summer effort is intended to build upon data obtained during spring sampling efforts, also conducted by Virginia Forestry and Wildlife Group on May 4th and 5th 2014. Merging data from spring and summer sampling efforts has produced a comprehensive list of species documented for the Biasioli Forest as well as a thorough survey of the Forest's diversity, noteworthy habitats, and management issues (such as invasive species).

Summer sampling efforts documented an additional 119 species. Adding this figure to the 112 species documented during spring sampling efforts yields a total of 231 species documented as occurring on the Biasioli Forest. Merging data from spring and summer sampling efforts has shown that approximately 84% of Biasioli's flora is native to North America and the remaining 16% is introduced. Approximately 3% of Biasioli's flora is heavily invasive on the property. Early and late summer sampling efforts will likely add to the number of taxa already documented for the Biasioli Forest. Sampling efforts conducted in subsequent seasons are also likely to turn up additional taxa due to anomalies between growing seasons. It has been concluded however, that the majority of Biasioli's flora has been successfully documented through the aforementioned spring and summer sampling efforts.

Nomenclature for this assessment and the associated "Biasioli Forest Summer Plant List" (Gibbons 2014) and "Biasioli Forest Comprehensive Plant List" (Gibbons 2014) primarily follows the "Flora of Virginia" (Weakly, Ludwig and Townsend 2012). However, the complexity of some groups warrants the reference of alternate taxonomic authorities. Specifically, the "Digital Atlas of the Virginia Flora" (Virginia Botanical Associates 2014) will act as the primary reference for the Violaceae, the Violets, due to updates in nomenclature resulting from contemporary studies.

*A small portion of the Biasioli property (~9 acres) is not included in the 500-Year Forest easement. This area contains the building infrastructure on the property and some additional bottomland fields. While not targeted in the botanical assessment, some overlap was needed and proves important, as invasive species do not recognize boundaries and infestations on the excluded section could be sources for future problems on the easement.

NOTEWORTHY COLLECTIONS

Species of special conservation concern, such as threatened or endangered species, were not documented for the Biasioli Forest during summer sampling efforts. Likewise, no species documented for the Forest are considered rare or watchlist taxa by Virginia's Division of Natural Heritage or are currently under review by the division. A Virginia

Natural Heritage Data Explorer database search indicated that one vascular plant species of conservation concern, *Carex roanensis*, has been documented for Greene County and that one vascular plant species of conservation concern, *Phlox buckleyi*, has been documented for Albemarle County (DCR-DNH 2014). The probability of finding *Phlox buckleyi* on the Biasiulli Forest was highly unlikely because the property does not host habitat conducive to the species. As predicted, *Phlox buckleyi* was not documented for the property during summer sampling efforts. Chances of finding *Carex roanensis* however, were greater as “dry-mesic (occasionally mesic or dry), often rocky, oak, oak-hickory, and mixed hardwood forest” habitats required by the species are found throughout the property (Virginia Botanical Associates 2014). No specimens of *C. roanensis* were encountered however, only those of its close congener, *C. virescens*, were found.

Six species previously undocumented for Greene County were documented for the Biasiulli Forest during summer sampling efforts. Four of these species are native and their discovery has filled “Greene County” gaps in their distribution. The remaining two species are introduced taxa and represent the continuing spread of these species throughout Virginia. The merging of spring and summer data for the Biasiulli Forest has yielded a total of 12 species documented as new Greene County records. In summary, these species include:

Scientific Name	Common Name	Sampling Effort
<i>Ampelopsis brevipedunculata</i> (Maxim.) Trautv.	Porcelain-berry, Amur Peppervine	Summer
<i>Berberis thunbergii</i> DC	Japanese Barberry	Spring
<i>Carex albicans</i> Willd. ex Sprengel	White-tinged Sedge	Spring
<i>Carex albursina</i> Sheldon	White Bear Sedge	Spring
<i>Carex platyphylla</i> Carey	Broad-leaved Sedge	Spring
<i>Dichanthelium acuminatum</i> (Sw.) Gould & C.A. Clark var. <i>fasciculatum</i> (Torr.) Freckmann	Slender-stemmed Panic Grass	Summer
<i>Nasturtium officinale</i> R. Brown	Watercress	Spring
<i>Oplismenus hirtellus</i> (L.) P. Beauv. ssp. <i>undulatifolius</i> (Ard.) U. Scholz	Wavyleaf Basketgrass	Summer
<i>Panicum virgatum</i> L. var. <i>virgatum</i>	Switchgrass	Summer
<i>Persicaria arifolia</i> (L.) Haraldson	Halberd-leaf Tearthumb	Summer
<i>Ulmus americana</i> L.	American Elm	Summer
<i>Viola striata</i> Ait.	Striped Violet	Spring

Carex appalachica, included in the “Biasiulli Forest Plant List” (Gibbons 2014) and the “Spring Botanical Assessment: Biasiulli Forest” (Gibbons and Morse 2014) has been

removed from the “Biasiulli Forest Comprehensive Plant List” (Gibbons 2014). Examination of similar, mature material collected during summer sampling efforts has shown that the species previously provisionally determined as *C. appalachica*, is likely *C. rosea*. No mature *C. appalachica* like specimens were documented during summer sampling.

Specimens representative of all county records, with the exception of *Ampelopsis brevipedunculata*, *Nasturtium officinale* and *Ulmus americana*, have been collected and will be deposited in Virginia Tech’s Massey Herbarium, in Blacksburg, Virginia. A request to deposit these county records into a different herbarium may be made and should be submitted to the author of this report. The author recommends that voucher collections be made for *Ampelopsis brevipedunculata*, *Nasturtium officinale* and *Ulmus americana*. A voucher specimen may be collected by anyone and should include a collection date and all locality and habitat data. The voucher should then be submitted to a herbarium professional for confirmation. Upon confirmation, notice of the voucher will be sent to Virginia Botanical Associates for its inclusion in the Digital Atlas of the Virginia Flora and the voucher will be deposited into the herbarium’s collections. For more instruction on how to collect and submit a voucher specimen, consult the Digital Atlas of the Virginia Flora website <www.vaplantatlas.org>.



Downy rattlesnake-plantain (*Goodyera pubescens*); flower

DIVERSITY

The three most diverse vascular plant families documented for the Biasiulli Forest, listed from most to least diverse, are the Asteraceae (Asters), the Poaceae (Grasses) and the Cyperaceae (Sedges). These families host 19 species, 14 species and 12 species, respectively. The family of vascular plants consisting of the most native, non-weedy species however, remains the Cyperaceae.

One additional species of Orchid (Orchidaceae) was documented during summer sampling efforts, adding to the five species documented during spring sampling. A small population of this species, *Platanthera clavellata*, was found in a seepage wetland along the main drainage. Though the species is widespread throughout Virginia, its presence is a welcome addition to the native plants already supported by Biasiulli's seepage wetlands.



Small green wood orchid (*Platanthera clavellata*)

NOTEWORTHY HABITATS

The combined efforts of spring and summer sampling efforts have shown that seepage wetlands are abundant and scattered throughout the Forest's main and smaller drainages, and vary in size and quality. Included in this report is a map showing the extent of these seepage wetlands.

As indicated in the "Spring Botanical Assessment: Biasioli Forest" (Gibbons and Morse 2014), Golden Saxifrage (*Chrysosplenium americanum*), Drooping Sedge (*Carex prasina*), Golden Ragwort (*Packera aurea*) and Marsh Blue Violet (*Viola cucullata*) are characteristic of the seepage wetlands found on the Biasioli Forest. Summer sampling efforts have shown Sallow Sedge (*Carex lurida*), Awl-fruit Sedge (*Carex stipata*), Water-hemlock (*Cicuta maculata*) and Halberd-leaf Tearthumb (*Persicaria arifolia*) to be common throughout these wetlands as well. Smaller, more scattered populations of Cinnamon Fern (*Osmundastrum cinnamomeum* var. *cinnamomeum*), Winged Monkeyflower (*Mimulus alatus*), Leafy Bulrush (*Scirpus polyphyllus*), Common Wood Reedgrass (*Cinna arundinacea*) and Virginia Cutgrass (*Leersia virginica*) are easily found in many of the wetlands.



Dry-mesic forest of chestnut oak, scarlet oak, and sweet birch. Shrub layer of mountain laurel and striped maple. Herbaceous layer sparse but sometimes occupied by dense cover of rockcap fern. Location: steep slopes of far southeastern corner of Biasioli Forest.

INVASIVE SPECIES

Merging data from spring and summer sampling efforts has produced a comprehensive map (included in this report) showing the extent of invasive species on the Biasioli Forest. It is clear that invasive species are prevalent throughout much of the site. Despite their widespread presence however, gaps remain in their distribution throughout the Forest and areas of significant size still show few signs of infestation. In particular the far southeast corner, exhibiting a northeastern aspect, and the far northwest corner, exhibiting a northwestern aspect, of the property show few signs of infestation by invasive species. Though these sites are less vulnerable to infestation than other sites on the property (see INVASIVE SPECIES in “Spring Botanical Assessment: Biasioli Forest” (Gibbons and Morse 2014)) they should receive watchful protection as they currently exhibit quality forest communities that remain relatively free of invasive species.

Two additional invasive species of extreme concern were documented during summer sampling efforts. These species, Tree-of-heaven (*Ailanthus altissima*) and Waveleaf Basketgrass (*Oplismenus hirtellus* ssp. *undulatifolius*) are a severe threat to eastern forests and should receive as much attention as other invasive species of concern found on the property, i.e. Wineberry (*Rubus phoenicolasius*), Japanese Stiltgrass (*Microstegium vimineum*), Garlic Mustard (*Alliaria petiolata*), Japanese Honeysuckle (*Lonicera japonica*), Multiflora Rose (*Rosa multiflora*) and Oriental Bittersweet (*Celastrus orbiculatus*).

Waveleaf Basketgrass could easily be considered the most severe threat to the Forest at this time. The species is a relatively new threat to North America, first discovered in 1996 (Kyde 2014). Initially found in Maryland, the plant’s distribution has expanded into northern Virginia and is apparently moving south. Greene County, VA may be the southern most extent of its range at this time (Kyde 2014, Virginia Botanical Associates 2014). Extreme vigilance should be taken to eradicate all known populations as soon as possible. Additional information on this invasive species may be obtained by visiting the Maryland Department of Natural Resources Wildlife and Heritage Service website <http://www.dnr.state.md.us/wildlife/Plants_Wildlife/WLBG/index.asp>.

Tree-of-heaven has not developed any severe infestations of mature trees on the property thus far. Dense patches of regeneration may be found scattered throughout the site in areas of canopy damage and gaps. Populations of this species however, are not restricted to such sites. Efforts should be made to eradicate these populations while they are still immature.

The author directly observed **Oriental Bittersweet** during summer sampling efforts. The plant is apparently scattered throughout the site but is found most abundantly in areas of canopy damage and canopy gaps. Here, its twining growth easily covers both dead and living vegetation.



Wavyleaf basketgrass (*Oplismenus hirtellus* ssp. *Undulatifolius*). Photo: Kerrie L. Kyde, MD DNR

REFERENCES

- DCR-DNH. 2014. Virginia Natural Heritage Data Explorer. Virginia Department of Conservation and Recreation. Richmond, VA. <https://vanhde.org/>
- Gibbons, L.D. 2014. Biasioli Forest Comprehensive Plant List. Virginia Forestry and Wildlife Group. Afton, VA. Unpublished report submitted to the 500-Year Forest Foundation. Durham, NC.
- Gibbons, L.D. 2014. Biasioli Forest Plant List. Virginia Forestry and Wildlife Group. Afton, VA. Unpublished report submitted to the 500-Year Forest Foundation. Durham, NC.
- Gibbons, L.D. 2014. Biasioli Forest Summer Plant List. Virginia Forestry and Wildlife Group. Afton, VA. Unpublished report submitted to the 500-Year Forest Foundation. Durham, NC.
- Gibbons, L.D. and B.W. Morse. 2014 Spring Botanical Assessment: Biasioli Forest. Virginia Forestry and Wildlife Group. Afton, VA. Unpublished report submitted to the 500-Year Forest Foundation. Durham, NC.
- Kyde, K.L. 2014. Waveleaf Basketgrass. Maryland Department of Natural Resources. Gaithersburg, MD. <http://www.dnr.state.md.us/wildlife/Plants_Wildlife/WLBG/index.asp>
- Weakley, A.S., J.C. Ludwig and J.F. Townsend. 2012. Flora of Virginia. Bland Crowder, ed. Foundation of the Flora of Virginia Project Inc., Richmond. Fort Worth: Botanical Research Institute of Texas Press.
- Virginia Botanical Associates. 2014. Digital Atlas of the Virginia Flora. c/o Virginia Botanical Associates, Blacksburg. <<http://www.vaplantatlas.org>>

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