# PROPOSAL FOR SILVICULTURAL ACTIVITY ON STATE FOREST AND PARK LANDS NEW JERSEY FOREST SERVICE

August 22, 2022

Application #: 2007-0318.001

## I. <u>Site Identification:</u>

- a. Location: Bass River State Forest
- b. Stand Designation: Allen & Oswego Road Fire Mitigation & Habitat Restoration
- c. Townships: Bass River Township and Little Egg Harbor Township
- d. Counties: Burlington County and Ocean County
- e. Block(s)/Lot(s) *Road Maintenance/Firebreak:* See Additional Pages Below. *Forest Management:* See Additional Pages Below.

## II. <u>Descriptive Information:</u>

- a. Purpose: Wildfire strategic risk reduction through firebreak installation and silvicultural thinning with maintenance of forest canopy to prevent stand replacing wildfire and increase forest health, in addition to forestry thinning and mowing for fuelbreak establishment and the promotion of local wildlife habitat restoration.
- b. Size of Activity: Road Maintenance/Firebreak: 78 acres Forest Management: 1,305 acres
- c. Activity: Firebreak installation and road maintenance (re-grading, etc.), silvicultural thinning in adjacent pine dominated uplands, and silvicultural thinning for habitat restoration forestry in pine-shrub oak uplands.
- d. Soils: Atsion Sands (AtsaA, AtshA), Downer loamy Sands (DocB), Fluvaquents (FmgAt),
   Lakehurst Sands (LakB, LakhB), Lakewood Sands (LasB), Manahawkin muck (MakAt),
   Woodstown loamy Sand (WodhB), Woodmansie Sand (WobB, WobC, WobhB, WobmB).

## III. <u>Site Description:</u>

The project has two main activities, (1) road maintenance/firebreak installation, and (2) silvicultural thinning, and forestry thinning and mowing for wildlife habitat restoration. The first activity involves firebreak installation and road maintenance for two roads, Allen Road and Oswego Road. The Allen Road firebreak/road maintenance area runs north to the property line shared with the Warren Grove Gunnery Range and south to the intersection of Stage Road (approximately five miles). However, tree removal activities will only occur to the north of Bartlett's Branch Bridge, whereas south of the bridge to Stage Road will include road maintenance activities only. The Oswego Road firebreak/road maintenance area runs west from the intersection of Allen Road nearly to Cutts Road and east from the Allen Road intersection to County Route 539 (approximately eight miles). The second main activity (forest

management) which involves silvicultural thinning and forestry thinning and mowing for wildlife habitat restoration will primarily occur in the forest between Coal Road to the east and Shamong Road/Martha Road to the west. Allen Road and Oswego Road are municipally owned rights-of-way, and there is no right-of way ownership information to the contrary that we are aware of. Tree removal is proposed within and outside of the rights-of-way for the two different treatments of (1) firebreak creation and (2) forest thinning. For ease of explanation, this activity area is outlined in greater detail within the attached treatment map.

Both main activities occur within two native forest types according to the Pinelands Comprehensive Management Plan (CMP), the pine dominated forest type and the pine-shrub oak forest type. Forest inventory data collection was performed in both forest types of the activity areas, in addition to the specific areas on either side of Allen Road between 2018 and 2019, with current 2022 data simulated through the Forest Vegetation Simulator (FVS). The pine dominated forest type contains approximately 2,075 trees per acre (1,752 trees per acre under two inches in DBH) with an overall average tree height of 46 feet. Basal area within this forest type is approximately 135  $ft^2$  per acre with a quadratic mean diameter (QMD) of 3.5 inches (including understory trees), the QMD including only overstory trees (four inches in DBH and above) was approximately 6.8 inches. Nearly 40% of the overall basal area within the pine dominated forest type comes from trees less than two inches in DBH. The pine dominated forest type also has a canopy cover of approximately 68%. The pine-shrub oak forest type contains approximately 1,940 trees per acre (1,774 trees under two inches in DBH) with an overall average tree height of about 49 feet. Basal area within this forest type is approximately 116  $ft^2$  per acre with a QMD of 3.3 inches (including understory trees), the QMD including only overstory trees (four inches in DBH and above) is approximately 8.9 inches. Nearly 39% of the overall basal area within the pine-shrub oak forest type comes from trees less than two inches in DBH. This forest type has a canopy cover of approximately 74%. Forest attributes for the area specifically on either side of Allen Road (portions of both forest types) include approximately 438 trees per acre, 99 ft<sup>2</sup> per acre of basal area, a QMD of approximately 6.5 inches, canopy cover of 68%, and an average volume of approximately 22 cords per acre. The average volume for the pine dominated forest type is approximately 14 cords per acre, while the average volume for the pine-shrub oak forest type is nearly 15 cords per acre.

Understory species within the pine dominated forest type include black huckleberry, lowbush blueberry, sheep laurel, teaberry, greenbrier, and inkberry. Understory species within the pineshrub oak forest type include black huckleberry, lowbush blueberry, teaberry, sheep laurel, mountain laurel, bracken fern, and inkberry. Understory species within the specific area on either side of Allen Road include lowbush blueberry, teaberry, black huckleberry, sheep laurel, greenbrier, mountain laurel, bracken fern, inkberry, bayberry, fetterbush, Virginia creeper, and highbush blueberry.

## IV. <u>Carbon</u>

There are five nationally accepted forest carbon pools which exchange carbon with one another (flux) and make up the overall global carbon cycle. These five forest carbon pools include live Page **2** of **50** 

aboveground, live belowground, dead wood, litter, and soil organic carbon. These pools are generally combined to describe the total carbon stores within a site (see following tables). Information about New Jersey's carbon pools and overall carbon strategies can be found within the most recent State Forest Action Plan (2020). One of the main strategies includes "carbon defense"—protecting the integrity of existing carbon pools.

The proposed project will significantly reduce the forest carbon pools throughout the site overall due to the removal of forest overstory. In particular, the flux in carbon before and after each of the treatments will change primarily from live aboveground carbon (removal of trees) to the dead wood pool (increase in slash, tops, etc.) due to harvesting activities. In addition, removed carbon may be utilized and stored by long-term forest products, stored within landfills, converted to energy, or may be left on site to be recycled back to the system depending on the implementation contractor and method of harvesting used to carry out the treatments. However, despite some carbon pool losses, this project will provide significant carbon defense to the remaining trees and surrounding forest through avoided emissions by reducing the risk of a rapid release of carbon to the atmosphere through catastrophic wildfire, including multiple Atlantic white-cedar stands and restored sites located along Bartlett's Branch which contain significant carbon stores. This project will also allow for a break-up of the fuel ladder and will reduce the risk or likelihood of wildfire spread. Added benefits include making these stands more resilient under pressure from climate stressors such as drought or insect pest activity such as southern pine beetle.

## V. <u>Project Intent:</u>

The range of forest density within both forest types of the proposed project presents significant wildfire fuel hazards, in addition to exceeding the threshold at which southern pine beetle (SPB) attack becomes a major risk. These issues have real potential consequences as major releases of carbon to the atmosphere through wildfire and mass mortality events. The proposed activities will address the dense volatile forest fuels and provide carbon defense for the future in an area plagued with historic wildfires, as well as create habitat more conducive for a variety of plant and wildlife species. In addition, these activities will provide significant protection of Atlantic white-cedar resources within the immediate (Bartlett's Branch) and surrounding areas.

## Road Maintenance/Firebreak Activity:

Firebreak activities will include the clearing of trees approximately 25 feet from either side of both Allen Road and Oswego Road. Tree removal activities will not occur South of Bartlett's Branch Bridge, only road maintenance will occur here. Road maintenance activities will occur for the length of both Allen Road and Oswego Road (13 miles total). Tree removal activities will not occur south of Bartlett's Branch Bridge to the intersection of Stage Road; however, road maintenance activities will occur in this portion. Road maintenance activities could include the addition of gravel, removal/repair of existing broken hard surface material, and road grading activities including crowning of the road. The inability to continue firebreak maintenance in the past has currently rendered both roads as non-functional firebreaks in a strategically significant section of the Pinelands region, as tree canopies connect or nearly connect across the roads. Removing all trees within 25 feet of either side of each road will not only establish the roads as useful firebreaks, reducing the risk of significant wildfire damage to the surrounding communities and forested tract as well as ensuring firefighter safety, but will allow the growth of native grasses to improve habitat conditions for a variety of wildlife species. Additionally, the creation and continued maintenance of these firebreaks will allow NJFFS personnel to safely carryout future planned prescribe burning efforts within the surrounding area. This activity consists of approximately 78 acres total. After trees are cut to create the firebreaks, various site preparation tools will be utilized to continue maintenance of the roads and firebreaks over the life of the permit. Site preparation activities will use a combination of mechanical methods (drum chopping, disking, and mowing) and prescribed fire.

If grass seed is needed due to the lack of native grasses seeding on their own, only native species mixes as suggested by the NJ Fish and Wildlife and Office of Natural Lands Management (ONLM) will be utilized (list of native grass species attached) and seeded in by hand using volunteers or a mechanical seeder such as a seed drill. Drum chopping will be utilized as well as prescribe burning along the tree removal areas (25 feet either side of roads) to again promote the establishment of native grasses. A single pass of the drum chopper will be applied to break up the current root mat within the 25 feet of either side of the road (firebreak) but will not exceed 25 contiguous feet as outlined within the Pinelands CMP. Additionally, only stumps along the road edge will be considered for removal, allowing for proper drainage of runoff. No new culverts will be installed, however current culverts will be evaluated and replaced in kind if needed, as the project progresses. Existing culverts along Allen Road and Oswego Road within the specified road maintenance project areas that are not in proper working condition will be replaced as needed over the life of the permit with an equivalent culvert size to ensure adequate water flow under the road. Areas along the firebreak/road maintenance portion of the project with intermittent ponds, bog communities, wetlands, floodplain swamps, potential treefrog breeding habitat and any wetlands associated plant species will be buffered by 100 feet from cutting and will remain consistent with the forestry standards within the Pinelands CMP.

| Firebreak<br>Treatment      | Trees/Ac | Basal<br>Area/Ac   | Quadratic<br>Mean<br>Diameter<br>(QMD) | Canopy<br>Cover | Merchantable<br>Cord<br>Volume/Ac | Total<br>Merchantable<br>Cord Volume | Total<br>Live Tree<br>Carbon<br>(tons/ac) |
|-----------------------------|----------|--------------------|--|-----------------|-----------------------------------|--------------------------------------|---|
| Before<br>Treatment         | 438      | 99 ft <sup>2</sup> | 6.5″                                   | 68%             | 22                                | 1,738                                | 24.7                                      |
| Right<br>After<br>Treatment | 0        | 0                  | 0                                      | 0               | 0                                 | 0                                    | 0   |

## Forest Management Activity:

This activity includes two types of forest management, (1) thinning low and from below to an average basal area of 60-80ft<sup>2</sup>/acre (1,041 acres total), and (2) thinning at a variable density to an average basal area of 30-50 ft<sup>2</sup>/acre (263 acres total), similar to a modified shelterwood treatment. The low and from below thinning operations only (1), will consist of upland pinedominated forest types only, located to the east and west of Allen Road running the length of the road as illustrated within the attached treatment map. Significant portions of this forest type have regenerated with pitch pine at excessive densities following the 1977 and 1999 wildfires. These stands will be thinned low and from below to a residual density of approximately 60-80 ft<sup>2</sup>/acre (35%-50% canopy cover) reducing the likelihood of a stand replacing wildfire by disrupting ladder fuels, increasing forest health, reducing forest density, and providing the added benefits of resilience under pressure from stressors such as drought and pests. This will simultaneously create a fuelbreak while maintaining a forest canopy. These pine dominated stands will be monitored and thinned again back to a residual density of 60-80ft<sup>2</sup>/acre near the end of the permit cycle if the trees are found to be expressing dominance due to competition. The variable density thinning treatment (2) will begin as a "feathered" edge with a density of 30  $ft^2$ /acre occurring from the western outside edge of only the Allen Road firebreak activity (which extends 25 feet from the road edge), approximately an additional 75 feet into the surrounding forest in the pine-shrub oak forest type only, north of Bartlett's Branch bridge. This will aim to eliminate hard edges between the firebreak and fuelbreak treatments, creating a more feathered visual look. The term feathered thinning simply means creating a gradual transition area in density from complete tree removal (0 ft2/ac) along the edge of the road for the fire break treatment to the variable density thinning treatment (30-50 ft2/ac) to reduce hard edges between the two treatments and to create more visually appealing treatments. Additional areas within the pine-shrub oak forest type (and outside of the 75 feet feathered area), identified as being potentially suitable for local wildlife, will be silviculturally thinned in a variable density fashion to an average basal area of 30-50 ft<sup>2</sup>/acre (255 acres total). The variable density thinning will also target already open forest areas for the establishment of native grasses while encouraging already dense shrub oak growth in other locations.

Site preparation activities for silvicultural purposes such as the establishment of native grasses will use a combination of mechanical methods (drum chopping, disking, and mowing) and prescribed fire. Chemical methods, such as spot treatment with herbicide such as glyphosate and/or triclopyr, is proposed to be utilized to the minimum amount necessary to achieve silvicultural objectives in accordance with the NJ Pinelands CMP in the pine dominated forest type for the forest thinning areas. Targeted spot-spraying with herbicides may be used in the pine-dominated forest type to control competitive plant species, including invasives, where control by other non-chemical means is not practical. All applications will be completed by a licensed pesticide applicator and no more than one application will occur in any given growing season. The material safety data sheets (MSDS) and herbicide labels for the brand names of Accord XRT II and Garlon 4 Ultra with the main ingredients of glyphosate and triclopyr respectively are attached —Note: the attached are only examples of brand name herbicides that are commonly used, there are a variety of brands that include the same active ingredients of glyphosate and triclopyr that may be used for this project.

If grass seed is needed due to the lack of native grasses seeding on their own, only native species mixes as suggested by the NJ Fish and Wildlife and ONLM will be utilized and seeded in by hand using volunteers or a mechanical seeder such as a seed drill. Both types of forest management treatments outlined above will act as fuelbreaks from Allen Road in addition to promoting local wildlife habitat restoration.

All forestry thinning activities are proposed only within uplands, no closer than 80 feet from wetlands, in accordance with the Forest Stewardship Council Management Standards for the US (2010), also consistent with the NJ Forestry and Wetlands Best Management Practices Manual, and forestry standards within the Pinelands CMP. To minimize non-target impacts of the forest management activity, all practices will adhere to a set of specifications for this property. The proposed forest management activities will utilize existing roads, including Allen Road and Oswego Road themselves, no new roads will be created during the project, and skid trails will be located outside of wetlands.

Within the 10 years following the described forest management activities in the pine dominated forest type (thinning low and from below to 60-80ft<sup>2</sup>/acre), the stand will share some characteristics with its appearance today, however suppressed and smaller trees will have been removed allowing residual trees to grow without significant wind damage and the canopy will have remained mostly intact with some small openings having slowly filled. Any slash left on the ground will have mostly decomposed or been burned providing nutrients to residual trees. The treatment areas will have significantly less trees per acre, however trees will have increased in size and basal area, as well as begun to show dominance, so much so that it will be time for another low and from below thinning. After 20 years from the time of the first thinning and 10 years after the second thinning, all canopy trees will have improved in growth and vigor, in addition to resistance from disturbance agents like insects and disease. Small gaps left in the canopy from the second thinning activity will have filled from growth of the residual trees as well. The number of trees per acre will be significantly lower, whereas the basal area and QMD will have increased slightly. Forty years from now, significant growth will be apparent in the residual canopy trees which will have increased in size. Losses of individual trees over time due to age, competition, and other factors should not affect the extent or depth of the canopy, as residual neighboring trees should still be numerous enough to utilize the site.

Within the 10 years following the described forest management activities in the pine-shrub oak forest type within the 75-foot treatment areas west of Allen Road, as well as the additional areas identified as suitable for wildlife habitat within the pine-shrub oak forest type interior, the stands will share some characteristics with today's appearance. Overall stand species composition will remain the same, however an added component of native grasses within the understory will become present. Shrub oak will remain in dense pockets, while grass establishment will be evident within more open canopy pockets throughout the pine-shrub oak forest type. The number of trees per acre as well as basal area will have been significantly reduced, with some areas denser than others in the variably thinned locations. Any slash from the activities will have started to decompose or have been burned. The canopy will have been significantly opened, with some pine and shrub oak regeneration in areas along with the

establishment of grass. After 20 years from the time of the thinning activities, patches of shrub oak and pine regeneration will be evident along with significant establishment of grasses within the understory. The overstory will consist of residual trees with larger diameters, having increased in growth and vigor, with a slight increase in basal area as well. Forty years from now, with continued maintenance and the establishment of native grasses, dense patches of shrub oak and some pine regeneration will be evident, with dense patches of native grasses intermixed within the understory. Overstory trees will have significantly increased in diameter, while basal area will have increased, yet continue to remain relatively low. Losses of individual trees over time due to age, and other factors should not affect the extent or depth of the canopy significantly, as residual neighboring trees should still be numerous enough to utilize the site. The following tables demonstrate before and after treatment conditions for each activity.

| PINE Low<br>& From<br>Below<br>Thinning<br>Treatment | Trees/Ac | Basal<br>Area/Ac    | Quadratic<br>Mean<br>Diameter<br>(QMD) | Canop<br>y<br>Cover | Merchantable<br>Cord<br>Volume/Ac | Total<br>Merchantable<br>Cord Volume | Total<br>Carbon<br>(tons/ac) |
|--|----------|---------------------|--|---------------------|-----------------------------------|--------------------------------------|------------------------------|
| Before<br>Treatment                                  | 2,075    | 135 ft <sup>2</sup> | 3.5″                                   | 68<br>%             | 14                                | 14,574                               | 35.3                         |
| Right After<br>First<br>Treatment                    | 313      | 80 ft <sup>2</sup>  | 6.8"                                   | 42<br>%             | 14                                | 14,574                               | 34.4                         |
| Right After<br>Second<br>Treatment                   | 204      | 80 ft <sup>2</sup>  | 8.5″                                   | 43<br>%             | 18                                | 18,738                               | 31.0                         |

| POK<br>"Feathered"<br>Variable<br>Density<br>Thinning<br>Treatment | Trees/Ac | Basal<br>Area/Ac    | Quadratic<br>Mean<br>Diameter<br>(QMD) | Canopy<br>Cover | Merchantable<br>Cord<br>Volume/Ac | Total<br>Merchantable<br>Cord Volume | Total<br>Carbon<br>(tons/ac) |
|--|----------|---------------------|--|-----------------|-----------------------------------|--------------------------------------|------------------------------|
| Before<br>Treatment  | 1,940    | 116 ft <sup>2</sup> | 3.3″                                   | 74%             | 15                                | 120                                  | 38.4                         |
| Right After<br>Treatment   | 33       | 30 ft <sup>2</sup>  | 13.0"                                  | 19%             | 8                                 | 64                                   | 32.4                         |

NJFS Pinelands Silviculture Proposal

Application # 2007-0318.001

| POK<br>Variable<br>Density<br>Thinning<br>Treatment | Trees/Ac | Basal<br>Area/Ac    | Quadratic<br>Mean<br>Diameter<br>(QMD) | Canopy<br>Cover | Merchantable<br>Cord<br>Volume/Ac | Total<br>Merchantable<br>Cord Volume | Total<br>Carbon<br>(tons/ac) |
|---|----------|---------------------|--|-----------------|-----------------------------------|--------------------------------------|------------------------------|
| Before<br>Treatment                                 | 1,940    | 116 ft <sup>2</sup> | 3.3"                                   | 74%             | 15                                | 3,825                                | 38.4                         |
| Right After<br>Treatment                            | 74       | 50 ft <sup>2</sup>  | 11.1"                                  | 30%             | 12                                | 3,060                                | 34.9                         |

## VI. <u>Natural and Historic Resources:</u>

This project was reviewed by the NJDEP Natural Heritage Review Group (NHRG). As a part of this review the project was initially screened using GIS. The screening process indicated that certain members of NHRG were to be notified of the project for a more detailed review. As a result of the screen, the NJ Fish and Wildlife Endangered and Nongame Species program (ENSP), ONLM, Bureau of Freshwater Fisheries (BFF), and the NJ Historic Preservation Office (HPO) were consulted for detailed review and input into this project. Consequently, a natural heritage database search letter is attached to this proposal.

All NJDEP agencies included in the review approved of the activities associated with the proposal, provided that specified considerations were incorporated into the activity plan. The NHRG review revealed that the proposed activity would pose no irreversible adverse impacts to the resource or any threatened or endangered species. In addition, no other specified threatened and endangered species buffers or equipment ground pressure restrictions were applied for these proposed activities during the NHRG review or Pinelands pre-application meeting.

Prior to implementation, NJ DEP staff will conduct visual surveys for potential T&E avian species cavities or nesting trees. If such trees are identified, they will not be harvested. Further, NJ DEP staff will conduct the proposed activities between April 15 to November 15, the time period when known T&E snake species are active. To the extent possible the cutting of trees will be avoided from May 1<sup>st</sup> to July 15<sup>th</sup> during peak bird breeding season. Heavy equipment working on the roadway for road maintenance activities are excluded from the set timing restrictions.

NJ Forest Service staff is aware of an ongoing snake research study in the vicinity of this project area. This study is permitted through NJ DEP research and collection permits that NJ Forest Service staff as well as other NJ DEP programs have a role in approving. We have consulted with the leaders of the study as well as NJ F&W ENSP during project development and they have confirmed there will be no impacts to the study and that the study area and project area do not overlap.

Lastly, The NJ Forest Service will be following 80-foot buffers for soils with low erosion potential such as those within/surrounding the project activity areas. T&E frog species within the New Jersey Pinelands use intermittent wetlands with defined boundaries as prescribed in abstracts provided by the Pinelands Science staff in conjunction with the NJ Fish and Wildlife, additional buffers will be placed in the field if other distinct wetland areas are found. The Office of Natural Lands Management has been consulted for the location of the proposed activities and the 100-foot buffers have been found acceptable in regard to T&E species.

## VII. <u>Cultural Resource Survey:</u>

**During the NJDEP Natural Heritage review, the initial screening tool did not reveal conflicts with proposed activities with regards to cultural resources with HPO**. However, should any cultural resources be discovered during the activity, HPO, as well as the NJ Pinelands Commission, will be notified.

### VIII. Activity Scheduling:

- 1. Allen Road firebreak installation– remove trees within 25' road buffer
- 2. Oswego Road firebreak installation remove trees within 25' road buffer
- Conduct wildlife habitat restoration forestry thinning in the pine-shrub oak forest type (30-50 ft<sup>2</sup> basal area per acre) and conduct first upland forest thinning in the pine dominated forest type (60-80 ft<sup>2</sup> basal area per acre)
- 4. Site preparation treatments and establishment of native grasses for firebreaks and pine-shrub oak wildlife habitat restoration forestry thinned area as needed, as well as road maintenance activities (may be performed congruently with the other activities)
- 5. Continuous maintenance of firebreaks and roads using mechanical methods and prescribed fire as needed.
- 6. Second upland forest thinning in the pine dominated forest type (60-80 ft<sup>2</sup> basal area per acre)

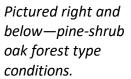
For any questions or comments regarding this proposed activity please contact the New Jersey Forest Service at 609-292-2532 or email <u>William.Zipse@dep.nj.gov</u>.

## IX. Stand Photos:

Pictured right and below—pine dominated forest type conditions. Note the ladder fuels and overstocked character. These conditions can lead to an unhealthy stand, as well as present significant wildfire hazards.



and hrub e





## Parcels Associated with Proposed Activities

The following color outline indicates management type occurring in the listed Block (B)/Lot (L):

| Allen Road, Road Maintenance/Firebreak  |
|---|
| Oswego Road, Road Maintenance/Firebreak |
| Forest Management                       |

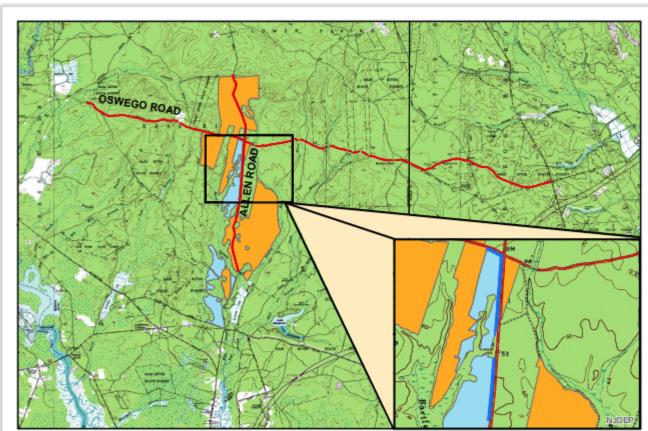
| Bass River Township (B, L) |        |        |         |          |          |  |  |  |  |
|----------------------------|--------|--------|---------|----------|----------|--|--|--|--|
| 49, 12                     | 78, 6  | 83, 2B | 83, 26  | 100, 7   | 103C, 18 |  |  |  |  |
| 65, 4                      | 78, 6A | 83, 2D | 83, 27  | 100, 7   | 103C, 19 |  |  |  |  |
| 64, 10                     | 78, 6A | 83, 2E | 83, 28  | 100, 9   | 103C, 20 |  |  |  |  |
| 65, 5                      | 78, 6B | 83, 2F | 83, 28  | 100, 9   | 103C, 21 |  |  |  |  |
| 65, 5                      | 78, 6C | 83, 5  | 91, 5A  | 100, 166 | 103C, 22 |  |  |  |  |
| 73, 11                     | 78, 6C | 83, 6  | 94, 13  | 100, 166 | 103F, 1  |  |  |  |  |
| 73, 14                     | 78, 8  | 83, 6  | 94, 5   | 101, 34  | 103F, 2  |  |  |  |  |
| 73A, 1                     | 78, 10 | 83, 8  | 94, 6   | 101, 34  | 103F, 3  |  |  |  |  |
| 73B, 1                     | 78, 10 | 83, 9  | 94, 8   | 101, 36  | 103F, 4  |  |  |  |  |
| 73C, 1                     | 78, 11 | 83, 9  | 94, 9   | 101, 36  | 103F, 5  |  |  |  |  |
| 73D, 1                     | 78, 11 | 83, 9A | 94, 9A  | 101, 37  | 103F, 6  |  |  |  |  |
| 73E, 1                     | 78, 12 | 83, 9A | 94, 10  | 101, 37  | 103F, 7  |  |  |  |  |
| 73G, 2                     | 78, 12 | 83, 9B | 94, 11  | 101, 37  | 103F, 8  |  |  |  |  |
| 73H, 1                     | 78, 13 | 83, 9B | 94, 12  | 101, 39  | 103F, 9  |  |  |  |  |
| 73K, 3                     | 78, 15 | 83, 9C | 95, 9   | 101, 39  | 103G, 1  |  |  |  |  |
| 73K, 4                     | 78, 15 | 83, 9C | 95, 8   | 101, 39  | 103H, 1  |  |  |  |  |
| 73K, 5                     | 78, 15 | 83, 9D | 96E, 1  | 101, 42  | 103I, 1  |  |  |  |  |
| 73K, 6                     | 78, 16 | 83, 10 | 96E, 9  | 101, 42  | 103J, 1  |  |  |  |  |
| 73K, 7                     | 78, 16 | 83, 10 | 96E, 10 | 101, 44  | 105, 2   |  |  |  |  |
| 73K, 8                     | 78, 16 | 83, 11 | 96E, 24 | 101, 44  | 105, 4   |  |  |  |  |
| 77, 2                      | 78, 17 | 83, 11 | 96E, 29 | 102, 1   |          |  |  |  |  |
| 77, 3                      | 78, 17 | 83, 12 | 96E, 32 | 103, 1A  |          |  |  |  |  |
| 77, 4                      | 78, 17 | 83, 12 | 96E, 33 | 103, 2   |          |  |  |  |  |
| 77, 5                      | 78, 19 | 83, 14 | 96E, 35 | 103, 3   |          |  |  |  |  |
| 77,6                       | 78, 19 | 83, 14 | 96E, 38 | 103, 4   |          |  |  |  |  |
| 77, 7                      | 78, 19 | 83, 15 | 96E, 44 | 103, 6   |          |  |  |  |  |
| 77, 16                     | 78, 20 | 83, 15 | 96E, 45 | 103, 167 |          |  |  |  |  |
| 77, 17                     | 78, 20 | 83, 16 | 96E, 46 | 103, 168 |          |  |  |  |  |
| 77, 18                     | 78, 20 | 83, 16 | 96E, 47 | 103, 169 |          |  |  |  |  |
| 77, 27                     | 78, 21 | 83, 17 | 96E, 48 | 103, 170 |          |  |  |  |  |
| 77, 41                     | 78, 21 | 83, 18 | 96E, 49 | 103, 171 |          |  |  |  |  |
| 77, 42                     | 78, 21 | 83, 18 | 96E, 50 | 103, 172 |          |  |  |  |  |

| <sup>1</sup> Little Egg<br>Harbor<br>Township |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|
| (B, L)  |  |  |  |  |  |  |  |  |  |
| 49, 1<br>49, 10                               |  |  |  |  |  |  |  |  |  |
|   |  |  |  |  |  |  |  |  |  |
| 49, 3<br>49, 4                                |  |  |  |  |  |  |  |  |  |
| 49, 5   |  |  |  |  |  |  |  |  |  |
|   |  |  |  |  |  |  |  |  |  |
| 49, 6<br>49, 7                                |  |  |  |  |  |  |  |  |  |
| 50, 1   |  |  |  |  |  |  |  |  |  |
| 50, 5   |  |  |  |  |  |  |  |  |  |
| 50, 6   |  |  |  |  |  |  |  |  |  |
| 51, 6   |  |  |  |  |  |  |  |  |  |
| 51, 7   |  |  |  |  |  |  |  |  |  |
| 51, 8   |  |  |  |  |  |  |  |  |  |
| 52, 1   |  |  |  |  |  |  |  |  |  |
| 52, 3   |  |  |  |  |  |  |  |  |  |
| 52, 4   |  |  |  |  |  |  |  |  |  |
| 52, 5   |  |  |  |  |  |  |  |  |  |
| 52, 6   |  |  |  |  |  |  |  |  |  |
| 53, 1   |  |  |  |  |  |  |  |  |  |
| 54, 3   |  |  |  |  |  |  |  |  |  |
| 58, 1   |  |  |  |  |  |  |  |  |  |
| 59, 1   |  |  |  |  |  |  |  |  |  |
| 59, 3   |  |  |  |  |  |  |  |  |  |
| 59,8  |  |  |  |  |  |  |  |  |  |
| 62, 2   |  |  |  |  |  |  |  |  |  |
| 62, 3   |  |  |  |  |  |  |  |  |  |
| 62,7  |  |  |  |  |  |  |  |  |  |
| 64, 1   |  |  |  |  |  |  |  |  |  |

<sup>&</sup>lt;sup>1</sup> All parcels within Little Egg Harbor Township adjacent to project area (within 200') are owned by NJDEP.

| Bass River Township (B, L) |        |        |         |          |  |  |  |  |  |  |
|----------------------------|--------|--------|---------|----------|--|--|--|--|--|--|
| 77, 42                     | 78, 23 | 83, 18 | 96E, 51 | 103, 173 |  |  |  |  |  |  |
| 77, 42                     | 78, 33 | 83, 21 | 96E, 52 | 103, 174 |  |  |  |  |  |  |
| 77, 43                     | 78, 33 | 83, 21 | 96E, 53 | 103, 175 |  |  |  |  |  |  |
| 77, 43                     | 82, 2  | 83, 21 | 96E, 54 | 103, 208 |  |  |  |  |  |  |
| 78, 1                      | 82, 2  | 83, 22 | 96E, 55 | 103, 209 |  |  |  |  |  |  |
| 78, 1                      | 82, 4  | 83, 22 | 97A, 1  | 103, 214 |  |  |  |  |  |  |
| 78, 2                      | 82, 4  | 83, 22 | 97D, 1  | 103B, 2  |  |  |  |  |  |  |
| 78, 2                      | 83, 1  | 83, 23 | 101, 1  | 103B, 7  |  |  |  |  |  |  |
| 78, 4                      | 83, 2  | 83, 23 | 100, 3  | 103B, 9  |  |  |  |  |  |  |
| 78, 4                      | 83, 2  | 83, 25 | 100, 3  | 103B, 11 |  |  |  |  |  |  |
| 78, 5                      | 83, 2A | 83, 25 | 100, 3A | 103B, 12 |  |  |  |  |  |  |
| 78, 5                      | 83, 2A | 83, 25 | 100, 3A | 103B, 13 |  |  |  |  |  |  |
| 78, 6                      | 83, 2B | 83, 26 | 100, 7  | 103C, 17 |  |  |  |  |  |  |

Bass River Township (B, L)



AGENCY: NJ Forest Service DATE: 08/18/2022 FOREST: Bass River State Forest SITE ID: Allen & Oswego Road Fire Mitigation & Habitat Restoration COUNTY: Burlington/Ocean TOWNSHIP: Bass River / Little Egg Harbor BLOCK/LOT: Please see proposal. ACREAGE: 78 ac (Road Maintenance/Firebreak) 1,305 ac (Forest Managment)

SOILS: Atsion Sands (AtsaA, AtshA), Downer Loamy Sands (DocB), Fluvaquents (FmgAt), Lakehurst Sands (LakB, LakhB), Lakewood Sands (LasB), Manahawkin Muck (MakAt), Woodstown Loamy Sand (WodhB), Woodmansie Sand (WobB, WobC, WobhB, WobmB).

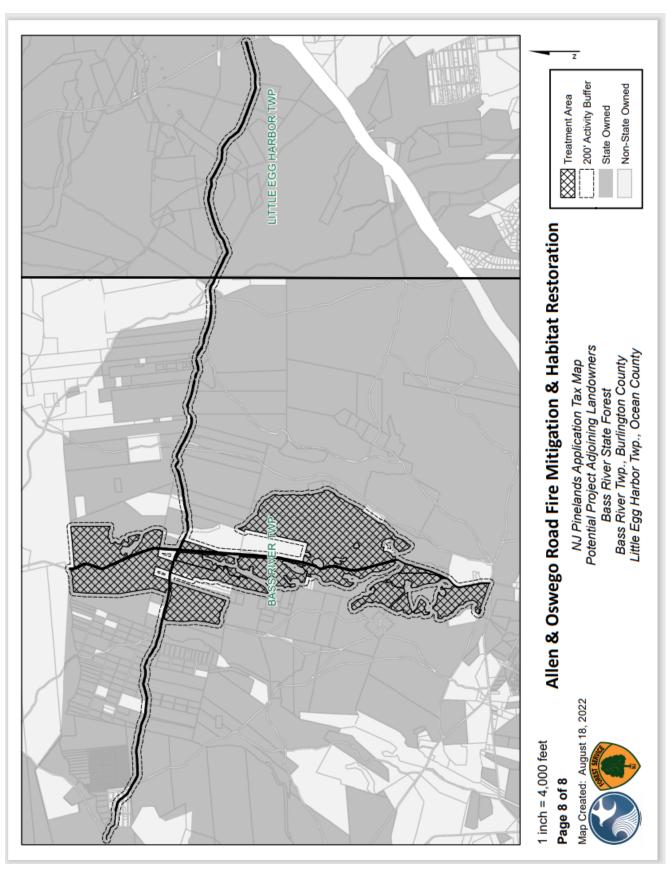
### ACTIVITY DESCRIPTION:

Project activities include firebreak/road maintenance, variable density thinning, and low and from below thinning. Variable Density thinning will occur in the pine-shrub oak forest type to promote wildlife habitat restoration. Low and from below thinning will occur in the pine dominated forest type to improve stand health and resilience, address the dense volatile forest fuels, and provide carbon defense for the future in an area plagued with historic wildfires. RF SCALE: 1:80,000 SCALE: 1 inch = 1 mile COUNTY: Burlington/Ocean QUAD(S): OSWEGO LAKE, WEST CREEK

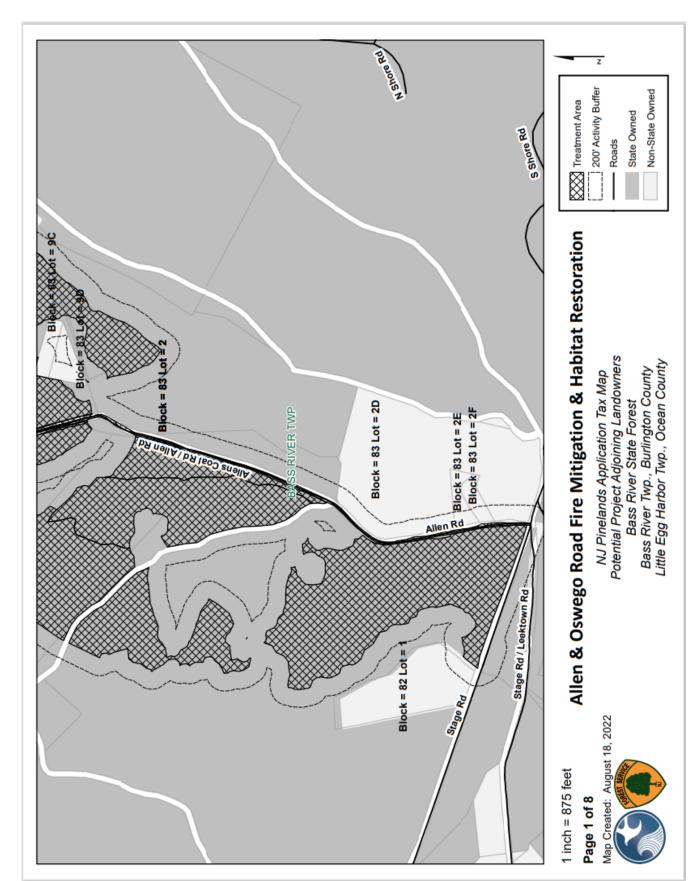


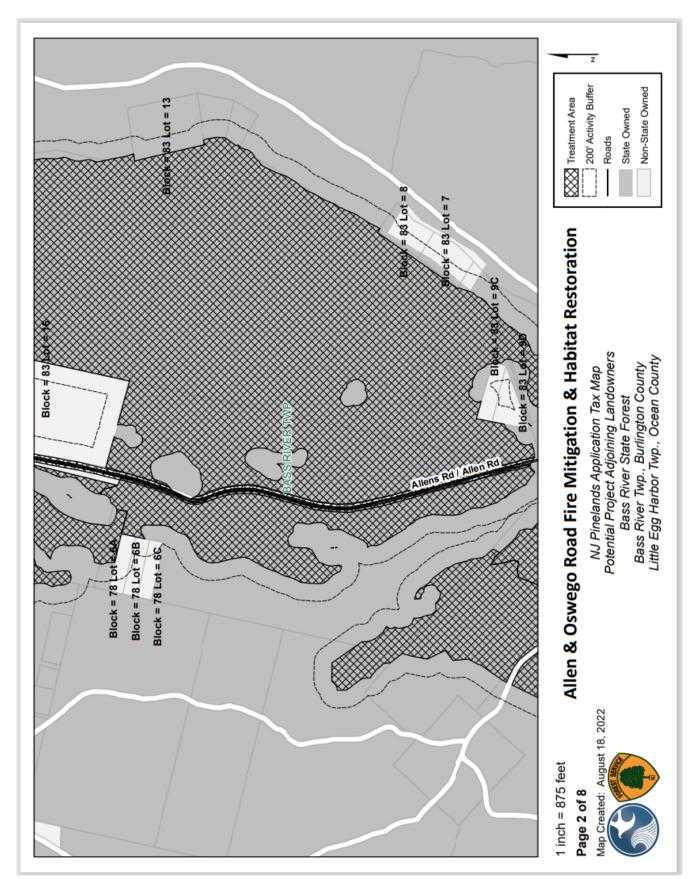
- POK Variable Density Thinning
- POK "Feathered" Variable Density Thinning



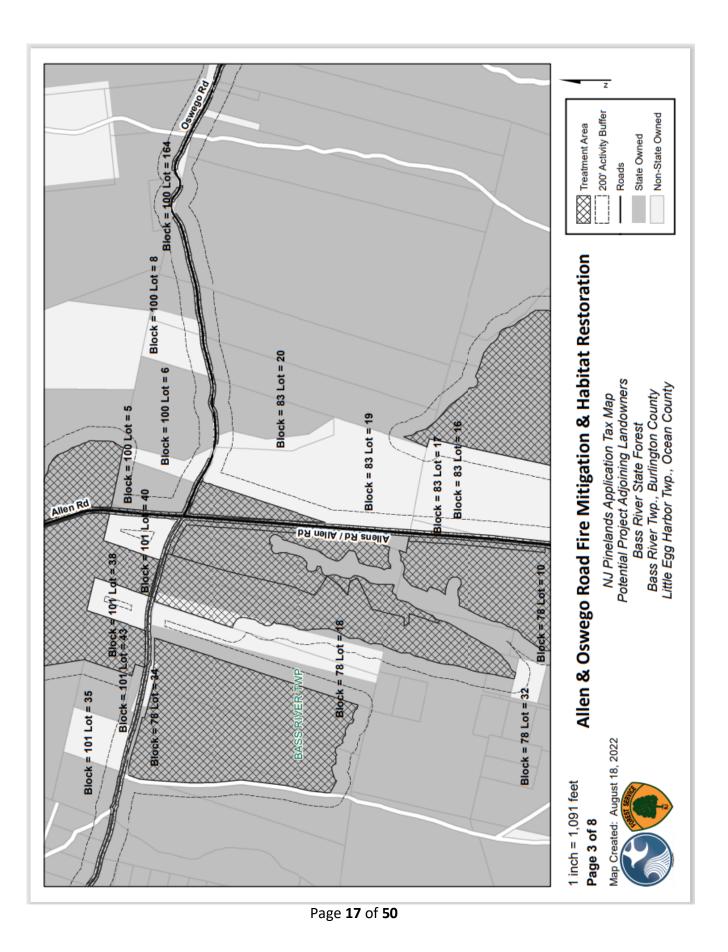


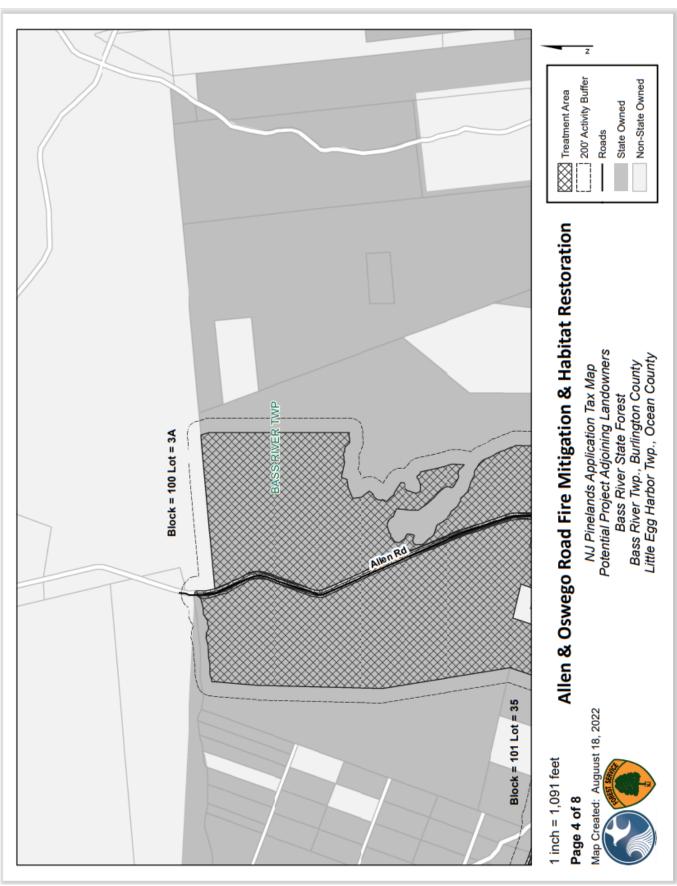
Page 14 of 50

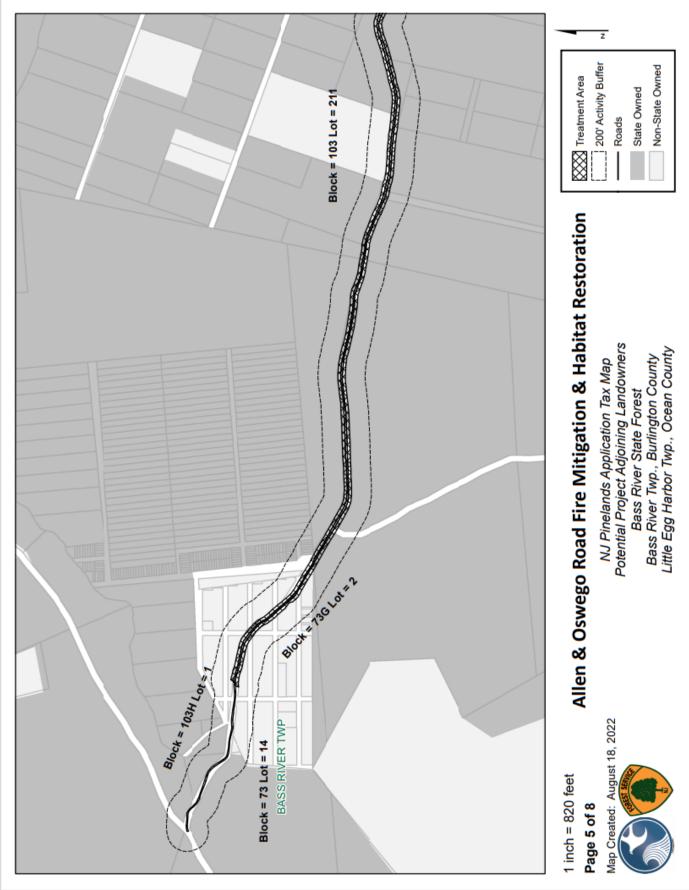




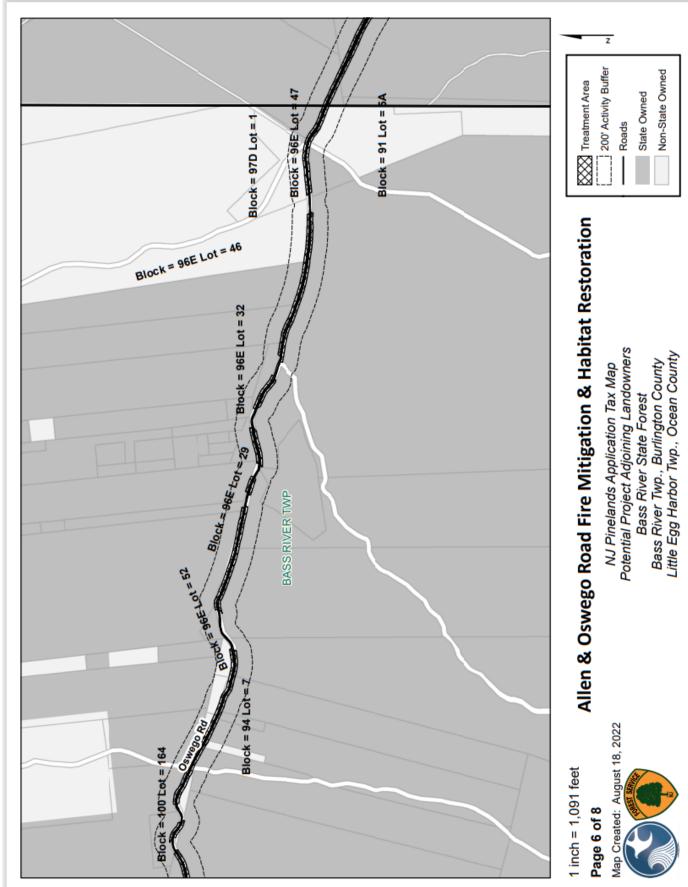
Page 16 of 50

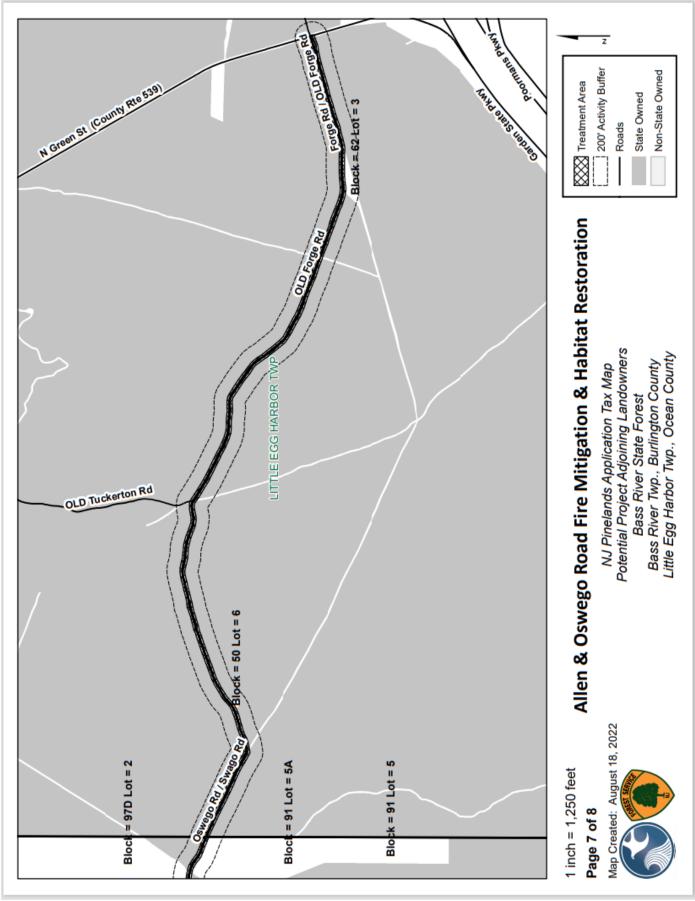






## Application # 2007-0318.001





#### LEGAL NOTICE DEPARTMENT OF ENVIRONMENTAL PROTECTION NEW JERSEY FOREST SERVICE

#### August 19, 2022

Take notice that the NJ Department of Environmental Protection, New Jersey Forest Service has amended an application to be applied to the NJ Pinelands Commission to permit forest management activities on state owned land as identified below. The application is on file and available for inspection by appointment at the NJ Pinelands Commission's office. Interested parties may comment to the Pinelands Commission within 10 days of the date of this notice.

Comments should be sent to:

Pinelands Commission P.O. Box 359 New Lisbon, New Jersey 08064 Phone: (609) 894-7300 Fax: (609) 894-7331 Email: AppInfo@njpines.state.nj.us

Any person who provides comments or requests a copy of the Executive Director's findings and conclusion shall be provided a copy of said findings and conclusion. Any interested person who is aggrieved by said determination is entitled to a hearing by appealing the determination.

Location: Bass River State Forest

#### Allen & Oswego Road Fire Mitigation & Habitat Restoration

Firebreak Establishment & Silvicultural Thinning Application # 2007-0318.001 Activity Size (Acres): Amended to 78 acres and 1,305 acres for a total of 1,383 acres Bass River Twp., Burlington County & Little Egg Harbor Twp., Ocean County Block/Lot: Various.

Purpose & Activity: Wildfire strategic risk reduction through firebreak establishment and silvicultural thinning with maintenance of forest canopy to prevent stand replacing wildfire and increase forest health, in addition to forestry thinning and mowing for fuelbreak establishment and the promotion of local wildlife habitat restoration.

| Project Contact: | William Zipse, Supervising Forester: 609-292-2532  |
|------------------|--|
| Prepared by:     | Holly Seelman, Forester<br>New Jersey Forest Service<br>Mail Code: 501-04<br>P.O. Box 420<br>Trenton, NJ 08625 |
|                  |  |

8/19/22, 10:22 AM

Mail - Seelman, Holly [DEP] - Outlook

## [EXTERNAL] RE: NJ Forest Service Legal Notice Publish

ACY Classified Legals <classlegal@pressofac.com>

Fri 8/19/2022 9:50 AM

To: Seelman, Holly [DEP] <Holly.Seelman@dep.nj.gov>

Hello,

This is to confirm receipt of your email request for a legal notice to be published on August 22, 2022. Once the notice is input and scheduled, a proof will be emailed to you.

Thank you. Elizabeth Matos (609) 272 -7240 classlegal@pressofac.com

From: Seelman, Holly [DEP] [mailto:Holly.Seelman@dep.nj.gov]
Sent: Friday, August 19, 2022 9:45 AM
To: ACY Classified Legals
Subject: Re: NJ Forest Service Legal Notice Publish

| BASS  | RIVER | BAS   | 08/09/22 Page 1 of 3 |  |                      |  |                     |
|-------|-------|-------|----------------------|--|----------------------|--|---------------------|
|       |       |       |                      | SWEGO ROAD FIRE MITIGATIO  |                      | Y OWNERS WITHIN 200 FEET OF<br>RESTORATION PROJECT |                     |
| BLOCK | LOT   | QUAL  | CLA                  | PROPERTY OWNER   |                      | PROPERTY LOCATION                                  | Add'l Lots          |
|       | 2     |       | 150                  | TOWNSHIP OF BASS RIVER<br>PO BOX 307<br>NEW GRETNA, NJ               |                      | E ADAMS TRACT                                      |                     |
| 78    | 4     |       | 150                  | STATE OF NEW JERSEY<br>1230 W HORSE-MERCER RD<br>TRENTON, NJ         | 08619                | MARTHA ROAD  | 7,9,10.01,10.05,11, |
| 78    | 6.A   |       | 150                  | NEW JERSEY AUDUBON SOCIE<br>9 HARDSCRABBLE ROAD<br>BERNARDSVILLE, NJ |                      | BERKLEY AVE  | 6.03,6.04           |
| 78    | 14    |       | 1                    | GARRISON & BROWN LLC<br>P.O. BOX 343<br>NEW GRETNA, NJ               | 08224                | ALLEN ROAD   |                     |
| 78    | 18    |       | 150                  | TOWNSHIP OF BASS RIVER<br>PO BOX 307<br>NEW GRETNA, NJ               |                      | OSWEGO ROAD  |                     |
| 78    | 31    |       | 150                  | NEW JERSEY, D.E.P.<br>PO BOX 420<br>TRENTON, NJ                      | 08625                | TUCKER AVENUE                                      |                     |
| 78    | 32    |       | 150                  | NJ CONSERVATION FOUNDATI<br>170 LONGVIEW RD                          |                      | TUCKER AVENUE                                      |                     |
| 78    | 34    |       | 1                    | EST OF R MURRAY % ALYCE<br>22 GREENVALE CIRCLE<br>WHITE PLAINS, NY   | DE LUIGI<br>10607    | OSWEGO RD  |                     |
| 82    | 1     |       | 150                  | NJ CONSERVATION FOUNDATI<br>170 LONGVIEW RD<br>FAR HILLS, NJ         |                      | STAGE ROAD   |                     |
| 83    | 2.0   |       | 4A                   | GRETNA GREENS % S HAZARD<br>PO BOX 17<br>NEW GRETNA, NJ              |                      | 940 STAGE ROAD                                     | 2-D                 |
| 83    | 2.E   |       | 2                    | 12 ALLEN ROAD  | JESSICA J<br>08224   | 12 ALLEN ROAD                                      |                     |
| 83    | 2.F   |       | 2                    | HAZARD, RICHARD S & HELE<br>P O BOX 17<br>NEW GRETNA, NJ             |                      | 10 ALLEN ROAD                                      | 2.014 AC            |
| 83    | 7     |       | 150                  | NJ CONSERVATION FOUNDATI<br>170 LONGVIEW RD<br>FAR HILLS, NJ         |                      | COAL ROAD  | 8                   |
| 83    | 9.0   |       | 1                    | 360 PAXTON COURT   | RGE STABILE<br>91784 | OCEAN AVE  | 9.05                |
| 83    | 13    |       | 150                  | PHILLIPS, JUNE<br>101 DAWN DRIVE<br>LINWOOD, NJ                      | 08221                | COAL ROAD  |                     |
| 83    | 16    | QFARM | 3B                   | AVE CORP %FRANCIS R HOEF<br>147 OLD FARMS ROAD<br>S. GLASTONBURY, CT | LING<br>06073        | ALLEN ROAD   |                     |
| 83    | 17    |       | 150                  | STATE OF NEW JERSEY<br>401 E STATE ST<br>TRENTON, NJ                 | 08625                | ALLEN ROAD   |                     |
| 83    | 17    |       | 150                  | STATE OF NEW JERSEY<br>401 E STATE ST<br>TRENTON, NJ                 | 08625                | ALLEN ROAD   |                     |
| 83    | 19    |       | 1                    | GARRISON & BROWN LLC<br>P.O. BOX 343<br>NEW GRETNA, NJ               | 08224                | ALLEN ROAD   |                     |
|       |       |       |                      |  |                      |  |                     |

BASS RIVER

### OWNER & ADDRESS REPORT

08/09/22 Page 2 of 3

#### BASS RIVER TOWNSHIP CERTIFIED LIST OF PROPERTY OWNERS WITHIN 200 FEET OF ALLEN & OSWEGO ROAD FIRE MITIGATION & HABITAT RESTORATION PROJECT

| BLOCK | LOT | QUAL | CLA | PROPERTY OWNER  |                 | PROPERTY LOCATION      | Add'I Lots |
|-------|-----|------|-----|---|-----------------|------------------------|------------|
| 83    | 20  |      | 1   |   | 08224           | OSWEGO ROAD            |            |
| 91    | 5   |      | 1   | KAUFMAN, ROBERT % SAGE RE/<br>%SAGE RLTY 767 3RD AV 5FU<br>NEW YORK, NY | 10017           | OSWEGO ROAD            | 5.02       |
| 94    | 7   |      | 2   | BUCK RUN GUN CLUB % KEN (<br>21 COLONIAL AVE<br>PITMAN, NJ              | 08071           | 520 OSWEGO ROAD        |            |
| 96.E  | 29  |      | 150 | TOWNSHIP OF BASS RIVER<br>P.O. BOX 307<br>NEW GRETNA, NJ                | 08224           | OSWEGO ROAD            |            |
| 96.E  | 32  |      | 150 | TOWNSHIP OF BASS RIVER<br>P.O. BOX 307<br>NEW GRETNA, NJ                | 08224           | OSWEGO ROAD            |            |
| 96.E  | 46  |      | 1   | MASCI, CECILIA & KRAJACK,<br>1 JOHNNY DR<br>FARMINGDALE, NJ             | JURY G<br>07727 | ANDREWS ROAD           |            |
| 96.E  | 47  |      | 1   | KAUFMAN ROBERT<br>%SAGE RLTY 767 3RD AV 5FU<br>NEW YORK, NY             | 10017           | OSWEGO & ANDREWS ROAD  |            |
| 97.D  | 1   |      | 1   | KAUFMAN ROBERT<br>%SAGE RLTY 767 3RD AV 5FL<br>NEW YORK, NY             | 10017           | MUNION FIELD & ANDREWS |            |
| 97.D  | 2   |      | 1   | MASCI, CECILIA & KRAJACK,<br>1 JOHNNY DR<br>FARMINGDALE, NJ             |                 | ANDREWS ROAD           |            |
| 100   | 4   |      | 15C | TOWNSHIP OF BASS RIVER<br>P.O. BOX 307<br>NEW GRETNA, NJ                | 08224           | ALLEN ROAD             |            |
| 100   | 5   |      | 150 | TOWNSHIP OF BASS RIVER<br>P.O. BOX 307<br>NEW GRETNA, NJ                | 08224           | ALLEN ROAD             |            |
| 100   | 6   |      | 1   | GARRISON & BROWN LLC<br>P.O. BOX 343<br>NEW GRETNA, NJ                  | 08224           | OSWEGO ROAD            |            |
| 100   | 8   |      | 150 | NJ CONSERVATION FOUNDATIO<br>170 LONGVIEW RD<br>FAR HILLS, NJ           | 07931           | OSWEGO ROAD            |            |
| 100   | 9   |      | 150 | STATE OF NEW JERSEY, D.E.<br>401 EAST STATE STREET<br>TRENTON, NJ       | .P.<br>08625    | OSWEGO ROAD            |            |
| 100   | 10  |      | 150 | TOWNSHIP OF BASS RIVER<br>P.O. BOX 307<br>NEW GRETNA, NJ                | 08224           | OSWEGO ROAD            |            |
| 100   | 164 |      | 150 | TOWNSHIP OF BASS RIVER<br>P.O. BOX 307<br>NEW GRETNA, NJ                | 08224           | OSWEGO ROAD            |            |
| 101   | 35  |      | 150 | TOWNSHIP OF BASS RIVER<br>N MAPLE AVE<br>NEW GRETNA, NJ                 | 08224           | OSWEGO ROAD            |            |
| 101   | 38  |      | 15C | TOWNSHIP OF BASS RIVER<br>PO BOX 307<br>NEW GRETNA, NJ                  |                 | OSWEGO ROAD            |            |
| 101   | 40  |      | 150 | TOWNSHIP OF BASS RIVER<br>PO BOX 307<br>NEW GRETNA, NJ                  |                 | OSWEGO ROAD            |            |
|       |     |      |     |   |                 |                        |            |

| BASS RIVER          | BASS RIVER TOWNSHI                                | NER & ADD<br>CERTIFIED LIST<br>DFIRE MITIGATIO | OF PROPERT | R E P O R T<br>Y OWNERS WITHIN 200 FEET OF<br>RESTORATION PROJECT | 08/09/22 Page 3 of 3 |
|---------------------|---|--|------------|---|----------------------|
| BLOCK LOT<br>101 41 | QUAL CLA<br>15C TOWNSHIP<br>PO BOX 3<br>NEW GRETI |  | 08224      | PROPERTY LOCATION<br>OSWEGO ROAD                                  | Add'I Lots           |
| 101 43              |   | OF BASS RIVER                                  | 08224      | OSWEGO ROAD   |                      |
| 103 211             | 15C NEW JERS<br>P.O. BOX<br>TRENTON,              |  | 08625      | OSWEGO ROAD   |                      |
| 103.H 1             | 15C TOWNSHIP<br>PO BOX 3<br>NEW GRET              |  | 08224      | OSWEGO ROAD   |                      |



State of New Jersey Department of Environmental Protection

STATE PARKS, FORESTS AND HISTORIC SITES 501 East State Street

501 East State Street P.O. Box 420, Mail Code 501-04 Trenton, New Jersey 08625-0420 Tel. (609) 292-2520 + Fax (609) 984-0378 www.ni.gov/dep

SHAWN M. LATOURETTE Commissioner

PHILIP D. MURPHY Governor

SHEILA Y. OLIVER Lt. Governor

> Public Development Forest Management Activity Adjacent Landowner Notification

New Jersey State Parks, Forests & Historic Sites State Lands Management Mail Code: 501-04 P.O. Box 420 Trenton, NJ 08625

August 18, 2022

Re: Allen & Oswego Road Fire Mitigation & Habitat Restoration – Bass River Township & Little Egg Harbor Township, Bass River State Forest

Please take notice that the New Jersey Forest Service has applied to the Pinelands Commission for approval of an amended application for Public Development (Forestry), which has been officially submitted as application #: 2007-0318.001. The two major types of proposed forestry activities are road maintenance/firebreaks (amended to 78 acres) and forest management (amended to 1,305 acres) within Bass River State Forest (see attached map). These activities will establish wildfire strategic risk reduction through firebreak establishment and silvicultural thinning with maintenance of forest canopy to prevent stand replacing wildfire and increase forest health, in addition to forestry thinning and mowing for fuelbreak establishment and the promotion of local wildlife habitat restoration. Operations will involve cutting unhealthy, suppressed, and poorly formed trees, while favoring the retention of healthy species of oak and pine, utilizing the appropriate mechanized equipment. The application is currently on file and available for inspection by appointment at the Pinelands Commission's office.

Amended items are as follows:

- All buffers have been amended to reflect 80 feet.
- Firebreak activities have been amended to include the clearing of trees approximately 25 feet from either side
  of both Allen Road and Oswego Road.
- Total Road Maintenance acreage decreased to 78 acres.
- The feathered variable density thinning treatment occurring from the western outside edge of only the Allen Road firebreak activity (which extends 25 feet from the road edge), has been updated to approximately an

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August 18, 2022 Page 2 of 3

> additional 75 feet into the surrounding forest in the pine-shrub oak forest type only, north of Bartlett's Branch bridge.

Total Forest Management acres increased 1,305 acres.

Provided additional details and clarified language on herbicide use.

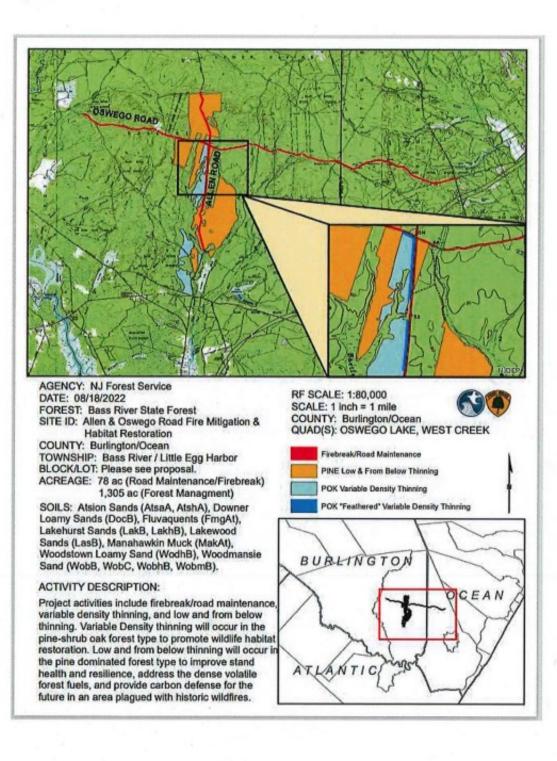
Interested persons may comment to the Pinelands Commission within ten (10) days of the receipt of this notice. Comments should be sent to the Pinelands Commission, PO Box 359, New Lisbon, New Jersey 08064, or by fax at (609)894-7331, or via email at <u>AppInfo@njpines.state.nj.us</u>. Any person who provides comments or requests a copy of the Executive Director's findings and conclusion shall be provided a copy of said findings and conclusion. Any interested person who is aggrieved by said determination is entitled to a hearing by appealing the determination.

Sincerely,

Samantha Hensen Assistant Regional Forester State Lands Management New Jersey Forest Service



August 18, 2022 Page 3 of 3





| 3 ill to:<br>New Jersey Fore<br>501 East State S<br>Frenton, NJ 086 | st Service<br>Street, PO Box 420, Mail Code 501-04   | Make checl   | 6.<br>6 4.4.  |  |
|---|--|--|---|--|
|   |  | <b>Include thi</b><br>NJDEP Office<br>Mail Code 50 | k pavable to:<br>of Natural Lands Mar<br>s invoice with pave<br>of Natural Lands Ma<br>01-04, P.O. Box 420<br>w Jersey 08625-0420 | n <mark>ent &amp; send</mark><br>anagement |
| Quantity (hrs.)<br>1  | Description<br>Natural Heritage Database search for<br>information of rare species and ecolor<br>communities.<br>Project: 22-3907464-25644 |  | Rate (per hr.)<br>\$ 0.00   | <u>Amount</u><br>\$ 0.00                   |
|   |  |  |   |  |
|   |  |  |   |  |

NHP File No. 22-3907464-25644



State of New Jersey MAIL CODE 501-04 DEPARTMENT OF ENVIRONMENTAL PROTECTION STATE PARKS, FORESTS & HISTORIC SITES OFFICE OF NATURAL LANDS MANAGEMENT 501 East State Street P.O. Box 420, Mail Code 501-04 Trenton, NJ 08625-0420 Tel. (609) 984-1339 + Fax (609) 984-0427

SHAWN M. LATOURETTE Commissioner

August 18, 2022

Samantha Hensen New Jersey Forest Service 501 East State Street, POBox 420, Mail Code 501-04 Trenton, NJ 08625-0420

Re: Allen Rd/O swego Rd Fuelbreak/Firebreak Bass River Township, Burlington County

Dear Sam antha Hensen:

PHILIP D. MURPHY

SHEILAY, OLIVER

Lt. Governor

Governor

Thank you for your data request regarding rare species inform ation for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Y es' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been docum ented from the county (or counties), referenced above, can be downloaded from https://nj.gov/dep/parksandforests/natural/heritage/database.html. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXFLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from https://nj.gov/dep/parksandforests/natural/docs/nhpcodes\_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project V ersion 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive web application at the following URL,

NHP File No. 22-3907464-25644

https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html.

Inform ation supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements (species and/or ecological communities) or their locations. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Robert J. Cartica Administrator

c: NHP File No. 22-3907464-25644

NHP File No. 22-3907464-25644

### Table 1: On Site Data Request Search Results (6 Possible Reports)

| <u>Report Name</u>   | <b>Included</b> | Number of Pages         |
|--|-----------------|-------------------------|
| 1. Possibly on Project Site Based on Search of Natural Heritage Database:<br>Rare Plant Species and Ecological Communities Currently Recorded in the<br>New Jersey Natural Heritage Database | No              | 0 pages included        |
| 2. Natural Heritage Priority Sites On Site   | Yes             | See emailed attachments |
| 3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on<br>Search of Landscape Project 3.3 Species Based Patches   | Yes             | 2 page(s) included      |
| 4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3  | Yes             | 1 page(s) included      |
| 5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File  | No              | 0 pages included        |
| 6. Other Animal Species On the Project Site Based on Additional Species<br>Tracked by Endangered and Nongame Species Program   | No              | 0 pages included        |

Thursday, August 18, 2022

Page 1 of 1 NHP File No.: 22-3907464-25644

|          |                       | Rare Wildlife Species or Wildlife Habitat on the<br>Project Site Based on Search of<br>Landscape Project 3.3 Species Based Patches |                       |      |                              | ]                          |       |           |
|----------|-----------------------|--|-----------------------|------|------------------------------|----------------------------|-------|-----------|
| Class    | Common Name           | Scientific Name  | Feature Type          | Rank | Federal Protection<br>Status | State Protection<br>Status | Grank | Srank     |
| Amphibia |                       |  |                       |      |                              |                            |       |           |
|          | Carpenter Frog        | Lithobates virgatipes  | Occupied Habitat      | 2    | NA                           | Special Concern            | G4    | S3        |
|          | Pine Barrens Treefrog | Hyla andersonii  | Breeding Sighting     | 3    | NA                           | State Threatened           | G4    | S2        |
|          | Pine Barrens Treefrog | Hyla andersonii  | Non-breeding Sighting | 3    | NA                           | State Threatened           | G4    | S2        |
|          | Pine Barrens Treefrog | Hyla andersonii  | Occupied Habitat      | 3    | NA                           | State Threatened           | G4    | \$2       |
|          | Pine Barrens Treefrog | Hyla andersonii  | Vernal Pool Breeding  | 3    | NA                           | State Threatened           | G4    | S2        |
| lves     | Bald Eagle            | Haliaeetus<br>leucocephalus  | Foraging              | 4    | NA                           | State Endangered           | G5    | \$1B,\$2N |
|          | Barred Owl            | Strix varia  | Breeding Sighting     | 3    | NA                           | State Threatened           | G5    | \$2B,\$2N |
|          | Barred Owl            | Strix varia  | Non-breeding Sighting | 3    | NA                           | State Threatened           | G5    | \$2B,\$2N |
|          | Black-billed Cuckoo   | Coccyzus<br>erythropthalmus  | Breeding Sighting     | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N |
|          | Brown Thrasher        | Toxostoma rufum  | Breeding Sighting     | 2    | NA                           | Special Concern            | G5    | S3B,S4N   |
|          | Common Nighthawk      | Chordeiles minor   | Breeding Sighting     | 2    | NA                           | Special Concern            | G5    | S3B,S3N   |
|          | Northern Parula       | Parula americana   | Breeding Sighting     | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N |
|          | Red-shouldered Hawk   | Buteo lineatus   | Breeding Sighting     | 4    | NA                           | State Endangered           | G5    | \$1B,\$3N |

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|          |                     | Rare Wildlife Species or Wildlife Habitat on the<br>Project Site Based on Search of<br>Landscape Project 3.3 Species Based Patches |                             |      |                              |                            |       |            |
|----------|---------------------|--|-----------------------------|------|------------------------------|----------------------------|-------|------------|
| Class    | Common Name         | Scientific Name  | Feature Type                | Rank | Federal Protection<br>Status | State Protection<br>Status | Grank | Srank      |
|          | Snowy Egret         | Egretta thula  | Foraging                    | 2    | NA                           | Special Concern            | G5    | S3B,S4N    |
|          | Whip-poor-will      | Caprimulgus vociferus  | Breeding Sighting           | 2    | NA                           | Special Concern            | G5    | S3B,SUN    |
|          | Wood Thrush         | Hylocichla mustelina   | Breeding Sighting           | 2    | NA                           | Special Concern            | G4    | \$3B,\$4N  |
| Insecta  |                     |  |                             |      |                              |                            |       |            |
|          | Hessel's Hairstreak | Callophrys hesseli   | Casual Flyby                | 2    | NA                           | Special Concern            | G3G4  | <b>S</b> 3 |
|          | Pine Barrens Bluet  | Enallagma recurvatum   | Occupied Habitat            | 2    | NA                           | Special Concern            | G3    | <b>S</b> 3 |
| Mammalia | Bobcat              | Lynx rufus   | Live Individual<br>Sighting | 4    | NA                           | State Endangered           | G5    | S2         |
| Reptilia |                     |  |                             |      |                              |                            |       |            |
|          | Eastern Box Turtle  | Terrapene carolina<br>carolina   | Occupied Habitat            | 2    | NA                           | Special Concern            | G5T5  | <b>S</b> 3 |
|          | Northern Pine Snake | Pituophis<br>melanoleucus<br>melanoleucus  | Occupied Habitat            | 3    | NA                           | State Threatened           | G4T4  | S2         |
|          | Timber Rattlesnake  | Crotalus horridus<br>horridus  | Occupied Habitat            | 4    | NA                           | State Endangered           | G4T4  | S1         |

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|                               | Vernal Pool Habitat on the<br>Project Site Based on Search of<br>Landscape Project 3.3 |  |
|-------------------------------|--|--|
| Vernal Pool Habitat Type      | Vernal Pool Habitat ID   |  |
| Vernal habitat area           | 2702   |  |
| Vernal habitat area           | 2707   |  |
| Potential vernal habitat area | 795  |  |
| Total number of records: 3    |  |  |

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#### Table 2: Vicinity Data Request Search Results (6 possible reports)

| <u>Report Name</u>   | <b>Included</b> | Number of Pages         |
|--|-----------------|-------------------------|
| 1. Immediate Vicinity of the Project Site Based on Search of Natural<br>Heritage Database: Rare Plant Species and Ecological Communities<br>Currently Recorded in the New Jersey Natural Heritage Database | Yes             | 3 page(s) included      |
| 2. Natural Heritage Priority Sites within the Immediate Vicinity   | Yes             | See emailed attachments |
| 3. Rare Wildlife Species or Wildlife Habitat Within the Immediate<br>Vicinity of the Project Site Based on Search of Landscape Project 3.3<br>Species Based Patches  | Yes             | 3 page(s) included      |
| 4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based<br>on Search of Landscape Project 3.3   | Yes             | 1 page(s) included      |
| 5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity<br>of the Project Site Based on Search of Landscape Project 3.3 Stream<br>Habitat File  | No              | 0 pages included        |
| 6. Other Animal Species In the Immediate Vicinity of the Project Site<br>Based on Additional Species Tracked by Endangered and Nongame<br>Species Program  | No              | 0 pages included        |

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|                          |                               | Immediate Vicinity of the Project Site<br>Based on Search of Natural Heritage Database<br>Rare Plant Species and Ecological Communities Currently Recorded in<br>the New Jersey Natural Heritage Database |                            |                    |       |       |            | in               |   |
|--------------------------|-------------------------------|---|----------------------------|--------------------|-------|-------|------------|------------------|---|
| Scientific Name          | Common Name                   | Federal Protection<br>Status  | State Protection<br>Status | Regional<br>Status | Grank | Srank | Identified | Last<br>Observed | Location  |
| Vascular Plants          |                               |   |                            |                    |       |       |            |                  |   |
| Ludwigia hirtella        | Hairy Primrose-willov         | v   |                            | LP, HL             | G5    | S1    | Y          | 1937-07-28       | Near Beaver Branch of Wading River,<br>southwest of Calico.   |
| Muhlenbergia torreyana   | Pine Barren Smoke G           | rass  |                            | LP, HL             | G3    | \$3   | Υ          | 2016-10-18       | Wharton State Forest. Located 1.4 miles<br>northeast of Harrisville, 1.75 miles east-<br>southeast of intersection of County Route<br>563 (also named Green Bank Chatsworth<br>Road and Chatsworth Harrisville New<br>Gretna Road) and County Route 679<br>(also named Harrisville Chatsworth<br>Road), 0.6 mile east-southeast of Martha,<br>in Bass River Township, Burlington<br>County. |
| Muhlenbergia torreyana   | Pine Barren Smoke G           | rass  |                            | LP, HL             | G3    | \$3   | Y          | 2016-10-18       | Bass River State Forest. Located 2.5<br>miles northeast of Harrisville, 2.25 miles<br>west-northwest of intersection of Oswego<br>Road and Allen(s) Road, 1.6 miles east-<br>southeast of Martha, in Bass River<br>Township, Burlington County.   |
| Panicum wrightianum      | Wright's Panic Grass          |   |                            | HL                 | G4    | S2    | Y          | 2016-10-18       | Bass River State Forest. Located 2.5<br>miles northeast of Harrisville, 2.25 miles<br>west-northwest of intersection of Oswego<br>Road and Allen(s) Road, 1.6 miles east-<br>southeast of Martha, in Bass River<br>Township, Burlington County.   |
| Prenanthes autumnalis    | Pine Barren Rattlesna<br>root | ke-   |                            | LP, HL             | G4G5  | S2    |            | 1985-09-11       | Southwest of Dans Bridge on Dans<br>Bridge Road. Ca. one mile north of Stage<br>Road.   |
| Rhynchospora cephalantha | Large-head Beaked-ru          | ish   |                            | LP, HL             | G5    | \$3   |            | 1985-09-11       | Southwest of Dans Bridge on Dans<br>Bridge Road. Ca. one mile north of Stage<br>Road.   |

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|  |                              | Base<br>Rare Plant Specie    | Immediate Vicinity of the Project Site<br>Based on Search of Natural Heritage Database<br>Rare Plant Species and Ecological Communities Currently Recorded in<br>the New Jersey Natural Heritage Database |                      |       |       |            |                  |  |
|--|------------------------------|------------------------------|---|----------------------|-------|-------|------------|------------------|--|
| Scientific Name  | Common Name                  | Federal Protection<br>Status | State Protection<br>Status  | r Regional<br>Status | Grank | Srank | Identified | Last<br>Observed | Location   |
| Utricularia purpurea   | Purple Bladderwort<br>rds: 7 |                              |   | LP, HL               | G5    | 83    | Υ          | 2009-08-25       | 2009: From Stage Road in Bass River<br>State Park travel ca. 52 miles north on<br>[French] Coal Road pull into small<br>opening on west side of road and walk<br>northeast to ditch; 0.6 mile north of<br>intersection of Stage Road and French<br>Coal Road, 1.7 miles northwest of where<br>Stage Road crosses over the Garden State<br>Parkway, located in Bass River<br>Township, Burlington County. |
| Nonvascular Pla  | nts                          |                              |   |                      |       |       |            |                  |  |
| Sphagnum cyclophyllum  | Sphagnum                     |                              |   | HL                   | G3    | S2    | Y          | 1961-10-23       | 2010: New Gretna, 5 miles northwest,<br>Route 563.   |
| Total number of reco   | rds: 1                       |                              |   |                      |       |       |            |                  |  |
| Terrestrial Com  | nunity - Other C             | Massification                |   |                      |       |       |            |                  |  |
| Dwarf pinus rigida-<br>quercus (marilandica,<br>ilicifolia)/corema conradii<br>shrubland | Pine Plains (Pp4/5)          |                              |   |                      | G1    | S1    | Y          | 1987-05-29       | East (lower) plains, S. of Oswego R., ca.<br>2 mi. N. of Munion field.   |

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### NJFS Pinelands Silviculture Proposal

|  |   | Immediate Vicinity of the Project Site<br>Based on Search of Natural Heritage Database<br>Rare Plant Species and Ecological Communities Currently Recorded in<br>the New Jersey Natural Heritage Database |                            |                      |       |       |            | in               |  |
|--|---|---|----------------------------|----------------------|-------|-------|------------|------------------|--|
| Scientific Name  | Common Name   | Federal Protection<br>Status  | State Protection<br>Status | n Regional<br>Status | Grank | Srank | Identified | Last<br>Observed | Location   |
| Eleocharis (olivacea,<br>microcarpa, robbinsii) -<br>xyris (difformis var.<br>difformis, smalliana)<br>herbaceous vegetation | Spikerush (Smallfruit,<br>Bright Green, Robbin's)<br>Yelloweyed Grass (Bog,<br>Small's) Coastal Plain<br>Intermittent Pond<br>Herbaceous Vegetation | -   |                            |                      | G2    | S2    | Υ          | 2002-11-07       | Site is 2 miles northeast of Leektown.<br>From Leektown, travel east on Route 542<br>about 1 mile to Allens Road. Turn left<br>(north) on Allens Road. Travel north on<br>Allens Road 1.6 miles to first pond and<br>1.8 miles to second pond. One pond is<br>directly east about 200 feet. The second<br>pond is about 800 feet north of the first,<br>just 75 feet east of the road. |
| Panicum rigidulum var.<br>pubescens -<br>dichanthelium sp. /<br>sphagnum spp.<br>herbaceous vegetation                       | Redtop Panicgrass -<br>Rosette Grass / Sphagnur<br>Moss Coastal Plain<br>Intermittent Pond<br>Herbaceous Vegetation                                 | m   |                            |                      | G2    | 82    | Υ          | 2002-11-07       | Site is 2 miles northeast of Leektown.<br>From Leektown, travel east on Route 542<br>about 1 mile to Allens Road. Turn left<br>(north) on Allens Road. Travel north on<br>Allens Road 1.6 miles to first pond and<br>1.8 to second pond. One pond is directly<br>east about 200 feet. The second pond is<br>about 800 feet north of the first, just 75<br>feet east of the road.       |
| Total number of reco   | ords: 3   |   |                            |                      |       |       |            |                  |  |

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|          |                       | Immediat                    | Rare Wildlife Species or Wildlife Habitat Within the<br>Immediate Vicinity of the Project Site Based on Search of<br>Landscape Project 3.3 Species Based Patches |      |                              |                            |       |           |
|----------|-----------------------|-----------------------------|--|------|------------------------------|----------------------------|-------|-----------|
| Class    | Common Name           | Scientific Name             | Feature Type   | Rank | Federal<br>Protection Status | State<br>Protection Status | Grank | Srank     |
| Amphibia |                       |                             |  |      |                              |                            |       |           |
|          | Carpenter Frog        | Lithobates virgatipes       | Occupied Habitat   | 2    | NA                           | Special Concern            | G4    | S3        |
|          | Fowler's Toad         | Anaxyrus fowleri            | Occupied Habitat   | 2    | NA                           | Special Concern            | G5    | S3        |
|          | Pine Barrens Treefrog | Hyla andersonii             | Breeding Sighting  | 3    | NA                           | State Threatened           | G4    | S2        |
|          | Pine Barrens Treefrog | Hyla andersonii             | Non-breeding<br>Sighting   | 3    | NA                           | State Threatened           | G4    | S2        |
|          | Pine Barrens Treefrog | Hyla andersonii             | Occupied Habitat   | 3    | NA                           | State Threatened           | G4    | S2        |
|          | Pine Barrens Treefrog | Hyla andersonii             | Vernal Pool Breeding   | 3    | NA                           | State Threatened           | G4    | S2        |
| Aves     |                       |                             |  |      |                              |                            |       |           |
|          | Bald Eagle            | Haliaeetus<br>leucocephalus | Foraging   | 4    | NA                           | State<br>Endangered        | G5    | \$1B,\$2N |
|          | Barred Owl            | Strix varia                 | Breeding Sighting  | 3    | NA                           | State Threatened           | G5    | \$2B,\$2N |
|          | Barred Owl            | Strix varia                 | Non-breeding<br>Sighting   | 3    | NA                           | State Threatened           | G5    | S2B,S2N   |
|          | Black-billed Cuckoo   | Coccyzus<br>erythropthalmus | Breeding Sighting  | 2    | NA                           | Special Concern            | G5    | S3B,S4N   |
|          | Brown Thrasher        | Toxostoma rufum             | Breeding Sighting  | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N |
|          | Common Nighthawk      | Chordeiles minor            | Breeding Sighting  | 2    | NA                           | Special Concern            | G5    | \$3B,\$3N |
|          | Common Tern           | Sterna hirundo              | Foraging   | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N |
|          | Cooper's Hawk         | Accipiter cooperii          | Breeding Sighting  | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N |
|          | Glossy Ibis           | Plegadis falcinellus        | Foraging   | 2    | NA                           | Special Concern            | G5    | S3B,S4N   |

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| Rare Wildlife Species or Wildlife Habitat Within the<br>Immediate Vicinity of the Project Site Based on Search of<br>Landscape Project 3.3 Species Based Patches |                     |   |                             |      |                              |                            |       |            |
|--|---------------------|---|-----------------------------|------|------------------------------|----------------------------|-------|------------|
| Class  | Common Name         | Scientific Name                           | Feature Type                | Rank | Federal<br>Protection Status | State<br>Protection Status | Grank | Srank      |
|  | Little Blue Heron   | Egretta caerulea                          | Foraging                    | 2    | NA                           | Special Concern            | G5    | S3B,S3N    |
|  | Northern Parula     | Parula americana                          | Breeding Sighting           | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N  |
|  | Red-shouldered Hawk | Buteo lineatus                            | Breeding Sighting           | 4    | NA                           | State<br>Endangered        | G5    | S1B,S3N    |
|  | Snowy Egret         | Egretta thula                             | Foraging                    | 2    | NA                           | Special Concern            | G5    | \$3B,\$4N  |
|  | Tricolored Heron    | Egretta tricolor                          | Foraging                    | 2    | NA                           | Special Concern            | G5    | S3B,S3N    |
|  | Whip-poor-will      | Caprimulgus<br>vociferus                  | Breeding Sighting           | 2    | NA                           | Special Concern            | G5    | S3B,SUN    |
|  | Wood Thrush         | Hylocichla mustelina                      | Breeding Sighting           | 2    | NA                           | Special Concern            | G4    | S3B,S4N    |
| nsecta   |                     |   |                             |      |                              |                            |       |            |
|  | Hessel's Hairstreak | Callophrys hesseli                        | Casual Flyby                | 2    | NA                           | Special Concern            | G3G4  | <b>S</b> 3 |
|  | Pine Barrens Bluet  | Enallagma<br>recurvatum                   | Occupied Habitat            | 2    | NA                           | Special Concern            | G3    | \$3        |
| <b>I</b> ammalia   |                     |   |                             |      |                              |                            |       |            |
|  | Bobcat              | Lynx rufus                                | Live Individual<br>Sighting | 4    | NA                           | State<br>Endangered        | G5    | S2         |
| Reptilia   |                     |   |                             |      |                              |                            |       |            |
|  | Eastern Box Turtle  | Terrapene carolina<br>carolina            | Occupied Habitat            | 2    | NA                           | Special Concern            | G5T5  | S3         |
|  | Northern Pine Snake | Pituophis<br>melanoleucus<br>melanoleucus | Occupied Habitat            | 3    | NA                           | State Threatened           | G4T4  | S2         |

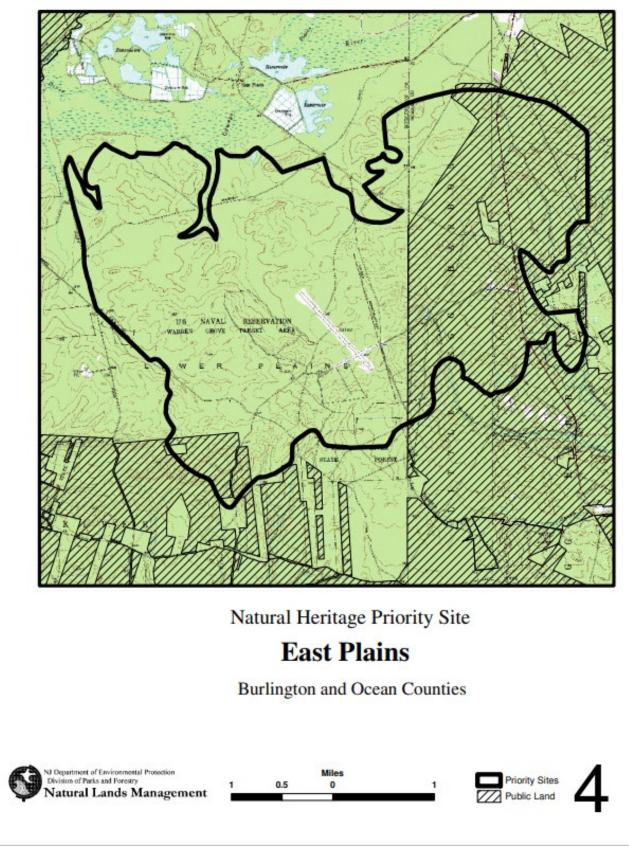
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|       |                    | Immedia                       | Wildlife Species or V<br>ite Vicinity of the Pi<br>andscape Project 3.3 | f    |                              |                            |       |       |
|-------|--------------------|-------------------------------|---|------|------------------------------|----------------------------|-------|-------|
| Class | Common Name        | Scientific Name               | Feature Type  | Rank | Federal<br>Protection Status | State<br>Protection Status | Grank | Srank |
|       | Timber Rattlesnake | Crotalus horridus<br>horridus | Occupied Habitat  | 4    | NA                           | State<br>Endangered        | G4T4  | S1    |

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|                               | Vernal Pool Habitat<br>In the Immediate Vicinity of<br>Project Site Based on Search of<br>Landscape Project 3.3 |        |
|-------------------------------|---|--------|
| Vernal Pool Habitat Type      | Vernal Pool Habitat ID  | 17<br> |
| Vernal habitat area           | 2702  |        |
| Vernal habitat area           | 2707  |        |
| Potential vernal habitat area | 708   |        |
| Potential vernal habitat area | 709   |        |
| Potential vernal habitat area | 761   |        |
| Potential vernal habitat area | 773   |        |
| Potential vernal habitat area | 795   |        |
| Total number of records: 7    |   |        |

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## Natural Heritage Priority Site East Plains

#### Locational Information

 Quad Name:
 Oswego Lake ; West Creek

 County:
 Burlington ; Ocean

 Municipality:
 Bass River Twp ; Little Egg Harbor Twp ; Stafford Twp ; Eagleswood Twp

#### Description of Site

An extensive dwarf pitch pine/scrub oak forest.

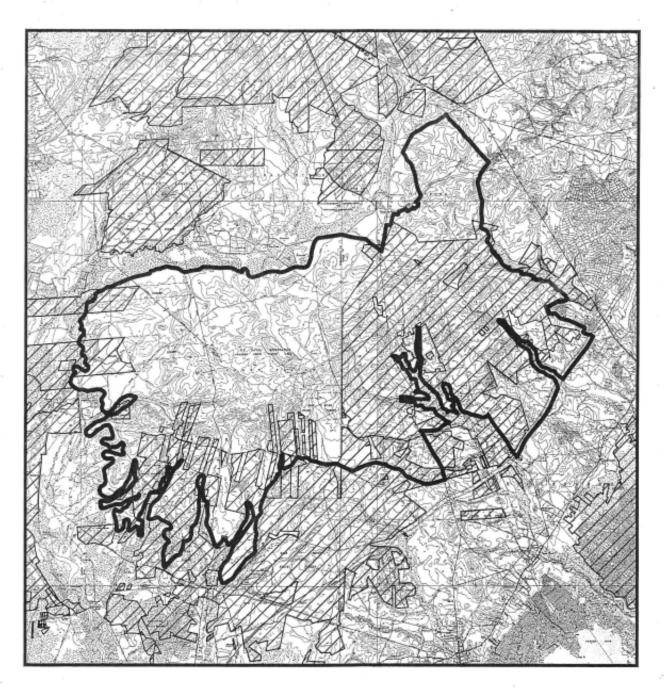
#### **Boundary Justification**

Primary boundaries follow those delineated by Givnish, 1980. As of 91-02-20 no secondary boundaries have been delineated for the standard site. Secondary bounds for macrosite should try to include the fireshed of the plains.

#### Biodiversity Rank B1

Exemplary stand of globally imperiled natural community. Also a number of globally rare plants and animals are present.

March, 2007 Site Code: S.USNJHP1\*213



## Natural Heritage Priority Site East Plains Fireshed Macrosite

Burlington and Ocean Counties



## Natural Heritage Priority Site East Plains Fireshed Macrosite

#### Locational Information

 Quad Name:
 West Creek ; Oswego Lake ; Brookville

 County:
 Burlington ; Ocean

 Municipality:
 Bass River Twp ; Eagleswood Twp ; Little Egg Harbor Twp ; Stafford Twp ; Barnegat Twp

#### Description of Site

A large patch of pitch pine-shrub oak barrens and pine plains in broad sandy uplands, interrupted by few wetlands.

#### **Boundary Justification**

Bounds drawn to include the fireshed containing the majority of fires that burn into the East Plains. Includes highly flammable pitch pine-shrub oak barrens and pine plains vegetation. Bordered by broad patches of wetlands or major roads or mesic forests which act as firebreaks.

#### Biodiversity Rank B1

This macrosite contains a globally imperiled natural community and a number of globally rare plants and animals. The site contains the land that supports the fire regime that sustains the pine plains vegetation of the East Plains.

March, 2007 Site Code: S.USNJHP1\*2041

# Frequently Asked Questions About The Natural Heritage Priority Sites GIS File

#### What are Natural Heritage Priority Sites?

Through its Natural Heritage Database, the Office of Natural Lands Management (ONLM) identifies critically important areas to conserve New Jersey's biological diversity, with particular emphasis on rare plant species and ecological communities. The database provides detailed information on rare species and ecological communities to planners, developers, and conservation agencies for use in resource management, environmental impact assessment, and both public and private land protection efforts.

Using the database, ONLM has identified 343 Natural Heritage Priority Sites, representing some of the best remaining habitat for rare species and rare ecological communities in the state. Although the primary focus of these sites is rare plant species and ecological communities, the DEP Endangered and Nongame Species Program also provided key information and assisted with the delineation of a number of the sites that encompass significant habitats for rare animals. These areas should be considered to be top priorities for the preservation of biological diversity in New Jersey. If these sites become degraded or destroyed, we may lose some of the unique components of our natural heritage.

#### How are Natural Heritage Priority Sites used in conservation of biological diversity?

Natural Heritage Priority Site maps are used by individuals and agencies concerned with the protection and management of land. The maps have been used by municipalities preparing natural resource inventories; public and private conservation organizations preparing open space acquisition goals; land developers and consultants identifying environmentally sensitive lands; and public and private landowners developing land management plans. However, the coverage was not developed for regulatory purposes, and should not be used as a substitute for the on-site surveys and Natural Heritage Database searches required by regulatory agencies.

Natural Heritage Priority Sites contain some of the best and most viable occurrences of rare plant species and ecological communities, but they do not cover all known habitat for these elements or most rare animal species in New Jersey. Most of the state has not been surveyed for rare species and ecological communities. If information is needed on whether or not endangered or threatened species have been documented from a particular area, a Natural Heritage Database search can be requested by contacting the Office of Natural Lands Management.

#### What do the boundaries of the sites contain?

The boundaries of each Natural Heritage Priority Site are drawn to encompass critical habitat for the rare species or ecological communities. Often the boundaries extend to include additional buffer lands that should be managed to protect this critical habitat. A justification for the boundary is provided for each site.

Boundaries of site polygons may overlap. Site polygons may also be nested so that one site may be found entirely within a larger site. When viewing the shape file, a larger site may sometimes obscure a smaller site within it. Such confusion can be eliminated by highlighting the area of interest and checking the attribute table to reveal all sites within the selected area.

#### How was the GIS coverage developed?

The coverage was originally developed as lines on USGS topographic paper maps and subsequently edited to fit on either 1995/97 color infrared aerial imagery, 1991 black and white aerial imagery or scanned USGS 1:24,000 topographic maps as an ArcView shape file (NJ State Plane Coordinate System, NAD83). Within the Highlands Region the coverage was developed using the NJDEP 2002 Land use/Land cover: Highlands Study Area (DRAFT) coverage, and then subsequently edited using 2002 High Resolution Orthophotography, as well as scanned USGS 1:24,000 topographic maps, as references.

## What attributes are included with the shape file?

(Note: Text fields in the attribute table are truncated at 254 characters. Therefore, some text may be deleted from the attribute table of some of the sites. The complete text for all the site records is contained in the **Prisites.rtf** file that is included in the Prisites Winzip distribution file.)

<u>Identifying attributes</u> – The Sitecode and Sitename fields are assigned by the Office of Natural Lands Management to track each site by a unique alphanumeric code and name. The Version field indicates the year and month of the current version of the Natural Heritage Priority Sites coverage. <u>Locational attributes</u> – Information about where each site is located can by found in the County, Quadname (US Geological Survey 7.5 minute topographic quadrangle map) and Municipali(ty) fields. More detailed information can be gathered by overlaying county and municipal coverages that are available from NJ DEP.

<u>Descriptive attributes</u> – A description of the site can be found in the Descriptio(n) field, while the Boundjust field contains a written justification for the site boundaries.

<u>Significance attributes</u> – The relative significance of each site is determined by assigning a biodiversity significance rank (Biodivrank). Justification for the rank can be found in the BiodivComm(ents) field. The Siteclass field indicates whether the site is categorized as a macrosite or a standard site. Standard sites are smaller in size (usually less than 3200 acres in size), while macrosites tend to be larger (usually greater than 3200 acres in size). It is not unusual to find several standard sites entirely contained within the boundaries of a macrosite.

## What is the biodiversity significance rank and how is it used?

Each site is ranked according to its significance for biological diversity using a scale developed by The Nature Conservancy, the network of Natural Heritage Programs and the New Jersey Natural Heritage Program. The ranks can be used to distinguish between sites that are of global significance for conservation of biological diversity vs. those that are of state significance. The global biodiversity significance ranks range from B1 to B5. Within the Highlands Region the global biodiversity significance rank has been combined with a state biodiversity significance rank which provides information about the significance of the site on a state level. The state biodiversity significance ranks for sites in the Highlands Region range from V1 to V5. Therefore, all sites have been assigned a global biodiversity rank (B rank), but not all sites have been assigned a state biodiversity rank (V rank). The specific definitions for each rank are as follows:

**B1** - Outstanding significance on a global level, generally the "last of the least" in the world, such as the only known occurrence of any element (species or ecological community), the best or an excellent occurrence of an element ranked critically imperiled globally, or a concentration (4+) of good or excellent occurrences of elements that are imperiled or critically imperiled globally. The site should be viable and defensible for the elements or ecological processes contained.

B2 - Very high significance on a global level, such as the

most outstanding occurrence of any ecological community. Also includes areas containing other occurrences of elements that are critically imperiled globally, a good or excellent occurrence of an element that is imperiled globally, an excellent occurrence of an element that is rare globally, or a concentration (4+) of good occurrences of globally rare elements or viable occurrences of globally imperiled elements.

**B3** - High significance on a global level, such as any other viable occurrence of an element that is globally imperiled, a good occurrence of a globally rare element, an excellent occurrence of any ecological community, or a concentration (4+) of good or excellent occurrences of elements that are critically imperiled in the State.

**B4** - Moderate significance on a global level, such as a viable occurrence of a globally rare element, a good occurrence of any ecological community, a good or excellent occurrence or only viable state occurrence of an element that is critically imperiled in the State, an excellent occurrence of an element that is imperiled in the State, or a concentration (4+) of good occurrences of elements that are imperiled in the State or excellent occurrences of elements that are rare in the State.

#### B5 - Of general biodiversity interest.

**V1** - Outstanding significance on a state level. Only known occurrence in the state for an element <u>or</u> Site with an excellent occurrence or the best occurrence in the state for an element ranked critically imperiled in the state <u>or</u> a concentration (4+) of good or excellent occurrences of elements that are imperiled or critically imperiled in the state.

**V2** - Very high significance on a state level. Includes sites containing other occurrences of elements that are critically imperiled in the state <u>or</u> a concentration (4+) of other occurrences of state imperiled elements and/or good or excellent occurrences of state rare elements.

**V3** - High significance on a state level. Includes sites containing the best occurrence in the state or an excellent occurrence of a state imperiled element <u>or</u> multiple (2+) other occurrences for state imperiled elements and/or excellent, good or moderate quality occurrences of state rare elements.

**V4** - Moderate significance on a state level. Includes sites containing the best occurrence in the state or an excellent occurrence of a state rare element <u>or</u> any site with other occurrences of a state imperiled element <u>or</u> multiple (2+) other occurrences of state rare elements.

 $\mathbf{V5}$  - Any site with any other occurrence of a state rare element.

How can I obtain Natural Heritage Priority Site maps for an area of interest to me? Natural Heritage Priority Site hard copy maps can be obtained by submitting a written request accompanied by a check or money order made payable to the Office of Natural Lands Management at the following address:

Office of Natural Lands Management P.O. Box 404 Trenton, NJ 08625-0404 Phone: 609-984-1339; Fax: 609-984-1427

Individual 8.5" X 11" maps are available at the following rate:

| 1 - 10 site maps & reports:  | \$1.50/site |
|------------------------------|-------------|
| 11 - 20 site maps & reports: | \$1.00/site |
| > 20 sites:                  | \$0.50/site |

Digital GIS Coverage of Natural Heritage Priority Sites

A digital version of the ArcView GIS file of Natural Heritage Priority Sites is also available. The 2007 version of Natural Heritage Priority Sites will be sent as an email attachment upon request. There is no charge for emailing the GIS data.

#### How often are the maps updated?

The Natural Heritage Priority Site information is constantly being updated in the Natural Heritage Database. A new edition of the maps will be made available after significant revisions or additions to the Database.

May 17, 2007



## New Jersey Department of Environmental Protection New Jersey Native Plant Species List

### Developed by the DEP pursuant to: P.L. 2017, c. 41 Act Concerning Use of Native Vegetation by DOT, NJTA and SJTA

#### August 18, 2017

P.L. 2017, c. 41 (Act), signed into law May 1, 2017, mandated the following initial requirement for the New Jersey Department of Environmental Protection (DEP):

a. No later than the 90<sup>th</sup> day after the date of enactment of this section, the Department of Environmental Protection, in consultation with the Division of Plant Industry in the Department of Agriculture, shall identify, for each plant hardiness zone, all of the particular species of vegetation that are native to the State, and that thrive in each plant hardiness zone of the State.

By August 1, 2017, the DEP is to promulgate the required native<sup>1</sup> plant species list (List), which is to include the input of the Division of Plant Industry within the Department of Agriculture regarding plant hardiness zone applicability. The Act further specifies that, no later than 180 days after enactment of the Act, the Department of Transportation (DOT), New Jersey Turnpike Authority (NJTA), and the South Jersey Transportation Authority (SJTA) are to plant only species included on the List for purposes of landscaping, land management, reforestation, or habitat restoration. Finally, the Act allows the above transportation agencies and authorities to apply to the DEP for exemptions to strict adherence to planting only those species included on the List.

The New Jersey Natural Heritage Program (NHP) within the DEP, Office of Natural Lands Management (ONLM), State Forestry Service, is part of an international network of biological inventories (NatureServe) operating in all 50 U.S. states, Canada, Latin America and the Caribbean that collect, analyze, and manage scientific information about plants and ecological communities of the Western Hemisphere. The NHP collects and maintains information about the location and status of rare plant species throughout New Jersey, conducts field surveys and performs research on rare plant species, is responsible for determining the eligibility of plant species for inclusion on New Jersey's codified Endangered Plant Species List (N.J.S.A. 7:5C et seq.), is the DEP's clearinghouse for locational data on all elements of biodiversity in NJ, and employs the only professional botanist in the DEP and in NJ state government. The draft List mandated by this Act that accompanies this narrative was initially developed by the NHP. The following provides information on the sources for the List as well as detail concerning its contents.

<sup>&</sup>lt;sup>1</sup> Also referred to as indigenous plants, native plants includes those taxa (including full species, subspecies, varieties or natural hybrids) that occur naturally within a specific geographic area. A species may be native only to certain specific physiographic provinces, counties or habitats within a state. Therefore, both indigenous and nonindigenous populations may occur within a state. This and most subsequent definitions in footnotes obtained from Snyder, D. and S. R. Kaufman. 2004.

After consideration of several existing NJ plant species lists, the ONLM determined that the existing plant list developed in NJ for use in Floristic Quality Assessments (FQA) would be the best source for the List mandated in this Act. FQA is a statistical method, first developed in 1977 by Dr. Gerould Wilhelm, a botanist and research taxonomist based in the Chicago region (Wilhelm and Masters, 1995; Taft et al, 1997). The methodology was designed as a means to objectively evaluate the floristic integrity of sites. It is a tool used by scientists and land managers to distinguish differences in floristic quality between sites and to track changes in vegetation quality over time. For example, FQA may be used to assess the success of land management in achieving particular floristic objectives through its application in the field before and after such management. Application of FQA techniques requires development and use of a comprehensive list of both native and non-native vascular plant taxa, including all species, subspecies, varieties, and hybrids documented to date in New Jersey. The FQA list, also referred to as the checklist of the flora of New Jersey, has a long history leading to its development.

The first comprehensive checklist of the flora of New Jersey was published by the American botanist, taxonomist and co-founder of the New York Botanical Garden Nathaniel Lord Britton in 1889 (Britton 1881, 1889). The next checklist of the flora was compiled by Karl Anderson in 1979, and then went through several updates and iterations [1983, 1989 (Anderson, 1989) and online in 2009 and 2011]. Anderson developed his original published 1989 checklist by updating the nomenclature of, and integrating the catalogues prepared by, N.L. Britton (1889), Witmer Stone (1911), Norman Taylor (1915), published field reports by the Torrey Botanical Club and Philadelphia Botanical Club, other published lists of local flora, as well as his own personal observations. Anderson's 1989 checklist included 2,696 plants, of which 1,980 were native to NJ.

In 2006 the NHP updated Anderson's 1989 checklist for use in floristic quality assessments. The NHP and Bowman's Hill Wildflower Preserve in PA coordinated a three-day meeting in April 2006 with a panel of expert local botanists led by Karl Anderson and moderated by Dr. Wilhelm. The resulting list included 2,117 native plants and 818 non-native plants. The list was then posted on the Bowman's Hill Wildflower Preserve's Plant Stewardship Index website for use in floristic quality assessments.

Subsequent revisions to the 2006 FQA list were completed in 2011 by Karl Anderson and Linda Kelly with updated taxonomy based on USDA Plants (<u>http://plants.usda.gov</u>), resulting in 2,183 native and 882 non-native taxa. In 2016-2017 another comprehensive review of the FQA list was completed by the NHP in the form of a report on FQA prepared for the U.S. Environmental Protection Agency. This checklist included 2,055 native vascular plants (including native species, subspecies, varieties, hybrids) and 939 non-native plants.

It should be noted that the FQA checklist of NJ flora reflects an ongoing effort to document, with voucher specimens, the entire native and nonnative flora of the state. New botanical discoveries are made yearly. The taxonomic nomenclature<sup>2</sup> is constantly being updated and documented in USDA Plants Database (USDA, PLANTS, 2017), Biota of North America Program (Kartesz, BONAP, 2017), and Integrated Taxonomic Information System (2017). The checklist therefore

<sup>1</sup> The science of describing, identifying, naming, and classifying biological organisms based on shared characteristics.

represents a "snapshot" in time of the flora of the state, and does not represent the complete flora of New Jersey.

The List developed pursuant to the Act contains a subset of the native species culled from the entire FQA checklist of both native and non-native vascular<sup>3</sup> plant taxa, including all species, varieties, subspecies, and hybrids documented to date in New Jersey. David Snyder, NHP Botanist, reviewed the latest checklist and made corrections to nativity status based on his extensive work on the flora of the state, herbarium records, the Natural Heritage (Biotics) database maintained by the NHP, and collection of voucher specimens.

The List includes only those vascular taxa considered native to New Jersey; all non-native plant taxa were removed. In addition, all 818 (797 vascular, 21 nonvascular<sup>4</sup>) plant species currently tracked as rare and listed as State Endangered or plant species of concern were removed from the List (see below). Species that are listed only by variety or subspecies indicate that the specific variety or subspecies are the only native taxa for that species in NJ. Growth form designation (if activated on spreadsheet) was obtained from the USDA Plants database (USDA, PLANTS, 2017) with some modifications specific to NJ based on professional judgement. For example, if a species growth form is listed as Tree and Shrub by the USDA Plants database, but is only found growing as a shrub in NJ, then the growth form is listed as Shrub.

Rare plants tracked by the NHP (http://www.state.nj.us/dep/parksandforests/natural/heritage/ spplant.html) are excluded from the List because they are not suitable candidates for propagation or planting by the transportation agencies included in the Act or by any other agencies except under very special and well researched circumstances. Rare plant species occur naturally in the landscape in habitats that have evolved over millennia, and propagation and planting as native cultivars/nativars<sup>5</sup> for landscaping or restoration projects would have severe implications for natural occurrences. Among the reasons not to include rare species in landscaping, land management, reforestation, or habitat restoration projects: Regulatory (DEP Land Use Regulations do not distinguish between native and non-native populations of rare plants); Biological (unintended genetic mixing of reintroduced populations with native populations, resulting in loss of original locally evolved genetic stock and the natural evolution of the species); Botanical (current and future field botanists may not be able to distinguish natural occurrences from planted occurrences). Many states have policies that prohibit the propagation and sale of native rare plants.

All native New Jersey plants are mapped by the USDA in Plant Hardiness Zones 6 and 7, with average annual extreme minimum temperatures reported as  $6a (-10 \text{ to } -5^{\circ} \text{ F})$  in northwestern counties only,  $6b (-5 \text{ to } 0^{\circ} \text{ F})$  and  $7a (0 \text{ to } 5^{\circ} \text{ F})$  statewide, and  $7b (6 \text{ to } 10^{\circ} \text{ F})$  in limited areas on

<sup>2</sup> Vascular plant means any of numerous plants, including the seed plants and the ferns, having well-developed vascular tissues consisting of phloem to transport sucrose and other organic nutrients and xylem to transport water and minerals.

<sup>3</sup> Nonvascular plants includes a division of nonflowering plants characterized by rhizoids rather than true roots and having little or no organized vascular tissue and showing alternation of generations between gamete-bearing forms and spore-bearing forms; comprises true mosses, liverworts, and hornworts.

<sup>4</sup> Cultivar is a variety of a plant developed from a natural species and maintained under cultivation. Nativar is one term for a cultivar of a native species. Like all cultivars, nativars are the result of artificial selections made by humans from the natural variation found in species. Nativars are almost always propagated vegetatively to preserve their selected trait(s), which means they no longer participate in natural reproduction patterns that would maintain genetic diversity.

the Atlantic coast and Delaware Bay. The USDA Plant Hardiness Zone Map for New Jersey is available at: <u>http://planthardiness.ars.usda.gov/PHZMWeb/Images/300dpi/NJ.jpg</u>

It is worth noting that most plant species on the List are not suitable for planting by transportation agencies for purposes of landscaping, land management, reforestation, or habitat restoration. With the exception of rare plants tracked by the NHP (see above), the List adheres to the requirement in the Act that the List include "all of the particular species of vegetation that are native to the State." The DEP is not advocating that transportation corridors be planted in poison ivy, poison sumac, stinging nettle and other noxious or irritating vegetation. Further, the vast majority of species on the List are not commercially available for purchase by these agencies. DOT, NJTA and SJTA should review the List to determine if species currently planted by these agencies are not native to the state. These agencies are encouraged to consult the DEP and the Department of Agriculture to identify a subset of listed species that may be suitable and commercially available for their use.

The enclosed List includes 1,233 native vascular plants. By growth form this includes 86 trees, 117 shrubs, 2 subshrubs, 43 vines, 298 graminoids, and 687 herbs. The List is comprised of full species, subspecies, varieties, and natural hybrids. Growth form definitions can be found at: <a href="https://plants.usda.gov/growth\_habits\_def.html">https://plants.usda.gov/growth\_habits\_def.html</a>.

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## New Jersey Department of Environmental Protection New Jersey Native Plant Species List

| Scientific Name                    | Common Name                   | Growth<br>Habit |
|------------------------------------|-------------------------------|-----------------|
| Acalypha gracilens                 | Slender three-seeded mercury  | Herb            |
|                                    | Hornbeam-leaved three-seeded  |                 |
| Acalypha ostryifolia               | mercury                       | Herb            |
| Acalypha rhomboidea                | Common three-seeded mercury   | Herb            |
| Acalypha virginica                 | Virginia three-seeded mercury | Herb            |
| Acer negundo                       | Box-elder                     | Tree            |
| Acer nigrum                        | Black maple                   | Tree            |
| Acer pensylvanicum                 | Striped maple                 | Tree            |
| Acer rubrum var. drummondii        | Drummond's maple              | Tree            |
| Acer rubrum var. rubrum            | Red maple                     | Tree            |
| Acer rubrum var. trilobum          | Trident red maple             | Tree            |
| Acer saccharinum                   | Silver maple                  | Tree            |
| Acer saccharum                     | Sugar maple                   | Tree            |
| Acer spicatum                      | Mountain maple                | Tree            |
| Actaea pachypoda                   | White baneberry               | Herb            |
| Actaea racemosa var. racemosa      | Black cohosh                  | Herb            |
| Adiantum pedatum                   | Northern maidenhair           | Herb            |
| Agalinis maritima                  | Seaside gerardia              | Herb            |
| Agalinis purpurea                  | False-foxglove                | Herb            |
| Agalinis setacea                   | Thread- leaved gerardia       | Herb            |
| Agalinis tenuifolia                | Slenderleaf false foxglove    | Herb            |
| Ageratina altissima var. altissima | White snakeroot               | Herb            |
| Agrimonia gryposepala              | Tall hairy agrimony           | Herb            |
| Agrimonia parviflora               | Harvestlice                   | Herb            |
| Agrimonia pubescens                | Downy agrimony                | Herb            |
| Agrimonia rostellata               | Beaked agrimony               | Herb            |
| Agrimonia striata                  | Woodland agrimony             | Herb            |
| Agrostis hyemalis                  | Hairgrass                     | Graminoid       |
| Agrostis perennans                 | Upland bentgrass              | Graminoid       |
| Aletris farinosa                   | Colic-root                    | Herb            |
| Alisma subcordatum                 | American water-plantain       | Herb            |
| Allium canadense                   | Wild onion                    | Herb            |
| Allium tricoccum                   | Wild leek                     | Herb            |
| Alnus incana                       | Speckled alder                | Shrub           |
| Alnus serrulata                    | Smooth alder                  | Shrub           |

## Developed by the DEP pursuant to: P.L. 2017, c. 41

| Scientific Name                       | Common Name               | Growth<br>Habit |
|---------------------------------------|---------------------------|-----------------|
| Amaranthus cannabinus                 | Water hemp                | Herb            |
| Ambrosia artemisiifolia               | Common ragweed            | Herb            |
| Ambrosia trifida                      | Giant ragweed             | Herb            |
| Amelanchier arborea                   | Common service-berry      | Tree            |
| Amelanchier canadensis                | Canadian service-berry    | Tree            |
| Amelanchier laevis                    | Allegheny service-berry   | Tree            |
| Amelanchier obovalis                  | Coastal service-berry     | Shrub           |
| Amelanchier x intermedia              | Serviceberry              | Tree            |
| Ammophila breviligulata               | American beachgrass       | Graminoid       |
| Amphicarpaea bracteata                | Hog peanut                | Vine            |
| Amphicarpum purshii                   | Pursh's millet-grass      | Graminoid       |
| Anaphalis margaritacea                | Pearly everlasting        | Herb            |
| Andropogon gerardii                   | Big bluestem              | Graminoid       |
| Andropogon glomeratus                 | Bushy bluestem            | Graminoid       |
| Andropogon virginicus var. virginicus | Broomsedge                | Graminoid       |
| Anemone quinquefolia                  | Wood anemone              | Herb            |
| Anemone virginiana                    | Tall thimbleweed          | Herb            |
| Angelica atropurpurea                 | Purple-stemmed angelica   | Herb            |
| Antennaria howellii subsp. neodioica  | Howell's pussytoes        | Herb            |
| Antennaria howellii subsp. petaloidea | Small pussytoes           | Herb            |
| Antennaria neglecta                   | Overlooked pussytoe       | Herb            |
| Antennaria parlinii subsp. fallax     | Parlin's pussytoes        | Herb            |
| Antennaria parlinii subsp. parlinii   | Parlin's pussytoes        | Herb            |
| Antennaria plantaginifolia            | Plantain-leaved pussytoes | Herb            |
| Apios americana                       | Ground-nut                | Vine            |
| Apocynum androsaemifolium             | Pink dogbane              | Herb            |
| Apocynum cannabinum                   | Indian-hemp               | Herb            |
| Apocynum x floribundum                | Intermediate dogbane      | Herb            |
| Aquilegia canadensis                  | Wild columbine            | Herb            |
| Arabis canadensis                     | Sicklepod                 | Herb            |
| Arabis glabra                         | Tower rockcress           | Herb            |
| Arabis laevigata                      | Smooth rockcress          | Herb            |
| Arabis lyrata                         | Lyre-leaved rockcress     | Herb            |
| Aralia nudicaulis                     | Wild sarsaparilla         | Herb            |
| Aralia racemosa                       | Spikenard                 | Herb            |
| Arctostaphylos uva-ursi               | Bearberry                 | Herb            |
| Arisaema dracontium                   | Green-dragon              | Herb            |
| Arisaema triphyllum subsp. pusillum   | Small Jack-in-the-pulpit  | Herb            |
| Arisaema triphyllum subsp. triphyllum | Jack-in-the-pulpit        | Herb            |
| Aristida longespica var. geniculata   | Slender threeawn          | Graminoid       |
| Aristida longespica var. longespica   | Slender threeawn          | Graminoid       |

| Scientific Name                           | Common Name                    | Growth<br>Habit |
|---|--------------------------------|-----------------|
| Aristida oligantha                        | Prairie threeawn               | Graminoid       |
| Aristida purpurascens                     | Arrow-feather three-awn        | Graminoid       |
| Aristida tuberculosa                      | Sea-beach Three-awn            | Graminoid       |
| Aronia arbutifolia                        | Red chokeberry                 | Shrub           |
| Aronia melanocarpa                        | Black chokeberry               | Shrub           |
| Aronia prunifolia                         | Purple chokeberry              | Shrub           |
| Asarum canadense                          | Canadian wild ginger           | Herb            |
| Asclepias amplexicaulis                   | Blunt-leaved milkweed          | Herb            |
| Asclepias exaltata                        | Poke milkweed                  | Herb            |
| Asclepias incarnata subsp. incarnata      | Swamp milkweed                 | Herb            |
| Asclepias incarnata subsp. pulchra        | Swamp milkweed                 | Herb            |
| Asclepias purpurascens                    | Purple milkweed                | Herb            |
| Asclepias syriaca                         | Common milkweed                | Herb            |
| Asclepias tuberosa                        | Butterfly-weed                 | Herb            |
| Asclepias viridiflora                     | Green milkweed                 | Herb            |
| Asplenium platyneuron                     | Ebony spleenwort               | Herb            |
| Asplenium rhizophyllum                    | Walking fern                   | Herb            |
| Asplenium trichomanes subsp. quadrivalens | Maidenhair spleenwort          | Herb            |
| Asplenium trichomanes subsp. trichomanes  | Maidenhair spleenwort          | Herb            |
| Asplenium x ebenoides                     | Scott's spleenwort             | Herb            |
| Asplenium x trudellii                     | Trudell's spleenwort           | Herb            |
| Athyrium filix-femina subsp. angustum     | Subartic lady fern             | Herb            |
| Athyrium filix-femina subsp. asplenioides | Asplenium lady fern            | Herb            |
| Atriplex cristata                         | Crested saltbush               | Herb            |
| Atriplex prostrata                        | Halberd-leaved orach           | Herb            |
| Aureolaria flava                          | Smooth false foxglove          | Herb            |
| Aureolaria pedicularia                    | Fernleaf yellow false foxglove | Herb            |
| Aureolaria virginica                      | Downy false-foxglove           | Herb            |
| Baccharis halimifolia                     | Groundsel-tree                 | Shrub           |
| Baptisia tinctoria                        | Wild indigo                    | Herb            |
| Bartonia paniculata                       | Screwstem                      | Herb            |
| Bartonia virginica                        | Bartonia                       | Herb            |
| Betula alleghaniensis                     | Yellow birch                   | Tree            |
| Betula lenta                              | Black birch                    | Tree            |
| Betula nigra                              | River birch                    | Tree            |
| Betula populifolia                        | Gray birch                     | Tree            |
| Bidens bipinnata                          | Spanish needles                | Herb            |
| Bidens cernua                             | Bur-marigold                   | Herb            |
| Bidens connata                            | Purple-stemmed beggar -ticks   | Herb            |
| Bidens coronata                           | Tickseed-sunflower             | Herb            |
| Bidens discoidea                          | Small beggar-ticks             | Herb            |

| Scientific Name                          | Common Name                | Growth<br>Habit |
|--|----------------------------|-----------------|
| Bidens frondosa                          | Beggar-ticks               | Herb            |
| Bidens laevis                            | Showy bur-marigold         | Herb            |
| Bidens vulgata                           | Big devils beggarticks     | Herb            |
| Boehmeria cylindrica                     | False nettle               | Herb            |
| Boltonia asteroides var. asteroides      | White doll's daisy         | Herb            |
| Botrychium dissectum                     | Cut-leaved grape-fern      | Herb            |
| Botrychium matricariifolium              | Matricary grape fern       | Herb            |
| Botrychium simplex                       | Little grapefern           | Herb            |
| Botrychium virginianum                   | Rattlesnake fern           | Herb            |
| Brachyelytrum aristosum                  | Northern short-husk        | Graminoid       |
| Brachyelytrum erectum                    | Bearded short-husk         | Graminoid       |
| Brasenia schreberi                       | Water shield               | Herb            |
| Bromus pubescens                         | Hairy brome                | Graminoid       |
| Bulbostylis capillaris                   | Densetuft hairsedge        | Graminoid       |
| Cakile edentula                          | Sea rocket                 | Herb            |
| Calamagrostis canadensis var. canadensis | Canada bluejoint           | Graminoid       |
| Calamagrostis canadensis var. macouniana | Canada bluejoint           | Graminoid       |
| Calamagrostis coarctata                  | Arctic reedgrass           | Graminoid       |
| Calamovilfa brevipilis                   | Pine Barrens reed grass    | Graminoid       |
| Callitriche heterophylla                 | Larger water-starwort      | Herb            |
| Calopogon tuberosus                      | Grass-pink                 | Herb            |
| Caltha palustris                         | Marsh-marigold             | Herb            |
| Calystegia sepium subsp. americanum      | Hedge false bindweed       | Vine            |
| Calystegia sepium subsp. angulata        | Hedge false bindweed       | Vine            |
| Campanula aparinoides                    | Marsh bellflower           | Herb            |
| Campanula rotundifolia                   | Harebell                   | Herb            |
| Campsis radicans                         | Trumpet creeper            | Vine            |
| Cardamine bulbosa                        | Bittercress                | Herb            |
| Cardamine concatenata                    | Cutleaf toothwort          | Herb            |
| Cardamine parviflora var. arenicola      | Small-flowered bittercress | Herb            |
| Cardamine pensylvanica                   | Pennsylvania bittercress   | Herb            |
| Carex abscondita                         | Thicket sedge              | Graminoid       |
| Carex alata                              | Broad-winged sedge         | Graminoid       |
| Carex albicans var. albicans             | White-tinged sedge         | Graminoid       |
| Carex albicans var. emmonsii             | Emmons' sedge              | Graminoid       |
| Carex albolutescens                      | Greenish-white sedge       | Graminoid       |
| Carex amphibola                          | Eastern narrow-leaf sedge  | Graminoid       |
| Carex annectens                          | Yellow fruited sedge       | Graminoid       |
| Carex appalachica                        | Appalachian stellate sedge | Graminoid       |
| Carex argyrantha                         | Hay sedge                  | Graminoid       |
| Carex atlantica subsp. atlantica         | Atlantic sedge             | Graminoid       |

| Scientific Name                   | Common Name                  | Growth<br>Habit |
|-----------------------------------|------------------------------|-----------------|
| Carex atlantica subsp. capillacea | Howe's sedge                 | Graminoid       |
| Carex barrattii                   | Barratt's sedge              | Graminoid       |
| Carex blanda                      | Woodland sedge               | Graminoid       |
| Carex brevior                     | Short sedge                  | Graminoid       |
| Carex bromoides                   | Brome-like sedge             | Graminoid       |
| Carex bullata                     | Button sedge                 | Graminoid       |
| Carex canescens subsp. disjuncta  | Silvery sedge                | Graminoid       |
| Carex cephalophora                | Sedge                        | Graminoid       |
| Carex collinsii                   | Collins' sedge               | Graminoid       |
| Carex communis                    | Fibrous-rooted sedge         | Graminoid       |
| Carex comosa                      | Bristly sedge                | Graminoid       |
| Carex complanata                  | Flattened sedge              | Graminoid       |
| Carex crinita var. brevicrinis    | Fringed sedge                | Graminoid       |
| Carex crinita var. crinita        | Fringed sedge                | Graminoid       |
| Carex cristatella                 | Crested sedge                | Graminoid       |
| Carex davisii                     | Davis' sedge                 | Graminoid       |
| Carex debilis var. debilis        | White-edged sedge            | Graminoid       |
| Carex debilis var. interjecta     | White-edged sedge            | Graminoid       |
| Carex debilis var. pubera         | White-edged sedge            | Graminoid       |
| Carex debilis var. rudgei         | White-edged sedge            | Graminoid       |
| Carex digitalis                   | Slender woodland sedge       | Graminoid       |
| Carex echinata                    | Star sedge                   | Graminoid       |
| Carex emoryi                      | Emory's sedge                | Graminoid       |
| Carex exilis                      | Coast sedge                  | Graminoid       |
| Carex festucacea                  | Fescue sedge                 | Graminoid       |
| Carex flaccosperma                | Thinfruit sedge              | Graminoid       |
| Carex flava                       | Yellow sedge                 | Graminoid       |
| Carex folliculata                 | Long sedge                   | Graminoid       |
| Carex frankii                     | Frank's sedge                | Graminoid       |
| Carex glaucodea                   | Blue sedge                   | Graminoid       |
| Carex gracilescens                | Slender loose-flowered sedge | Graminoid       |
| Carex gracillima                  | Graceful sedge               | Graminoid       |
| Carex granularis                  | Limestone meadow sedge       | Graminoid       |
| Carex grayi                       | Gray's sedge                 | Graminoid       |
| Carex grisea                      | Sedge                        | Graminoid       |
| Carex gynandra                    | Nodding sedge                | Graminoid       |
| Carex hirsutella                  | Fuzzy wuzzy sedge            | Graminoid       |
| Carex hirtifolia                  | Pubescent sedge              | Graminoid       |
| Carex hormathodes                 | Marsh straw sedge            | Graminoid       |
| Carex hystericina                 | Porcupine sedge              | Graminoid       |
| Carex interior                    | Inland sedge                 | Graminoid       |

| Scientific Name                | Common Name           | Growth<br>Habit |
|--------------------------------|-----------------------|-----------------|
| Carex intumescens              | Bladder sedge         | Graminoid       |
| Carex lacustris                | Lake-bank sedge       | Graminoid       |
| Carex laevivaginata            | Smooth-sheathed sedge | Graminoid       |
| Carex laxiculmis               | Spreading sedge       | Graminoid       |
| Carex laxiflora                | Loose-flowered sedge  | Graminoid       |
| Carex leptalea subsp. leptalea | Bristlystalked sedge  | Graminoid       |
| Carex livida                   | Livid sedge           | Graminoid       |
| Carex longii                   | Long's sedge          | Graminoid       |
| Carex lucorum                  | Sedge                 | Graminoid       |
| Carex lupulina                 | Hop sedge             | Graminoid       |
| Carex lurida                   | Sallow sedge          | Graminoid       |
| Carex molesta                  | Troublesome sedge     | Graminoid       |
| Carex muehlenbergii            | Muhlenberg's sedge    | Graminoid       |
| Carex nigromarginata           | Black-edged sedge     | Graminoid       |
| Carex normalis                 | Large straw sedge     | Graminoid       |
| Carex pedunculata              | Long-stalked sedge    | Graminoid       |
| Carex pellita                  | Woolly sedge          | Graminoid       |
| Carex pensylvanica             | Pennsylvania sedge    | Graminoid       |
| Carex platyphylla              | Broad-leaf sedge      | Graminoid       |
| Carex prasina                  | Drooping sedge        | Graminoid       |
| Carex projecta                 | Necklace sedge        | Graminoid       |
| Carex radiata                  | Stellate sedge        | Graminoid       |
| Carex retroflexa               | Reflexed sedge        | Graminoid       |
| Carex rosea                    | Rose sedge            | Graminoid       |
| Carex scabrata                 | Rough sedge           | Graminoid       |
| Carex scoparia                 | Broom sedge           | Graminoid       |
| Carex seorsa                   | Weak stellate sedge   | Graminoid       |
| Carex sparganioides            | Bur-reed sedge        | Graminoid       |
| Carex sprengelii               | Long-beaked sedge     | Graminoid       |
| Carex squarrosa                | Squarrose sedge       | Graminoid       |
| Carex stipata var. stipata     | Owlfruit sedge        | Graminoid       |
| Carex straminea                | Eastern straw sedge   | Graminoid       |
| Carex striata var. brevis      | Walter's sedge        | Graminoid       |
| Carex striatula                | Striate sedge         | Graminoid       |
| Carex stricta                  | Tussock sedge         | Graminoid       |
| Carex styloflexa               | Bent sedge            | Graminoid       |
| Carex swanii                   | Swan's sedge          | Graminoid       |
| Carex tetanica                 | Rigid sedge           | Graminoid       |
| Carex tonsa                    | Sedge                 | Graminoid       |
| Carex torta                    | Twisted sedge         | Graminoid       |
| Carex tribuloides              | Blunt broom sedge     | Graminoid       |

| Scientific Name                        | Common Name          | Growth<br>Habit |
|--|----------------------|-----------------|
| Carex trichocarpa                      | Hairy-fruited sedge  | Graminoid       |
| Carex trisperma                        | Three fruited sedge  | Graminoid       |
| Carex umbellata                        | Umbellate sedge      | Graminoid       |
| Carex venusta                          | Dark green sedge     | Graminoid       |
| Carex vesicaria                        | Inflated sedge       | Graminoid       |
| Carex vestita                          | Velvet sedge         | Graminoid       |
| Carex virescens                        | Ribbed sedge         | Graminoid       |
| Carex viridula                         | Little green sedge   | Graminoid       |
| Carex vulpinoidea                      | Fox sedge            | Graminoid       |
| Carpinus caroliniana                   | American hornbeam    | Tree            |
| Carya cordiformis                      | Bitternut hickory    | Tree            |
| Carya glabra                           | Pignut hickory       | Tree            |
| Carya ovalis                           | Sweet Pignut Hickory | Tree            |
| Carya ovata                            | Shagbark hickory     | Tree            |
| Carya pallida                          | Sand Hickory         | Tree            |
| Carya tomentosa                        | Mockernut hickory    | Tree            |
| Castanea dentata                       | American chestnut    | Tree            |
| Caulophyllum thalictroides             | Blue cohosh          | Herb            |
| Ceanothus americanus                   | New Jersey tea       | Shrub           |
| Celastrus scandens                     | American bittersweet | Vine            |
| Celtis occidentalis                    | Hackberry            | Tree            |
| Cenchrus longispinus                   | Sandbur              | Graminoid       |
| Cenchrus tribuloides                   | Dune sandbur         | Graminoid       |
| Cephalanthus occidentalis              | Buttonbush           | Shrub           |
| Cerastium arvense                      | Field chickweed      | Herb            |
| Cerastium nutans                       | Nodding chickweed    | Herb            |
| Ceratophyllum demersum                 | Coontail             | Herb            |
| Chamaecrista fasciculata               | Partridge-pea        | Herb            |
| Chamaecrista nictitans                 | Wild sensitive-plant | Herb            |
| Chamaecyparis thyoides                 | Atlantic white-cedar | Tree            |
| Chamaedaphne calyculata                | Leatherleaf          | Shrub           |
| Chamaesyce maculata                    | Spotted spurge       | Herb            |
| Chamaesyce nutans                      | Eyebane              | Herb            |
| Chamaesyce polygonifolia               | Seaside sandmat      | Herb            |
| Chamaesyce vermiculata                 | Wormseed sandmat     | Herb            |
| Chasmanthium laxum                     | Slender spike-grass  | Graminoid       |
| Chelone glabra                         | Turtlehead           | Herb            |
| Chenopodium album var. missouriense    | Lamb's quarters      | Herb            |
| Chenopodium berlandieri var. boscianum | Pitseed goosefoot    | Herb            |
| Chenopodium berlandieri var. bushianum | Pigweed              | Herb            |
| Chenopodium capitatum                  | Blite goosefoot      | Herb            |

| Scientific Name                    | Common Name                           | Growth<br>Habit |
|------------------------------------|---------------------------------------|-----------------|
| Chimaphila maculata                | Pipsissewa                            | Herb            |
| Chimaphila umbellata               | Pipsissewa                            | Herb            |
| Chrysopsis mariana                 | Golden aster                          | Herb            |
| Chrysosplenium americanum          | Golden saxifrage                      | Herb            |
| Cicuta bulbifera                   | Bulblet-bearing water-hemlock         | Herb            |
| Cicuta maculata                    | Spotted water hemlock                 | Herb            |
| Cinna arundinacea                  | Wood reedgrass                        | Graminoid       |
| Circaea alpina                     | Small enchanter's-nightshade          | Herb            |
| Circaea lutetiana                  | Broad-leaf enchanter's-<br>nightshade | Herb            |
| Cirsium discolor                   | Field thistle                         | Herb            |
| Cirsium horridulum                 | Yellow thistle                        | Herb            |
| Cirsium muticum                    | Swamp thistle                         | Herb            |
| Cirsium pumilum                    | Pasture thistle                       | Herb            |
| Cladium mariscoides                | Twig-rush                             | Graminoid       |
| Claytonia virginica var. virginica | Virginia springbeauty                 | Herb            |
| Clematis virginiana                | Virgin's-bower                        | Vine            |
| Clethra alnifolia                  | Sweet pepperbush                      | Shrub           |
| Clinopodium vulgare                | Wild basil                            | Herb            |
| Clintonia umbellulata              | White clintonia                       | Herb            |
| Collinsonia canadensis             | Horse balm                            | Herb            |
| Comandra umbellata                 | Bastard toadflax                      | Herb            |
| Comptonia peregrina                | Sweet-fern                            | Shrub           |
| Conopholis americana               | Squaw-root                            | Herb            |
| Conyza canadensis var. canadensis  | Canadian horseweed                    | Herb            |
| Conyza canadensis var. pusilla     | Canadian horseweed                    | Herb            |
| Coptis trifolia                    | Goldthread                            | Herb            |
| Corallorhiza maculata              | Spotted coralroot                     | Herb            |
| Corallorhiza odontorhiza           | Autumn coralroot                      | Herb            |
| Cornus alternifolia                | Alternate-leaved dogwood              | Shrub           |
| Cornus amomum                      | Silky dogwood                         | Shrub           |
| Cornus florida                     | Flowering dogwood                     | Tree            |
| Cornus racemosa                    | Grey dogwood                          | Shrub           |
| Cornus rugosa                      | Round-leaved dogwood                  | Shrub           |
| Cornus sericea                     | Red-osier dogwood                     | Shrub           |
| Corydalis flavula                  | Yellow fumewort                       | Herb            |
| Corydalis sempervirens             | Rock harlequin                        | Herb            |
| Corylus americana                  | American hazelnut                     | Shrub           |
| Corylus cornuta                    | Beaked hazelnut                       | Shrub           |
| Crataegus crus-galli               | Cockspur hawthorn                     | Tree            |
| Crataegus intricata                | Biltmore hawthorn                     | Shrub           |

| Scientific Name                          | Common Name                   | Growth<br>Habit |
|--|-------------------------------|-----------------|
| Crataegus macrosperma                    | Big-fruited hawthorne         | Shrub           |
| Crataegus pruinosa                       | Waxy-fruit hawthorne          | Shrub           |
| Crataegus uniflora                       | Dwarf hawthorne               | Shrub           |
| Crotalaria sagittalis                    | Rattlebox                     | Herb            |
| Cryptotaenia canadensis                  | Honewort                      | Herb            |
| Cunila origanoides                       | Common dittany                | Herb            |
| Cuscuta compacta                         | Dodder                        | Vine            |
| Cuscuta gronovii                         | Common dodder                 | Vine            |
| Cuscuta indecora var. neuropetala        | Bigseed alfalfa dodder        | Vine            |
| Cuscuta pentagona var. pentagona         | Fiveangled dodder             | Vine            |
| Cyperus bipartitus                       | Slender flatsedge             | Graminoid       |
| Cyperus dentatus                         | Toothed flatsedge             | Graminoid       |
| Cyperus diandrus                         | Umbrella flatsedge            | Graminoid       |
| Cyperus echinatus                        | Globe flatsedge               | Graminoid       |
| Cyperus erythrorhizos                    | Redroot flatsedge             | Graminoid       |
| Cyperus esculentus                       | Yellow nutsedge               | Graminoid       |
| Cyperus filicinus                        | Fern flatsedge                | Graminoid       |
| Cyperus flavescens                       | Yellow flatsedge              | Graminoid       |
| Cyperus grayi                            | Gray's flatsedge              | Graminoid       |
| Cyperus lupulinus subsp. lupulinus       | Great Plains flatsedge        | Graminoid       |
| Cyperus lupulinus subsp. macilentus      | Great Plains flatsedge        | Graminoid       |
| Cyperus retrorsus                        | Pine barrens flatsedge        | Graminoid       |
| Cyperus squarrosus                       | Bearded flatsedge             | Graminoid       |
| Cyperus strigosus                        | Straw-colored flatsedge       | Graminoid       |
| Cypripedium acaule                       | Pink lady's-slipper           | Herb            |
| Cypripedium calceolus                    | Yellow lady's-slipper         | Herb            |
| Cypripedium parviflorum var. parviflorum | Lesser yellow lady's-slipper  | Herb            |
| Cypripedium parviflorum var. pubescens   | Greater yellow lady's-slipper | Herb            |
| Cystopteris bulbifera                    | Bulblet bladder fern          | Herb            |
| Cystopteris tenuis                       | Fragile fern                  | Herb            |
| Danthonia compressa                      | Flattened Wild Oat-grass      | Graminoid       |
| ,<br>Danthonia sericea                   | Silky Wild Oat-grass          | Graminoid       |
| Danthonia spicata                        | Common Wild Oat-grass         | Graminoid       |
| Dasiphora fruticosa subsp. floribunda    | Shrubby Cinquefoil            | Shrub           |
| Decodon verticillatus                    | Water-willow                  | Shrub           |
| Dennstaedtia punctilobula                | Hay-scented fern              | Herb            |
| Deparia acrostichoides                   | Silvery glade fern            | Herb            |
| Deschampsia flexuosa                     | Common hair grass             | Graminoid       |
| Desmodium canadense                      | Showy tick-trefoil            | Herb            |
| Desmodium canescens                      | Hoary tick-trefoil            | Herb            |
| Desmodium ciliare                        | Tick-clover                   | Herb            |

| Scientific Name                                | Common Name                 | Growth<br>Habit |
|--|-----------------------------|-----------------|
| Desmodium glabellum                            | Dillenius' tick-trefoil     | Herb            |
| Desmodium glutinosum                           | Sticky tick-trefoil         | Herb            |
| Desmodium marilandicum                         | Maryland tick-clover        | Herb            |
| Desmodium nudiflorum                           | Naked-flowered tick-trefoil | Herb            |
| Desmodium obtusum                              | Tick-trefoil                | Herb            |
| Desmodium paniculatum                          | Tick-trefoil                | Herb            |
| Desmodium perplexum                            | Perplexing tick-trefoil     | Herb            |
| Desmodium rotundifolium                        | Round-leaved tick-trefoil   | Herb            |
| Dicentra cucullaria                            | Dutchman's-breeches         | Herb            |
| Dichanthelium acuminatum var. fasciculatum     | Western panicgrass          | Graminoid       |
| Dichanthelium acuminatum var. lindheimeri      | Lindheimer panicgrass       | Graminoid       |
| Dichanthelium boscii                           | Bosc's panicgrass           | Graminoid       |
| Dichanthelium clandestinum                     | Deertongue                  | Graminoid       |
| Dichanthelium commutatum                       | Variable panicgrass         | Graminoid       |
| Dichanthelium depauperatum                     | Starved panicgrass          | Graminoid       |
| Dichanthelium dichotomum var. dichotomum       | Cypress panicgrass          | Graminoid       |
| Dichanthelium dichotomum var. ensifolium       | Cypress panicgrass          | Graminoid       |
| Dichanthelium latifolium                       | Broadleaf rosette grass     | Graminoid       |
| Dichanthelium linearifolium                    | Slimleaf panicgrass         | Graminoid       |
| Dichanthelium meridionale                      | Matting rosette grass       | Graminoid       |
| Dichanthelium ovale var. addisonii             | Addison's rosette grss      | Graminoid       |
| Dichanthelium ovale var. ovale                 | Eggleaf rosette grass       | Graminoid       |
| Dichanthelium sabulorum var. patulum           | Hemlock panic grass         | Graminoid       |
| Dichanthelium sabulorum var. thinium           | Hemlock rosette grass       | Graminoid       |
| Dichanthelium scoparium                        | Velvet panicum              | Graminoid       |
| Dichanthelium sphaerocarpon var. isophyllum    | Roundseed panicgrass        | Graminoid       |
| Dichanthelium sphaerocarpon var. sphaerocarpon | Roundseed panicgrass        | Graminoid       |
| Dichanthelium spretum                          | Eaton's panic grass         | Graminoid       |
| Dichanthelium villosissimum var. villosissimum | Whitehair rosette grass     | Graminoid       |
| Diervilla lonicera                             | Bush-honeysuckle            | Shrub           |
| Digitaria cognata                              | Fall witchgrass             | Graminoid       |
| Digitaria filiformis                           | Slender crabgrass           | Graminoid       |
| Diodia teres                                   | Rough buttonweed            | Shrub           |
| Dioscorea villosa                              | Wild yam                    | Vine            |
| Diospyros virginiana                           | Persimmon                   | Tree            |
| Distichlis spicata                             | Marsh spike-grass           | Graminoid       |
| Doellingeria umbellata var. umbellata          | Parasol whitetop            | Herb            |
| Drosera filiformis                             | Thread-leaved sundew        | Herb            |
| Drosera intermedia                             | Spatulate-leaved sundew     | Herb            |
| Drosera rotundifolia                           | Round-leaved sundew         | Herb            |
| Dryopteris carthusiana                         | Spinulose wood fern         | Herb            |

| Scientific Name                    | Common Name                     | Growth<br>Habit |
|------------------------------------|---------------------------------|-----------------|
| Dryopteris cristata                | Crested shield fern             | Herb            |
| Dryopteris intermedia              | Evergreen wood fern             | Herb            |
| Dryopteris marginalis              | Marginal wood fern              | Herb            |
| Dryopteris x boottii               | Boott's hybrid wood fern        | Herb            |
| Dryopteris x slossoniae            | Miss Slosson's hybrid wood fern | Herb            |
| Dryopteris x triploidea            | Triploid hybrid wood fern       | Herb            |
| Dulichium arundinaceum             | Three-way sedge                 | Graminoid       |
| Echinochloa muricata var. muricata | Rough barnyard grass            | Graminoid       |
| Echinochloa walteri                | Coast cockspur grass            | Graminoid       |
| Echinocystis lobata                | Prickly cucumber                | Vine            |
| Eclipta prostrata                  | False daisy                     | Herb            |
| Eleocharis acicularis              | Needle spike-rush               | Graminoid       |
| Eleocharis aestuum                 | Tidal spikerush                 | Graminoid       |
| Eleocharis engelmannii             | Engelmann's spike rush          | Graminoid       |
| Eleocharis fallax                  | Creeping spike-rush             | Graminoid       |
| Eleocharis flavescens              | Yellow spike-rush               | Graminoid       |
| Eleocharis microcarpa              | Small-fruit spike-rush          | Graminoid       |
| Eleocharis obtusa                  | Blunt spike-rush                | Graminoid       |
| Eleocharis olivacea var. olivacea  | Bright green spike-rush         | Graminoid       |
| Eleocharis ovata                   | Ovate Spike-rush                | Graminoid       |
| Eleocharis palustris               | Creeping spike-rush             | Graminoid       |
| Eleocharis parvula                 | Dwarf spike-rush                | Graminoid       |
| Eleocharis robbinsii               | Robbins' spike rush             | Graminoid       |
| Eleocharis rostellata              | Beaked spike rush               | Graminoid       |
| Eleocharis tenuis var. pseudoptera | Slender spike-rush              | Graminoid       |
| Eleocharis tenuis var. tenuis      | Slender spike-rush              | Graminoid       |
| Eleocharis tricostata              | Three-ribbed spike-rush         | Graminoid       |
| Eleocharis tuberculosa             | Long-tubercled spike-rush       | Graminoid       |
| Elodea canadensis                  | Ditch-moss                      | Herb            |
| Elodea nuttallii                   | Waterweed                       | Herb            |
| Elymus canadensis                  | Canada wild-rye                 | Graminoid       |
| Elymus hystrix                     | Bottlebrush-grass               | Graminoid       |
| Elymus riparius                    | Riverbank wild-rye              | Graminoid       |
| Elymus villosus                    | Downy wild-rye                  | Graminoid       |
| Elymus virginicus                  | Virginia wild-rye               | Graminoid       |
| Epifagus virginiana                | Beechdrops                      | Herb            |
| Epigaea repens                     | Trailing-arbutus                | Herb            |
| Epilobium ciliatum                 | Willow-herb                     | Herb            |
| Epilobium coloratum                | Purple-leaved willow-herb       | Herb            |
| Equisetum arvense                  | Field horsetail                 | Herb            |
| Equisetum fluviatile               | Water horsetail                 | Herb            |

| Scientific Name                               | Common Name                | Growth<br>Habit |
|---|----------------------------|-----------------|
| Equisetum hyemale                             | Scouring-rush              | Herb            |
| Equisetum x ferrissii                         | Intermediate scouring-rush | Herb            |
| Equisetum x litorale                          | Shore horsetail            | Herb            |
| Eragrostis capillaris                         | Lacegrass                  | Graminoid       |
| Eragrostis hypnoides                          | Smooth creeping love-grass | Graminoid       |
| Eragrostis pectinacea                         | Carolina love-grass        | Graminoid       |
| Eragrostis spectabilis                        | Purple love-grass          | Graminoid       |
| Erechtites hieraciifolius var. hieraciifolius | American burnweed          | Herb            |
| Erigeron annuus                               | Daisy fleabane             | Herb            |
| Erigeron philadelphicus                       | Philadelphia fleabane      | Herb            |
| Erigeron pulchellus                           | Robin's-plantain           | Herb            |
| Erigeron strigosus                            | Daisy fleabane             | Herb            |
| Eriocaulon aquaticum                          | Seven-angled pipewort      | Herb            |
| Eriocaulon compressum                         | Flattened pipewort         | Herb            |
| Eriocaulon decangulare                        | Ten-angled pipewort        | Herb            |
| Eriophorum virginicum                         | Tawny cotton-grass         | Graminoid       |
| Erythronium americanum                        | Yellow trout-lily          | Herb            |
| Eubotrys racemosus                            | Fetter-bush                | Shrub           |
| Euonymus americanus                           | Hearts-a-bursting          | Shrub           |
| Eupatorium album var. album                   | White boneset              | Herb            |
| Eupatorium album var. subvenosum              | White boneset              | Herb            |
| Eupatorium altissimum                         | Tall boneset               | Herb            |
| Eupatorium hyssopifolium var. calcaratum      | Hyssop-leaved thoroughwort | Herb            |
| Eupatorium hyssopifolium var. hyssopifolium   | Hyssop-leaved thoroughwort | Herb            |
| Eupatorium hyssopifolium var. laciniatum      | Hyssop-leaved thoroughwort | Herb            |
| Eupatorium leucolepis                         | White-bracted boneset      | Herb            |
| Eupatorium perfoliatum                        | Boneset                    | Herb            |
| Eupatorium pilosum                            | Rough boneset              | Herb            |
| Eupatorium rotundifolium var. cordigerum      | Roundleaf thoroughwort     | Herb            |
| Eupatorium rotundifolium var. ovatum          | Roundleaf thoroughwort     | Herb            |
| Eupatorium rotundifolium var. rotundifolium   | Roundleaf thoroughwort     | Herb            |
| Eupatorium serotinum                          | Late eupatorium            | Herb            |
| Eupatorium sessilifolium var. sessilifolium   | Upland boneset             | Herb            |
| Euphorbia ipecacuanhae                        | lpecac spurge              | Herb            |
| Eurybia compacta                              | Slender aster              | Herb            |
| Eurybia divaricata                            | White wood aster           | Herb            |
| Eurybia macrophylla                           | Bigleaf aster              | Herb            |
| Eurybia schreberi                             | Schreber's aster           | Herb            |
| Eurybia spectabilis                           | Showy aster                | Herb            |
| Eurybia x herveyi                             | Hervey's aster             | Herb            |
| Euthamia caroliniana                          | Slender goldentop          | Herb            |

| Scientific Name                     | Common Name                | Growth<br>Habit |
|-------------------------------------|----------------------------|-----------------|
| Euthamia graminifolia               | Flat-top goldentop         | Herb            |
| Eutrochium dubium                   | Coastal plain joe-pye weed | Herb            |
| Eutrochium fistulosum               | Trumpetweed                | Herb            |
| Eutrochium maculatum                | Spotted joe-pye-weed       | Herb            |
| Eutrochium purpureum var. purpureum | Sweet-scented joe-pye weed | Herb            |
| Fagus grandifolia                   | American beech             | Tree            |
| Festuca rubra                       | Red fescue                 | Graminoid       |
| Festuca subverticillata             | Nodding fescue             | Graminoid       |
| Fimbristylis autumnalis             | Slender fimbry             | Graminoid       |
| Floerkea proserpinacoides           | False-mermaid              | Herb            |
| Fragaria vesca subsp. americana     | Woodland strawberry        | Herb            |
| Fragaria virginiana                 | Virginia strawberry        | Herb            |
| Fraxinus americana                  | White ash                  | Tree            |
| Fraxinus nigra                      | Black ash                  | Tree            |
| Fraxinus pennsylvanica              | Green ash                  | Tree            |
| Fuirena pumila                      | Smooth fuirena             | Graminoid       |
| Galactia regularis                  | Eastern milk-pea           | Vine            |
| Galearis spectabilis                | Showy orchis               | Herb            |
| Galium aparine                      | Stickywilly                | Herb            |
| Galium asprellum                    | Rough bedstraw             | Herb            |
| Galium circaezans                   | Licorice bedstraw          | Herb            |
| Galium lanceolatum                  | Lanceleaf wild licorice    | Herb            |
| Galium obtusum                      | Bluntleaf bedstraw         | Herb            |
| Galium pilosum                      | Hairy bedstraw             | Herb            |
| Galium tinctorium                   | Stiff marsh bedstraw       | Herb            |
| Galium triflorum                    | Fragrant bedstraw          | Herb            |
| Gamochaeta purpurea                 | Purple cudweed             | Herb            |
| Gaultheria procumbens               | Teaberry                   | Herb            |
| Gaylussacia baccata                 | Black huckleberry          | Shrub           |
| Gaylussacia dumosa                  | Dwarf huckleberry          | Shrub           |
| Gaylussacia frondosa                | Dangleberry                | Shrub           |
| Gentiana clausa                     | Bottle gentian             | Herb            |
| Gentianopsis crinita                | Eastern fringed gentian    | Herb            |
| Geranium carolinianum               | Wild geranium              | Herb            |
| Geranium maculatum                  | Wood geranium              | Herb            |
| Geranium robertianum                | Herb-robert                | Herb            |
| Geum aleppicum                      | Yellow avens               | Herb            |
| Geum canadense                      | White avens                | Herb            |
| Geum laciniatum                     | Rough avens                | Herb            |
| Geum rivale                         | Water avens                | Herb            |
| Geum vernum                         | Spring avens               | Herb            |

| Scientific Name                            | Common Name                  | Growth<br>Habit |
|--|------------------------------|-----------------|
| Geum virginianum                           | Virginia avens               | Herb            |
| Glyceria acutiflora                        | Sharp-scaled manna grass     | Graminoid       |
| Glyceria canadensis                        | Rattlesnake manna grass      | Graminoid       |
| Glyceria melicaria                         | Long manna grass             | Graminoid       |
| Glyceria obtusa                            | Blunt manna grass            | Graminoid       |
| Glyceria septentrionalis                   | Floating manna grass         | Graminoid       |
| Glyceria striata                           | Fowl manna grass             | Graminoid       |
| Goodyera pubescens                         | Downy rattlesnake-plantain   | Herb            |
| Gratiola aurea                             | Golden hedge hyssop          | Herb            |
| Gratiola neglecta                          | Hedge hyssop                 | Herb            |
| Hackelia virginiana                        | Virginia stickseed           | Herb            |
| Hamamelis virginiana                       | Witch-hazel                  | Shrub           |
| Hedeoma pulegioides                        | American false pennyroyal    | Herb            |
| Helenium autumnale                         | Common sneezeweed            | Herb            |
| Helianthemum canadense                     | Long-branched frostweed      | Herb            |
| Helianthemum propinquum                    | Pine barrens frostweed       | Herb            |
| Helianthus angustifolius                   | Narrow-leaf sunflower        | Herb            |
| Helianthus decapetalus                     | Thin-leaved sunflower        | Herb            |
| Helianthus divaricatus                     | Rough sunflower              | Herb            |
| Helianthus giganteus                       | Swamp sunflower              | Herb            |
| Helianthus strumosus                       | Pale-leaf woodland sunflower | Herb            |
| Helianthus tuberosus                       | Jerusalem artichoke          | Herb            |
| Heliopsis helianthoides var. helianthoides | Smooth ox-eye                | Herb            |
| Hepatica nobilis var. obtusa               | Roundlobe hepatica           | Herb            |
| Heracleum maximum                          | Common cowparsnip            | Herb            |
| Heteranthera dubia                         | Grassleaf mudplantain        | Herb            |
| Heteranthera multiflora                    | Bouquet mud-plantain         | Herb            |
| Heteranthera reniformis                    | Mud-plantain                 | Herb            |
| Heuchera americana                         | Alum-root                    | Herb            |
| Hibiscus moscheutos                        | Rose-mallow                  | Herb            |
| Hieracium gronovii                         | queendevil                   | Herb            |
| Hieracium paniculatum                      | Panicled hawkweed            | Herb            |
| Hieracium scabrum                          | Rough hawkweed               | Herb            |
| Hieracium venosum                          | Rattlesnake-weed             | Herb            |
| Hierochloe odorata                         | Sweet grass                  | Graminoid       |
| Houstonia caerulea                         | Bluets                       | Herb            |
| Houstonia purpurea                         | Purple bluets                | Herb            |
| Hudsonia ericoides                         | Golden heather               | Herb            |
| Hudsonia tomentosa                         | Beach heather                | Herb            |
| Humulus lupulus var. lupuloides            | Brewer's hops                | Vine            |
| Huperzia lucidula                          | Shining clubmoss             | Herb            |

| Scientific Name                            | Common Name                | Growth<br>Habit |
|--|----------------------------|-----------------|
| Hydrangea arborescens                      | Sevenbark                  | Shrub           |
| Hydrocotyle americana                      | Marsh pennywort            | Herb            |
| Hydrocotyle umbellata                      | Manyflower marsh pennywort | Herb            |
| Hydrophyllum virginianum                   | Virginia waterleaf         | Herb            |
| Hypericum boreale                          | Northern St. John's-wort   | Herb            |
| Hypericum canadense                        | Canadian St. John's-wort   | Herb            |
| Hypericum crux-andreae                     | St. Peterswort             | Shrub           |
| Hypericum densiflorum                      | Bushy St. John's-wort      | Shrub           |
| Hypericum denticulatum                     | Coppery St. John's-wort    | Herb            |
| Hypericum dissimulatum                     | Disguised St. John's-wort  | Herb            |
| Hypericum gentianoides                     | Orange-grass               | Herb            |
| Hypericum hypericoides subsp. hypericoides | St. Andrew's cross         | Herb            |
| Hypericum hypericoides subsp. multicaule   | St. Andrew's cross         | Herb            |
| Hypericum mutilum                          | Dwarf St. John's-wort      | Herb            |
| Hypericum punctatum                        | Spotted St. John's-wort    | Herb            |
| Hypoxis hirsuta                            | Yellow star-grass          | Herb            |
| llex glabra                                | Inkberry                   | Shrub           |
| Ilex laevigata                             | Smooth winterberry         | Shrub           |
| llex mucronata                             | Catberry                   | Shrub           |
| Ilex opaca                                 | American holly             | Tree            |
| Ilex verticillata                          | Winterberry                | Shrub           |
| Impatiens capensis                         | Jewelweed                  | Herb            |
| Impatiens pallida                          | Pale jewelweed             | Herb            |
| Ionactis linariifolius                     | Stiff-leaved aster         | Herb            |
| Ipomoea pandurata                          | Man-of-the-earth           | Vine            |
| Iris prismatica                            | Slender blue flag          | Herb            |
| Iris versicolor                            | Northern blue flag         | Herb            |
| Isoetes acadiensis                         | Acadian quillwort          | Herb            |
| Isoetes engelmannii                        | Engelmann's quillwort      | Herb            |
| Isoetes riparia var. amesii                | Ames' quillwort            | Herb            |
| Isoetes tenella                            | Spiny-spored quillwort     | Herb            |
| Isoetes x eatonii                          | Eaton's quillwort          | Herb            |
| Isoetes x fairbrothersii                   | Fairbrothers' quillwort    | Herb            |
| Isotria verticillata                       | Whorled-pogonia            | Herb            |
| Itea virginica                             | Virginia Willow            | Shrub           |
| Iva frutescens                             | Marsh elder                | Shrub           |
| Juglans nigra                              | Black walnut               | Tree            |
| Juncus acuminatus                          | Sharp-fruited rush         | Graminoid       |
| Juncus biflorus                            | Grass rush                 | Graminoid       |
| Juncus bufonius                            | Toad rush                  | Graminoid       |
| Juncus canadensis                          | Canada rush                | Graminoid       |

| Scientific Name                   | Common Name               | Growth<br>Habit |
|-----------------------------------|---------------------------|-----------------|
| Juncus debilis                    | Weak rush                 | Graminoid       |
| Juncus dichotomus                 | Forked rush               | Graminoid       |
| Juncus effusus var. pylaei        | Common rush               | Graminoid       |
| Juncus effusus var. solutus       | Lamp Rush                 | Graminoid       |
| Juncus gerardii                   | Blackfoot rush            | Graminoid       |
| Juncus marginatus                 | Grass-leaved rush         | Graminoid       |
| Juncus militaris                  | Bayonet rush              | Graminoid       |
| Juncus pelocarpus                 | Brown-fruited rush        | Graminoid       |
| Juncus scirpoides                 | Sedge rush                | Graminoid       |
| Juncus secundus                   | Lopsided rush             | Graminoid       |
| Juncus subcaudatus                | Woodland rush             | Graminoid       |
| Juncus tenuis                     | Poverty rush              | Graminoid       |
| Juniperus virginiana              | Eastern red-cedar         | Tree            |
| Justicia americana                | Water-willow              | Herb            |
| Kalmia angustifolia               | Sheep laurel              | Shrub           |
| Kalmia latifolia                  | Mountain laurel           | Shrub           |
| Kosteletzkya pentacarpos          | Virginia saltmarsh mallow | Herb            |
| Krigia biflora                    | Twoflower dwarfdandelion  | Herb            |
| Krigia virginica                  | Virginia dwarfdandelion   | Herb            |
| Kyllinga gracillima               | Pasture spikesedge        | Graminoid       |
| Lachnanthes caroliana             | Redroot                   | Herb            |
| Lactuca biennis                   | Blue lettuce              | Herb            |
| Lactuca canadensis                | Canada lettuce            | Herb            |
| Lactuca floridana                 | Woodland lettuce          | Herb            |
| Laportea canadensis               | Wood-nettle               | Herb            |
| Larix laricina                    | American larch            | Tree            |
| Lathyrus japonicus var. maritimus | Beach pea                 | Vine            |
| Lathyrus japonicus var. pellitus  | Beach pea                 | Vine            |
| Lathyrus palustris                | Marsh pea                 | Herb            |
| Lechea maritima                   | Beach pinweed             | Herb            |
| Lechea minor                      | Thyme-leaf pinweed        | Herb            |
| Lechea mucronata                  | Hairy pinweed             | Herb            |
| Lechea pulchella                  | Leggett's pinweed         | Herb            |
| Lechea racemulosa                 | Oblong-fruit pinweed      | Herb            |
| Leersia oryzoides                 | Rice cutgrass             | Graminoid       |
| Leersia virginica                 | White grass               | Graminoid       |
| Leiophyllum buxifolium            | Sand myrtle               | Shrub           |
| Lemna minor                       | Duckweed                  | Herb            |
| Lepidium virginicum               | Virginia pepperweed       | Herb            |
| Lespedeza angustifolia            | Narrow-leaved bush-clover | Herb            |
| Lespedeza capitata                | Roundhead lespedeza       | Herb            |

| Scientific Name                  | Common Name                | Growth<br>Habit |
|----------------------------------|----------------------------|-----------------|
| Lespedeza frutescens             | Shrubby lespedeza          | Herb            |
| Lespedeza hirta subsp. hirta     | Hairy lespedeza            | Herb            |
| Lespedeza procumbens             | Trailing bush-clover       | Herb            |
| Lespedeza repens                 | Creeping bush-clover       | Herb            |
| Lespedeza violacea               | Violet lespedeza           | Herb            |
| Lespedeza virginica              | Slender bush-clover        | Herb            |
| Lespedeza x brittonii            | Britton's lespedeza        | Herb            |
| Lespedeza x nuttallii            | Nuttall's bush-clover      | Herb            |
| Lespedeza x simulata             | Bush-clover                | Herb            |
| Liatris pilosa                   | Grass-leaved blazing star  | Herb            |
| Lilaeopsis chinensis             | Lilaeopsis                 | Herb            |
| Lilium canadense                 | Canada lily                | Herb            |
| Lilium superbum                  | Turk's-cap lily            | Herb            |
| Limonium carolinianum            | Sea lavender               | Herb            |
| Lindera benzoin                  | Spicebush                  | shrub           |
| Lindernia dubia var. anagallidea | Yellowseed false pimpernel | Herb            |
| Lindernia dubia var. dubia       | Yellowseed false pimpernel | Herb            |
| Linum medium                     | Yellow flax                | Herb            |
| Linum striatum                   | Ridged yellow flax         | Herb            |
| Liparis liliifolia               | Lily-leaved twayblade      | Herb            |
| Liparis loeselii                 | Yellow twayblade           | Herb            |
| Liquidambar styraciflua          | Sweetgum                   | Tree            |
| Liriodendron tulipifera          | Tuliptree                  | Tree            |
| Listera australis                | Southern twayblade         | Herb            |
| Lobelia cardinalis               | Cardinal-flower            | Herb            |
| Lobelia inflata                  | Indian-tobacco             | Herb            |
| Lobelia kalmii                   | Kalm's lobelia             | Herb            |
| Lobelia nuttallii                | Nuttall's lobelia          | Herb            |
| Lobelia puberula                 | Downy lobelia              | Herb            |
| Lobelia siphilitica              | Great blue lobelia         | Herb            |
| Lobelia spicata                  | Palespike lobelia          | Herb            |
| Lonicera dioica                  | Mountain honeysuckle       | Vine            |
| Lonicera sempervirens            | Trumpet honeysuckle        | Vine            |
| Lophiola aurea                   | Goldencrest                | Herb            |
| Ludwigia alternifolia            | Seedbox                    | Herb            |
| Ludwigia palustris               | Marsh-purslane             | Herb            |
| Ludwigia sphaerocarpa            | Round-pod water Primrose   | Herb            |
| Luzula bulbosa                   | Woodrush                   | Graminoid       |
| Luzula echinata                  | Common woodrush            | Graminoid       |
| Luzula multiflora                | Field woodrush             | Graminoid       |
| Lycopodiella alopecuroides       | Foxtail clubmoss           | Herb            |

| Scientific Name                        | Common Name                         | Growth<br>Habit |
|--|-------------------------------------|-----------------|
| Lycopodiella appressa                  | Southern bog clubmoss               | Herb            |
| Lycopodium clavatum                    | Running clubmoss                    | Herb            |
| Lycopodium dendroideum                 | Tree groundpine                     | Herb            |
| Lycopodium digitatum                   | Fan clubmoss                        | Herb            |
| Lycopodium obscurum                    | Rare clubmoss                       | Herb            |
| Lycopodium tristachyum                 | Deeproot clubmoss                   | Herb            |
| Lycopus americanus                     | Water-horehound                     | Herb            |
| Lycopus amplectens                     | Clasping-leaved water-<br>horehound | Herb            |
| Lycopus uniflorus                      | Northern bugleweed                  | Herb            |
| Lycopus virginicus                     | Virginia water horehound            | Herb            |
| Lyonia ligustrina                      | Maleberry                           | Shrub           |
| Lyonia mariana                         | Staggerbush                         | Shrub           |
| Lysimachia ciliata                     | Fringed loosestrife                 | Herb            |
| Lysimachia quadrifolia                 | Whorled loosestrife                 | Herb            |
| Lysimachia terrestris                  | Swamp-candles                       | Herb            |
| Lysimachia x producta                  | Loosestrife                         | Herb            |
| Magnolia virginiana                    | Sweet-bay magnolia                  | Tree            |
| Maianthemum canadense                  | Canada mayflower                    | Herb            |
| Maianthemum racemosum subsp. racemosum | False solomon's seal                | Herb            |
| Maianthemum stellatum                  | Starry false solomon's seal         | Herb            |
| Malus coronaria                        | Sweet crab apple                    | Tree            |
| Matteuccia struthiopteris              | Ostrich fern                        | Herb            |
| Medeola virginiana                     | Indian cucumber-root                | Herb            |
| Melampyrum lineare                     | Narrowleaf cowwheat                 | Herb            |
| Menispermum canadense                  | Moonseed                            | Vine            |
| Mentha arvensis                        | Wild mint                           | Herb            |
| Mikania scandens                       | Climbing hempweed                   | Vine            |
| Mimulus alatus                         | Winged monkey-flower                | Herb            |
| Mimulus ringens                        | Allegheny monkeyflower              | Herb            |
| Minuartia caroliniana                  | Pine barrens sandwort               | Herb            |
| Mitchella repens                       | Partridge-berry                     | Herb            |
| ,<br>Mitella diphylla                  | Twoleaf miterwort                   | Herb            |
| Mitella prostrata                      | Creeping Bishop's-cap               | Herb            |
| Moehringia lateriflora                 | Blunt-leaved sandwort               | Herb            |
| Monarda fistulosa                      | Wild bergamot                       | Herb            |
| Monarda punctata                       | Spotted bee-balm                    | Herb            |
| ,<br>Monotropa hypopitys               | Pinesap                             | Herb            |
| Monotropa uniflora                     | Indian-pipe                         | Herb            |
| Morella caroliniensis                  | Southern bayberry                   | Shrub           |
| Morella cerifera                       | Wax myrtle                          | Shrub           |

| Scientific Name                    | Common Name                        | Growth<br>Habit |
|------------------------------------|------------------------------------|-----------------|
| Morella pensylvanica               | Northern bayberry                  | Shrub           |
| Morus rubra                        | Red mulberry                       | Tree            |
| Muhlenbergia frondosa              | Wirestem muhly                     | Graminoid       |
| Muhlenbergia mexicana              | Mexican muhly                      | Graminoid       |
| Muhlenbergia schreberi             | Nimblewill                         | Graminoid       |
| Muhlenbergia sobolifera            | Rock muhly                         | Graminoid       |
| Muhlenbergia tenuiflora            | Slimflower muhly                   | Graminoid       |
| Muhlenbergia uniflora              | Late-flowering dropseed            | Graminoid       |
| Myosotis laxa                      | Wild forget-me-not                 | Herb            |
| Myriophyllum humile                | Water-milfoil                      | Herb            |
| Najas flexilis                     | Northern water nymph               | Herb            |
| Nuphar lutea subsp. advena         | Spatterdock                        | Herb            |
| Nuphar lutea subsp. rubrodisca     | Red-disk yellow pond lily          | Herb            |
| Nuphar lutea subsp. variegata      | Variegated yellow pond-lily        | Herb            |
| Nuttallanthus canadensis           | Blue toadflax                      | Herb            |
| Nymphaea odorata subsp. odorata    | Fragrant water-lily                | Herb            |
| Nyssa biflora                      | Swamp tupelo                       | Tree            |
| Nyssa sylvatica                    | Sourgum                            | Tree            |
| Oclemena acuminata                 | Whorled wood aster                 | Herb            |
| Oclemena nemoralis                 | Bog aster                          | Herb            |
| Oclemena x blakei                  | Blake's aster                      | Herb            |
| Oenothera biennis                  | Evening-primrose                   | Herb            |
| Oenothera fruticosa                | Sundrops                           | Herb            |
| Oenothera laciniata                | Cut-leaved evening-primrose        | Herb            |
| Oenothera nutans                   | Evening-primrose                   | Herb            |
| Oenothera parviflora               | Small-flowered evening<br>primrose | Herb            |
| Oenothera perennis                 | Sundrops                           | Herb            |
| Oldenlandia uniflora               | Clustered bluets                   | Herb            |
| Onoclea sensibilis                 | Sensitive fern                     | Herb            |
| Opuntia humifusa                   | Eastern prickly-pear cactus        | Shrub           |
| Orobanche uniflora                 | Broom-rape                         | Herb            |
| Orontium aquaticum                 | Goldenclub                         | Herb            |
| Osmorhiza claytonii                | Sweet-cicely                       | Herb            |
| Osmorhiza longistylis              | Anise root                         | Herb            |
| Osmunda cinnamomea var. cinnamomea | Cinnamon fern                      | Herb            |
| Osmunda claytoniana                | Interrupted fern                   | Herb            |
| Osmunda regalis                    | Royal fern                         | Herb            |
| Ostrya virginiana                  | Hop-hornbeam                       | Tree            |
| Oxalis dillenii                    | Southern yellow wood-sorrel        | Herb            |
| Oxalis stricta                     | Common yellow wood-sorrel          | Herb            |

| Scientific Name                        | Common Name             | Growth<br>Habit |
|--|-------------------------|-----------------|
| Oxalis violacea                        | Violet wood-sorrel      | Herb            |
| Oxypolis rigidior                      | Cowbane                 | Herb            |
| Packera aurea                          | Golden ragwort          | Herb            |
| Packera obovata                        | Roundleaf ragwort       | Herb            |
| Panax trifolius                        | Dwarf ginseng           | Herb            |
| Panicum amarum var. amarum             | Bitter panicgrass       | Graminoid       |
| Panicum anceps                         | Beaked panicgrass       | Graminoid       |
| Panicum capillare                      | Witchgrass              | Graminoid       |
| Panicum dichotomiflorum                | Fall panicgrass         | Graminoid       |
| Panicum philadelphicum                 | Philadelphia panicgrass | Graminoid       |
| Panicum rigidulum var. elongatum       | Redtop panicgrass       | Graminoid       |
| Panicum rigidulum var. pubescens       | Redtop panicgrass       | Graminoid       |
| Panicum rigidulum var. rigidulum       | Redtop panicgrass       | Graminoid       |
| Panicum verrucosum                     | Warty panicgrass        | Graminoid       |
| Panicum virgatum                       | Switchgrass             | Graminoid       |
| Parietaria pensylvanica                | Pellitory               | Herb            |
| Parnassia glauca                       | Grass-of-parnassus      | Herb            |
| Paronychia canadensis                  | Forked chickweed        | Herb            |
| Paronychia fastigiata                  | Whitlow-wort            | Herb            |
| Parthenocissus quinquefolia            | Virginia-creeper        | Vine            |
| Parthenocissus vitacea                 | Thicket creeper         | Vine            |
| Paspalum laeve                         | Field paspalum          | Graminoid       |
| Patis racemosa                         | Blackseed ricegrass     | Graminoid       |
| Pedicularis canadensis                 | Canadian lousewort      | Herb            |
| Pellaea atropurpurea                   | Purple cliffbrake       | Herb            |
| Peltandra virginica                    | Arrow-arum              | Herb            |
| Penstemon hirsutus                     | Hairy beardtongue       | Herb            |
| Penthorum sedoides                     | Ditch stonecrop         | Herb            |
| Phalaris arundinacea                   | Reed canary-grass       | Graminoid       |
| Phegopteris hexagonoptera              | Broad beech fern        | Herb            |
| Phlox subulata                         | Moss-pink               | Herb            |
| Phoradendron leucarpum                 | Christmas mistletoe     | Shrub           |
| Phragmites australis subsp. americanus | Common reed - native    | Graminoid       |
| Phryma leptostachya                    | Lopseed                 | Herb            |
| Physalis heterophylla                  | Clammy groundcherry     | Herb            |
| Physalis longifolia var. subglabrata   | Longleaf groundcherry   | Herb            |
| Physalis virginiana                    | Virginia groundcherry   | Herb            |
| Physocarpus opulifolius                | Ninebark                | Shrub           |
| Phytolacca americana                   | Pokeweed                | Herb            |
| Picea mariana                          | Black spruce            | Tree            |
| Pilea fontana                          | Lesser clearweed        | Herb            |

| Scientific Name                          | Common Name                 | Growth<br>Habit |
|--|-----------------------------|-----------------|
| Pilea pumila                             | Clearweed                   | Herb            |
| Pinus echinata                           | Short-leaf pine             | Tree            |
| Pinus rigida                             | Pitch pine                  | Tree            |
| Pinus rigida x taeda                     | Hybrid pine (Pitlolly pine) | Tree            |
| Pinus strobus                            | Eastern white pine          | Tree            |
| Pinus virginiana                         | Virginia pine               | Tree            |
| Piptochaetium avenaceum                  | Blackseed speargrass        | Graminoid       |
| Plantago rugelii                         | Rugel's plantain            | Herb            |
| Plantago virginica                       | Dwarf plantain              | Herb            |
| Platanthera blephariglottis              | White fringed-orchid        | Herb            |
| Platanthera clavellata                   | Clubspur orchid             | Herb            |
| Platanthera lacera                       | Ragged fringed-orchid       | Herb            |
| Platanus occidentalis                    | Sycamore                    | Tree            |
| Pluchea odorata                          | Marsh fleabane              | Herb            |
| Poa alsodes                              | Grove bluegrass             | Graminoid       |
| Poa cuspidata                            | Early bluegrass             | Graminoid       |
| Poa palustris                            | Fowl bluegrass              | Graminoid       |
| Podophyllum peltatum                     | Mayapple                    | Herb            |
| Pogonia ophioglossoides                  | Rose pogonia                | Herb            |
| Polygala brevifolia                      | Short-leaved milkwort       | Herb            |
| Polygala cruciata                        | Cross-leaved milkwort       | Herb            |
| Polygala lutea                           | Orange milkwort             | Herb            |
| Polygala nuttallii                       | Nuttall's milkwort          | Herb            |
| Polygala paucifolia                      | Gaywings                    | Herb            |
| Polygala sanguinea                       | Field milkwort              | Herb            |
| Polygala verticillata                    | Whorled milkwort            | Herb            |
| Polygonatum biflorum var. biflorum       | Solomon's-seal              | Herb            |
| Polygonatum biflorum var. commutatum     | Solomon's-seal              | Herb            |
| Polygonatum pubescens                    | Solomon's-seal              | Herb            |
| Polygonella articulata                   | Jointweed                   | Herb            |
| Polygonum amphibium var. emersum         | Water smartweed             | Herb            |
| Polygonum amphibium var. stipulaceum     | Water smartweed             | Herb            |
| Polygonum arifolium                      | Halberd-leaf tearthumb      | Vine            |
| Polygonum careyi                         | Carey's knotweed            | Herb            |
| Polygonum hydropiperoides                | Mild water-pepper           | Herb            |
| Polygonum pensylvanicum                  | Pennsylvania smartweed      | Herb            |
| Polygonum punctatum                      | Dotted smartweed            | Herb            |
| Polygonum ramosissimum var. prolificum   | Bushy knotweed              | Herb            |
| Polygonum ramosissimum var. ramosissimum | Bushy knotweed              | Herb            |
| Polygonum robustius                      | Large water-smartweed       | Herb            |
| Polygonum sagittatum                     | Arrow-leaved tearthumb      | Vine            |

| Scientific Name                                   | Common Name              | Growth<br>Habit |
|---|--------------------------|-----------------|
| Polygonum scandens                                | Climbing false buckwheat | Vine            |
| Polygonum tenue                                   | Slender knotweed         | Herb            |
| Polygonum virginianum                             | Jumpseed                 | Herb            |
| Polypodium appalachianum                          | Appalachian polypody     | Herb            |
| Polypodium virginianum                            | Common polypody          | Herb            |
| Polystichum acrostichoides                        | Christmas fern           | Herb            |
| Pontederia cordata                                | Pickerel-weed            | Herb            |
| Populus deltoides                                 | Eastern cottonwood       | Tree            |
| Populus grandidentata                             | Bigtooth aspen           | Tree            |
| Populus tremuloides                               | Quaking aspen            | Tree            |
| Potamogeton alpinus                               | Northern pondweed        | Herb            |
| Potamogeton amplifolius                           | Large-leaved pondweed    | Herb            |
| Potamogeton bicupulatus                           | Pondweed                 | Herb            |
| Potamogeton diversifolius                         | Snailseed pondweed       | Herb            |
| Potamogeton epihydrus                             | Ribbonleaf pondweed      | Herb            |
| Potamogeton foliosus                              | Leafy pondweed           | Herb            |
| Potamogeton gramineus                             | Grass-like pondweed      | Herb            |
| Potamogeton natans                                | Floating pondweed        | Herb            |
| Potamogeton nodosus                               | Longleaf pondweed        | Herb            |
| Potamogeton perfoliatus                           | Perfoliate pondweed      | Herb            |
| Potamogeton pulcher                               | Spotted pondweed         | Herb            |
| Potamogeton pusillus                              | Pondweed                 | Herb            |
| Potamogeton spirillus                             | Spiral pondweed          | Herb            |
| Potentilla canadensis                             | Dwarf cinquefoil         | Herb            |
| Potentilla norvegica                              | Norwegian cinquefoil     | Herb            |
| Potentilla simplex                                | Common cinquefoil        | Herb            |
| Prenanthes alba                                   | White rattlesnake-root   | Herb            |
| Prenanthes altissima                              | Tall rattlesnake-root    | Herb            |
| Prenanthes serpentaria                            | Lion's-foot              | Herb            |
| Prenanthes trifoliolata                           | Gall-of-the-earth        | Herb            |
| Proserpinaca palustris                            | Common mermaid-weed      | Herb            |
| Proserpinaca pectinata                            | Cut-leaved mermaid-weed  | Herb            |
| Prunella vulgaris subsp. lanceolata               | Lance selfheal           | Herb            |
| Prunus americana                                  | Wild plum                | Tree            |
| Prunus maritima                                   | Beach plum               | Shrub           |
| Prunus pensylvanica                               | Pin cherry               | Tree            |
| Prunus serotina                                   | Wild black cherry        | Tree            |
| Prunus virginiana                                 | Choke cherry             | Tree            |
| Pseudognaphalium obtusifolium subsp. obtusifolium | Rabbit-tobacco           | Herb            |
| Pseudognaphalium obtusifolium subsp. praecox      | Rabbit-tobacco           | Herb            |
| Pteridium aquilinum                               | Bracken fern             | Herb            |

| Scientific Name                      | Common Name            | Growth<br>Habit |
|--------------------------------------|------------------------|-----------------|
| Ptilimnium capillaceum               | Mock Bishop's-weed     | Herb            |
| Pycnanthemum incanum                 | Mountain-mint          | Herb            |
| Pycnanthemum muticum                 | Mountain-mint          | Herb            |
| Pycnanthemum tenuifolium             | Mountain-mint          | Herb            |
| Pycnanthemum verticillatum           | Whorled mountain-mint  | Herb            |
| Pycnanthemum virginianum             | Mountain-mint          | Herb            |
| Pyrola americana                     | American wintergreen   | Herb            |
| Pyrola elliptica                     | Shinleaf               | Herb            |
| Pyxidanthera barbulata               | Pyxie moss             | Subshrub        |
| Quercus alba                         | White oak              | Tree            |
| Quercus bicolor                      | Swamp white oak        | Tree            |
| Quercus coccinea                     | Scarlet oak            | Tree            |
| Quercus falcata                      | Southern red oak       | Tree            |
| Quercus ilicifolia                   | Scrub oak              | Tree            |
| Quercus marilandica                  | Blackjack oak          | Tree            |
| Quercus montana                      | Chestnut oak           | Tree            |
| Quercus muehlenbergii                | Yellow oak             | Tree            |
| Quercus palustris                    | Pin oak                | Tree            |
| Quercus phellos                      | Willow oak             | Tree            |
| Quercus prinoides                    | Dwarf chestnut oak     | Shrub           |
| Quercus rubra                        | Northern red oak       | Tree            |
| Quercus stellata                     | Post oak               | Tree            |
| Quercus velutina                     | Black oak              | Tree            |
| Ranunculus abortivus                 | Kidney-leaf buttercup  | Herb            |
| Ranunculus hispidus var. caricetorum | Bristly buttercup      | Herb            |
| Ranunculus hispidus var. hispidus    | Bristly buttercup      | Herb            |
| Ranunculus hispidus var. nitidus     | Bristly buttercup      | Herb            |
| Ranunculus recurvatus                | Blisterwort            | Herb            |
| Ranunculus sceleratus                | Cursed buttercup       | Herb            |
| Rhamnus alnifolia                    | Alder-leaved buckthorn | Shrub           |
| Rhexia mariana var. mariana          | Maryland meadowbeauty  | Herb            |
| Rhexia virginica                     | Meadow-beauty          | Herb            |
| Rhexia x brevibracteata              | Meadow beauty          | Herb            |
| Rhododendron maximum                 | Rosebay                | Shrub           |
| Rhododendron periclymenoides         | Pinxter-flower         | Shrub           |
| Rhododendron viscosum                | Swamp azalea           | Shrub           |
| Rhus copallinum                      | Shining sumac          | Shrub           |
| Rhus glabra                          | Smooth sumac           | Tree            |
| Rhus typhina                         | Staghorn sumac         | Tree            |
| Rhynchospora alba                    | White beak-rush        | Graminoid       |
| Rhynchospora capitellata             | Brownish beaked-rush   | Graminoid       |

| Scientific Name                      | Common Name                | Growth<br>Habit |
|--------------------------------------|----------------------------|-----------------|
| Rhynchospora chalarocephala          | Loose-headed beaked-rush   | Graminoid       |
| Rhynchospora fusca                   | Brown beaked-rush          | Graminoid       |
| Rhynchospora gracilenta              | Slender beaked-rush        | Graminoid       |
| Rhynchospora macrostachya            | Large-spiked Horned -rush  | Graminoid       |
| Rhynchospora torreyana               | Torrey's beaked rush       | Graminoid       |
| Ribes americanum                     | Wild black currant         | Shrub           |
| Ribes hirtellum                      | Northern wild gooseberry   | Shrub           |
| Ribes rotundifolium                  | Wild gooseberry            | Shrub           |
| Rorippa palustris subsp. fernaldiana | Fernald's yellowcress      | Herb            |
| Rorippa palustris subsp. hispida     | Hispid yellowcress         | Herb            |
| Rosa carolina                        | Pasture rose               | Shrub           |
| Rosa nitida                          | Shining Rose               | Shrub           |
| Rosa palustris                       | Swamp rose                 | Shrub           |
| Rosa virginiana                      | Virginia rose              | Shrub           |
| Rubus allegheniensis                 | Allegheny blackberry       | Shrub           |
| Rubus alumnus                        | Old field blackberry       | Shrub           |
| Rubus andrewsianus                   | Andrew's blackberry        | Shrub           |
| Rubus argutus                        | Sawtooth blackberry        | Shrub           |
| Rubus baileyanus                     | Bailey's dewberry          | Shrub           |
| Rubus bellobatus                     | Kittatinny blackberry      | Shrub           |
| Rubus cuneifolius                    | Sand blackberry            | Shrub           |
| Rubus depavitus                      | Aberdeen blackberry        | Shrub           |
| ,<br>Rubus elegantulus               | Showy blackberry           | Shrub           |
| Rubus flagellaris                    | Northern dewberry          | Vine            |
| Rubus floricomus                     | Many-flowered blackberry   | Shrub           |
| Rubus frondosus                      | Yankee blackberry          | Shrub           |
| Rubus hispidus                       | Bristly dewberry           | Vine            |
| Rubus hypolasius                     | Pineland dewberry          | Shrub           |
| Rubus idaeus subsp. strigosus        | Red raspberry              | Shrub           |
| Rubus laudatus                       | Plains blackberry          | Shrub           |
| Rubus leviculus                      | Bottomland dewberry        | Shrub           |
| Rubus michiganensis                  | ,<br>Michigan dewberry     | Shrub           |
| Rubus occidentalis                   | Black-cap raspberry        | Shrub           |
| Rubus odoratus                       | Purple-flowering raspberry | Shrub           |
| Rubus parcifrondifer                 | Silver creek blackberry    | Shrub           |
| Rubus pensilvanicus                  | Pennsylvania blackberry    | Shrub           |
| Rubus pergratus                      | Upland blackberry          | Shrub           |
| Rubus philadelphicus                 | Philadelphia blackberry    | Vine            |
| Rubus plicatifolius                  | Plaitleaf dewberry         | Subshrub        |
| Rubus pubescens                      | Dwarf blackberry           | Herb            |
| Rubus recurvans                      | Recurved blackberry        | Shrub           |

| Scientific Name                      | Common Name               | Growth<br>Habit |
|--------------------------------------|---------------------------|-----------------|
| Rubus roribaccus                     | Lucretia blackberry       | Shrub           |
| Rubus semisetosus                    | Swamp blackberry          | Shrub           |
| Rudbeckia laciniata                  | Cutleaf coneflower        | Herb            |
| Rudbeckia triloba                    | Three-lobed coneflower    | Herb            |
| Rumex orbiculatus                    | Great water dock          | Herb            |
| Rumex verticillatus                  | Water dock                | Herb            |
| Ruppia maritima                      | Ditch-grass               | Herb            |
| Sabatia angularis                    | Common marsh-pink         | Herb            |
| Sabatia difformis                    | Lance-leaved sabatia      | Herb            |
| Sabatia stellaris                    | Sea pink                  | Herb            |
| Saccharum giganteum                  | Giant plume-grass         | Graminoid       |
| Sagina decumbens                     | Trailing pearlwort        | Herb            |
| Sagittaria engelmanniana             | Engelmann's arrowhead     | Herb            |
| Sagittaria graminea                  | Grass-leaved sagittaria   | Herb            |
| Sagittaria latifolia                 | Wapato                    | Herb            |
| Sagittaria rigida                    | Sessile-fruited arrowhead | Herb            |
| Salicornia bigelovii                 | Dwarf glasswort           | Herb            |
| Salicornia depressa                  | Virginia glasswort        | Herb            |
| Salix bebbiana                       | Bebb willow               | Shrub           |
| Salix discolor                       | Pussy willow              | Shrub           |
| Salix eriocephala                    | Diamond willow            | Shrub           |
| Salix exigua                         | Sandbar willow            | Shrub           |
| Salix humilis var. humilis           | Prairie willow            | Shrub           |
| Salix humilis var. tristis           | Prairie willow            | Shrub           |
| Salix nigra                          | Black willow              | Tree            |
| Salix petiolaris                     | Slender willow            | Tree            |
| Salix sericea                        | Silky willow              | Shrub           |
| Salvia lyrata                        | Lyre-leaved sage          | Herb            |
| Sambucus nigra subsp. canadensis     | American black elderberry | Shrub           |
| Sambucus racemosa var. racemosa      | Red elderberry            | Shrub           |
| Samolus valerandi subsp. parviflorus | Water pimpernel           | Herb            |
| Sanguinaria canadensis               | Bloodroot                 | Herb            |
| Sanguisorba canadensis               | Canadian burnet           | Herb            |
| Sanicula canadensis                  | Canadian sanicle          | Herb            |
| Sanicula marilandica                 | Maryland sanicle          | Herb            |
| Sanicula odorata                     | Clustered blacksnakeroot  | Herb            |
| Sarcocornia perennis                 | Chickenclaws              | Herb            |
| Sarracenia purpurea                  | Pitcher-plant             | Herb            |
| Sassafras albidum                    | Sassafras                 | tree            |
| Saururus cernuus                     | Lizard's-tail             | Herb            |
| Saxifraga pensylvanica               | Swamp saxifrage           | Herb            |

| Scientific Name                  | Common Name                         | Growth<br>Habit |
|----------------------------------|-------------------------------------|-----------------|
| Saxifraga virginiensis           | Early saxifrage                     | Herb            |
| Schizachyrium scoparium          | Little bluestem                     | Graminoid       |
| Schoenoplectiella purshiana      | Weakstalk bulrush                   | Graminoid       |
| Schoenoplectus americanus        | Olney's threesquare                 | Graminoid       |
| Schoenoplectus fluviatilis       | River bulrush                       | Graminoid       |
| Schoenoplectus pungens           | Common threesquare                  | Graminoid       |
| Schoenoplectus robustus          | salt-marsh bulrush                  | Graminoid       |
| Schoenoplectus subterminalis     | Water bulrush                       | Graminoid       |
| Schoenoplectus tabernaemontani   | Great bulrush; softstem bulrush     | Graminoid       |
| Scirpus atrovirens               | Black bulrush                       | Graminoid       |
| Scirpus cyperinus                | Wool-grass                          | Graminoid       |
| Scirpus expansus                 | Wood bulrush                        | Graminoid       |
| Scirpus georgianus               | Bulrush                             | Graminoid       |
| Scirpus hattorianus              | Mosquito bulrush                    | Graminoid       |
| Scirpus polyphyllus              | Leafy bulrush                       | Graminoid       |
| Scleria minor                    | Slender nut-rush                    | Graminoid       |
| Scleria muehlenbergii            | Reticulated nut-rush                | Graminoid       |
| Scleria reticularis              | Reticulated nut-rush                | Graminoid       |
| Scleria triglomerata             | Whip nut-rush                       | Graminoid       |
| Scrophularia lanceolata          | Lanceleaf figwort                   | Herb            |
| Scrophularia marilandica         | Carpenter's square                  | Herb            |
| Scutellaria elliptica            | Hairy skullcap                      | Herb            |
| Scutellaria galericulata         | Common skullcap                     | Herb            |
| Scutellaria integrifolia         | Hyssop skullcup                     | Herb            |
| Scutellaria lateriflora          | Mad-dog skullcap                    | Herb            |
| Scutellaria parvula var. parvula | Small skullcap                      | Herb            |
| Sedum ternatum                   | Wild stonecrop                      | Herb            |
| Selaginella apoda                | Meadow spikemoss                    | Herb            |
| Senna hebecarpa                  | Northern wild senna                 | Herb            |
| Sericocarpus asteroides          | White-topped aster                  | Herb            |
| Sericocarpus linifolius          | Narrow-leaved white-topped<br>aster | Herb            |
| Setaria parviflora               | Marsh bristlegrass                  | Graminoid       |
| Sicyos angulatus                 | Bur cucumber                        | Vine            |
| Silene antirrhina                | Sleepy Catchfly                     | Herb            |
| Silene stellata                  | Starry campion                      | Herb            |
| Sisyrinchium angustifolium       | Blue-eyed-grass                     | Herb            |
| Sisyrinchium atlanticum          | Eastern blue-eyed-grass             | Herb            |
| Sisyrinchium mucronatum          | Michaux's blue-eyed Grass           | Herb            |
| Sium suave                       | Water-parsnip                       | Herb            |
| Smilax glauca                    | Glaucous greenbrier                 | Vine            |

| Scientific Name                 | Common Name                      | Growth<br>Habit |
|---------------------------------|----------------------------------|-----------------|
| Smilax herbacea                 | Carrion-flower                   | Vine            |
| Smilax rotundifolia             | Roundleaf greenbrier             | Vine            |
| Smilax walteri                  | Red-berried greenbrier           | Vine            |
| Solidago altissima              | Canada goldenrod                 | Herb            |
| Solidago bicolor                | Silver-rod                       | Herb            |
| Solidago caesia                 | Bluestem goldenrod               | Herb            |
| Solidago canadensis             | Canada goldenrod                 | Herb            |
| Solidago erecta                 | Slender goldenrod                | Herb            |
| Solidago fistulosa              | Pine barren goldenrod            | Herb            |
| Solidago flexicaulis            | Zigzag goldenrod                 | Herb            |
| Solidago gigantea               | Giant goldenrod                  | Herb            |
| Solidago juncea                 | Early goldenrod                  | Herb            |
| Solidago nemoralis              | Gray goldenrod                   | Herb            |
| Solidago odora                  | Sweet goldenrod                  | Herb            |
| Solidago patula                 | Spreading goldenrod              | Herb            |
| Solidago puberula               | Downy goldenrod                  | Herb            |
| Solidago rugosa subsp. aspera   | Wrinkle-leaf goldenrod           | Herb            |
| Solidago rugosa subsp. rugosa   | Wrinkle-leaf goldenrod           | Herb            |
| Solidago sempervirens           | Seaside goldenrod                | Herb            |
| Solidago ulmifolia              | Elm-leaved goldenrod             | Herb            |
| Sorghastrum nutans              | Indian-grass                     | Graminoid       |
| Sparganium americanum           | American bur-reed                | Herb            |
| Sparganium androcladum          | Branching bur-reed               | Herb            |
| Sparganium eurycarpum           | Giant bur-reed                   | Herb            |
| Spartina alterniflora           | Smooth cordgrass                 | Graminoid       |
| Spartina cynosuroides           | Big cordgrass                    | Graminoid       |
| Spartina patens                 | Salt marsh cordgrass             | Graminoid       |
| Spartina pectinata              | Prairie cordgrass                | Graminoid       |
| Sphenopholis intermedia         | Slender wedgescale               | Graminoid       |
| Sphenopholis nitida             | Shiny wedgescale                 | Graminoid       |
| Sphenopholis obtusata           | Prairie wedgescale               | Graminoid       |
| Sphenopholis x pallens          | Tall wedgescale                  | Graminoid       |
| Spiraea latifolia               | Meadowsweet                      | Shrub           |
| Spiraea tomentosa               | Steeplebush                      | Shrub           |
| Spiranthes cernua               | Nodding ladies'-tresses          | Herb            |
| Spiranthes lacera var. gracilis | Southern slender ladies'-tresses | Herb            |
| Spiranthes lacera var. lacera   | Northern slender ladies'-tresses | Herb            |
| Spiranthes vernalis             | Spring ladies'-tresses           | Herb            |
| Spirodela polyrrhiza            | Greater duckweed                 | Herb            |
| Sporobolus vaginiflorus         | Poverty grass sheathed dropseed  | Graminoid       |

| Scientific Name  | Common Name                | Growth<br>Habit |
|--|----------------------------|-----------------|
| Staphylea trifolia   | Bladdernut                 | Shrub           |
| Stellaria alsine   | Bog chickweed              | Herb            |
| Stellaria longifolia   | Long-leaved stitchwort     | Herb            |
| Strophostyles helvola  | Wild bean                  | Vine            |
| Strophostyles umbellata  | Wild bean                  | Vine            |
| Stuckenia pectinata  | Sago pondweed              | Herb            |
| Suaeda linearis  | Tall sea-blite             | Herb            |
| Symphyotrichum cordifolium                                     | Common blue wood aster     | Herb            |
| Symphyotrichum dumosum var. dumosum                            | Rice button aster          | Herb            |
| Symphyotrichum laeve var. laeve                                | Smooth blue aster          | Herb            |
| Symphyotrichum lanceolatum subsp. lanceolatum var. lanceolatum | White panicled aster       | Herb            |
| Symphyotrichum lateriflorum var. lateriflorum                  | Calico aster               | Herb            |
| Symphyotrichum lowrieanum                                      | Smooth heart-leaved aster  | Herb            |
| Symphyotrichum novae-angliae                                   | New England aster          | Herb            |
| Symphyotrichum novi-belgii var. novi-belgii                    | New York aster             | Herb            |
| Symphyotrichum patens var. patens                              | Late purple aster          | Herb            |
| Symphyotrichum phlogifolium                                    | Thinleaf late purple aster | Herb            |
| Symphyotrichum pilosum var. pilosum                            | Heath aster                | Herb            |
| Symphyotrichum puniceum var. puniceum                          | Purple-stemmed aster       | Herb            |
| Symphyotrichum racemosum                                       | Small white aster          | Herb            |
| Symphyotrichum subulatum                                       | Annual salt marsh aster    | Herb            |
| Symphyotrichum tenuifolium                                     | Perennial salt marsh aster | Herb            |
| Symphyotrichum undulatum                                       | Wavyleaf aster             | Herb            |
| Symphyotrichum x amethystinum                                  | Amethyst aster             | Herb            |
| Symplocarpus foetidus  | Skunk cabbage              | Herb            |
| Tephrosia virginiana   | Goat's-rue                 | Herb            |
| Teucrium canadense var. canadense                              | Canada germander           | Herb            |
| Thalictrum dioicum   | Early meadow-rue           | Herb            |
| Thalictrum pubescens   | Tall meadow-rue            | Herb            |
| Thalictrum revolutum   | Waxyleaf meadow-rue        | Herb            |
| Thalictrum thalictroides                                       | Rue anemone                | Herb            |
| Thelypteris noveboracensis                                     | New York fern              | Herb            |
| Thelypteris palustris var. pubescens                           | Eastern marsh fern         | Herb            |
| Thelypteris simulata   | Bog fern                   | Herb            |
| Tilia americana var. americana                                 | American basswood          | Tree            |
| Tilia americana var. heterophylla                              | American basswood          | Tree            |
| Tipularia discolor   | Cranefly orchid            | Herb            |
| Torreyochloa pallida var. pallida                              | Pale false mannagrass      | Graminoid       |
| Toxicodendron radicans   | Poison ivy                 | Vine            |
| Toxicodendron vernix   | Poison sumac               | Shrub           |

| Scientific Name               | Common Name                   | Growth<br>Habit |
|-------------------------------|-------------------------------|-----------------|
| Tradescantia virginiana       | Spiderwort                    | Herb            |
| Triadenum virginicum          | Marsh St. John's-wort         | Herb            |
| Trichophorum planifolium      | Bashful bulrush               | Graminoid       |
| Trichostema dichotomum        | Blue-curls                    | Herb            |
| Tridens flavus var. flavus    | Purpletop tridens             | Graminoid       |
| Trientalis borealis           | Star-flower                   | Herb            |
| Trillium cernuum              | Nodding trillium              | Herb            |
| Trillium erectum              | Purple trillium               | Herb            |
| Triodanis perfoliata          | Venus's looking-glass         | Herb            |
| Triosteum aurantiacum         | Orangefruit horse gentian     | Herb            |
| Triosteum perfoliatum         | Feverwort                     | Herb            |
| Triplasis purpurea            | Sand grass                    | Graminoid       |
| Tripsacum dactyloides         | Eastern gamagrass             | Graminoid       |
| Tsuga canadensis              | Eastern hemlock               | Tree            |
| Typha angustifolia            | Narrowleaf cattail            | Herb            |
| Typha latifolia               | Broadleaf cattail             | Herb            |
| Typha x glauca                | Hybrid cattail                | Herb            |
| Ulmus americana               | American elm                  | Tree            |
| Ulmus rubra                   | Slippery Elm                  | Tree            |
| Urtica dioica subsp. gracilis | Great nettle                  | Herb            |
| Utricularia cornuta           | Horned Bladderwort            | Herb            |
| Utricularia geminiscapa       | Hiddden-fruited Bladderwort   | Herb            |
| Utricularia juncea            | Rush Bladderwort              | Herb            |
| Utricularia macrorhiza        | Common bladderwort            | Herb            |
| Utricularia striata           | Striped bladderwort           | Herb            |
| Utricularia subulata          | Slender bladderwort           | Herb            |
| Uvularia perfoliata           | Bellwort                      | Herb            |
| Uvularia sessilifolia         | Bellwort                      | Herb            |
| Vaccinium angustifolium       | Low sweet blueberry           | Shrub           |
| Vaccinium caesariense         | New Jersey highbush blueberry | Shrub           |
| Vaccinium corymbosum          | Highbush blueberry            | Shrub           |
| Vaccinium fuscatum            | Black highbush blueberry      | Shrub           |
| Vaccinium macrocarpon         | Cranberry                     | Herb            |
| Vaccinium pallidum            | Lowbush blueberry             | Shrub           |
| ,<br>Vaccinium stamineum      | Deerberry                     | Shrub           |
| Vallisneria americana         | Tape-grass                    | Herb            |
| Veratrum hybridum             | Slender bunchflower           | Herb            |
| Veratrum viride               | Green false hellebore         | Herb            |
| Verbena hastata               | Blue vervain                  | Herb            |
| Verbena urticifolia           | White vervain                 | Herb            |
| Verbesina alternifolia        | Wingstem                      | Herb            |

| Scientific Name                   | Common Name             | Growth<br>Habit |
|-----------------------------------|-------------------------|-----------------|
| Vernonia noveboracensis           | New York ironweed       | Herb            |
| Veronica americana                | American brooklime      | Herb            |
| Veronica anagallis-aquatica       | Water speedwell         | Herb            |
| Veronica peregrina                | Neckweed                | Herb            |
| Veronica scutellata               | Marsh speedwell         | Herb            |
| Veronicastrum virginicum          | Culver's-root           | Herb            |
| Viburnum acerifolium              | Maple-leaved viburnum   | Shrub           |
| Viburnum dentatum var. dentatum   | Southern arrowwood      | Shrub           |
| Viburnum lentago                  | Nannyberry              | Tree            |
| Viburnum nudum var. cassinoides   | Withe-rod               | Shrub           |
| Viburnum nudum var. nudum         | Possumhaw               | Shrub           |
| Viburnum prunifolium              | Black-haw               | Tree            |
| Viburnum rafinesqueanum           | Downy arrow-wood        | Shrub           |
| Viburnum recognitum               | Northern arrow-wood     | Shrub           |
| Viola affinis                     | Sand violet             | Herb            |
| Viola bicolor                     | Field pansy             | Herb            |
| Viola blanda var. blanda          | Sweet white violet      | Herb            |
| Viola cucullata                   | Blue marsh violet       | Herb            |
| Viola labradorica                 | American dog violet     | Herb            |
| Viola lanceolata                  | Lance-leaved violet     | Herb            |
| Viola macloskeyi                  | Small white violet      | Herb            |
| Viola pedata                      | Birdfoot violet         | Herb            |
| Viola pubescens var. pubescens    | Downy yellow violet     | Herb            |
| Viola pubescens var. scabriuscula | Downy yellow violet     | Herb            |
| Viola rotundifolia                | Roundleaf yellow violet | Herb            |
| Viola sagittata var. ovata        | Ovate-leaved violet     | Herb            |
| Viola sagittata var. sagittata    | Arrowleaf violet        | Herb            |
| Viola sororia                     | Common blue violet      | Herb            |
| Viola striata                     | Striped cream violet    | Herb            |
| Viola x palmata                   | Early blue violet       | Herb            |
| ,<br>Viola x primulifolia         | Primrose-leaved violet  | Herb            |
| Vitis aestivalis                  | Summer grape            | Vine            |
| Vitis labrusca                    | Fox grape               | Vine            |
| Vitis riparia                     | Riverbank grape         | Vine            |
| ,<br>Vitis vulpina                | Frost grape             | Vine            |
| Vitis x novae-angliae             | New England grape       | Vine            |
| Vulpia octoflora var. octoflora   | Six-weeks fescue        | Graminoid       |
| Wolffia borealis                  | Northern watermeal      | Herb            |
| Wolffia brasiliensis              | Brazilian watermeal     | Herb            |
| Wolffia columbiana                | Water-meal              | Herb            |
| Woodsia ilvensis                  | Rusty woodsia           | Herb            |

| Scientific Name                     | Common Name                   | Growth<br>Habit |
|-------------------------------------|-------------------------------|-----------------|
| Woodsia obtusa                      | Blunt-lobed woodsia           | Herb            |
| Woodwardia areolata                 | Netted chain fern             | Herb            |
| Woodwardia virginica                | Virginia chain fern           | Herb            |
| Xanthium strumarium var. canadense  | Common cocklebur              | Herb            |
| Xanthium strumarium var. glabratum  | Rough cocklebur               | Herb            |
| Xanthium strumarium var. strumarium | Rough cocklebur               | Herb            |
| Xerophyllum asphodeloides           | Turkey-beard                  | Herb            |
| Xyris difformis                     | Bog yellow-eyed grass         | Herb            |
| Xyris smalliana                     | Small's yellow-eyed grass     | Herb            |
| Xyris torta                         | Twisted yellow-eyed grass     | Herb            |
| Zannichellia palustris              | Horned pondweed               | Herb            |
| Zanthoxylum americanum              | Prickly-ash                   | Tree            |
| Zizania aquatica                    | Wild-rice                     | Graminoid       |
| Zizia aptera                        | Heart-leaved golden-alexander | Herb            |
| Zizia aurea                         | Golden-alexander              | Herb            |
| Zostera marina                      | Eel-grass                     | Herb            |