

**Table 10: Belle Island Study Area - Baseline Study Data Summary;  
JRPS Habitat Restoration Project (Phase 1) - Invasive Plant Management Plan**

Lead Data Collection Team: Richmond Tree Stewards (Louise Seals, Catherine Farmer, Janet Woody, Suzette Lyon, Carol Ridderhof, Krissi Vandenberg, Polmann, Killy Hardt, Joe Terry, Betts, Burgess, Trish Bernal)  
Support Data Collection Teams: N/A  
Date of Observation: May 30, July 19, July 23, July 30, and August 22 (2015)  
Total Observation Time: 53.5 hours



| Functional Guild        | Scientific Name                                           | Common Name          | Family           | DCR Rank* | Suggested Treatment*** | Management Unit** |    |    |    |    |    |   |
|-------------------------|-----------------------------------------------------------|----------------------|------------------|-----------|------------------------|-------------------|----|----|----|----|----|---|
|                         |                                                           |                      |                  |           |                        | 1                 | 2  | 3  | 4a | 4b | 4m |   |
| Trees                   | Acer platanoides L.                                       | Norway Maple         | Aceraceae        | M         | TBD                    |                   |    | 1  |    |    |    |   |
|                         | Ailanthus altissima (P. Mill.) Swingle                    | Tree of Heaven       | Simaroubaceae    | H         | TBD                    | 3                 | 3  | 3  | 2  | 1  | 3  |   |
|                         | Albizia julibrissin Durazz.                               | Mimosa               | Fabaceae         | M         | TBD                    | 1                 |    | 3- | 2  | 1  | 1  |   |
|                         | Melia azedarach L.                                        | Chinaberrytree       | Meliaceae        | L         | TBD                    |                   |    | 1  |    |    |    |   |
|                         | Morus alba L.                                             | White Mulberry       | Moraceae         | L         | TBD                    |                   | 2  | 1  |    |    | 1  | 3 |
|                         | Paulownia tomentosa (Thunb.) Sieb. & Zucc. ex Steud.      | Princesstree         | Scrophulariaceae | M         | TBD                    | 1-                | 1  | 1  | 2+ | 1  | 1  |   |
|                         | Pyrus calleryana Dcne.                                    | Bradford Pear        | Rosaceae         | M         | TBD                    |                   |    | 1  |    |    |    |   |
| Shrubs                  | Berberis thunbergii DC.                                   | Japanese Barberry    | Berberidaceae    | M         | na                     |                   |    |    |    |    |    |   |
|                         | Elaeagnus umbellata Thunb.                                | Autumn Olive         | Elaeagnaceae     | H         | TBD                    | 1-                | 1  | 1  | 2  |    |    |   |
|                         | Euonymus alatus (Thunb.) Sieb.                            | Burningbush          | Celastraceae     | H         | na                     |                   |    |    |    |    |    |   |
|                         | Ligustrum sinense Lour.                                   | Chinese Privet       | Oleaceae         | H         | TBD                    | 2+                | 3  | 4+ | 1  | 2  | 1  |   |
|                         | Lonicera maackii (Rupr.) Maximowicz                       | Amur Honeysuckle     | Brassicaceae     | H         | TBD                    |                   |    |    | 4  |    |    |   |
|                         | Rosa multiflora Thunb. ex Murr.                           | Multiflora Rose      | Rosaceae         | H         | TBD                    |                   |    | 1  |    |    |    |   |
| Herbs/Grasses           | Alliaria petiolata (Bieb.) Cavara & Grande                | Garlic Mustard       | Brassicaceae     | H         | TBD                    |                   | 1  | 1+ | 1  | 1  | 1  |   |
|                         | Centaurea stoebe L. ssp. micranthos (S.G. Gmelin ex Gule) | Spotted Knapweed     | Asteraceae       | H         | TBD                    |                   |    |    |    |    | 1  | 1 |
|                         | Cirsium vulgare (Savi) Ten.                               | Bull Thistle         | Asteraceae       | M         | na                     |                   |    |    |    |    |    |   |
|                         | Commelina communis L.                                     | Asiatic dayflower    | Commelinaceae    | L         | TBD                    | 1-                |    | 1+ |    | 2- |    |   |
|                         | Hydrilla verticillata (L. f.) Royle                       | Hydrilla             | Hydrocharitaceae | H         | na                     |                   |    |    |    |    |    |   |
|                         | Iris pseudacorus L.                                       | Paleyellow Iris      | Iridaceae        | H         | na                     |                   |    |    |    |    |    |   |
|                         | Lespedeza cuneata (Dum.-Cours.) G. Don                    | Chinese Lespedeza    | Fabaceae         | H         | TBD                    | 2                 | 1+ | 1+ | 1  | 1  | 3  |   |
|                         | Lysimachia nummularia L.                                  | Moneywort            | Primulaceae      | H         | na                     |                   |    |    |    |    |    |   |
|                         | Lythrum salicaria L. var. gracilior Turcz.                | Purple Loosestrife   | Lythraceae       | H         | TBD                    |                   |    |    |    | 1  |    |   |
|                         | Murdannia keisak (Hassk.) Hand.-Maz.                      | Marsh Dewflower      | Commelinaceae    | H         | na                     |                   |    |    |    |    |    |   |
|                         | Perilla frutescens (L.) Britt. var. crispa (Benth.) Deane | Beefsteak Plant      | Lamiaceae        | L         | TBD                    |                   | 1  |    |    |    |    |   |
|                         | Persicaria longiseta (de Bruyn) Moldenke                  | Lady's Thumb         | Polygonaceae     | H         | na                     |                   |    |    |    |    |    |   |
|                         | Phyllostachys aurea Carr. ex A. & C. Rivière              | Golden Bamboo        | Poaceae          | H         | na                     |                   |    |    |    |    |    |   |
|                         | Reynoutria japonica Houtt.                                | Japanese Knotweed    | Polygonaceae     | M         | TBD                    |                   |    |    |    |    |    | 1 |
|                         | Rumex acetosella L.                                       | Common Sheep Sorrel  | Polygonaceae     | H         | na                     |                   |    |    |    |    |    |   |
|                         | Rumex crispus L.                                          | Curly Dock           | Polygonaceae     | M         | na                     |                   |    |    |    |    |    |   |
|                         | Securigera varia (L.) Lassen                              | Crownvetch           | Fabaceae         | L         | na                     |                   |    |    |    |    |    |   |
|                         | Stellaria media (L.) Vill.                                | Common Chickweed     | Caryophyllaceae  | H         | na                     |                   |    |    |    |    |    |   |
|                         | Urtica dioica L.                                          | Stinging Nettle      | Urticaceae       | M         | na                     |                   |    |    |    |    |    |   |
|                         | Arthraxon hispidus (Thunb.) Makino                        | Small Carpgrass      | Poaceae          | M         | na                     |                   |    |    |    |    |    |   |
|                         | Microstegium vimineum (Trin.) A. Camus                    | Japanese Stiltgrass  | Poaceae          | H         | TBD                    | 2                 | 1  | 1+ |    |    | 1  | 1 |
|                         | Sorghum halepense (L.) Pers.                              | Johnsongrass         | Poaceae          | H         | TBD                    | 1                 |    |    |    | 1  |    | 3 |
| Vines                   | Ampelopsis brevipedunculata (Maxim.) Trautv.              | Amur Peppervine      | Vitaceae         | H         | na                     |                   |    |    |    |    |    |   |
|                         | Celastrus orbiculata Thunb. [orthographic variant]        | Oriental Bittersweet | Celastraceae     | H         | TBD                    |                   |    | 2  |    |    |    |   |
|                         | Dioscorea polystachya Turczaninow                         | Cinnamon Vine        | Poaceae          | H         | na                     |                   |    |    |    |    |    |   |
|                         | Euonymus fortunei (Turcz.) Hand.-Maz.                     | Winter Creeper       | Celastraceae     | M         | TBD                    |                   |    | 2  |    |    |    |   |
|                         | Glechoma hederacea L.                                     | Ground Ivy           | Lamiaceae        | M         | TBD                    | 1                 |    |    | 3  | 3- | 1  |   |
|                         | Hedera helix L.                                           | English Ivy          | Araliaceae       | M         | TBD                    | 2+                | 3- | 3  | 5  | 2  |    |   |
|                         | Humulus japonicus Sieb. & Zucc.                           | Japanese Hop         | Cannabaceae      | M         | na                     |                   |    |    |    |    |    |   |
|                         | Lonicera japonica Thunb.                                  | Japanese Honeysuckle | Caprifoliaceae   | H         | TBD                    | 4                 | 3+ | 3  | 4  | 2+ | 1  |   |
|                         | Pueraria montana (Lour.) Merr.                            | Kudzu                | Fabaceae         | H         | na                     |                   |    |    |    |    |    |   |
|                         | Vinca major L.                                            | Bigleaf Periwinkle   | Apocynaceae      | L         | na                     |                   |    |    |    |    |    |   |
|                         | Vinca minor L.                                            | Common Periwinkle    | Apocynaceae      | L         | TBD                    |                   |    | 1  |    |    |    |   |
|                         | Wisteria sinensis (Sims) DC.                              | Chinese Wisteria     | Fabaceae         | M         | na                     |                   |    |    |    |    |    |   |
| Cover Class for Trees:  |                                                           |                      |                  |           |                        | 3                 | 3  | 3  | 2  | 1  | 3  |   |
| Cover Class for Shrubs: |                                                           |                      |                  |           |                        | 2                 | 3  | 4+ | 2  | 2  | 1  |   |
| Cover Class for Herbs:  |                                                           |                      |                  |           |                        | 2                 | 1  | 1  | 1  | 2  | 3  |   |
| Cover Class for Vines:  |                                                           |                      |                  |           |                        | 4+                | 4  | 3  | 5  | 3  | 1  |   |
| OVERALL COVER CLASS:    |                                                           |                      |                  |           |                        | 5                 | 5  | 5  | 5  | 3  | 4  |   |

\*Virginia Department of Conservation and Recreation Invasiveness Ranking: H = High Invasiveness; M = Medium Invasiveness; L = Low Invasiveness

\*\*Management Units Assessed Using Modified Braun-Blanquet Cover Scale: 1 = 0-5%; 2 = 5-20%; 3 = 20-50%; 4 = 50-75%; 5 = 75-100%

\*\*\*Treatment practices based on Miller 2003 and JRPS Park Superintendent

| Treatment Category*** | Treatment Description***                                                                   |
|-----------------------|--------------------------------------------------------------------------------------------|
| A                     | Hand Removal: Removal of plant material from the soil in environmentally sensitive areas.  |
| B                     | Goat Herd Management: Rotating herds to remove dense cover and combo treatments.           |
| C                     | Mow-Treat Method: Application of herbicide-water mixtures to cut/damaged stems or foliage. |
| D                     | Cut-Treat Method: Application of herbicide-water mixtures to freshly cut stumps.           |
| E                     | Basal Spray: Applications of herbicide-oil-penetrant mixture daubed onto lower stems.      |
| F                     | Stem Injection: Applications of appropriate herbicide directly into tree stems.            |
| G                     | Prescribed Burning: Drip torching and other methods utilizing experienced professionals.   |
| H                     | Directed Foliar Spray: Application to leaves with herbicide-water-surfactant mixture.      |