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Table 1  
List of species identified in woody vegetation survey 2000-2002

Font color indicates status (*black*=native, *blue*=introduced, *red*=introduced & invasive).  
(Note: \* represents new species not previously found 2000 or 2001 survey)

Scientific name	Family	Common name	Native/Introduced
<i>Acer cv.</i>	<i>Aceraceae</i>	Maple cultivar	Introduced
<i>Acer negundo</i>	<i>Aceraceae</i>	Box-elder	Native
<i>Acer platanoides</i>	<i>Aceraceae</i>	Norway maple	Introduced from Europe/ Invasive
<i>Acer saccharinum</i>	<i>Aceraceae</i>	Silver maple	Native
<i>Acer saccharum</i>	<i>Aceraceae</i>	Sugar maple	Native
<i>Aesculus spp.</i>	<i>Sapindaceae</i>	Buckeye	Native
<i>Ailanthus altissima</i>	<i>Simaroubaceae</i>	Tree of heaven	Introduced from Asia/ Invasive
<i>Alnus spp.</i>	<i>Betulaceae</i>	Alder	Native
<i>Amorpha fruticosa</i>	<i>Fabaceae</i>	False indigo	Native
<i>Ampelopsis brevipedunculata</i>	<i>Vitaceae</i>	Porcelain-berry	Introduced from Asia
<i>Aralia spinosa</i>	<i>Apiaceae</i>	Devil's walking stick	Native
<i>Berberis cv.</i>	<i>Berberidaceae</i>	Barberry cultivar	Introduced from Asia
<i>Berberis thunbergii</i>	<i>Berberidaceae</i>	Barberry	Introduced from Asia/ Invasive
<i>Betula cv.</i>	<i>Betulaceae</i>	Birch cultivar	Introduced from Europe
<i>Betula spp.</i>	<i>Betulaceae</i>	Birch	Native
<i>Buddleia spp.*</i>	<i>Loganiaceae</i>	Butterfly bush	Introduced from Asia
<i>Carya spp.</i>	<i>Juglandaceae</i>	Hickory	Native
<i>Catalpa spp.</i>	<i>Bignoniaceae</i>	Catalpa	Introduced from southern USA
<i>Celastrus orbiculatus</i>	<i>Celastraceae</i>	Oriental bittersweet	Introduced from Asia/ Invasive
<i>Celtis occidentalis</i>	<i>Ulmaceae</i>	Hackberry	Native
<i>Cephalanthus occidentalis</i>	<i>Rubiaceae</i>	Buttonbush	Native
<i>Cercis canadensis</i>	<i>Fabaceae</i>	Redbud	Native
<i>Cornus spp.</i>	<i>Cornaceae</i>	Dogwood	Native
<i>Crataegus spp.</i>	<i>Rosaceae</i>	Hawthorn	Native
<i>Forsythia cv.</i>	<i>Oleaceae</i>	Forsythia	Introduced from Europe
<i>Fraxinus spp.</i>	<i>Oleaceae</i>	Ash	Native
<i>Gleditsia triacanthos</i>	<i>Fabaceae</i>	Honey locust	Native
<i>Hamamelis virginiana</i>	<i>Hamaelidaceae</i>	Witch-hazel	Native
<i>Hibiscus syriacus</i>	<i>Malvaceae</i>	Rose-of-Sharon	Introduced from Asia
<i>Hibiscus moscheutos</i>	<i>Malvaceae</i>	Swamp rose mallow	Native
<i>Humulus spp.</i>	<i>Moraceae</i>	Hops	Native/Introduced from Asia
<i>Hydrangea arborescens</i>	<i>Hydrangeaceae</i>	Hydrangea	Native
<i>Ilex cv.</i>	<i>Aquifoliaceae</i>	Holly cultivar	Native
<i>Juglans spp.</i>	<i>Juglandaceae</i>	Black Walnut	Native
<i>Juniperus cv.</i>	<i>Cupressaceae</i>	Juniper	Native
<i>Ligustrum vulgare</i>	<i>Oleaceae</i>	Privet	Introduced from Europe
<i>Lindera benzoin</i>	<i>Lauraceae</i>	Spicebush	Native
<i>Liquidambar styraciflua</i>	<i>Hamaelidaceae</i>	Sweet-gum	Native
<i>Liriodendron tulipifera</i>	<i>Magnoliaceae</i>	Tulip tree	Native
<i>Lonicera maackii</i>	<i>Caprifoliaceae</i>	Amur honeysuckle	Introduced /Invasive
<i>Lonicera spp. (shrub)</i>	<i>Caprifoliaceae</i>	Honeysuckle	Introduced /Invasive
<i>Lonicera spp. (vining)</i>	<i>Caprifoliaceae</i>	Honeysuckle	Introduced /Invasive

Scientific name	Family	Common name	Native/Introduced
<i>Maclura pomifera</i>	<i>Moraceae</i>	Osage orange	Introduced from southern USA
<i>Malus coronaria</i>	<i>Rosaceae</i>	Crabapple	Native
<i>Malus pumila</i>	<i>Rosaceae</i>	Apple	Introduced from Asia
<i>Menispermum canadense</i>	<i>Menispermaceae</i>	Moonseed	Native
<i>Morus alba</i>	<i>Moraceae</i>	White Mulberry	Introduced from Asia
<i>Morus rubra</i>	<i>Moraceae</i>	Red Mulberry	Native
<i>Nyssa sylvatica</i>	<i>Nyssaceae</i>	Tupelo, Black gum	Native
<i>Ostrya virginiana</i>	<i>Betulaceae</i>	Hophornbeam	Native
<i>Parthenocissus quinquefolia</i>	<i>Vitaceae</i>	Virginia creeper	Native
<i>Physocarpus opulifolius</i>	<i>Rosaceae</i>	Ninebark	Native
<i>Picea cv.</i>	<i>Pinaceae</i>	spruce cultivar	Introduced
<i>Pinus cv.</i>	<i>Pinaceae</i>	pine cultivar	Introduced
<i>Platanus occidentalis</i>	<i>Platanaceae</i>	Sycamore	Native
<i>Populus tremuloides</i>	<i>Salicaceae</i>	Quaking aspen	Native
<i>Populus deltoids</i>	<i>Salicaceae</i>	Cottonwood	Native
<i>Prunus cv.</i>	<i>Rosaceae</i>	Cherry cultivar	Introduced
<i>Prunus spp.</i>	<i>Rosaceae</i>	Wild Cherry	Native
<i>Ptelea trifoliata</i>	<i>Rutaceae</i>	Hop-tree	Native
<i>Quercus spp.</i>	<i>Fagaceae</i>	Oak	Native
<i>Rhamnus frangula</i>	<i>Rhamnaceae</i>	Buckthorn Alder	Introduced from EurAsia/ Invasive
<i>Rhus typhina</i>	<i>Anacardiaceae</i>	Staghorn Sumac	Native
<i>Ribes spp.</i>	<i>Saxifragaceae</i>	Currant	Native/Introduced
<i>Robinia pseudoacacia</i>	<i>Fabaceae</i>	Black Locust	Native
<i>Rosa cv.</i>	<i>Rosaceae</i>	Rose cultivar	Introduced
<i>Rosa multiflora</i>	<i>Rosaceae</i>	Multiflora rose	Introduced from Asia/ Invasive
<i>Rubus spp.</i>	<i>Rosaceae</i>	Blackberry, raspberry	Native
<i>Rubus odoratus*</i>	<i>Rosaceae</i>	Purple-flowering raspberry	Native
<i>Salix babylonica</i>	<i>Salicaceae</i>	Weeping willow	Introduced from Asia
<i>Salix spp.</i>	<i>Salicaceae</i>	Willow	Native
<i>Sambucus candensis</i>	<i>Caprifoliaceae</i>	Elderberry	Native
<i>Sambucus pubens*</i>	<i>Caprifoliaceae</i>	Red-berried Elder	Native
<i>Sassafras albidum</i>	<i>Lauraceae</i>	Sassafras	Native
<i>Sorbus aucuparia</i>	<i>Rosaceae</i>	Mountain Ash	Introduced from Europe
<i>Spiraea spp.</i>	<i>Rosaceae</i>	Meadowsweet	Native
<i>Staphylia trifolia</i>	<i>Staphyleaceae</i>	Bladdernut	Native
<i>Symphoricarpus albus</i>	<i>Caprifoliaceae</i>	Snowberry	Native
<i>Tilia americana</i>	<i>Tiliaceae</i>	Basswood	Native
<i>Tsuga canadensis</i>	<i>Pinaceae</i>	Hemlock	Native
<i>Toxicodendron radicans</i>	<i>Anacardiaceae</i>	Poison ivy	Native
<i>Ulmus spp.</i>	<i>Ulmaceae</i>	Elm	Native
<i>Viburnum sp.</i>	<i>Adoxaceae</i>	Arrow-wood	Native
<i>Vitis sp.</i>	<i>Vitaceae</i>	Grapevine	Native
<i>Wisteria floribunda</i>	<i>Fabaceae</i>	Wisteria	Introduced from Europe

Table 2  
 Frequency of Occurrence of Plant Community Types Along the Monongahela and the Allegheny Rivers.  
 River distributions of community types are significantly different (G test).

Allegheny River (2002)	Monongahela River (2001)		
Sycamore - Box-Elder Floodplain Forest		0.11	0.29
Silver Maple Floodplain Forest		0.34	0.04
Black Willow Scrub/Shrub Wetland		0.06	0.10
Alder - Ninebark Wetland		0.06	0.11
Water-willow - smartweed riverbed community		0.09	0.07



*Physocarpus opulifolius* (Ninebark)

Relative abundance of woody species in Pittsburgh pool 2000

Platanus occidentalis (Sycamore) N	Sassafras albidum (Sassafras) N
Vitis spp. (Grapevine) N	Acer rubrum (Red maple) N
Salix spp. (Willow) N	Aesculus spp. (Buckeye) N
Acer saccharinum (Silver maple) N	Aralia spinosa (Devil's walking stick) N
Acer negundo (Box elder) N	Hamamelis virginiana (Witch-hazel) N
Ulmus spp. (Elm) N	Ilex cv. (Holly cultivar) N
Robinia pseudoacacia (Black locust) N	Menispermum canadense (Moonseed) N
Cornus spp. (Dogwood) N	Ailanthus altissima (Tree of heaven) I
Rhus typhina (Staghorn sumac) N	Morus alba (Mulberry) I
Toxicodendron radicans (Poison ivy) N	Polygonum (Japanese knotweed) I
Parthenocissus quinquefolia (Virginia creeper) N	Celastrus orbiculatus (Oriental bittersweet) I
Amorpha fruitcosa (False indigo) N	Catalpa spp. (Catalpa) I
Physocarpus opulifolius (Ninebark) N	Wisteria floribunda (Wisteria) I
Populus deltoides (Cottonwood) N	Rhamnus frangula (Buckthorn Alder) I
Rubus spp. (Blackberry, raspberry) N	Rosa multiflora (Multiflora Rose) I
Fraxinus spp. (Ash) N	Ulmus pumila (Siberian Elm) I
Alnus spp. (Alder) N	Acer platanoides (Norway maple) I
Cephalanthus occidentalis (Buttonbush) N	Lonicera maackii (Amur honeysuckle) I
Sambucus canadensis (Elderberry) N	Lonicera spp. (vining) (Honeysuckle) I
Prunus spp. (Wild cherry) N	Prunus cv. (Cherry cultivar) I
Celtis occidentalis (Hackberry) N	Maclura pomifera (Osage Orange) I
Malus coronaria (Crabapple) N	Lonicera spp. (shrub) (Honeysuckle) I
Liriodendron tulipifera (Tulip tree) N	Sorbus aucuparia (Mountain Ash) I
Betula spp. (Birch) N	Betula cv. (Birch cultivar) I
Ostrya virginiana (Hophornbeam) N	Forsythia cv. (Forsythia) I
Crataegus spp. (Hawthorn) N	Pinus cv. (pine cultivar) I
Hydrangea arborescens (Hydrangeae) N	Ligustrum vulgare (Privet) I
Tilia americana (Basswood) N	Malus pumila (Apple) I
Gleditsia triacanthos (Honey locust) N	Salix babylonica (Weeping willow) I
Juglans spp. (Walnut) N	Hibiscus syriacus (Rose-of-Sharon) I
Populus tremuloides (Quaking aspen) N	Berberis cv. (Barberry cultivar) I
Cercis canadensis (Redbud) N	Berberis thunbergii (Barberry) I
Viburnum spp. (Arrow-wood) N	Picea cv. (spruce cultivar) I
Liquidambar styraciflua (Sweet-gum) N	Humulus spp. (Hops) I
Quercus spp. (Oak) N	
Ribes spp. (Currant) N	
Acer saccharum (Sugar maple) N	
Spiraea spp. (Meadowsweet) N	

I = Introduced  
N = Native

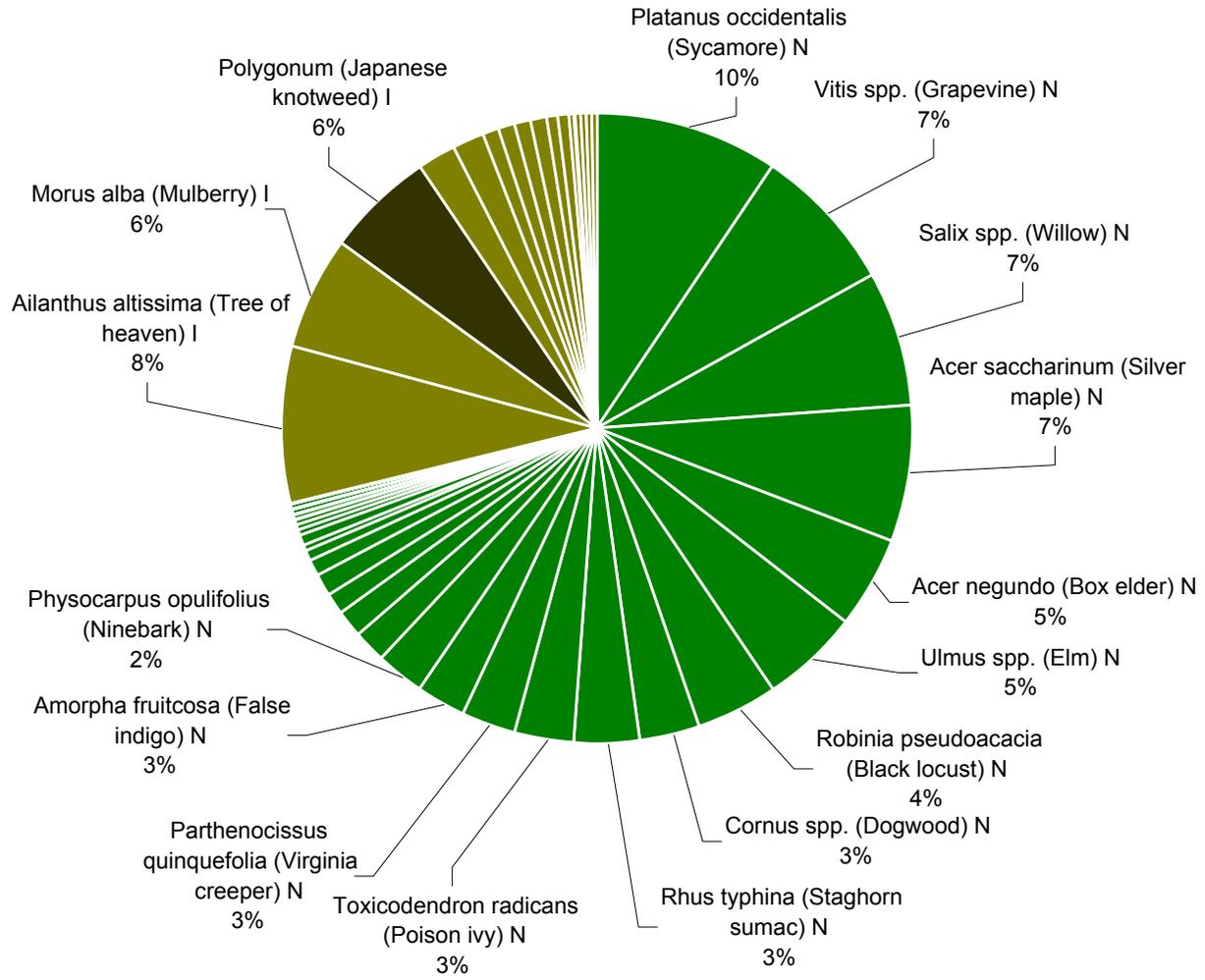


Fig. 1. Relative abundance of woody species in Pittsburgh pool 2000

*Platanus occidentalis* (Sycamore)



Relative abundance of woody species upper Allegheny 2002

Acer saccharinum (Silver maple) N
Platanus occidentalis (Sycamore) N
Salix spp. (Willow) N
Vitis spp. (Grapevine) N
Ulmus spp. (Elm) N
Cornus spp. (Dogwood) N
Physocarpus opulifolius (Ninebark) N
Toxicodendron radicans (Poison ivy) N
Parthenocissus quinquefolia (Virginia creeper) N
Robinia pseudoacacia (Black locust) N
Fraxinus spp. (Ash) N
Populus deltoides (Cottonwood) N
Cephalanthus occidentalis (Buttonbush) N
Acer negundo (Box elder) N
Rubus spp. (Blackberry, raspberry) N
Rhus typhina (Staghorn sumac) N
Sambucus canadensis (Elderberry) N
Alnus spp. (Alder) N
Prunus spp. (Wild cherry) N
Liriodendron tulipifera (Tulip tree) N
Quercus spp. (Oak) N
Hydrangea arborescens (Hydrangeae) N
Celtis occidentalis (Hackberry) N
Tilia americana (Basswood) N
Staphylia trifolia (Bladdernut) N
Crataegus spp. (Hawthorn) N
Juglans spp. (Walnut) N
Malus coronaria (Crabapple) N
Ilex cv. (Holly cultivar) N
Betula spp. (Birch) N
Carya spp. (Hickory) N
Amorpha fruitcosa (False indigo) N
Acer saccharum (Sugar maple) N
Gleditsia triacanthos (Honey locust) N
Viburnum spp. (Arrow-wood) N
Lindera benzoin (Spicebush) N
Sassafras albidum (Sassafras) N

Acer rubrum (Red maple) N
Spiraea spp. (Meadowsweet) N
Polygonum (Japanese knotweed) I
Ailanthus altissima (Tree of heaven) I
Lonicera maackii (Amur honeysuckle) I
Catalpa spp. (Catalpa) I
Morus alba (Mulberry) I
Acer platanoides (Norway maple) I
Rosa multiflora (Multiflora Rose) I
Celastrus orbiculatus (Oriental bittersweet) I
Rhamnus frangula (Buckthorn Alder) I
Lonicera spp. (vining) (Honeysuckle) I
Hibiscus syriacus (Rose-of-Sharon) I
Maclura pomifera (Osage Orange) I
Ligustrum vulgare (Privet) I
Forsythia cv. (Forsythia) I
Picea cv. (spruce cultivar) I
Wisteria floribunda (Wisteria) I
Prunus cv. (Cherry cultivar) I
Pinus cv. (pine cultivar) I
Lonicera spp. (shrub) (Honeysuckle) I
Berberis thunbergii (Barberry) I
Salix babylonica (Weeping willow) I
Berberis cv. (Barberry cultivar) I
Malus pumila (Apple) I
Rosa cv. (Rose) I

I = Introduced  
N = Native

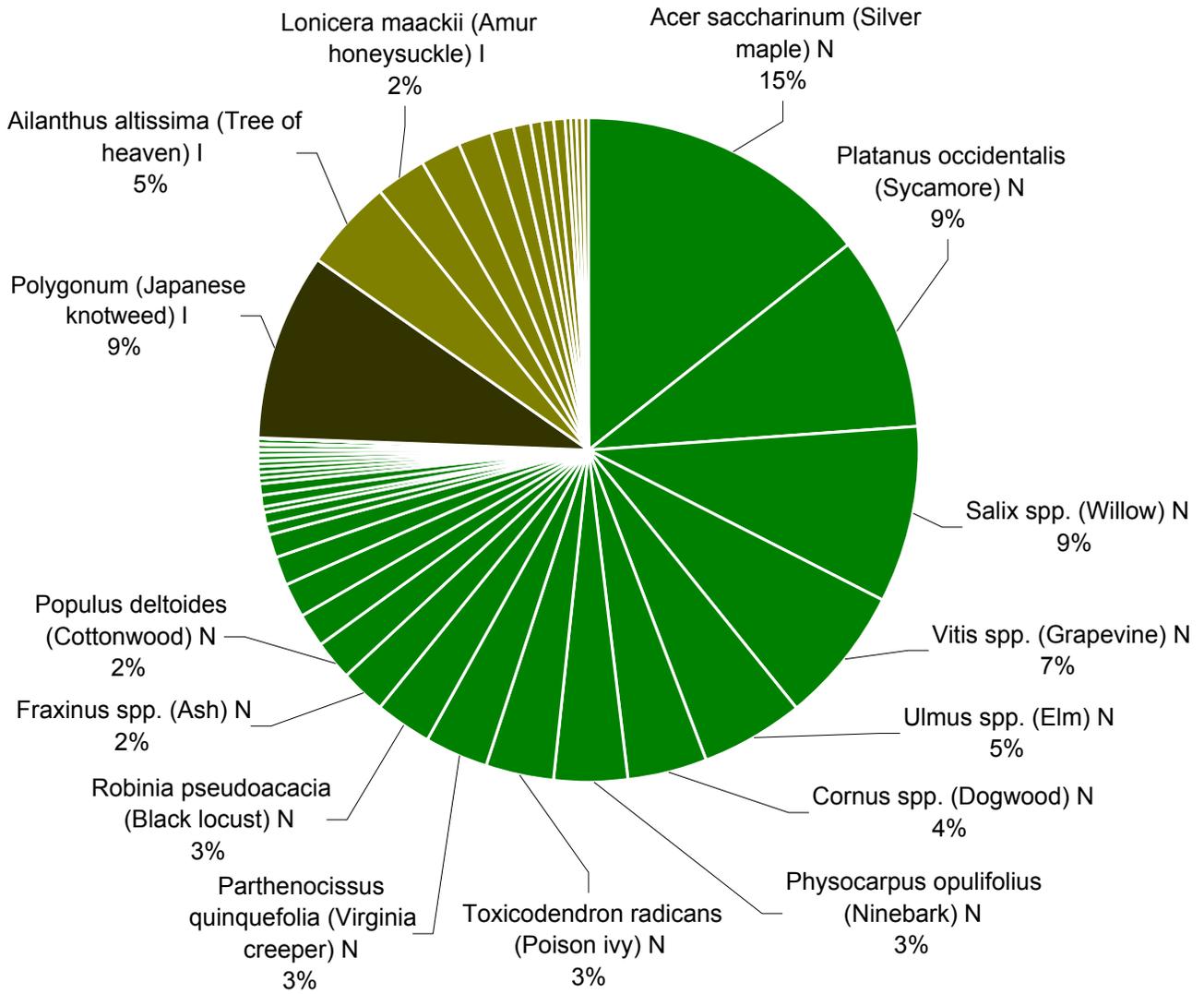


Fig. 2. Relative abundance of woody species upper Allegheny 2002



*Acer saccharinum* (Silver maple)

Relative abundance of woody species upper Monongahela 2001

Acer saccharinum (Silver maple) N	Spiraea spp. (Meadowsweet) N
Platanus occidentalis (Sycamore) N	Polygonum (Japanese knotweed) I
Salix spp. (Willow) N	Ailanthus altissima (Tree of heaven) I
Vitis spp. (Grapevine) N	Lonicera maackii (Amur honeysuckle) I
Ulmus spp. (Elm) N	Catalpa spp. (Catalpa) I
Cornus spp. (Dogwood) N	Morus alba (Mulberry) I
Physocarpus opulifolius (Ninebark) N	Acer platanoides (Norway maple) I
Toxicodendron radicans (Poison ivy) N	Rosa multiflora (Multiflora Rose) I
Parthenocissus quinquefolia (Virginia creeper) N	Celastrus orbiculatus (Oriental bittersweet) I
Robinia pseudoacacia (Black locust) N	Rhamnus frangula (Buckthorn Alder) I
Fraxinus spp. (Ash) N	Lonicera spp. (vining) (Honeysuckle) I
Populus deltoides (Cottonwood) N	Hibiscus syriacus (Rose-of-Sharon) I
Cephalanthus occidentalis (Buttonbush) N	Maclura pomifera (Osage Orange) I
Acer negundo (Box elder) N	Ligustrum vulgare (Privet) I
Rubus spp. (Blackberry, raspberry) N	Forsythia cv. (Forsythia) I
Rhus typhina (Staghorn sumac) N	Picea cv. (spruce cultivar) I
Sambucus canadensis (Elderberry) N	Wisteria floribunda (Wisteria) I
Alnus spp. (Alder) N	Prunus cv. (Cherry cultivar) I
Prunus spp. (Wild cherry) N	Pinus cv. (pine cultivar) I
Liriodendron tulipifera (Tulip tree) N	Lonicera spp. (shrub) (Honeysuckle) I
Quercus spp. (Oak) N	Berberis thunbergii (Barberry) I
Hydrangea arborescens (Hydrangeae) N	Salix babylonica (Weeping willow) I
Celtis occidentalis (Hackberry) N	Berberis cv. (Barberry cultivar) I
Tilia americana (Basswood) N	Malus pumila (Apple) I
Staphylia trifolia (Bladdernut) N	Rosa cv. (Rose) I
Crataegus spp. (Hawthorn) N	
Juglans spp. (Walnut) N	
Malus coronaria (Crabapple) N	
Ilex cv. (Holly cultivar) N	
Betula spp. (Birch) N	
Carya spp. (Hickory) N	
Amorpha fruitcosa (False indigo) N	
Acer saccharum (Sugar maple) N	
Gleditsia triacanthos (Honey locust) N	
Viburnum spp. (Arrow-wood) N	
Lindera benzoin (Spicebush) N	
Sassafras albidum (Sassafras) N	
Acer rubrum (Red maple) N	

I = Introduced  
N = Native

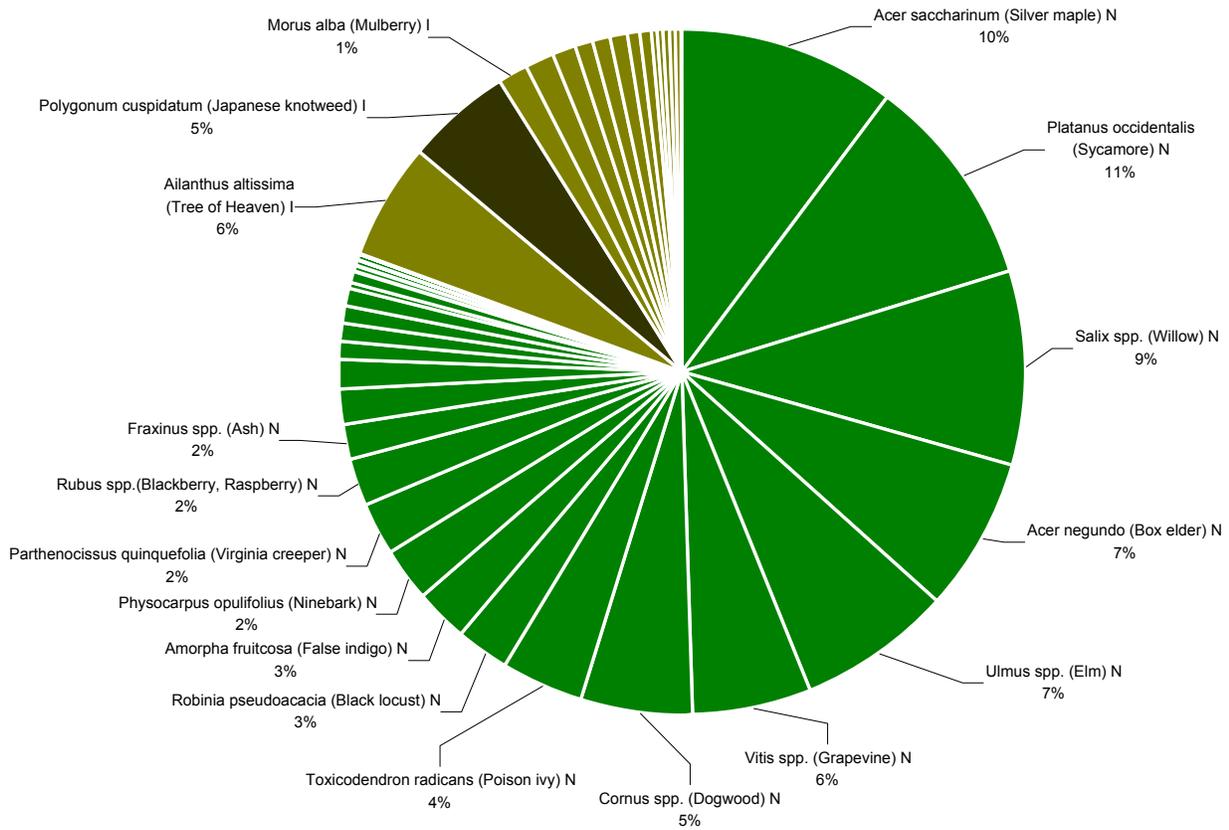


Fig. 3. Relative abundance of woody species upper Monongahela 2001

*Salix* spp. (Willow)



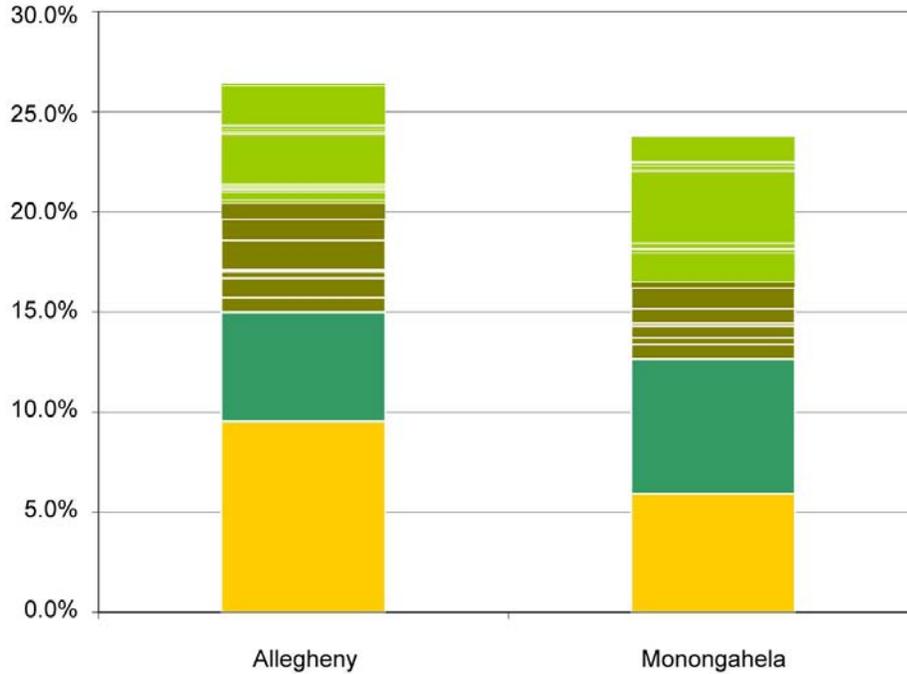


Fig. 4. Comparison of Native and Introduced Species abundances in Allegheny and Monongahela Rivers

**Native Species**

- Acer cv.
- Berberis cv.
- Betula cv.
- Catalpa spp.
- Forsythia cv.
- Hibiscus syriacus
- Ligustrum vulgare
- Maclura pomifera
- Malus pumila
- Morus alba
- Picea cv.
- Pinus cv.
- Prunus cv.
- Rosa cv.
- Salix babylonica
- Sorbus aucuparia
- Ulmus pumila
- Wisteria floribunda

**Introduced Species**

- Acer platanoides
- Berberis thunbergii
- Celastrus orbiculatus
- Lonicera maackii
- Lonicera spp. (shrub)
- Lonicera spp. (vining)
- Rhamnus frangula
- Rosa multiflora

**Dominant Introduced Species**

- Ailanthus altissima
- Polygonum cuspidatum

## Five major plant communities found on the Allegheny and Monongahela River Banks

### 1. Sycamore – (River Birch) – Box-Elder Floodplain Forest (photo; p.16)

This community type was the most common native plant community encountered on the Monongahela but was rarely found along the Allegheny River. These forests are typical of the floodplains of larger rivers in PA that receive periodic or seasonal flooding. They are characterized by dominance of *Platanus occidentalis* (sycamore) and *Acer negundo* (box elder) and in the eastern half of the state, *Betula nigra* (river birch). Typically river birch is not found in this forest type in the Ohio River drainage and was not seen in our survey. An example of this floodplain forest type can be found along the Allegheny at AL135-137.

### 2. Silver Maple Floodplain Forest (photo: p.18)

These forests occur on well-developed floodplains along large rivers. They are characterized by the predominance of *Acer saccharinum* (silver maple) but also include *Acer rubrum* (red maple), *Salix nigra* (black willow), *Acer negundo* (box elder), *Ulmus americana* (American elm) and *Ulmus rubra* (red elm). This forest type was the most common community type on the Allegheny. Large intact stretches of this floodplain community are found along the shores of the Allegheny. These stretches may be candidates for preservation efforts. Examples of this forest type can be found on Figure at AR109-AR129 and AL169-AL181.

### 3. Black Willow Scrub/Shrub Wetland (photo: p.20)

This community is typically found along riverbanks and stream habitats and is characterized by the predominance of *Salix nigra* (black willow) in association with several dogwood species, *Cornus* spp. as well as *Alnus rugosa* (speckled alder). In this survey we found the invasive species *Polygonum cuspidatum*, Japanese knotweed, co-occurring along the Allegheny as well as Monongahela Rivers. An example of this habitat can be found along the Allegheny on Figure at AR149-AR159.

### 4. Alder – Ninebark Wetland (photo: p.14)

These wetlands are characterized as “shrub swamps” dominated by Alder spp. and/or *Physocarpus opulifolius* (ninebark). In our surveys, the plant association reached the riverbank edges. This community was rarely found along the Allegheny River. An example of this community type can be found at AL077-AL081.

### 5. Water-willow (*Justicia americana*) – smartweed riverbed community (photo: p.22)

This herbaceous community is found on major rivers in areas where there is inundation of alluvium near the shore or sediment develops among rocks in the river and was common along the Monongahela and Allegheny. Plants in this community withstand flooding of their roots for most of the year. Water-willow is co-dominant with several species of smartweed (*Polygonum*) and several species of rushes (e.g. *Eleocharis*) in the mix. Although water-willow is an herbaceous species, it is an important native plant found along the shores of both the Monongahela and the Allegheny Rivers. Examples of this community type are found between AR105-109 and AR207-209.



Water-willow (*Justicia americana*)

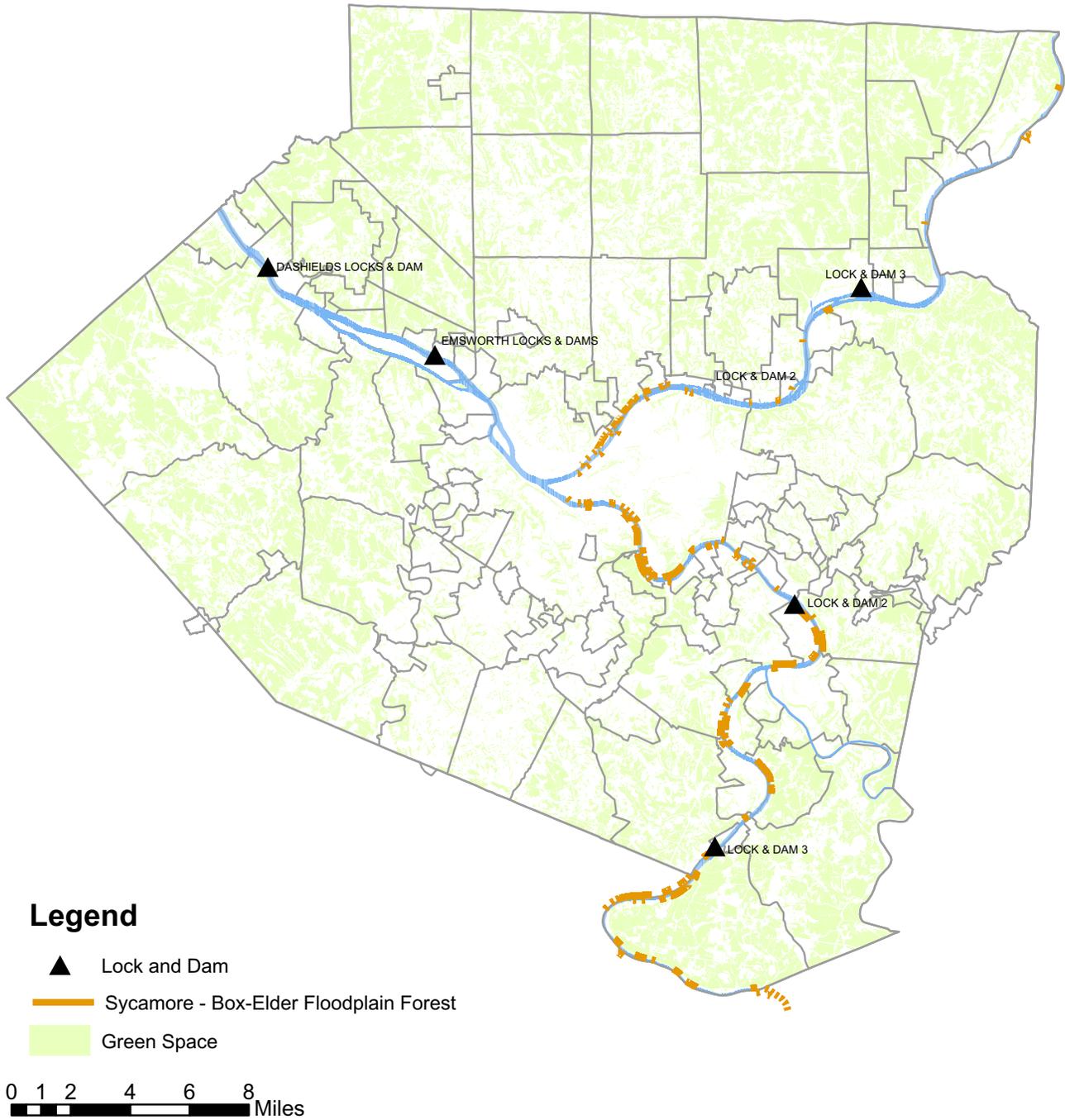


Fig. 6. Distribution of Sycamore - Box-elder Forest along the Monongahela and Allegheny Rivers

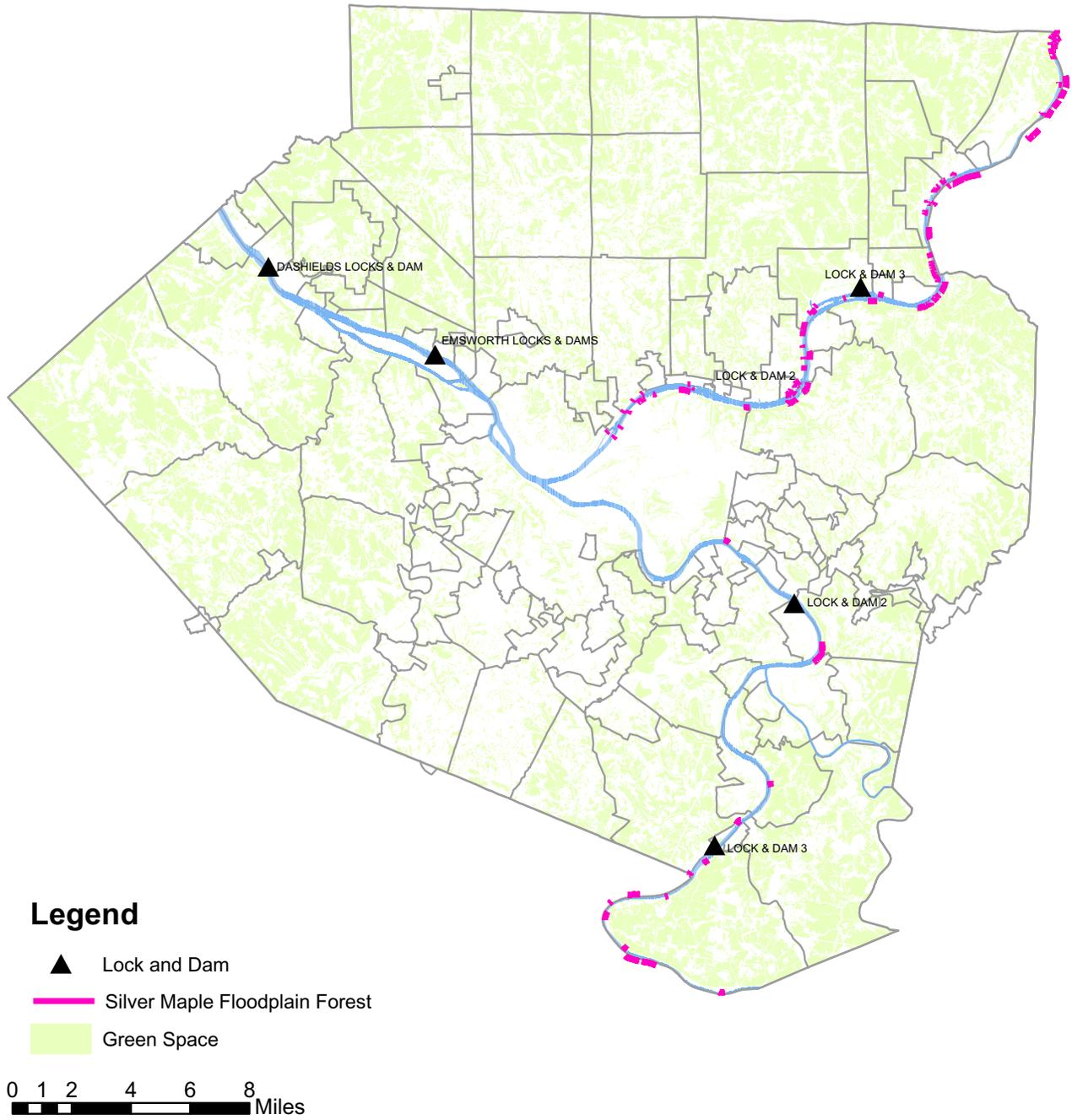


Fig. 7. Distribution of Silver - Maple Floodplain Forest along the Monongahela and Allegheny Rivers

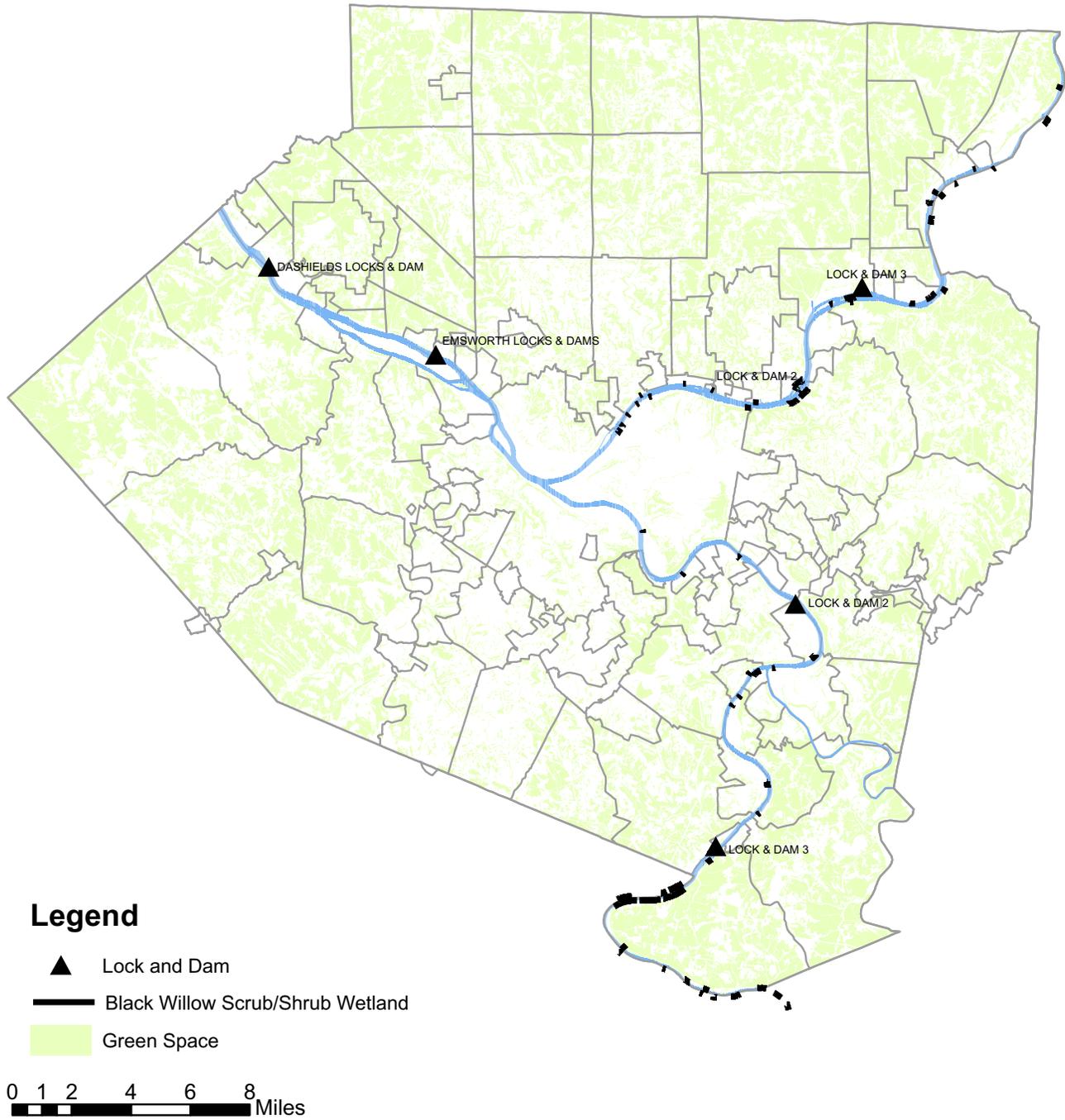


Fig. 8. Distribution of Black Willow Scrub / Shrub Wetland along the Monongahela and Allegheny Rivers

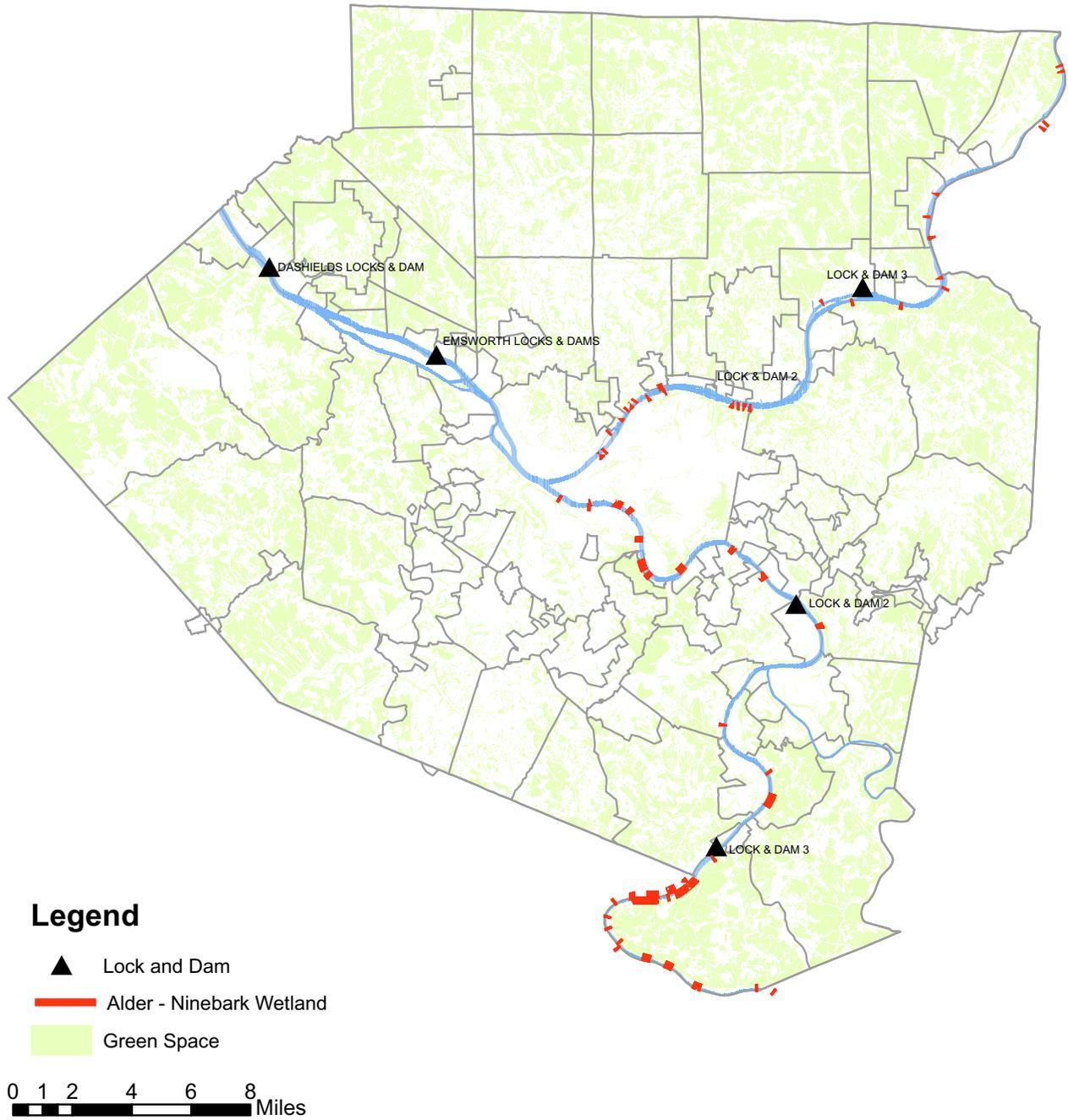


Fig. 9. Distribution of Alder - Ninebark Wetland along the Monongahela and Allegheny Rivers

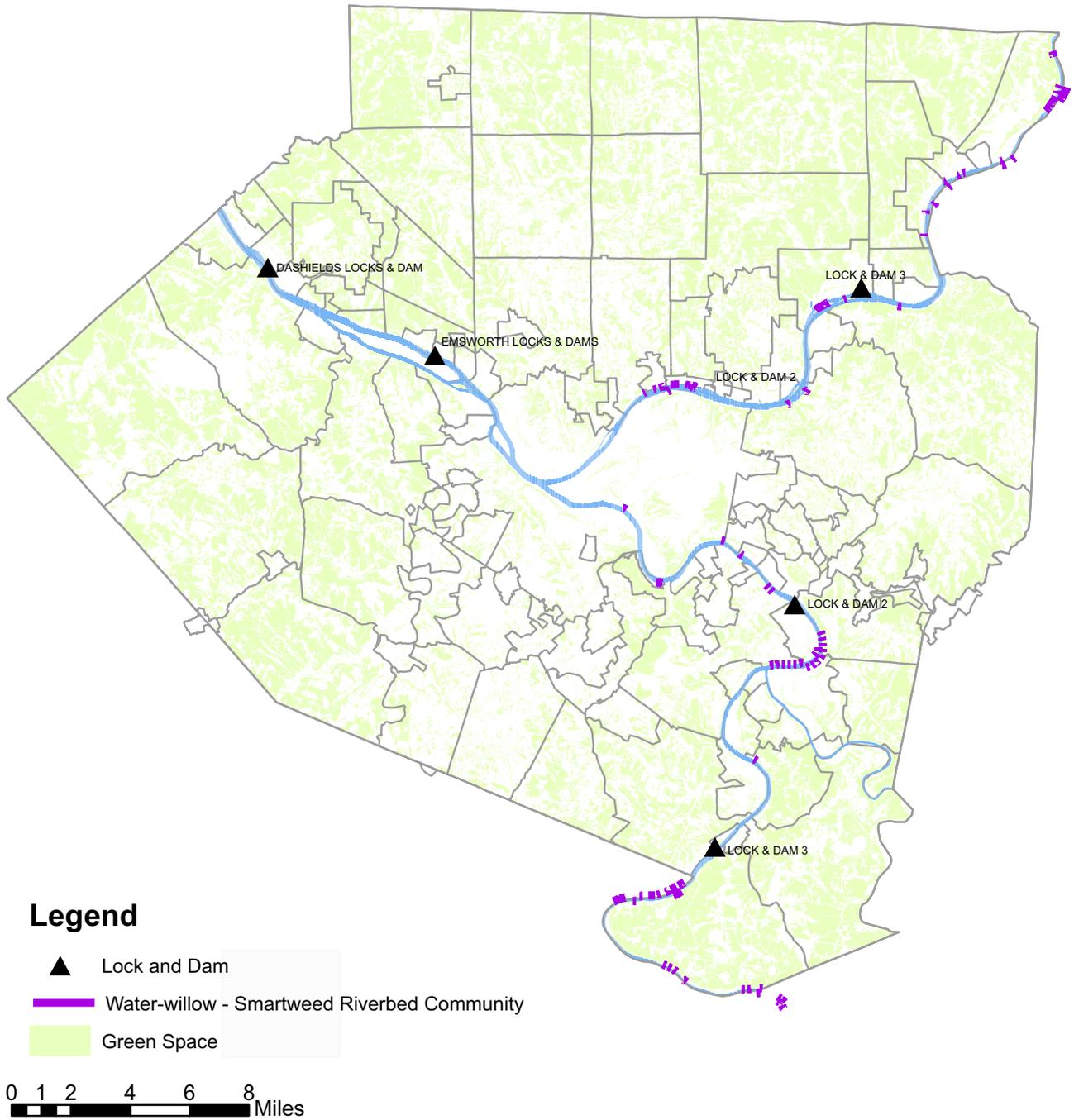


Fig. 10. Distribution of Water-Willow (*Justicia americana*) - Smartweed Riverbed Community along the Monongahela and Allegheny Rivers

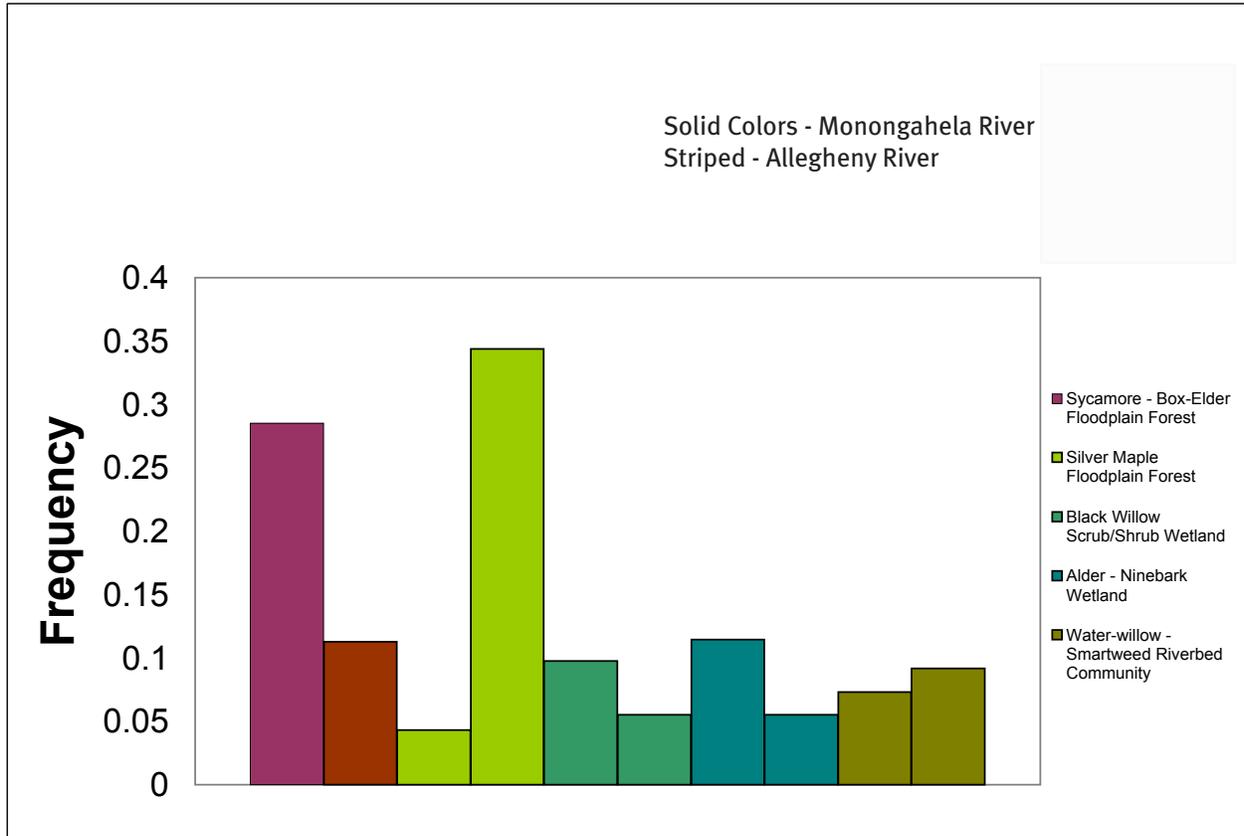


Fig. 11. Frequency of five major native community types along the Monongahela and Allegheny Rivers



Islands on the Allegheny River

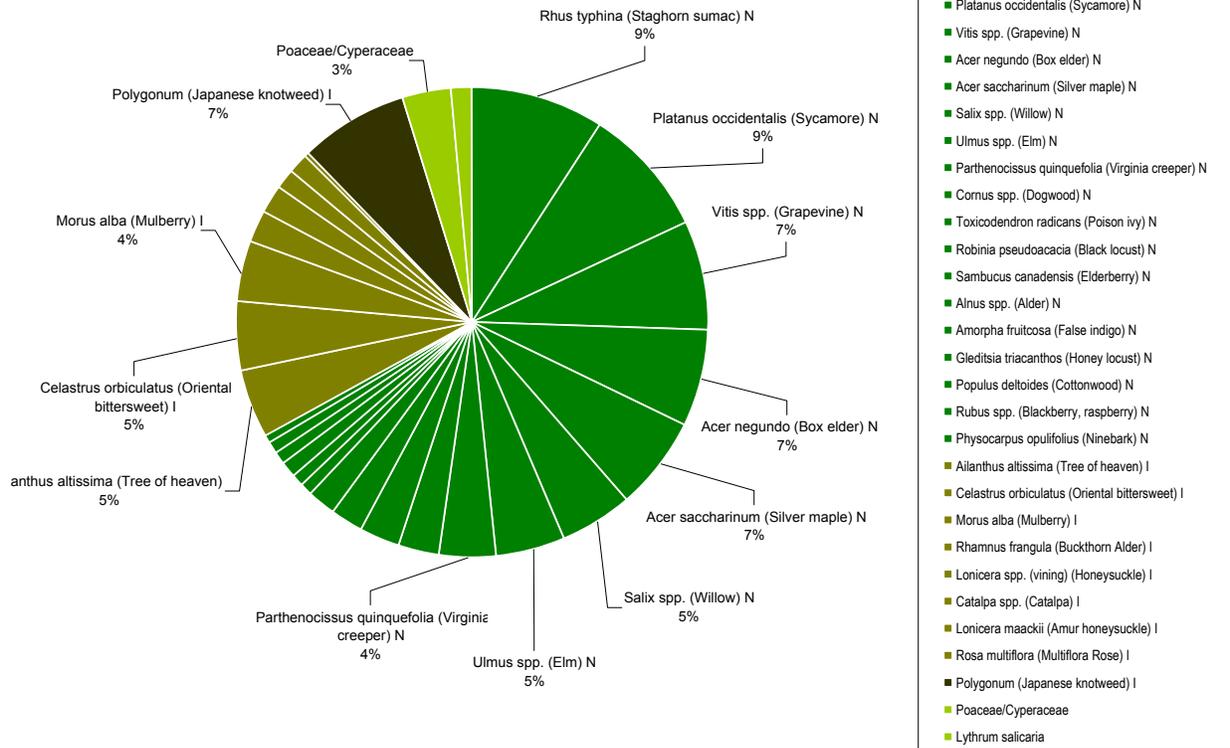


Fig. 12. Relative abundance of woody and herbaceous species on Herr's Island (A11 - Pittsburgh Pool)

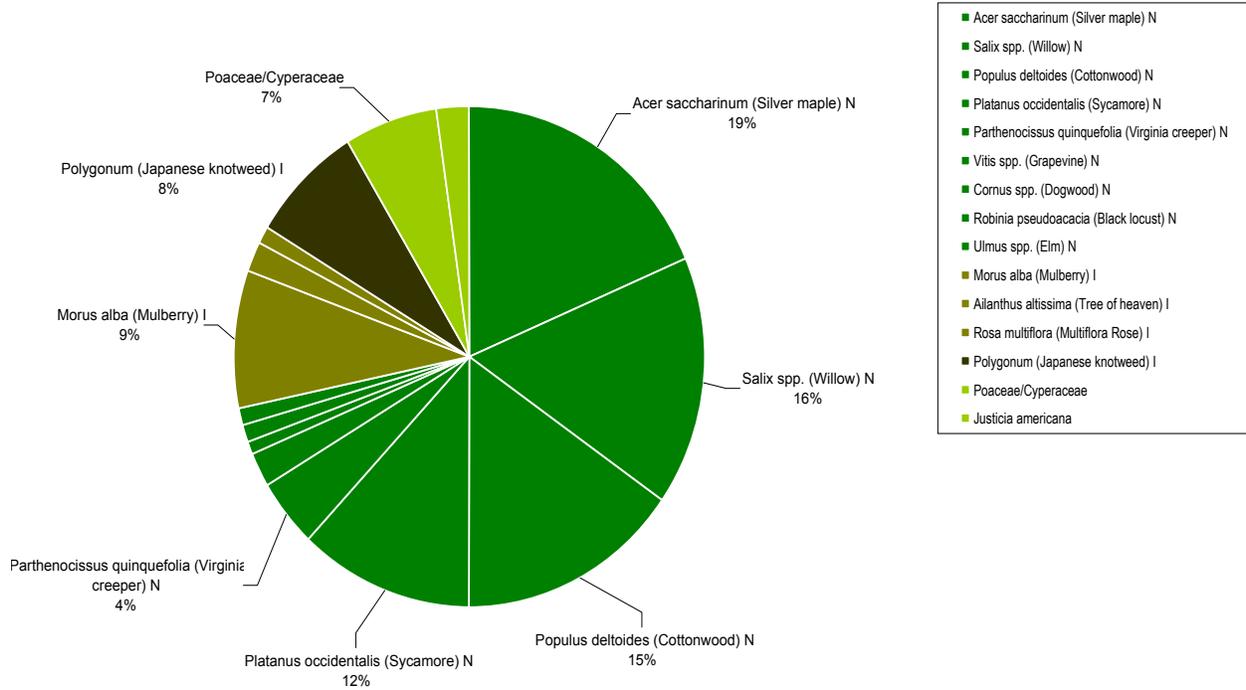


Fig. 13. Relative abundance of woody and herbaceous species on Six Mile Island (A12 - Pittsburgh Pool)

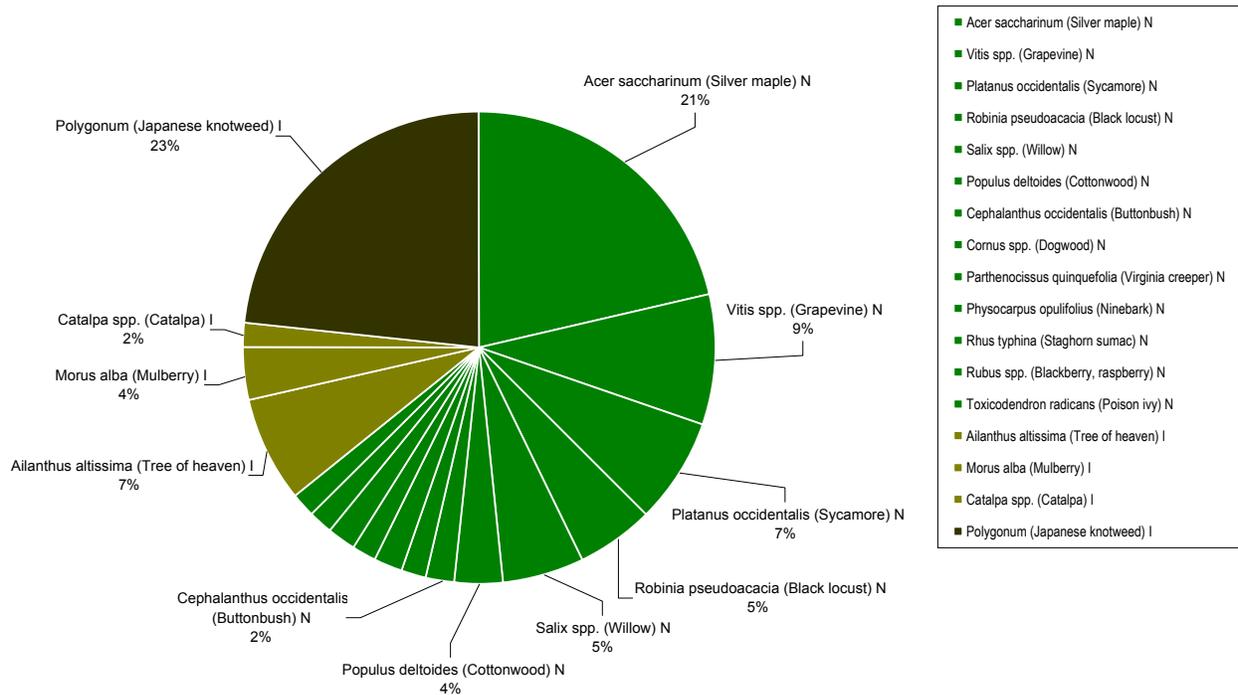


Fig. 14. Relative abundance of woody and herbaceous species on Sycamore Island (A13 - Pool 2)

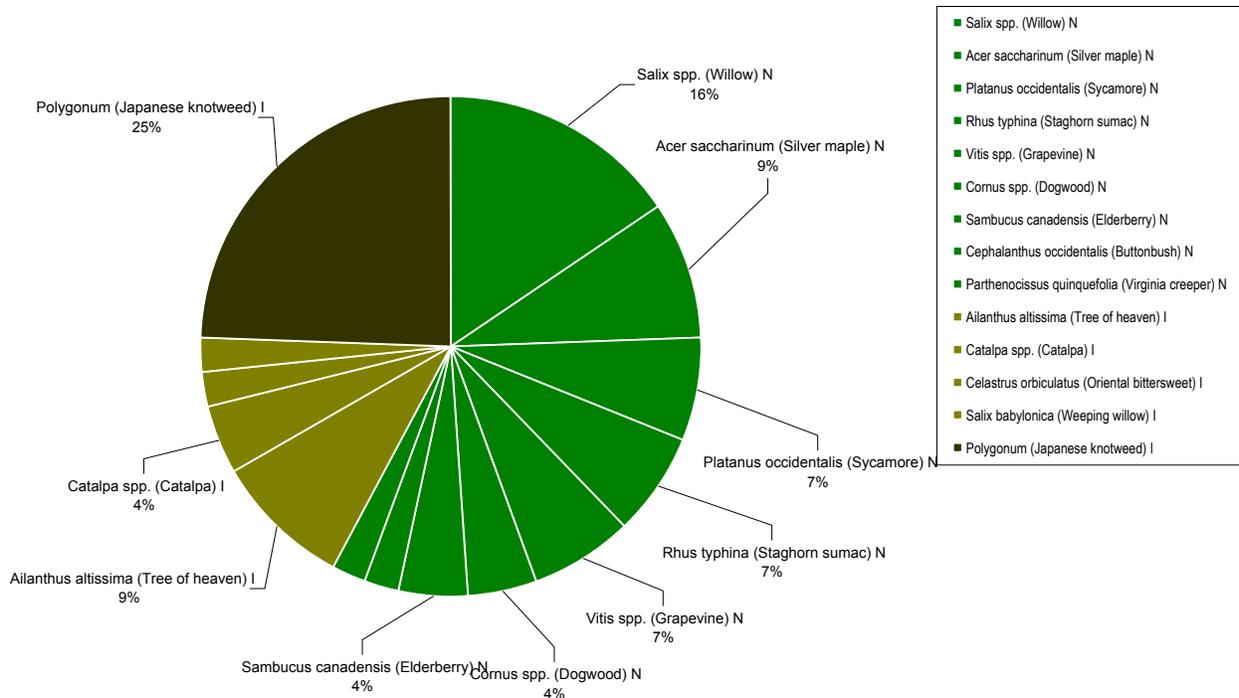


Fig. 15. Relative abundance of woody and herbaceous species on Nine Mile Island (A14 - Pool 2)

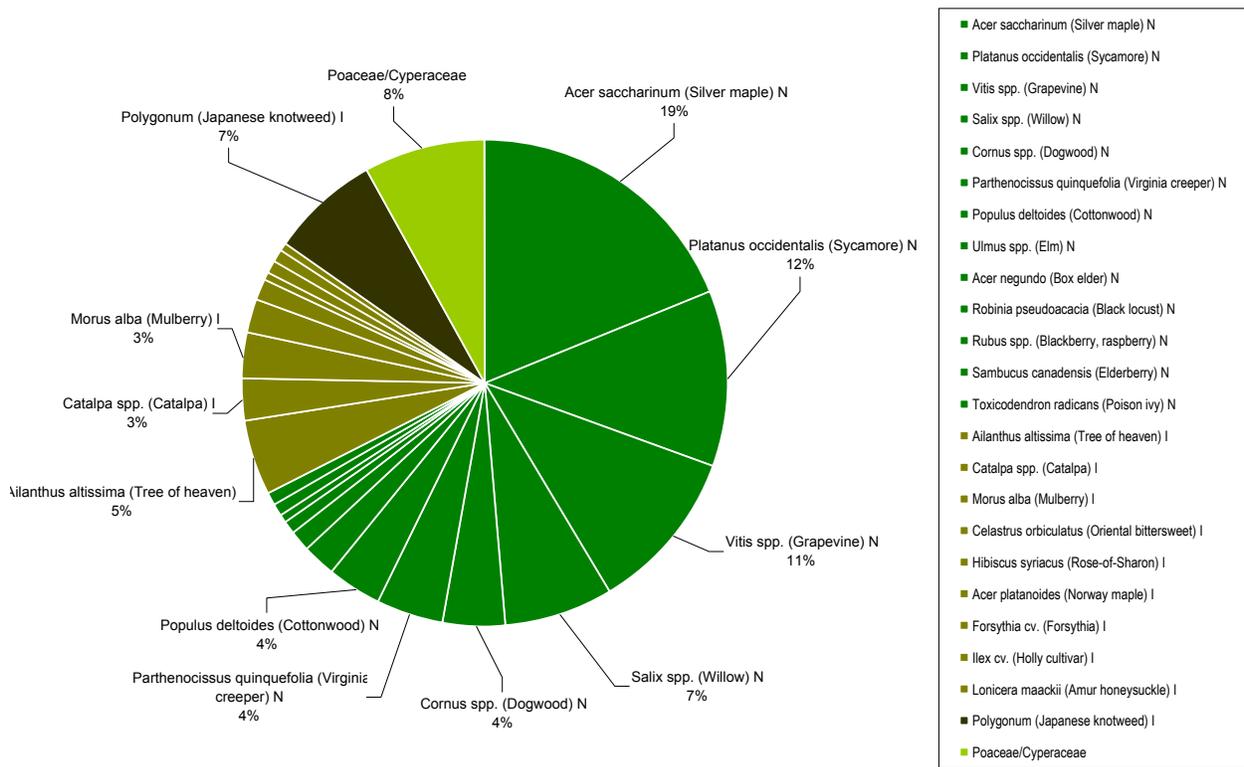


Fig. 16. Relative abundance of woody and herbaceous species on Twelve Mile Island (A15 - Pool 2)

3R2N Riverbank Vegetation, Phase 3 - 2002

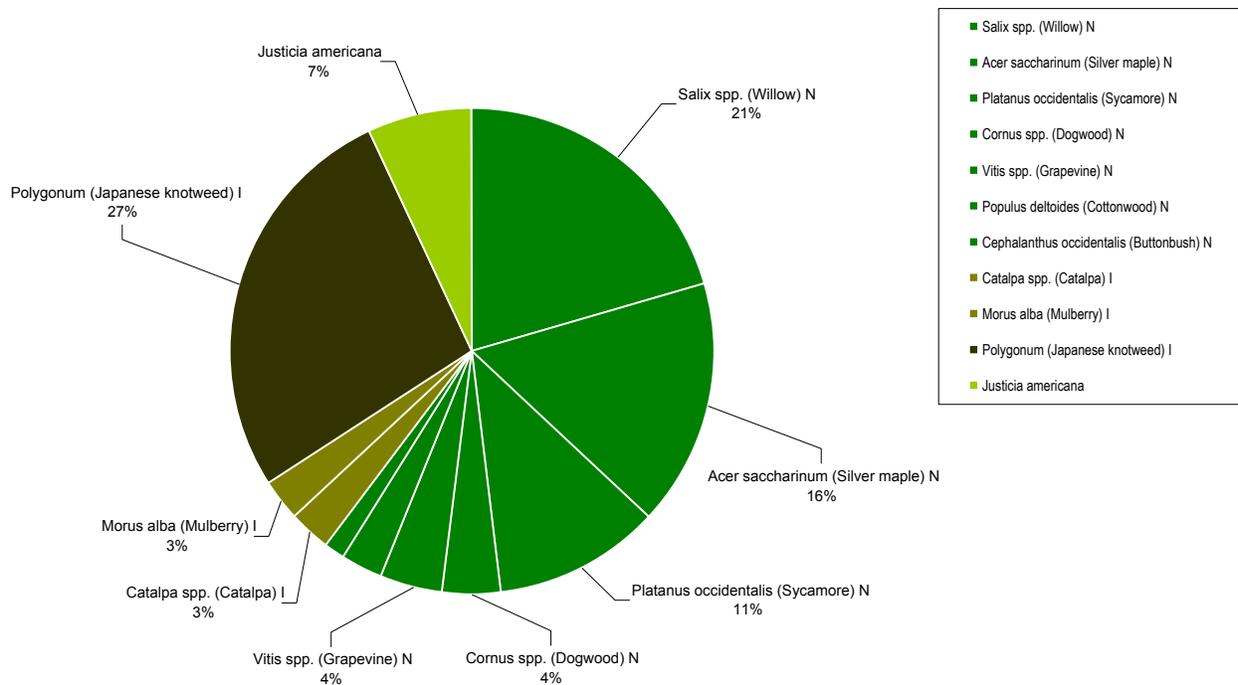


Fig. 17. Relative abundance of woody and herbaceous species on Fourteen Mile Island (A16 - Pool 2)

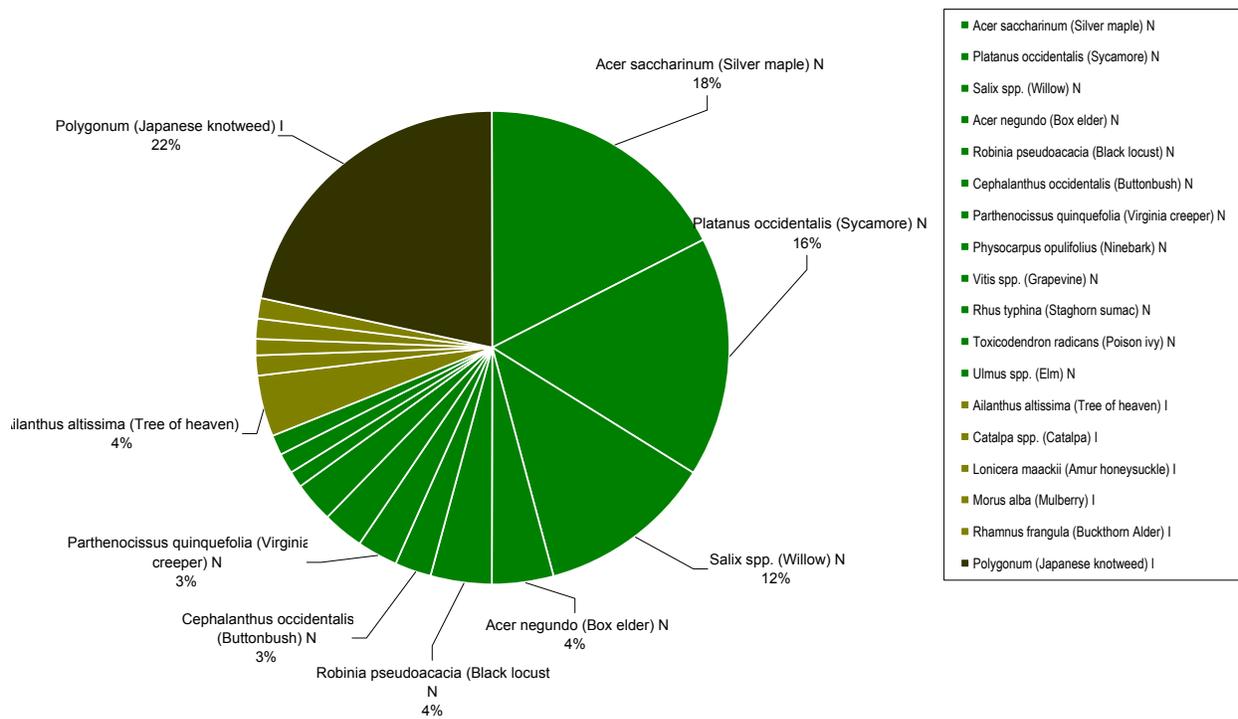


Fig. 18. Relative abundance of woody and herbaceous species on Jack's Island (A19 - Pool 4)

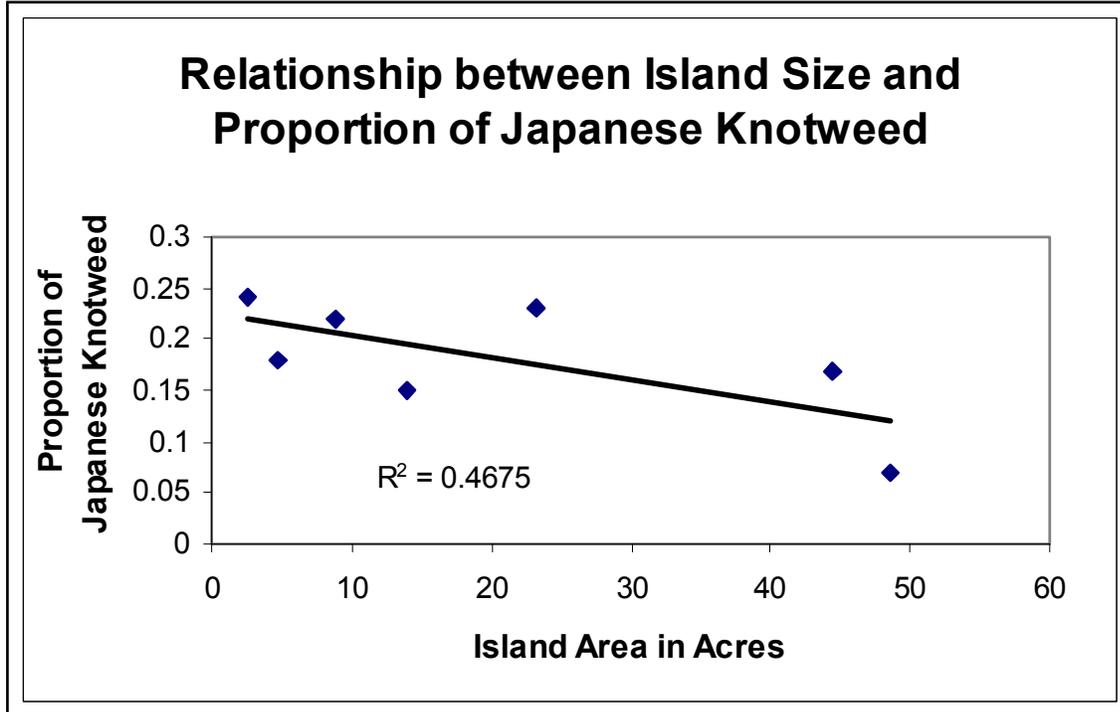


Fig. 19



Polygonum (Japanese knotweed)

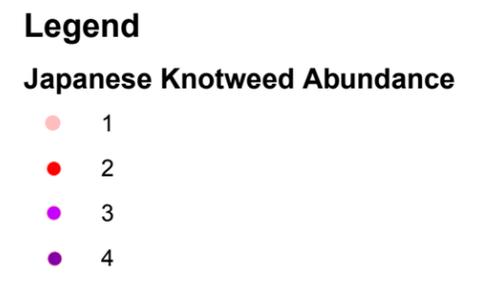
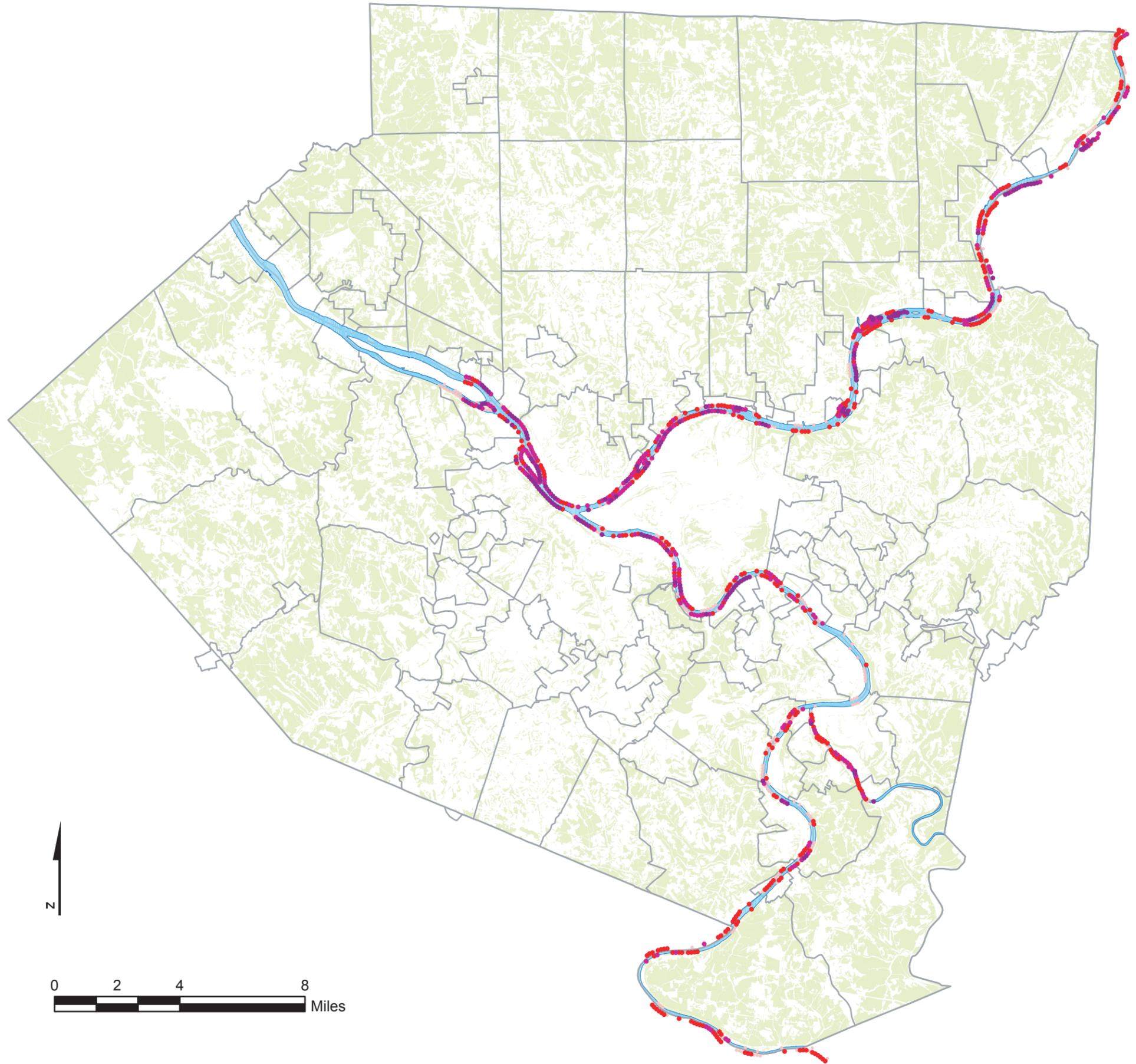
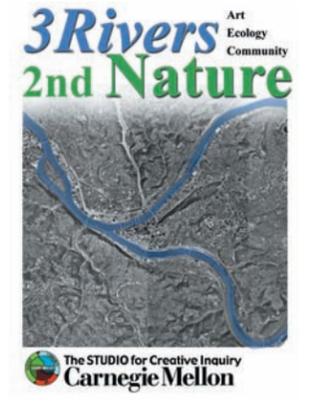


Figure 20: Distribution of Japanese Knotweed

Fig. 21. Continuity types

(1-7 types defined)

- 1 = No significant woody vegetation
- 2 = Woody vegetation clumped unevenly
- 3 = Woody vegetation clumped evenly
- 4 = Woody vegetation sporadic unevenly
- 5 = Woody vegetation sporadic evenly
- 6 = Woody vegetation continuous with only small breaks
- 7 = Woody vegetation continuous and dense



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For more information on the 3R2N project,  
see <http://3r2n.cfa.cmu.edu>

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Published by the STUDIO for Creative Inquiry  
Rm 111, College of Fine Arts, Carnegie Mellon University  
Pittsburgh, PA 15213  
412.268.3454  
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First Edition, First Printing