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Township of East Rockhill

APPENDIX C
Plant Lists for Wetland Management

Table C-1 References to Wetland Ecology and Habitat information

Author/Year	Title	Description
Dennison and Berry, eds. (1993)	Wetlands/Guide to Science, Law, and Technology	Regulatory definitions; general wetland ecology, types of wetlands; delineation; mitigation; risk assessment
Hammer (1992)	Creating Freshwater Wetlands	Handbook on types of wetlands, wetland structure and function, wetland creation, and operation and maintenance
Kadlec and Knight (1996)	Treatment Wetlands	Includes chapters on wetland ecology including water quality, soils, vegetation, and fauna
Majundar et al. eds. (1989)	Wetlands Ecology and Conservation; Emphasis in Pennsylvania	Collected chapters on wetland classification, hydrology, surface water quality, plant and animal communities, assessment and restoration, and recreation
Marble (1992)	A Guide to Wetland Functional Design	Guidebook to designing wetlands for habitat creation, restoration, and mitigation; describes wetland hydrology, chemistry, sediment interactions, foodchain support functions, and design for wildlife habitat
Merritt (1994)	Wetlands, Industry & Wildlife	Handbook on creating and managing wetlands for wildlife habitat in the context of industrial development

WATER

Author/Year	Title	Description
Mitsch and Gosselink (1993)	Wetlands	Complete textbook covering all facets of wetland ecology; hydrology; biogeochemistry; biological adaptations; ecosystem-level processes; wetland types; wetland management
Niering (1985)	Wetlands	Audubon Society nature field guide to wetland ecology; types of wetlands; descriptions and photographs of wetland flora and fauna
Payne (1992)	Techniques for Wildlife Habitat Management of Wetlands	Guidebook to creation of wetlands with focus on creation of wildlife habitat

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Pennsylvania Handbook of Best Management Practices for Developing Areas

Table C-2¹
Aquatic and Wetland Plants that can be Used in Constructive Wetlands

¹ Editor's Note: Table C-2 starts on the next even numbered page.

Table C-2
 Aquatic and Wetland Plants that can be Used in Constructive Wetlands

Plant Species	Common Name	Growth Form	Persistence	Growth/Spread Rate	Vegetative Growth Method	Spacing
<i>Acer negundo</i>	Box elder	Tree	Perennial; deciduous	Fast; 4.5 to 6 m / 8 yrs		
<i>Acer rubrum</i>	Red maple	Tree	Perennial; deciduous	Medium to fast; 5 to 7 m / 10 yrs		
<i>Acorus calamus</i>	Sweet flag	Emergent; herbaceous	Perennial; nonpersistent	Moderate; 15 cm/yr	Rhizome	0.3 to 0.9 m O.C.
<i>Alnus serrulata</i>	Smooth alder	Shrub	Perennial; deciduous	Rapid; 60 cm/yr		
<i>Carex spp.</i>	Sedges	Emergent; herbaceous	Perennial; nonpersistent	Slow to rapid	Rhizome	0.15 to 1.8 m O.C.
<i>Capriplantus occidentalis</i>	Butturbush	Shrub	Perennial; deciduous	Medium; 30 to 60 cm/yr		
<i>Ceratophyllum demersum</i>	Cornail	Submerged aquatic	Perennial	Rapid	Fragmentation	
<i>Cyperus esculentus</i>	Chufa	Emergent herbaceous	Perennial; nonpersistent	Rapid	Rhizome	
<i>Elodea canadensis</i>	Water hyacinth	Non-rooted floating aquatic	Perennial; nonpersistent	Rapid	Stolons	
<i>Hydrocotyle umbellata</i>	Water-pennywort	Emergent to floating; herbaceous	Perennial; nonpersistent	Rapid	Stolons or rhizomes	
<i>Iris versicolor</i>	Blue flag	Emergent; herbaceous	Perennial; nonpersistent	Slow; <60 cm/yr	Bulb	0.15 to 0.45 m O.C.
<i>Juncus effusus</i>	Soft rush	Emergent; herbaceous	Perennial; persistent	Slow; <6 cm/yr	Rhizome	0.15 to 0.45 m O.C.
<i>Lemna minor</i>	Common duckweed	Non-rooted floating aquatic	Perennial; nonpersistent	Rapid	Fragmentation	
<i>Najas flexilis</i>	Spatterdock	Rooted floating to emergent; herbaceous	Perennial; nonpersistent	Slow; <6 cm/yr	Rhizome	0.15 to 0.45 m O.C.
<i>Nymphaea odorata</i>	Fragrant water lily	Rooted floating aquatic	Perennial; nonpersistent		Rhizome	
<i>Nyssa sylvatica</i>	Black gum	Tree	Perennial; deciduous	Slow	Suckers	

Propegules	Habitat	Shade Tolerance	Wildlife Benefits	Water Regime	Salinity Tolerance
Container	Forested wetlands	Full sun	Songbirds; waterbirds; small mammals	Irregular to regular inundation or saturation	Fresh water; resistant to salt water
Seed; whip; bare root	Fresh marsh; swamp; alluvial woods	Partial shade	Gamebirds; songbirds; browners	Irregular to seasonally inundated or saturated	Fresh water; < 0.5 ppt
Rhizome; bare root plant	Fresh to brackish marshes	Partial shade	Waterfowl; muskrat	Regular to permanent inundation; < 15 cm	Fresh to brackish; < 10 ppt
Container	Fresh marshes and swamps	Full sun	Songbirds; gamebirds; ducks; woodcock; blackbirds; beaver	Seasonal to regular inundation; up to 7 cm	Fresh water; < 0.5 ppt
Seed; bare root plant	Fresh marshes; swamps; lake edges	Full shade to full sun	Rails; sparrows; snipe; songbirds; ducks; moose	Irregularly to permanent inundation; <0.15 cm	Fresh water; <0.5 ppt
Seedling; bare rootplant	Fresh marshes; swamps; edge of ponds	Full shade to full sun	Ducks; deer; rails; blackbirds; muskrats; beaver	Irregular to permanent inundation; up to 90 cm	Fresh water; tolerates infrequent salt water
Whole Plant	Lakes; Slow Streams		Ducks; coots; geese; grebes; swans; marshbirds; muskrats	Regular to permanent inundation; 0.3 to 1.5 m	Fresh water; <0.05 ppt
Seed; tuber	Fresh marshes; wet meadows	Full sun	Waterfowl; songbirds; small mammals	Irregular to regular inundation; <0.3 m	Fresh water; <0.5 ppt
Whole plants	Fresh water ponds and sluggish streams	Full sun	Coots; cover for invertebrates and fish	Permanent inundation	Fresh water; < 0.5 ppt
Bare root plant; whole plant	Shoralines; shallow marshes	Partial shade	Wildfowl; waterfowl	Regular to permanent inundation; <30 cm	Fresh water; <0.5 ppt
Seed; bulb; bare root plant	Marshes; wet meadows; swamps	Partial shade	Muskrat; wildfowl; marsh birds	Regular to permanent inundation; < 15 cm	Fresh to moderately brackish
Seed; rhizome; bare root plant	Marshes; shrub swamps; wet meadows	Full sun	Wildfowl; marshbirds; songbirds; waterfowl	Regular to permanent inundation; <30 cm	Fresh water; <0.5 ppt
Whole plant	Lakes and ponds	Partial shade	Ducks; gallinules; coots; rails; geese; beaver; muskrat; small mammals	Permanent inundation	Fresh water; <0.05 ppt
Bare root plant	Marshes; swamps; ponds	Partial shade	Ducks; muskrat; fish	Regular to permanent inundation; up to 1.8 m	Fresh water to infrequent brackish
Bare root seedling	Ponds and lakes	Partial shade	Cranes; ducks; beaver; muskrat; moose	Permanent inundation; 0.3 to 0.8 m	Fresh water; <0.05 ppt
Seed; bare root plant	Forested wetlands; swamps	Partial shade	Ducks; woodpeckers; songbirds; aquatic furbearers	Irregular to permanent inundation	Fresh water to infrequent brackish

Table C-2 (cont.)
 Aquatic and Wetland Plants that can be Used in Constructive Wetlands

Plant Species	Common Name	Growth Form	Persistence	Growth/Spread Rate	Vegetative Growth Method	Spacing
<i>Potamogeton nodosus</i>	Potamogeton	Emergent herbaceous	Perennial; nonpersistent	Moderate; 15 cm/yr	Rhizome	0.3 to 0.9 m O.C.
<i>Populus deltoides</i>	Eastern cottonwood	Tree	Perennial; deciduous	Fast; 1.2 to 1.8 m/yr		
<i>Potamogeton nodosus</i>	Long-leaved pond weed	Rooted submerged aquatic	Perennial; nonpersistent	Rapid	Rhizome	0.6 to 1.8 m O.C.
<i>Quercus bicolor</i>	Swamp white oak	Tree	Perennial; deciduous	Fast; 0.4 to 0.6 m/yr		
<i>Rosa palustris</i>	Swamp rose	Shrub	Perennial; deciduous			
<i>Sagittaria latifolia</i>	Duck potato	Emergent; herbaceous	Perennial; nonpersistent	Rapid; > 30 cm/yr	Runners; tubers	0.6 to 1.8 m O.C.
<i>Salix nigra</i>	Black willow	Tree	Perennial; deciduous	Fast; 0.9 to 1.8 m/yr	Suckers	
<i>Scirpus acutus</i>	Hardstem bulrush	Emergent; herbaceous	Perennial; persistent	Rapid	Rhizome	0.9 to 1.8 m O.C.
<i>Scirpus americanus</i>	Olney's bulrush	Emergent; herbaceous	Perennial; semi-persistent	Rapid; > 30 cm/yr	Rhizome	0.6 to 1.8 m O.C.
<i>Scirpus cyperinus</i>	Wool grass	Emergent; herbaceous	Perennial; persistent	Moderate; 15 cm/yr	Rhizome	0.3 to 0.9 m O.C.
<i>Scirpus validus</i>	Soft stem bulrush	Emergent; herbaceous	Perennial; persistent	Rapid; > 30 cm/yr	Rhizome	0.6 to 1.8 m O.C.
<i>Spergularia eurycarpa</i>	Giant bur-reed	Emergent; herbaceous	Perennial; nonpersistent	Rapid; > 30 cm/yr	Rhizome	0.6 to 1.8 m O.C.
<i>Taxodium distichum</i>	Bald cypress	Tree	Perennial; deciduous	Medium; 0.3 to 0.6 m/yr		
<i>Typha angustifolia</i>	Narrow-leaved cattail	Emergent; herbaceous	Perennial; persistent	Rapid; > 30 cm/yr	Rhizome	0.6 to 1.8 m O.C.
<i>Typha latifolia</i>	Broad-leaved cattail	Emergent; herbaceous	Perennial; persistent	Rapid; > 30 cm/yr	Rhizome	0.6 to 1.8 m O.C.

Source: Adapted with modifications from Thunhorst (1993).

Propagules	Habitat	Shade Tolerance	Wildlife Benefits	Water Regime	Salinity Tolerance
Rhizome; bare root plant	Fresh to brackish marshes; edges of ponds	Partial shade	Ducks; muskrat; fish	Regular to permanent; up to 30 cm	Fresh to moderately brackish; up to 3 ppt
Bare root plant; container	Forested wetlands	Full sun	Gamebirds; songbirds; waterfowl; aquatic furbearers; browsers	Seasonal inundation or saturation	Fresh water to infrequent brackish
Seed; bare root plant	Streams; lakes; ponds		Waterfowl; marshbirds; shorebirds; aquatic furbearers; moose; fish	Regular to permanent inundation; 0.3 to 1.8 m	Fresh water; <0.05 ppt
Bare root plant; container	Forested wetlands	Partial shade	Waterfowl; marshbirds; shorebirds; gamebirds; songbirds; mammals	Irregular to seasonal inundation or saturation	Fresh water to infrequent brackish
Container	Fresh marshes; shrub swamps	Full sun	Songbirds; gamebirds	Irregular to regular soil saturation	Fresh water; < 0.5 ppt
uber; bare root plant	Fresh marshes; swamps; edge of ponds	Partial shade	Ducks; swans; rails; muskrats; beaver	Regular to permanent inundation; up to 60 cm	Fresh water; <0.5 ppt
Bare root; container	Fresh marshes; swamps	Full sun	Gamebirds; ducks; songbirds; woodpeckers; aquatic mammals	Irregular to permanent inundation	Fresh water; < 0.5 ppt
Seed; rhizome	Fresh to brackish marshes	Full sun	Ducks; geese; swans; cranes; shorebirds; rails; snipe; muskrats; fish	Regular to permanent; up to 90 cm	Fresh to brackish
Rhizome; bare root plant	Brackish and alkali marshes	Full sun	Ducks; geese; swans; cranes; shorebirds; rails; snipe; muskrats; fish	Regular to permanent inundation; up to 30 cm	Fresh to brackish water; up to 15 ppt
Rhizome; bare root plant	Fresh marshes; wet meadows; sloughs; swamps	Full sun	Ducks; geese; swans; cranes; shorebirds; rails; snipe; muskrats; fish	Irregular to seasonal inundation	Fresh water; < 0.5 ppt
Rhizome; bare root plant	Fresh and brackish marshes	Full sun	Ducks; geese; swans; cranes; shorebirds; rails; snipe; muskrats; fish	Regular to permanent inundation; up to 30 cm	Fresh to brackish water; up to 5 ppt
Seed; rhizome; bare root plant	Marshes; swamps; pond shorelines	Partial shade	Ducks; swan; geese; beaver; muskrat;	Regular to permanent inundation; up to 30 cm	Fresh water; < 0.5 ppt
Seed; bare root; container	Fresh water swamps; pond and lake margins	Partial shade	Perching and nesting site for birds	Irregular to permanent inundation	Fresh water; < 0.5 ppt
Rhizome; bare root plant	Fresh and brackish marshes; pond edges	Full sun	Geese; ducks; muskrats; beaver; blackbirds; fish	Irregular to permanent inundation; up to 30 cm	Fresh to brackish; up to 15 ppt
Rhizome; bare root plant	Fresh marshes; pond margins	Full sun	Geese; ducks; muskrats; beaver; blackbirds; fish	Irregular to permanent inundation; up to 30 cm	Fresh water; < 0.5 ppt

