

Midwest Ephemeral Pond

Site Characteristics: This community may occur throughout shallow depressions that flood for several weeks in the spring but draw down by early summer. This community may also occur along the shores of ponds, ditches, wetlands (riverine and pothole) and sloughs as water recedes over the growing season. These basins may be kettles in glacial deposits, low spots in outwash plains, depressions in floodplains, lake and oxbow margins, or a wide variety of human or beaver-created wetlands. These ponds have low concentrations of ions and salts and bottoms composed of finer sediments, organic muck, clay, or silt. The community is subjected to frequent, long duration flooding or ponding. The community may occur on glacial sand deposits where deep sands produce an open groundwater aquifer that floods surface depressions during wet years.

Vegetation Characteristics: A wide variety of forbs and graminoids may colonize the exposed substrate. Repeated flooding may eliminate perennial species and favor annuals. Common plants include Beggarticks, Flatspike Sedges, Barnyardgrass, and Smartweed species. Annuals are the most common species growing within and along margins of drying basins, including some of the major dominants, such as Hall's Bulrush, Valley Redstem, and various Smartweed species. Dominant perennials include Broadleaf Cattail, Narrowleaf Cattail, Softstem Bulrush, and Water Smartweed. Rare species found in these sand ponds include Claspingleaf Doll's Daisy and Hall's Bulrush.

Range:

Conservation Status: G4 - Apparently Secure

Management Considerations: This community is a widespread early successional type that is of high importance to certain amphibians and invertebrates. Seedbanks are an important source of redevelopment, with some seeds remaining viable for many years after drainage or drying. Repeated flooding may eliminate perennial species and favor annuals. Basins within agricultural fields are typically farmed during dry years, and native vegetation only develops during wet years, when ponds retain water.

Iowa NRCS Plant Community Description

This community description is a compilation of the Community Association and it's over-riding Community Alliance descriptions as provided by NatureServe (www.natureserve.org/explorer). Where necessary, community descriptions were adapted as recommended by Iowa plant community experts.

3/18/2009

MIDWEST EPHEMERAL POND						
SCIENTIFIC NAME	COMMON NAME	STRATA	FUNCTIONAL GROUP	IA CofC	SEEDS/LB	STATE STATUS
<i>Ammannia coccinea</i>	Toothcup	Herbaceous Layer	A-FORB	4	600000	
<i>Bidens cernua</i>	Nodding bur marigold	Herbaceous Layer	A-FORB	2	336000	
<i>Bidens frondosa</i>	Beggar-ticks	Herbaceous Layer	A-FORB	3	80000	
<i>Bidens spp.</i>	Beggartick	Herbaceous Layer	A-FORB			
<i>Boehmeria cylindrica</i>	Bog hemp	Herbaceous Layer	P-FORB	5	325000	
<i>Carex aquatilis</i>	Water sedge	Herbaceous Layer	P-SEDGE, COOL SEASON	7	795776	
<i>Carex lupulina</i>	Common hop sedge	Herbaceous Layer	P-SEDGE, COOL SEASON	6	52800	
<i>Cephalanthus occidentalis</i>	Buttonbush	Shrub Layer	SHRUB	6	96000	
<i>Cyperus erythrorhizos</i>	Red-rooted nutsedge	Herbaceous Layer	A-SEDGE, WARM SEASON	2		
<i>Cyperus esculentus</i>	Yellow nutgrass	Herbaceous Layer	P-SEDGE, WARM SEASON	0		
<i>Cyperus odoratus squarrosus</i>	Fragrant flatsedge	Herbaceous Layer	A-SEDGE, WARM SEASON	2		
<i>Cyperus spp</i>	Nutrushes	Herbaceous Layer				
<i>Cyperus strigosus</i>	Long-scaled nutsedge	Herbaceous Layer	P-SEDGE, WARM SEASON	2		
<i>Echinochloa muricata</i>	Spiny barnyard grass	Herbaceous Layer	A-GRASS, WARM SEASON	3		
<i>Helianthus annuus</i>	Common sunflower	Herbaceous Layer	A-FORB	0	46919	
<i>Juncus effusus</i>	Common rush	Herbaceous Layer	P-RUSH, COOL SEASON	4	16000000	SC
<i>Leersia spp.</i>	Cutgrass	Herbaceous Layer	P-GRASS, COOL SEASON			
<i>Lemna minor</i>	Duckweed	Floating-Leaved	A-FORB	3		
<i>Nelumbo lutea</i>	American lotus	Floating-Leaved	P-FORB	5		
<i>Peltandra virginica</i>	Arrow arum	Herbaceous Layer	P-FORB	10		E
<i>Penthorum sedoides</i>	Ditch stonecrop	Herbaceous Layer	P-FORB	3	20800000	
<i>Polygonum amphibium emersum</i>	Water smartweed	Herbaceous Layer, Dominant	P-FORB	3	125000	
<i>Polygonum hydropiperoides</i>	Mild water pepper	Herbaceous Layer	P-FORB	6	125000	
<i>Polygonum lapathifolium</i>	Curttop lady's thumb	Herbaceous Layer	A-FORB	0	251996	
<i>Polygonum pensylvanicum laevigatum</i>	Pinkweed	Herbaceous Layer	A-FORB	0	208000	
<i>Polygonum punctatum</i>	Water smartweed	Herbaceous Layer	A-FORB	4	124800	
<i>Polygonum spp.</i>	Knotweed	Herbaceous Layer				

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SCIENTIFIC NAME	COMMON NAME	STRATA	FUNCTIONAL GROUP	IA CofC	SEEDS/LB	STATE STATUS
<i>Potamogeton natans</i>	Common pondweed	Floating-Leaved	P-FORB	10		
<i>Potamogeton pectinata</i>	Sago pondweed	Floating-Leaved	P-FORB	3		
<i>Rumex spp.</i>	Dock	Herbaceous Layer	P-FORB			
<i>Sagittaria brevirostra</i>	Short-beaked arrowleaf	Herbaceous Layer	P-FORB	4		
<i>Schoenoplectus acutus</i>	Hard-stemmed bulrush	Herbaceous Layer	P-SEDGE, COOL SEASON	4	206400	
<i>Schoenoplectus hallii</i>	Hall's tufted bulrush	Herbaceous Layer	A-SEDGE, COOL SEASON	10		SC
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed bulrush	Herbaceous Layer, Dominant	P-SEDGE, COOL SEASON	3	496000	
<i>Scirpus cyperinus</i>	Wooly bulrush	Herbaceous Layer	P-SEDGE, COOL SEASON	4	27200000	
<i>Spirodela polyrrhiza</i>	Greater duckweed	Floating-Leaved	A-FORB	6		
<i>Typha angustifolia</i>	Narrow-leaved cattail	Herbaceous Layer, Dominant	P-FORB	1	2267962	
<i>Typha latifolia</i>	Common cattail	Herbaceous Layer, Dominant	P-FORB	1	7559873	
<i>Utricularia gibba</i>	Humped bladderwort	Floating-Leaved	P-FORB	10		SC
<i>Wolffia spp</i>	Watermeal	Floating-Leaved	P-FORB			

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SCIENTIFIC NAME	COMMON NAME	SEEDS PER LB	SEEDS PER FT ²	% OF MIX	COST PER LB	COST PER FT ²	LBS PER ACRE	CC	FUNCTIONAL GROUP
<i>Alisma subcordatum</i>	Water plantain	825,000	1.55	3.9%		\$0.0000	0.08	3	P-FORB
<i>Amorpha fruticosa</i>	Indigo bush, false indigo	59,200	0.31	0.8%		\$0.0000	0.23	5	SUB-SHRUB, LEGUME
<i>Asclepias incarnata</i>	Swamp milkweed	76,800	0.25	0.6%		\$0.0000	0.14	4	P-FORB
<i>Bidens cernua</i>	Nodding bur marigold	336,000	1.30	3.3%		\$0.0000	0.17	2	A-FORB
<i>Bidens frondosa</i>	Beggar-ticks	80,000	0.30	0.8%		\$0.0000	0.16	3	A-FORB
<i>Calamagrostis canadensis</i>	Bluejoint	4,480,000	1.07	2.7%		\$0.0000	0.01	5	P-GRASS, COOL SEASON
<i>Carex atherodes</i>	Hairy-leaved lake sedge	464,000	0.40	1.0%		\$0.0000	0.04	8	P-SEDGE, COOL SEASON
<i>Carex comosa</i>	Bristly sedge	480,000	1.00	2.5%		\$0.0000	0.09	6	P-SEDGE, COOL SEASON
<i>Carex hystericina</i>	Porcupine sedge	480,000	1.00	2.5%		\$0.0000	0.09	5	P-SEDGE, COOL SEASON
<i>Carex lacustris</i>	Common lake sedge	512,000	0.25	0.6%		\$0.0000	0.02	7	P-SEDGE, COOL SEASON
<i>Carex lupulina</i>	Common hop sedge	52,800	0.15	0.4%		\$0.0000	0.12	6	P-SEDGE, COOL SEASON
<i>Carex pellita</i>	Wooly sedge	448,000	0.25	0.6%		\$0.0000	0.02	4	P-SEDGE, COOL SEASON
<i>Carex scoparia</i>	Lance-fruited oval sedge	1,344,000	1.00	2.5%		\$0.0000	0.03	5	P-SEDGE, COOL SEASON
<i>Carex stipata</i>	Common fox sedge	544,000	1.00	2.5%		\$0.0000	0.08	5	P-SEDGE, COOL SEASON
<i>Carex stricta</i>	Common tussock sedge	848,000	0.25	0.6%		\$0.0000	0.01	6	P-SEDGE, COOL SEASON
<i>Carex tribuloides</i>	Awl-fruited oval sedge	1,920,000	1.00	2.5%		\$0.0000	0.02	3	P-SEDGE, COOL SEASON
<i>Carex trichocarpa</i>	Hairy-fruited lake sedge	288,000	0.17	0.4%		\$0.0000	0.03	8	P-SEDGE, COOL SEASON
<i>Carex vesicaria</i>	Tufted lake sedge	192,000	0.20	0.5%		\$0.0000	0.05	7	P-SEDGE, COOL SEASON
<i>Carex vulpinoidea</i>	Brown fox sedge	1,600,000	1.00	2.5%		\$0.0000	0.03	3	P-SEDGE, COOL SEASON
<i>Eleocharis acicularis</i>	Needle spikerush	1,120,000	1.00	2.5%		\$0.0000	0.04	3	P-SEDGE, COOL SEASON
<i>Eleocharis obtusa</i>	Blunt spikerush	1,600,000	1.00	2.5%		\$0.0000	0.03	3	A-SEDGE, COOL SEASON
<i>Eleocharis palustris</i>	Marsh spikerush	816,000	0.75	1.9%		\$0.0000	0.04	6	P-SEDGE, COOL SEASON
<i>Epilobium ciliatum</i>	Northern willow herb	960,000	1.55	3.9%		\$0.0000	0.07	3	P-FORB
<i>Eupatorium perfoliatum</i>	Boneset	2,560,000	1.55	3.9%		\$0.0000	0.03	6	P-FORB
<i>Glyceria grandis</i>	American manna grass	1,280,000	1.00	2.5%		\$0.0000	0.03	6	P-GRASS, COOL SEASON
<i>Glyceria striata</i>	Fowl manna grass	2,560,000	1.00	2.5%		\$0.0000	0.02	5	P-GRASS, COOL SEASON
<i>Helenium autumnale</i>	Sneezeweed	2,080,000	1.55	3.9%		\$0.0000	0.03	4	P-FORB
<i>Impatiens capensis</i>	Spotted touch-me-not	64,000	0.04	0.1%		\$0.0000	0.03	3	A-FORB
<i>Iris shrevei</i>	Blue flag	16,000	0.07	0.2%		\$0.0000	0.19	6	P-FORB
<i>Juncus arcticus littoralis</i>	Bog rush	3,000,000	1.00	2.5%		\$0.0000	0.01	6	P-SEDGE, COOL SEASON
<i>Juncus dudleyi</i>	Dudley's rush	51,200,000	1.00	2.5%		\$0.0000	0.00	2	P-SEDGE, COOL SEASON
<i>Juncus nodosus</i>	Joint rush	29,616,000	1.00	2.5%		\$0.0000	0.00	4	P-SEDGE, COOL SEASON
<i>Juncus torreyi</i>	Torrey's rush	25,600,000	1.00	2.5%		\$0.0000	0.00	3	P-SEDGE, COOL SEASON
<i>Leersia oryzoides</i>	Rice cut-grass	544,000	1.00	2.5%		\$0.0000	0.08	2	P-GRASS, COOL SEASON
<i>Lycopus americanus</i>	Water horehound	2,080,000	1.55	3.9%		\$0.0000	0.03	4	P-FORB
<i>Mentha arvensis</i>	Wild mint	4,800,000	1.55	3.9%		\$0.0000	0.01	4	P-FORB
<i>Mimulus ringens</i>	Monkey flower	36,800,000	1.55	3.9%		\$0.0000	0.00	3	P-FORB
<i>Pedicularis lanceolata</i>	Swamp lousewort	704,000	1.55	3.9%		\$0.0000	0.10	7	P-FORB, HEMIPARASITE
<i>Penthorum sedoides</i>	Ditch stonecrop	20,800,000	1.55	3.9%		\$0.0000	0.00	3	P-FORB
<i>Polygonum pensylvanicum laevigatum</i>	Pinkweed	208,000	1.00	2.5%		\$0.0000	0.21	0	A-FORB
<i>Polygonum punctatum</i>	Water smartweed	124,800	0.20	0.5%		\$0.0000	0.07	4	A-FORB
<i>Pontederia cordata</i>	Pickereel-weed	4,992	0.03	0.1%		\$0.0000	0.26	7	P-FORB
<i>Rumex orbiculatus</i>	Great water dock	240,000	1.20	3.0%		\$0.0000	0.22	7	P-FORB
<i>Sagittaria latifolia</i>	Common arrowhead	128,000	0.38	1.0%		\$0.0000	0.13	4	P-FORB
<i>Schoenoplectus acutus</i>	Hard-stemmed bulrush	206,400	0.40	1.0%		\$0.0000	0.08	4	P-SEDGE, COOL SEASON
<i>Schoenoplectus fluviatilis</i>	River bulrush	68,800	0.11	0.3%		\$0.0000	0.07	5	P-SEDGE, COOL SEASON
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed bulrush	496,000	1.00	2.5%		\$0.0000	0.09	3	P-SEDGE, COOL SEASON
<i>Scutellaria lateriflora</i>	Mad-dog skullcap	2,720,000	0.90	2.3%		\$0.0000	0.01	6	P-FORB
<i>Sparganium eurycarpum</i>	Common bur reed	8,000	0.07	0.2%		\$0.0000	0.38	6	P-FORB
				0.0%		#DIV/0!	#DIV/0!		
Graminoid Species	27	Vine Species	0	PLS Seeds/ft ²	40.0	Cost/ft ²	\$0.00	Floristic Quality Index	32.0
Forbs & Sub-shrubs	22	Tree Species	0	PLS lbs/acre*	3.7	Cost/acre	\$0	Mix Conservatism	4.6
Shrub Species	0	Total Species	49			Cost/lb	\$0.00	Simpson's Evenness	72%
Forb & Sub-shrub Seed/ft ²	20.00	Graminoid Seed/ft ²	20.00	Shrub Seed/ft ²	0.00	Vine Seed/ft ²	0.00	Tree Seed/ft ²	0.00

* PLS seeding rate must be converted to a bulk seeding rate

If cell is in red criteria not met. If cell is in orange recommendation not met.	
Percent of Mix	Exceeded the 20% of mix maximum for seeds/ft ²
Number of Graminoid Species	Minimum of 10 graminoid species not met
Number of Forbs & Sub-shrubs	Minimum of 20 forb and sub-shrub species not met
Total Number of Species	Minimum of 30 species not met
PLS Seeds/ft ²	Minimum of 40 seeds/ft ² not met
Graminoid Seed/ft ²	Minimum 20 seeds/ft ² of graminoids not met
Forb & Sub-shrub Seed/ft ²	Minimum 20 seeds/ft ² of forbs and sub-shrubs not met
Floristic Quality Index (FQI)	Floristic quality index is below the required 20.0 minimum.
Mix Conservatism (CC)	Coefficient of Conservatism is below the required 3.0 minimum.
Simpson's Evenness	Evenness (balance) of the mix is below the recommended 70%
Conservatism Guilds:	
Early Successional	Does not fall within the recommended range of 15-33%
Mid-Successional	Does not fall within the recommended range of 45-65%
Late Successional	Does not fall within the recommended range of 15-33%

Evenness Calculation	
Sum of Squares	0.03
Simpson's Evenness:	0.72

Conservatism Guilds		Seed/ft ² % mix
EARLY SUCCESSIONAL (0-3)	16	42.1%
MID SUCCESSIONAL (4-7)	31	56.5%
LATE SUCCESSIONAL (8-10)	2	1.4%
	49	100.0%

Seeding Plan

Page 1 of 2

Name _____
Prepared by _____
Type of Seeding: **Midwest Ephemeral Pond**

Date _____
Tract No. _____
Field No. _____
Contract No. _____

Acres

Seeding Mix Summary

Graminoids	Scientific Name	Common Name	Seeds/Ft2	PLS Lbs / Total PLS	
				Acre	lb
1	Calamagrostis canadensis	Bluejoint	1.07	0.01	
2	Carex atherodes	Hairy-leaved lake sedge	0.40	0.04	
3	Carex comosa	Bristly sedge	1.00	0.09	
4	Carex hystericina	Porcupine sedge	1.00	0.09	
5	Carex lacustris	Common lake sedge	0.25	0.02	
6	Carex lupulina	Common hop sedge	0.15	0.12	
7	Carex pellita	Wooly sedge	0.25	0.02	
8	Carex scoparia	Lance-fruited oval sedge	1.00	0.03	
9	Carex stipata	Common fox sedge	1.00	0.08	
10	Carex stricta	Common tussock sedge	0.25	0.01	
11	Carex tribuloides	Awl-fruited oval sedge	1.00	0.02	
12	Carex trichocarpa	Hairy-fruited lake sedge	0.17	0.03	
13	Carex vesicaria	Tufted lake sedge	0.20	0.05	
14	Carex vulpinoidea	Brown fox sedge	1.00	0.03	
15	Eleocharis acicularis	Needle spikerush	1.00	0.04	
16	Eleocharis obtusa	Blunt spikerush	1.00	0.03	
17	Eleocharis palustris	Marsh spikerush	0.75	0.04	
18	Glyceria grandis	American manna grass	1.00	0.03	
19	Glyceria striata	Fowl manna grass	1.00	0.02	
20	Juncus arcticus littoralis	Bog rush	1.00	0.01	
21	Juncus dudleyi	Dudley's rush	1.00	0.001	
22	Juncus nodosus	Joint rush	1.00	0.001	
23	Juncus torreyi	Torrey's rush	1.00	0.002	
24	Leersia oryzoides	Rice cut-grass	1.00	0.08	
25	Schoenoplectus acutus	Hard-stemmed bulrush	0.40	0.08	
26	Schoenoplectus fluviatilis	River bulrush	0.11	0.07	
27	Schoenoplectus tabernaemontani	Soft-stemmed bulrush	1.00	0.09	
28					
SUBTOTAL GRAMINOIDS			20.00	1.14	

Forbs/Legumes	Scientific Name	Common Name	Seeds/Ft2	PLS Lbs / Total PLS	
				Acre	lb
1	Alisma subcordatum	Water plantain	1.55	0.08	
2	Amorpha fruticosa	Indigo bush, false indigo	0.31	0.23	
3	Asclepias incarnata	Swamp milkweed	0.25	0.14	
4	Bidens cernua	Nodding bur marigold	1.30	0.17	
5	Bidens frondosa	Beggar-ticks	0.30	0.16	
6	Epilobium ciliatum	Northern willow herb	1.55	0.07	
7	Eupatorium perfoliatum	Boneset	1.55	0.03	
8	Helenium autumnale	Sneezeweed	1.55	0.03	
9	Impatiens capensis	Spotted touch-me-not	0.04	0.03	
10	Iris shrevei	Blue flag	0.07	0.19	
11	Lycopus americanus	Water horehound	1.55	0.03	
12	Mentha arvensis	Wild mint	1.55	0.01	
13	Mimulus ringens	Monkey flower	1.55	0.002	
14	Pedicularis lanceolata	Swamp lousewort	1.55	0.10	
15	Penthorum sedoides	Ditch stonecrop	1.55	0.003	
16	Polygonum pensylvanicum laevigatum	Pinkweed	1.00	0.21	
17	Polygonum punctatum	Water smartweed	0.20	0.07	
18	Pontederia cordata	Pickerel-weed	0.03	0.26	
19	Rumex orbiculatus	Great water dock	1.20	0.22	
20	Sagittaria latifolia	Common arrowhead	0.38	0.13	
21	Scutellaria lateriflora	Mad-dog skullcap	0.90	0.01	
22	Sparganium eurycarpum	Common bur reed	0.07	0.38	
23					
24					
25					
26					
27					
28					
29					
30					
SUBTOTAL FORBS			20.00	2.56	

* Required dominant and co-dominant species in bold

TOTAL 40.00 3.70

SEEDING MIX FLORISTIC QUALITY VALUES

Average Coefficient of Conservatism	4.6
Floristic Quality Index	32.0

Fertilizer & Lime	General Soil Test	Total Needed lbs
Lime (ECCE) (Actual Lime)	2000	0
Nitrogen	30	0
Phosphate (P205)	30	0
Potash (K20)	40	0

Additional Seeding Criteria:

Do not apply fertilizer. Frost seeding dates Feb. 1st - March 15th.

Spring seeding dates are April 15th to July 1st. Dormant Seeding dates November 15th to freeze up.

Seeding was completed by _____ according to the above requirements.
(Date)

(Producer's Signature)

(Date)

Field Office

Certified by

(NRCS Representative)

When seeding is completed, return seeding plan to the Natural Resources Conservation Services.

For state cost-share projects, attach receipts for seed, fertilizer, lime and mulch.

For Federal cost-share, return receipts to Farm Service Agency.