

# Glossary of Terms

**Achene:** a dry, single seeded fruit that doesn't split at maturity, similar to a small nut.

**Adventive:** an exotic plant that is introduced and naturalized.

**Allelopathic:** any direct or indirect harmful effect of chemicals from one plant on nearby plants.

**Annual Plant:** a plant that completes its life cycle and dies in one year or less.

**Arch Abutment:** the part of an arch that directly receives thrust or pressure.

**Best Management Practices (BMPs):** A practice or combination of practices that are determined to be the most effective and practicable means of controlling point and non-point source pollutants. BMPs include structural devices which temporarily store or treat urban stormwater runoff to remove pollutants, reduce flooding, and protect aquatic habitats. BMPs also include non-structural approaches, such as public education efforts to prevent the dumping of household chemicals into storm drains.

**Biennial Plant:** a plant that lives for two years, producing vegetative growth the first year, usually blooming and fruiting in the second year, and then dying.

**Bog:** a wetland with extensive peat accumulation and a low pH (acid).

**Brackish:** slightly salty; term applied to water with a saline content that is intermediate between that of freshwater and sea water.

**Broadcast:** to cast seed widely over the surface of the soil.

**Buffer:** A protected strip of land along the edge of a stream, lake, or wetland; usually maintained in natural or native vegetation. Buffers provide wildlife habitat, protect shores and banks from erosion, filter water pollutants, and screen sensitive areas from potential adverse effects of development activity.

**Buttress Pile:** a pile (pier) that supports or strengthens something.

**Calcareous:** possessing a sufficient quantity of free calcium carbonate or magnesium carbonate to effervesce carbon dioxide visibly when treated with cold 0.1 normal hydrochloric acid; which contribute to a basic condition.

**Corm:** a short, vertical, often swollen, underground stem, many "bulbs" are actually corms.

**Detention Basin:** a stormwater facility for storing runoff, with a controlled release of water during and after the rainfall event.

**Division:** plant propagation by dividing a parent plant into 2 or more. Many parts of plants can be split, including roots, crowns, bulbs, leaves, fronds, etc.

**Drawdown:** when the water level in a marsh or pond is lowered to expose the bottom sediment.

**Drill:** sowing seed in rows, usually by machine. The advantage is in more careful spacing of seed and assured seed-soil contact.

**Emergent:** a rooted, herbaceous, wetland or aquatic plant which manifests some of its adult growth above the waterline, but is rooted underwater.

**FAC (Facultative):** an indicator category for plants, estimating the probability of a given species to occur in wetlands at 34% to 66%. A positive (+) sign attached to the category indicates a frequency toward the higher end of the probability, and a negative (-) sign indicates a frequency toward the lower end of the probability. The indicator category does not equate to the degrees of wetness tolerated by a given species.

**FACU (Facultative Upland):** an indicator category for plants, estimating the probability of a given species to occur in wetlands at 1% to 33%. A positive (+) sign attached to the category indicates a frequency toward the higher end of the probability, and a negative (-) sign indicates a frequency toward the lower end of the probability. The indicator category does not equate to the degrees of wetness tolerated by a given species.

**FACW (Facultative Wetland):** an indicator category for plants, estimating the probability of a given species to occur in wetlands at 67% to 99%. A positive (+) sign attached to the category indicates a frequency toward the higher end of the probability, and a negative (-) sign indicates a frequency toward the lower end of the probability. The indicator category does not equate to the degrees of wetness tolerated by a given species.

**Fen:** a wetland area usually calcareous in nature, which has a supply of mineral rich ground water as the primary water source and has accumulated peat.

**Flatwoods:** a low lying woodland composed of hardwood tree species in the canopy which usually occupies the first terrace, not the primary floodplain.

**Forested Wetland:** a wetland with trees, in this area often adventive, but also including swamps and bottomland hardwood forests.

**Genotype:** a class or group of individuals sharing a specified genetic makeup.

**Hydrologic Regime:** the duration and timing of surface water characteristics, as well as, ground water fluctuations.

**Impervious:** a layer which does not allow water to pass through it.

**Influorescence:** an individual flower cluster, the arrangement of flowers on a plant.

**Inundation:** a condition in which water from any source temporarily or permanently covers a land surface.

**Loam:** a soil texture. Soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

**Marl:** an earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay or other impurities in varying proportions.

**Marsh:** wetland that is inundated much or all of the growing season and contains forbs and grasses but not many woody species. A periodically wet or continually flooded area where the surface is not deeply submerged, covered dominantly with sedges, cattails, rushes, or other emergent plants.

**Mesic:** an area with well drained but moist soil for much of the growing season or year.

**Mortality:** of or pertaining to the death or death rate of a population.

**OBL(Obligate):** an indicator category for plants, estimating the probability of a given species to occur in wetlands at 99%. It does not estimate the degree of wetness tolerated by a given species.

**Organic Soil:** a soil that contains a high percentage (greater than 20 or 30%) of organic matter throughout the upper part of the soil profile.

**Peat:** a deposit of organic materials in a wet area where the material accumulates more quickly than it decomposes. The material is unconsolidated soil material consisting largely of un-decomposed or only slightly decomposed organic matter accumulated under conditions of excessive moisture and must contain identifiable original fibers to correctly be called peat.

Muck is the same material decomposed past recognition.

**Perennial:** a non-woody plant which lives more than two years, as distinguished from annuals and biennials.

**Prairie:** a level to hilly tract of land that has a dominance of grasses and forbs, has a scarcity of shrubs, and is almost treeless. The natural plant community consists of various mixes of native species.

**Prairie Swale:** a linear depression that is a least seasonally wet with slowly or non-flowing water and that is heavily vegetated with native grasses and forbs. Prairie swales serve as infiltration measures.

**Propagule:** a reproductive product of a parent plant. Propagules may be sexual in origin, such as, seeds, or asexual, such as, cuttings.

**Pure Live Seed (PLS):** the product of the percentage of germination plus the had seed and the percentage of pure live seed, divided by 100.

**Rhizome:** a horizontal or upright stem found underground or growing across the surface of the substrate, modified for reproduction or for food storage. It is particularly apparent in the rapid underground spread of many grasses.

**Saturated:** a soil layer with soil water pressure at zero or positive, It is not necessary for all soil pores to be filled with water for a soil to be saturated; some pores may have entrapped air or other gases. In the 1987 US Army Corps of Engineers wetland delineation manual, a soil is saturated when the capillary fringe occurs within 12 inches of the surface.

**Scarification:** the act of treating a hard coated seed by mechanical abrasion or with acid to facilitate water absorption and hasten germination.

**Sedge Meadow:** a native wetland plant community dominated by sedges.

**Shrub-Scrub Wetland:** an area dominated by woody vegetation less than 6 meters (20 feet) tall. Multiple stemmed species, immature tree species, and stunted species may all be found. In this geographic area the species are often adventive.

**Stolon:** a running stem or branch, aerial or along the surface of the substrate that can root at the nodes.

**Stratification:** cold treatment to break seed dormancy.

**Substrate:** the base or substance upon which a plant grows; or, a subsoil or layer underneath another layer.

**Suckers:** a shoot originating from the roots or lower part of the stem of a plant and usually developing rapidly.

**Swale:** a wide, shallow ditch or depression used to temporarily convey, store, and filter runoff. *See Prairie Swale.*

**Swamp:** an area saturated with water throughout much of the year but with the surface of the soil usually not deeply submerged; usually characterized by tree or shrub vegetation. A wetland that is saturated or inundated and contains woody plants. Often used in conjunction with a particular tree name, such as, cypress swamp.

**Terrace:** a level and ordinarily narrow plain usually with a steep front bordering a river or lake, but often above the primary floodplain in the landscape.

**UPL(Upland):** an indicator category for plants, estimating the probability of a given species to occur in uplands at 99%.

**Watershed:** all land and water within the confines of a drainage divide, or, the land which is tributary to a given river, lake, or stream.

**Wet Meadow:** a wetland that is inundated early in the season and dries out later in the season.

**Wet Prairie:** a prairie that is composed of grasses, sedges, and forbs and is situated in a moisture regime that is drier than a sedge meadow, but wetter than a mesic prairie. *See Mesic and Prairie.*

# Bibliography

- Adamus, P.R., F.J. Clairain Jr., R.D. Smith, and R.E. Young. 1987. Wetland evaluation technique (WET); volume II: methodology. Operational draft technical report. US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS. 206pp.
- Anderson, R.C., P. Bandyopadhyay, C. Morton, W. Scott, and V. Tetzlaff. Niche partitioning and phonological and morphological separation between 2 sunflower species. *Castaenea*. 53:236-242.
- Anderson, R.N. 1952. Seed germination and plant development of the weed *Polygonum coccineum*. MS Thesis. University of Nebraska. Lincoln, NE.
- Anderson, R.N. 1968. Germination and establishment of weeds for experimental purposes. Weed Sciences Society of America. Urbana, IL.
- Arnason, T., R.J. Hebda, and T. Johns. 1981. Use of plants for food and medicine by native people of eastern Canada. *Can. J. Bot.* 59:2189-2325.
- Art, H.A. 1991. The wildflower gardeners guide: midwest, great plains, and Canadian prairie edition. A Gardenway Publishing Book. Storey Communications. Pownal, VT. 192pp.
- Baly, I.L., and E.A. Freeman. 1977. Seasonal variation of selected cations in *Acorus calamus*. *Aquatic Botany* 3:65-84.
- Brenholm, T.L., and A.G. van der Valk. 1994. Sedge establishment studies: how age and storage conditions affect germination and viability of *Carex* seed. Technical Paper No. 3, Wetlands Research, Inc., Chicago, IL. 4pp.
- Bolland, W., and C.J. Burk. 1992. Some effects of acidic growing conditions on three emergent macrophytes; *Zizania aquatica*, *Leersia orzoides*, *Peltandra virginica*. *Envir. Pol.* 76:211-217.
- Bonner, F.T. 1974. *Cephalanthus occidentalis*, Common Buttonbush. pg 301-302 In: USDA Handbook 450. Seeds of woody plants of the United States. USDA Forest Service, Washington D.C.
- Brodie, G.A., D.A. Hammer, and D.A. Tomljanovich. 1989. Treatment of acid drainage with a constructed wetland at the Tennessee Valley Authority 950 coal mine. In: D.A. Hammer (ed) pg 201-210. Constructed wetlands for waste water treatment. Lewis Publishers Inc., Chelsea, MI.
- Brodie, G.A., D.A. Hammer, and D.A. Tomljanovich. 1989. Constructed wetlands for treatment of an ash pond seepage. In: D.A. Hammer (ed) pg 211-220. Constructed wetlands for waste water treatment. Lewis Publishers Inc. Chelsea, MI.
- Clark, W.R., and R.T. Clay. 1985. Standing crop of *Sagittaria* in the upper Mississippi River. *Can. J. Bot.* 63:1453-1457.
- Conn, J.S. 1990. Seed viability and dormancy of 17 weed species after burial for 4.7 years in Alaska. *Weed Science* 38:134-138.
- Conner, W.H., J.G. Gosselink, and R.T. Parrando. 1981. Comparison of the vegetation of three Louisiana swamp sites with different flooding regimes. *Amer. J. Bot.* 68:320-331.
- Coppin, N.J. and I.G. Richards. 1990. Use of vegetation in civil engineering. Butterworths, London. 292pp.
- Crocker, W., and W.E. Davis. 1914. Delayed germination in seed of *Alisma plantago*. *Botany Gazette* 58:285-321.
- Daukas, P., D. Lowry, and W.W. Walker Jr. 1989. Design of wet detention basins and constructed wetlands for treatment of stormwater runoff from a regional shopping mall in Massachusetts. In: D.A. Hammer (ed) pgs 686-694. Constructed wetlands for wastewater treatment. Lewis Publishers Inc. Chelsea, MI.
- Dehgan, B., M. Gooch, F. Almira, and M. Kane. 1989. Vegetative propagation of Florida native plants. Vol III Shrubs. Proceedings of the Florida State Horticulture Society 102:254-260.
- Densco, I. 1982. Effects of ecological factors on the germination of the seed of *Leersia orzoides*. *Novenyvedelen Plant Prot. (Budapest)* 18:312-318.
- Deno, N.C. 1993. Seed germination theory and practice. Second edition, fifth printing. Self Published. Norman C. Deno, Pennsylvania State University, State College, PA. 242 pp.
- Directory of wetland plant vendors. U.S. Army Corps of Engineers Report WRP-SM-1. Waterways Experiment Station. Vicksburg, MS.

- Dirr, M.A. 1990. *Manual of woody landscape plants*. Stipes Publishing Company, Champaign, IL. 552pp.
- Eggers, S.D. and D.M. Reed. 1987. *Wetland plants and plant communities of Minnesota and Wisconsin*. US Army Corps of Engineers, St. Paul District. St. Paul, MN. 201pp.
- Emerson, F.B. Jr. 1961. *Experiments in the establishment of food and cover plants in marshes created for wildlife in New York state*. New York Fish and Game Journal 8:130-144.
- Faber-Langendoen, D., and P.F. Maycock. 1989. *Community patterns and environmental gradients of buttonbush ponds in lowland forest of southern Ontario*. Can. Field. Nat. 103:479-485.
- Faber-Langendoen, D., and S.T. Dina. 1987. *Growth responses of *Cephalanthus occidentalis* to varying light levels and flooding*. Transact. Missouri Academy of Sciences 21:55-62.
- Fassett, N.C. 1960. *A manual of aquatic plants*. University of Wisconsin Press, Madison, WI. 405pp.
- Fernald, M.L. 1950. *Gray's manual of botany, eighth edition - illustrated*. Dioscorides Press, Portland, OR. 1632pp.
- Fredrickson, L.H., and T.S. Taylor. 1982. *Management of seasonally flooded impoundments for wildlife*. Resource publication 148. US Fish and Wildlife Service. Washington D.C.
- Fredrickson, L.H. 1991. *Strategies for water level manipulation in a moist soil system*. Leaflet 13.4.6, US Dept. of the Interior, Fish and Wildlife Service.
- Fulton, G.W., J.L. Richardson, and W.T. Barker. 1986. *Wetland soils and vegetation*. North Dakota Agricultural Experiment Station Report 106:1-16.
- Gaboury, M., R. Newbury, and C. Watson. In Press 1996. *Non-Point pollution control program, Illinois Department of Natural Resources. Field manual of urban stream restoration*. Illinois State Water Survey. Illinois Department of Natural Resources.
- Galatowitsch, S.M., and A.G. van der Valk. 1994. *Restoring prairie wetlands, an ecological approach*. Iowa State University Press, Ames, IA. 246pp.
- Garbisch, E.W., and S.M. McIninch. 1992. *Seed information for wetland plant species of the Northeast United States*. Restoration Management Notes 10:85-86.
- Garbisch, E.W., S.M. McIninch, H.J. Swartz, and G.J. Salvaggio. 1996. *The effects of controlled chilling on five wetland herbaceous plant species*. Wetland Journal 8(2) 20-25.
- Geyer, W.A., and N.F. Rogers. 1972. *Spoils Change the Tree Growth on Coal Mine Spoils in Kansas*. Journal of Soil and Water Conservation 27:114-116.
- Gillespie, J. 1995. *Personnel communication*. Country Wetlands Nursery Ltd. Muskego, WI.
- Gleason, H.A., and A. Cronquist. 1963. *Manual of vascular plants of northeastern United States and adjacent Canada*. D. von Nostrand Co. New York, NY. 810pp.
- Gray, D.H., and A.T. Leiser. 1989. *Biotechnical slope protection and erosion control*. Van Nostrand Reinhold Company, New York, NY. 263pp.
- Hamet-Ahti, L. 1980. *The *Juncus effusus* aggregates in eastern North America*. Annals Bot. Fennici 17:183-191.
- Hammer, D.A. 1992. *Creating fresh water wetlands*. Lewis Publishers Inc. Chelsea, MI. 298pp.
- Harris, S.W., and W.H. Marshall. 1960. *Germination and planting experiments on Softstem and Hardstem Bulrush*. Journal of Wildlife Management 24:134-139.
- Hitchcock, A.S., and A. Chase. 1971. *Manual of grasses of the United States, Volume I* Dover Publishers Inc. New York, NY. 569pp.
- Hogg, E.H., and V.J. Lieffers. 1991. *Seasonal changes in shoot regrowth potential in *Calamagrostis canadensis**. Oecologia 85:596-602.
- Horner, R.R., J.J. Skupien, E.H. Livingston, and H.E. Shaver. 1994. *Fundamentals of urban runoff management: technical and institutional issues*. Terene Institute and U.S. Environmental Protection Agency, Washington D.C. 302pp.
- Isley, D. 1944. *A study of conditions that affect the germination of *Scirpus* seed*. Cornell University Agricultural Experiment Station Memo 257:1-8.

- Jones, S.B., and L.E. Foote. 1990. *Gardening with native wildflowers*. Timber Press Inc. Portland, OR. 195pp.
- Jorga, W., and G. Weise. 1981. Aquatic plants and their importance for embankment stabilization and improvement of water quality. *Acta. Hydrochem. Hydrobiologia* 9:37-56.
- Jurik, T.W., S.C. Wang, and A.G. van der Valk. 1994. Effects of sediment load on seedling emergence from wetland seed banks. *Wetlands* 14(3): 159-165.
- Kadalek, J.A., and W.A. Wentz. 1974. *State of the art survey and evaluation of marsh plant establishment techniques*. Volume 1. Report D-74-9 US Army Corps of Engineers. Vicksburg, MS.
- Kantrud, H.A., J.B. Miller, and A.G. van der Valk. 1989. Vegetation of the wetlands of the prairie pothole region. In: A.G. van der Valk (eds.) pp 132-177. *Northern prairie wetlands*. Iowa State University Press. Ames, IA.
- Kartesz, J.T. 1994. *A synonymized checklist of the vascular flora of the United States, Canada, and Greenland*, volume I - checklist, volume II - thesaurus. Timber Press, Portland, Oregon. Vol. I: 622pp, Vol. II: 816pp.
- Kato, T., M. Tsunakawa, N. Sasaki, H. Aizawa, K. Fujita, Y. Kitahara, and N. Takahashi. 1977. Growth and germination inhibitors in rice husks. *Phytochem.* 16:45-48.
- Kaut, R.B. 1985. Reproductive phenology and biology in annual and perennial *Alismataceae*. *Aquatic Botany* 22:153-164.
- Keddy, P.A., and T.H. Ellis. 1985. Seedling recruitment of 11 wetland plant species along a water level gradient: shared or distinct response? *Can. J. Bot.* 63:1876-1879.
- Kester, W. 1992. Personal communication. Kesters Wild Game Food Nursery Inc. Wisconsin.
- Klebesadel, L.J., C.I. Branton, and J.J. Koranda. 1962. Seed characteristics of bluejoint and techniques for threshing. *Journal of Range Management* 15:227-228.
- Lamoureux, W.J. 1970. *Aquatic plants for fish and wildlife*. Technical bulletin #1. Royal Botanic Gardens. Hamilton, Ontario 29pp.
- Larmen, M.M. 1989. Arrowhead or duck potato. *Minnesota Horticulture*. 108:207.
- Larson, J.L. 1993. Personal communication. Applied Ecological Services. Brodhead, WI.
- Larson, J.L. 1989a. Purple loosestrife in a southeast sedge meadow. *University of Wisconsin-Milwaukee Field Station Bulletin*. 22:1-11.
- Larson, J.L. 1989b. The life history and primary production of shoots of *Carex scoparia* and *Scirpus cyperinus* in a southeast Wisconsin sedge meadow. Ph.D. Dissertation. University of Wisconsin, Milwaukee.
- Larson, J.L., and F.W. Stearns. 1990. Factors influencing seed germination in *Carex scoparia*. *Wetlands* 10:277-283.
- Lazenby, A. 1955. Germination and establishment of *Juncus effusus*, the effect of different companion species and of variation in soil and fertility conditions. *Journal of Ecology* 43:103-119.
- Leif, J.W., and E.A. Oelke. 1990. Growth and development of giant burreed. *Weed Tech.* 4:849-854.
- Lieffers, V.J. 1984. Emergent communities of oxbow lakes in northeastern Alberta: salinity, water level fluctuation and succession. *Can. J. Bot.* 62:310-316.
- Loucks, W.L., and R.A. Keen. 1973. Submersion tolerance of selected seedling trees. *Journal of Forestry* 71:496-497.
- Low, J.B., and F.C. Bellrose. 1944. The seed and vegetative yield of waterfowl food plants in the Illinois river valley. *Journal of Wildlife Managers* 8:7-22.
- Marble, A.D. 1992. *A guide to wetland functional design*. Lewis Publishers, Chelsea, MI. 222pp.
- Marburger, J.E. 1993. Biology and management of *Sagittaria latifolia* willd. (Broadleaf Arrowhead) for wetland restoration and creation. *Restoration Ecology* 1(4) 248-255.
- Mariner, R.D. and L. Mertz-Erwin. 1991. *Landscaping techniques and materials for urban Illinois stream corridors and wetland edges*. Report prepared by Northeastern Illinois Planning Commission for Illinois Department of Energy and Natural Resources, Springfield, IL 111pp.

- Martin, A.C., H.S. Zim, and A.L. Nelson. 1951. *American wildlife and plants, a guide to wildlife food habits*. McGraw-Hill Book Co., New York, NY. 500pp.
- Maun, M.A., and J. Lapiere. 1986. Effects of burial by sand on seed germination and seedling emergence of 4 dune species. *Amer. J. Bot.* 73:450-455.
- McAtee, W.C. 1939. *Wildfood plants*. Collegiate Press Inc. Ames, IA. 214pp.
- McClain, W.E. 1997. *Prairie establishment and landscaping*. Technical publication #2, Division of Natural Heritage, Illinois Department of Natural Resources. Springfield, Illinois. 62pp.
- McDonald, M.E. 1955. Cause and effects of a die-off of emergent vegetation. *Journal of Wildlife Management* 19:24-35.
- McIninch, S.M., and E.W. Garbisch. 1991. Oxygen requirement of dormant wetland plants. *Wildflower* 4:8-13.
- McIninch, S.M., and E.W. Garbisch. 1996. The establishment of *Scirpus pungens* from large and small rhizomes as a function of water depth. *Wetland Journal* 8(2) 24-27.
- McKee, C.E., and A.C. van der Valk. 1989. The impact of duration of drainage on the seed banks of northern prairie wetlands. *Can. J. Bot.* 67:1878-1884.
- McKendrick, J.D., A.L. Brundage, and V.L. Burton. 1977. Quality of bluejoint hay is influenced by time of harvest. *Agroborealis* 9:26-29.
- Michaub, S.C., and C.J. Richardson. 1989. Efficiencies of substrate, vegetation, water levels, and microbial population: relative radial oxygen loss in 5 wetland plants. In: D.A. Hammer (ed) pg 501-507. *Constructed wetlands for wastewater treatment*. Lewis Publishers Inc. Chelsea, MI.
- Ministry of Agriculture Fisheries and Food. 1962. *The control of rushes*. Advisory Leaflet 433. Swindon Press Ltd, England.
- Mitchell, W.W. 1979. Three varieties of native Alaskan grasses for revegetation purposes. Circular 32. Agricultural Experiment Station, University of Alaska. Fairbanks, AK.
- Mitsch, W.J., and J.G. Gosselink. 1993. *Wetlands*, 2nd edition. Van Nostrand Reinhold, New York, NY. 722pp.
- Mohlenbrock, R. (ed.) 1988. *Field guide to Illinois wetlands*. Illinois Department of Conservation, Division of Planning. 244pp.
- Mohlenbrock, R.H. 1986. *Guide to the vascular flora of Illinois*. Southern Illinois University Press. Carbondale and Edwardsville, IL. 507pp.
- Moore, D.R.J., and P.A. Keddy. 1988. Effects of water depth gradients on the germination of lake shore plants. *Can. J. Bot.* 66:548-552.
- Morgan, M.D. 1990. Seed germination characteristics of *Iris virginicus*. *American Midl. Nat.* 124:209-213.
- Nawrot, J.R. 1993. Personal communication. Southern Illinois University. Carbondale, IL.
- Newbury, R.W. and M.N. Gaboury. 1993. *Stream analysis and fish habitat design, a field manual*. Newbury Hydraulics, Ltd., Gibsons, BC, Canada. 256pp.
- Newcomb, L. 1977. *Newcombs wildflower guide*. Little, Brown and Company, Canada. 490pp.
- Nichols, G.E. 1934. The influence of exposure to winter temperatures upon seed germination in various native American plants. *Ecology* 15:364-373.
- Nichols, S.A. 1975. The impact of overwinter drawdown on the aquatic vegetation of the Chippewa flowage in Wisconsin. *Trans. WI Acad. Sci.* 63:176-186.
- Nishimura, N., T. Suyama, and N. Ohga. 1985. Aspects of indicator plants as critical for grassland development in wetlands. XV International Grassland Congress. Kyoto, Japan. August 24-31. Pgs. 660-662.
- Northeastern Illinois Planning Commission. 1997. *Source Book On Natural Landscaping for Public Officials*. Book available from the Northeastern Illinois Planning Commission, Chicago, IL.
- Northeastern Illinois Planning Commission. Undated. *Stormwater detention basin retrofitting techniques to improve stormwater pollutant removal and runoff rate control*. Brochure available from the Northeastern Illinois Planning Commission, Chicago, IL.
- Norton, D.C., A.M. Cody, and A.W. Gabel. 1987. *Subaquilla calamagrostis* and its biology in *Calamagrostis* species in Iowa, Ohio, and Wisconsin. *J. of Nematology* 19:260-262.

- Oakes, A.J. 1990. *Ornamental grasses and grasslike plants*. Van Nostrand Reinhold. New York, NY. 614pp.
- Packard, S. and C.F. Mutel. eds. 1997. *The tallgrass prairie restoration handbook*. Society for Ecological Restoration. Island Press, Washington D.C. 463pp.
- Payne, N.F. 1992. *Techniques for wildlife habitat management of wetlands*. McGraw-Hill Inc. New York, NY. 549pp.
- Pescitelli, S. and Rung, R. Undated. *An evaluation of selected emergent plant species potential for habitat enhancement and streambank stabilization*. Available from Illinois Department of Natural Resources, Division of Fisheries, Yorkville, IL. 32pp.
- Phillips, H.R. 1985. *Growing and propagating wildflowers*. University of North Carolina Press. Chapel Hill, NC. 331pp.
- Price, T.H., and D.W. Dreher. 1993. *Urban stormwater best management practices for northeastern Illinois*. Northeastern Illinois Planning Commission, Chicago, IL.
- Fyrah, G.L. 1969. *Taxonomic and distributive studies in Leersia*. Iowa State J. Sci. 44:215-270.
- Redington, C. B. 1994. *Plants in wetlands. Redington field guides to biological interactions*. Kendall/Hunt Publishing Co., Dubuque, IA 394pp.
- Reed, P.B. 1997. *Revision of the national list of plant species that occur in wetlands*. US Department of the Interior, Fish and Wildlife Service, Washington D.C. 253pp.
- Richards, P.W., and A.R. Chapham. 1941. *Biological flora of the British isles*. Journal of Ecology 29:362-391.
- Rock, T. 1981. *Prairie propagation handbook*. Wehr Nature Center, Milwaukee County Department of Parks, Recreation and Culture. Franklin, WI. 7pp.
- Roseboom, D., R. Twait, and T. Hill. 1989. *Restoration of Peoria lake: Wallop Breaux Sportfishing Restoration Project F-55-R*. IDOC, Division of Fisheries. Aledo, IL.
- RUST Environment and Infrastructure. 1995. *Stream-bank stabilization program*. Unpublished report prepared in cooperation with Applied Ecological Services, Inc. for DuPage County Stormwater Management Division, Department of Environmental Concerns, Wheaton, IL 36pp.
- Salvaggio, G.J. 1996. *Effects of thermoperiod and photoperiod on the germination of ten herbaceous wetland species*. Wetland Journal 8(2) 16-19.
- Sanders, T.B., J.L. Hamrick, and L.R. Holden. 1979. *Allozyme variation in Elymus canadensis from the tallgrass prairie region: geographic variation*. American Midl. Nat. 101:1-12.
- Sanders, T.B., and J.L. Hamerick. 1980. *Variation in the breeding system of Elymus canadensis*. Evolution 34:117-122.
- Sharp, W.M. 1951. *Environmental requirements of a fresh water marsh and the ecology of some aquatic plants*. Pennsylvania Cooperative Wildlife Research Unit. Read at N.E. Game Conference, Wilmington Delaware, February 23, 1951. 6pp. Cited in Ould P. and C. Holbrow. Undated. *An aquatic plant fact book and selected bibliography*. Unpublished preliminary report prepared by Ducks Unlimited (Canada).
- Sherrod, K.C., T.G. Ciravolo, and K.W. McLeod. 1987. *Growth of woody seedlings under varying light conditions*. Amer. J. Bot.
- Shiple, B., and M. Paren. 1991. *Germination responses of 64 wetland species in relation to seed size, minimum time to reproduction and seedling relative growth rate*. Functional Ecology 5:111-118.
- Shirley, S. 1994. *Restoring the tall grass prairie*. University of Iowa Press. Iowa City, IA. 330pp.
- Silvics of North America Volumes 1 and 2. US Forest Service, Ag Handbook 654.
- Smith, J.R., and B.S. Smith. 1980. *The prairie garden*. University of Wisconsin Press. Madison, WI. 219pp.
- Soots, R.F. Jr., and M.C. Landin. 1978. *Development and management of avian habitat on dredged material islands*. US Army Corps of Engineers Technical Report DS-78-18. Vicksburg, MS.

- Spence, D.H.N. 1982. The zonation of plants in fresh water lakes. *Advances in Ecological Restoration* 12:37-125.
- Squires, L. and A.G. van der Valk. 1992. Water depth tolerances of the dominant emergent macrophytes of the delta marsh, Manitoba. *Can. J. Bot.* 70:1860-1867.
- Steinbauer, G.P., and D. Neil. 1948. Dormancy and germination of seeds of the burreeds. *Michigan Academy of Scientific Arts Letters* 34:33-37.
- Steussy, T.F., D.M. Spooner, and K.A. Evans. 1986. Adaptive significance of ray cordiallas in *Helianthus grossesserritus*. *American Midl. Nat.* 115:191-197.
- Stewart, R.E. and H.A. Kantrud. 1972. Vegetation of prairie potholes, North Dakota, in relation to quality of water and other environmental factors. U.S. Geological Survey professional paper 585-D. 36pp. Cited in Ould P. and C. Holbrow. Undated. An aquatic plant fact book and selected bibliography. Unpublished preliminary report prepared by Ducks Unlimited (Canada).
- Stoyhoff, N.A., and W. J. Hess. 1986. Bluff City fen: communities, vegetation history and management. *Trans Illini Academy of Science* 79:53-58.
- Strecker, E.W., J.M. Kersnar, E.D. Driscoll, and R.R. Horner. 1992. The use of wetlands for controlling stormwater pollution. The Terrene Institute, Washington D.C. 66pp.
- Suehiro, K., K. Hozumi, and K. Shinozaki. 1984. Growth of three species of *Bidens* under different levels of soil moisture control. *Bot. Mag. Tokyo* 97:163-170.
- Surrency, D. 1991. Evaluation of aquatic plants for constructed wetlands. In: *Constructed wetlands form water quality improvement*. International Symposium at the University Of West Florida. October 21-24. Pensacola, FL.
- Swanson, G.A., and H.F. Duellman. 1989. Wetland habitats of waterfowl in the prairie pothole region. pg. 228-267 In: A.G. van der Valk (ed) *Northern prairie wetlands*. Iowa State University Press. Ames, IA.
- Swink F., and G. Wilhelm. 1994. *Plants of the Chicago region*, 4th edition. Indiana Academy of Science Indianapolis, IN. 921pp.
- Taylor, K.S., and S.F. Hamblin 1963. *Handbook of wildflower cultivation*. MacMillan, New York, NY. 307pp.
- Thunhorst, G.A. 1993. *Wetland planting guide for the northeastern United States*. Environmental Concern, Inc., St. Michaels, MD. 179pp.
- Tyrell, L.E. 1987. A floristic survey of buttonbush swamps in Gahanna Woods State Nature Preserve, Franklin County, Ohio. *Michigan Pot.* 26:29-38.
- Uhler, F.M. 1944. Control of undesirable plants in waterfowl habitats. *North American Wildlife Transactions* 9:295-303.
- U.S. Army Corps of Engineers, 1978. *Wetland habitat development with dredged material: engineering and plant propagation*. Technical Report DS-78-1-6. Waterways experiment station. Vicksburg, MS.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 1995. *1995 Illinois urban manual, a technical manual designed for urban ecosystem protection and enhancement.*, Champaign, IL.
- U.S. Department of Agriculture, Soil Conservation Service. 1982. *National list of scientific plant names*, Vol. 1 - list of plant names, Vol. 2 - synonymy. SCS-TP-159. US Department of Agriculture, Soil Conservation Service, Washington D.C. Vol. 1: 416pp, Vol. 2: 438pp.
- U.S. Department of Agriculture, Soil Conservation Service. Undated. *Midwestern wetland flora-field office guide to plant species*. USDA Soil Conservation Service Midwest Technical Center, Lincoln, NE.
- van der Valk, A.G. 1989. *Northern prairie wetlands*. Iowa State University Press, Ames, IA. 400pp.
- Warburton, D.B., W.B. Kimstra, and J.R. Nawroot . 1985. *Aquatic macrophyte propagation and planting practices for wetland establishment*. In: R.P. Brooks et al. (Eds.) Pgs. 139-152. *Wetlands and water management on mined lands, Proceedings*. Oct 23-24 Pennsylvania State University, PA.
- Weller, M.W. 1989. Plant and water level dynamics in an east Texas shrub/hardwood bottomland wetland. *Wetlands* 9:73-88.

- Willard, D.E., and A.K. Hiller. 1989. Wetland dynamics: considerations for restored and created wetlands. In: J.A. Kustler and M.E. Kentula (eds.) pg. 47-54. Wetland creation and restoration: the status of the science. Vol II. U.S. Environmental Protection Agency. Corvallis, OR.
- Willard, D.E., V.M. Finn, and D.A Levine. 1989. Creation and restoration of riparian wetlands in the agricultural midwest. In: J.A. Kustler and M.A. Kentula (eds.) pg. 333-343. Wetland creation and restoration: the status of the science. Vol I. U.S. Environmental Protection Agency. Corvallis, OR.
- Wooten, J.W. 1971. The monoecious and dioecious conditions in *Sagittaria latifolia*. Evolution 25:549-553.