

TALLGRASS

O N T A R I O

Ontario Tallgrass Prairie and Savanna Association

PRINCIPLE #2

FOR THE MANAGEMENT OF TALLGRASS PRAIRIE AND SAVANNAH FRAGMENTS IN SOUTHERN ONTARIO

Tallgrass Ontario (TGO) has created a series of six principles to offer support to the landowner in southern Ontario who wishes to maintain and enhance their tallgrass habitat, and are derived from the experiences of tallgrass habitat managers from across the eastern portion of North America. These principles apply to all the various tallgrass habitats in southern Ontario including prairies, savannas, woodlands, and most types of alvars. More information on what, exactly, constitutes tallgrass habitats is provided on the TGO website. In addition, please refer to the Further Readings section appended to these principles.

Landowners are excellent caretakers and stewards of our natural environments. The day-to-day observations of landowners are one of the most important ways that our knowledge of how to successfully manage habitats will increase.

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LET THE SUN SHINE IN.



The single most important thing that you need to actively provide for your tallgrass is sunlight. Tallgrass plants are adapted to high levels of sunlight and they won't grow unless they get it. In natural stands of prairie, fire, drought, heavy grazing, flooding, windstorms, and other disturbances keep the numbers of shrubs and trees down to a minimum. In addition, these types of disturbances periodically destroyed the natural build-up of dead plant matter that any grassland produces. All these disturbances tend not to happen in domesticated landscapes and we need to make up for this static situation, particularly with regard to the eradication of shrubs. So, if your patch starts to look brushy, and the grasses and forbs are getting lots of shade, get out and grub

out the bushes! You can do this by hand, with a chainsaw, or with a Brush Hog, but let the sun shine in. (But, see Principle #4 before you start!)

Finally, avoid planting trees in and around your tallgrass. In our recent survey of tallgrass habitats around Ontario, we discovered that the single greatest threat to extant tallgrass is planted trees, particularly red pines. You need to make a decision to have tallgrass habitat or a forest; it really isn't possible to have both in the same exact area. If you decide that you want a savanna or woodland, then you must keep the number and size of your trees down to where the total canopy cover of all the trees combined is less than 60% (preferably less than 30%) of the total area. In addition, you want to only use tree species that occur naturally in, and are adapted to, savannas and woodlands, e.g., oaks, white pines, jack pines, and hickories, for the most part. Finally, remember that you want trees and not saplings. In a natural savanna or woodland, the vast majority of saplings are destroyed by fire or drought each year. Saplings shade out grasses and forbs, so, unless you consciously choose to keep one that you want to grow as a tree, remove the younger trees!

FURTHER READING



- ALISON, R. M. (1976).** The History of the Wild Turkey in Ontario. *The Canadian Field Naturalist*, 90, 481-85.
- ANDERSEN, O. B., CROW, T. R., LIETZ, S. M., & STEARNS, F. (1996).** Transformation of a landscape in the upper mid-west, USA: The history of the lower St. Croix River valley, 1830 to present. *Landscape and Urban Planning*, 35, 247-67.
- BALL, P. W. (1981).** Hill's Oak (*Quercus ellipsoidalis*) in Southern Ontario. *The Canadian Field Naturalist*, 95(3), 281-86.
- BOLLINGER, E. K., BOLLINGER, P. B., & GAVIN, T. A. (1990).** Effects of Hay Cropping on the Eastern Populations of the Bobolink. *Wilderness Society Bulletin*, 18(2), 142-50.
- BRAY, J. R. (1960).** The Composition of Savanna Vegetation in Wisconsin. *Ecology*, 41(4), 721-32.
- CARPENTER, J. R. (1940).** The Grassland Biome. *Ecological Monographs*, 10(4), 617-84.
- CATLING, P. M., & CATLING, V. R. (1993).** Floristic Composition, Phytogeography and Relationships of Prairies, Savannas, and Sand Barrens Along the Trent River, Eastern Ontario. 1-53.
- CATLING, P. M., CATLING, V. R., & MCKAY-KUJA, S. M. (1999).** The Extent, Floristic Composition and Maintenance of the Rice Lake Plains, Ontario, Based on Historical Records. *The Canadian Field Naturalist*, 106(1), 73-86.
- COLLINS, S. L. (1987).** Interaction of Disturbances in Tallgrass Prairie: A Field Experiment. *Ecology*, 68(5), 1243-50.
- COLLINS, S. L., & ADAMS, D. E. (1983).** Succession in Grasslands: Thirty Two Years of Change in a Central Oklahoma Tallgrass Prairie. *Vegetation*, 51(12), 181-90.
- COUPLAND, R. T. (1950).** Ecology of Mixed Prairie in Canada. *Ecological Monographs*, 20, 271-315.
- DELANY, K., RODGER, L., WOODLIFFE, P. A., RHYNARD, G., & MORRIS, P. (2000).** Planting the Seed.
- DEPAUL, L., & KOPITZKE, D. (1999).** Incentives for Savanna Protection on Private Lands: Past Present and Future. *Transactions*, 87, 47-56.
- DYKSTERHUIS, E. J. (1957).** The Savannah Concept and Its Use. *Ecology*, 83(3), 435-42.
- FABER-LANGENDOEND, D., & MAYCOCK, P. F. (1983).** A Vegetation Analysis of Tallgrass Prairie in Southern Ontario. Thirteenth North American Prairie Conference, 17-32.
- FABER-LANGENDOEND, D., & MAYCOCK, P. F. (1987).** Composition and Soil - Environment Analysis of Prairies on Walpole Island, Southwestern Ontario. *Canadian Journal of Botany*, 65, 2410-19.
- GIBSON, D. J. (1988).** Regeneration and Fluctuation of Tallgrass Prairie Vegetation in Response to Burning Frequency. *Bulletin of Torrey Botanical Club*, 18(1), 1-12.
- GOODBAN, A. G., BAKOWSKY, W. D., & BRICKER, B. D. (1983).** The Historical and Present Extent and Floristic Composition of Prairie and Savanna Vegetation in the Vicinity of Hamilton, Ontario. Fifteenth North American Prairie Conference, 87-103.
- HANNON, S. J., COTTERILL, S. E., & SCHMIEGELOW, F. K. A. (2004).** Identifying Rare Species of Songbirds in Managed Forests: Application of an Ecoregional Template to a Boreal Mixed Wood System. *Forest Ecology and Management*, 191, 157-70.
- HERKERT, J. R. (1997).** Bobolink *Dolichonyx oryzivorus* Population Decline in Agricultural Landscapes in the Midwestern USA. *Biological Conservation*, 80, 107-12.
- HIGGINS, K. F. (1984).** Lightning Fires in North Dakota Grasslands and in Pine Savanna Lands of South Dakota and Montana. *Journal of Range Management*, 32(2), 100-03.
- HOWE, H. F. (1994).** Managing Species Diversity in Tallgrass Prairie: Assumptions and Implications. *Conservation Biology*, 8(3), 691-704.
- JACKSON, M., & COWELL, C. M. (2002).** Vegetation Change in a Rainforest Remnant at the Eastern Presettlement Prairie Margin, U.S.A. *Natural Areas Journal*, 22(1), 53-60.
- LEACH, M. K., & GIVNIGH, T. J. (1999).** Gradients in the Composition, Structure, and Diversity of Remnant Oak Savannas in South Wisconsin. *Ecological Monographs*, 69(3), 353-74.
- LEE, J. T., WOODY, S. J., & THOMPSON, S. (2001).** Targeting Sites for Conservation: Using a Patch-Based Ranking Scheme to Assess Conservation Potential. *Journal of Environmental Management*, 61, 367-80.
- LOOMIS, R. S. (1984).** Traditional Agriculture in America. *Annual Review of Ecology and Systematics*, 15, 449-78.
- LUMSDEN, H. G. (1966).** The Prairie Chicken in Southern Ontario. *The Canadian Field-Naturalist*, 80, 33-45.
- MACDOUGALL, A. S., BECKWITH, B. R., & MASLOVAT, C. Y. (2004).** Defending Conservation Strategies with Historical Perspectives: A Case Study From a Degraded Oak Grassland System. *Conservation Biology*, 18(2), 455-65.
- MAYCOCK, P. F. (1963).** The Phytosociology of the Deciduous Forest of Extreme Southern Ontario. *Canadian Journal of Botany*, 41, 379-438.
- MCCUNE, B., & COTTAM, G. (1985).** The Successional Status of a Southern Wisconsin Oak Woods. *Ecology*, 66(4), 1270-78.
- MORSINK, W. A. G. (1984).** Deciduous Forest Mapping Units and Major Tree Lists for the Essex, Kent, and Lambton Tri-County Area of Southwestern Ontario. *Ontario Field Biology*, 38, 17-29.
- PACKARD, S. (1988).** Just a Few Oddball Species: Restoration and the Rediscovery of the Tallgrass Savanna. *Restoration and Management*, 6, 13-22.
- PLUMB, G. E., DODD, JERROLD L. (1993).** Foraging Ecology of Bison and Cattle on a Mixed Prairie: Implications for Natural Area Management. *Ecological Applications*, 3(4), 631-43.
- PYNE, S. J. (1963).** Indian Fires. *Natural History*, 2(83), 6-11.
- REZNICEK, A. A. (1983).** Association of Relict Prairie Flora with Indian Trails in Central Ontario. Eighth North American Prairie Conference, 33-39.
- REZNICEK, A. A., & MAYCOCK, P. F. (1983).** Composition of an Isolated Prairie in Central Ontario. *Canadian Journal of Botany*, 61, 3107-16.
- ROBERTS, T. M., ROBSON, T., & CATLING, P. M. (1977).** Factors Maintaining a Disjunct Community of *Laitris specata* and Other Prairie Species in Ontario, Canada. *Canadian Journal of Botany*, 55, 593-605.
- ROBERTSON, H. (1993).** Between the Banks and the Blue Sky. *Equinox*, 47-57. Robertson, K. R., Anderson, R. C., & Schwartz, M. W. (1997). The Tallgrass Prairie Mosaic (pp. xvi, 436 p). New York: Chapman & Hall.
- ROGERS, C. M. (1966).** A Wet Prairie Community from Windsor, Ontario. *Canadian Field Naturalist*, 80, 195-99.
- SKARPE, C. (1991).** Spatial Patterns and Dynamics of Woody Vegetation in an Arid Savanna. *Journal of Vegetation Science*, 2, 565-72.
- GOVERNMENT OF ONTARIO. (1999).** Prescribed Burns For Tallgrass Prairie and Savannas in Southern Ontario. Ontario Ministry of Natural Resources
- TESTER, J. R., MARSHALL, WILLIAM H. (1961).** A Study of Certain Plant and Animal Interrelations on a Native Prairie in Northwestern Minnesota. *Occasional Papers*, 8, 1-51.
- TRANSEAU, E. N. (1935).** The Prairie Peninsula. *Ecology*, 16(3), 423-37.
- VAN DER HEIJDEN, M. G. A. (2004).** Arbuscular mycorrhizal Fungi as Support Systems for Seedling Establishment in Grasslands. *Ecology Letters*, 7, 293-303.
- VINTON, M. A., HARTNETT, D. C., FINCK, E. J., & BRIGGS, J. M. (1993).** Interactive Effects of Fire, Bison (*Bison bison*) Grazing and Plant Community Composition in Tallgrass Prairie. *The American Midland Naturalist*, 129, 10-18.
- VOGL, R. J. (1964).** Vegetational History of Crex Meadows, A Prairie Savanna in Northwestern Wisconsin. *American Midland Naturalist*, 72(1), 157-75.
- WALK, J., & WARNER, R. E. (2000).** Grassland Management for the Conservation of Songbirds in the Midwestern USA. *Biological Conservation*, 94, 165-72.
- WALLACH, B. (1985).** The Return of the Prairie. *Landscape*, 28(3), 1-5.
- WARMAN, L., SINCLAIR, ANTHONY. (2000).** A Systematic Method for Identifying Priority Conservation Areas Using Wildlife Habitat Relationships and Observed Locations of Rare Species. *Proceedings*, 141-44.
- WOOD, J. D. (1961).** The Woodland-Oak Plains Transition Zone in the Settlement of Western Upper Canada. *Canadian Geographer*, 1, 43-47.