

General Habitat Description for the Eastern Meadowlark (*Sturnella magna*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

HABITAT CATEGORIZATION

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| 1 | Nest and the area within 10 m of the nest |
| 2 | The area between 10 m and 100 m of the nest or centre of approximated defended territory |
| 3 | The area of continuous suitable habitat between 100 m and 300 m of the nest or approximated centre of defended territory |

Category 1

Eastern Meadowlark nests and the area immediately around the nest (i.e., 10 m) are highly sensitive features supporting the species' reproduction life cycle and have the lowest tolerance to alteration. These are areas the species depends on for egg laying, incubation, and rearing of young. Nests are used daily during the nesting season (~20-30 days). Juveniles continue to receive parental care for 2 weeks following fledging. During the first week after fledging, juveniles are not capable of extended flights and rely on areas surrounding the nest site to gain experience flying and to obtain food. At 1-3 days post-fledging, juvenile movements are restricted to hopping through grass and short flights or glides between 5 and 10 m (Kershner 2004). The area immediately surrounding the nest (i.e., 10 m) is important to maintain the microclimate around the nest and provide cover from predators.

It is important to note that Eastern Meadowlark nests are rarely identified due to their cryptic nature. It is inadvisable to search for nests as this may inadvertently jeopardize the nesting site and/or offspring. However, if a nest is identified, it and the area within 10 m shall be categorized as Category 1.

Category 2

The area between 10 m and 100 m of the nest or centre of approximated defended territory is included in Category 2 and is considered to have a moderate level of tolerance to alteration. This area includes the species' defended territory and is depended on daily for courtship, mating, rearing of young, feeding, resting, and bathing. Suitable habitat for this species includes but is not limited to pastures, hayfields, old or abandoned fields, and native prairies and savannahs (McCracken *et al.* 2013). Breeding males demonstrate strong territoriality during the breeding season (COSEWIC 2011). Eastern Meadowlark defended territories range from 1.2-6.1 ha and are on average 2.8-3.2 ha in size (or approximately the area within 100 m of a nest) (Lanyon 1995). Due to the polygynous nature of Eastern Meadowlarks, one territory may support multiple females and their nests. Both males and females show site fidelity to previously used breeding sites (Lanyon 1957, 1995).

Category 3

The area of continuous suitable habitat between 100 m and 300 m of a nest or centre of approximated defended territory is included in Category 3 and will be considered to have a high level of tolerance to alteration. Eastern Meadowlarks depend on this area for feeding, rearing of young, resting, dispersal and concealment from predators. This area also helps maintain the function of both Category 1 and 2 habitat. Suitable habitat for this species includes but is not limited to pastures, hayfields, old or abandoned fields, and native prairies and savannahs (McCracken *et al.* 2013).

Eastern Meadowlarks are grassland-dependent species but may not be strongly area-sensitive (McCracken *et al.* 2013). Studies in the U.S. have shown that breeding density was not influenced by patch size and the species was not affected by edge density, distance to another patch of grassland or forest, cover, patch size or core area of grassland (Bollinger 1995, Winter 1998, Horn *et al.* 2000, McCracken *et al.* 2013). Nevertheless, other studies have suggested that large tracts of grasslands are preferred over smaller fragments (Herkert 1991, Vickery *et al.* 1994) and that there may be regional differences in the degree of sensitivity to habitat fragmentation (O'Leary and Nyberg 2000, Hull 2003, Renfrew and Ribic 2008). Minimum patch area requirements to support breeding habitat for the species have been reported at 5 ha (Herkert 1994) however abundance and productivity are higher in larger patches and in patches surrounded by other open habitats (Herkert *et al.* 2003, Bollinger and Gavin 2004, Ribic and Sample 2005, Keyel *et al.* 2011, McCracken *et al.* 2013).

Activities in Eastern Meadowlark habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed.*

Generally compatible:

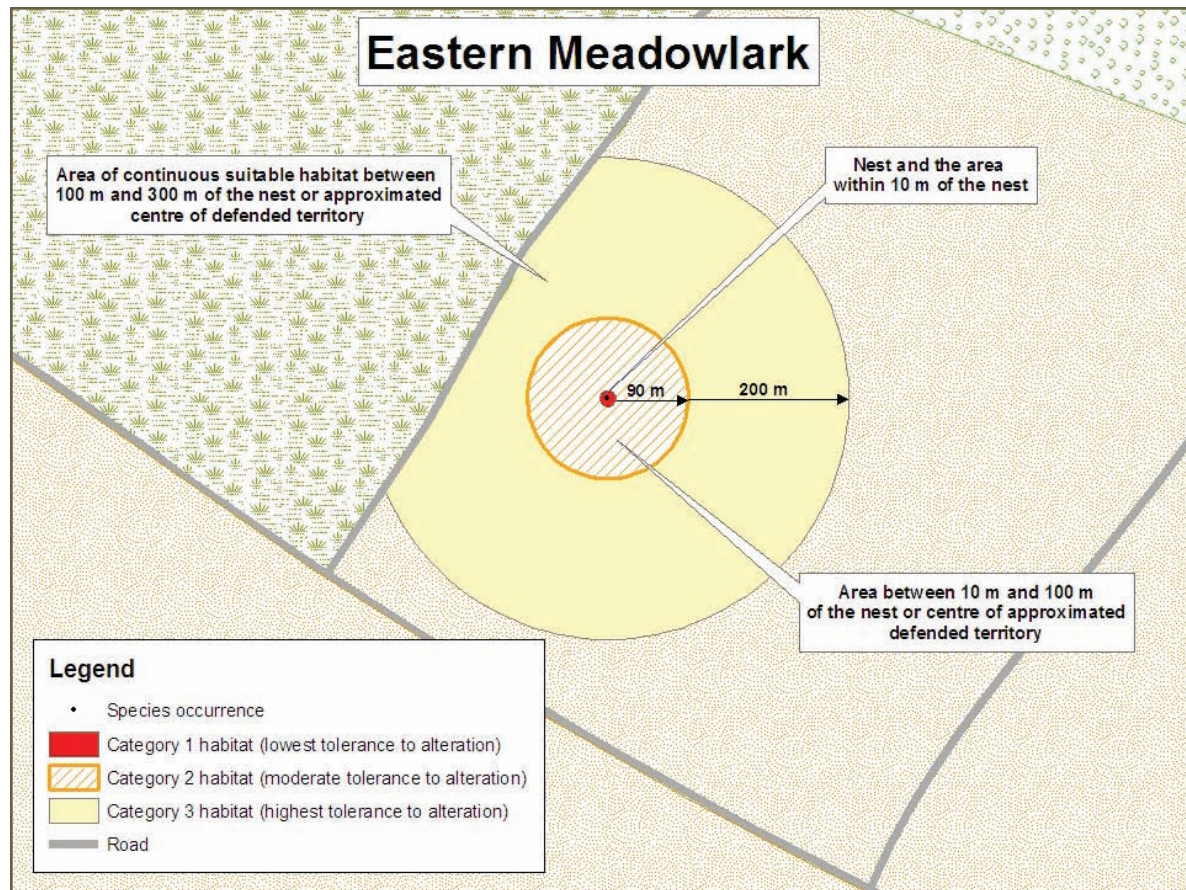
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle grazing.
- Hiking and non-motorized vehicle use on existing recreational trails.
- General yard work such as lawn care and gardening.

Generally not compatible*:

- Development activities that result in significant fragmentation or removal of large tracts of suitable grasslands.
- Indiscriminate application of pesticides within habitat.

* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

Sample application of the general habitat protection for Eastern Meadowlark



References

Bollinger, E.K. 1995. Successional changes and habitat selection in hayfield bird communities. *Auk* 112:720–732.

Bollinger, E.K. and T.A. Gavin. 2004. Responses of nesting Bobolinks (*Dolichonyx oryzivorus*) to habitat edge. *Auk* 121:767–776.

COSEWIC. 2011. COSEWIC assessment and status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.

Herkert, J.R. 1991. Prairie birds of Illinois: population response to two centuries of habitat change. *Illinois Natural History Survey Bulletin* 34:393–399.

Herkert, J.R. 1994. The effects of habitat fragmentation on midwestern grassland bird communities. *Ecological Applications* 4:461–71.

- Herkert, J.R., D.L. Reinking, D.A. Wiedenfeld, M. Winter, J.L. Zimmerman, W.E. Jensen, E.J. Finck, R.R. Koford, D.H. Wolfe, S.K. Sherrod, M.A. Jenkins, J. Faaborg, and S.K. Robinson. 2003. Effects of prairie fragmentation on the nest success of breeding birds in the mid-continental United States. *Conservation Biology*. 17:587–594.
- Horn, D.J., R.J. Fletcher, Jr. and R.R. Koford. 2000. Detecting area sensitivity: a comment on previous studies. *American Midland Naturalist* 144:28-35.
- Hull, S. D. 2003. Effects of management practices on grassland birds: Eastern Meadowlark. Northern Prairie Wildlife Research Center, Jamestown, ND. Northern Prairie Wildlife Research Center Online. <http://www.npwr.usgs.gov/resource/literatr/grasbird/eame/eame.htm>.
- Kershner, E.L., J.W. Walk, and R.E. Warner. 2004b. Post fledging movements and survival of juvenile Eastern Meadowlarks (*Sturnella magna*) in Illinois. *Auk* 121:1146-1154.
- Keyel, A.C., C.M. Bauer, C.R. Lattin, L.M. Romero, and J.M. Reed. 2011. Testing the role of patch openness as a causal mechanism for apparent area sensitivity in a grassland specialist. *Oecologia* (published online; doi: 10.1007/s00442-011-2213-8).
- Lanyon, W.E. 1957. The comparative biology of the meadowlarks (*Sturnella*) in Wisconsin. Publications of The Nuttall Ornithological Club, Number 1. Cambridge, MA. 67 pp.
- Lanyon, W.E. 1995. Eastern Meadowlark (*Sturnella magna*). A. Poole and F. Gill, editors. *The Birds of North America*, No. 160. The Academy of Natural Sciences, Philadelphia, PA.
- O’Leary, C.H. and D.W. Nyberg. 2000. Treelines between fields reduce the density of grassland birds. *Natural Areas Journal* 20:243-249.
- McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier. 2013. DRAFT Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii + 86 pp.
- Renfrew, R.B. and C.A. Ribic. 2008. Multi-scale models of grassland passerine abundance in a fragmented system in Wisconsin. *Landscape Ecology* 23:181–193.
- Ribic, C.A. and D.W. Sample. 2001. Associations of grassland birds with landscape factors in southern Wisconsin. *American Midland Naturalist* 146:105-121.
- Vickery, P.D., M.L. Hunter, Jr., and S.M. Melvin. 1994. Effects of habitat area on the distribution of grassland birds in Maine. *Conservation Biology* 8:1087-1097.
- Winter, M. 1998. Effect of habitat fragmentation on grassland-nesting birds in southwestern Missouri. Ph.D. dissertation. University of Missouri, Columbia, MI. 215 pp.