Species Habitat Assessment

PURPOSE:

This document provides guidance for the completion of a Species Habitat Assessment, which may be required for the submission of an application under the *Planning Act*. All Species Habitat Assessments shall follow the requirements referenced in this document.

A Species Habitat Assessment provides information that may be required for a Planning Application and is most often completed as a component of an Environmental Impact Statement (EIS), Environmental Assessment (EA), subwatershed study, or natural areas inventory, but on occasion may be required as an independent assessment where the completion of the additional study or studies is not required. Where an EIS or other study is completed, that includes a species habitat assessment, that information may be incorporated into the EIS and a separate document is not required.

Significant Wildlife Habitat and Significant Habitat of Threatened or Endangered Species have been identified as Core Areas in the City's Natural Heritage System (NHS). The identification of significant species and their habitats can influence the design of a development proposal.

Development, as defined in the City's Official Plans, means "the creation of a new lot, change in land use, or the construction of buildings or structures, requiring approval under the Planning Act." This includes:

- Official Plan Amendments;
- Zoning By-law Amendments;
- Draft Plans of Subdivision;
- Site Plan Control;
- Consents to Sever;
- Minor Variances; and,
- Niagara Escarpment Plan amendments or development permits.

Site alteration means “activities, such as grading, excavation, and the placement of fill that would change the landform and natural vegetative characteristics of a site”. If a development or site alteration is proposed within or adjacent to a Species at Risk (SAR) occurrence, has the potential to provide Species at Risk habitat, and/or could contain significant wildlife habitat, a species habitat assessment will be required.

While the likelihood of significant species and habitat is highest in association with established natural areas, such as those included in the Natural Heritage System (NHS), certain species may occupy or utilize anthropogenic features and marginal or cultural habitats (e.g.: abandoned structures; landscaping vegetation; hedgerows; agricultural ponds or drains, hayfields, etc.). Such features cannot be exempted from assessment without, at minimum, a due-diligence review or screening to address the potential for species and habitat to occur.

A Species Habitat Assessment is a study that addresses the potential presence of significant species, including Species at Risk (SAR) and provincially/regionally rare species, and their habitat, and habitat types or areas which meet criteria for Significant Wildlife Habitat.

PREPARED BY:

A Species Habitat Assessment is completed by a qualified expert, which in this case refers to an expert in fields relevant to the natural environment (e.g., ecology, biology, forestry), usually an environmental consultant. The qualified expert should have demonstrated experience and training in the location and identification of target species and habitat types/features.

CONTENTS:

A Species Habitat Assessment shall contain the following:

1.0 Scoping a Species Habitat Assessment

A Species Habitat Assessment may be scoped by City of Hamilton staff in consultation with the applicant, to focus on specific areas or species. Field data from previous studies may be used as a secondary source of information but must be updated if collected more than five years prior.

The following sections outline the scope of work that could potentially be required for a Species Habitat Assessment, but not all of the listed components may be required depending on the outcome of project scoping.

1.1 Background Review

Review and analysis of existing information is the first step which allows preliminary characterization of the study area and identifies data gaps which may require additional work to address. This step should be completed prior to any field investigations; it may be beneficial for the applicant to begin this process during the scoping stage so that the data gaps and assumptions are fully understood by all parties at the onset of the project.

Within the City of Hamilton, background information is to be sought from the City of Hamilton's Natural Areas Inventory Project (3rd Edition, 2014) and the Hamilton Natural Heritage Database which is managed by the Hamilton Conservation Authority. Additional background data sources should be considered, including federal, provincial, and public atlas data. Some examples have been included in the Other Information section.

While the focus of the analysis will be on natural features and areas, under some circumstances it will also be important to consider anthropogenic features; for example: derelict buildings which can provide roosting habitat for Species at Risk (SAR) bats; chimneys providing nesting and/or roosting habitat for Chimney Swifts, bridges supporting colonies of nesting birds; or agricultural fields with wet pockets / remnant wetlands or open country bird breeding habitat. While anthropogenic features may not be appropriate to designate as natural heritage under municipal policy, they could have

legislative implications under the *Species Conservation Act*, the *Migratory Birds Convention Act*, or the *Species at Risk Act*.

Please note that in many cases, sites with public access will have existing records available if significant numbers of animals or species are consistently present (e.g., a birding “hotspot” may be present on the eBird website). Background information may be sufficient in these cases to determine the habitat usage by the applicable species / numbers of animals. However, for locations with restricted access, such as private properties without roadside viewing points, background information from public sources will be lacking. In these cases, a lack of existing observations records shall not be taken as proof of the absence of species or habitat.

The background review is to include the entire study area limits plus adjacent lands, with the potential to extend for greater distances where there is contiguous habitat overlapping with or extending through the study area. Adjacency is defined in the City's Official Plan and may be as great as 120 metres from the feature. Wildlife species can move throughout a range or territory formed of suitable habitat, so a lack of past observation within the study area is not to be taken as proof of absence if that species has been observed on adjacent lands containing similar habitat.

1.1.1 Preliminary Species at Risk Screening

The Ministry of Environment Conservation, and Parks’ (MECP) 2019 “Client’s Guide to Preliminary Screenings for Species at Risk” (or updated document as applicable; available via communication with MECP) shall be referenced by the proponent to ensure that all requirements are met. A preliminary list of Species at Risk (SAR) will be compiled, including those species that have previously been or could potentially be associated with the study area and adjacent lands. This list will be prepared using all available background information sources including any site-specific resources such as previous assessment reports/studies or background information sourced from relevant agencies (e.g., Conservation Authority), stakeholders/interest groups (e.g., local nature clubs), or local residents. The list of potential species associations resulting from this review shall be subjected to a preliminary screening by comparing the habitat

requirements of each species with the habitat present in the study area, to determine if species has the potential to be present under current conditions. A reconnaissance site visit may be appropriate to complete at this stage to review habitat and site conditions. Recommendations are then to be developed concerning any need for targeted surveys or additional assessment. A conservative approach is to be taken, where if there is any doubt as to the presence of species or habitat, or if data are lacking, then potential for habitat is to be assumed present unless and until proven otherwise. In the event that existing information is not sufficient to screen the species, field investigations must be completed to the extent necessary to, at minimum, confirm the presence/absence of suitable habitat features, or to survey for the presence/absence of targeted species during the appropriate season, per the applicable survey protocols and procedures.

For locations where background information confirms Species at Risk presence, limits of habitat are to be defined and discussed according to the provincial General Habitat Description for that species, if available (e.g.: https://www.ontario.ca/page/blandings-turtle-general-habitat-description), or other applicable source (with sources and justification provided for City approval).

1.1.2 Preliminary Significant Wildlife Habitat Review

The Province's Significant Wildlife Habitat (SWH) Technical Guide (MNRF, 2000) and Significant Wildlife Habitat Criteria Schedules (MNRF, 2015) provide an in-depth accounting of the types and characteristics of habitat that are considered significant on the provincial level, as well as the criteria that are to be used to guide the identification of candidate or confirmed Significant Wildlife Habitat. *Candidate* habitat is typically identified where landforms meet certain minimum standards for size, structure, or character; *confirmed* habitat is identified where studies have been completed to identify the required numbers of individuals, indicator species, or other characteristics associated with significance.

Using background information, the applicant is to review the criteria applicable to the ecoregion containing the study area (6E or 7E) and prepare a preliminary assessment of the listed categories and criteria. A conservative approach is to be taken, where if

there is any doubt as to the applicability of a criterion or if data are lacking, then candidate habitat should be assumed present until proven otherwise through field investigations or consultation with relevant authorities.

Air photo analysis (using multiple years and seasons, if available) should be completed to help to identify candidate habitats. For example, spring sheet water in fields would be visible in air photos and, if present over multiple years, and would suggest that waterfowl stopover and staging habitat should be considered for the site. Similarly, air photos will show wet pockets or headwater drainage features in farm fields or pastures which might support significant numbers of spring-breeding frogs or other wetland attributes.

1.2 Field Surveys

Where existing background information is not sufficient to confidently evaluate the presence/absence of significant species or habitat, then field investigations shall also be undertaken. The scope of field surveys will be informed by the species or habitat being targeted for confirmation, as determined through the background review and study scoping stages described above.

The timing of ecological field investigations is critical for the accurate detection and identification of species. All field surveys must be completed in the appropriate season and time to detect the target species or habitat. The appropriate scope and timing of field investigations will largely follow the City of Hamilton's Environmental Impact Statement Guidelines (2015). However, additional or alternate scope may be required for certain species or habitat types. The following sections provide an overview of additional or atypical survey requirements and protocols that may be appropriate for the detection of species and their habitat in the field. Not all of the following surveys may be required for a selected study area.

Please note that surveys requiring the collection and handling of animals may be subject to the requirement for a Wildlife Scientific Collector's Authorization under the Fish and Wildlife Conservation Act, and an associated Animal Care Protocol approved by the MNRF Wildlife Care Committee, prior to the completion of any work. For

specialized surveys requiring the capture or handling of animals, at least one member of the study team must have experience with completing those types of surveys according to an approved work plan.

In all cases, where significant species or habitat features are observed during field investigations, they must be accurately located using GPS and the number of individuals is to be counted or estimated as appropriate.

Botanical Survey

Targeted botanical surveys may be required where rare or at-risk plants have been flagged as a possibility for the study area, or where the documentation of indicator plant species is required for the confirmation of Significant Wildlife Habitat. Where required, such surveys are to be completed via wandering transect through the extent of habitat providing suitable growing conditions for the target species and timed to allow for maximum potential of identification of those species (i.e., when identifiable features such as flowers or seed heads are present; will vary according to species).

Breeding Birds

Certain species or groups of birds (e.g., raptors, owls) breed at different times of year than is considered typical for most species. When surveying for a particular species of breeding bird, the applicant must identify its specific breeding season (e.g., using the ‘safe dates’ resource published for the Ontario Breeding Bird Atlas) and determine if survey effort outside of the typical window is required.

Specialized survey protocols have been developed as part of the Ontario Breeding Bird Atlas to detect the breeding habitat of nightjars, owls, and marsh birds; requirements for these surveys may be triggered to confirm presence/absence of Species at Risk or as part of targeted Significant Wildlife Habitat investigations. If required, surveyors should follow the published protocol documents for appropriate timing and scope.

A specialized survey protocol is also available for the identification of Chimney Swift roosting habitat. When an application includes impact to or destruction of a structure with potential to support nesting Chimney Swifts (i.e., structures with open chimneys,

particularly larger and longer chimneys on non-residential buildings such as schools, churches, or historical buildings), survey efforts are to follow the National Chimney Swift Roost Survey Protocol (Environment and Climate Change Canada, 2022).

Migratory and Overwintering Birds

The provincial criteria schedules for Significant Wildlife Habitat include consideration of migratory and overwintering bird habitats. If candidate habitat in these categories is identified through the preliminary assessment, then field investigations during the migratory or overwintering period (i.e., outside of the typical survey period of May-July) may be required to confirm presence/absence. The required timing and effort for these surveys will be specific to the habitat or species targeted and should be guided by the Significant Wildlife Habitat Technical Guide and criteria schedules.

Reptiles

Provincial guidelines are available for surveying most of Ontario's Species at Risk reptiles:

Survey Protocol for Ontario's Species at Risk Snakes (MNRF, 2016);

Survey Protocol for Queensnake (*Regina septemvittata*) in Ontario (MNRF, 2015);

Survey Protocol for Blanding's Turtle in Ontario (MNRF, 2015);

Survey Protocol for Spotted Turtle (*Clemmys guttata*) in Ontario (MNRF, 2015) – to be obtained by contacting the province directly; and,

Survey Protocol for Wood Turtle (*Glyptemys insculpta*) in Ontario (MNRF, 2015) – to be obtained by contacting the province directly.

Potential snake hibernacula include features such as stone piles, rock crevices, old building foundations or tree stumps, and abandoned animal burrows. Confirmation of hibernaculum usage is very difficult since occupied hibernacula often cannot be differentiated from other potentially suitable but unused habitat features based on surface characteristics alone and therefore need targeted surveys during the

emergence period to confirm usage. Visual encounter surveys (in keeping with the Species at Risk snake protocol referenced above) that are timed to coincide with spring emergence may be able to confirm individual snakes entering or leaving the entrance of an occupied hibernaculum. Additional surveying utilizing fences or traps may be required to confirm presence/absence of Species at Risk or overall abundance of snakes using a feature; such surveys should only be done as part of an approved study program under a Wildlife Scientific Collector's Authorization from the MNRF.

Salamanders

Salamanders do not vocalize and therefore are not captured in the typical Marsh Monitoring Program calling amphibian surveys. Surveying for salamanders and their habitat may be required to determine presence/absence, particularly if Species at Risk may be present in the study area. However, due to the sensitivity of these habitats and organisms, targeted survey programs for salamanders are recommended to only be completed in consultation with MNRF/MECP and the applicable Conservation Authority. Survey protocols are to be informed by the species and habitat targeted and confirmed with the appropriate agencies beforehand.

Potential breeding habitat for ambystomid salamanders includes temporary vernal pools in woodlands and similar features which may be identified and mapped in early spring. Pools may be visually searched in a non-intrusive manner for the presence of adults or egg masses during the active period (typically mid-March to late April). Plethodontid salamanders, comparatively, are not dependent on ponds or wetlands, but may be found throughout moist woodland areas; they are typically surveyed for using the joint EMAN-Parks Canada monitoring protocol which utilizes artificial cover boards but can be encountered under natural cover.

For both groups, visual surveys for individuals that include the flipping of cover objects should be utilized with discretion, as excessive disturbance of cover habitat can have negative impacts on individuals or the population. Any cover objects that are disturbed should be replaced in their original location with care not to injure any animals that may be sheltering beneath, and once species presence has been confirmed then additional

habitat disturbance should be minimized. Collection of salamanders (e.g., with minnow traps, pitfall traps, dip nets) should only be done as part of an approved survey program under a Wildlife Scientific Collector's Authorization from the MNRF.

Bats

Background information, aerial photographs, and/or Ecological Land Classification assessment may be used to identify woodland areas that have potential for bat habitat (including habitat for the four bats currently listed as Species at Risk in Ontario). On-site reconnaissance may also be appropriate to identify isolated or marginal features with habitat potential; please note that while forest and swamp communities are documented as the primary habitats for bats, MECP has indicated that patchy or isolated trees providing wildlife habitat features (e.g., large mature trees with cavities or cracks along driveways or hedgerows) may also provide habitat for Species at Risk bats and can be locally significant, especially if other habitat in the area is lacking, and so should not be discounted simply because they do not occur in a forest.

Where potential or candidate habitat is present, and where this habitat will possibly be impacted or encroached on by a proposed development or land use change (e.g., proposed tree removal), field investigations must be completed. MECP has prepared three documents, dated 2022, which provide directions with regard to Species at Risk bat habitat (Species at Risk Bats Survey Note; Use of Buildings by Species at Risk Bats - Survey Methodology; Bats & Treed Habitats - Maternity Roost Surveys). These documents may currently be obtained by contacting the MECP and may be subject to update; the proponent should ensure they are aware of and have obtained the most current guidelines from the MECP regarding Species at Risk bats.

Required survey components per current standards may include the following, depending on the species and affected habitat features:

Habitat tree survey - to be completed during "leaf-off" conditions (i.e., late fall through early spring) when visibility of upper branches and trunks of trees is high. Trees with potential to provide roosting habitat (e.g., standing snags, cavity trees, trees with cracks or sloughing bark, large oaks, or maples) are to be identified and mapped;

Rock feature survey - identification of rock piles and similar features in keeping with the habitat description for Species at Risk Eastern Small-footed Myotis;

Acoustic monitoring - to be completed for ten nights in the month of June using passive ultrasonic recorders; can allow identification of species in a study area and may be required by MECP for the review and approval of Endangered Species Act applications; and/or,

Exit surveys - may be required by the MECP prior to proposed demolition of buildings or other structures with the potential to contain roosting habitat; involves actively surveying for bats entering/leaving a structure, over two separate evenings preferably in the month of June.

If the potential habitat areas/features identified through the preliminary stage are to be avoided and protected by the proposed project, then additional surveying to confirm presence/absence and quantify the habitat may not be necessary. If impacts are expected to occur, however, then surveying will be required to ensure compliance with the *Species Conservation Act* at a minimum.

Other Mammals

Targeted mammal surveys may be appropriate if Species at Risk mammals are a possibility for the area. In such cases, a survey program potentially including wildlife cameras, tracking, or trapping would need to be developed in keeping with the behaviours and habitat of the affected species. A survey program requiring trapping and handling animals would require a Wildlife Scientific Collector’s Authorization under the Fish and Wildlife Conservation Act, and an associated Animal Care Protocol approved by the MNRF Wildlife Care Committee, prior to the completion of any work.

Insects

Targeted surveys may be appropriate if Species at Risk or provincially/regionally rare insect species are a possibility for the area, or if data is lacking for the site (as is often the case, as insect surveying has not historically been completed in many locations). In such cases, the survey protocols and timing would be dependent on the targeted

species. Dragonflies, damselflies, and butterflies are among the more commonly surveyed insects and would be observed via repeated wandering transects in suitable habitat, with identification occurring either visually with the naked eye or via binoculars, or by netting of individuals for close examination. Dragonflies and damselflies might also be surveyed in their larval forms along with numerous other insects as part of aquatic benthic macroinvertebrate sampling. Surveys for butterflies and moths shall also include identification of larval host plants in the study area.

Bee surveys also generally occur via wandering transects as described above. Guidance on the completion of bumble bee surveys in particular has been proposed within the Ontario Rusty-patched Bumble Bee Recovery Strategy document (MNRF, 2011) and in Wildlife Preservation Canada's BumbleBeeWatch General Survey Protocol (2017).

Other groups of insects would have their own specialized requirements based on their habitats and behaviours. In all cases, survey timing will need to coincide with the active period or flight time of the targeted species.

Capture of insect specimens in nets or traps is necessary for identification of certain species and groups. Please note that capture and handling of SAR may be subject to requirements under the *Species Conservation Act*, but otherwise most invertebrates are not listed under the *Fish and Wildlife Conservation Act* and would not need a Wildlife Scientific Collector's Authorization. "Specially Protected" invertebrates under the Act at this time include only listed SAR and the swallowtail group of butterflies; please refer to O. Reg. 669/98 to confirm the current list of wildlife species protected under the Act which would require a Wildlife Scientific Collector's Authorization.

Terrestrial Crayfish

Chimneys or burrows of terrestrial crayfish are often incidentally encountered in wet meadows or along the edges of fields or wetlands. Recommended survey timing for dedicated terrestrial crayfish detection, per the Significant Wildlife Habitat criteria schedule, is April to August during which time the distinctive mud chimneys may be found in meadow marsh, swamp, or moist terrestrial sites. The documented presence of

terrestrial crayfish or their chimneys qualifies an area as confirmed Significant Wildlife Habitat.

Aquatic Species

Survey requirements for aquatic species are defined separately in the Fish Habitat Assessment Guidelines.

1.3 Analysis and Conclusions

The information gained through the steps detailed above is to be compiled and analyzed to identify the location, extent, and sensitivity of any significant species or habitat identified. Mapping is to be produced on a recent air photo base showing the general location of any significant observations made by the applicant's team, as well as confirmed locations of background occurrence records. Mapping shall also show the delineation of any Ecological Land Classification (ELC) community boundaries, Species at Risk habitat boundaries, or candidate and confirmed Significant Wildlife Habitat areas, as applicable.

The preliminary Species at Risk screening and Significant Wildlife Habitat assessment (see Section 3.2) are to be updated and finalized, and the determination of presence/absence of species or habitat is to be confirmed, with evidence provided to support the final determination.

1.4 Documentation

A Species Habitat Assessment report is to be prepared, and should include the following:

- Definition of the study area, including a general site location map showing main roads and the location of the site relative to the City's Natural Heritage System;
- Results of the background information review and a list of all information sources used;
- Details of all field investigations completed (if applicable; e.g., methodology, timing, weather conditions, surveyors, survey effort);

- Results of all field investigations completed (if applicable), including:
    - GPS co-ordinates for any observed plant and animal species that are listed as uncommon or rare within Hamilton, ranked S1 to S3 in the province, or are listed as Species at Risk; and
    - An estimate of abundance for any Species at Risk that are documented.
- Completed Species at Risk Screening table, providing at minimum the compiled list of species, a description of their habitat requirements, and an assessment of the presence/absence of the species and their suitable habitat in the study area;
- Completed Significant Wildlife Habitat assessment table, providing at minimum an overview of the habitat criteria that were evaluated, an assessment of the presence/absence of significant habitat features/types, and the proof or rationale for that decision;
- Mapping of species and habitat locations, including any regulated habitat areas per provincial General Habitat Descriptions or other relevant references;
- Description of the proposed development or site alteration relevant to the features or locations defined above;
- Recommendations for the proposed development or site alteration to avoid or mitigate impacts to species and habitat - e.g., the designation of particular features or areas as part of the Natural Heritage System, improved buffers around particular features or areas, improved linkages between identified habitat areas, the provision of specific mitigation or protection measures (e.g., timing windows) during construction, etc.;
- Concluding statement of whether there will or will not be impacts to the surveyed species or habitat(s); and,
- Field data sheets in an appendix (if applicable).

One digital (PDF) copy of the Species Habitat Assessment report should be submitted to the City as part of a complete application. For sites where an Environmental Impact Statement is also being prepared, the Species Habitat Assessment can be included as part of the Environmental Impact Statement report. Digital copies of mapping (shape files) should be provided.

Procedure

The process outlined below is designed to allow for timely and efficient review of development applications. The purpose of the Species Habitat Assessment is to guide the design of the development proposal, such that impacts to species and habitats are minimized or avoided. The Species Habitat Assessment must therefore be submitted, where required, as part of a complete application.

The following procedure should be followed:

1. Identification of Study Need

As outlined within Schedule H (Rural Hamilton Official Plan) and Schedule I (Urban Hamilton Official Plan), a Species Habitat Assessment is required when development is located within or adjacent to certain areas.

2. Preparation and Approval of Study Terms of Reference

Before beginning a Species Habitat Assessment, the applicant's consultant must prepare a Terms of Reference (ToR) to the satisfaction of City staff. The ToR should provide: an overview of the study area; the proposed scope and timing of work to complete the assessment; and the anticipated content of the report. A site visit with the applicant, their retained qualified expert, and the City's Natural Heritage Planner may be requested at this time. The ToR is to be approved prior to the start of any field work.

3. Preparation of the Species Habitat Assessment Report

The completion of the Species Habitat Assessment and preparation of the associated report should follow the procedures detailed in this guideline document.

4. Submission and Review of the Species Habitat Assessment Report

One digital (PDF) copy of the Species Habitat Assessment report should be submitted to the City as part of a complete application. For sites where an Environmental Impact Statement is also being prepared, the Species Habitat Assessment can be included as part of the Environmental Impact Statement report.

The City's Natural Heritage Planning staff will be responsible for reviewing the report. There may be occasions where the City's Environmentally Significant Areas Impact Evaluation Group (ESAIEG), is also asked to review the species habitat assessment, particularly when it is submitted as part of an Environmental Impact Statement. A site visit may be required at this time.

Please note that the City and individual agencies may refuse to review a Species Habitat Assessment that does not fulfill the requirements in these Guidelines or the approved Terms of Reference.

5. Implementation of Recommendations

The Species Habitat Assessment will provide guidance to the applicant on how to design the development site layout to maintain or enhance the ecological functions of the Natural Heritage System. The development plan must then be updated to incorporate these recommendations. Please note that where impacts to Endangered or Threatened species or their habitat are anticipated, additional requirements may exist under the provincial *Species Conservation Act* and/or federal *Species at Risk Act*. The proponent must complete the appropriate consultation with relevant agencies and ensure regulatory requirements under these Acts are met.

OTHER INFORMATION:

- Fisheries & Oceans Canada's "Aquatic Species at Risk Map": https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html
- Natural Heritage Information Centre "Make A Map: Natural Heritage Areas": https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA
- Ontario Breeding Bird Atlas: https://www.birdsontario.org/
- Ontario Butterfly Atlas: https://www.ontarioinsects.org/atlas/
- Ontario Reptile & Amphibian Atlas: https://www.ontarioinsects.org/herp/

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