

Medway Valley Heritage Forest South ESA

Natural Heritage Inventory and Evaluation

EEPAC believes that its recommendations need to be carried out before the next steps in the Conservation Master Plan proceed.

The inventory and evaluation document describes and documents procedures and mapping used to develop a provisional management foundation for the MVHF ESA south of Fanshawe Park Road. The existing Ecological Land Classification (ELC) was mapped and validated. Field mapping of habitat and plant, bird and animal species was used to refine the ESA boundaries, and to outline management zones (Nature Reserve-NR, Natural Areas –NA1 & NA2), restoration zones (RO), naturalisation and stewardship zones. The findings are summarised in a mapping of Key Wildlife Habitats.

Overall the report provides a substantial update on the ESA status and a strong basis for moving forward. The careful mapping and documentation of species provides a valuable resource. The species at risk, conservation values and habitat identification are fundamental to effective management. Identification and prioritization is particularly valuable for invasive species, encroachment and restoration. The recommended revised ESA boundary similarly provides a valuable and carefully documented frame of reference.

The EEPAC Working Group reviewed this report with respect to the primary goal of protection and enhancement mandated for ESAs as per the City's Official Plan, but with due consideration to access and recreation. It is noted that a number of concerns have been raised about quite local features, and it is hoped that these issues will be addressed in due course, as spring permits better access. However, in view of the pioneering nature of much of this work, we have elected not to address detailed issues in our initial review, because the public consultation process will allow a more complete consideration of details. Our review focuses on the mapping and management processes and the strategy of the report.

1. Ecological perspective

Most of the ESA is recovering from clearance under conditions different from the pre-settlement landscape. Therefore the current ecology consists of a matrix of recovering and residual patches. These ecotypes are neither optimal, nor stable. Nor is their eventual equilibrium clear given urbanised environmental conditions and anticipated climate change.

There appears to be an envisioned "target landscape" that is implicit in the report, primarily valley side (dry and wet) forest, bottomland deciduous forest and meadow.

Recommendation 1: *the "target landscape" should be specifically identified and mapped. The degree of mismatch between existing land cover and target landscape can then be practically mapped and assessed.*

The validity of much of the inventory hinges on the statistical validity of the sampling. The basis for sampling sites is unclear, although some reference is made to purposive rather than more conventional random/stratified sampling (e.g p 9 "the specific sites indicated by the city..."). Purposive sampling is appropriate with high confidence of priorities and prior knowledge is abundant. In the absence of

substantial prior knowledge, purposive sampling merely endorses prejudices, rather than providing an objective characterisation.

Although the review mechanics were explicit, there are concerns about the ecological validity of the results, arising because the procedures are primarily mapping rather than process-based. Isolating, protecting or naturalising of management zones may be effective in reducing trampling and alien species competition. However, it does not necessarily achieve the desired outcome, particularly if limiting factors are not inherently manageable-like water quality and quantity, or governed by the ongoing ecological succession.

Recommendation 2: *The nature of the sampling scheme should be explicit. The ecology of the key species and their site status should be provided and incorporated into the management process to ensure the best success in reproduction and sustainability.*

Environmental management in urban settings is inevitably constrained by environmental and social limitations. For example, the vulnerability of seeps or bottom lands to inundation and drought may limit the survival potential for sensitive species. A programme to enhance vegetation or particular plants may be impractical with uncontrolled browsing by deer or flooding by beaver. Effective plans require an understanding of the impracticality of fulfilling all possible goals, and some guidance into the range of choices facing the community in managing their ESAs. The report focusses on the protection of rarer species although more common species (native and alien) may be of comparable importance to the ecology. Such consideration is applied to invasive alien plant species, but it does not include native common species that may smother or browse on species of interest. But a broader perspective and explicit constraints should be identified if management and particularly community input are to be informed and effective.

Recommendation 3: *A broader ecological perspective should include major ecosystem factors (materials, stability hydrology) and structure (linkages) not just mapping of select species. Make trade-off options explicit.*

2. Mapping

The report provided a generally very clear and logical explanation and rendering of the work undertaken. However, there were some difficulties in fully comprehending the outcome, or understanding the scope of information being used.

The ELC update is an important and essential start to the study, and the validation resulted in a number of changes. A map highlighting the *changes* (rather than the updated ELCs) would have allowed a more effective review.

Recommendation 4: *Develop a map of ELC changes as part of the ESA review reporting process.*

The report indicates that previous work has been consulted, but no reference list is provided.

Recommendation 5: *Provide a reference and resource list.*

Where previous work has mapped the ecology or specific species, then the consistency or change should be an essential part of documenting the valley ecology in order to determine species status as stable,

declining, extirpated or new. For example, the key wetland ABH1 does not appear in the 1995 Subwatershed study (MMM&UTRCA 1995). The implication is that the highly rated vernal pool habitat is a result of recent alteration of drainage due to utility installation. Another example is that the benthic and fish monitoring programmes by UTRCA do not appear to have been consulted.

Recommendation 6: *Where possible use earlier work to indicate dynamic status of species and habitats.*

The Medway Valley has a rather special hydrology arising from its incision into diverse glacial deposits, resulting in quite specific interaction between groundwater, surface water and terrain to govern the ecology. Aquatic habitats are investigated (p36-7) in some detail, but they are not incorporated substantially into the final management plan. For example, the current Medway Valley Subwatershed interim report is identified as providing valuable perspective on future flooding and erosion under changing climate, but not how the variety of wetlands are sustained. Adequate management of the Medway Valley ecology should include differentiated aquatic habitats and this depends on an informed understanding of valley hydrology and likely trends.

Recommendation 7: *A fuller report on valley hydrology should be undertaken to inform the ecological mapping so that wetland source areas and vulnerabilities can be identified and offset if warranted.*

Geographical Information Systems (GIS) provide a powerful and effective tool for mapping and management of natural areas as is readily apparent in the report in hand. However, there are persistent scale and dimensional limitations to GIS, particularly with respect to point and linear features, and small areas (likely less than 0.5 hectares based on comments in the Dillon study). This may account for the scarcity or exclusion of aquatic habitat in the management plan. Small patches of species at risk have been applied by being amplified into Nature reserve zones. But small habitat patches may not be so readily incorporated and these may be important to sustaining the species to be protected.

Recommendation 8: *Small habitat patches and linear seeps and streams should not be excluded from the planning recommendations just because they are difficult to map.*

The listing of Natural Areas and Reserves in table 8 provides a substantial and valued attempt to rationalise the management recommendations. But it is difficult to read and interpret the table and cross reference the mapping. A good start would be to remove all "Doesn't meet..." entries to allow focus on the substantive information. A descriptive title rather than numerical ordinal would more clearly identify the zone characteristics. It is not clear what "delineated by contours" means... topography or ELC boundaries? If the former, then how is this done? There is also no clear rationale for why an area was given a Nature Reserve Designation vs Natural Area 1. It appears to be by number of ESA criteria met, but this is not done consistently.

Recommendation 9: *Make Table 8 "Defining Indicators for Management Zones" clearer and explain the rationale used for the classifications.*

Utility corridors are a prevalent feature of the management plan. Their routing through Nature Reserves is highly regrettable in retrospect in breaking up interior forest. The nominal 12 m right of way mapped seems excessive. It could be much less in particularly sensitive zones. The NA1 restoration attributed to utility corridors seems arbitrary, and unlikely to be realised except by periodic clearances of saplings and scrub.

Recommendation 10: *Utility corridor width and target ecology should be sensitive to the ecological and management setting.*

The building of new infrastructure in the ESA has complicated the application of the *Guidelines for Assessing Ecological Boundaries of Vegetation Patches*. It is clear that the city wishes to exclude the stormwater management facilities from the ESA, however, it is EEPACs position that Guideline 10 has been incorrectly used. Guideline 10 refers to building envelopes and institutional building envelopes or existing building sites. EEPAC believes Guideline 9c would be proper. It states “Existing heavily managed or manicured features adjacent to a patch are not included in a patch.”

Recommendation 11: *The report be revised to change the references to Guideline 10 to Guideline 9c*

Similarly, the new boundary of the ESA shown in area C on Figure 15a north of Fanshawe Park Road (text page 43) excludes the presumptive location of a stormwater facility prior to the EIS that should be required for this city project. It is only after a full EIS that a sector of and ESA should be excised.

We note in passing that Boundary Revision A of the northern sector (Figure 15A) is inconsistent with the same area in Figure 15b. Under criteria 4 and 5 we would urge fuller inclusion of the ravine and woodlot within this sector of the ESA, particularly with reference to recent and anticipated development in the vicinity.

Recommendation 12: *The boundaries of the ESA in area C on Figure 15a be revised to maintain the current application of the boundary guidelines pending due process. Adopt an expanded version of Boundary revision A (Northern area)*

3. Some Practical Considerations

A substantial effort has gone into mapping the Sycamore (*Platanus Occidentalis*- Figure 10). It is not clear what the conclusions are from this work. Perhaps it informs the Natural area mapping.

Recommendation 13: *Explain and utilise the Sycamore results if possible.*

The inclusion of MVHF north of Fanshawe Park Road in this report is confusing. It appears to receive ELC validation and species mapping, but no further analysis. It would be advantageous to incorporate the full MVHF into the current effort to allow a fully integrated analysis and plan. As indicated above (Recommendation 12), it is apparent that boundary adjustments are proposed

Recommendation 14: *Include the entire MVHF ESA in the planning process if possible to allow informed management.*

A major gap in the report is the omission of University and Huron College lands from any consideration. This is regrettable and may substantially compromise the manage ecology of the valley. Efforts should be made to persuade these public institutions to allow full integration, if only with respect to those valley lands too steep or low-lying to permit profitable development. The City has representatives on the University Board of Governors, and there is an established “Town and Gown” committee that could be mobilised in this cause.

Recommendation 15: *Undertake all possible efforts to integrate the University (and College) lands into the planning process.*

EEPAC enthusiastically endorses the efforts to mitigate critical invasive species, naturalise disturbed areas, moderate encroachment and promote private stewardship. Some of these issues are flagged as a priority. However, our experience is that such good intentions are seldom met by practical implementation. The criteria for successful management are not clear, but funding is a common limitation.

Recommendation 16: *Ensure the effective pursuit of priority mitigation works as soon as possible by initiating the Invasive Species Management Plan and stewardship initiatives without necessarily awaiting complete review and development of the management plan.*

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