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memorandum

date May 23, 2017

to Geza DeGall
Velmeir

cc

from Jim Keany
Director Biological Resources

subject Site Visit – Proposed development at Madison Valley City People's Garden Store Seattle, WA

Velmeir engaged Environmental Science Associates (ESA) to assist it with a habitat assessment of the vegetated slope that abuts the east side of the City People's Garden Store located at 2939 Madison Street, Seattle, WA. The slope begins directly behind the developed portion of the commercial lot and extends to join Dewey Place E. at the slope toe. The following narrative describes the available resources that ESA reviewed, agency data that ESA assessed, and the results of ESA's field assessment.

Assessment Methods

ESA reviewed a number of materials that have been prepared as part of the site land use permit documentation. These include:

- Survey map of existing conditions, topography, and structural features/Land Title Survey (Barg Hausen 2016)
- Site Planting Plan (TRA 2017)
- Retaining Wall Structural Layout (Navix 2017)
- Design Concepts (Studio Meng Strazzara)
- Original (June 16, 2016) and Revised (July 1, 2016) Arborist Report (Tree Solutions)
- Geotechnical Report (GeoEngineers 2015)

After review of this information, ESA also examined the following data sources:

- Google Earth aerial photographs
- Washington State Department of Fish and Wildlife Priority Species and Habitat Database
- City of Seattle Urban Forest Master Plan

Following a review and summary of these data sources, ESA conducted a field survey on May 4, 2017 to assess the habitat quality of the vegetated slope and its value as a habitat corridor. The site was assessed by Jim Keany, senior wildlife ecologist at ESA in Seattle. The entire perimeter of the site was walked, where public access allowed along the top (commercial property) and along Dewey Place E. for the length of the property line with several ventures (where thick blackberry stands allowed) up onto the hillslope. Notes were taken on the general condition of the site, dominant vegetative types, occurrence of invasive plant species, and any observed wildlife. Three 10-minute bird point counts (Huff, et al., 2000) were completed along the north, middle, and south end of the property line along Dewey Place E. All birds seen or identified by call or song were noted.

Results

As noted in the Arborist Report there is a mix of native and non-native trees on the project site. In addition, the site has a high level of non-native shrubs and vines. About 75% of the vegetated hillslope behind the buildings/parking lot is dominated by a dense ground layer of Himalayan blackberry. On the north end of the slope (toward powerline crossing) blackberry is the only vegetation covering the slope, forming a dense, impenetrable layer.

Further south along the slope, the vegetation transitions to include tree cover, but a dense blackberry understory is present within most of the treed slope, limiting native vegetation undergrowth. Only near the south end of the property line is there minimal blackberry occurrence. English ivy, an invasive vine, also occurs in dense patches throughout the site and has climbed the trunks of many of the trees on the site up to 50 feet high. Japanese knotweed, an invasive perennial, also occurs on the site in scattered areas with one dense stand of about 990 square feet (Table 1).

Table 1. Occurrence of noxious weed species on the City People's Garden Store property.

Noxious Weed Species	Washington State Noxious Weed Board Designation	Occurrence on Site	Comments
Himalayan Blackberry (*Rubus armeniacus*)	Class C	Widespread and very dense – Level 4	Limits growth of native understory species through 75% of the site.
Japanese knotweed (*Polygonum cuspidatum*)	Class B	Sparse and scattered – one Level 4 density – 900 ft^2	Limited distribution but is known to spread easily and is difficult to eradicate.
English Ivy (*Hedera helix*)	Class C	Widespread throughout site – Level 4 most areas.	Dense on trees and on ground throughout site. Limiting growth of understory native plant species. Can affect health of trees or add to wind-throw risk.

Class B: Species are designated for control in state regions where they are not yet widespread. Prevention of new infestations in these areas is the primary goal. Class C: Widespread in WA, control not specified in King County. Weed density levels – 1 = trace-0.5 sq. yd; 2 = 0.6 – 5/sq. yd.; 3 = 6 – 20/sq. yd.; 4 = >20/ sq. yd.

Few birds were observed using the dense blackberry habitat patch but those observed included species common to urban areas such as song sparrow, Bewick's wren, and American crow. Additional common species were observed in the treed portion of the site including black-capped chickadee, yellow-rumped warbler, bush tit, Anna's hummingbird, red-shafted flicker, Steller's jay, and American robin. All of these species are commonly found in Seattle residential neighborhoods where some tree cover is available.

The hillslope is isolated within a larger matrix of commercial building along Madison Street and the surrounding residential neighborhood on the remaining sides. While the hillslope blackberry patch does connect to a small, steep vegetated parcel tucked in the hillslope between Madison Street and East Mercer Street, there is no further habitat corridor connection. The arboretum, across Madison Street, provides a significantly larger block of habitat in a park-like setting. But the small, vegetated hillslope behind the City People's Garden store has no connection to the arboretum.

The Washington State Department of Fish and Wildlife (WDFW) has mapped the forested portions of the arboretum (Figure 1) as a Biodiversity Area and Corridor, indicating an area of relatively undisturbed or unbroken track of vegetation that connects fish and wildlife habitat conservations areas, priority habitats, areas identified as biologically diverse, or valuable habitats within a city or Urban Growth Area. WDFW has not designated any of the small, scatted vegetated parcels on the other side of Madison Street, including the City People's Garden property, as such.

Figure 1. Washington Department of Fish and Wildlife Priority Species and Habitat Map of Seattle Arboretum Biodiversity Area and Habitat Corridor (shaded area).

Conclusions

Decades of urbanization has resulted in dissecting habitat tracts into smaller, unconnected units with severely constrained ability to support native wildlife and plants. Such human-induced fragmentation leads to the formation of habitat "patches" or areas of habitat interspersed amongst non-habitat areas. The composition and configuration of the patches on a landscape affects its ability to support wildlife. In addition, the size and shape of a patch determine the habitat value the patch provides for different species. A habitat patch increases the amount of edge habitat and decreases the amount of interior habitat available compared to a homogenous landscape of habitat. Species that are particularly vulnerable to edge effects and habitat patch size dynamics are those that require larger areas of habitat and avoid habitat edges. Common, more versatile species are able to use small, degraded habitat patches while species with more sensitive habitat requirements require larger, less disturbed forest tracts (Donnelly and Marzuff, 2004; Simberloff et al. 1992)

When a patch gets sufficiently small or elongated in shape, all interior habitat is lost, leading to a loss of interior species and dominance by edge species (Turner et al. 2001). Effects depend upon the particular species in question and that species' habitat preferences. The diversity of vegetation structure, especially foliage height diversity, is correlated with bird species diversity in natural habitats (MacArthur 1964). Additionally, in a study of the bird diversity of different sized parks in Seattle, Gavareski (1976) found that a diverse shrub layer and size of land parcel was directly correlated to bird diversity.

The vegetated habitat patch on the slope behind the City People's Garden Store is small, isolated, contains a high density of noxious weeds, has limited foliage height diversity – and thus is considered very low habitat value with no habitat corridor connections (See attached photos). The density of noxious weed species on the site affects the plant diversity and has a corresponding effect on the wildlife species use and further lowers the patch's habitat value. Birds typical of Seattle's residential neighborhoods will use the habitat. Versatile medium-sized mammals, such as raccoon and opossum (common in Seattle residential neighborhoods), may use the area and native small mammals likely face stiff competition from non-native Norwegian rats due to the small parcel size, proximity to structures, and proliferation of non-native plants.

The City of Seattle has not characterized this site as an important urban open space, and the WDFW has not designated it as an important habitat corridor or biodiversity area. While WDFW has designated the contiguous forest of the arboretum as a habitat corridor and biodiversity area, the City People's Garden Store vegetated patch is separated from the arboretum by the busy urban arterial and commercial corridor– Madison Street. As such, no habitat corridor exists between the City People's site and the arboretum.

In summary, the City People's site does not provide quality habitat and is not part of a larger habitat unit. Mammals and birds likely to use the site are those common to Seattle's urban neighborhoods. Development of the site will remove a dense infestation several weed species – Himalayan blackberry, Japanese knotweed, and English ivy. In addition, the landscaping plan for the proposed development includes a mix of native and ornamental groundcover, shrubs, and trees that will provide some habitat for urban wildlife, particularly resident and neotropical migrant songbirds. Regular maintenance of the site will ensure that noxious weeds do not invade and dominate the landscape, such as the site's current condition. Because the site does not contain wetlands, stream/riparian habitat, and is not identified by the City of Seattle or the WDFW as a significant habitat feature, it is not afforded any regulatory protection.

Literature Cited

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MacArthur, R. H. 1964. Environmental factors affecting bird species diversity. Am. Nat. 98:387-397.

Simberloff , D., J.A. Farr, J. Cox, and D.W. Mehlman. 1992. Movement corridors: conservation bargains or poor investments? Conservation Biology 6:493-505.

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Dense blackberry on slope

Knotweed in foreground, blackberry in background

Dense English ivy ground cover

English ivy growing on trees