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Habitat Assessment and Bald Eagle Management Plan for Bosveld Property City of Mercer Island, Washington

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Prepared by:

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Project location:

Address: 73XX SE 38th St., Mercer Island
Parcel: 3623500037
Legal description: ISLAND PARK Replat of W 100 FT MEAS ALG N LN & POR VAC ST ADJ E of W LN PROD S

Prepared for:

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1 INTRODUCTION

This report addresses habitat on the property located at 73XX SE 38th Street in the City of Mercer Island (parcel 3623500037) (Figure 1). This assessment is in fulfillment of Mercer Island City Code (MICC) Section 19.07.170(B) and includes a field assessment of existing habitat on and adjacent to the site; evaluation of proposed actions and their potential direct and indirect impacts to bald eagles; discussion of management recommendations; and avoidance, minimization, and mitigation measures. A single-family home is proposed for the property.



Figure 1. Subject property (King County 2017).

2 METHODS

2.1 Existing Documentation Review

Publicly available sensitive areas and habitat documentation for the subject property were reviewed for this report. Sources include aerial photographs of the site and surrounding area, local (City of Mercer Island) inventories, the King County public GIS database (iMAP), WDFW Priority Habitat and Species (PHS), and State and federal threatened and endangered species lists.

2.2 Fieldwork

A certified wildlife biologist (The Wildlife Society CWB) visited the site on April 9, 2021, to assess wildlife habitat, note special features, record any presence of wildlife species and sign, and determine the level of existing disturbance. In particular, a known bald eagle nest in the nearby Mercedale Hillside Park was located and observed.

3 PROPERTY LOCATION AND VICINITY

Access to the property is from SE 38th Street. The parcel is presently vacant and zoned R-15 (single-family minimum 15,000 sf lot). Bordering properties are the same zoning. Other residential zones in the vicinity are R-9 and R-8.4. The northern half of the of the parcel slopes gently to moderately down from north to south, and the southern half is substantially steep. This slope precludes the possibility of an access driveway from West Mercer Way.

Mercedale Hillside Park is approximately 220 feet NE of the subject property at its nearest point. The Lake Washington shoreline is about 500 feet to the SW. All surrounding properties are developed with single-family homes, with the exception of two vacant residential lots adjacent to Mercedale Hillside Park. Commercial areas are about 0.45 miles to the NW, with the I-90 corridor a further 0.45 miles beyond that.

The subject parcel is just over 0.55 acres. Vegetation in the proposed building area is limited to a low stratum of primarily the invasive species Himalayan blackberry (*Rubus armeniacus*) and English ivy (*Hedera helix*) and scattered native shrubs (Appendix A, Photo 1).

The remainder of the property is mature forest dominated by Douglas fir (*Pseudotsuga menziesii*) with a smaller component of bigleaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), and Pacific madrone (*Arbutus menziesii*) (Appendix A, Photo 2). Undergrowth is typical Pacific northwest native species, including red huckleberry (*Vaccinium parvifolium*), Pacific rhododendron (*Rhododendron macrophyllum*), low Oregon grape (*Mahonia nervosa*), and sword fern (*Polystichum munitum*). Significant infestations of ivy are present throughout, as well as scattered holly (*Ilex aquifolium*) and Himalayan blackberry.

4 PROJECT DESCRIPTION

The property owner proposes a single-family home on the parcel. A two-vehicle carport will be connected to the house by a walkway. Access to the carport will be directly from SE 38th street, eliminating the need for a driveway. Proposed lot coverage is 2,995 sf or 12.5%, 5,453 sf less than that allowable. The house and lot are further designed to avoid and minimize impacts as described in detail in Section 6.3.

5 HABITAT ASSESSMENT

5.1 Critical Areas (Wetland, Streams, and Shorelines)

No wetlands or streams are present on the property. The nearest documented wetlands are along the Lake Washington shoreline, and the nearest stream documented by the City of Mercer Island originates on a developed property approximately 500 feet east of the subject property and flows NE into Mercerdale Hillside Park. This stream is not identified in state inventories. As stated previously, the Lake Washington shoreline is about 500 feet from the property at its nearest point and separated from the parcel by several developed lots and West Mercer Way.

5.2 Upland Habitat

5.2.1 Site Level

The forested part of the property can be generally characterized as an urban forested habitat patch supporting a mature community of native trees and a mix of native and invasive undergrowth species (Table 1). Downed wood is abundant and some small snags are scattered throughout the site. The proposed build area is limited in vegetative structural and compositional diversity, as no large trees are present and undergrowth is dominated by invasive woody vines.

The forest that presently constitutes the majority of the onsite area outside of the proposed building footprint offers some refuge for urban-adapted species. The property may provide breeding habitat for passerines and small mammals with limited home ranges, such as voles and squirrels. Foraging and perching use by birds is expected, as native plants provide forage and dense vegetation provides potential nesting sites. Woodpecker sign was noted on downed wood during the site visit. Tall, mature trees may provide roosting and resting places for hawks and eagles, and the largest trees are suitable nest trees for some raptors. Species whose breeding requirements could potentially be met on the site include those nesting on the ground, in mid-story, or in the canopy; species not reliant on a perennial water source; and small, ground- and tree-dwelling mammals. Use by beavers and otters is unlikely, given the property's distance from Lake Washington and development barriers between the property and the lake. The lack of wetlands and a year-round water source limits potential use by herpetiles and wetland dependent species.

Table 1. Vegetative species identified on the study site

Common name	Scientific name
Douglas-fir	<i>Pseudotsuga menziesii</i>
Bigleaf maple	<i>Acer macrophyllum</i>
Red alder	<i>Alnus rubra</i>
Black cottonwood	<i>Populus balsamifera</i>
Madrona	<i>Arbutus menziesii</i>
Mountain ash	<i>Sorbus aucuparia</i>
Low Oregon grape	<i>Mahonia nervosa</i>
Osoberry	<i>Oemleria cerasiformis</i>
Red huckleberry	<i>Vaccinium parvifolium</i>
Pacific rhododendron	<i>Rhododendron macrophyllum</i>
Currant	<i>Ribes</i> sp.
Himalayan blackberry*	<i>Rubus ameniacus</i>
English ivy*	<i>Hedera helix</i>
Holly*	<i>Ilex aquifolium</i>
Bracken fern	<i>Pteridium aquilinum</i>
Sword fern	<i>Polystichum munitum</i>

*Non-native invasive species

5.2.2 Landscape Level

The study vicinity can be characterized as medium-density urban and mixed environs. As a general rule, wildlife species diversity decreases and species densities increase as urbanization increases. Density increases are largely the result of exotic and synanthropic species thriving in urban areas. The subject property, considered on its own, is smaller than urban patches that have been demonstrated to have an effect, positive or negative, on wildlife in the wider vicinity. It can be assumed, however, that the site in conjunction with surrounding properties has the potential for limited use by more mobile wildlife species existing in the greater landscape. The surrounding landscape is not, however, a source for less common, larger species that require intact habitat to persist.

As a whole, the landscape is greatly fragmented into small patches, and wildlife use is largely limited to resident urban-tolerant species and a limited number of migratory bird species. Within urban environs, vegetated corridors are used for travel between habitat patches by most terrestrial species, and patches of native vegetation act as wildlife refugia. The nature of Mercer Island, as an island, largely limits the potential for corridor travel to the species that are already present in the area. Likewise, the size of the island limits habitat patches to relatively small areas that, again, support species present in the island's urban environs and mobile migratory species. The proximity of the subject property to Mercerdale Hillside Park, which is part of a PHS Biodiversity Area, may facilitate use of the property by species and individuals utilizing the larger habitat patch that constitutes the park. This likely includes highly mobile species, particularly birds, that occur in the greater area and can cross navigate Lake Washington. Use of the larger habitat patches on the island may also be used by non-resident birds during migration.

5.3 Fish and Wildlife Habitat Conservations Areas

5.3.1 PHS and Species of Local Importance

MICC 19.07.170.A includes as Fish and Wildlife Habitat Conservation Areas (FWHCA) species of protected status or local importance that have a primary association with a site; areas used by bald eagles; and biodiversity areas, among other critical areas. This section addresses those FWHCAs that occur on or near the subject property.

PHS data show no State priority species on or within a mile of the property, although Mercedale Hillside Park is part of a designated Biodiversity Area. There are no records of any PHS species or listed endangered or threatened species on the study property (record search conducted using wwwEBird.org). The potential for any PHS species that may be present in the King County area to be present on the site is summarized in Table 2. Bald eagles and the nearby PHS Biodiversity Area are considered in greater detail in Sections 5.3.2 and 5.3.3.

Table 2. Potential occurrence of species on the project property.

Common name	Scientific name	Potential occurrence	Rational for determination
Bald eagle	<i>Haliaeetus leucocephalus</i>	Likely	Subject property is between known nest site and Lake Washington
Peregrine falcon	<i>Falco peregrinus</i>	Unlikely	Breeds on cliff and high structures, may forage in the area
Pileated woodpecker	<i>Dryocopus pileatus</i>	Likely	Species is ubiquitous, downed wood present on site
Vaux's swift	<i>Chaetura vauxi</i>	Unlikely	Large snags and large open foraging areas are not present
Merlin	<i>Falco columbarius</i>	Possible	Species becoming common in urban areas and forests
Purple martin	<i>Progne subis</i>	Unlikely	Rare, most use areas known
Osprey	<i>Pandion haliaetus</i>	Possible perching	Species is common in the area, Lake Washington is nearby
Red-tailed hawk	<i>Buteo jamaicensis</i>	Possible	Suitable perching habitat is present, species is ubiquitous

5.3.2 Biodiversity Area

As described in Section 5.2.2, Mercedale Hillside Park constitutes a designated Biodiversity Area and urban forest refuge within a developed landscape. The habitat preserved within the park is rare in urban areas, where little intact mature forest remains. As stated, wildlife using the Biodiversity Area may also use and move through the subject property, but species are limited to common urban-adapted residents and migrant birds. The size of the park allows for nesting and use by larger bird species, including bald eagles, and to non-synanthropic, less tolerant species that might include red-tailed hawk, pileated woodpecker, and a number of flycatchers, warblers, and other passerines that would avoid smaller areas with nearer human disturbance. While any wildlife using the park could also travel onto the subject property, several developed lots with single-family homes and associated structures are present

between the park and the subject property, as is SE 38th Street. These features may deter travel to the subject property by more sensitive wildlife species.

5.3.3 Bald Eagle

The local inventory identifies the presence of a bald eagle nest in a large Douglas fir in Mercerdale Hillside Park (Appendix A, Photo 3) (Figure 2). The surveyed distance from the nest tree to the closest edge of the subject property is 333 feet. I located and observed the nest itself and the surrounding area for approximately 3 hours during the April site visit, which is within the incubation period for the species in this area. No eagles approached the nest during this time, but a bird in incubating posture could have remained invisible from below. It is possible that this pair has an alternative nest, which it may use in some years. Such nesting behavior is common in bald eagles. I heard eagles once, briefly, from the vicinity of Lake Washington during the visit, but not directly above or adjacent to the park or subject site, as far as I could tell from the aural observation.

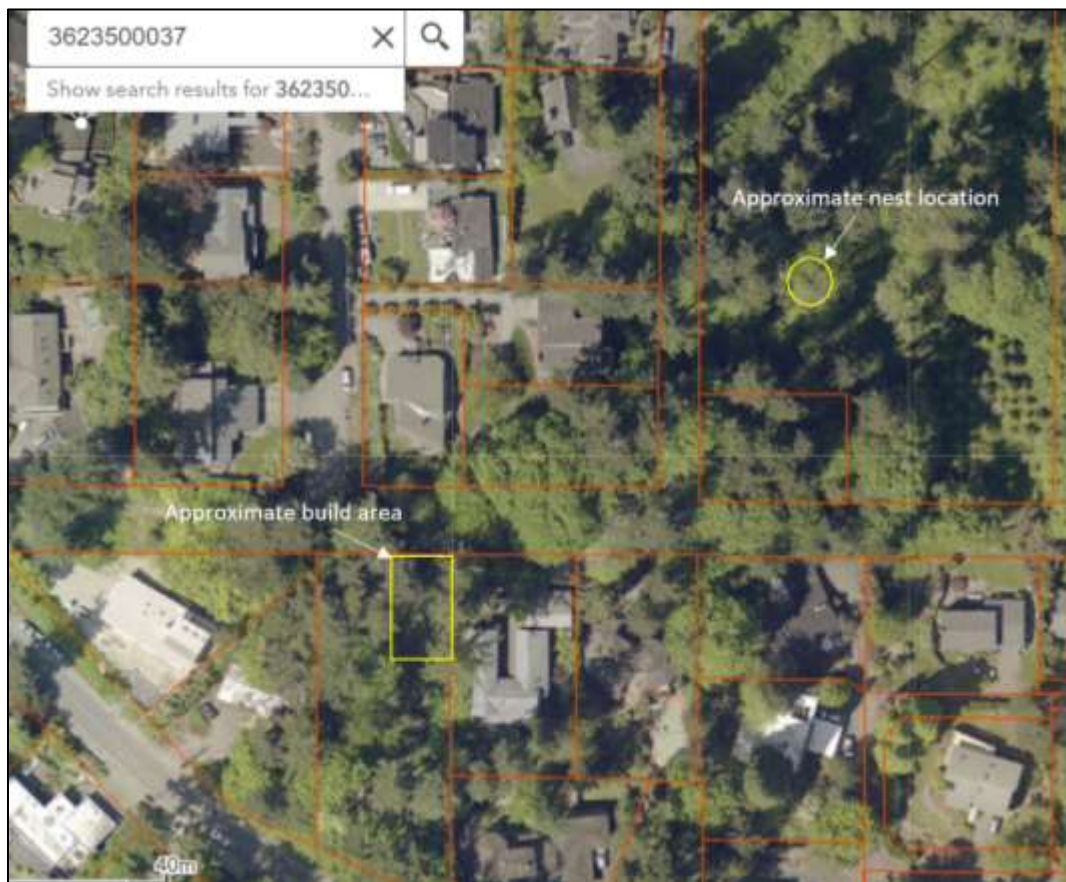


Figure 2. Approximate building and nest locations (King County 2017).

Several bald eagle pairs nest on Mercer Island and the species is commonly heard and seen on the island. Eagles commonly forage in Lake Washington. Local pairs tend to be habituated to human presence and disturbance that occurs with residential use, as is indicated by their common occurrence on the highly developed island. The Mercerdale Hillside Park nest is close to, and plainly visible from, a trail that is used by walkers, runners, and birdwatchers daily.

On Mercer Island and in similar environments, bald eagles nest in or near the tops of large trees. Breeding pairs tend to select nests near open water, where they forage. The remaining patches of habitat with large trees on Mercer Island support several breeding pairs, some of which are within residential yards and on highly developed shoreline. Anecdotal evidence suggests the presence of the Mercerdale Hillside Park nest for many years.

The City of Mercer Island refers to the 2007 U.S. Fish and Wildlife Service (USFWS) National Bald Eagle Management Guidelines in defining bald eagle buffer zones. The guidelines depend largely on whether other activities similar to the proposed project existing within a mile of an eagle nest, and whether or not the proposed activity will be visible from the nest. Recommended buffers are 660 feet from nests for most residential construction projects if the activity will be visible from the nest. If the activity will not be visible to the nesting eagles, a 330-foot buffer is recommended, along with restricting clearing, landscaping, and external construction to outside of the breeding season.

An exception to the 660-foot buffer for visible activity may be implemented when similar activities occur within one mile of the nest. In the present case, dense residential use and construction activities of residential and commercial scale are not only abundant within one mile of the nest, but residential use is present between the proposed project site and the nest. Regarding the visibility criterion, I attempted to view the nest from numerous areas within and near the subject property. The results are documented in a series of photos (Appendix A, Photos 3 through 6). Due to the combined factors of topography and vegetation, the nest was not visibly from the project site. Even allowing for the superior eyesight of bald eagles, it is unlikely line-of-sight exists, as the entire nest tree is obstructed. With the obviously limitation of not being able to view the property from the nest itself, my best determination is that the subject property at ground level to five feet is not visible from the nest. Visibility may be different when deciduous vegetation is not leafed-out, but trunks and branches of large conifers also obscured the area.

6 PROJECT IMPACTS

6.1 Direct Impacts

6.1.1 General Habitat Impacts

Impacts that result as a direct consequence of an action can include habitat area loss; noise and light disturbance from construction activities and site use; and physical human and pet disturbance, including vegetation trampling, noise, litter, depredation, and encroachment.

Any loss or alteration of habitat has the potential to impact wildlife that utilize the study area during some phase of their lifecycle. Under this proposal, the primary direct impact is the loss of 2,995 sf of degraded habitat. The proposed building area comprises the least valuable habitat on the site, with few native plants and low structural and composition diversity of vegetation, and thus direct impacts to

nesting and foraging wildlife due to habitat loss are expected to be very limited. Efforts to avoid impacts to higher quality habitat are detailed in Section 6.3.

Mature conifers are increasingly rare in urban and developing areas, including Mercer Island. All healthy significant trees are avoided by this proposal. Removal is limited to diseased and hazard trees. Adherence to recommendations from the registered arborist will assure that retained trees are not damaged by construction.

Water quality and hydrologic impacts from this proposal are avoided through implementation of all standard Best Management Practices (BMPs) and adherence to all stormwater and sewage management requirements. See Section 6.3 for stormwater-related standards.

Impacts to wildlife may also result from human disturbance to a site. The presence of people, vehicles, lighting, and structures can act as deterrents to wildlife. The proximity of roads and other residences to the project site is a consideration in judging the potential impact of the proposed residential development. The proposal presents little disturbance impact over existing conditions. Vehicle access to the house and residential use of the property are further from the Biodiversity Area and bald eagle nest than existing similar activities closer to the park. Noise, light, and human activity will not increase substantially over existing ambient noise, light, and activity from neighboring homes. The presence of an additional home in the area might be considered an added wildlife deterrent; whether or not the increased disturbance will result in a measurable impact to wildlife is debatable. As demonstrated, the immediate area is already in similar use. Any impacts would likely be limited to a dispersal of a few individuals of common urban species to other vegetated areas. Finally, domestic pets are a cause of mortality in small wildlife species. Any development carries a risk of an increase in this type of impact.

6.1.2 Breeding Bald Eagle Impacts

Bald eagles can be sensitive to human disturbance, but tolerant pairs and individuals are well documented. Potential disturbances to the local breeding pair from the project consist primarily of construction noise, some of which is expected to exceed ambient levels. The presence of people and machinery during construction should not be visible from the nest, and efforts will be made to limit noise-generating construction activity to times outside of the breeding season, which can extend from January through August in the Pacific Northwest.

Regardless of the proposed activity being outside of the 330-foot bald eagle nest buffer, the project takes measures to protect the nest from any visual impact during construction and use. Foremost among these measures is the retention of all large, healthy trees on the site and the avoidance of other vegetation disturbance apart from low, invasive-dominated strata in a limited footprint. No trees will be removed between the development area and the nest. The retention of trees also prevents the loss of any perching sites on the property.

Other mitigating factors are listed in Section 6.3.

6.2 Indirect and Cumulative Impacts

Indirect and cumulative impacts can be addressed insofar as land use of the surrounding landscape can be expected to change over time. Adjacent residential properties are already developed. Residential properties may develop further with remodeling or secondary structures, but because the area is at or near build-out, there is little immediate threat of compounding effects of development related to this area.

Although fragmentation is a primary concern in urban and developing areas, cumulative impacts from further fragmentation is not a great threat in the project vicinity. As explained above, adjacent properties are already developed, as is the general landscape of Mercer Island. Future changes to the Biodiversity Area itself are unlikely, as such areas are afforded protection under the MICC.

6.3 Mitigation Sequencing and Actions

Avoidance and minimization measures have been considered as part of this proposal from the initial planning stages. These are directed at both limiting general habitat disturbance and protecting the nesting bald eagles particularly.

The proposed development footprint has been minimized to well below the standard permitted 35% of the lot area. The foundation area is only 824 sf, a driveway is avoided, and the planned home is of modest size. The home is positioned to stay entirely within the disturbed habitat area, thereby avoiding the removal of trees and native ground vegetation. Throughout the site, all healthy trees will be retained, with removal limited to 13 dead or diseased trees. This preserves eagle perches and avoids disruption of the tree canopy. The foundation will be constructed by methods designed to avoid root damage. Outdoor recreational use areas associated with the house are limited to a deck and situated on the west side of the house, away from the nest. No lawn or additional vegetation clearing is planned. The applicant intends to keep all outdoor areas naturally vegetated with existing native species.

Landscaping will be very limited to preserve existing native vegetation, and will consist of native species. A "green roof" is planned, which will reduce visual impact from above and compensate for ground cover loss and impervious surface in the building footprint. Siding is designed to blend with the surroundings and the majority of glazing will face away from the nest area to further avoid visual impact. Outdoor areas proposed for human use are situated on the south side of the house, away from the eagle nest area and Biodiversity Area.

A TESC plan and BMPs will be in place during construction. Although not a jurisdictional requirement, a vegetated "green roof" is intended to provide a level of stormwater quantity control for the project treat stormwater quality and quantity. A raised deck using standard board spacing of approximately ¼-inch will allow water to drain to the ground beneath it. As directed by the City, all stormwater from hard surfaces (i.e., roof, driveway, patios, etc.) will be collected and conveyed to an existing public system in West Mercer Way. In addition, permeably open grating will be used for the carport floor. No road construction is planned, and intensity of road use will not change. Underground power line connection is proposed to avoid the need for above-ground structures. Powerline trenches will be excavated in a manner and location to avoid disturbance to mature tree roots.

Appendix A

Photographs



Photo 1. Disturbed habitat in development footprint area.



Photo 2. Subject property forested area.



Photo 3. Mercedale Hillside Park bald eagle nest from park trail.



Photo 4. Nest area (nest not visible) from adjacent undeveloped parcel at SW corner of park.

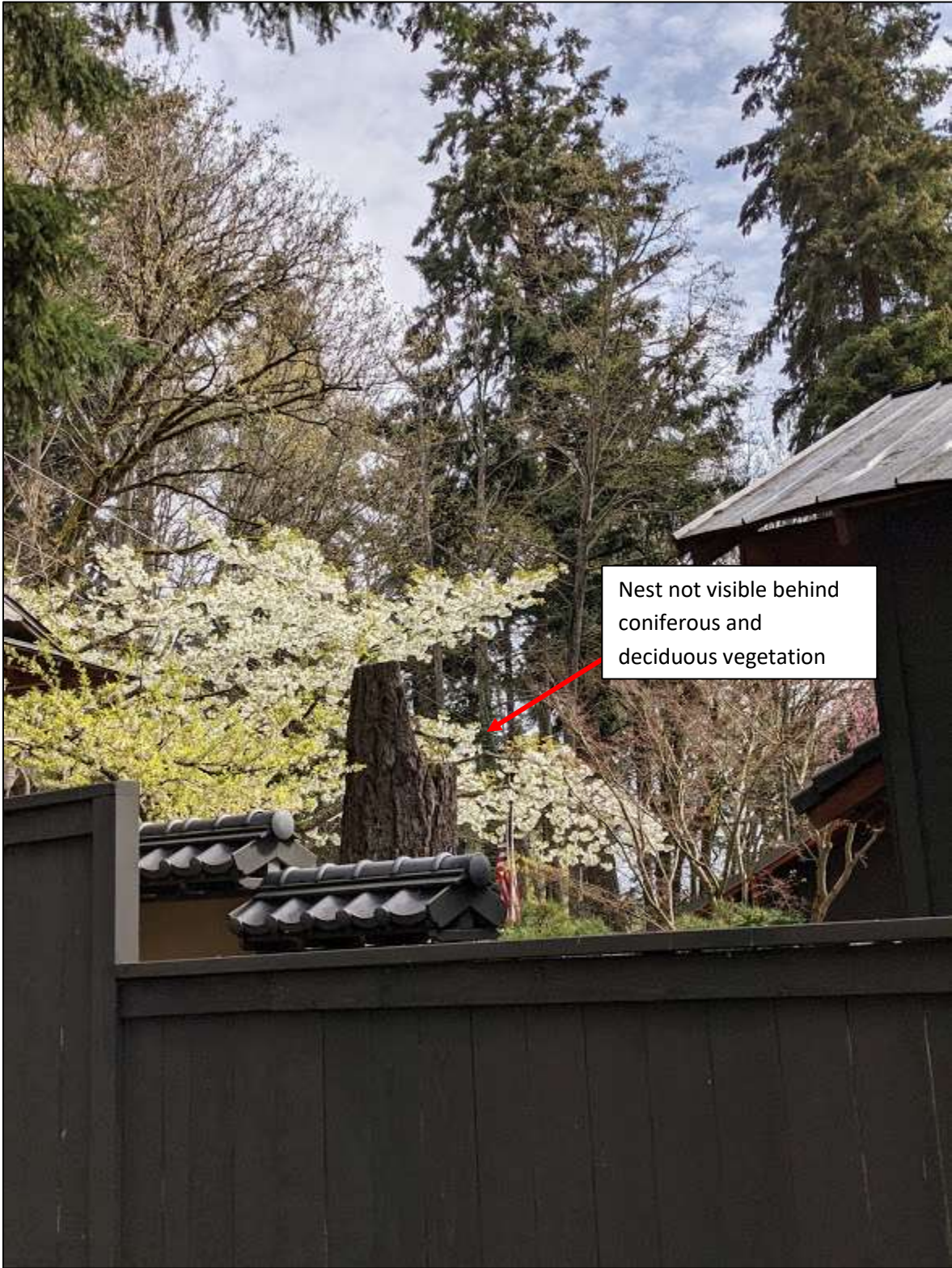


Photo 5. Photo taken in direction of the nest from SW corner of build area.



Photo 6. Photo taken in direction of the nest from best vantage within subject parcel.