

An Ecological Restoration Proposal

For a Portion of

Mt. Douglas Park

Submitted by

Friends of Mount Douglas Park Society

May 28, 2020

Mount Douglas Park – Camas Meadows Area Restoration Project Proposal

Summary

Mount Douglas Park, is a high-use, urban forest Park managed by the Municipality of Saanich that contains a remnant of one of Canada's most endangered ecosystems – the Garry oak meadow. For the purposes of this report, the area under study is referred to as the Camas Meadows Area. It consists of approximately 5ha. of shallow-soil Garry oak meadow in the Southwest corner of the Park and includes the Park's only substantial Camas field (Fig. 1-2, pg. 4).

While the Park Charter, adopted by the Municipality of Saanich in 1992, expresses the goal of maintaining the Park *as a wilderness preserve for generations to come*, this goal is currently in jeopardy. Without specific and timely actions to protect the remnant Garry oak meadow from uncontrolled recreational use impacts, the natural elements of this threatened ecosystem may reach a state of being irretrievably damaged in the near future.

Increasing visitors and, in particular, the growing number of commercial dog-walkers using this section of the Park as an off-leash exercise yard, along with the development of numerous informal trails and a general lack of public awareness of the vulnerability of the native vegetation all jeopardize the biotic survival of this Garry oak meadow. Accordingly, this report recommends municipal support for a formal restoration project in this area and additional support through regulation of dog numbers and leash requirements.

Garry oak restoration research repeatedly calls for immediate attention to support biotic integrity and the disturbance regime (Fuchs, 2001). It is recommended that the Friends of Mount Douglas Park Society, working together with Saanich Parks staff, provide on-the-ground leadership through a process of facilitating the development of a formal restoration project plan that addresses, among other things:

- specific plans for clear delineation of trails throughout the area,
- protection and rejuvenation of the camas fields,
- planting sapling Garry oaks and other native plants,
- institution of a pilot burn of a section of the open meadow.

The proposed multi-year restoration strategy would depend upon formalized partnership agreements with various organizations, ensuring the integration of essential expertise and authorities throughout the planning and implementation of the project. This report represents a proposal that suggests elements that may be included in a yet-to-be-developed formalized plan, given sufficient support from key stakeholders.

1 – INTRODUCTION

Mount Douglas Park is a multi-use, urban park located in southern Vancouver Island (Saanich). Managed by the Municipality of Saanich, Mount Douglas Park is promoted as a showcase urban forest with valuable natural features and host to thousands of visitors each year. The Friends of Mount Douglas Park Society (hereafter referred to as FMDPS) was established in 1989 to protect the Park's natural elements by proactively managing the human uses and impacts, while respecting the Charter goals supported by municipal proclamation in 1992. This 188 hectare Park encompasses diverse ecological environments including a shallow-soil **Garry oak ecosystem** (Figure 1-1), the natural remnants of which are being rapidly destroyed by unconstrained trampling and excessive dog roaming. This aim of this multi-year restoration plan proposal is the protection and restoration of this remnant Garry oak ecosystem and related camas meadows, through channeling human and canine foot-traffic, educating users about this sensitive ecosystem, serve as a demonstration and research site and advance the reconciliation relationships between Indigenous and settler groups who value these lands. The recommendations in this report are directly influenced by the extensive restoration guidance provided by the GOERT* organization.

* GOERT – Garry Oak Ecosystem Recovery Team www.goert.ca/restoration

Figure 1 – 1: Project Site Location

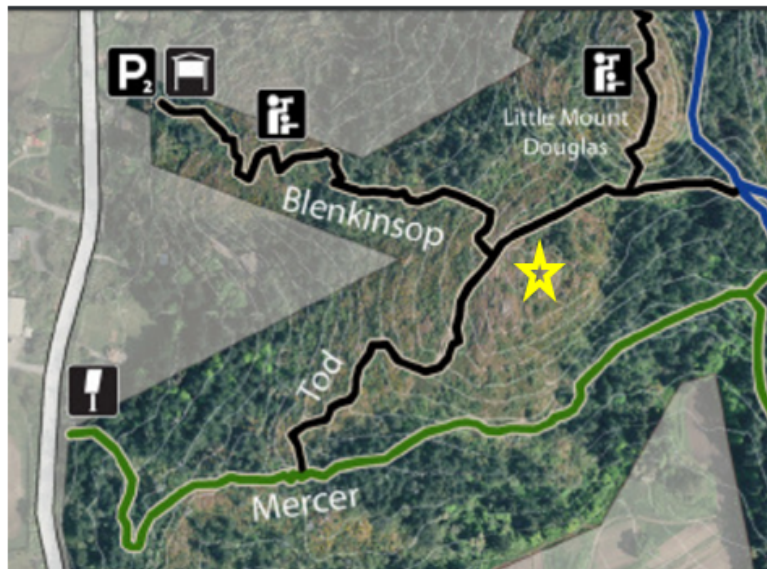
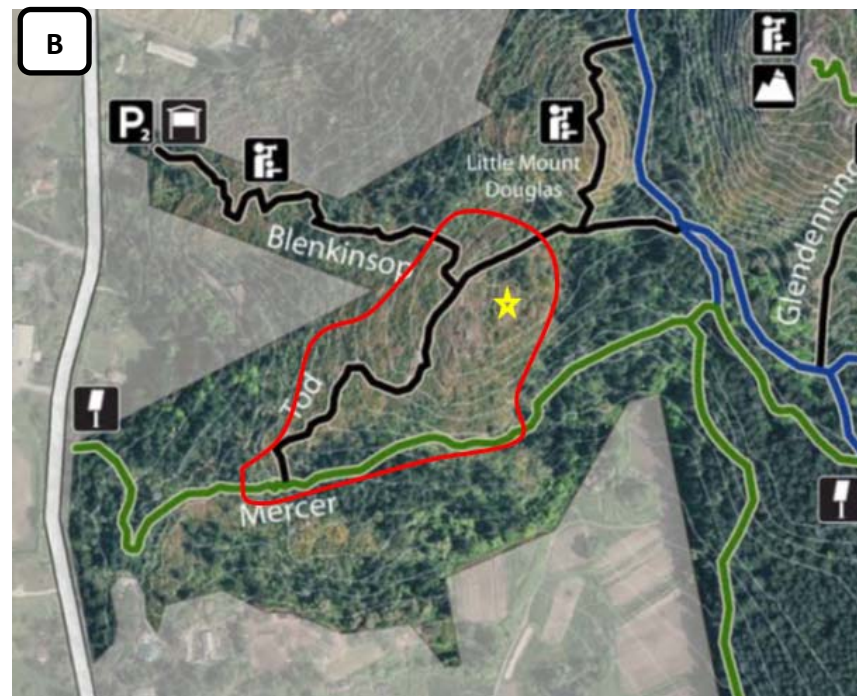


Figure 1 – 1: Project site location
(48°29'26.7"N 123°21'04.0"W)

Mount Douglas Park, Saanich
see Photo 1

The map used for Figure 1 – 1 and panel B in Figure 1 – 2 is drawn from the Mount Douglas Park (PDF) brochure provided on the Municipality of Saanich website.

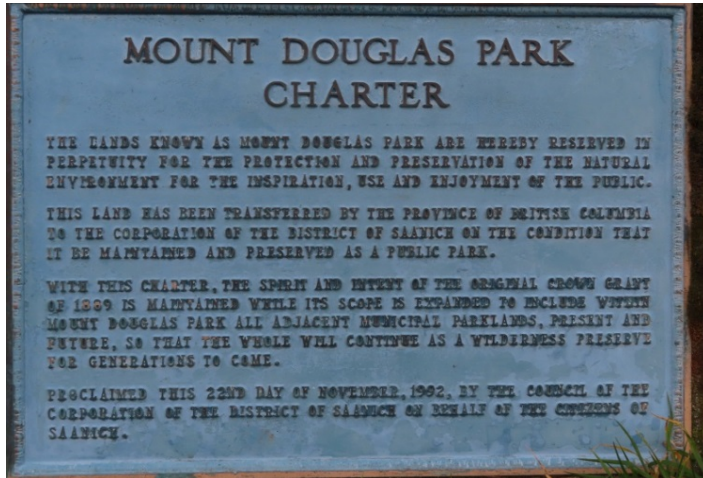
Figure 1 – 2: Camas Meadows Area Site Map



A – Restoration Site Area approximately 4.6 ha. (source: Saanich GIS) Location of Reference Tree indicated by star.

B – Official Park Trails within subject area (black and green) Source: Saanich Park Map

Figure 1 – 3: Park Charter



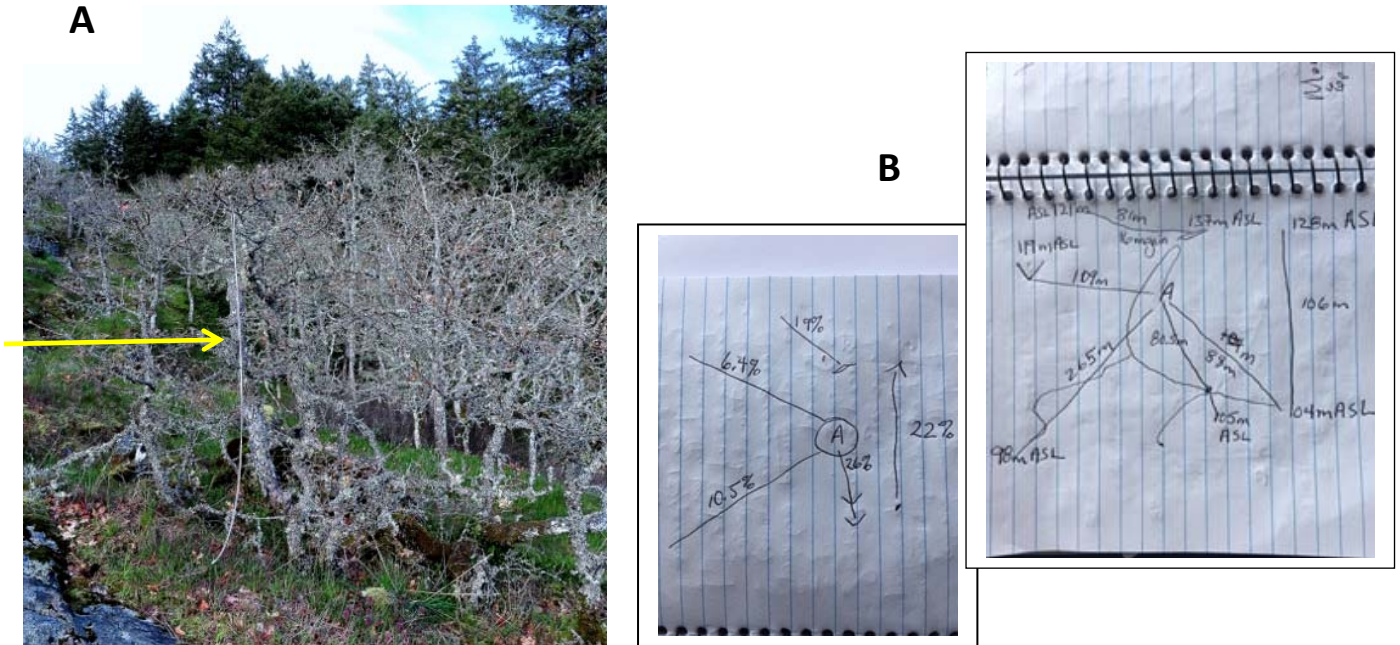
Mount Douglas Park Charter* stipulates that these lands “are hereby reserved in perpetuity for the protection and preservation of the natural environment for the inspiration, use and enjoyment of the public” and “so that the whole will continue as a wilderness preserve for generations to come”. (*Formally adopted by Saanich Council 1992)

These foundational goals for Mt. Douglas Park lands align with the general statement of purpose currently used for B.C. parks Protected Areas...to ensure that all aspects of the preservation and maintenance of the natural environment are fully considered in the administration of land use and resource development.

2 – METHODS

The author conducted an initial visit with the FMDPS Society President to review the project site and goals in situ. A second meeting was held to further discuss the Society goals, methods of working with the municipality, the type and limits of resources available for projects within the Park and the preferred strategies for managing visitor movement. Eight subsequent ground site visits were made at various times of day for data collection, plus 3 site visits to the comparator site, Mt. Tolmie. Informal interviews were held with site visitors and a volunteer removing invasives. Photos, measurements, assessments, sample collection and basic notes were made during the site visits with more detailed recordings completed afterwards. Scaled photos (Fig. 2-1), satellite elevation readings and Google map measurement tools were all utilized. Resources, such as The Field Manual for Describing Terrestrial Ecosystems (2nd edition), Google maps, field guides, e-flora B.C. and course notes were consulted throughout for data collection guidance and species identification. Key individuals with detailed knowledge of Mount Douglas Park were invited to review and comment on a draft of this report.

Figure 2 – 1 - A) Tree size estimation using string measure B) Calculation of Slope and Distances



3 - RESULTS & INTERPRETATION

Human encroachment threatens the integrity of this remnant Garry oak meadow ecosystem. Unless new Garry oaks become established soon, this fragile ecosystem may be permanently lost. Indications are that the Eastern section of the site presents the best area to begin planting of Garry oak saplings. This location is most sheltered from drying winds and appears to offer somewhat deeper soil layers. The Southern facing hillside offers the highest inventory of Camas, suggesting this area offers the optimal site for rejuvenating the vitality of the remaining Camas population. The longest reach to the Southwest consists of a series of terraces with well-defined forest boundaries. Somewhat sheltered from the dominant winds, and benefiting from downward flowing rainwater, the lower portion of this section meets some requirements to support better tree growth, but is currently covered with dense grasses and some Oregon grape. The terrain, natural boundaries and heavy grass cover appears to present an ideal opportunity to test the restoration of fire to a Garry oak ecosystem. Public education signage and strategic trail upgrades (fencing, markers and steps) may go a long way to encourage respectful use of this sensitive area through adherence to marked trails. Requiring that all dogs be leashed in this area would significantly reduce soil compaction and vegetation/nutrient damage - both crucial to the success of the restoration. The Camas Meadow Area Restoration Project would forefront historical values of preserving the natural environment and assets of this land for the benefit of all, including future generations (Fig. 1-3). This project could also reflect modern use needs through i) the provision of an accessible location for restoration academics and students to expand knowledge and ii) diversifying the nature of the urban park inventory in the Capital Region through the dedication of a section of this Park specifically to natural environment preservation.

Table 3 – 1: Summary of Observation and Data Collection Results

| |
|--|
| <p>Project site - Camas Meadows Area</p> <ul style="list-style-type: none"> a) Elevation change from 98m ASL (SW corner) to 126m ASL at crest next to Reference Tree, across terrain that varies from 26% grade to 6.4%, with the dominant slope section (265m) sloping down 10.5% to the SW (See Table 3-2 for EEC's) b) Hikers expressed a willingness to stay on trails if requested (via signs) for restoration purposes c) Numerous trails are worn throughout the area except in Area C and the Northern portion of Area A d) High use trails show significant braiding and widening, especially where the area becomes slippery or muddy during wet periods e) Informal trails suggest hikers are drawn to higher elevation and bare rock sections f) Commercial dog walkers are bringing numerous, mostly large, dogs (up to 12 each) to this area, allowing them to freely roam, dig and defecate g) Control of invasives plants/shrubs has been ongoing (through hand-pulling by volunteers) in reducing the number of invasive plants h) Garry oak population of old and declining, gnarled and stunted trees, with few live trees having trunk diameters >60 cm (Photo 10) or reaching heights above 4m. (Scale Photo#9 and others). i) Trees most exposed to the wind-swept SW slope appear particularly stunted and broken j) Core inventory of some native plants still exists on site (Camas, Garry oak, Oregon grape, Licorice fern and less common wildflowers) k) Limited encroachment into area by seral species along boundaries l) Neighbouring agricultural land provides connected wildlife habitat corridor m) Detailed site assessment results (see Table 3-2 and Appendix A : Inventory) |
| <p>Interpretation of Camas Meadows Area Preliminary Site Data</p> <ul style="list-style-type: none"> • Many visitors have little awareness of the sensitive nature of this Garry oak ecosystem, or the vulnerability of the native species that are characteristic of this ecosystem • There is little understanding of the damage that can be done to the natural environment by large dogs being allowed to roam freely, defecate, chase and dig throughout this landscape, altering the integrity of the nutrient profile and biodiversity of the ecosystem • Without specific protections for the natural environment this section of the Park will continue to be rapidly degraded through increasing use as an off-leash, dog-park • Many hikers pass through this area on their way to the higher elevations of Little Mount Doug (167m.) and Mt. Douglas Lookout (225m.) (Photo 1 shows these respective lookout locations) • While volunteers are putting in many hours removing invasive plants/shrubs there is no consistent follow-up restoration leaving some patches more vulnerable to re-infestation by invasive plants • It is uncertain, based on this short, preliminary assessment, what rare or threatened species still exist in this area; further assessment supported by knowledgeable experts is needed • Already protected as Parkland and somewhat separated from the more heavily used areas of the Park, this particular area presents some unique opportunities for restoration of the natural ecosystem characteristics of this place and aligns with B.C. Protected Area and B.C Park System goals. (see below) |

B.C. Protected Area Goal

Goal 2: Special Features *To protect the special natural, cultural heritage and recreational features of the province, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological and paleontological features, outstanding or fragile cultural heritage features, and outstanding outdoor recreational features such as trails.*

➤ Many protected areas will be set aside primarily to protect rare or vulnerable features. Others will combine protection with giving people the opportunity to appreciate and enjoy the intrinsic values of the areas. Others will be protected to attract people to experience and appreciate their natural or cultural heritage.

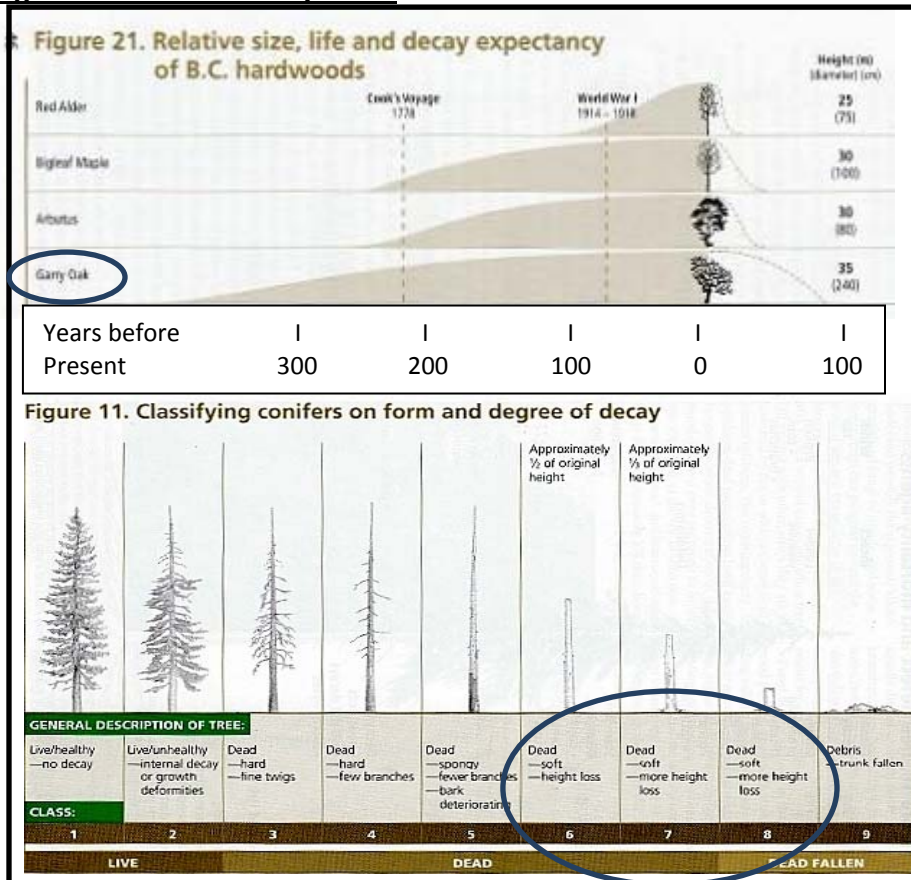
Table 3 – 2: Assessment of Site Essential Ecosystem Characteristics

| | |
|--------------------------------------|--|
| <p>Habitat Quality</p> | <ul style="list-style-type: none"> • Mixture of surface types from bare, glaciated rock, to shallow surface soils to scattered deeper soil pockets supporting clusters of herbaceous and woody vegetation; generally exposed grassland, with scattered trees, primarily aging Garry oak, elevation gain of approximately 35 meters across a series of terraces and steeper slopes (Fig. 3-1); the dominant terrain profile is a long slope from the reference peak down to SW and is subject to regular winds (Photos 14, 15, 16, 36, 39); • The project site is mostly grassland scattered with rock outcrops and bordered by narrow sections of predominantly Douglas Fir/Big Leaf Maple forest. The terrain to the NW of the project area is steep, exposed rock face with progressive elevation gain. Shallow-soil Garry oak, mostly dwarfed by wind exposure are scattered throughout the project site, more densely in the somewhat sheltered eastern portion (photos 6, 21, 40); • Mobile wildlife species can be intermittently found here (photos 32, 33); • Once moisture from the winter wet season has dried up this is a very dry area, subject to ongoing sun and prevailing winds; • This site benefits from connectivity to other habitat areas via the adjoining protected agricultural lands. |
| <p>Biotic Integrity</p> | <ul style="list-style-type: none"> • The last 140+ years of progressively intensifying settlement has resulted in damage, degradation and some cases extinction of native species previously found at this site; • Alien and invasive herbaceous plants can be found throughout the area, though volunteers have been regularly removing Scotch Broom and Daphne, two of the most vigorous invaders; • The relative separation of this area from the majority of Park visitors has enabled some of the core native plant species typical of the Garry oak ecosystem to survive here, though recently increasing human/dog traffic threatens or has eliminated some species once present; • The vast majority of Garry oaks in this area appear to be old and in late stage decline (Fig. 3-2), with few young, replacement oaks in evidence; • A few (less than a dozen?) Arbutus occur in this area, with the largest ones near the boundaries, and several Class 7-8 conifer remnants (likely Douglas Fir) that once shared this space. |
| <p>Ecological Processes</p> | <ul style="list-style-type: none"> • It is well documented that Indigenous Peoples regularly used fire to maintain camas fields that occurred in conjunction with Garry oak meadows. The elimination of fire from these ecosystems has compromised former ecological processes of such meadow areas. Garry Oak restoration experts recommend resumption of burning, at least as a test procedure, to support ecological restoration. Competition from introduced and invasive species has likely contributed to a reduction in the vitality and rate of spread of both camas species; • The southwest slope of this site and relative elevation in relation to surrounding terrain exposes this site to more intense and continuous wind and sun exposure than other sections of the Park. The influences of these stressors can be seen in the stunted height and profile of the Garry oaks throughout the project area. |
| <p>Water Quality & Hydrology</p> | <ul style="list-style-type: none"> • Climate changes are tending towards inconsistent levels of precipitation and longer, hotter summer drought periods; • The shallow, porous surface cover layer and exposed or near-surface bedrock makes this area drain very quickly, with only small depression areas able to retain rainwater for any period of time. These areas can be identified by small clusters of trees, ferns and some Oregon grape (photos 7, 8, 12, 36); • Path indentations now channel water run-off, during heavy rains, further speeding drainage and increasing erosion at those locations. |

Table 3 – 2: EEC’s continued

| | |
|---------------------|--|
| Disturbance Regimes | <ul style="list-style-type: none"> • Fires, formerly used on a regular basis by Indigenous People to maintain Camas fields in Garry oak meadows in this area have been eliminated • Introduced exotic and invasive plants have out-competed much of the native vegetation (European grasses, Scotch Broom, etc.); • Many people pick native wildflowers they find or even attempt to remove whole plants; • Dogs run everywhere trampling sensitive areas, and owners seldom pick up after them in this “natural” area. Feces deposits alter the nutrient profile of sensitive ecosystems in a way that negatively affects native plants, and poses a health risk to volunteers who work on removal of invasive plants; • People often prefer to walk/climb on a route less frequently used by others, or seek solitude in locations away from the main pathways, thereby trampling even those areas beyond the pathways (photos 11, 20); • During the wet season, hikers divert around pathway sections that are wet and muddy, thus widening and braiding existing pathways (photos 16, 18, 19, 21); • Already subject to regular drought and wind exposure, climate change increases the frequency and intensity of these stresses on sensitive species. |
| Soil/ Sediment | <ul style="list-style-type: none"> • Soil depths on level areas, along cliff sides and in depressions may range from 30-45cm of organic matter that turns light and dusty during the dry season (photo 35); • Other sections with little to no surface soil have variable depths of glacial mixed-till over gneiss bedrock, (photos 16, 19, 20, 36 - 38); • Sections of bare, smooth glaciated rock surface, in some cases supporting patchy areas of lichen or moss (photos 17, 18, 39); • Numerous areas with rock near the surface have been stripped of fragile surface plant growth by people and dogs traversing the area. |

Figure 3 – 1: Tree Decay Rates



Illustrations from: *Wildlife & Trees in British Columbia* show:

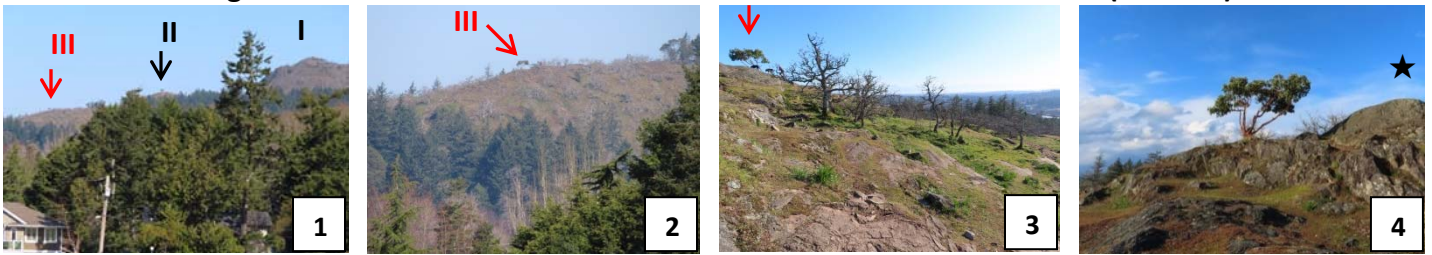
> the lifespan of the Garry oak (ideal conditions) could be 400 years to peak health, followed by a slower decay trajectory relative to other hardwoods, spanning almost 100 years;

and

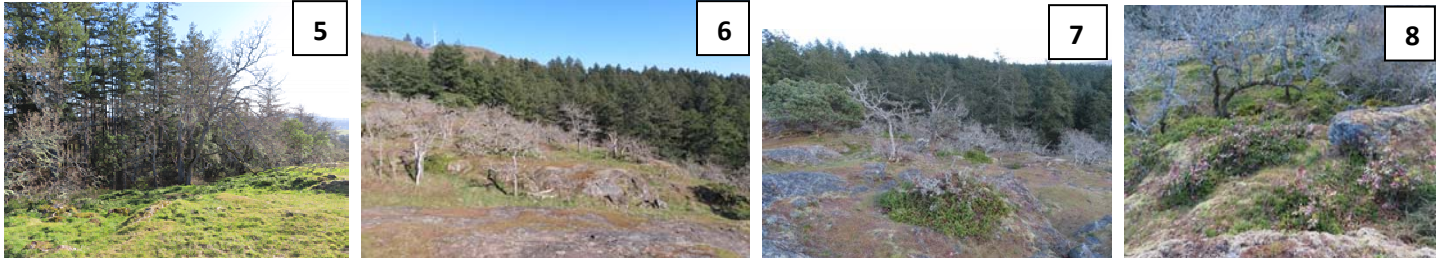
> the decay categories used to assess coniferous decline. Coniferous remnants on this site, presumed to be Douglas Fir, ranged from class 7 – 9 (see photo 31).

Figure 3 – 2: Photos

Mount Douglas Park's 3 Peaks & Restoration Site III Reference Location Tree (Arbutus)



Boundaries and Terraces



Trees

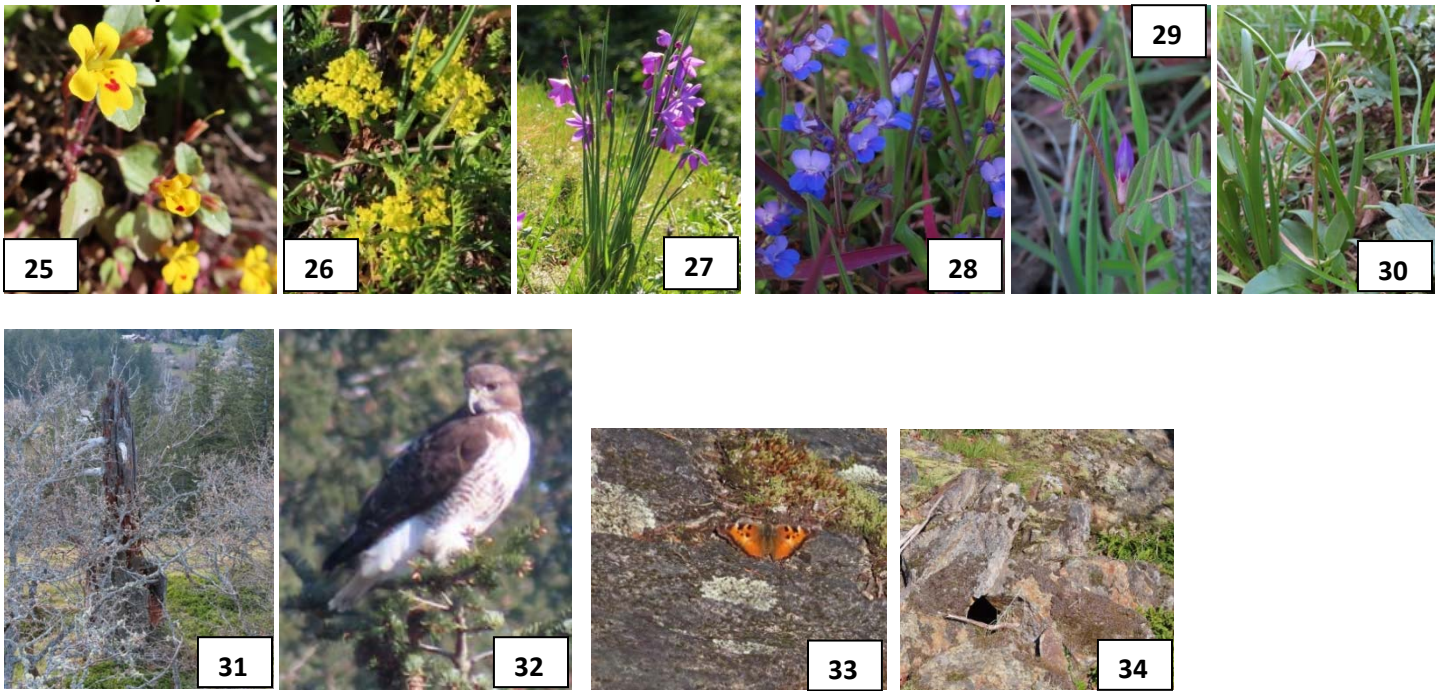


Trails



Figure 3 – 2: Photos continued

Observed Species



Soil



Photo Legend: All Photos taken March 2020

| | |
|----|---|
| 1 | Mt. Douglas Lookout = I (225m) Little Mt. Doug = II (167m) Camas Meadow Knoll = III (134m) |
| 2 | Project site maps → Reference Location Tree (<i>Arbutus</i>) <i>indicated by red arrow</i> |
| 3 | Reference Tree at 133m Above Sea Level |
| 4 | Reference Tree and Knoll (133m) <i>marked by ★</i> , looking Northward |
| 5 | Southern Boundary Strip of forest |
| 6 | View from trail towards SE trail access, showing forest boundary of project site |
| 7 | SE view from trail; Garry oaks with <i>Arbutus</i> (left) and fern clump (centre) |
| 8 | Western slope showing Oregon grape in soil pockets on terrace |
| 9 | Garry oak with 5ft. measuring string scale: most Garry oak < 3.5m tall (Area C) |
| 10 | One of larger girth Garry oaks on site at 1.3m, growing in deeper soil pocket near Knoll |
| 11 | Hiker with dogs setting own route up south face of site (Area B) |
| 12 | Wind topped Garry oaks on southern slope below Reference Tree |
| 13 | Terraced slope & pathways leading to Reference Tree location (looking North) |
| 14 | View SW from beside Reference Tree overlooking proposed burn site |
| 15 | One of many trails leading across terraced slope in proposed burn site |
| 16 | Wide, rocky trail just to W of crest, becomes water course during rainy season |
| 17 | Main trail junction just below (W) Reference Tree |
| 18 | Exposed rock trail section, hikers use grassy verge for traction |
| 19 | Erosion evidence on main trail junction, section avoided by many hikers |
| 20 | Dog walker choosing own path through Camas Meadow to knoll |
| 21 | Pathway entering project site from SE boundary |
| 22 | Sheltered depression NE of Reference Tree where deeper humus/soil has built up |
| 23 | 'Natural obstacle' trail diversion (W slope) successfully redirects hikers from closed trail |
| 24 | Example of split rail fencing being used in the Park and recommended |
| 25 | Wingstem Monkey-flower (<i>Erythranthe alsinoides</i>) |
| 26 | Spring Gold (<i>Lomatium utriculatum</i>) (native) |
| 27 | Satin Flower (<i>Olsynium douglasii</i>) (native) |
| 28 | Small-flowered Blue-eyed Mary (<i>Collinsia parviflora</i>) (native) |
| 29 | Spring Vetch (<i>Vicia lathyroides</i>) (exotic) |
| 30 | Broad-leaved Shooting Star (<i>Dodecatheon hendersonii</i>) (native) |
| 31 | Class 7-8 – Douglas Fir remnant |
| 32 | Hawk – possibly Red-tailed Hawk (unconfirmed) |
| 33 | Butterfly - California Tortoise Shell (<i>Nymphalis californica</i>) (native) |
| 34 | Animal den |
| 35 | Hole dug out by dog at base of Garry oak shown in photo 10 |
| 36 | Sheltered ravine in depression near crest, just N of Reference Tree |
| 37 | Illustration of how continual trampling cuts into organic and soil layer |
| 38 | Gravel path and exposed soil following invasive plant removal |
| 39 | Downslope view of meadow area of Section A – proposed burn section |
| 40 | Upslope view of Section C – proposed initial planting area for Garry oak saplings |

4. DISCUSSION

The proposed restoration project site is a rocky outcrop Garry oak meadow area, occupying approximately 5ha., within a much larger 188ha., Municipally managed, natural Park. The proposed restoration project site has relatively well defined boundaries and has been sheltered from the heaviest volume of Park visitors in the past due to its distance from parking lots. The Park benefits from a strong Friends of Mount Douglas Park Society that is very active in planning and implementing strategies to protect the natural environment while enhancing the overall user experience in a sustainable manner. The FMDPS wants to better manage the ever-growing pedestrian and canine traffic in this sensitive section of the Park and spearhead restoration of the natural features of a Garry oak meadow. If left unmanaged for much longer, the remaining native species found here may soon become irreparably damaged. Through providing organizing and planning leadership in conjunction with the Municipality of Saanich, the FMDPS aims to bring together relevant experts and volunteers to restore and protect this threatened natural ecosystem and sustainably serve human use needs.

A preliminary assessment of the proposed project site suggests that visitors currently use the entire area in a random way and are largely unaware of damage they and their dogs are creating. When questioned, however, visitors indicated they would be willing to be guided by signs and respect marked trails and restoration areas. Volunteers are successfully removing most of the large invasive plants but not currently addressing the bare surfaces their removal creates (photo 38). The GOERT Best Management Practices manual strongly recommends re-establishing fire to Garry oak meadows, though this practice has proven infeasible in many urban locations. Best Management Practices also advises careful trail management and restricting foot traffic to specific trails, particularly in shallow soil/ rocky outcrop Garry oak ecosystem areas (Appendix A). The recommendations of this report suggest creation of three distinct restoration focus areas to best align human uses and restoration activities with the existing terrain and vegetation (Fig. 5- 1).

Though conducted over a short period of time (6 weeks) and without expert identification of smaller plants (i.e. grasses, lichens and mosses), a preliminary site assessment confirms that though weakened, some of the keystone species of a Garry oak meadow are present. The short study period and general Park prohibitions against disturbing plants and soil also limited data collection for this report. However, once the proposed restoration project is approved, detailed site information can be gathered and compared to the existing body of knowledge about shallow-soil Garry oak ecosystems. Contacts initiated during the study period, as well as reference to existing community values surveys, along with the documented goals for this Park (Fig. 1 – 3) collectively provide a reasonable foundation of human values and intended uses that underpin the recommendations that follow.

The presence of many knowledgeable Garry oak restoration experts in the Victoria area makes planning and implementing this project highly feasible. The well-defined, yet somewhat secluded, project site creates an ideal location to i) demonstrate the efficacy of recommended restoration practices such as burning, ii) educate the public and iii) conduct further research, while preserving an endangered ecosystem remnant. Components of the recommended plan also address human values and uses through continued access for hikers and dog owners. The planned involvement of academics and students would support ongoing monitoring of restoration results and potentially new research findings.

5. RECOMMENDATIONS

A detailed restoration project plan should be developed incorporating the knowledge of Garry oak ecosystem restoration experts and other partners, culminating in formal approval from the Municipality of Saanich. Plan preparation activities would include more extensive user needs assessment, more detailed trail mapping, planning for installation of protective fencing at strategic points, trail and educational signage and the regulation of roaming dogs. A full annual cycle site assessment would be required to inform planning and serve as baseline data for future monitoring. Acorn collection could also be initiated. Pending inventory completion, three restoration focus areas could be precisely mapped, with Area B (Camas and wildflowers) providing the most visible showcase for the whole project. Monitoring and ongoing research will be important long-term aspects of this project.





Table 5 – 1: Recommendations for Camas Meadows Area Restoration

| Recommendations |
|---|
| Year 1 |
| 1. Designate the Camas Meadows as a natural preservation area within Mount Douglas Park. |
| 2. FMDPS working with Saanich Parks - Identify partners with appropriate expertise to contribute to development of a detailed Restoration Plan, including public consultation/input and human use needs. |
| 3. Obtain formal Municipal approval for Camas Meadows Restoration Plan within Mt. Douglas Park. |
| 4. Make it a requirement that all dogs be <u>on-leash</u> and max. 3 dogs/per group. |
| 5. Using natural materials wherever possible close informal trails; install sections of low-fence along sensitive trail boundaries; install educational/interpretive sign-boards describing goals, restoration work & ecological features; identify websites for further info; provide municipally designated dog waste disposal containers at key parking/access points. |
| 6. Formalize partnership with UVic Ecological Restoration Program/Student Network to support completion of a detailed species inventory and site assessment, which shall be used as the monitoring baseline. Collection of Garry oak acorns from site. |
| Year 2 |
| 7. Formalize partnership with local stakeholder representatives to: <i>a)</i> (post-inventory) explore options for the introduction of an annual Camas festival demonstrating traditional management of Camas, and <i>b)</i> conduct and assess the results of reintroducing controlled burns in a Garry oak meadow. |
| 8. Formalize partnership with GOERT as site for planting and monitoring new Garry oak saplings (from scrub oak seedlings) to strengthen the succession to the next generation of Garry oak. |
| 9. Monitor compliance and impacts of Year 1 changes, communicate rehabilitation/preservation outcomes with stakeholders and public at large (monitoring is ongoing annually, referencing baseline and successive year data). |
| 10. Amend restoration plans as required/appropriate, based on monitoring data results. |
| Year 3 |
| 11. Continuation of monitoring, public education and communication and enhancement where results indicate. |
| 12. Ongoing research, (& publish as feasible), restoration and ongoing monitoring results, to more widely promote the opportunities for balancing restoration/nature preservation with ongoing human use in urban greenspaces; showcase reconciliation opportunities. |

Figure 5-1: Recommendations









LEGEND Trails

-  Reference Tree
-  Main trail with markers
-  Service trails for restoration
-  Steps construction



LEGEND Biotic Restoration Zones

- A** Proposed Burn Area
- B** Camas/Wildflower Restoration
- C** Garry oak sapling / nursery

-  Reference Tree
-  Primary visitor trails
-  Service trails
-  Signposts
-  Cedar rail low fence
-  Natural Barrier (log etc.)

6 – CONCLUSION

The SW section of Mount Douglas Park consists of a remnant shallow-soil, Garry oak meadow ecosystem. While relatively removed from the main Park area, visitor use of this open area has increased considerably over the past few years, including high numbers of large dogs permitted to roam throughout the area. Existing Garry oak meadow restoration research demonstrates that foot traffic through such sensitive ecosystems results in loss of vegetation cover, causes soil compaction and erosion and dog feces alters soil fertility favouring invasive species over native vegetation (GOERT-BMP pg. 14). The established Park stewardship group, Friends of Mount Douglas Park Society, wants to better manage human and canine travel across sensitive areas and initiate restoration of the declining native Garry oak and camas populations to ensure preservation of this threatened ecosystem within the Park, for the benefit of future generations. The 12 recommendations provided are based upon a 6-week, student review of the site, and draw particularly upon the detailed publications of the Garry Oak Ecosystem Recovery Team (GOERT). The restoration goals reflected in these recommendations are achievable. Ongoing monitoring and research opportunities could be readily facilitated through partnerships with University of Victoria and GOERT. Implementation of these recommendations would continue to serve the human use goals of the Park with only a limited amount of regulation, in combination with enhanced trail management and well executed public education initiatives.

ACKNOWLEDGEMENTS

Special thanks to the Executive of Friends of Mount Douglas Park Society and in particular, President Dr. Darrell Wick. Together with other Board members, Darrell tirelessly leads and advocates for this natural space and strives to ensure that the Charter goal of sustainable management is not lost in the face of growing urban and recreational use pressures. Darrell Wick was instrumental in the creation of the FMDPS and continues to visit the Park almost daily. It was on several of these visits that Darrell generously shared his knowledge of the history of the Park and his commitment to the preservation of this remnant Garry oak meadow ecosystem within this remarkable Park.



The southward view from the Camas Knoll, overlooking Victoria, B. C.

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Photo: D. Wick 2002 - Camas in Mt. Douglas Park

Appendix A

Site Inspection Inventory

| Category | Common Name | Genus species |
|--------------------------------------|--------------------------------------|--|
| Native | Chocolate Lily | <i>Fritillaria affinis</i> |
| Native | Satin Flower | <i>Sisyrinchium douglasii</i> |
| Native | Wingstem Monkey-flower | <i>Erythranthe alsinoides</i> |
| Native | Garry Oak | <i>Quercus garryana</i> |
| Native | Orange Honeysuckle | <i>Lonicera ciliosa</i> |
| Native | Licorice Fern | <i>Polypodium glycyrrhiza</i> |
| Native | Tall Oregon Grape | <i>Mahonia aquifolium</i> |
| Native | Great Camas | <i>Camassia leichtlinii</i> |
| Native | Common Camas | <i>Camassia quamash</i> |
| Native | White Fawn Lily | <i>Erythronium oregonum</i> |
| Native | Ocean Spray | <i>Holodiscus discolor</i> |
| Native | Spring Gold | <i>Lomatium utriculatum</i> |
| Native | Self-Heal | <i>Prunella vulgaris</i> |
| Native | Broad-Leaved Shooting Star | <i>Dodecatheon hendersonii</i> |
| Native | Small Blue-eyed Mary | <i>Collinsia parviflora</i> |
| Exotic | Spring Vetch | <i>Vicia lathyroides L.</i> |
| Invasive | Himalayan Blackberry | <i>Rubus armeniacus</i> |
| Invasive | Scotch Broom | <i>Cytisus scoparius</i> |
| Invasive | English Blue-bell | <i>Hyacinthoides non-scripta</i> |
| Invasive | Purple Dead Nettle | <i>Lamium purpureum</i> |
| Unidentified | Various introduced/invasive grasses | |
| Unidentified | Various mosses | |
| Unidentified | Various lichens | |
| Transition Zone Shrubs & Wildflowers | Osoberry | <i>Oemleria cerasiformis</i> |
| | Himalayan Blackberry | <i>Rubus armeniacus</i> |
| | Orange Honeysuckle | <i>Lonicera ciliosa</i> |
| | Common Snowberry | <i>Symphoricarpos albus</i> |
| | White Fawn Lily | <i>Erythronium oregonum</i> |
| | Chocolate Lily | <i>Fritillaria affinis</i> |
| | Dull Oregon Grape | <i>Mahonia nervosa</i> |
| Casual Observations | Black-tailed Deer | <i>Odocoileus hemionus columbianus</i> |
| | Rabbits | |
| | Bald Eagles, hawks, turkey vultures | |
| | Crows, Ravens | |
| | Barred Owls | |
| | Insects | |
| | Butterflies | |
| | Salamander | |
| | Song birds - Juncos, Sparrows, Wrens | |

Appendix B

➤ *Established documentation that supports the recommended actions.*

Excerpt adapted from: **The Friends of Mount Douglas Park Society Park Plan 3rd Edition, 2017.**

Trails

Attractive, well-defined trails in the Park enhance visitor experience and prevent proliferation of opportunistic trails that damage natural features. Trails that the public should use all have names; unnamed trails are opportunistic trails that should not be used. The proliferation of these ad hoc unnamed trails represents a threat to the Park natural environment.

Goal: To provide passage in the park in a way that allows visitors to enjoy and appreciate the natural environment as a wilderness preserve while carefully preserving it for generations to come by minimizing adverse effects of trails and trail use on the Park's natural character. (See Mount Douglas Park Charter – Acknowledgements Section).

Policies:

1. Different sections of the Park have different characteristics. Require trails to reflect these different characteristics.
2. Take steps to keep walkers on named trails. [Close ad-hoc trails and restore the understory vegetation.](#)
3. Avoid a long straight corridor perspective by making trail alignment meander following natural contours.
4. [Where invasive plant removal has significantly removed understory, use natural/windfall/debris where possible, and split rails where not, to limit trail width and consequent habitat destruction. Split rail fencing has the positive benefit of not only protecting sensitive areas, but also highlights the special nature of what is being protected.](#)
5. Limit trail maintenance for the most part, to removal of obvious hazards and the repair of damaged areas by:
 - [filling in wet or muddy patches and providing water control.](#)
 - [protecting against erosion, braiding, ballooning or lateral sprawl, and delta formations at trail intersections.](#)
 - [trimming trail bordering vegetation and overgrowth to allow clear passage without widening trail corridor.](#)

Trail Categories:

• **Natural Trails**

- o Rating: Moderate. The natural earth tread enhances the feeling of the natural settings.
- o Alignment: Follows natural contours around land humps, trees and other small obstacles.
- o Width: Varying 0.75 to 1.5 m

• **Rugged Trails**

- o Rating: Difficult. Generally steep, traversing loose rock surfaces with exposed heights. These trails are unimproved providing the maximum natural park experience.
- o Width: Narrow single tread.

Implementation:

1. Actively address trail water issues. Lack of water control has led to serious erosion. It also is the cause of significant trail spread and also side trails.
2. Protect exposed tree roots along trails
3. Review overall trail strategy to [reduce the proliferation of ad hoc unnamed trails including a determination of trails that should be recognized and those that should be closed.](#)
4. Cut steps into areas where trails traverse large rocks. Acquire necessary tools.

Dogs

Goal: To balance good opportunities for dog walking while ensuring visitor safety, trail inclusiveness for all users, protection and preservation of the natural environment and sensitive ecosystems.

Implementation:

1. In 2009, a report on dogs in Mount Douglas Park concluded that further leash control restrictions might be needed in future. That report should be updated now.
2. Require and enforce that all dogs in the Park be on a leash.
3. Modify Saanich bylaws to prohibit dogs from entering creeks, tributaries, ponds, marshes and wetlands in the Park.
4. [Restrict the number of dogs under a single person's control when walking in the Park to a maximum of three dogs.](#)

Adapted from GOERT Best Management Practices for Garry Oak and Associated Ecosystems (2013)

Best Practice Aim: Limit trampling, especially in areas of thin soils over bedrock or with species at risk

1. Trails established without thoughtful design frequently result in:
 - sections with mud pits that form in the wet season, ultimately leading to trail braiding and widening
 - trails that cross vernal pools, seeps and areas of rare or threatened species
 - poorly defined trail edges, particularly in rocky areas
 - rapid erosion of thin soils, leading to washouts and gullies in the trail bed and resultant trail widening
 - diversion of natural surface water flow patterns; **feet of dogs and people compact the soil** changing the way water moves over it
 - **foot and animal traffic trample plants and spread seeds of invasive plants**
 - Staying on the trail helps sensitive areas to persist and helps preserve biodiversity.
 - Trails must serve the needs of multiple user groups and take environmental and geographical factors into account
 - Make sure that people **pick up after their pets – limiting the amount of nutrients added to the Garry oak ecosystem which change the chemistry of native soils potentially favouring the growth of invasive species**

Observed Challenges in relation to these points:

1. Trails:
 - sections with mud pits that form in the wet season, ultimately leading to trail braiding and widening
 - trails that wander widely to avoid areas that become wet
 - poorly defined trail edges, particularly in rocky areas
 - rapid erosion of thin soils, leading to washouts and gullies in the trail bed and resultant trail widening
 - diversion of natural surface water flow patterns.
2. Off-leash dog roaming results in:
 - trampling of soil and vegetation, disturbance of natural placement of biotic and abiotic components of the environment, digging in sensitive areas
 - harassment and even killing/predation of resident species
 - extensive and intensive nutrient loading in sensitive areas (from feces and urine deposits) that changes the chemistry of the natural area and may further favour invasive species, and pose a threat to volunteers working to remove invasives in this area.
3. Human responsibility for dogs:
 - owners can and do ignore the actions of their dogs when they are off-leash, remaining detached from dogs trampling, disturbing and digging in vegetation areas as well as defecating and urinating without regard to sensitive species/areas.