Follow-up notes from a site visit at the west side of 375 Village Bay Rd with the Mayne Island Housing Society on June 22nd 2020

Provided by Rob Underhill RPBio
Mayne Island Conservancy
biologist@mayneconservancy.ca
250-539-2535

Intro

The Mayne Island Conservancy was approached by Brian Crumblehulme and Deborah Goldman from the Mayne Island Housing Society (MIHS) regarding an area of land they are considering developing for affordable housing. They asked us to provide information about the natural features of the area and make recommendations on how they could mitigate impacts to natural features in the event of a development. No specific development plans were provided by the MIHS. The following notes and recommendations do not constitute an environmental impact assessment. These notes do not represent an endorsement of any development plans the MIHS may propose or implement in future.

Method and Limitations

Biologist Rob Underhill visited the site on two occasions; first on June 22nd 2020 in the company of Brian, Deborah, and Michael Dunn (Executive Director, Mayne Island Conservancy) to walk around part of the area and get a general sense of the site, and a second time on June 29th 2020 to record the locations of existing skid roads and identify any areas of particular ecological value. No species inventories or detailed surveys were completed during these site visits.

Description of Site

The area of interest as indicated by the MIHS is the westernmost 3 acres of 375 Village Bay Rd, described as 'Parcel 3' on a rough sketch provided by the MIHS.

Ecosystem Classification

According to the Terrestrial Ecosystem Mapping (TEM) completed by BA Blackwell in 2007 (based on 2004 air photos), Parcel 3 is 20% CDFmm04 and 80% CDFmm01 (Figure 1). However, observations during the site visits showed the property contains a higher proportion of wetter ecosystems than described in the TEM, including an area of CDFmm06 (Figure 2).

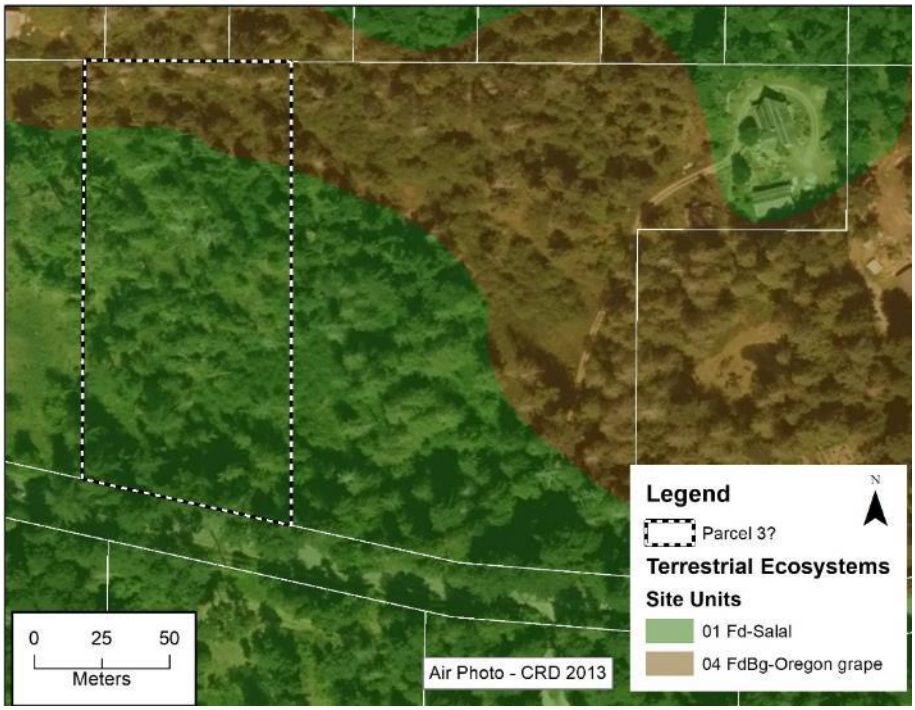

Figure 1. Terrestrial Ecosystems on Parcel 3 as described by BA Blackwell, 2007. Map created by the Mayne Island Conservancy using TEM data provided by Parks Canada.

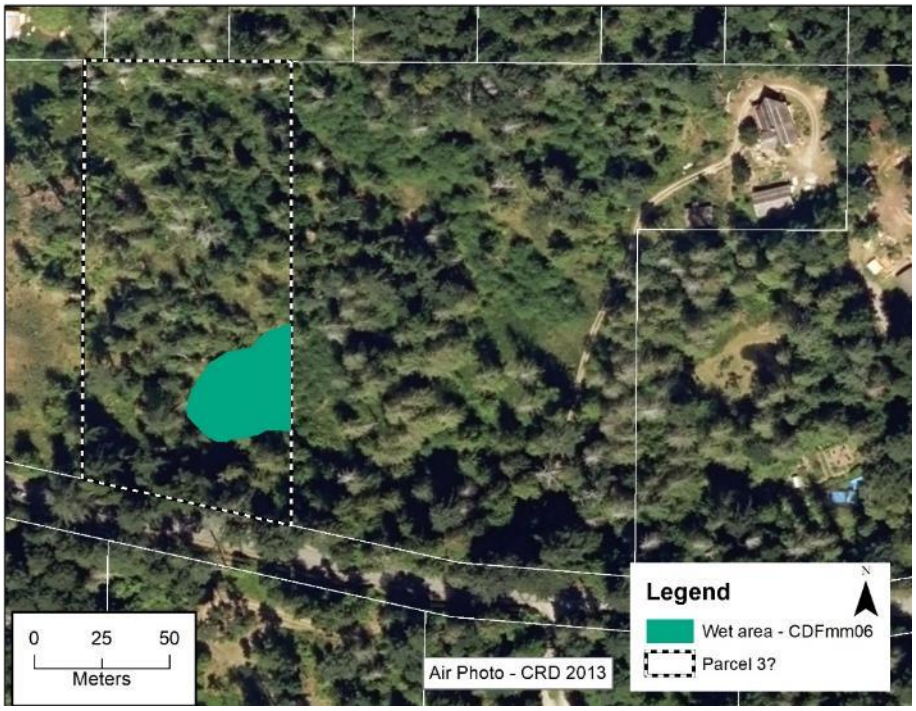

Figure 2. A wetter area (CDFmm06) identified by the Mayne Island Conservancy June 29th 2020.

Disturbance History

According to the Terrestrial Ecosystem Mapping completed by BA Blackwell in 2007, the most recent disturbance on the property was clearcut logging in a small area along the west of the property in the 2000's, they also describe a large portion of Parcel 3 as selectively logged in the 1990's, and an area to the south selectively logged in the 1970's (**Figure 3**). Our observations during the site visits support that history of logging except for the clearcutting along the west side, which seems to have also been selective based on the presence of some mature trees.

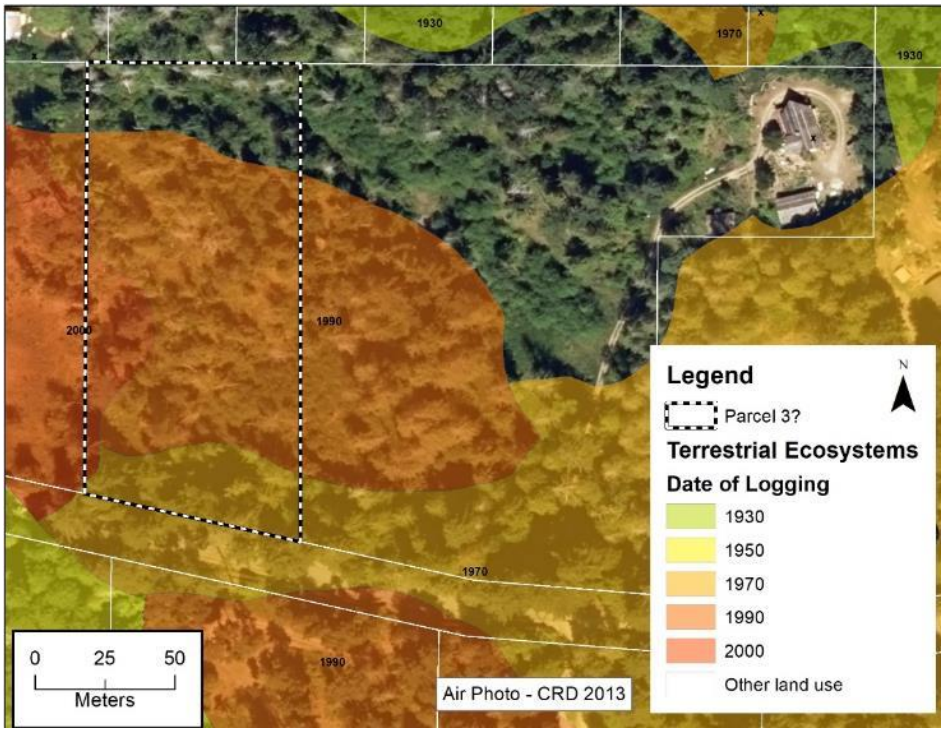

Figure 3. Logging history in Parcel 3 as described by BA Blackwell, 2007. Map created by the Mayne Island Conservancy from TEM data provided by Parks Canada.

Several skid roads and one larger area (log loading zone?) are evident in Parcel 3, likely created to provide vehicle and equipment access for the 1990's timber harvest. It's possible the skid roads were created prior to the 1990's and re-used at that time. Soil compaction along the skid roads and in the loading zone has reduced natural regeneration of vegetation. Deer browse and exotic plant species infestations are higher in these areas than in other areas of Parcel 3.

Figure 4. Skid roads and disturbed/compacted loading zone on Parcel 3 as described by the Mayne Island Conservancy Jun 29th 2020.

Vegetation

As of June 29th 2020, Parcel 3 contained forests of mixed successional stages, including some mature forest characteristics and some early successional vegetation. Site degradation from past logging operations appears limited to skid roads and loading sites. There is a remnant overstory composed primarily of western red cedar with the occasional large diameter Douglas fir. Some mature forest characteristics are present such as large diameter coarse woody debris and large standing dead trees. The regenerating lower canopy is dominated by Douglas fir and grand fir. Big-leaf maples occur on occasion, and red alder is common in the wetter sites. The shrub layer is well developed and diverse, with sword fern, salal, and salmon berry the most common. Herbaceous vegetation is well developed in the wetter sites, with the CDFmm06 site indicated in **Figure 2** dominated by small-flowered bulrush. The presence of small-flowered bulrush and lady fern indicate a strongly fluctuating water table with seasonal flooding. On June 29th the soils in the wettest sites were still wet but not saturated and no standing water was observed.

Figure 5. Wetland vegetation such as small-flowered bulrush (*Scirpus microcarpus*) is an indication of seasonally flooded soils.

Conservation Significance of the Vegetation

According to the BC Conservation Data Center (CDC 2020), the three natural plant communities on Parcel 3 are Red Listed, i.e., they are Endangered or Threatened and are considered to be at risk of being lost provincially. In addition, they are listed either as Critically Imperiled (S1) or Imperiled (S2) at the sub-national level. Table 1 lists the natural plant communities of conservation concern.

Table 1. Conservation Data Centre vegetation elements of conservation concern on Parcel 3 (CDC 2020).

Plant Community (Biogeoclimatic Ecosystem Classification system)	**CDC Status**
Douglas-fir – Salal (CDFmm01)	Red List (S2)
Grand Fir / Dull Oregon-grape (CDFmm04)	Red List (S2)
Grand Fir / Three-leaved Foamflower (CDFmm06)	Red List (S1)

Locally on Mayne Island, wetter ecosystems have been disproportionately converted to other land uses compared to most drier ecosystem types, primarily for agriculture. According to an analysis of the TEM data by the Mayne Island Conservancy, the CDFmm06 ecosystem type makes up 5.8% of Mayne Island by area, and as of 2004 58% of that ecosystem type had been converted to other land uses. The CDFmm01 makes up 40.4% of Mayne Island and was 27% converted, the CDFmm04 makes up 13.4% and was 38% converted.

The large diameter standing dead Douglas fir and western red cedar trees on Parcel 3 are noteworthy from a habitat conservation perspective. Large standing dead trees are uncommon on Mayne Island due to a history of logging and danger tree removal. These trees provide valuable bird and bat habitat.

Recommendations

If this property is developed, following these recommendations could reduce the impacts to existing conservation values.

- Utilize existing degraded areas; skid roads and loading zone.
- Avoid wetter areas as a priority. These sites are less common on the landscape due to natural topography and historic land uses. They also contribute significantly to freshwater management (surface water filtration and groundwater recharge), and to carbon storage.
- Consider standing dead trees to have equal conservation value to living trees, in particular large diameter ones. When unsafe to leave trees standing, reduce their height only as much as is needed to remove the danger.
- Leave any large diameter coarse woody debris (tree trunks) on site to decompose naturally.
- Minimize the footprint of operations. Not only permanent infrastructure, but also the footprint impacted during the construction process. Once soils are compacted or topsoil lost, it takes hundreds of years to recover natural vegetation communities.
- Establish a plan that identifies which natural areas you want to conserve. Keep machinery out of those sites. Treat areas that will remain natural as if they contain pristine gardens already.
- Consolidate infrastructure together as close as possible to avoid widespread impact and fragmentation of natural ecosystems. Locate infrastructure close to existing access points to avoid losing natural areas resulting from long roads.
- Observe waterflow at the site during peak surface flow in late January to inform infrastructure planning.
- Consider a long-term plan for invasive plant management. Species observed on site in low abundance may increase exponentially following disturbance. Priority species observed on-site include (in order of concern): English holly, daphne, tansy ragwort, sweet briar rose, Canada thistle, bull thistle.