

Aurora Oaks LLC

Mazama Pocket Gopher (*Thomomys Mazama*) Absence and Garry Oak (*Quercus garryana*) Presence Report

Prepared for Aurora Oaks LLC

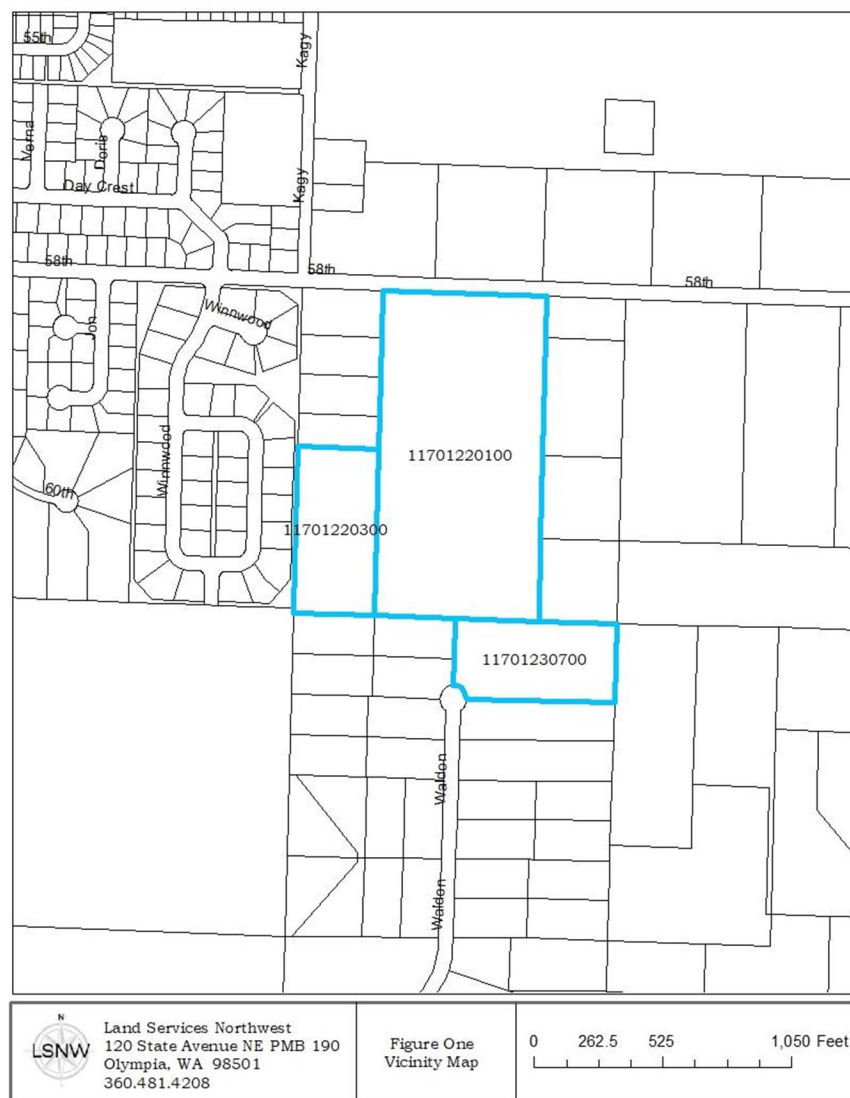


Prepared by
Land Services Northwest
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Land Services Northwest
Olympia, WA

1.0 INTRODUCTION

This report is the result of a Mazama Pocket Gopher and regulated prairie survey on the following parcels (**Figure 1**):

- The 20.45-acre parcel number 11701220100 with the legal description of 1-17-1W NW NW W675.5F OF E990F LESS N30F HENSLIN RD in Thurston County.
- The 4.99-acre parcel number 11701230700 at 6144 SE WALDON DR with the legal description of 1-17-1W SW NW TRACT 7 OF SURVEY VOL 11 PG 61 in Thurston County.
- The 5.15-acre parcel number 11701220300 at 8541 58TH AVE SE with the legal description of 1-17-1W S2 NW NW LESS E990F in Thurston County.



The Purpose of this report is to provide a study of the presence or absence of indicators of the Mazama Pocket Gopher (*Thomomys Mazama*) (MPG) and Regulated Prairie Under Thurston County Code (TCC) Chapter 24.

Mazama Pocket Gopher

Four subspecies of Mazama pocket gophers found in Thurston County are listed as threatened under the Endangered Species Act (ESA). Impacts to Mazama pocket gophers should be avoided or addressed through USFWS permitting processes. The presence of this species on a property may have regulatory implications that may limit the amount or type of development that can occur on a property in order to avoid “take” of the species. Take is defined under the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species.

This study should allow the reader to assess whether the Mazama pocket gopher is likely to be found on site and what the implications of its presence or absence may have with regard to permitting a residence or other structures or development.

Regulated Prairie, Garry Oaks and Mima Mounds

The parcel contains soil types associated with prairies as defined in the Thurston County Critical Areas Ordinance (CAO 24.25). Transects were walked throughout the parcel (or at least throughout the building envelope and 50-foot buffer area). A list of plant species encountered during the survey was recorded and CAO target prairie plants were noted. Regulated prairie can be either wet or dry outwash prairie and is critical habitat for the Taylors checkerspot butterfly and the Mardon skipper butterfly. Prairie habitat is regulated if three indicator species are found within 5 meters (15 feet) of each other with 25 or more of each species in the plot.

2.0 METHODS

2.1 Review of Existing Information

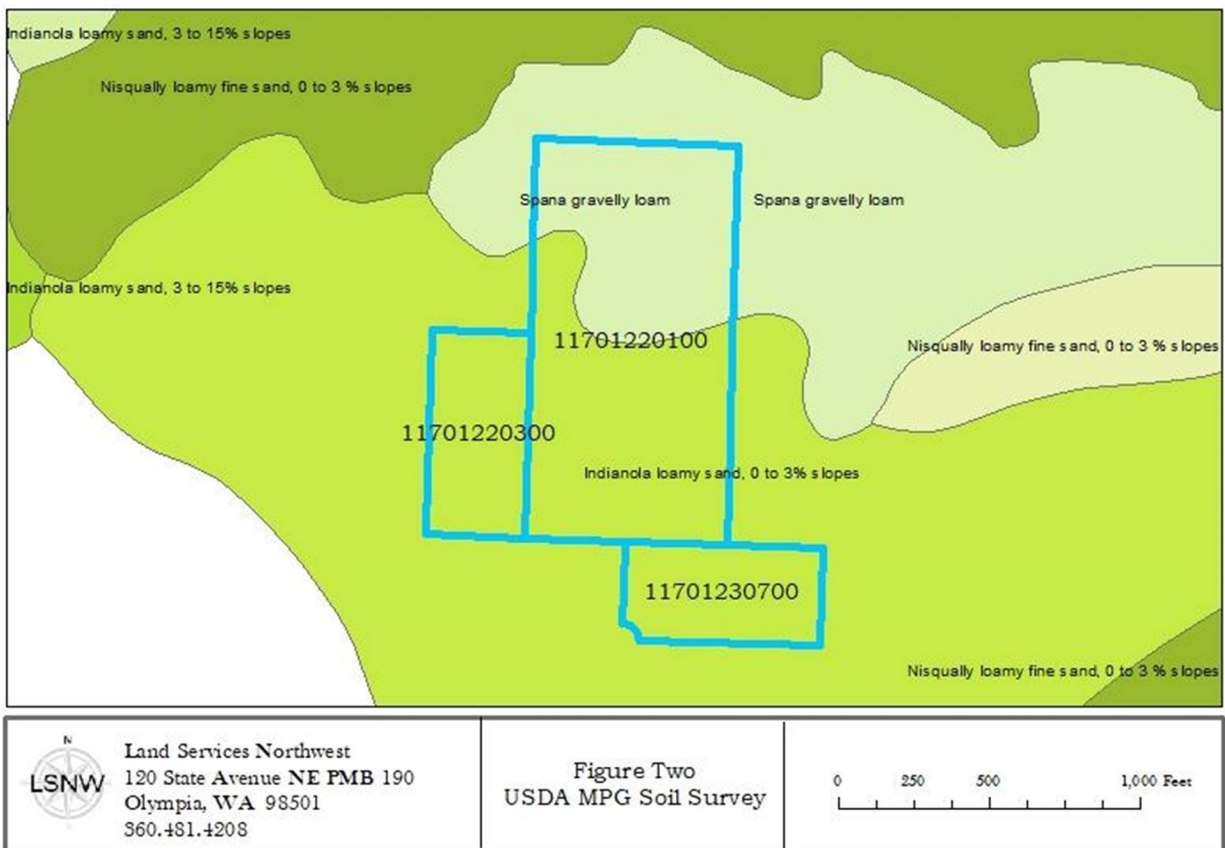
Background Review

Background information on the subject property was reviewed prior to field investigations and included the following:

- Thurston County Geodata Gopher Soils Shapefiles
- WDFW Priority Habitats and Species Information
- USFWS species list information
- WDFW species information

2.2 Summary of Existing Information

The existing information shows Indianola loamy sand 0 to 3 percent slopes, Nisqually loamy fine sand 0 to 3 percent slopes, and Spana gravelly loam, within 300 feet of the subject property, which are more and less preferred by the MPG (**Figure 2**) and (**Attachment A**).



Attachment A

Table 1. Soils known to be associated with Mazama pocket gopher occupancy.

Mazama Pocket Gopher Preference	Soil Type
<p>More Preferred</p> <p>(formerly High and Medium Preference Soils)</p>	<p>Nisqually loamy fine sand, 0 to 3 percent slopes</p> <p>Nisqually loamy fine sand, 3 to 15 percent slopes</p> <p>Spanaway-Nisqually complex, 2 to 10 percent slopes</p> <p>Cagey loamy sand</p> <p>Indianola loamy sand, 0 to 3 percent slopes</p> <p>Spanaway gravelly sandy loam, 0 to 3 percent slopes</p> <p>Spanaway gravelly sandy loam, 3 to 15% slopes</p>
<p>Less Preferred</p> <p>(formerly Low Preference Soils)</p>	<p>Alderwood gravelly sandy loam, 0 to 3 percent slopes</p> <p>Alderwood gravelly sandy loam, 3 to 15 percent slopes</p> <p>Everett very gravelly sandy loam, 0 to 3 percent slopes</p> <p>Everett very gravelly sandy loam, 3 to 15 percent slopes</p> <p>Indianola loamy sand, 3 to 15 percent slopes</p> <p>Kapowsin silt loam, 3 to 15 percent slopes</p> <p>McKenna gravelly silt loam, 0 to 5 percent slopes</p> <p>Norma fine sandy loam</p> <p>Norma silt loam</p> <p>Spana gravelly loam</p> <p>Spanaway stony sandy loam, 0 to 3 percent slopes</p> <p>Spanaway stony sandy loam, 3 to 15 percent slopes</p> <p>Yelm fine sandy loam, 0 to 3 percent slopes</p> <p>Yelm fine sandy loam, 3 to 15 percent slopes</p>

The WDFW Priority Habitats and Species Map does not show occurrences of the MPG in the vicinity of the subject property within 600 feet in 2016. (**Appendix B**).

2.3 2022 Mazama Pocket Gopher Protocol

A. General Information – 2022 Approach

1. The MPG review season will run June 1-October 31, 2022.
2. The protocol described in this memorandum will only apply to properties not known to be occupied by MPG since April 2014, the date of the federal listing.

The property was not known to be occupied by the MPG since April 2014.

3. Negative determinations will be valid for the length of the underlying County permit or approval, per County code.

The determination is negative.

4. Qualified consultants may perform field reviews and submit results for County evaluation, per the CAO. Consultants must have received training from USFWS at one of the two trainings offered in May/June 2018 and is certified to conduct these surveys.

Alex Callender is qualified as a consultant as he received training and certification during the May 2018 class conducted by the United States Fish and Wildlife Service.

B. In-Office Procedures

1. Staff will review land use applications to determine if the MPG field screening protocols described in this memorandum must be initiated for the following:

- a. Within 600 feet of a site known to have positive MPG occurrence ; or
- b. On or within 300 feet of a soil type known to be associated with MPG occupancy.

The parcels are on and within 300 feet of a soil type associated with MPG occupancy.

2. County staff will determine if other factors preclude the need for field screening. See Preliminary assessment below.

3. County staff will notify applicants if their application cannot be excluded from further review.

4. Applicants may hire a consultant to perform field review, or may request that field review be conducted by County staff according to the protocol described in this memorandum.

5. County staff will review critical area reports submitted by consultants.

6. For sites to be screened by the County, staff will coordinate site visits with landowners/applicants, ensure advance notification and property access, and develop site visit schedules.

7. For sites where no MPG activity is observed, the County will provide applicants with a project condition that requires them to stop construction activity and alert the County and USFWS if evidence of MPG occupancy is observed.

N/A - No activity observed

8. Thurston County landowners who know or learn that Mazama pocket gophers are present on their property can move forward with their proposed development by: 1) proposing mitigation to the County as directed in the County's Critical Areas Ordinance (Title 24 TCC); or 2) contacting USFWS directly to discuss the review, assessment, and mitigation

process most appropriate for their site(s) and proposed activities; or 3) waiting to participate in the yet to be completed Thurston County HCP.

C. Preliminary Assessment

As land use applications are received, properties mapped with or within 300 feet of gopher and/or prairie soils undergo the following preliminary assessment in-office.

1. For properties or project areas that appear to meet County criteria below, an internal review is conducted by staff biologist to determine if the project may be released from the full gopher review process. The following criteria may release a project from further gopher review:

- Locations west of the Black River, or on the Steamboat Island or Cooper Point peninsulas.
N/A
- Sites submerged for 30 consecutive days or more since October 31, 2017.
N/A
- Sites covered with impervious surfaces (as defined in CAO Chapter 17.15 and Title 24).
- Fully forested (>30%) sites with shrub and fern understory.
Parcels 11701220100 and 11701230700 are predominantly forested and the excluded areas are shown on the transect maps in Appendix C. Parcel #11701220300
- Sites that consist of slopes greater than 40 percent, or that contain landslide hazard areas (per existing County regulations).
N/A
- Sites on less preferred MPG soils north of Interstate 5.
N/A
- Building to take place in the footprint of an existing structure (also mobile home replacements in the same footprint).
N/A
- Mobile home replacements in existing lots in an existing mobile home park.
N/A
- Heating oil tank removal
N/A
- Foundation repair
N/A
- Projects which lie >300 feet from mapped gopher soils.
The parcel is within >300 feet of mapped gopher soils.

2. If a property and/or project area do not meet internal review criteria, the project is put on a list to be scheduled for full MPG review during the appropriate seasonal review period.

3. In addition to the in-office preliminary assessment, the County HCP biologist may, if time allows, visit properties prior to the first gopher review in order to screen for prairie habitat. This screening process focuses on the presence or absence of native prairie plants, Oregon white oak trees (*Quercus garryana*), or Mima mounds protected under the Critical Areas Ordinance (CAO).

The site was evaluated for Regulated prairie plants on July 25, August 25, and September 7, 2022. None of the target prairie plant species identified in the Thurston County CAO were detected in species number or quantity to meet the criteria on the parcel. Garry oaks were found on parcel 11701220100 and shown on the SV4 map in Appendix C.

D. Implementation Measures

In order to ensure the review process runs efficiently, the following measures will be implemented as part of the 2022 screening approach. These are intended to reduce costs and staff time, and ensure that MPG screening requests, especially those associated with building permit applications, are screened during the screening season.

1. No soil verification will be required in conjunction with MPG field screening.
2. Site mowing or brushing will be required to initiate first site visits, where necessary and feasible, and completed two to four weeks in advance of the site visit.

The ground was visible.

3. No further screening will be conducted in 2022 following the detection of MPG mounds on a property. The County will notify landowners that MPG evidence has been detected within two weeks.

The Mazama pocket gopher mounds were **not** found.

4. At the end of the 2022 season, County staff will provide data regarding MPG occupancy to USFWS.
5. No additional site visit will be required if indeterminate mounds are detected, if the full number of required visits has been completed.

N/A

6. The County will prioritize project specific applications over non-project applications. This will help ensure that applicants that have projects ready for construction will receive necessary permits and may initiate construction in a timely manner.

E. Site Visit Overview

County field personnel or hired consultants will conduct field observations to determine MPG presence on sites with potential habitat. These site visits will be conducted as follows:

1. All valid site visits must be conducted from June 1 through October 31, 2022. Site visits outside that survey window will not be considered valid.
 - Site visit one: 7.25.22
 - Site visit two: 8.25.22
 - Site visit three: 9.7.22

- Site visit four: 10.12.22 and 10.17.22

2. A site or parcel is considered to be the entire property, not just the footprint of the proposed project.

Parcels 11701220100 and 11701230700 are predominantly forested and the excluded areas are shown on the transect maps in Appendix C.

3. Sites with less preferred soils (see Attachment A) will be visited two (2) times, at least 30 days apart.

The surveys were conducted 30 days apart.

4. Sites with more preferred soils (see Attachment A) will be visited two (2) times, at least 30 days apart.

5. Site conditions must be recorded on a data sheet or similar information documented in narrative form. A template data sheet can be found on the County website at <http://www.co.thurston.wa.us/permitting/gopher-reviews/index.html>

The data sheets are provided in Appendix C.

6. Document and describe which areas of the parcel cannot be screened due to limited accessibility and/or dense understory. This should be depicted on an aerial or site plan submitted to the County.

The excluded areas are shown on the transect maps in Appendix C.

7. The ground must be easily visible to ensure mound observation and identification. Request mowing if necessary to ensure visibility. Wait two to three weeks after mowing before beginning screening.

The ground was visible.

<http://www.co.thurston.wa.us/permitting/gopher-reviews/index.html> F. Detailed Field Methodology

1. The survey crew orients themselves with the layout of the property using aerial maps, and strategizes their route for walking through the property.
2. Start GPS to record survey route.
3. Walk the survey transects methodically, slowly walking a straight line and scanning an area approximately 2-3 meters to the left and right as you walk, looking for mounds. Transects should be no more than five (5) meters apart when conducted by a single individual.
4. If the survey is performed by a team, walk together in parallel lines approximately 5 meters apart while you are scanning left to right for mounds.

The survey was conducted according to the protocol.

5. At each mound found, stop and identify it as an MPG or mole mound. If it is an MPG mound, identify it as a singular mound or a group (3 mounds or more) on a data sheet to be submitted to the County. (County has developed data sheets for your use on <http://www.co.thurston.wa.us/permitting/gopher-reviews/index.html>)

No MPG mounds were found. Mole mounds were found on all sites and approximate quantity was recorded in the data sheets.

6. Record all positive MPG mounds, likely MPG mounds, and MPG mound groups in a GPS unit that provides a date, time, georeferenced point, and other required information in County GPS data instruction for each MPG mound. Submit GPS data in a form acceptable to the County. County GPS Data instruction can be found at <http://www.co.thurston.wa.us/permitting/gopher-reviews/index.html>

N /A No MPG mounds were found.

7. Photograph all MPG mounds or MPG mound groups. At a minimum, photograph MPG mounds or MPG mound groups representative of MPG detections on site.

No MPG mounds found.

8. Photos of mounds should include one that has identifiable landscape features for reference. In order to accurately depict the presence of gopher activity on a specific property, the following series of photos should be submitted to the County:

- At least one up-close photo to depict mound characteristics
No MPG mounds were found.
- At least one photo depicting groups of mounds as a whole (when groups are encountered).
N/A
- At least one photo depicting gopher mounds with recognizable landscape features in the background, at each location where mounds are detected on a property
N/A
- Photos can be taken with the GPS unit or a separate, camera, preferably a camera with locational features (latitude, longitude)
N/A
- Photo point description or noteworthy landscape or other features to aid in relocation. Additional photos to be considered.
N/A Photos are in Appendix A
- The approximate building footprint location from at least two cardinal directions.
N/A No project is identified yet.
- Landscape photos to depict habitat type and in some cases to indicate why not all portions of a property require gopher screening.
Appendix A Photos

9. Describe and/or quantify what portion and proportion of the property was screened, and record your survey route and any MPG mounds found on either an aerial or parcel map.

Parcels 11701220100 and 11701230700 are predominantly forested and the excluded areas are shown on the transect maps in Appendix C.

10. If MPG mounds are observed on a site, that day's survey effort should continue until the entire site is screened, and all mounds present identified, but additional site visits are not required.

No mounds were found.

11. In order for the County to accurately review Critical Area Reports submitted in lieu of County field inspections the information collected in the field (GPS, data sheets, field notes, transect representations on aerial, etc.) shall be filed with the County. GPS

No mounds were found, the information was submitted in an acceptable format.

2.4 Regulated Prairie Survey Protocol

1. Prairie Review Method

The parcel contains soil types associated with prairies as defined in the Thurston County Critical Areas Ordinance (TCC 24.25). Transects were walked throughout the parcel (or at least throughout the building envelope and 50-foot buffer area).

2. A list of plant species encountered during the survey was recorded and CAO target prairie plants were noted.

Plants encountered are listed on the CAO plant list (Appendix D).

3. Confirmation that CAO prairie plants were surveyed for and either found or not found, prairie criteria met or not met, etc. An example statement of your findings could be:

None of the target prairie plant species identified in the Thurston County CAO were detected on the parcel. Garry oaks were found on parcel 11701220100 and shown on transect map SV4 in Appendix C.

4. If prairie habitat is identified onsite, it is regulated pursuant to Chapter 24.25 of the CAO. Provide either a GPS map or hand-drawn aerial map indicating location of prairie plants on the parcel in relation to the proposed building area.

Garry oaks were found on parcel 11701220100 and shown on transect map SV4 in Appendix C.

5. A full species list of plants (prairie and non-prairie) found at the time of survey. Attached is a blank checklist and data sheet if you choose to use. Even if no CAO prairie plants were detected, a complete species list of vegetation observed helps characterize site conditions.

The full plant list is in Appendix D.

6. Color photos of plant species encountered.

See Appendix A.

7. Transect map. If done concurrently with gopher review, you can use the same transect map.

Transect maps are shown in Appendix C.

8. Oregon white oak trees, if observed onsite, must also be documented, mapped, and included in the prairie plant survey. As with prairie plants, provide either a GPS map or hand-drawn aerial map indicating location of oaks on the parcel in relation to the proposed building area.

Garry oaks were found on parcel 11701220100 and are documented and mapped on transect map SV4 in Appendix C.

9. Mima mounds, if observed onsite, must also be documented, mapped, and included in the prairie plant survey. Provide either a GPS map or hand-drawn aerial map indicating location of Mima mounds on the parcel in relation to the proposed building area.

No mima mounds were found.

3.0 CURRENT CONDITIONS AND METHODS

Land Services Northwest conducted a survey on July 25, August 25, September 27, and October 12 and 17, 2022 walking the area and looking for signs of the MPG and regulated prairie in accordance with the protocol.

Parcel #11701220100 is undeveloped and has an open field on the northern portion along 58th. The remainder of the parcel is forested.

Parcel #11701230700 is a fully forested vacant lot.

Parcel #11701220300 has a single-family residence and outbuildings and lawn with trees scattered throughout.

These parcels are located in a residential area with homes on small lots to the south and west and on acreage to the north and east.

4.0 RESULTS

No Mazama pocket gophers were found on site.

No CAO prairie plants or Mima mounds were found.

Garry oaks were found on parcel 11701220100 and are documented and mapped on transect map SV4 in Appendix C.

Appendix A

Photos

Parcel #11701220100









Chamberlain
07/25/2022 10:57 AM
46.99563, -122.75769
8520 58th Ave SE, Olympia, WA 98513, USA



Parcel #11701230700





Parcel #11701220300



Chamberlain.3
09.07.2022 12:56 PM
8541 58th Ave SE, Olympia, WA 98513, USA





Appendix B

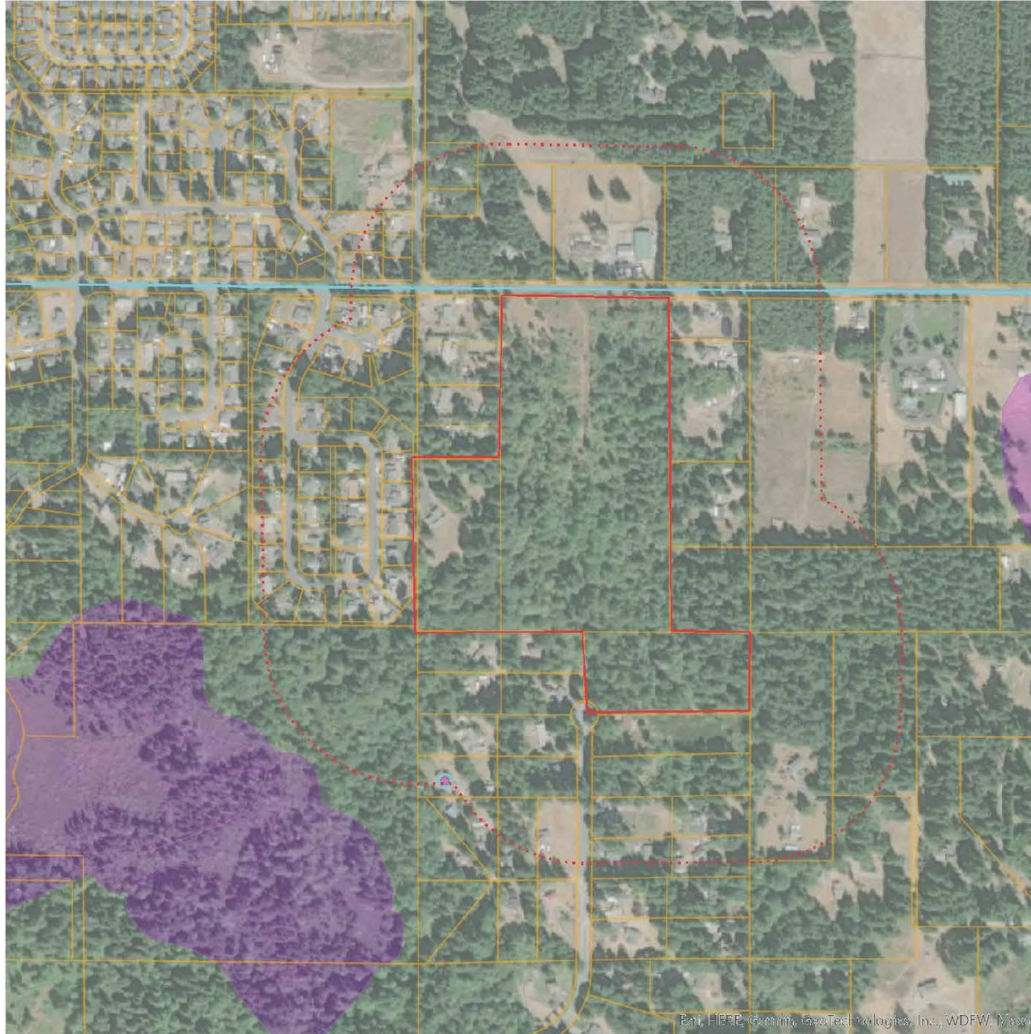
WDFW Priority Habitats and Species Map

9/14/22, 11:21 AM

PHS Report



Priority Habitats and Species on the Web



Buffer radius: 600 Feet

Report Date: 09/14/2022

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Sensitive Location
Western toad	N/A	Candidate	No
Big brown bat	N/A	N/A	Yes
Little Brown Bat	N/A	N/A	Yes
Yuma myotis	N/A	N/A	Yes

about:blank

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9/14/22, 11:21 AM

PHS Report

PHS Species/Habitats Details:

Western toad	
Scientific Name	<i>Anaxyrus boreas</i>
Priority Area	Occurrence
Accuracy	GPS
Notes	SUBMITTED AS NORTHERN SPOTTED FROG, PHOTOS SHOW WESTERN TOAD.
Source Record	176237
Source Dataset	WS_OccurPoint
Source Date	WS_OccurPoint
Source Name	DORSEY, D/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00025
Geometry Type	Points

Big brown bat	
Scientific Name	<i>Eptesicus fuscus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

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9/14/22, 11:21 AM

PHS Report

Big brown bat	
Scientific Name	<i>Eptesicus fuscus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Little Brown Bat	
Scientific Name	<i>Myotis lucifugus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Yuma myotis	
Scientific Name	<i>Myotis yumanensis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

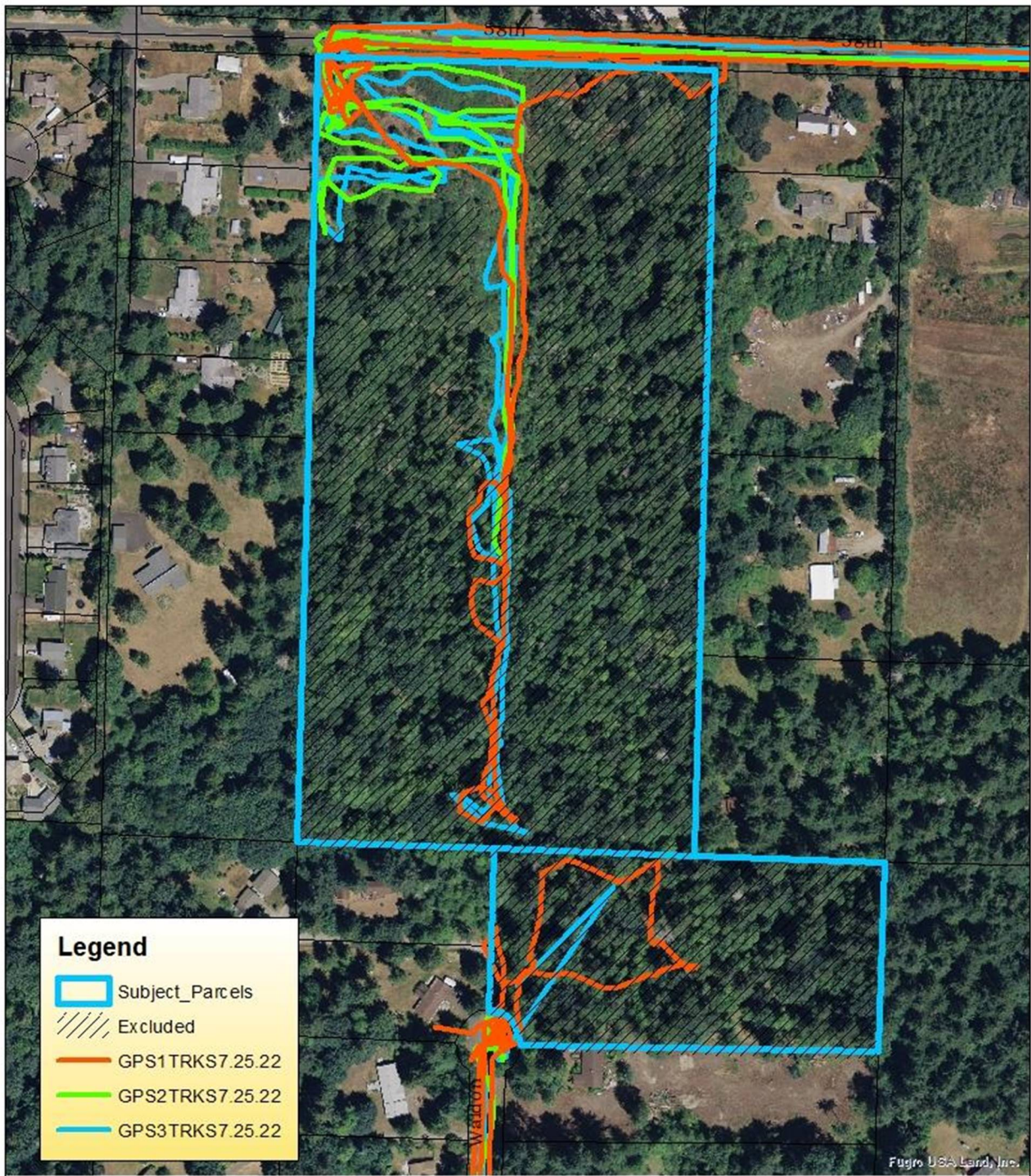
DISCLAIMER: This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

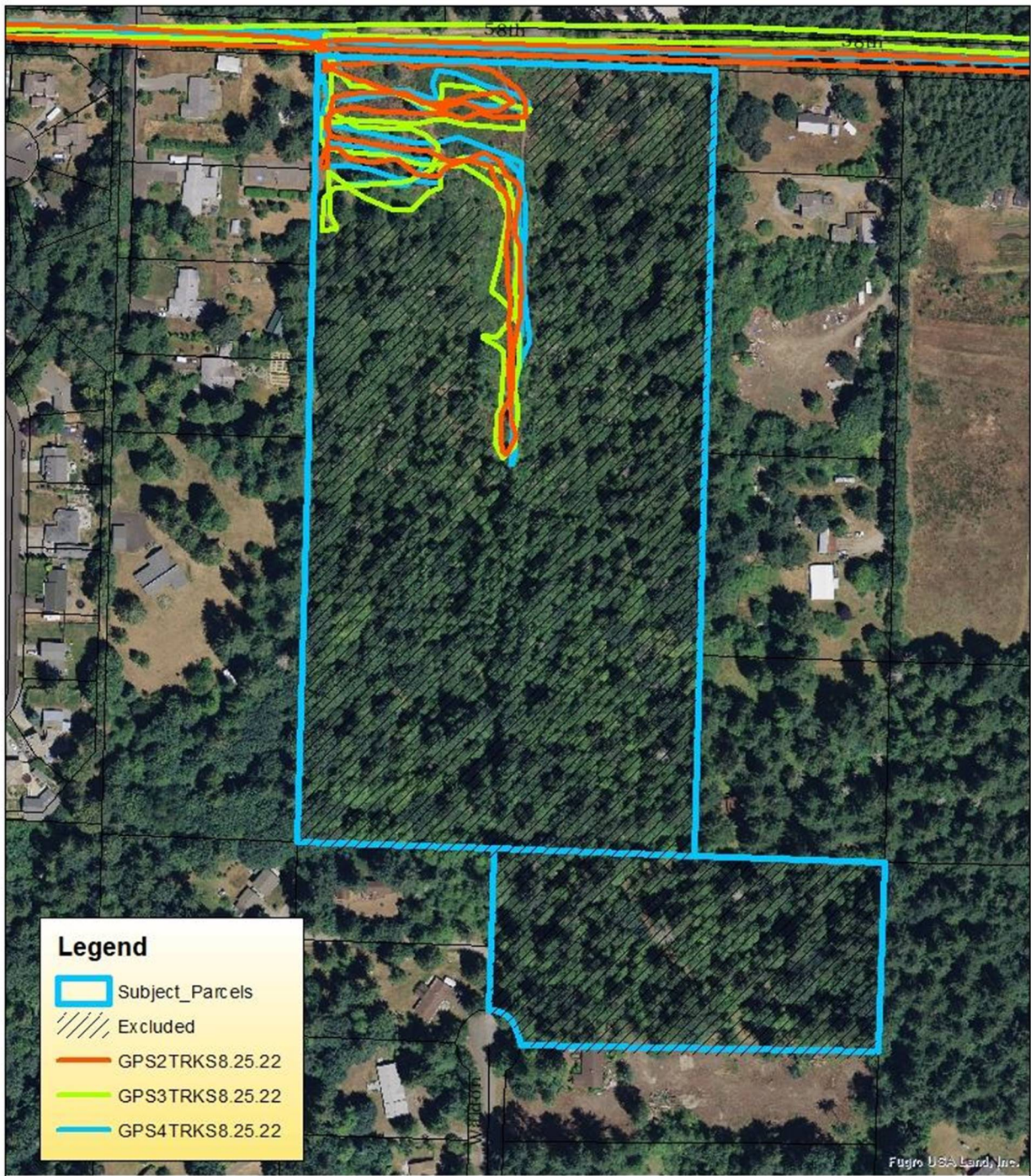
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Appendix C

MPG Survey Form and Transect Maps

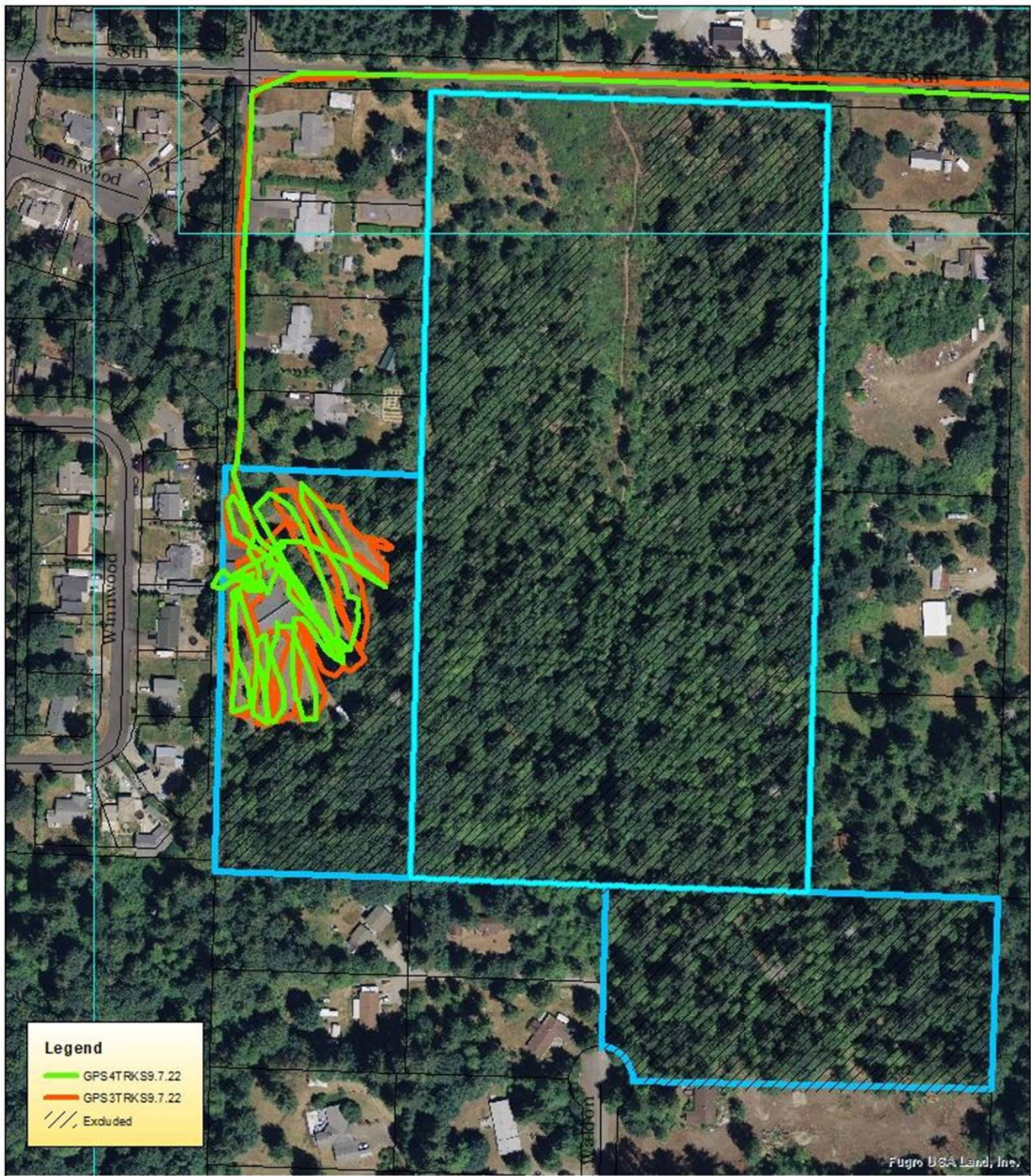




Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

SV2
8.25.22

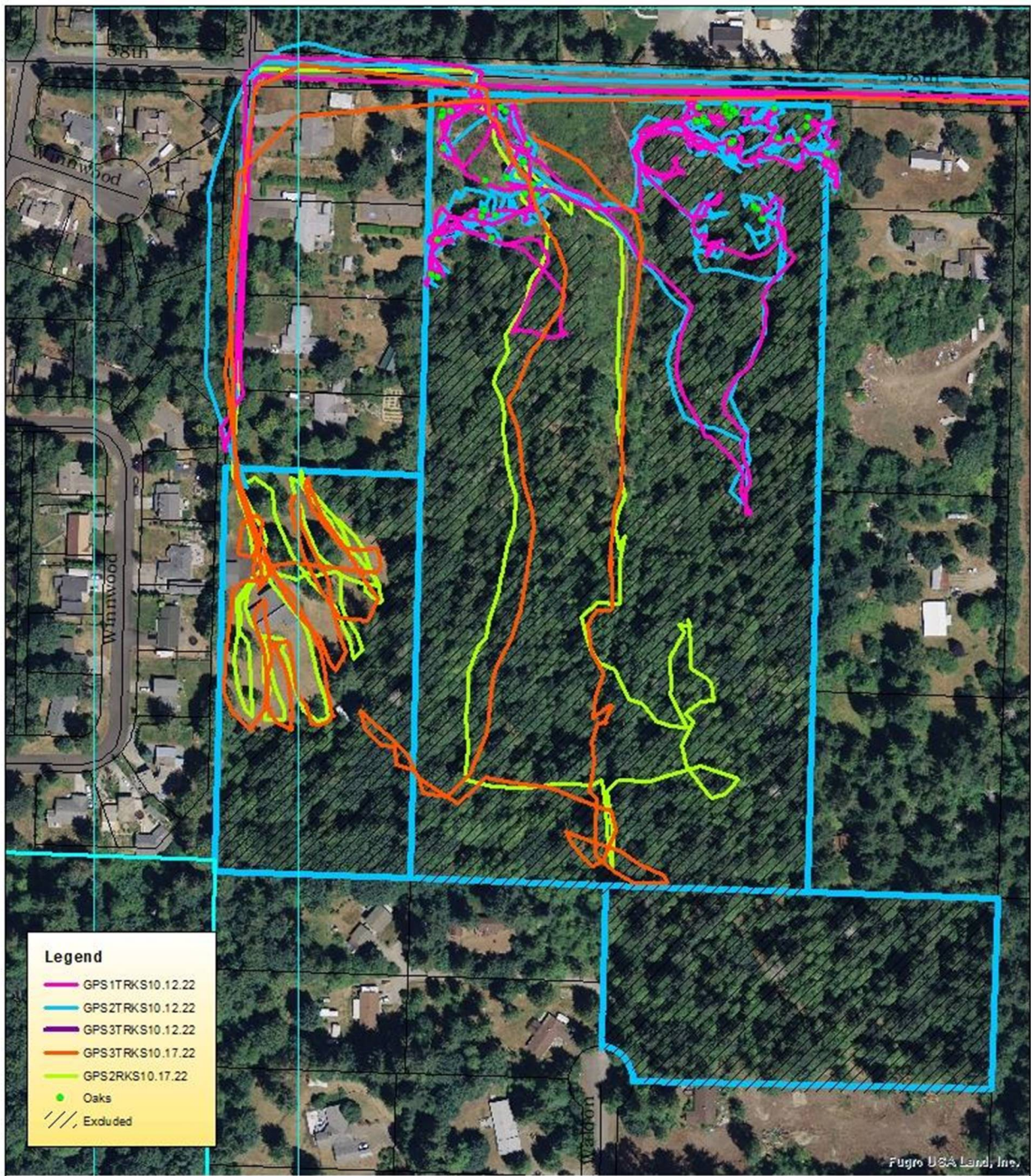
0 125 250 500 Feet



Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

SV3
9.7.22

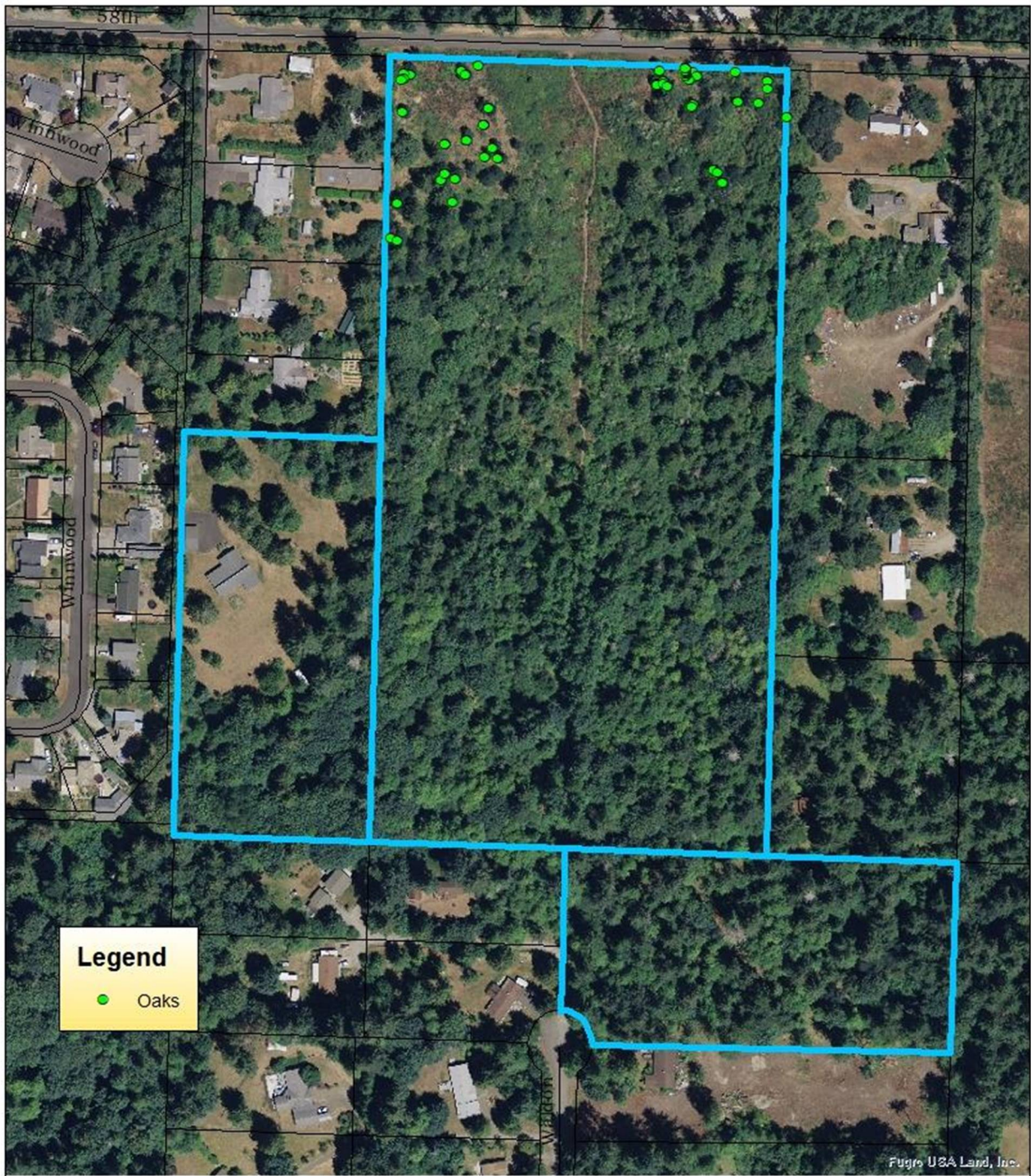
0 125 250 500 Feet



Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

SV4
10.12.22 and 10.17.22

0 125 250 500 Feet



2021 Thurston County Mazama Pocket Gopher Screening Field Form Site Visit Date: 7.25.22

Site Name and Parcel #	Parcel #: 11701220100 11701230700 Project #: _____ Site/Landowner: Chamberlain
How were the data collected? (circle the method for each)	Transect: Trimble <u>Garmin</u> Aerial Mounds Trimble Garmin Aerial Notes: _____
Field Team Personnel: (Indicate all staff present, CIRCLE who filled out form)	Name: Alex Callender Name: <u>Susan Callender</u> Name: Jackson Schoenberg
Others onsite (name/affiliation)	
Site visit # (CIRCLE all that apply)	<u>1st</u> 2 nd Unable to screen Notes: _____
Do onsite conditions preclude the need for further visits?	Yes <u>No</u> Dense woody cover that encompasses the entire site (trees/shrubs) that appears to preclude any potential MPG use. Impervious Compacted Graveled Flooded Other _____ Notes: _____
Describe visibility for mound detection:	Poor Fair <u>Good</u> Notes: _____
Request mowing? (CIRCLE and DESCRIBE WHERE MOWING IS NEEDED and SHOW ON AERIAL PHOTO)	Yes No <u>N/A</u> Notes: _____

Page 1 of 2

Mounds observed over the whole site are characteristic of:	MPG Mounds	Likely MPG Mounds	Indeterminate	Likely Mole Mounds	Mole Mounds
Quantify or describe amount of each type and approx. # of mounds <i>Group = 3 mounds or more</i>	0	0	0	0	0
No MPG mounds (circle)					
MPG mounds in GPS? (CIRCLE and DESCRIBE) If MPG mounds present, entered in GPS?	None All Most Some Notes: Yes No N/A				
Does woody vegetation onsite match aerial photo?	Yes No - describe differences and show on parcel map/aerial:				
What portion(s) of the property was screened? (CIRCLE and DESCRIBE)	All Part - describe and show on parcel map/aerial: The parcels are predominantly forested with a shrub and fern understory. The excluded areas are shown on the transect maps in Appendix C.				
Notes -	Describe, and show on parcel map/aerial if applicable:				
Team reviewed and agreed to data recorded on form? (CIRCLE, and EXPLAIN if "No")	Yes No Reviewed by initials: <u>AC</u> <u>SC</u> <u>JS</u> _____ Notes:				

2021 Thurston County Mazama Pocket Gopher Screening Field Form Site Visit Date: 8.25.22

Site Name and Parcel #	Parcel #: <u>11701220100 11701230700</u> Project #: _____ Site/Landowner: <u>Chamberlain</u>
How were the data collected? (circle the method for each)	Transect: Trimble Garmin Aerial Mounds Trimble <u>Garmin</u> Aerial Notes: _____
Field Team Personnel: (Indicate all staff present, CIRCLE who filled out form)	Name: Alex Callender Name: <u>Susan Callender</u> Name: Jackson Schoenberg
Others onsite (name/affiliation)	
Site visit # (CIRCLE all that apply)	1 st <u>2nd</u> Unable to screen Notes: _____
Do onsite conditions preclude the need for further visits?	Yes <u>No</u> Dense woody cover that encompasses the entire site (trees/shrubs) that appears to preclude any potential MPG use. Impervious Compacted Graveled Flooded Other _____ Notes: _____
Describe visibility for mound detection:	Poor Fair <u>Good</u> Notes: _____
Request mowing? (CIRCLE and DESCRIBE WHERE MOWING IS NEEDED and SHOW ON AERIAL PHOTO)	Yes No <u>N/A</u> Notes: _____

Page 1 of 2

Mounds observed over the whole site are characteristic of:	MPG Mounds	Likely MPG Mounds	Indeterminate	Likely Mole Mounds	Mole Mounds
Quantify or describe amount of each type and approx. # of mounds <i>Group = 3 mounds or more</i>	0	0	0	0	5
	<u>No MPG mounds (circle)</u>				
MPG mounds in GPS? (CIRCLE and DESCRIBE) If MPG mounds present, entered in GPS?	None All Most Some Notes: Yes No <u>N/A</u>				
Does woody vegetation onsite match aerial photo?	<u>Yes</u> No - describe differences and show on parcel map/aerial:				
What portion(s) of the property was screened? (CIRCLE and DESCRIBE)	All <u>Part</u> - describe and show on parcel map/aerial: The parcels are predominantly forested with a shrub and fern understory. The excluded areas are shown on the transect maps in Appendix C.				
Notes -	Describe, and show on parcel map/aerial if applicable:				
Team reviewed and agreed to data recorded on form? (CIRCLE, and EXPLAIN if "No")	<u>Yes</u> No Reviewed by initials: <u>AC</u> <u>SC</u> <u>JS</u> _____ Notes:				

2021 Thurston County Mazama Pocket Gopher Screening Field Form Site Visit Date: 9.7.22

Site Name and Parcel #	Parcel #: <u>11701220300</u> Project #: _____ Site/Landowner: <u>Chamberlain</u>
How were the data collected? (circle the method for each)	Transect: Trimble <u>Garmin</u> Aerial Mounds Trimble Garmin Aerial Notes: _____
Field Team Personnel: (Indicate all staff present, CIRCLE who filled out form)	Name: Alex Callender Name: <u>Susan Callender</u> Name: _____
Others onsite (name/affiliation)	
Site visit # (CIRCLE all that apply)	<u>1st</u> 2 nd Unable to screen Notes: _____
Do onsite conditions preclude the need for further visits?	Yes <u>No</u> Dense woody cover that encompasses the entire site (trees/shrubs) that appears to preclude any potential MPG use. Impervious Compacted Graveled Flooded Other _____ Notes: _____
Describe visibility for mound detection:	Poor Fair <u>Good</u> Notes: _____
Request mowing? (CIRCLE and DESCRIBE WHERE MOWING IS NEEDED and SHOW ON AERIAL PHOTO)	Yes No <u>N/A</u> Notes: _____

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Mounds observed over the whole site are characteristic of:	MPG Mounds	Likely MPG Mounds	Indeterminate	Likely Mole Mounds	Mole Mounds
Quantify or describe amount of each type and approx. # of mounds <i>Group = 3 mounds or more</i>	0	0	0	0	0
	No MPG mounds (circle)				
MPG mounds in GPS? (CIRCLE and DESCRIBE) If MPG mounds present, entered in GPS?	None All Most Some Notes: Yes No <u>N/A</u>				
Does woody vegetation onsite match aerial photo?	<u>Yes</u> No - describe differences and show on parcel map/aerial:				
What portion(s) of the property was screened? (CIRCLE and DESCRIBE)	All <u>Part</u> - describe and show on parcel map/aerial: The parcel is partially forested with a shrub and fern understory. The excluded areas are shown on the transect maps in Appendix C.				
Notes -	Describe, and show on parcel map/aerial if applicable:				
Team reviewed and agreed to data recorded on form? (CIRCLE, and EXPLAIN if "No")	<u>Yes</u> No Reviewed by initials: <u>AC</u> <u>SC</u> ____ ____ Notes:				

2021 Thurston County Mazama Pocket Gopher Screening Field Form

Site Visit Date: 10.12.22 and 10.17.22

Site Name and Parcel #	Parcel #: 11701220300 Project #: Site/Landowner: Chamberlain
How were the data collected? (circle the method for each)	Transect: Trimble <u>Garmin</u> Aerial Mounds Trimble Garmin Aerial Notes:
Field Team Personnel: (Indicate all staff present, CIRCLE who filled out form)	Name: Alex Callender Name: <u>Susan Callender</u> Name: Jackson Schoenberg
Others onsite (name/affiliation)	
Site visit # (CIRCLE all that apply)	1 st <u>2nd</u> Unable to screen Notes:
Do onsite conditions preclude the need for further visits?	Yes <u>No</u> Dense woody cover that encompasses the entire site (trees/shrubs) that appears to preclude any potential MPG use. Impervious Compacted Graveled Flooded Other _____ Notes:
Describe visibility for mound detection:	Poor Fair <u>Good</u> Notes:
Request mowing? (CIRCLE and DESCRIBE WHERE MOWING IS NEEDED and SHOW ON AERIAL PHOTO)	Yes No <u>N/A</u> Notes:

Mounds observed over the whole site are characteristic of:	MPG Mounds	Likely MPG Mounds	Indeterminate	Likely Mole Mounds	Mole Mounds
Quantify or describe amount of each type and approx. # of mounds <i>Group = 3 mounds or more</i>	0	0	0	0	10
No MPG mounds (circle)					
MPG mounds in GPS? (CIRCLE and DESCRIBE) If MPG mounds present, entered in GPS?	None All Most Some Notes: Yes No (N/A)				
Does woody vegetation onsite match aerial photo?	(Yes) No - describe differences and show on parcel map/aerial:				
What portion(s) of the property was screened? (CIRCLE and DESCRIBE)	(All) Part - describe and show on parcel map/aerial:				
Notes -	Describe, and show on parcel map/aerial if applicable:				
Team reviewed and agreed to data recorded on form? (CIRCLE, and EXPLAIN if "No")	(Yes) No Reviewed by initials: <u>AC</u> <u>SC</u> <u>JS</u> _____ Notes:				

Appendix D

CAO Prairie Data Sheet

2019 Thurston County Critical Areas Ordinance (CAO) Prairie Screening Data Sheet

Parcel Number: 11701220100, 11701230700, 11701220300	CAO prairie criteria met?	Yes or <input checked="" type="radio"/> No
Property Owner: Steve Chamberlain	Mima mounds present?	Yes or <input checked="" type="radio"/> No
Surveyor(s): Alex and Susan Callender	Oaks (<i>Quercus garryana</i>) present?	<input checked="" type="radio"/> Yes or No
Date: 7.25, 8.25, 9.17 and 10.17.22	Mature:	Note: The oak survey will be submitted independently of this report.
Composition of Vegetation:	Sapling:	
	Seedling:	

X Target species	Class* (circle)
<i>Apocynum androsaemifolium</i>	1 2 3 4 5 N/A
<i>Balsamorhiza deltoidea</i>	Present / Absent
<i>Bistorta bistortoides</i>	Present / Absent
<i>Brodiaea coronaria</i>	1 2 3 4 5 N/A
<i>Camassia leichtlinii</i>	1 2 3 4 5 N/A
<i>Camassia quamash</i>	Present / Absent
<i>Carex densa</i>	Present / Absent
<i>Carex feta</i>	1 2 3 4 5 N/A
<i>Carex inops</i> ssp. <i>inops</i>	1 2 3 4 5 N/A
<i>Carex tumulicola</i>	1 2 3 4 5 N/A
<i>Carex unilateralis</i>	1 2 3 4 5 N/A
<i>Castilleja hispida</i>	1 2 3 4 5 N/A
<i>Castilleja levisecta</i>	Present / Absent
<i>Danthonia californica</i>	1 2 3 4 5 N/A
<i>Delphinium menziesii</i>	1 2 3 4 5 N/A
<i>Delphinium nuttallii</i>	1 2 3 4 5 N/A
<i>Deschampsia cespitosa</i>	1 2 3 4 5 N/A
<i>Deschampsia danthonioides</i>	1 2 3 4 5 N/A
<i>Dodecatheon hendersonii</i>	1 2 3 4 5 N/A
<i>Downingia yina</i>	1 2 3 4 5 N/A
<i>Erigeron speciosus</i>	1 2 3 4 5 N/A
<i>Eriophyllum lanatum</i>	Cover: ___ m ² N/A
<i>Eryngium petiolatum</i>	Present / Absent
<i>Festuca roemerii</i> (F. <i>idahoensis</i>)	1 2 3 4 5 N/A
<i>Fragaria virginiana</i>	Cover: ___ m ² N/A
<i>Fritillaria affinis</i>	1 2 3 4 5 N/A
<i>Hieracium scouleri</i>	1 2 3 4 5 N/A
<i>Hosackia pinnata</i> (<i>Lotus pinnatus</i>)	Present / Absent
<i>Koeleria macrantha</i> (K. <i>crinata</i>)	1 2 3 4 5 N/A
<i>Leptosiphon bicolor</i> (<i>Linanthus b.</i>)	1 2 3 4 5 N/A
<i>Lomatium bradshawii</i>	Present / Absent
<i>Lomatium nudicaule</i>	1 2 3 4 5 N/A
<i>Lomatium triternatum</i>	1 2 3 4 5 N/A
<i>Lomatium utriculatum</i>	Present / Absent

<i>Lupinus albicaulis</i>	1 2 3 4 5 N/A
<i>Lupinus lepidus</i> var. <i>lepidus</i>	1 2 3 4 5 N/A
<i>Lupinus polyphyllus</i>	1 2 3 4 5 N/A
<i>Micranthes integrifolia</i> (<i>Saxifraga i.</i>)	Present / Absent
<i>Micranthes oregana</i> (<i>Saxifraga o.</i>)	1 2 3 4 5 N/A
<i>Microseris laciniata</i>	Present / Absent
<i>Perideridia gairdneri</i>	1 2 3 4 5 N/A
<i>Plagiobothrys figuratus</i>	1 2 3 4 5 N/A
<i>Plectritis congesta</i>	Present / Absent
<i>Polemonium carneum</i>	Present / Absent
<i>Potentilla gracilis</i>	Present / Absent
<i>Ranunculus alismifolius</i>	1 2 3 4 5 N/A
<i>Ranunculus occidentalis</i>	Present / Absent
<i>Ranunculus orthorhynchus</i>	1 2 3 4 5 N/A
<i>Sericocarpus rigidus</i>	Present / Absent
<i>Sidalcea malviflora</i> var. <i>virgata</i>	Present / Absent
<i>Silene scouleri</i>	Present / Absent
<i>Sisyrinchium idahoense</i>	1 2 3 4 5 N/A
<i>Solidago missouriensis</i>	1 2 3 4 5 N/A
<i>Solidago simplex</i> (S. <i>spathulata</i>)	1 2 3 4 5 N/A
<i>Toxicoscordion venenosum</i> var. <i>venenosum</i> (<i>Zigadenus venenosus</i>)	1 2 3 4 5 N/A
<i>Trifolium willdenowii</i> (T. <i>tridentatum</i>)	1 2 3 4 5 N/A
<i>Triteleia grandiflora</i>	1 2 3 4 5 N/A
<i>Triteleia hyacinthina</i>	1 2 3 4 5 N/A
<i>Veratrum californicum</i>	1 2 3 4 5 N/A
<i>Veratrum viride</i>	1 2 3 4 5 N/A
<i>Viola adunca</i>	1 2 3 4 5 N/A
<i>Viola praemorsa</i> var. <i>nuttallii</i>	1 2 3 4 5 N/A

*Species Count Class:

1 = < 25
 2 = 25 - 49
 3 = 50 - 74
 4 = 75 - 100
 5 = >100

Prairie Plant Manual:

<https://www.thurstoncountywa.gov/planning/planningdocuments/cao-prairie-plant-manual-4.23.2018.pdf>

Non-CAO vegetation

Species or codons (i.e. "HYPRAD" for <i>Hypochaeris radicata</i>)	Notes
1 Himalayan blackberry (<i>Rubus armeniacus</i>)	
2 Ox eye daisy (<i>Leucanthemum vulgare</i>)	
3 Narrow leafed plantain (<i>Plantago lanceolata</i> 10)	
4 Wild carrot (<i>Daucus carota</i>)	
5 Trailing blackberry (<i>Rubus ursinus</i>)	
6 Scotch broom (<i>Cytisus scoparius</i>)	
7 Common dandelion (<i>Taraxacum officinale</i>)	
8 Tall oregon grape (<i>Mahonia aquifolium</i>)	
9 Western swordfern (<i>Polystichum munitum</i>)	
10 Hawkweed (<i>Hieracium spp.</i>)	
11	
12	
13	
14	
15	

Prairie Habitat Criteria: If at any point at least three target species, totaling in general at least 25 plants each are encountered within about 5 meters of each other (WDFW 2015), the area in question meets the criteria to be established as occurrence of prairie. For certain plants such as WNHP rare plants (indicated here in bold), or species which serves as nectar or host plants for both TCB and either SCC or SGCN butterflies (indicated here with underline), presence is enough to meet prairie habitat criteria for such species, even if their count is less than 25 individual plants. CAO wet and dry prairie plant lists can be found in Tables 24.25-7 and 24.25-8, respectively. More info available at: <https://www.thurstoncountywa.gov/planning/Pages/hcp-prairie-review.aspx>

Mima mounds and oak habitat definitions can be found in TCC 24.03.010