



*Promoting the protection, conservation and restoration of natural forest ecosystems and their processes on the Olympic Peninsula, including fish and wildlife habitat, and surrounding ecosystems*

January 13, 2023

SEPA FILE 22-123001 FPA #2617773 TCB 23 Timber Sale

Brian Suslick  
Assistant Region Manager  
411 Tillicum Lane, Forks, WA 98331  
Via email [Olympic.region@dnr.wa.gov](mailto:Olympic.region@dnr.wa.gov)

Dear Mr. Suslick

Our review of the timber sale TCB 23 has surfaced the following SEPA comments for consideration and response. In summary

- Inadequate review of slope stability issues
- Harvest of older, structurally complex forests and fragmentation of MM habitat
- Taylor's Checkerspot Butterfly habitat restoration and management concerns

*Inadequate review of slope stability issues*

Our Geotechnical Review of the TCB 23 Timber Sale (see attached report) highlights potential Deep Seated Landslide activity associated with the bluff slope of the Elwha River that was not adequately addressed in this FPA. The recently unrestricted Elwha River increases the potential for further activation of these bluffs, and the sensitive nature of the watershed restoration and associated fisheries restoration, Port Angeles City water intake, warrant a high level of caution for forest practices which may further impact these slopes with potential for delivery.

We ask for further review of the slope stability issues surrounding this sale, including the assessment of GWRA for the Elwha bluffs. Office review should cover a more rigorous time period than review of only a blurry 1956 photograph and a 2020 photograph, as the detailed photographs and LiDAR in this area are plentiful due to the dam removals and restorations. Field review should cover at least the top and toe of the bluff slopes, delineating scarp activity and identifying slide deposits at the toes of the steep slopes which will be at least partially removed by active channel migration

*Harvest of older, structurally complex forest*

OFCO holds the position that older, structurally complex forests such as those included in the TCB 23 timber sale are an essential tool in a crucial fight against climate change. These forests both store AND sequester more carbon than younger forests and transitioning them to industrial forest management immediately switches them from being net sinks for atmospheric carbon to net sources. This sale will harvest over 14 acres of these forests which play an increasingly important role as a natural climate solution. In addition, the older forests within this timber sale are linked structurally via age and height class to a significant older stand on the north side of Kelly Peak which is mapped as Occupied Marbled Murrelet habitat. Although the stand does span the top of the Peak, it could be argued that a lack of timber type break between the aspects creates an extension of that mapped habitat, and its use by Marbled Murrelet is unknown at this time but possible, therefore harvesting increases the fragmentation of the already dwindling habitat in the area, and the continued decline of the species.

Harvest in this older, structurally complex forest should be deferred in the short term as there are several pathways opening to realizing both the ecologic AND economic benefits of maintaining these forests, for example, the DNR carbon offsets program and the Natural Climate Solutions Account generated by the Climate Commitment Act.

*Taylor's Checkerspot Butterfly habitat restoration and management concerns*

Over the last three years, DNR has conducted timber harvests with the stated benefit of reclaiming or enhancing habitat for the endangered, listed TCB. This includes units 3 and 6 of the Flutterby FPA #2616500 on Eagle Ridge and Kelly Peak, respectively and the Striped Fly timber sale FPA #261368 on Striped Peak.

OFCO supports the work to restore native bluff and bald habitat with these DNR managed landscapes in order to assist recovery of the endangered TCB. It is difficult to provide constructive feedback without a management, habitat restoration or monitoring plan in hand so I raise a few general concerns based on my experience mapping native plant communities including balds. The native nectaring and larval host plant for TCB are grasses and perennial herbaceous plants and sometimes shrubs which have a high affinity for a very unique habitat called a bald. Balds are small forest openings which occur on ridge tops or mixed within rocky cliff complexes which are often too steep and dynamic for herbaceous plants to successfully persist. Balds are often convex in shape, and covered in moss. The distance to bedrock layer is often shallow, making it difficult to support trees, although shrubs can persist. Balds on the North Olympic Peninsula were likely maintained by Native Americans through selective fire use and in the recent time due to fire suppression both the balds and their associated pollinators including TCB have experienced population declines and local extirpations.

Habitat restoration in support of TCB populations needs to focus on restoring native herbaceous nectaring and larval hosts plants such as *Fragaria*, *Castilleja*, *Plectritis*, *Collinsia*, and *Whipplea* while, de-emphasizing use of non-native plants in the *Plantago* genus. Operations in support of timber sales in this area need to have an explicit focus on avoiding additional introduction of and decreasing the impact of the extensive invasive species, particularly Scots broom that previous road construction and maintenance has already caused so that the use of herbicides can be avoided if possible. Road construction in support of this sale, particularly the 1405.1 must be done with certified weed-free rock so as to reduce further challenges with invasive noxious weeds.

There are no bald landforms within the TCB habitat buffer area proposed to be included in the restoration following the harvest by creating "open conditions favorable to the butterfly" via not replanting with conifers. However, I would argue based on landform, soils and current vegetation that this lower landform historically was forested and TCB habitat map was overgenerous in including it. Therefore, restoring what was likely never habitat seems fruitless, as well as a poor rationale for clearcutting large, structurally complex trees.

The most likely outcome from the TCB 23 harvest and passive restoration planned is that the reconstruction of road 1405.1, as is the case with other roads on the south side of Kelly Peak, will become newly created and somewhat unnatural road-cut habitat which offer weeds that unfortunately are used by the TCB. Furthermore, the area which will not be replanted with conifers will likely naturally regrow with dense, deciduous Big-Leaf Maples and shrubs and will require perpetual maintenance to keep it as unnatural open non-forest in a non-bald landscape. I understand all these restoration activities are extremely time and resource intensive therefore I would much prefer to see DNR aim its limited resources towards developing truly high quality habitat on the newly harvested acres adjacent to the currently utilized TCB habitat in the balds at the top of the peak, as well as restoring native herbaceous plants to the recently clearcut areas at the top of Eagle Ridge and Striped Peak using as much local seed sourced as possible.

Thank you for taking the time to discuss my questions about habitat connectivity and I look forward to discussing this further.

Regards,



Catharine Copass, PhD  
Olympic Forest Coalition

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January 13, 2023

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Subject: **GEOTECHNICAL REVIEW  
STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES (DNR)  
FOREST PRACTICES APPLICATION (FPA) NO. 2617773  
"TCB 23" TIMBER SALE  
CLALLAM COUNTY, WASHINGTON**

Dear Dr. Copass and others concerned,

Thank you for requesting me to assist you with geotechnical services related to the subject FPA. The following review summarizes my research and analysis regarding the proposed timber sale and is intended for you to use in your comments to the DNR. The terminology herein and comments are intended to be consistent with Section 16 of the DNR Forest Practices Board Manual, dated 5/2016. I am not a DNR Qualified Expert (QE) for forest practices ([https://www.dnr.wa.gov/publications/fr\\_geo\\_experts.pdf](https://www.dnr.wa.gov/publications/fr_geo_experts.pdf)). I am a State of Washington Licensed Engineering Geologist (LEG), which is the same license required for QEs, and I have 15 years of engineering geology experience particularly focused on slope stability and geomorphology, but I do not have the required "...3 years of field experience in the evaluation of relevant problems in forest lands." I have also included comments independent of the Board Manual and/or its typical interpretation and policies with respect to the subject FPA. The focus of my review is the DNR "Engineering Geologic Risk Assessment, TCB 23 timber sale," report (EGRA), dated November 8, 2022 and revised November 16, 2022, which I reviewed digitally. I did not visit the units in the field and my review is based only on office review, although I have traveled through this area on the Olympic Discovery Trail and the adjacent forest roads many times. I also reviewed several photos and videos from your site visit on January 12, 2023.

### **SUMMARY AND CONCLUSIONS**

The DNR does not appear to have adequately completed office and field review related to the deep-seated landslides (DSLs) relevant to this timber sale in its mapping of the area based on my analysis. There are omitted and erroneous text and figure errors, numerous areas of potentially unstable slopes without office of field comments / notes. The risk to natural resources, and private and public resources / infrastructure appears to be major for this timber sale and has not been addressed in this EGRA.

## ANALYSIS

Because this timber sale is a type IV special, the DNR slope stability reporting needs to be very rigorous / thorough. However, when looking at the EGRA, I noticed that the report and its figures were missing several relevant elements and features.

- Geologic Map - I noticed the geologic map name “Forks 1:24,000-scale geologic map” was incorrect in section 4.0 Geologic Setting, and should be changed to “Elwha and Angeles Point.” The footnote and the reference on figure 3 appear correct.
- “Landform 1” appears clearly visible to me on LiDAR and in my field recollection of the scarp(s) south of PA-I-1405.1 as a DSL. The head scarp is roughly east-facing, with the flow direction to the east and south, rather than the purely southward direction shown on the geologic map. The geologist’s tracks do appear to cross the south edge of the head scarp near the 1000-foot contour label and one or two of the scarps within the body of the slide on Figure 4, sheet 1 of 2 of the EGRA, but are not near the highest portion of the head scarp. The tracks only appear in the relatively-elevated and driest portion of the slide mass. The tracks do not appear to cross the toe of the slide, the numerous seepage areas of borderline streams / wetlands, very soft saturated soil, or areas where I have seen tipped / disturbed trees. The head scarp, slide features, and the EGRA’s 40-foot contours are difficult to see in the FPA PDF, so I have included below an image from the DNR “LiDAR Portal” (<https://lidarportal.dnr.wa.gov/#48.07683:-123.58323:15>) from 2018 (Image-1) and the Clallam County online “multipurpose map” (<https://clallam-county-portal-clallam.hub.arcgis.com/apps/multipurpose-map-1/explore>) with 5-foot contours (Image-2) to respectively show the slide features in bare earth form and the contours which show the slope direction. In images 3 and 4 I have sketched my interpretation of this slide area and other features discussed below.

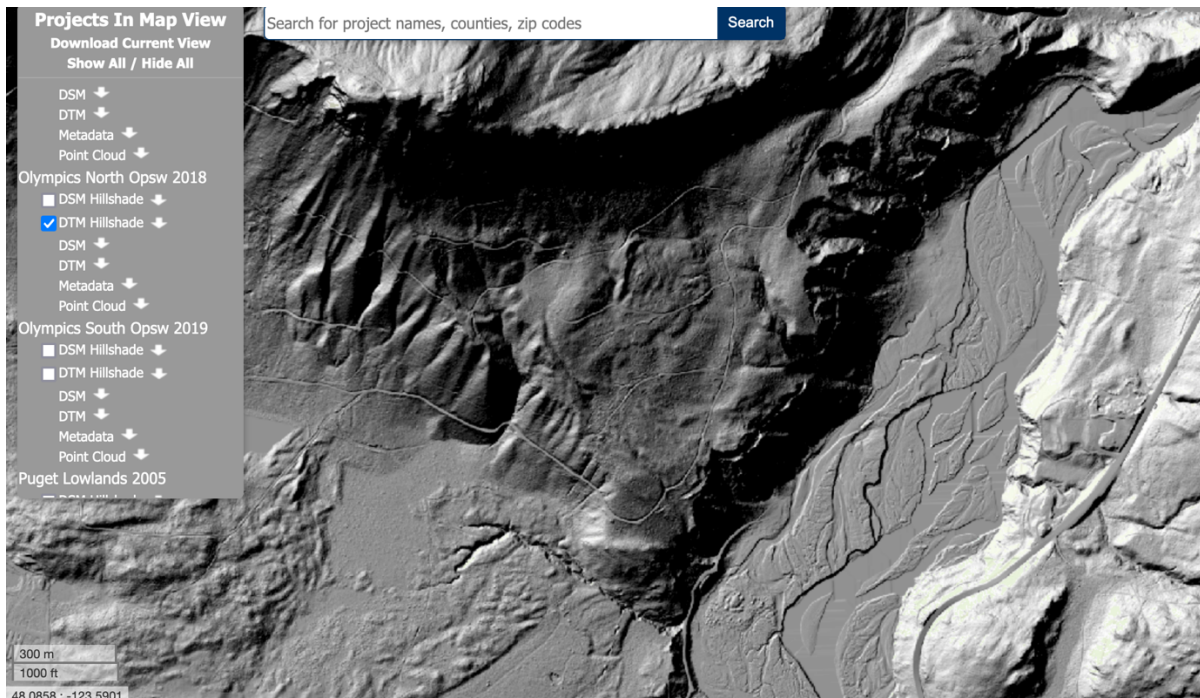


Image-1: 2018 LiDAR Portal Image of the Timber Sale Area

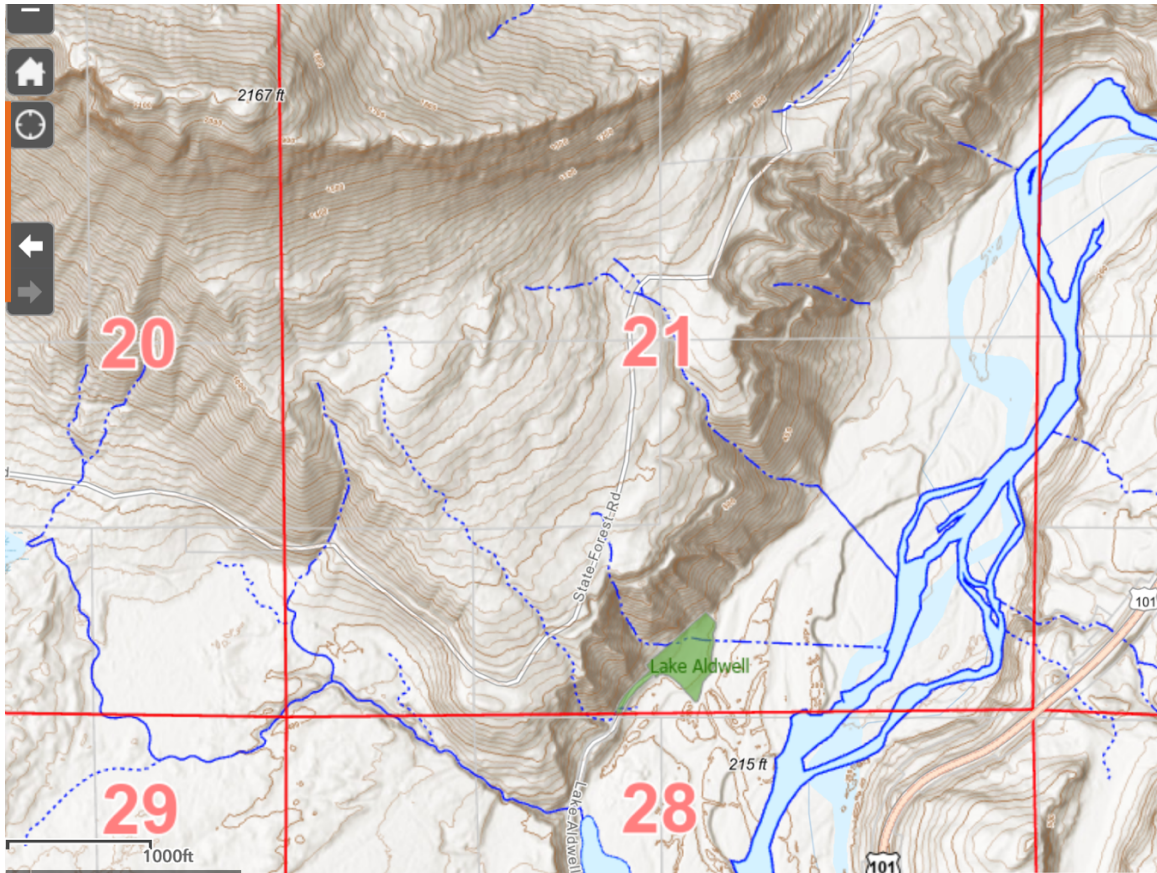


Image-2: Clallam County “Multipurpose Map” with LiDAR and 5-foot Contours

- The Elwha River bluffs southeast of the timber sale consist of very steep slopes at least 400-feet in height. These bluffs appear to have had major past instability, such as DSL-1 which is noted in the EGRA to be “relict.” The naturally-eroding or naturally-incising Elwha River was dammed to form Lake Aldwell in 1913 and Lake Mills in 1927, which artificially and temporarily increased stability in these bluff slopes by eliminating scour at the toe and buttressing the toe with sediment. Since the removal of the dams, this area is now subject to dramatic changes, including: rapid channel migration within the Lake Aldwell sediment, temporary rapid deposition of sediment from upstream, rapid erosion, and uncontrolled large flows within the river not seen for 100-years. Both images above show crisp head scarps including and above a road grade along near the top of the bluff. The set of convergent head-scarps southwest of the DSL-1 drainage appear to be much more recent than DSL-1 as they: cut northward into the DSL-1 drainage, have very crisp head-scarp(s), the southern 1/3 of this area displaces the above-noted road grade with significantly **more than enough displacement to be considered a DSL**, and a very large and obvious debris deposit at the base of the bluff slope. The DNR geologist’s tracks do not cross any part of this area. Directly south of the east edge of the timber sale area, at the south edge of figure 4, sheet 1 of 2 of the EGRA, there are some geologist’s tracks on the upper part of the Elwha bluffs which show glacial soil symbols and also an unknown lightning symbol. **The lightning symbol is not shown in the legend or discussed in the report text and should be clarified by DNR.** Immediately north of these tracks are several arc-shaped traces visible in the LiDAR imagery, which appear to be related to DSL motion which would include the bluff slope. There appears to be recent river scour at the toe of the bluff slope in this area and there is an

obvious recent shallow slide and slide debris in the lower roughly 2/3 of the slope in this area. The DNR geologist's tracks do not appear to have traversed the toe of these critical bluff slopes.

- The extents of DSL-1 shown on the EGRA do not appear to extend far enough south. I have outlined the area of the apparently-missing part of DSL-1 in orange (the slide deposit, as the EGRA shows, rather than the scarp and the deposit as I and most geologic maps typically show).
- Immediately north of DSL-1, on the northwest side of PA-I-1000, there are several apparent scarps significantly uphill of a small area of geologist's tracks with glacial soil symbols, and it is not apparent that the DNR reviewed the scarps.
- To the east (downstream) and outside of the extents of Figure 4, Sheet 1 of 2 (Image 3 below), there is a large DSL complex which appears to be active and similarly susceptible to increased recent destabilization by the recently-unrestricted Elwha River.
- Slides in this area of the bluff adversely affect the Type-1 Elwha River, it's unique and recovering salmon habitat, the Aldwell park at the base of the bluff, recreation above and below the bluff, residences and infrastructure upstream and downstream of the bluff, and timber resources in adjacent areas.

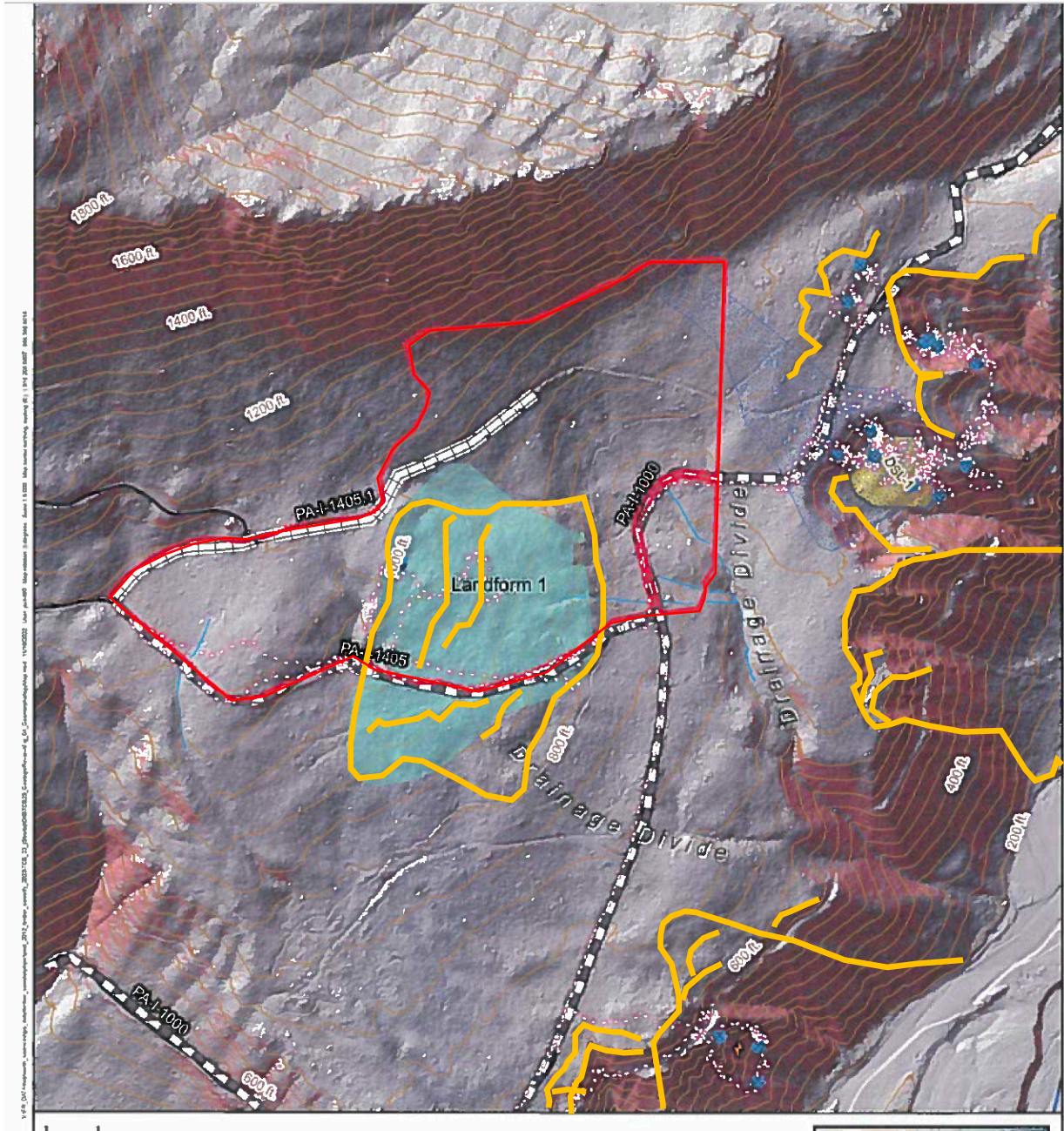


Image 3 – Unit 1 Geomorphology Map (Figure 4, Sheet 1 of 2) from the EGRA with My Annotations in Orange

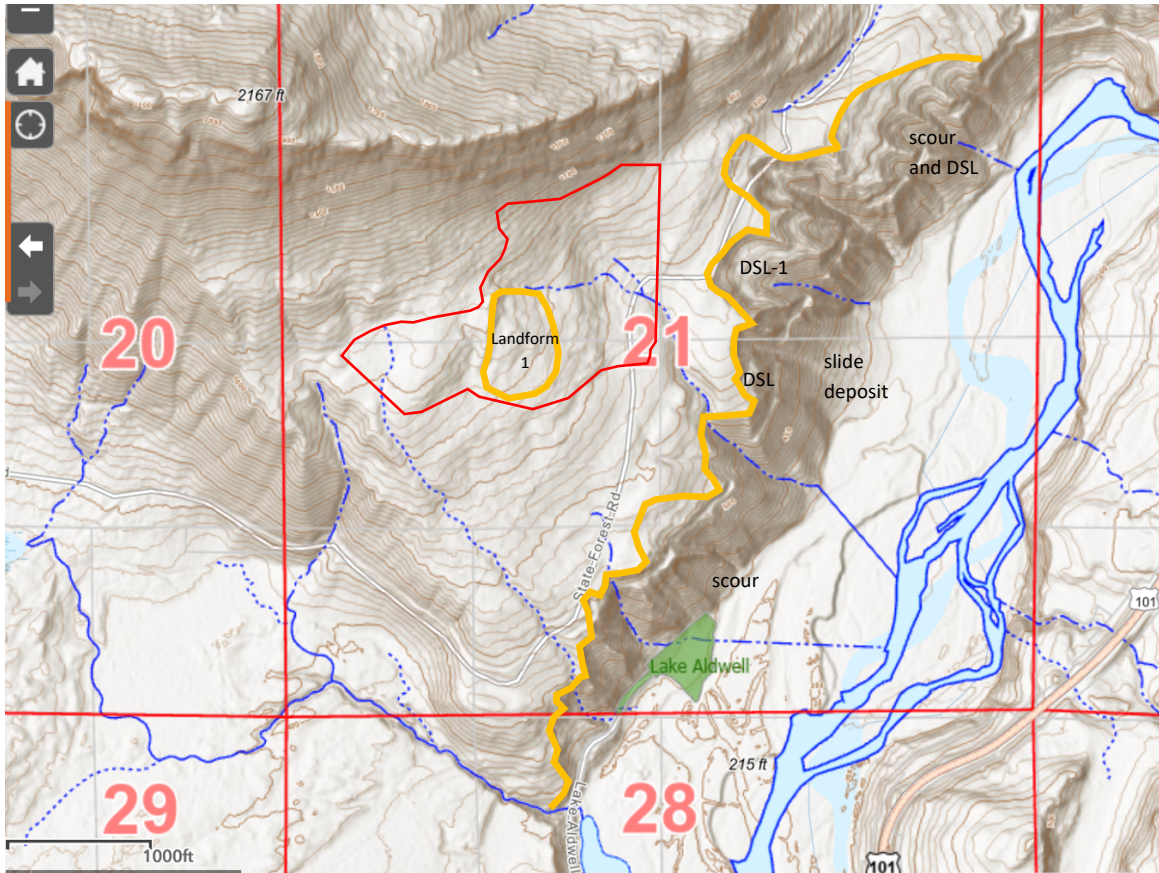


Image-4: All Relevant Features, Based on Clallam County “Multipurpose Map” with LiDAR and 5-foot Contours, Timber Sale in Red, and My Annotations in Orange and My Text in Black



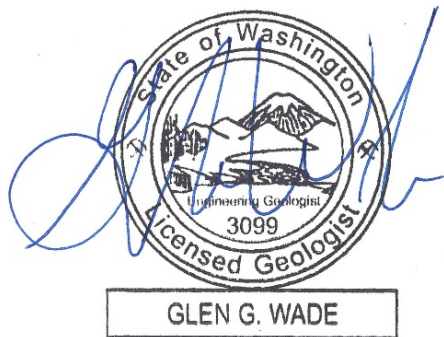
**LIMITATIONS**

The comments in this letter apply only to the subject land and they are not transferable to nearby or adjoining property. These comments are the property of OFCO and may be used by others only with their permission.

These comments were based on a limited review of documents, with no field observations or subsurface investigation directly related to investigation of this timber sale, although I am generally familiar with the area from many years of field experience in this immediate area. The prediction of hazard events is particularly difficult and speculative in nature and the discussion on that subject herein is my informed opinion only. Users who need a high level of reliance on the observations and conclusions of the study may wish to obtain further investigations.

No warranty, neither express, nor implied, is provided herewith. Please call on me if you have questions about the contents or meaning of this report.

Sincerely yours,



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Glen G. Wade, P.G., L.E.G.  
Engineering Geologist

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