



STARKER
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May 18, 2022

In mid-March 2022, Starker Forests became aware of a landslide on its forestlands on an unnamed tributary to Harris Creek; a tributary to the Luckiamute River, near Gage Road and Wildwood Road in southern Polk County. A forester observed muddy water in Harris Creek while working in the forest. A drone flight confirmed the landslide, which was estimated to be under five acres. The Oregon Department of Forestry (ODF) Dallas office was notified and a geotechnical specialist and two stewardship foresters from the ODF visited the site with Starker Forests forestry staff on April 18th.

The geotechnical specialist, a certified engineering geologist, provided a summary of his findings in the attached email.

The geotechnical specialist noted, “A review of lidar indicates three other older (ancient?) deep-seated landslide features along the southeast side of this same ridge. Though we did not hike to the lower positions of those debris fields, they appear to be ancient features, **consistent with many hundreds of others in the coast range.**” Also, “Overall we noted no causes of initiation of the slide by forest management.”

The closest residence is approximately 1.6 miles downstream. The timber stand was planted in 1995. Aerial photos indicate that the slope had limited movement between 1995 and 2022. Starker Forests purchased this property in 2011.

We continue to monitor the slide from a safe distance and using a drone and have observed that the area involved has grown. With over twelve inches of rain since April 1, measured at the nearby ODF Gellatly Weather Station, the slide is acting as was suggested by the geotechnical specialist, “I would expect continued movement and sediment delivery to the tributary for the remainder of this wet season...”

Please direct any questions to our office in Corvallis, or the Dallas unit of the Oregon Department of Forestry.

Starker Forests is an 86-year-old, fifth generation, family-owned forestland owner, managing over 90,000 acres of forestland in western Oregon.

From: BUREN Michael R * ODF <Michael.R.BUREN@odf.oregon.gov>
Sent: Friday, April 22, 2022 1:14 PM
To: THOMPSON Dave K * ODF
Cc: BIRD Andrew A * ODF
Subject: Harris Creek Slide

Dave,

On Monday the 18th we investigated the source of considerable turbidity in Harris Creek, a tributary to the Luckiamute River. Turbidity was first noted mid-March, the source of which was previously located by you and Starker staff as a landslide off of a small tributary. We visited the site with Andrew Bird and met Jennifer Beathe (Starker) on site. The reasons for our visit were to further understand the slide by observing its geometry, geology, and to understand any possible relationships between its initiation and forest practices.

There is a narrow ridge which extends northeast for about 2,300 feet from Bonner Ridge (map). Movement is evident on the southeast aspect slope of this ridge. An approximately 25ft head-scarp demarks the upper extent of the slide margin (photo). Within the down-dropped block, conifer are jack-strawed and the ground surface is disturbed. While on site I mapped the upper extent of movement. Looking at your photos previously taken, and Starker's drone photos, and hearing debris shed off of the toe of the slide, I assume the moving part of the slide "daylights" some tens to a couple hundred of feet above the small tributary located directly south. While on site, we heard these failures occur twice in about an hour as portions of the debris in the toe area would release from the main body and form debris torrents. We could not inspect the toe area as the terrain was obviously not stable. We observed a portion of the slope directly behind the current western margin of the head-scarp to have settled. We did not observe other settlement behind the longer east-trending head-scarp.

A review of lidar indicates three other older (ancient?) deep-seated landslide features along the southeast side of this same ridge. Though we did not hike to the lower positions of those debris fields, they appear to be ancient features, consistent with many hundreds of others in the coast range. The northwest aspect slopes off of the same ridge do not exhibit the presence of similar features. Usually, this indicates that the underlying marine formation's bedding dips toward the southeast, causing the underlying formation to be weaker and more likely to slide, in that direction.

The ridge is mapped as Tye Formation, though while on-site it is possible that the lower part of the ridge in the area of the slide is actually the Yamhill Formation, containing siltstone, and the upper portion of the ridge, containing more sandstone, is the Tye. Both of these are bedded marine sedimentary deposits known to be slide prone. Surprisingly, the head-scarp of the slide contains no bedded formation material. The narrow ridge would

normally have a shallow soil layer, underlain by bedded formation – instead being composed of a thick sequence of disaggregated material.

The stand was planted in 1995 (Beathe) and the area likely last harvested from a landing and road about 900ft uphill. There is no possible influence on stability from the road. We noted an old (~1950) grade which comes to the ridge near the lower end of the eastern margin of movement, though again, did not perceive how that feature could have contributed.

Overall, we noted no causes of initiation of the slide by forest management. The presence of other similar slope movements in the area which likely predate forest management indicate the slopes to be marginally stable along the ridge. I would expect continued movement and sediment delivery to the tributary for the remainder of this wet season, and likely other wet seasons also, but at a slower rate.

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