Oregon Stream Protection Coalition

BEFORE THE OREGON BOARD OF FORESTRY

General Public Comment by Mary Scurlock, Oregon Stream Protection Coalition on
1) Debris Torrent Stream Implementation and Effectiveness, and;
2) Alternate Practice Approvals Allowing Tethered Equipment on Steep and Erosion Prone Slopes and High Landslide Hazard Locations

March 6, 2019

On behalf of the Oregon Stream Protection Coalition, I would like to flag two current issues of serious concern raised recently with Department staff and which we expect will be subject of ongoing dialogue. We believe both subjects deserve dedication of monitoring resources.

I. OSPC Analysis of Debris Torrent Streams

Background: The importance of wood delivery to fish streams from debris torrents was highlighted by the Independent Multidisciplinary Science Team's 1999 report on salmon and forest practices (IMST 1999) and in the 2000 recommendations of the Forest Practices Advisory Committee (FPAC 2000). A 2001 amendment to the Forest Practices Act added ORS 527.676 which authorized the State Forester to direct the wildlife leave-trees required for clearcuts (2 per acre) be left within 50 feet of up to 500 feet of certain Type N stream reaches that deliver to F streams. "Debris torrent-prone streams" (DTS) were generally defined to "include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement." ODF finalized an implementing rule in 2007 and developed more specific screening criteria in 2008 which were applied using 10 meter Digital Elevation Model data to develop maps. So far as we know there has been no scrutiny of these criteria in the interim, nor have the maps been revised using higher resolution LiDAR data.

OSPC Siletz Analysis: Last fall OSPC retained Dr. Dan Miller to compare the Miller & Burnett 2007 model outputs with ODF's "debris torrent streams" (DTS) in the Siletz Basin. A summary of this analysis is attached. *Our analysis found that the ODF-designated reaches comprise only 1.1% of all potential debris torrent stream reaches on private forestlands in the Siletz, and 0% of those that deliver to high-intrinsic potential Coho reaches*. The results indicate to us that the ODF criteria do not identify either enough reaches or the right reaches to make an ecologically significant contribution to wood loading in fish-bearing reaches, the ostensible purpose of clumping trees along these reaches.

Need for Validation of Debris Torrent Stream Criteria: We would like to work with the Department to develop a monitoring work plan related to Debris Torrent Streams. This would involve consideration of the information we have already provided, as well as available literature and expertise to establish a clearer ecological objective for debris-torrent prone nonfish streams, e.g. what proportion of the channels likely to deliver to fish streams should be recognized?

These questions relate directly to at least two "high priority effectiveness questions" in the ODF Monitoring Strategy regarding protection of headwater (Type N) streams and the effectiveness of leave tree requirements at achieving overall maintenance of resources under the Forest Practices Act. Protection of Type N streams has been flagged as a deficiency in the forest practice rules under the coastal zone management statutes and in salmon recovery plans. It is time to dedicate monitoring resources to developing recommendations to improve identification and protection of debris torrent streams.

II. Approval of Plans for Alternate Practice to Waive Rule Prohibitions on Skid Trails Within 100 feet of Stream Channels on Steep and Erosion-Prone Slopes and Operation of Ground-based Equipment on High Landslide Hazard Locations

The Coalition has raised concerns with Department staff, State Forester Daugherty and Chair Imeson as to whether the Department is acting within its authority in routinely approving exceptions to two important rule prescriptions through plans for alternate practice to allow the location of skid trails created by tethered ground-based equipment within 100 feet of stream channels and to operate tethered ground-based equipment on steep and erosion-prone areas and on high landslide hazard locations. Applications for alternate practice approval are not subject to public notice and comment requirements like other written plans, but we are informed that over 70 plans to operate tethered equipment under rule waivers have been approved already, and more are expected under "template" and approval guidance recently adopted by the Department.

The reasons for our concerns are both legal and technical, and there isn't time to detail them here. Our goal today is simply to alert the Board that we are in dialogue with Department about what the approval standard is for these alternate plans (we have provided a legal opinion letter on this subject), and whether there is a technical basis to demonstrate that standard is met. We have questioned whether waters of the state are being adequately protected by plans that locate skid trails closer than the default 100 feet from stream channels on steep and erosion-prone slopes and that allow heavy equipment on high landslide hazard locations. In our view, approval to operate outside the rule prescriptions prohibiting these practices requires the State Forester to find that less environmental damage will result, but it remains unclear whether there is, or could ever be, an adequate technical basis to make such a finding.

We urge the Board to exercise oversight of this issue, and to request a demonstration of how these routinely approved alternate plans are protecting waters of the state better than the rule prescriptions. Given NOAA and EPA findings that current forest practices rules are inadequate to protect waters of the state from forest operations on headwater streams and landslide-prone areas, it is hard for OSPC to understand how the Department can justify relaxing any existing rule prescription in these sensitive and under-protected areas – but that is exactly what the Department appears to us to be doing. In this context, we recommend intensive monitoring of the numerous already-approved operations.

Application of a Landscape-Level Framework to Evaluate Potential Wood Delivery from Non-Fish-Bearing Headwater Channels to Fish-Bearing Streams

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Field studies show that from 13% to 65% of the large wood inventoried in western Oregon streams is found in debris-torrent deposits (*1-3*). A portion of this wood originates from steep channels traversed by debris torrents that sweep up accumulated wood (*4*) and carry it to larger channels downslope (*5*). Areas adjacent to these steep non-fish-bearing ("N") channels, which provide the accumulated wood, can thus form an important source of woody debris to downslope fish-bearing ("F") streams.

Accordingly, OAR 629-640-0210 (Leaving green trees and snags along small N streams subject to rapidly moving landslides) provides guidance for map and field delineation of some of these contributing areas with the goal "to provide a source of large wood that can be moved by rapidly moving landslides into Type F streams".

Here we present results of computer-based methods (*6-8*) to identify N channels that may be traversed by debris torrents that deposit into F streams. These methods use topographic attributes derived from digital elevation models (DEMs) to characterize mapped landslide initiation sites and debris-torrent runout tracks. With these models, N channels were classified in terms of their potential to be traversed by a debris-torrent originating upslope and continuing downstream to an F stream. N channels were further classified to reflect characteristics, in terms of habitat intrinsic potential for coho salmon (*9*), of the receiving F stream.

These models were calibrated using landslide and debris-torrent mapping from Oregon (*10, 11*) with 10-m DEMs. Preliminary analyses indicate that higher resolution lidar DEMs can offer improved delineation of landslide initiation sites and debris-torrent runout tracks, suggesting that results from the 10-m DEMs may under-estimate debris-torrent potential; this result needs to be confirmed after re-calibration with the high-resolution DEMs.

For the basins used to calibrate the models, debris-torrent potential is related to the proportion of debris-torrent track length contained within each channel class. By ranking channels from high to low potential, we can map N channels in terms of the proportion of debris torrents that occurred within each class. This provides a quantified measure of susceptibility. Leave trees can be located to provide wood sources for a specified proportion of future debris-torrent occurrences and can be targeted to provide wood to those type F channels where it will offer the most benefit. Likewise, these measures of susceptibility can be tested. They predict that a certain proportion of future debris torrents will occur within a specified set of channels within a basin. Monitoring of debris-torrent occurrences will show if that prediction is accurate, and if not, provide data for improving these methods.

For the Siletz Basin in the Oregon mid coast, using 10-m DEMs and looking solely at the 687 km of F streams on private timberlands under Oregon Department of Forestry jurisdiction, we find there are 736 km of N channels that may be traversed by debris torrents that travel to those F streams. Most of those, however, have a relatively low susceptibility: 80% of all debris torrents are predicted to occur on only 142 km (19%) of those N channels. In looking at which F streams receive the debris torrents, we

find there are 141 km of F streams with high habitat intrinsic potential (IP) for coho (defined here as IP values greater than 0.67) and that there are 76 km of N streams that can deliver debris torrents to those high IP streams.

For comparison, the current debris-torrent leave-tree reaches designated by ODF covered 4.3 km within the Siletz basin, but some fell on lands outside of ODF jurisdiction or on type F streams. The remainder cover 3.8 km of N channels and encompass 0.9% of all potential debris-torrents within the basin, 1.1% of all potential debris torrents within private forest lands, and do not include any of the N channels that may deliver debris torrents to F channels with high coho IP values.

Citations

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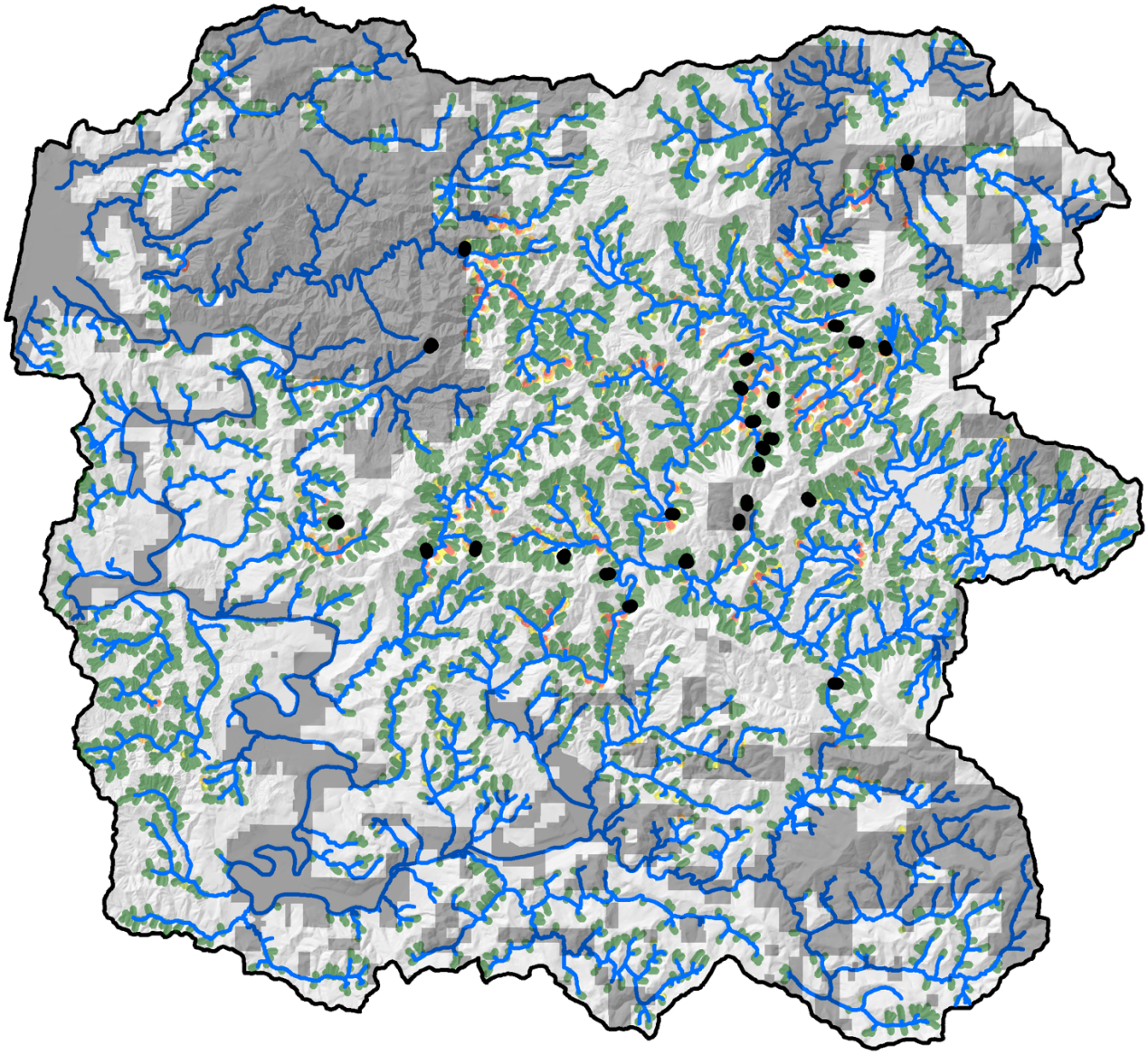
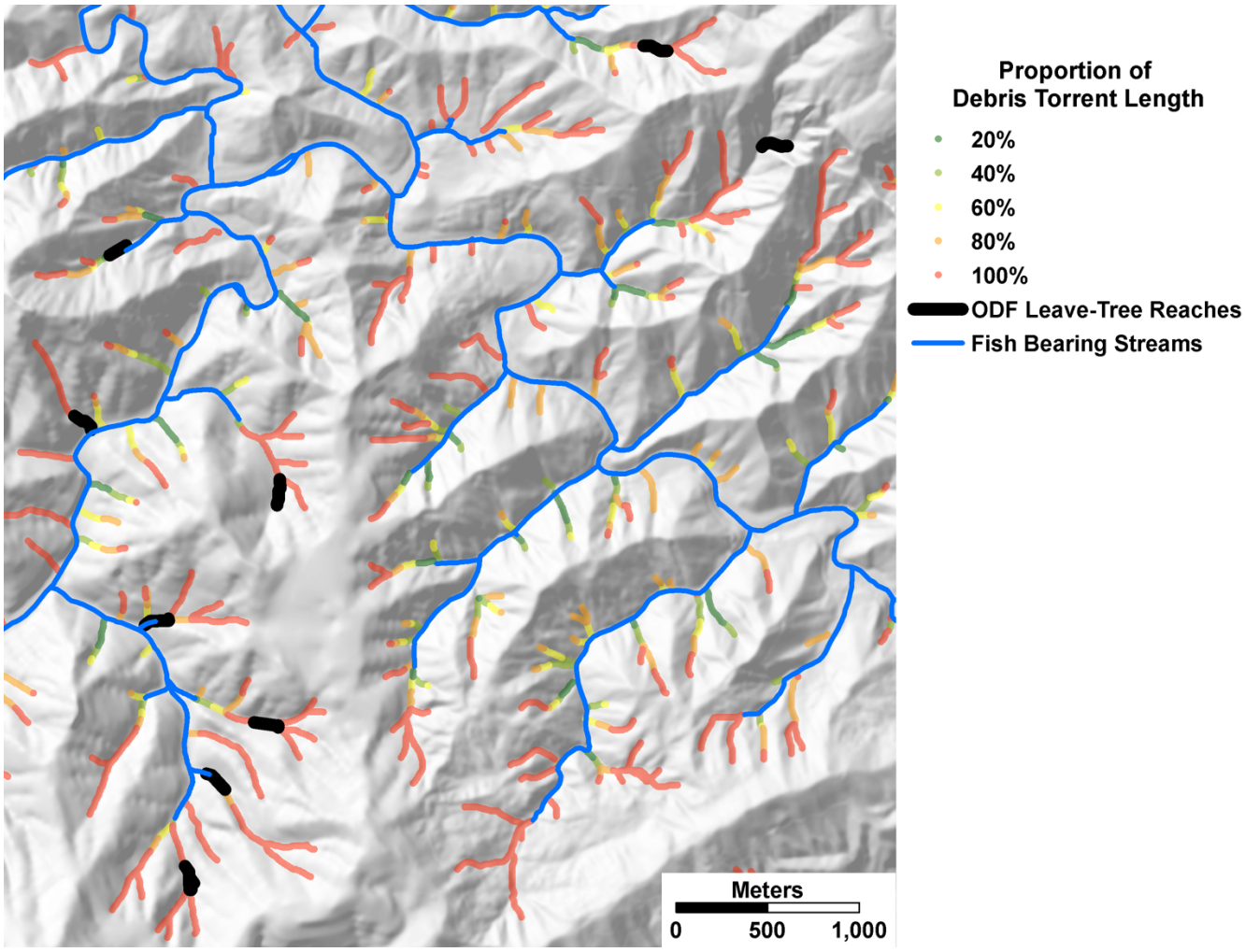


Proportion of Debris Torrent Length

- 20%
- 40%
- 60%
- 80%
- 100%
- ODF Leave-Tree Reaches
- Fish Bearing Streams

ODF-designated debris-torrent leave-tree reaches cover 4.3 km of channels in the Siletz basin. Some of these are outside of ODF jurisdiction or fall on fish-bearing streams. The remainder are 3.8 km of type N channels.

The ODF leave-tree reaches include 0.9% of potential debris-torrent length within the basin and 1.1% of potential debris-torrent length on private forest lands: they should include about 1 out of every 88 debris torrents on private forest lands in the basin that deliver to fish-bearing streams.



Close-up of the area highlighted on the map
on previous page

Here are two ways of comparing model results to the current ODF Debris-Torrent Leave-Tree reaches.

The upper black line in the left graph shows the N channel length that encompasses the proportion of expected debris-torrent length, including only those that travel to F channels. The bottom gray line shows how the ODF reaches compare in length. For example, the model indicates there are 735.6 km of N debris-torrent-prone channels that deliver to F streams. ODF reaches cover 3.7 km of these N channels. The model indicates that 141.5 km of N channels will include 80% of all future F-channel-delivering debris-torrent length; ODF reaches cover 1.4 km of these N channels. The model indicates that 53 km of N channels will include 50% of future F-channel-delivering debris-torrent lengths; ODF reaches cover 0.9 km of these channels.

The graph on the right shows the percentage of expected total debris-torrent length included in the ODF reaches as a function of the proportion of all F-channel-delivering debris torrents. N channels are ranked from high to low debris-torrent susceptibility. For those N channels that contain 20% of future debris-torrent length, the overlapping ODF reaches contain only about 0.48% of the total debris-torrent length. For those N channels that contain 80% of future debris-torrent length, the overlapping ODF reaches contain about 1.1% of the total. For those N channels that are predicted to contain 100% of future debris-torrent length, the overlapping ODF reaches contain about 1.15% of the total.