



WASHINGTON STATE DEPARTMENT OF
Natural Resources

Peter Goldmark - Commissioner of Public Lands

Forest Practices Field Review of Potentially Unstable Slopes



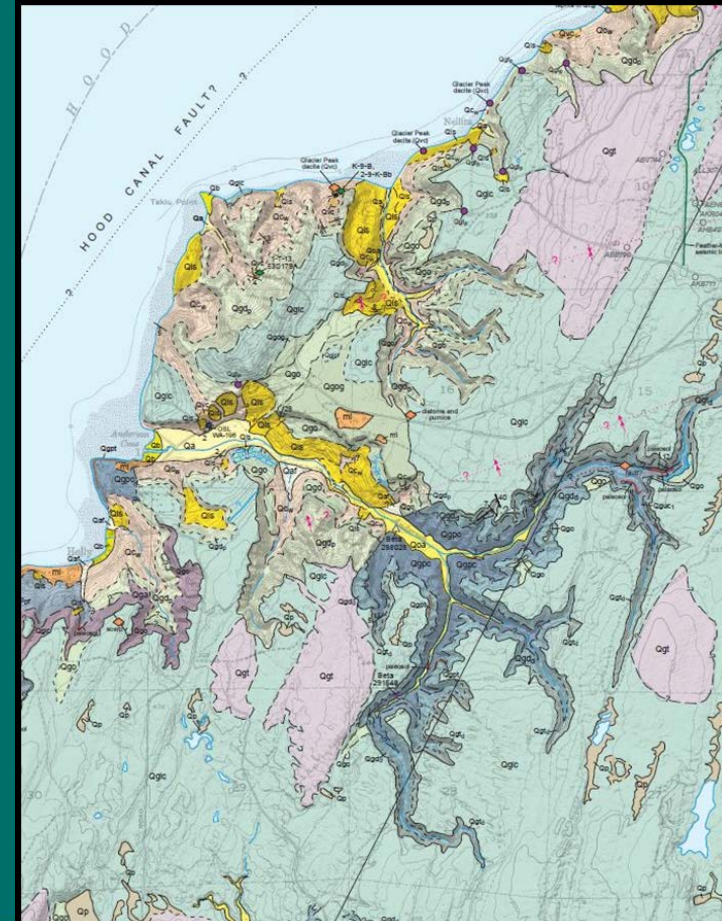
Background on Jack

- 25 years of experience in Forest Practices
 - 16 years as a Forest Practices Forester
- Supervise 5 office staff and 5 Forest Practices Foresters in Pacific Cascade Region



Background on Trevor

- Engineering Geologist in the Forest Practices Division. I evaluate unstable slopes for Forest Practices foresters in the South Puget Sound region.
- 7 years mapping glacial landforms and evaluating geologic hazards along Hood Canal and throughout Washington.



Public Safety

- WAC 222-16-050(1)(d)
 - Rules protect Public Resources & Public Safety



New FPA & Slope Stability Informational Form

Statewide Class III
FPAs Totals
(since June)

- 15 Geo Technical Reports
- 149 Slope Stability Informational Forms



Review Process for Slope Stability Assessment

- Designed to use redundancy & expertise



Process for Review

- Applicant information:
 - FPA
 - Slope Stability Informational Form
 - Other, FPA question 31
 - Geotechnical Report
 - Geologist letter
- DNR Office Review
- DNR Field Review
 - Forester
 - Geologist



Screening Tools for Office

- Soils Map
- Slope Stability Model (aka SLPSTB)
- Landslide Hazard Zonation (LHZ)
- Landslide inventory map = Landslide Polygon

RESOURCE REVIEW

- Unstable Slopes (Risk: Highway, Water; _____)
- Soils Map (Highly Erodible & Very Unstable)
- SLPSTAB
- Landslide Hazard Zonation
- Landslide Polygon



Helpful Screening Tools for Foresters

- Slope Stability Model (aka SLPSTB)
- Landslide Hazard Zonation (LHZ)
- Landslide inventory map
- Topographic maps
- Geologic maps
- Aerial photos (stereo pairs)
- Ortho photos
- LiDAR



Boots on the Ground

- FP Forester knowledge of home unit
- FP Geologist field experience & expertise
- Eyes on the site



Forester Review

- Familiarity w/ area
 - Past slope instability issues
 - Areas of concern
 - Resources in vicinity
 - Former reviews
 - The people
 - Landowners
 - Operators
 - Communities

Repetition



Forester/ Geologist Team Relationship

- FP Forester alerts Geologist when FPA raises questions/concerns
- Geologist alerts Forester
- Team Approach
 - Each play a role in Public Safety and Resource Protection



Forester / Geologist Relationship

- Foresters contact me for assistance with unstable slopes when applications (FPA) are submitted both on public and private lands.
- I review FPAs in my region both remotely and on the ground for the FP foresters. A site visit is needed to confirm the unstable features.



Geologist Review

- Slope Stability Informational Form (SSIF) provides notice of potentially unstable slopes:
 - Review SSIF and digitize the area
 - Evaluate the area for signs of instability and potential instability using screening tools available in the office:
 - Areas of past instability and potential concern
 - Public safety and public resources
 - Review geotechnical reports
 - Consult with DNR Forester about findings



Slope Stability Informational Form

- FPAs between June 1st and Aug 13th:
 - 149 applications with the SSIF
 - 15 applications included additional information from Qualified Experts.
 - Our geologists reviewed 39 applications.
- Bulk of SSIF didn't have rule identified landforms that required protection.
- The SSIF gets the applicant to think about and address slope stability.



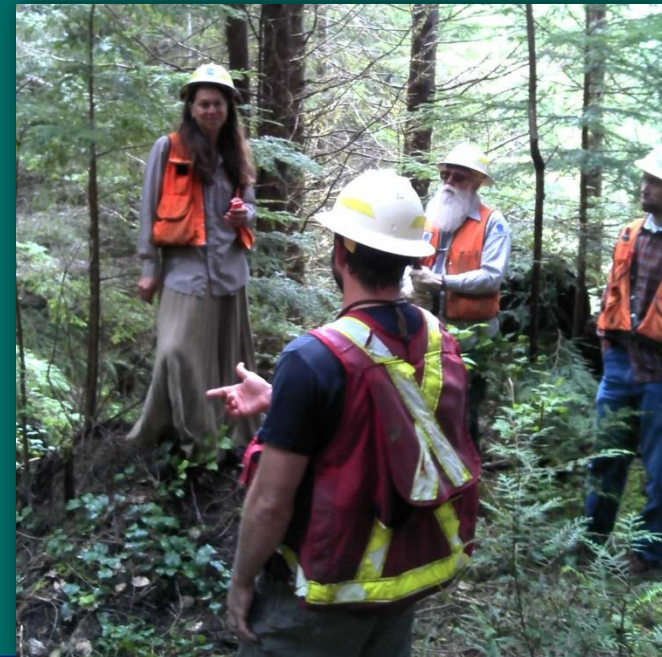
Geologist Desk Tools

- Slope Stability Model
- Landslide Hazard Zonation (LHZ)
- Landslide Inventory
- Lidar based topography
- Aerial photos
- Geologic maps



Forester & Geologist Visit Site

- I consult with the forester about application, SSIF and my review.
- Forester & geologist visit site with applicant to review and evaluate unstable slopes in and around FPA.



Forest Practices Science Team Trainings

- Since 2002 DNR geologists have trained over 600 people in identifying unstable slopes.
- Other State agencies
- Tribes
- Private landowners
- Land managers
- Qualified Experts
- Forestry Consultants



Questions?





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