

Best Management Practices (BMPs) Pertaining to Water Quality on Forested Land

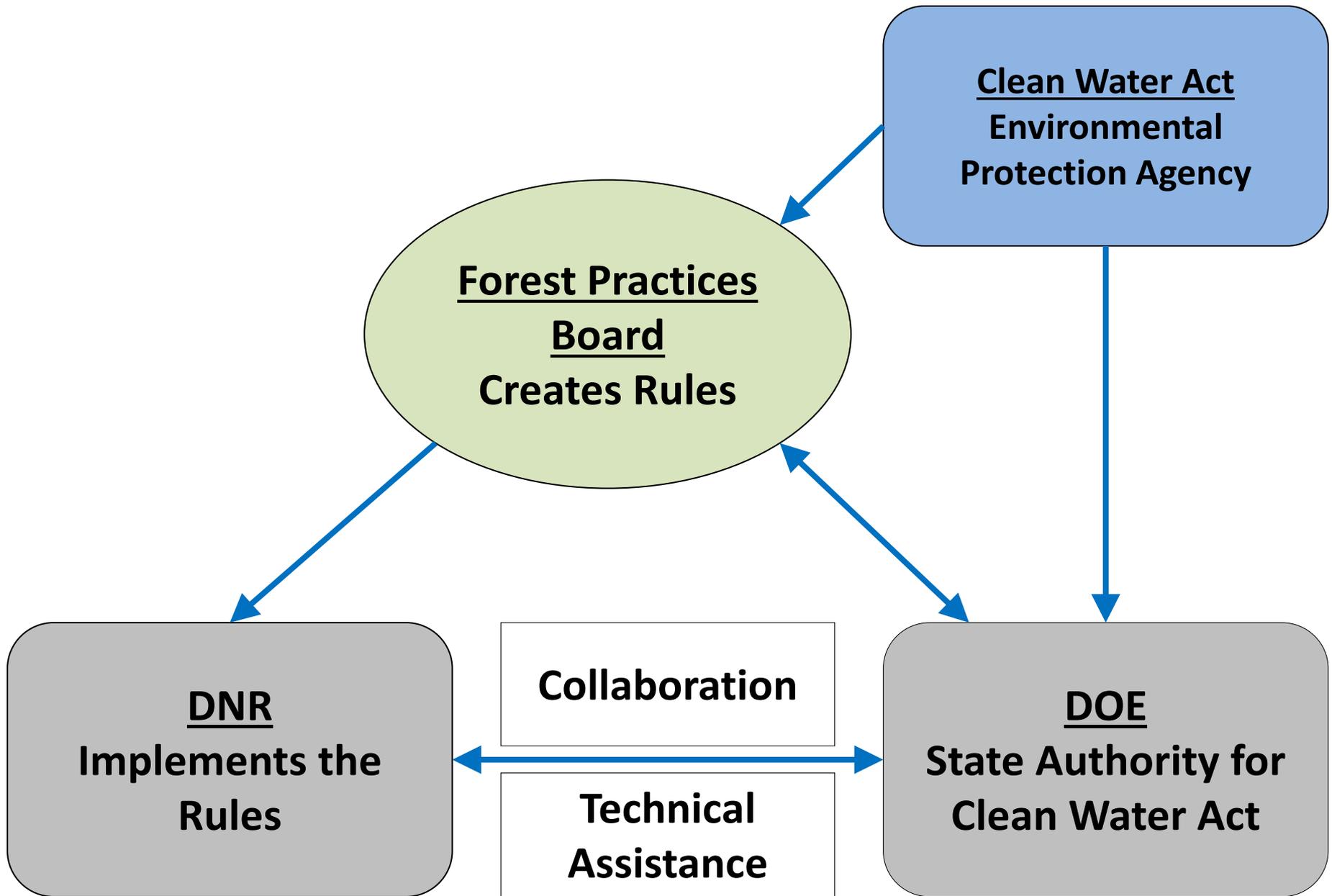
Bob Penhale
Department of Ecology



Objectives

- Understand DNR/DOE collaboration in achieving Water quality protection associated with forest practices, especially roads, harvest and chemical use.
- Understand the relationship between BMPs and water quality (Dude, they're the tools !!)
- Identify available guidance documents used in BMP selection, installation, and education to help you communicate with landowners.







If you
Follow the Rules...

Deliverability

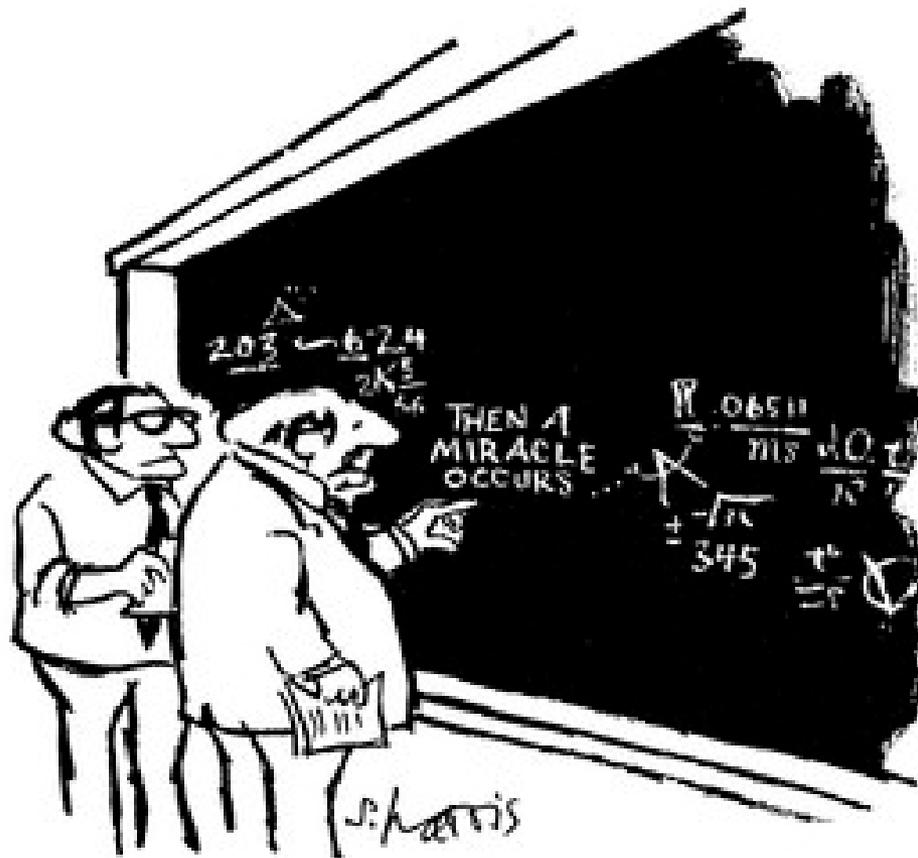
- To transfer sediment or chemical directly or indirectly to water (or other public resource)
- Mass wasting
- Herbicide use
- Forest Roads



Turbidity

- An indirect measure of soil particles in water
- Water quality standards in WA State law
- Changes with the background condition
- More turbid background means not as clean water delivered to your system





"I think you should be more explicit here in step two."





Keep clean water clean
Route dirty water to the
forest floor

WA Road Surface Erosion Model

Appendix A – Table A-9

Sediment Delivery/Distance Relationship

Distance From Culvert (ft)	Percent of Total Eroded Sediment Delivery
0	100
35	70
70	50
105	35
140	25
175	18
210	10
245	4
280	3
315	2
350	1

What are BMPs

- Best management Practices are measures which, when used singly or in combination, prevent or reduce sedimentation and deliverability.



BMP Types

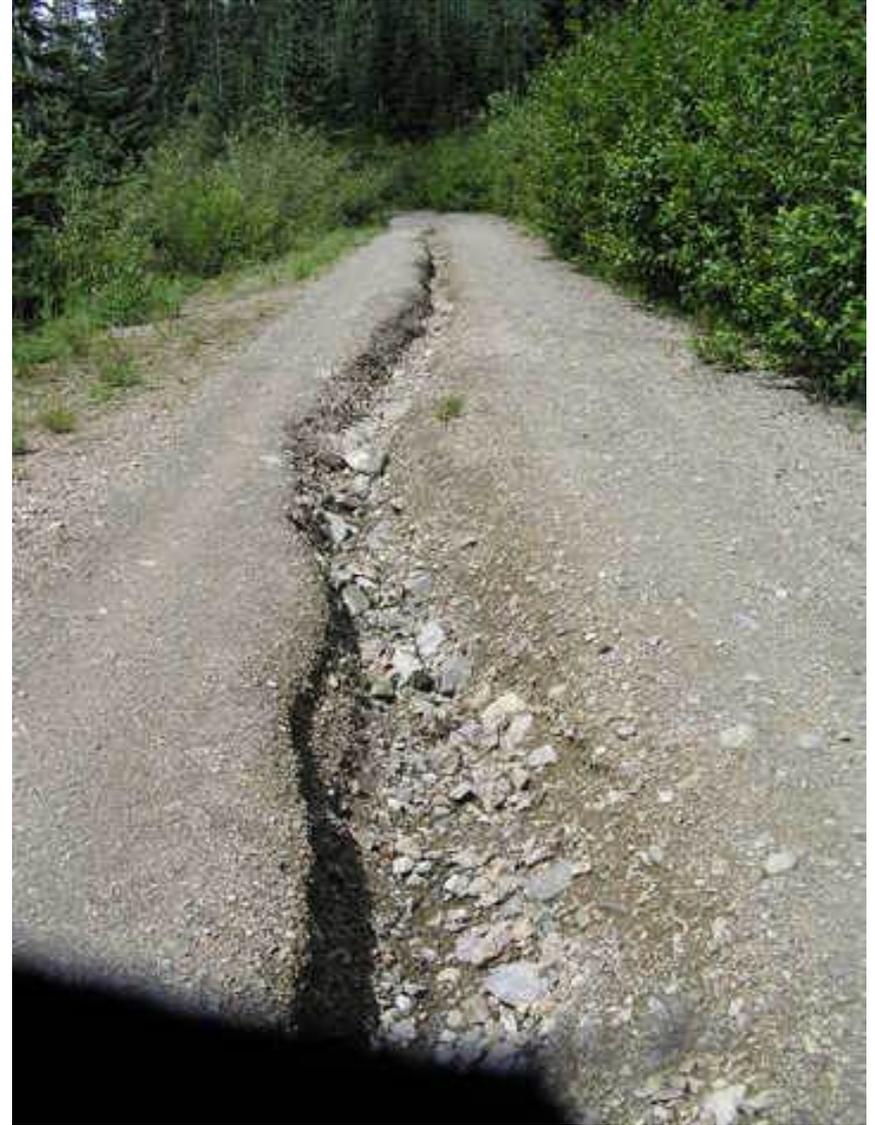
- Source Control BMPs
- Treatment Control BMPs



Source control or
treatment?



- Is this a problem?
- Does it deliver?
- If so, what are some solutions for this problem?
- If not,...?



A photograph of a dirt road with a rutted path leading into a brushy area. The path is marked with deep, parallel tracks from a vehicle. The surrounding vegetation is dense and green, with some brown leaves scattered on the ground. The text "Does this have potential?" is overlaid in white on the right side of the image.

Does this have potential?

What do you see?
I see #2



Pretty ain't necessarily good



Good Berm or Bad Berm?



Site specific, rely on Good ol' #2

Blue clay fill Failure





Fix of the clay fill

Design BMPs

It's simple, no mistakes allowed



Well...
Constant upkeep



4.3

Erosion Control Measures



Creative Solutions Work













Beyond the Board Manual

- Forest Practices Illustrated
- Managing Woodland Roads (OSU)
- A Guide to Forest Roads (WFPA)
- Washington Road Surface Model
- Local Forest Practices Forester

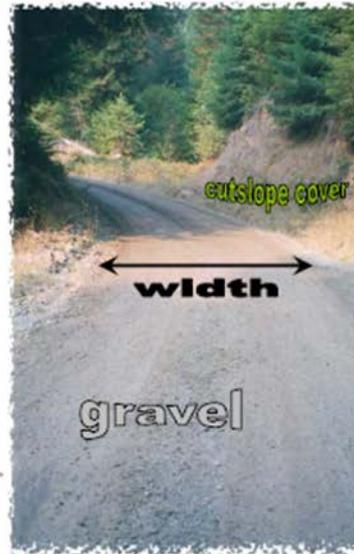


Washington Road Surface Erosion Model

Surface Erosion



precipitation



Prepared for:
State of Washington
Department of
Natural Resources

By:
Kathy Dubé
Walt Megahan
Marc McCalmon

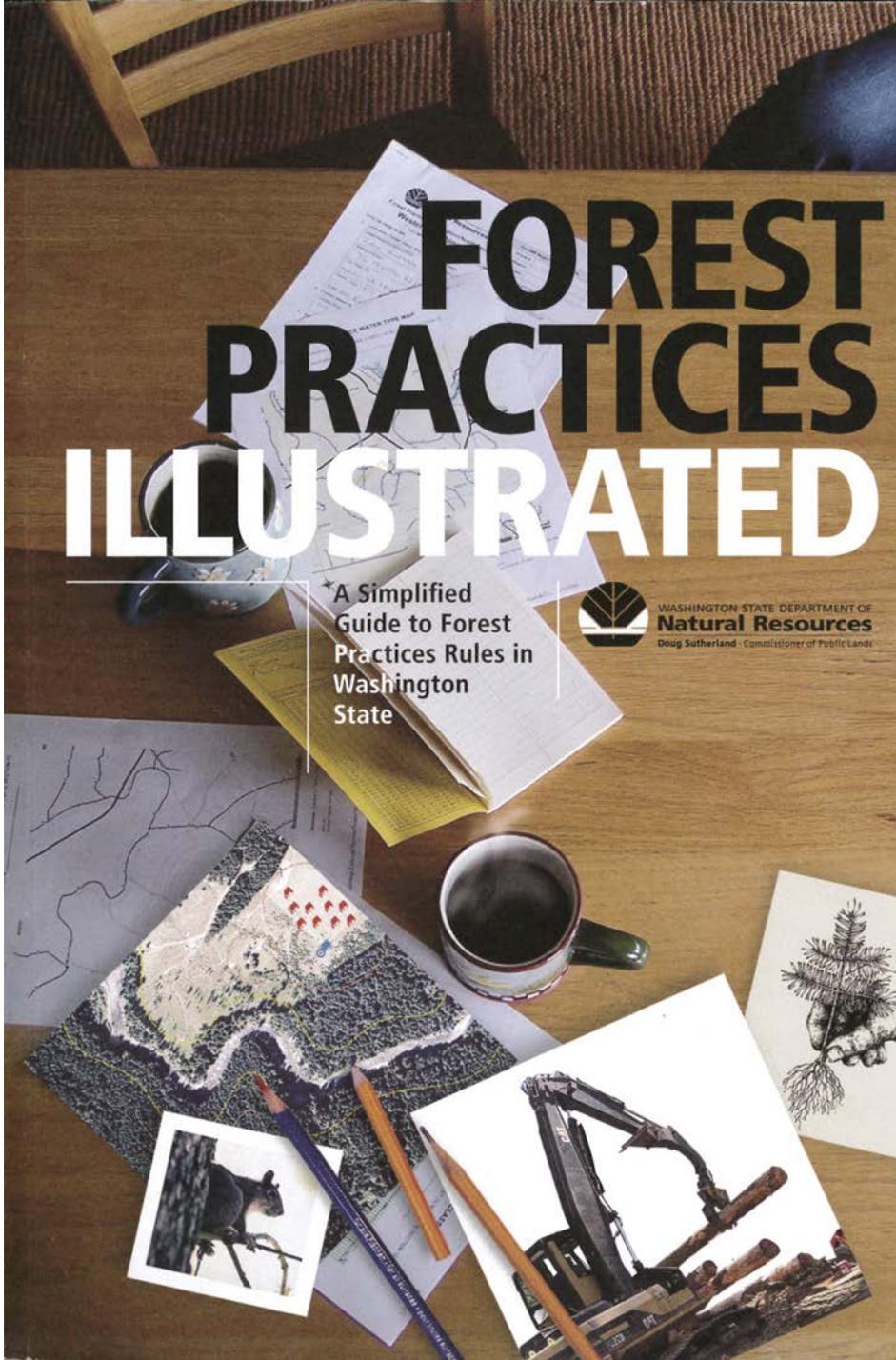
February 20, 2004

FOREST PRACTICES ILLUSTRATED

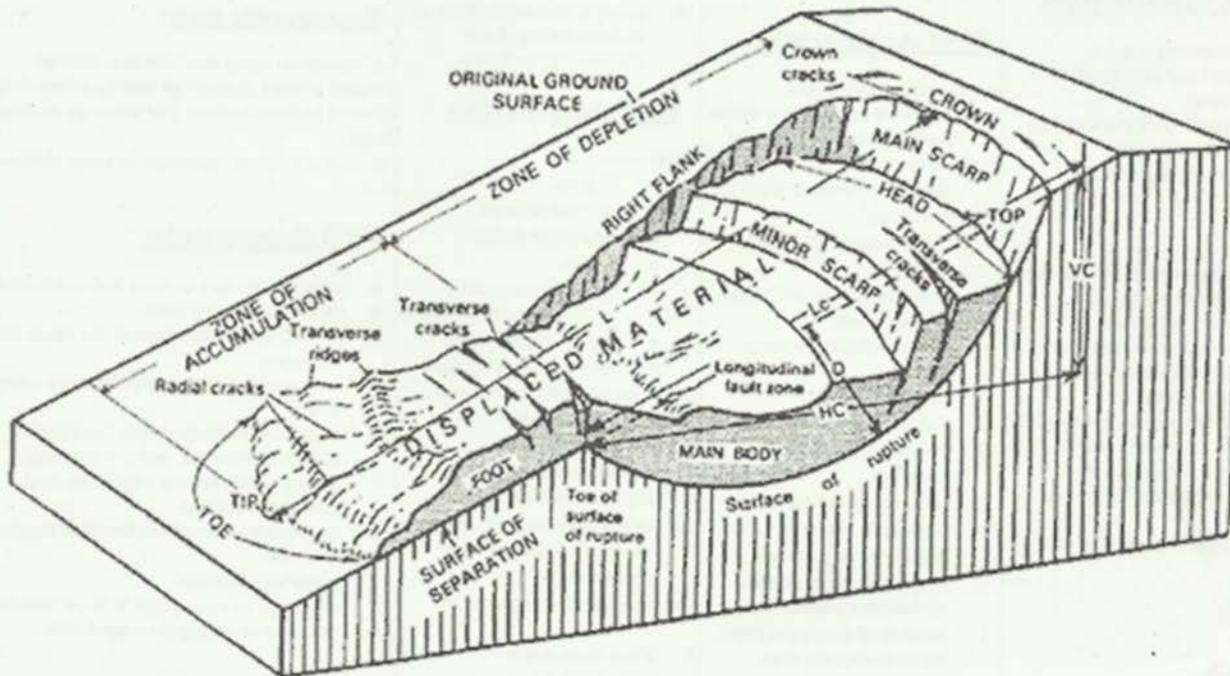
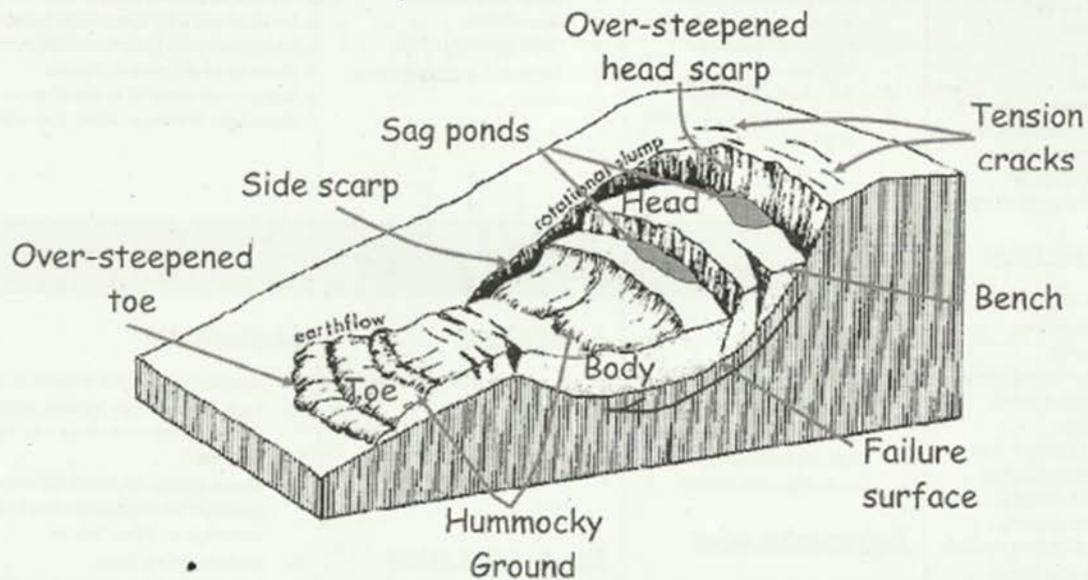
A Simplified
Guide to Forest
Practices Rules in
Washington
State



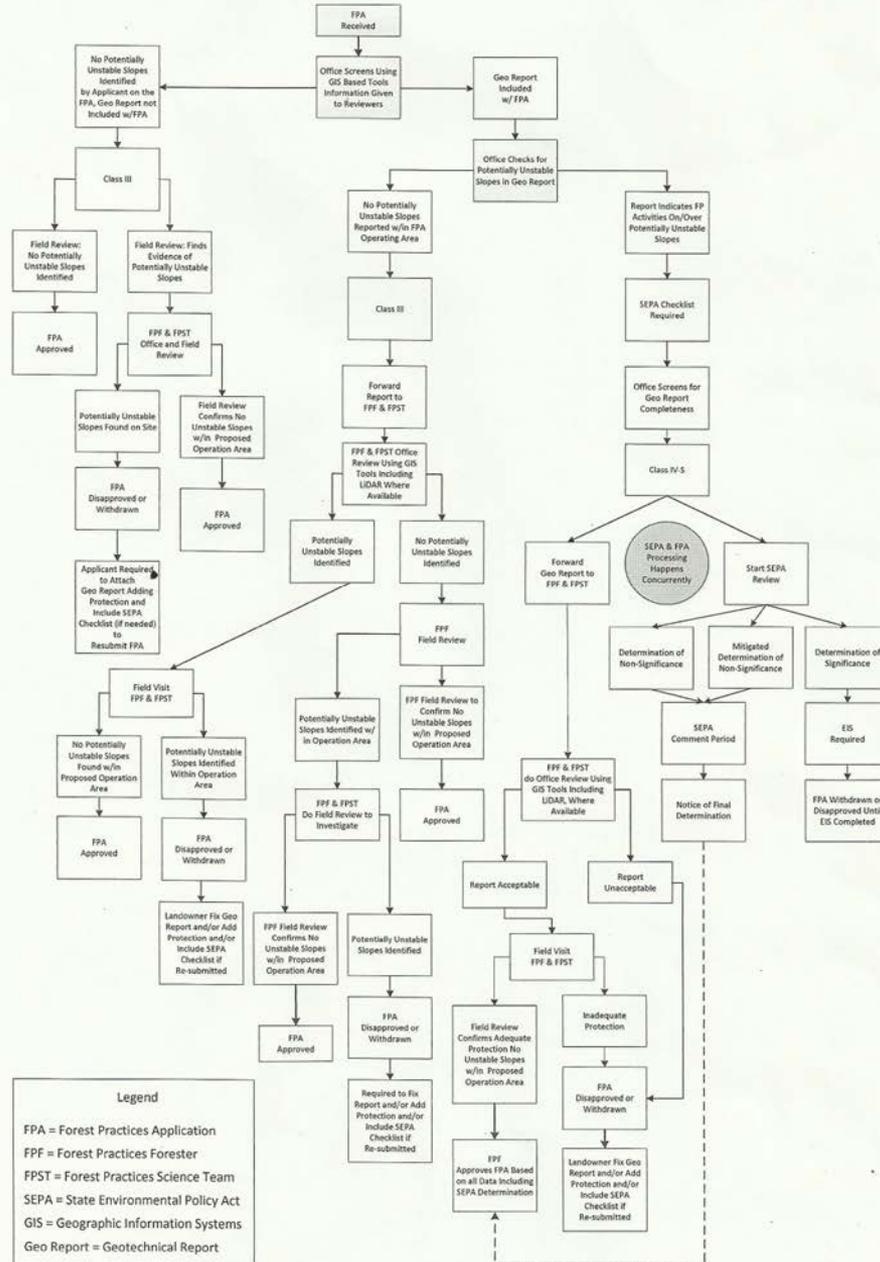
WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland : Commissioner of Public Lands



Rotational Deep-seated Landslide



FPA Processing for the Protection of Potentially Unstable Slopes (flow chart 2)



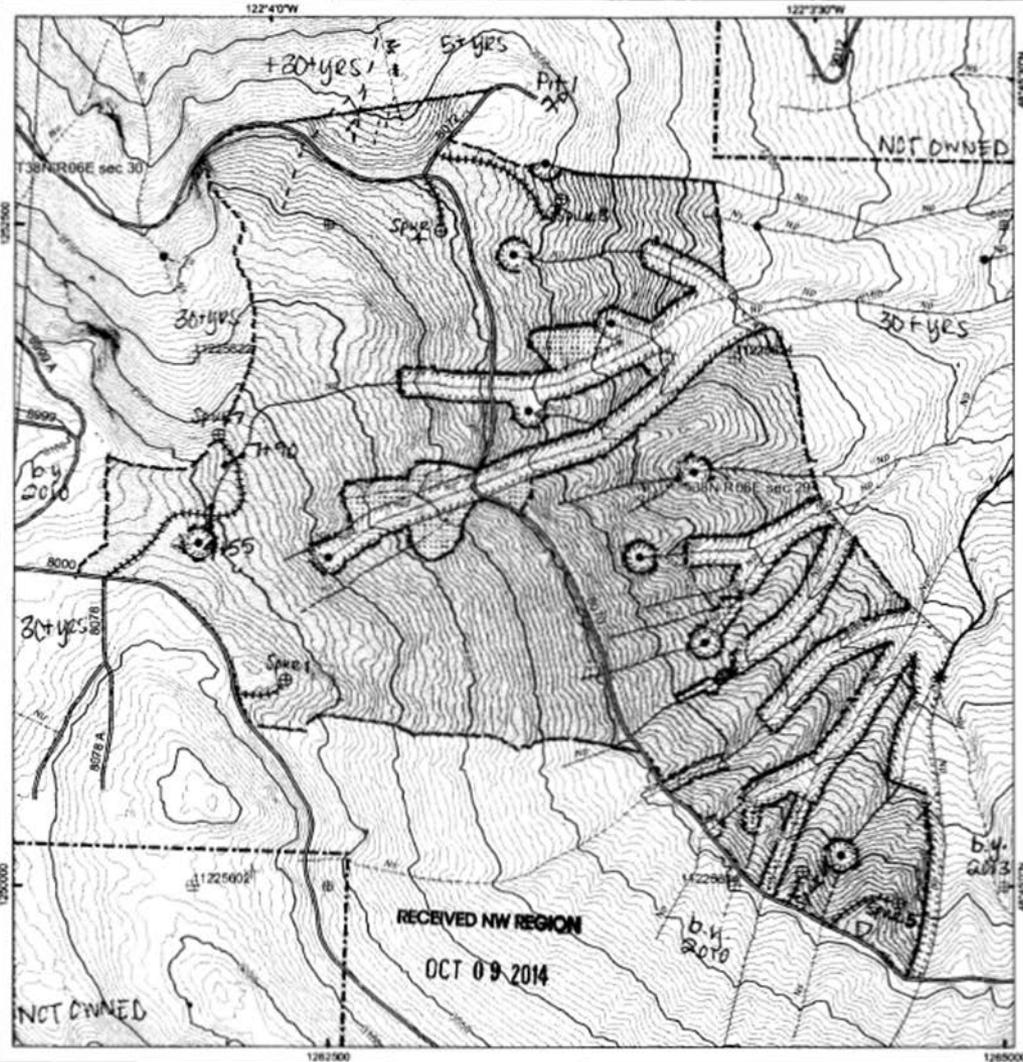
Legend

- FPA = Forest Practices Application
- FPF = Forest Practices Forester
- FPST = Forest Practices Science Team
- SEPA = State Environmental Policy Act
- GIS = Geographic Information Systems
- Geo Report = Geotechnical Report

FPA for: Stratify
 HUN 15925
 107.2 Acres

WY Columbia Timberlands
 48 45'10"N 122 03'47"W
 RMZ 20.0 acres
 Unstable 2.6 acres

North Cascades Tree Farm
 Whatcom County
 T38N R06E sec 29



EMERGENCY MEDICAL EVACUATION

Call: 911
 Lifelight: 1-800-452-7434

- | | | |
|-----------------------------|------------------------------|------------------------|
| ⊕ DNR Registration Points | ● Perennial Initiation Point | ▬ Harvest |
| ⊕ Landings | * Regulatory End of Fish | ▨ RMZ |
| ⊙ Leave Tree Sites | ▲ Seep/Spring | ▩ Other Leave Areas |
| +++++ New Road Construction | ~ Type F Stream | ▧ Unstable/Inner Gorge |
| --- Road Reconstruction | ~ Type Np Stream | ▦ Type A Wetland |
| - - - WCT Property Line | ~ Type Ns: Nu Stream | ▥ Type B Wetland |
| ~ 10 ft Contours | ~ Type X, U Stream | ▤ Forested Wetland |
| | —●— Culvert or EQ Crossing | |



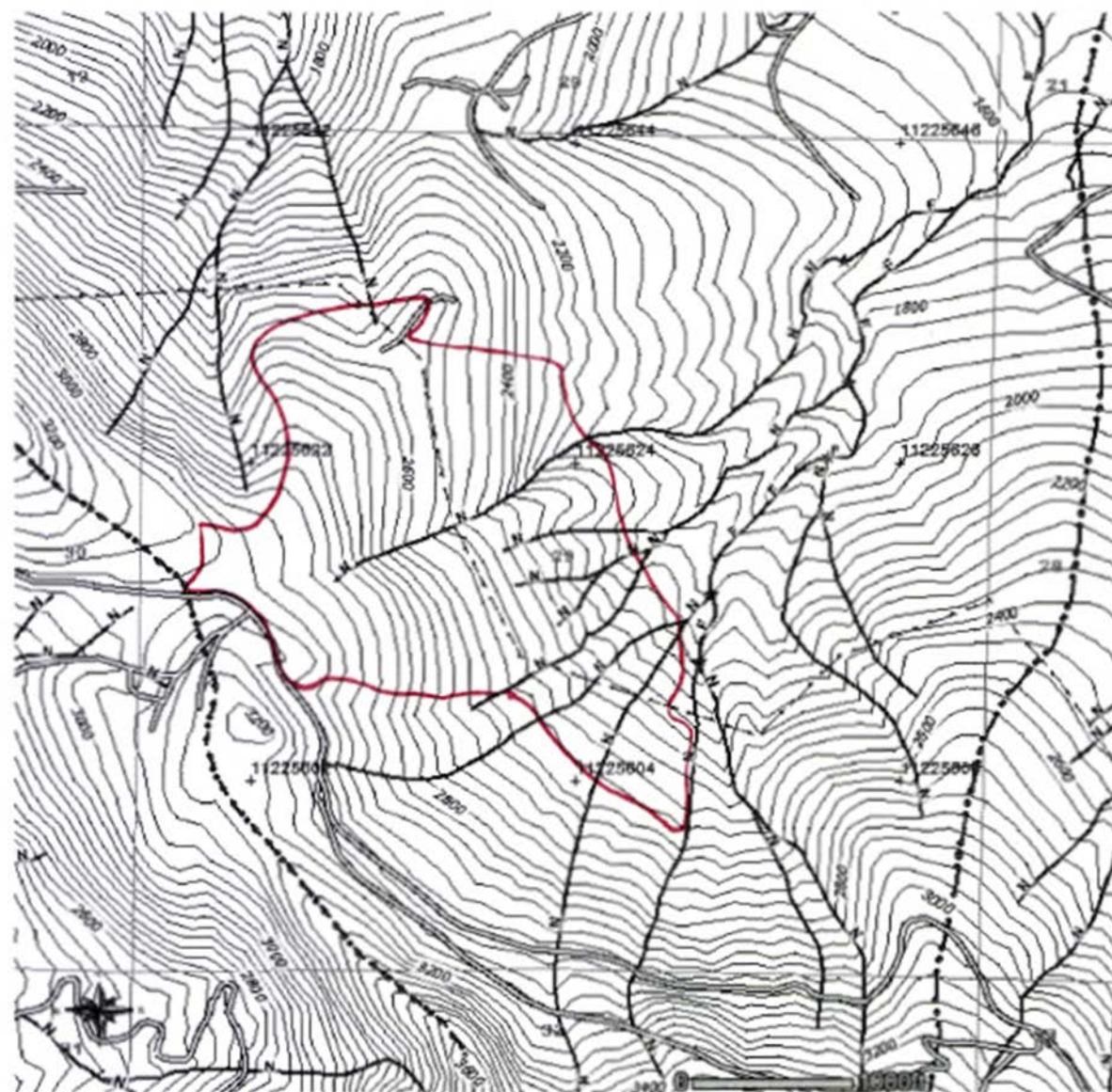
1 in = 500 ft

9/9/2014

FOREST PRACTICE ACTIVITY MAP

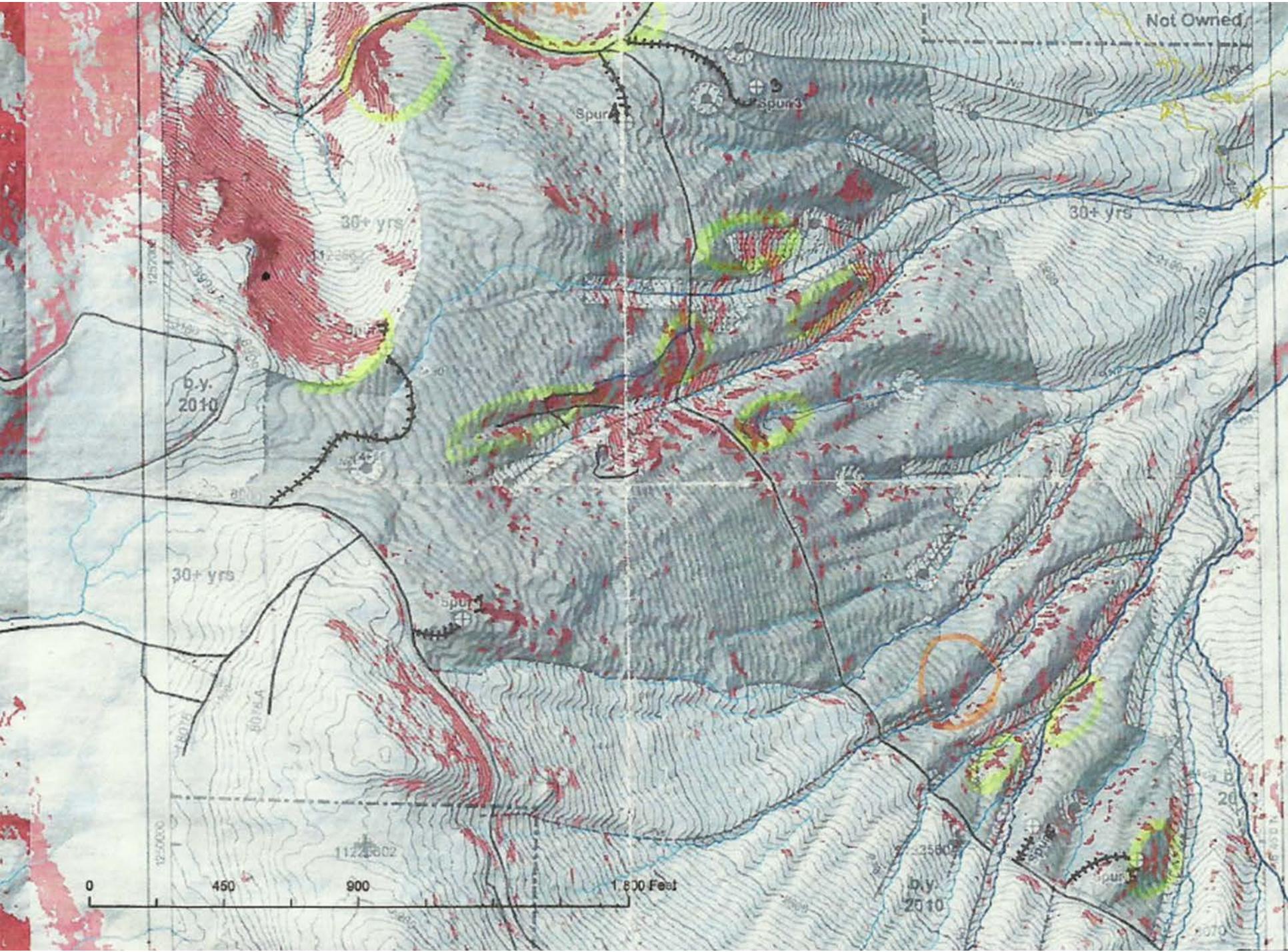
TOWNSHIP 38 NORTH HALF 0, RANGE 06 EAST (W.M.) HALF 0, SECTION 29

Application # _____



Please use the legend from the FPA Instruction or provide a list of symbols used.

Not Owned



b.y.
2010

30+ yrs

Spur

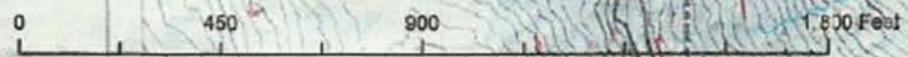
Spur3

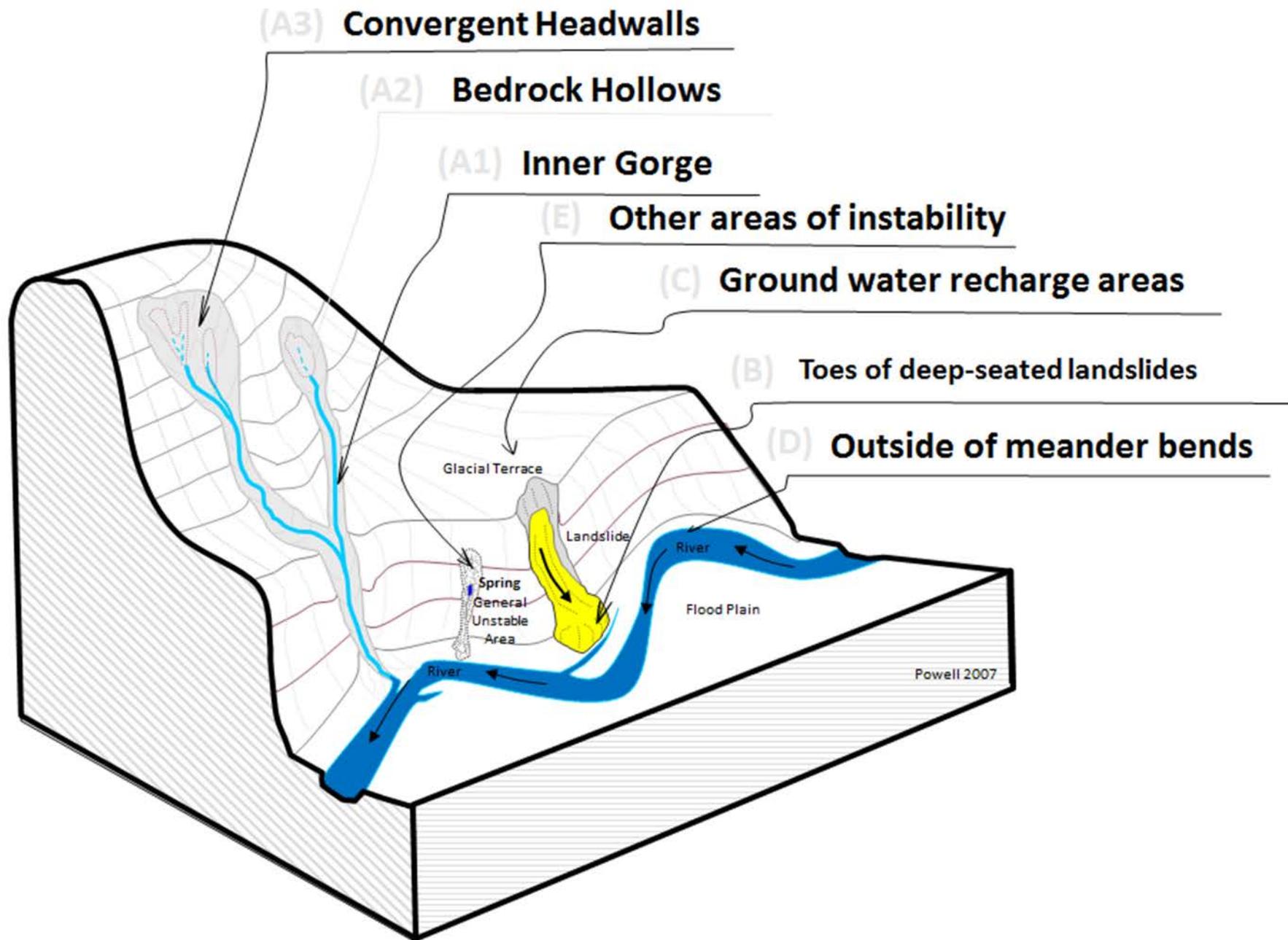
30+ yrs

30+ yrs

Spur

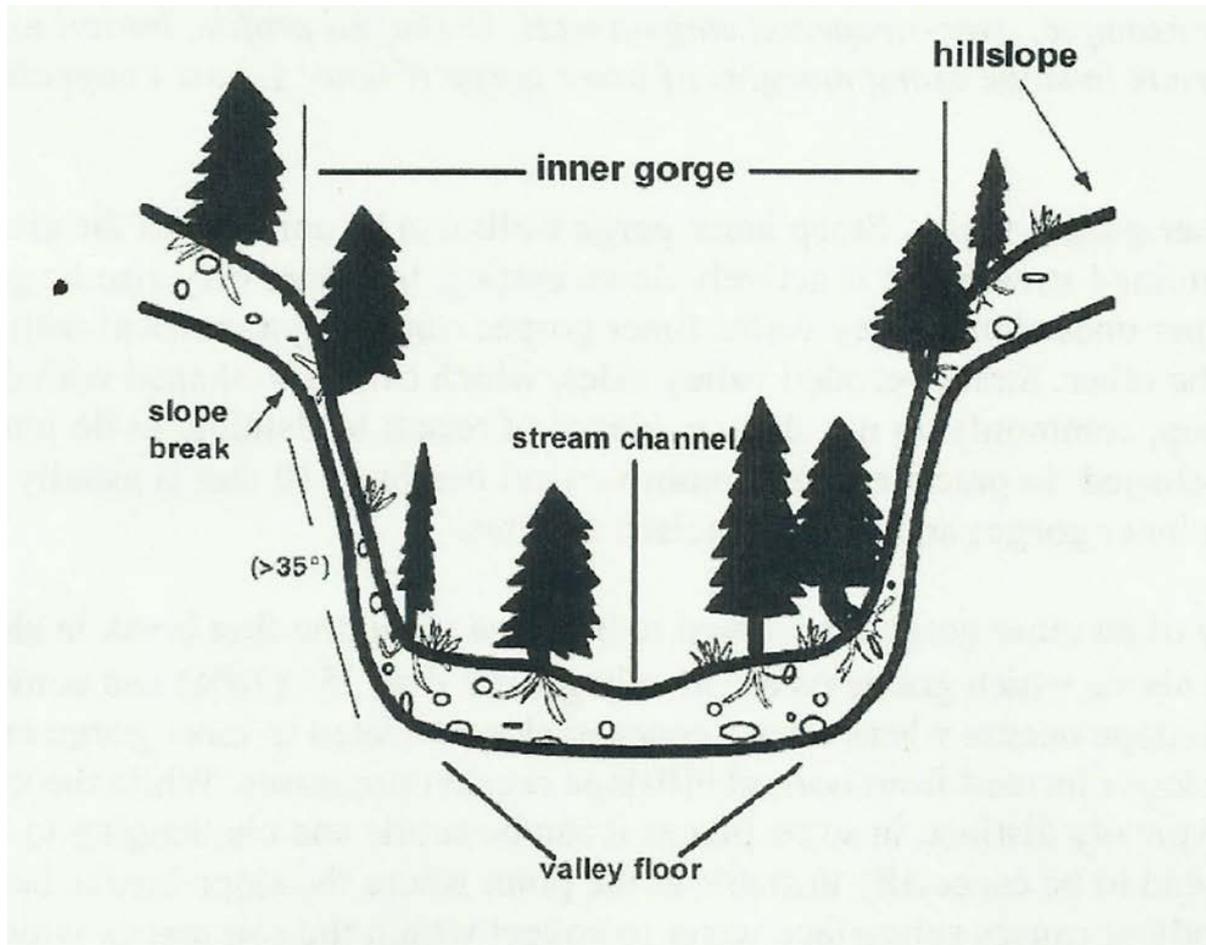
b.y.
2010





Unstable landforms listed in WAC 222-16-050

Magic Word = SEPA



Herbicide Application

Leave a 200' buffer from homes

Leave a 100' buffer from agricultural land



WIND BUFFER
You may need to leave additional buffer widths to prevent spray from entering RMZ, homes and agricultural areas.

Buffer widths on all type 'S' and 'F' streams will be the width of the Inner Zone.

Aerial Chemical Application Instructions

WAC 222-16-070, Chapter 222-38 WAC

General Information

Application forms are available from DNR's Forest Practices website

http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_forms.aspx.

They are also available from DNR Region offices. Completed forms must be legible for electronic scanning. Please:

- Type or use ink.
- Do not use whiteout. If you make mistakes, cross them out and initial your changes.
- Do not write in the margins.
- Include comments on a separate page. Include the question number that each comment refers to.
- Include activity map(s). You can download maps from the link on the Forest Practices web site listed above. Maps are also available at DNR region offices. General map standards are at the end of these instructions. Contact the region office to discuss mapping options that best fit your proposal.

There is no fee for aerial chemical applications. Send the completed application form to the region office where the chemical application will occur. Region office addresses are listed below. If your application is complete, DNR will mail you a postcard. If it is incomplete, DNR will contact you and explain why.

DNR Region Offices

(Business hours are 8:00 am to 4:30 pm)

Northwest Region

919 N Township St
Sedro-Woolley, WA
98284
Tel: (360) 856-3500
Fax: (360) 856-2150

Includes: Island, San Juan, Skagit, Snohomish, and Whatcom counties

Olympic Region

411 Tillicum Lane
Forks, WA 98331
Tel: (360) 374-2800
Fax: (360) 374-5446

Includes: Clallam, north half of Grays Harbor, and Jefferson counties

Pacific Cascade Region

601 Bond Rd
P.O. Box 280
Castle Rock, WA 98611
Tel: (360) 577-2025
Fax: (360) 274-4196

Includes: Clark, Cowlitz, south half of Grays Harbor, Lewis, Pacific, Thurston, Skamania, and Wahkiakum counties

South Puget Sound Region

950 Farman Ave. N
Enumclaw, WA 98022
Tel: (360) 825-1631
Fax: (360) 825-1672

Includes: King, Kitsap, Mason, and Pierce counties

Southeast Region

713 Bowers Road
Ellensburg, WA 98926
Tel: (509) 925-8510
Fax: (509) 925-8522

Includes: Adams, Asotin, Benton, Chelan, Columbia, Douglas, Franklin, Garfield, Grant, Kittitas, Klickitat, Skamania, Walla Walla, Whitman, and Yakima counties

Northeast Region

225 S. Silke Road
Colville, WA 99114
Tel: (509) 684-7474
Fax: (509) 684-7484

Includes: Ferry, Lincoln, Okanogan, Pend Oreille, Spokane, and Stevens counties

[AE News Archives](#)
[PICOL Database](#)

WSPRS RESOURCES

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[Communities](#)
[Economic Development](#)
[Energy](#)
[Gardening](#)
[Health & Wellness](#)
[Natural Resources](#)
[Youth & Families](#)
[Extension](#) > WA State Pest Management Resource Service

Connecting the people of Washington State with research-based information on pest management choices for home and commercial use.

Related Programs at WSU:

[Statewide IPM](#)
[Pesticide Safety Education](#)

NEW:

Updated Salmon Mapper for Protecting Endangered and Threatened Salmon in the PNW and California

EPA is releasing an updated [Salmon Mapper](#). The interactive map includes enhanced spatial resolution and the most recent geospatial data depicting salmon-supporting stream reaches where no-spray buffer zones apply in California, Oregon and Washington State for 12 pesticides that are subject either to the original 2004 injunction in Washington Toxics Coalition (WTC) v. EPA or the August 15, 2014, stipulated injunction in Northwest Center for Alternatives to Pesticides (NCAP) v. EPA.

The pesticides included in the NCAP v. EPA stipulated injunction are carbaryl, chlorpyrifos, diazinon, malathion and methomyl. The pesticides that remain subject to the original WTC v. EPA injunctive relief order are 1,3-dichloropropene, bromoxynil, diflufenburon, fenbutatin oxide, metolachlor, prometryn and propargite.

These buffer zones will remain in place for carbaryl, chlorpyrifos, diazinon, malathion, and methomyl until EPA implements any necessary protections for Pacific salmon and steelhead based on reinitiated consultations with the National Marine Fisheries Services. Buffer zones for the remaining seven chemicals included in the WTC vs. EPA will remain in place until final Biological Opinions are completed. To view the no-spray buffer zones go to the [Salmon Mapper](#).

For more information on the specific buffer zones and background on the NCAP case, visit <http://www.epa.gov/oppead1/endanger/litstatus/ncap-v-epa.html>.

Atta Boy



Cultus Mountain Watershed Management Plan



Public Utility District No. 1 of Skagit County
1415 Freeway Drive
P.O. Box 1436
Mount Vernon, WA 98273
(360) 424-7104
Skagitpud.org

August 2013

Penhale, Bob (ECY)

From: trueman@skagitpud.org
Sent: Thursday, October 09, 2014 2:09 PM
To: Penhale, Bob (ECY)
Subject: Skagit PUD-RMAP success story
Attachments: Letter to Longview Timber 05-31-12.pdf

Bob,

I thought I'd get after this while it's fresh in my mind:

- Skagit PUD's Cultus Mountain Watershed includes approximately 6,000 acres and supplies water to close to 70,000 people
- Weyerhaeuser (formerly Longview Timber) owns 71%; DNR owns 25%
- In early 2012, we started working to improve communications with the watershed landowners. On Longview's property, very little if any roads had been officially upgraded through RMAP; but there was a lot of active logging throughout all seasons. We started to improve education to the landowner's about the importance of water quality to surface water purveyors. A copy of a letter sent to Longview asking for increased priority to the area related to RMAP is attached. Longview took the letter and asked DNR and the Tribes to allow for an adjustment to their RMAP priorities. Skagit River Systems Cooperative and the Upper Skagit Tribe (according to Andy Blachly-Weyco) supported the change even though it meant delays to other areas of concern to them.
- RMAP activities started in earnest in late 2012 and by late 2014 at least 80% of Weyerhaeuser's property in the Cultus Mountain Watershed has been upgraded and the final work will be done in the near future.

Longview/Weyerhaeuser helped reduce risks to water quality significantly by changing RMAP priorities and focusing a lot of contractor resources in a small amount of time. It's my understanding that Weyerhaeuser has received an extension on their RMAP deadline, so we could have been waiting for years for this to be done if they had not stepped up to the plate.

Hopefully this helps,
Bill

P.S. did I hear that Kitty Weisman is no longer in the same DOH position? If so, have you heard who is leading the source water protection work?

Bill Trueman
Environmental Services Coordinator



P.O. Box 1436
1415 Freeway Drive
Mount Vernon, WA 98273
Office: (360) 848-2151
Email: trueman@skagitpud.org