

Naneum Ridge to Columbia River



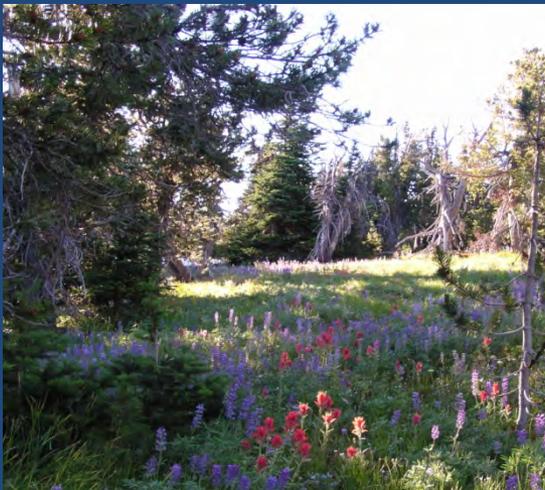
Washington
Department of
**FISH and
WILDLIFE**



WASHINGTON STATE
Natural Resources

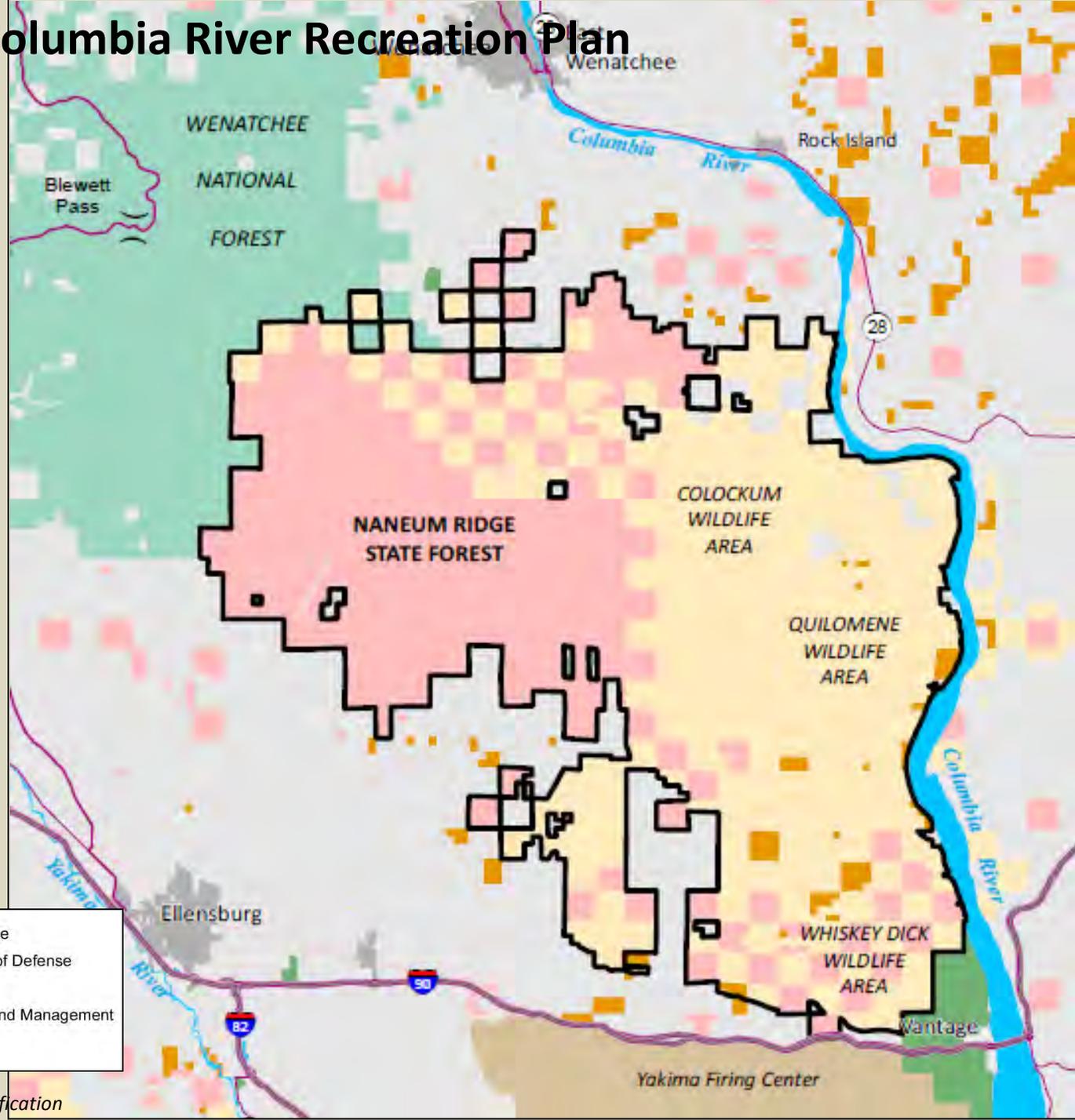
DNR & WDFW Recreation Plan

Recreation Land Suitability



Naneum Ridge to Columbia River Recreation Plan

Planning Area



Every effort has been made to ensure the accuracy of this map. However, due to changes in ownership and the need to rely on data from outside the agency, the Department of Natural Resources cannot accept responsibility for errors or omissions. Therefore, no warranties accompany this material.

Recreation Planning Area	US Forest Service
DNR-Managed Lands	US Department of Defense
WA Dept of Fish & Wildlife	City Limits
WA State Parks	US Bureau of Land Management

0 1.5 3 6 9 12 Miles

NANEUM RIDGE TO COLUMBIA RIVER RECREATION PLAN

Recreation Land Suitability

Recreation Land Suitability

Identify and map areas with long- term limiting factors that affect recreation planning

Biological Criteria

Geologic & Soils Criteria

Management Criteria

Overview

- 1) Review geologic & soils criteria individually
- 2) Suitability matrix
- 3) Composites of information by type

Terms for Geologic & Soil Suitability

Low Suitability= Areas with long-term limiting factors. These primarily include areas with potential for landslides, erosion and slope instability

Moderate Suitability= Areas where less mitigation and potential for impact exists compared to low suitability

Soil & Geologic Criteria*

Soils with High Erosion Potential

Poorly Drained Soils

Slope Percentage

100-Year Flood Plains

Areas That Have Moved in Previous Landslides

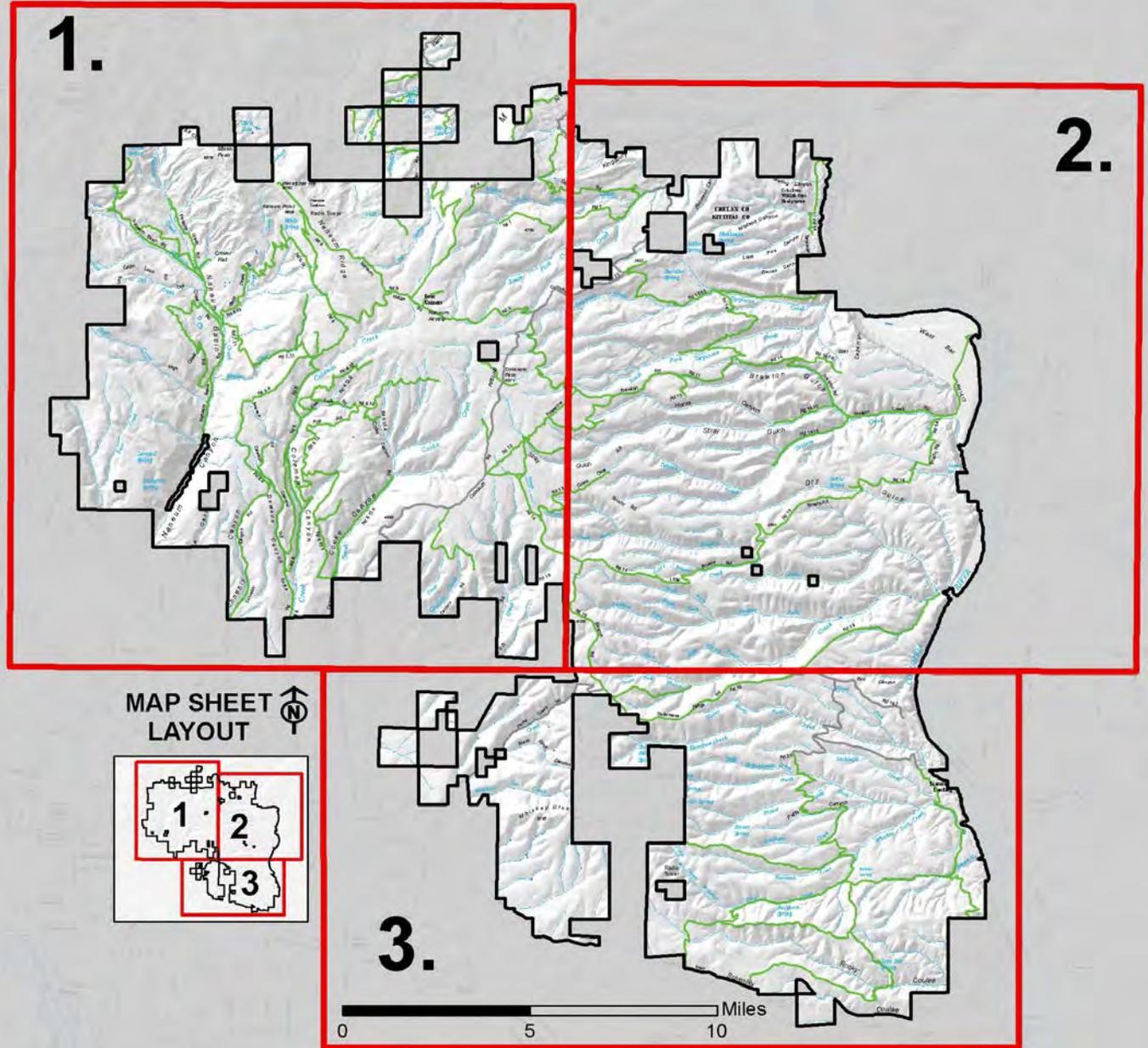
Areas With High Potential for Landslides

Special Geologic Features

*These project-scale considerations are not intended to replace site specific project analysis. This list is based on information available to date.

Naneum Ridge to Columbia River Recreation Plan

Suitability Map Sheet Layout



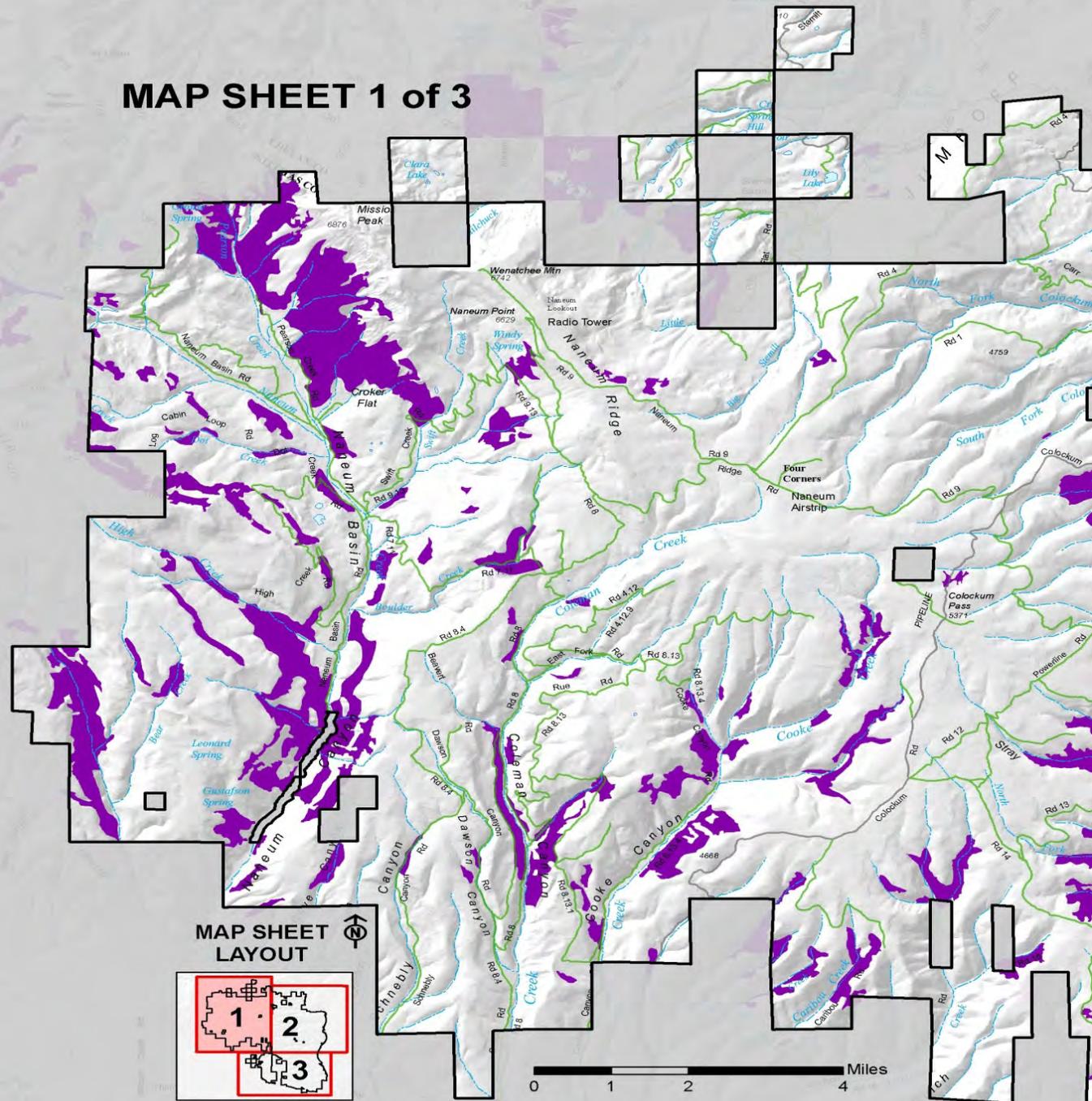


Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 1 of 3

 **Soils with High Erosion Potential**

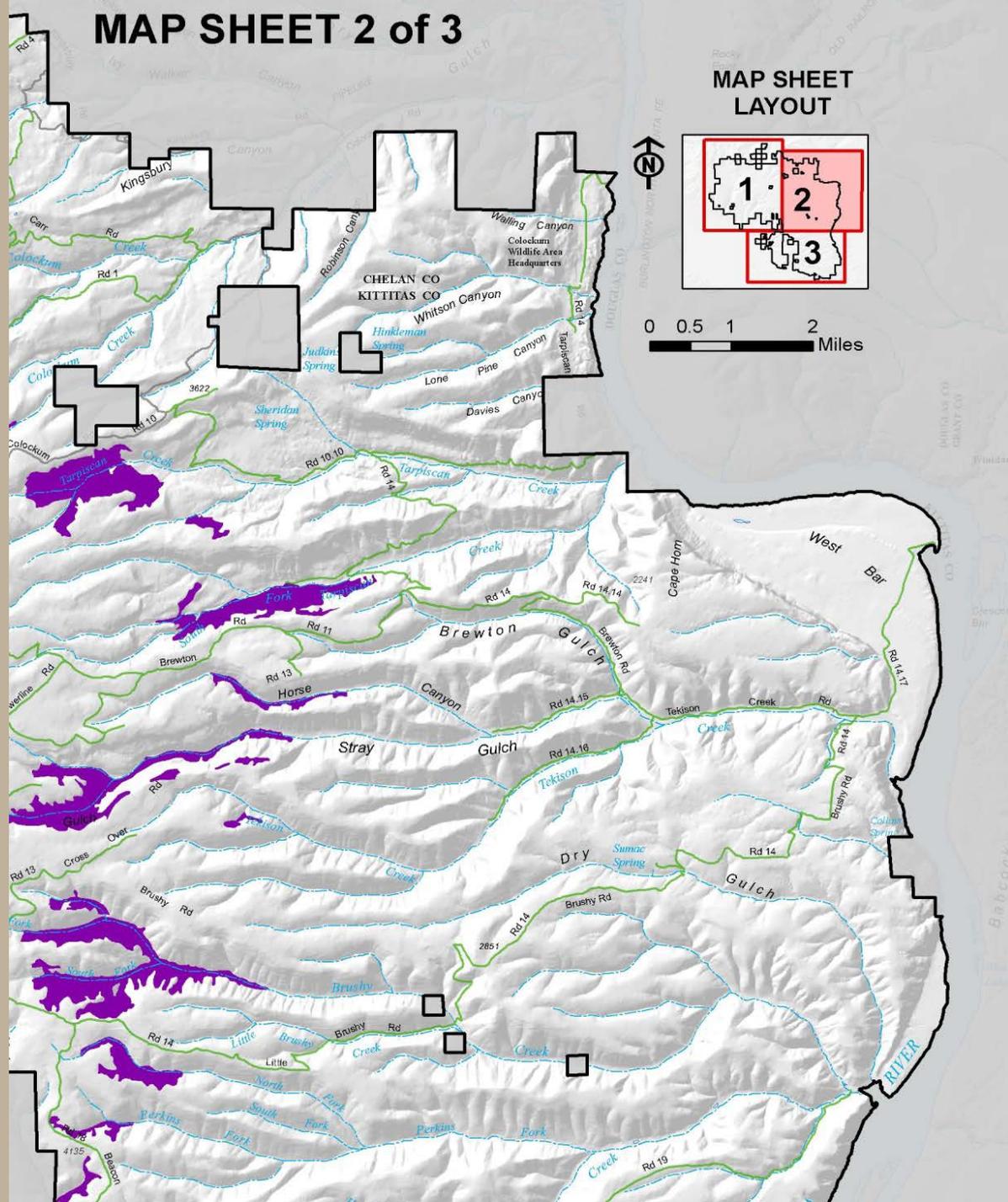
Currently only DNR lands are shown; working to obtain data for WDFW lands.



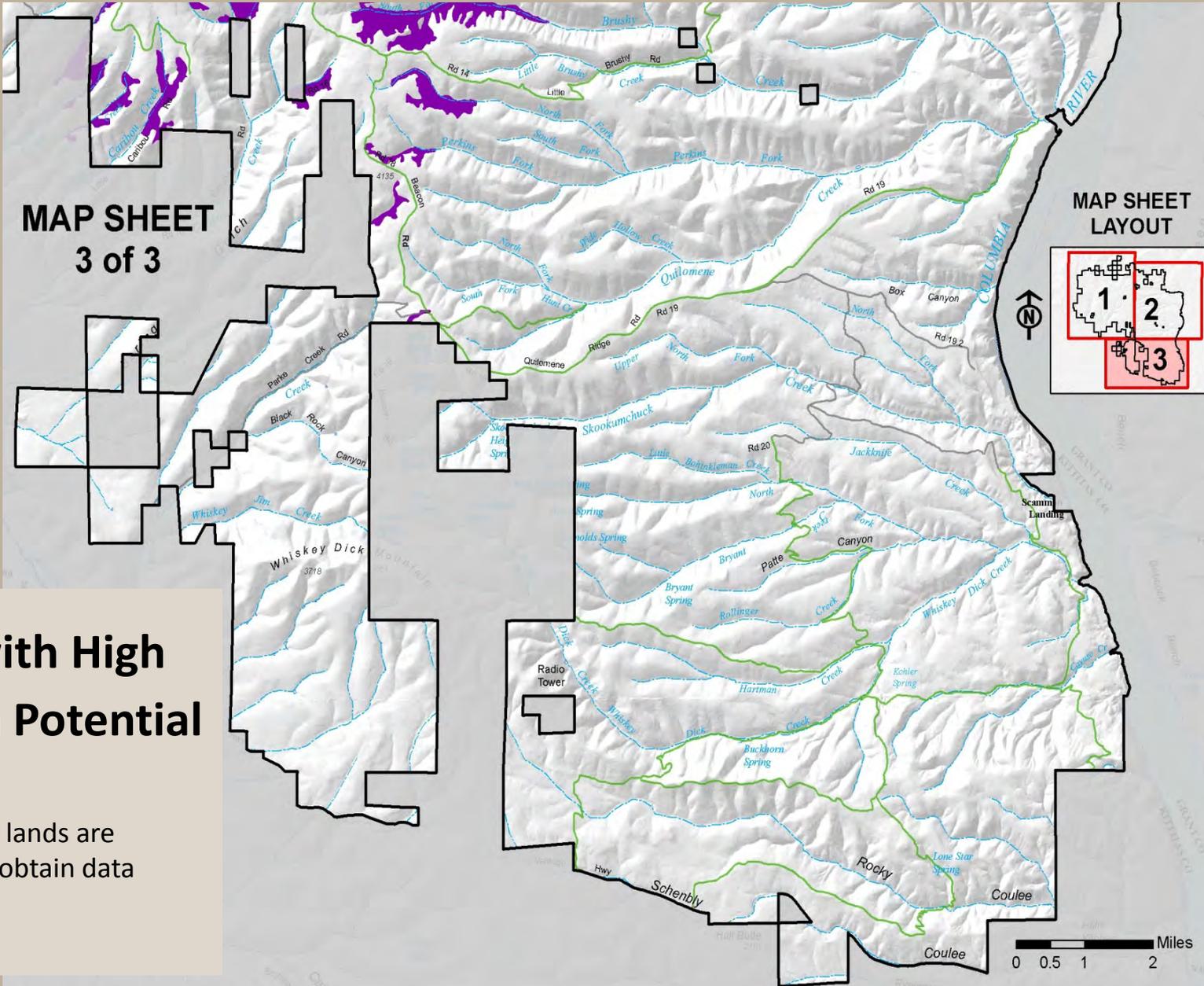
Naneum Ridge to Columbia River Recreation Plan

Soils with High Erosion Potential

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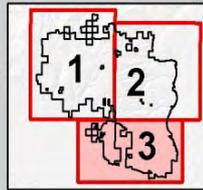


Naneum Ridge to Columbia River Recreation Plan



**MAP SHEET
3 of 3**

**MAP SHEET
LAYOUT**



Soils with High Erosion Potential

Currently only DNR lands are shown; working to obtain data for WDFW lands.

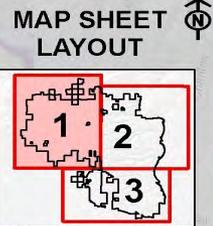
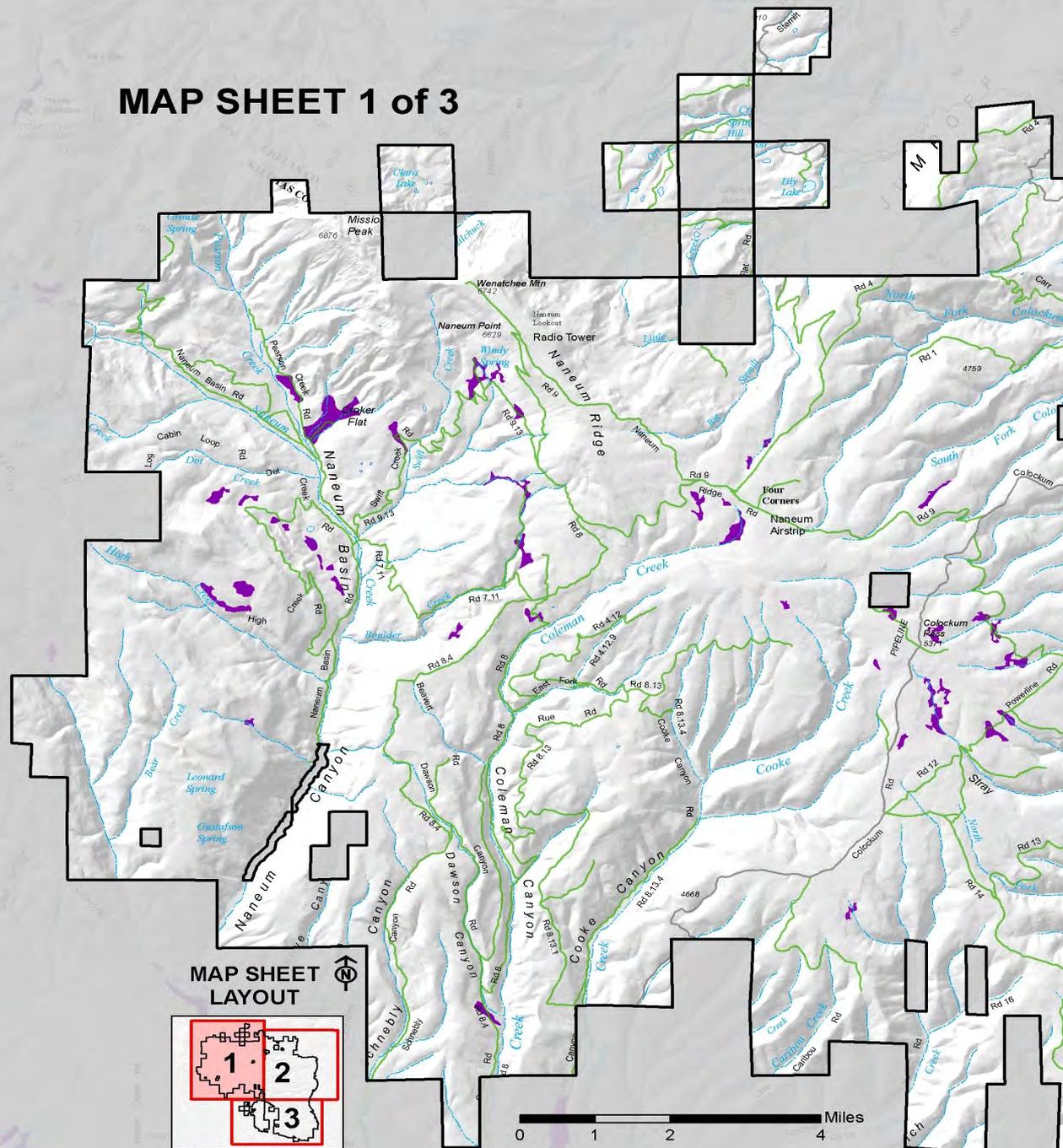


Naneum Ridge to Columbia River Recreation Plan



**Poorly
Drained
Soils**

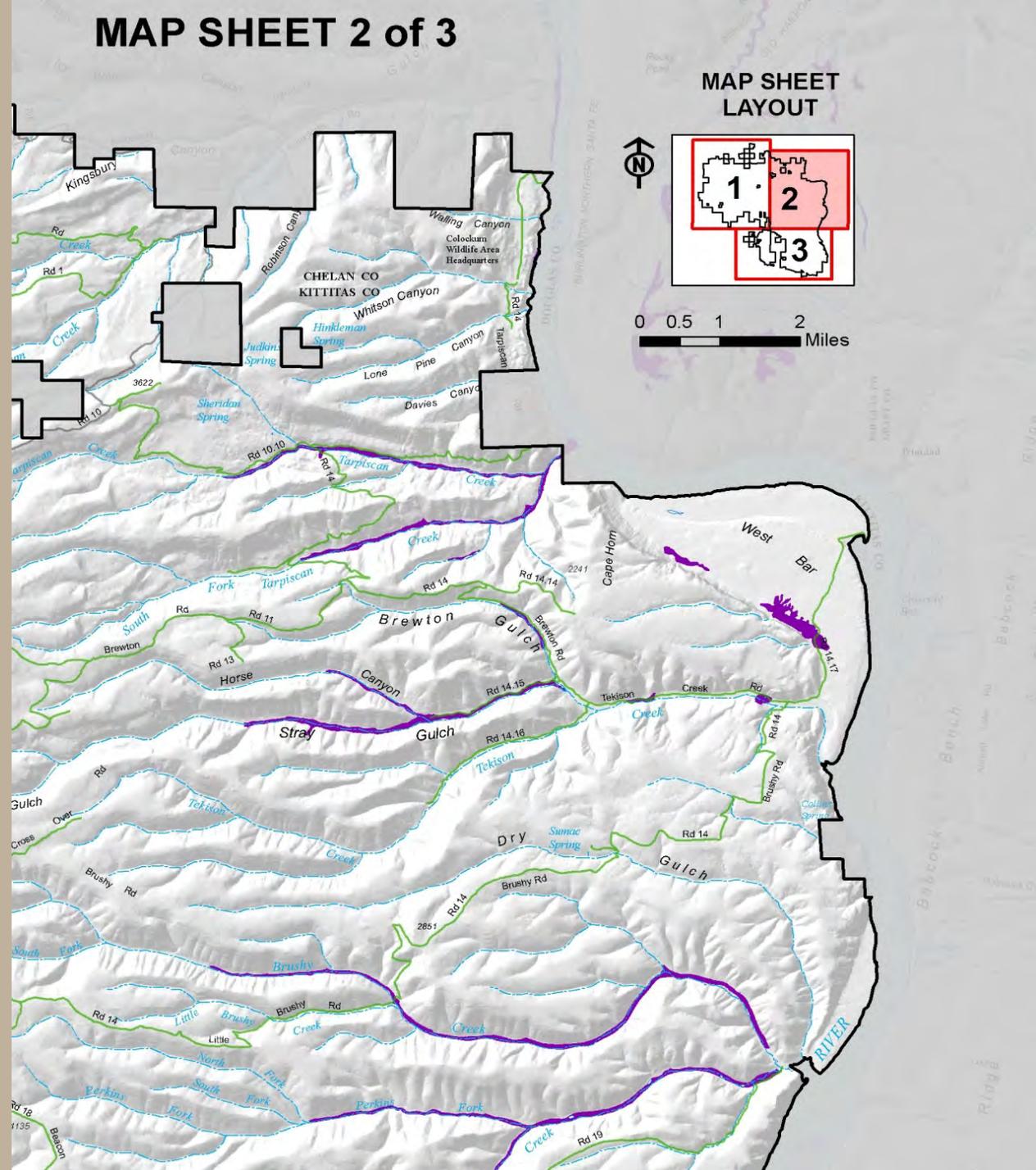
MAP SHEET 1 of 3



Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 2 of 3

 **Poorly Drained Soils**



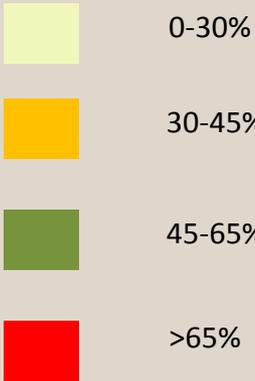


Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 1 of 3

Slope Steepness

Slope Percent

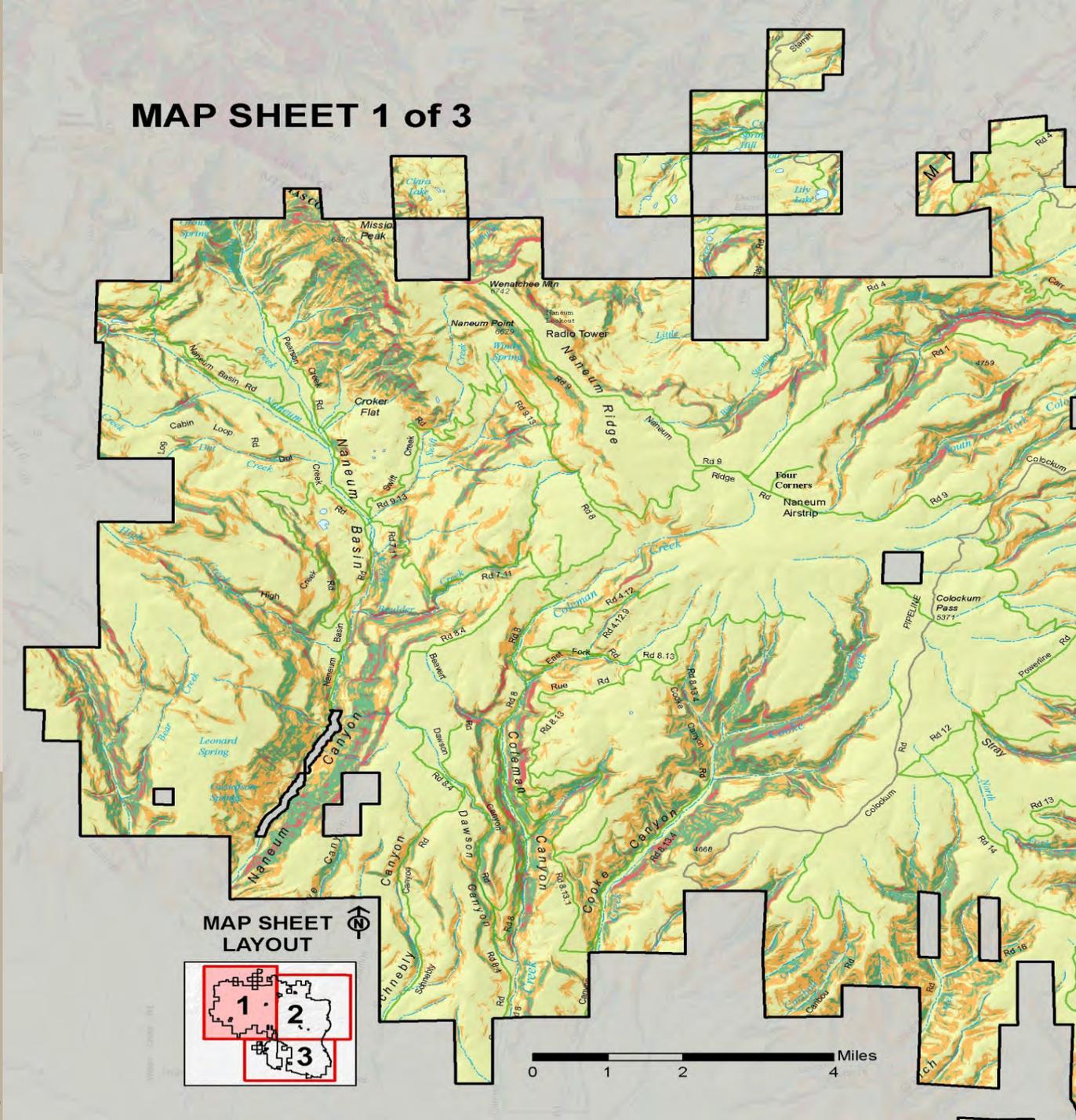


Comparison to Degrees:

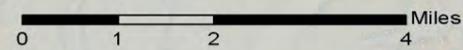
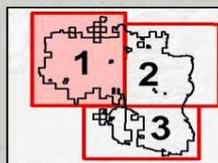
30% = 16.70°

50% = 26.50°

100% = 45°



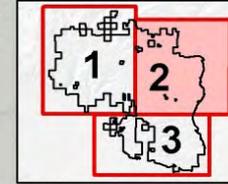
MAP SHEET LAYOUT



Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 2 of 3

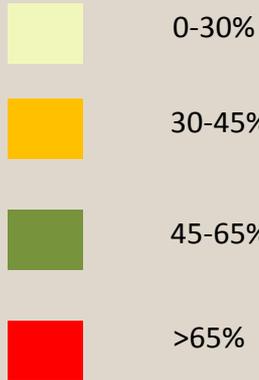
MAP SHEET LAYOUT



0 0.5 1 2 Miles

Slope Steepness

Slope Percent

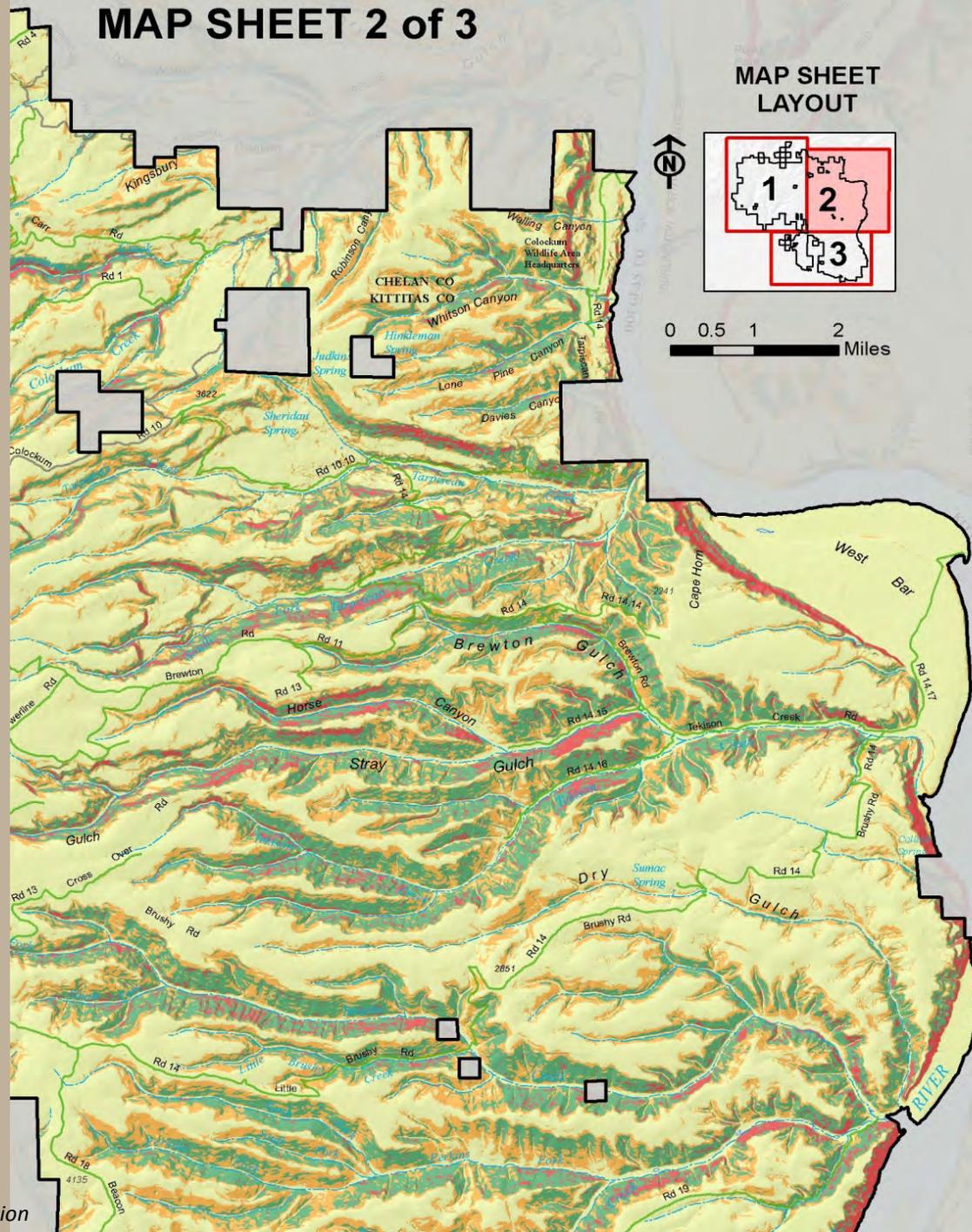


Comparison to Degrees:

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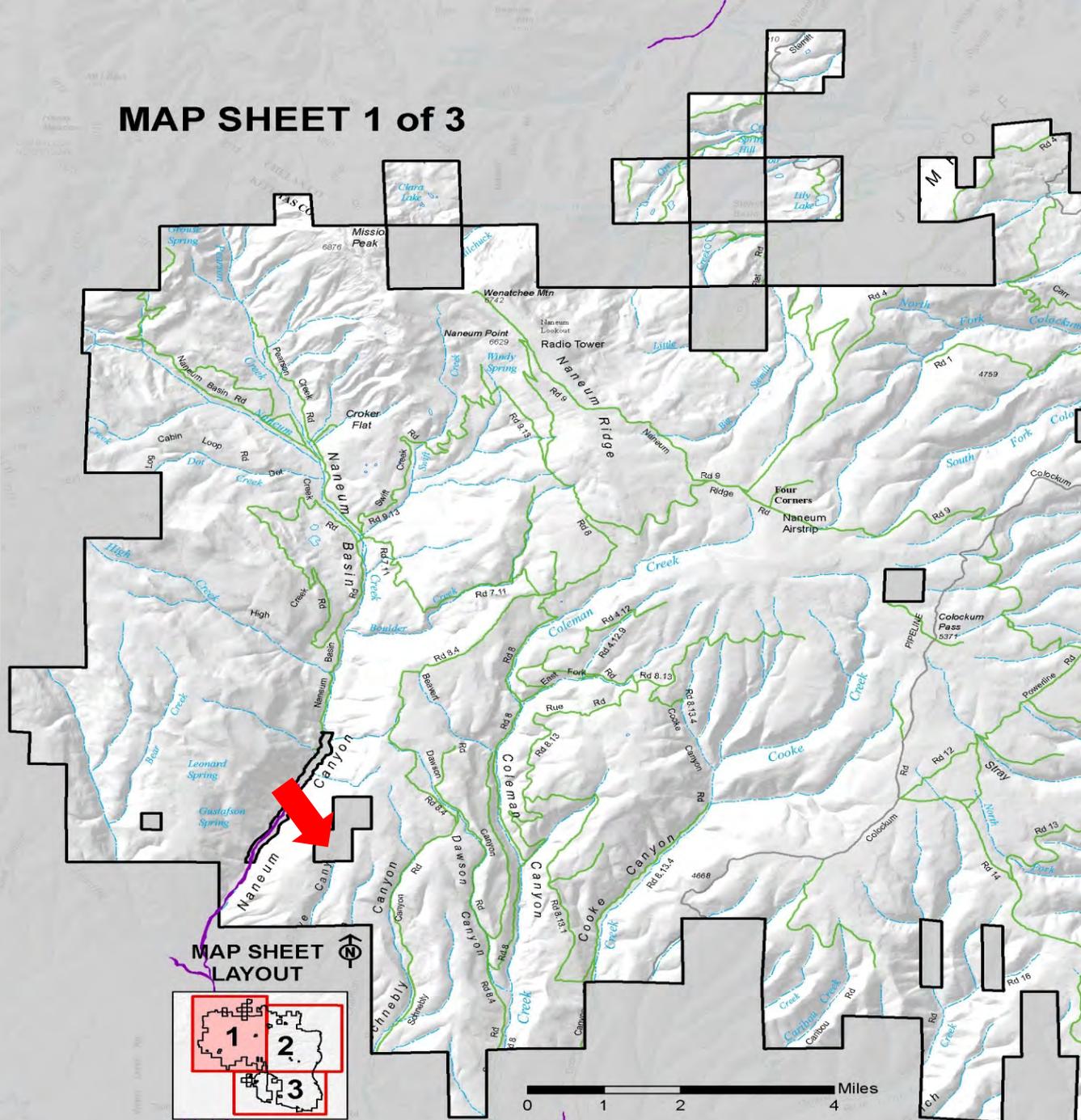
100% = 45°





Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 1 of 3



-  100 Year Flood Plains*
-  100 Year Flood Hazard Zones**

*Zone A = Areas subject to a one percent or greater annual chance of flooding in any given year. No detailed hydraulic analysis has been performed.

**FEMA is updating DFRIM (digital flood rate insurance maps) for Kittitas County – none exist, preliminary data will be available in early 2013.

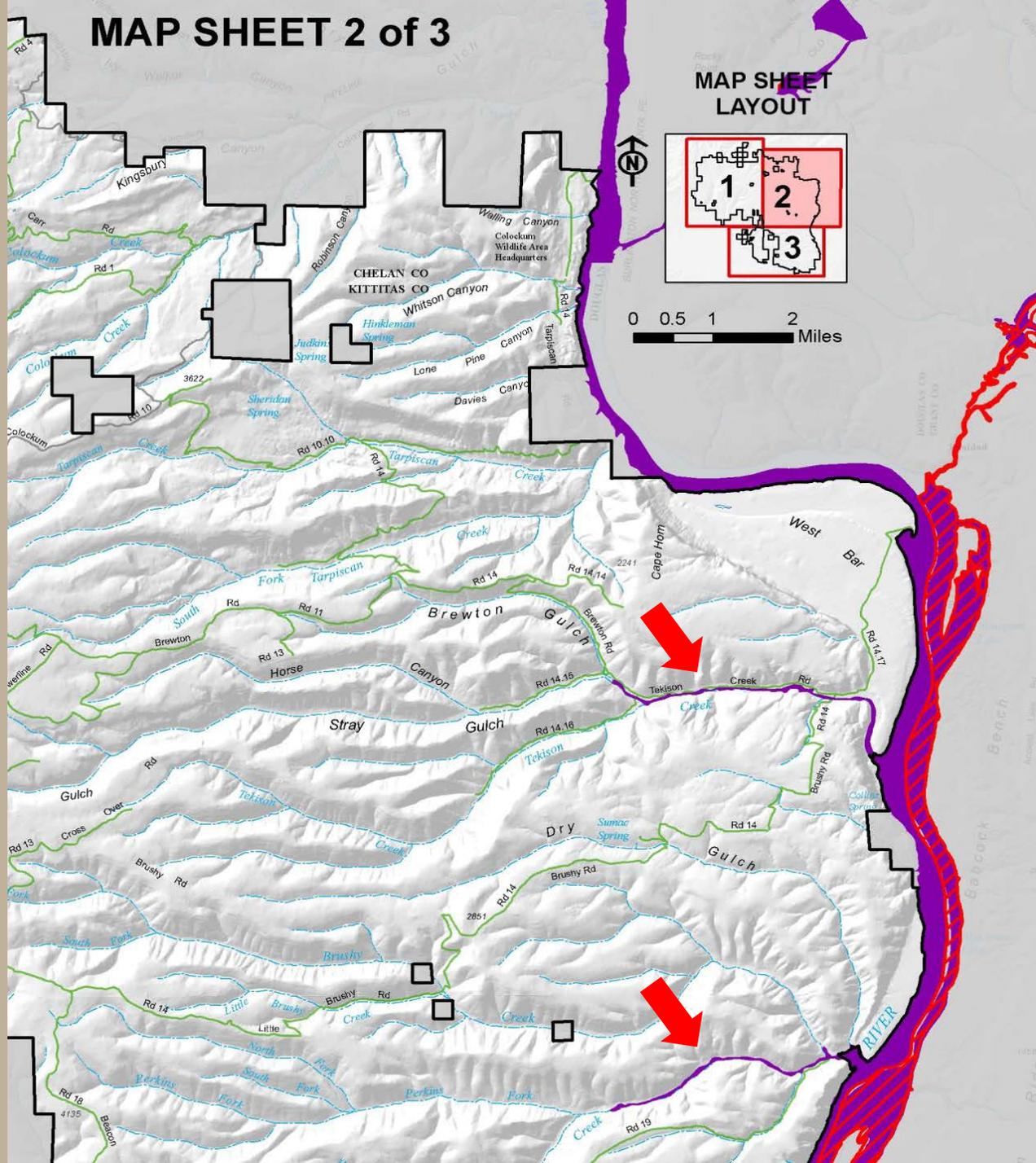
Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 2 of 3

-  **100 Year Flood Plains***
-  **100 Year Flood Hazard Zones****

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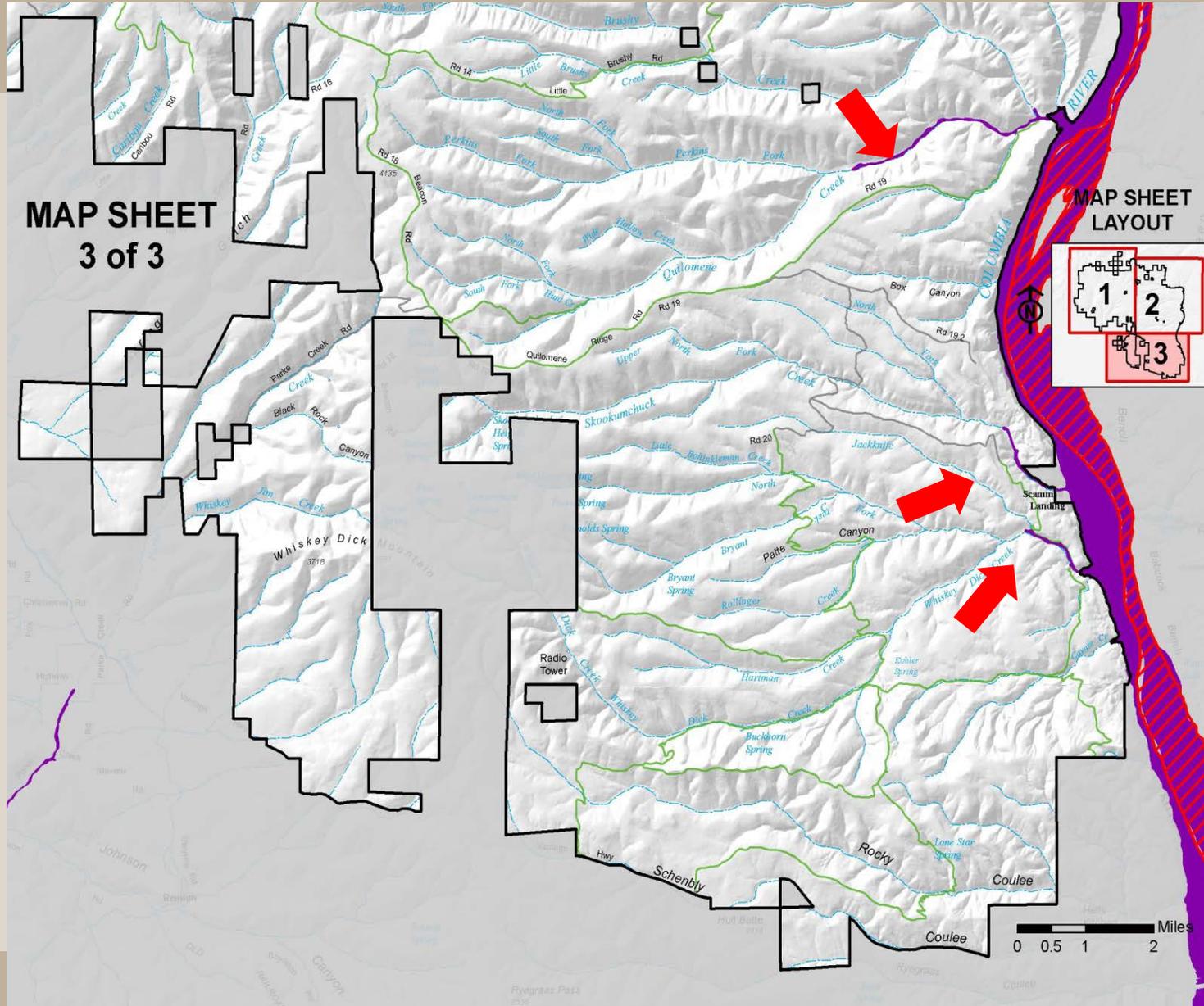
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Naneum Ridge to Columbia River Recreation Plan

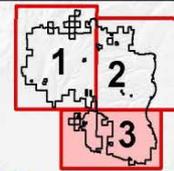
 **100 Year Flood Plains***

 **100 Year Flood Hazard Zones****



MAP SHEET
3 of 3

MAP SHEET
LAYOUT



0 0.5 1 2 Miles

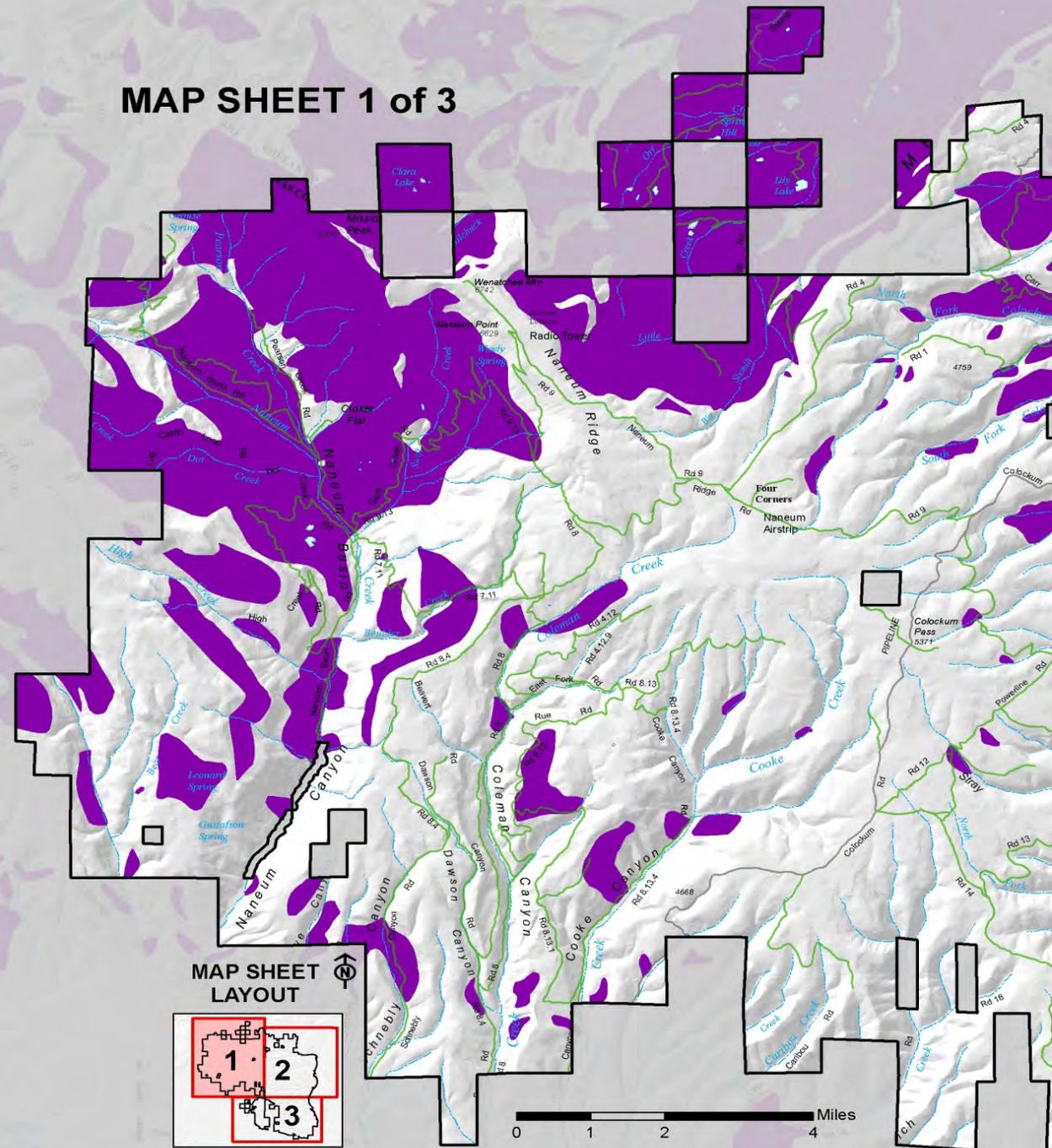
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MAP SHEET 1 of 3

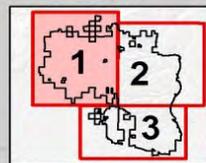


**Areas That Have
Moved in Previous
Landslides**

SOURCE DATA:

Forest Practices Landslide
Inventory Certainty - Definite;
Forest Practices Landslide
Hazard Zones - Moderate
Instability Potential;
DNR 100k Geologic Units
PLMIs & QLS -
mass wasting deposits,
mostly landslides.

MAP SHEET
LAYOUT

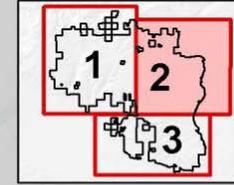


0 1 2 4 Miles

Naneum Ridge to Columbia River Recreation Plan

MAP SHEET 2 of 3

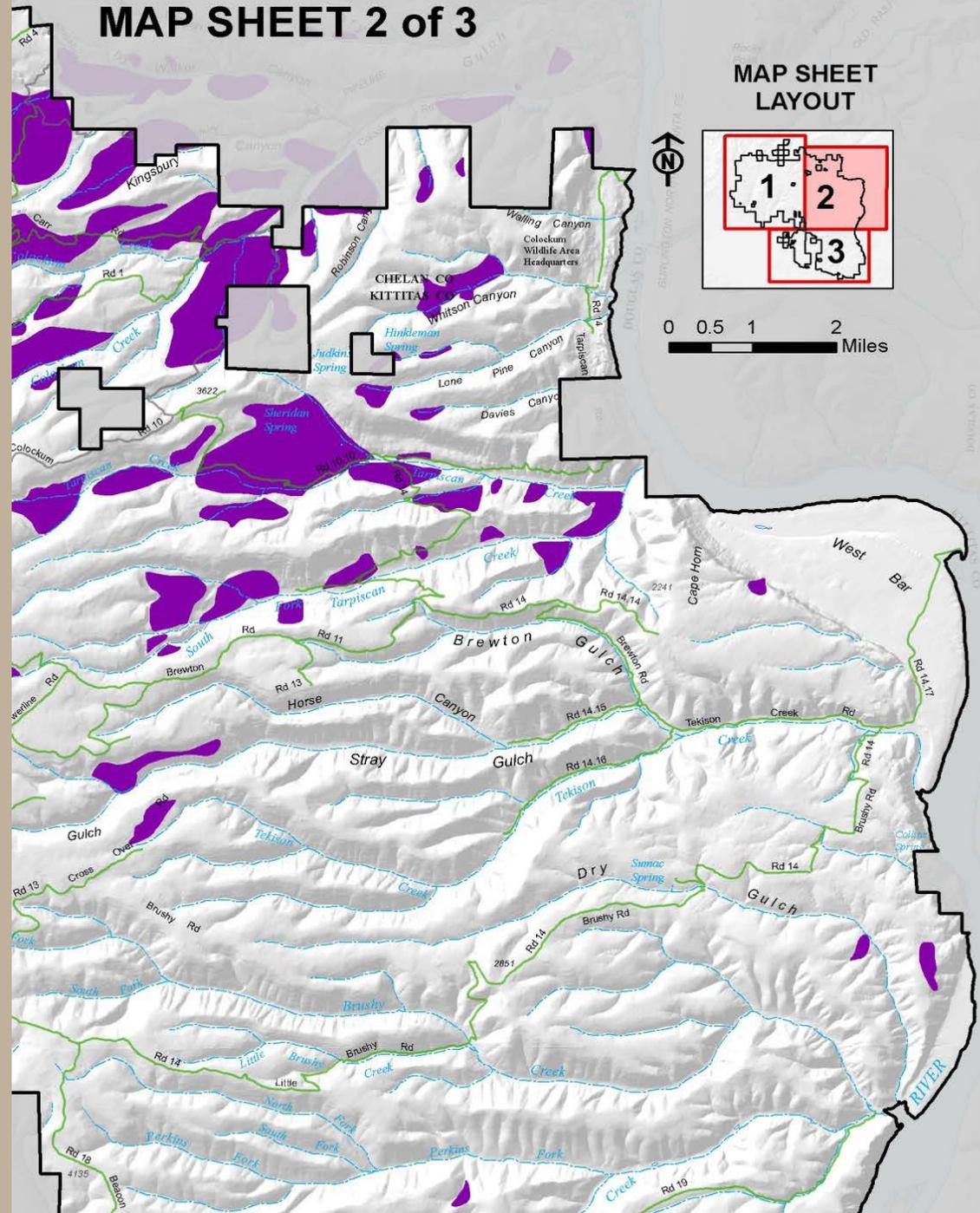
MAP SHEET LAYOUT



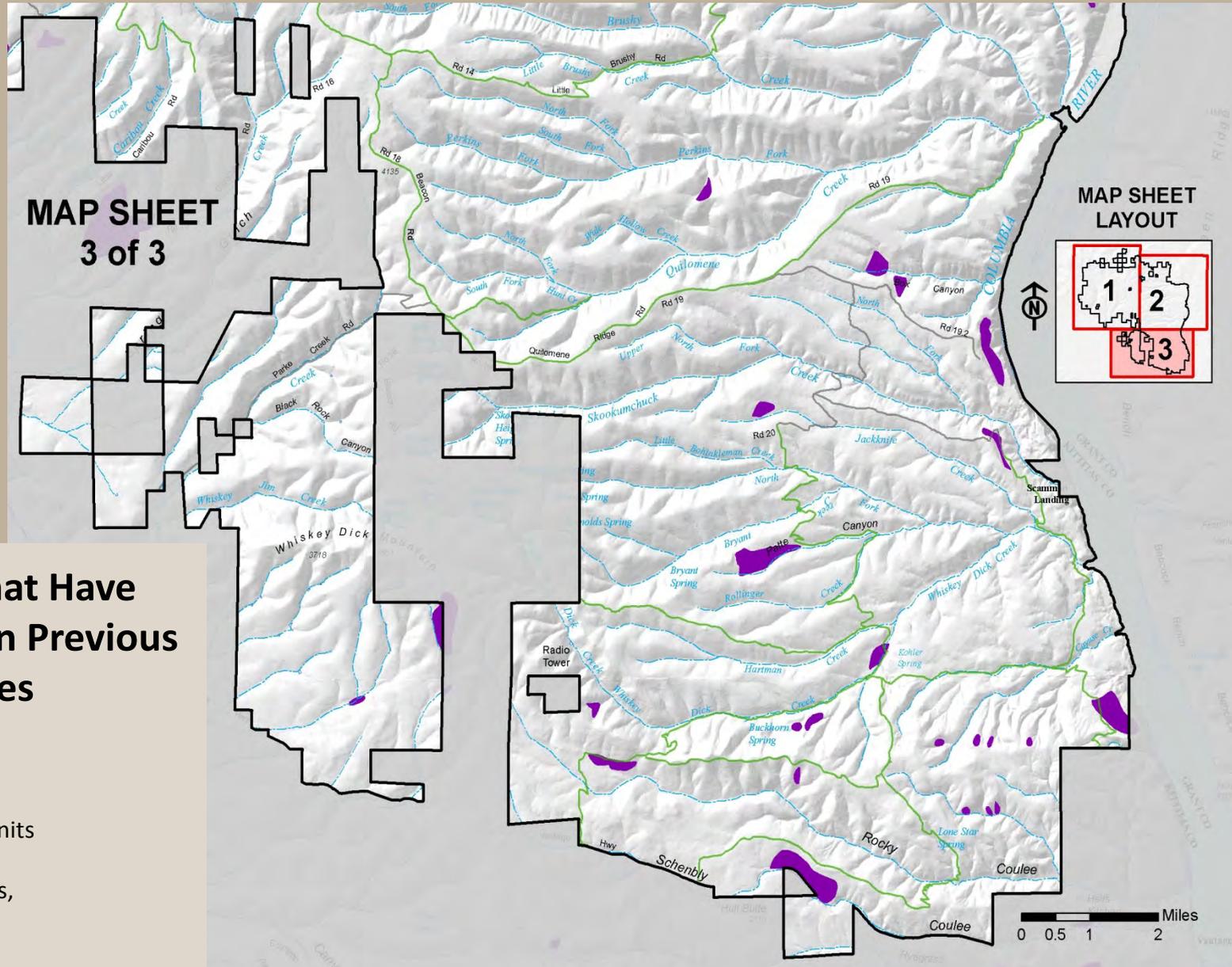
0 0.5 1 2 Miles

 **Areas That Have Moved in Previous Landslides**

SOURCE DATA:
DNR 100k Geologic Units
QLS –
mass wasting deposits,
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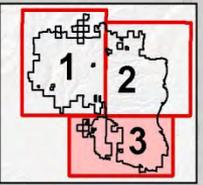


Naneum Ridge to Columbia River Recreation Plan



**MAP SHEET
3 of 3**

**MAP SHEET
LAYOUT**



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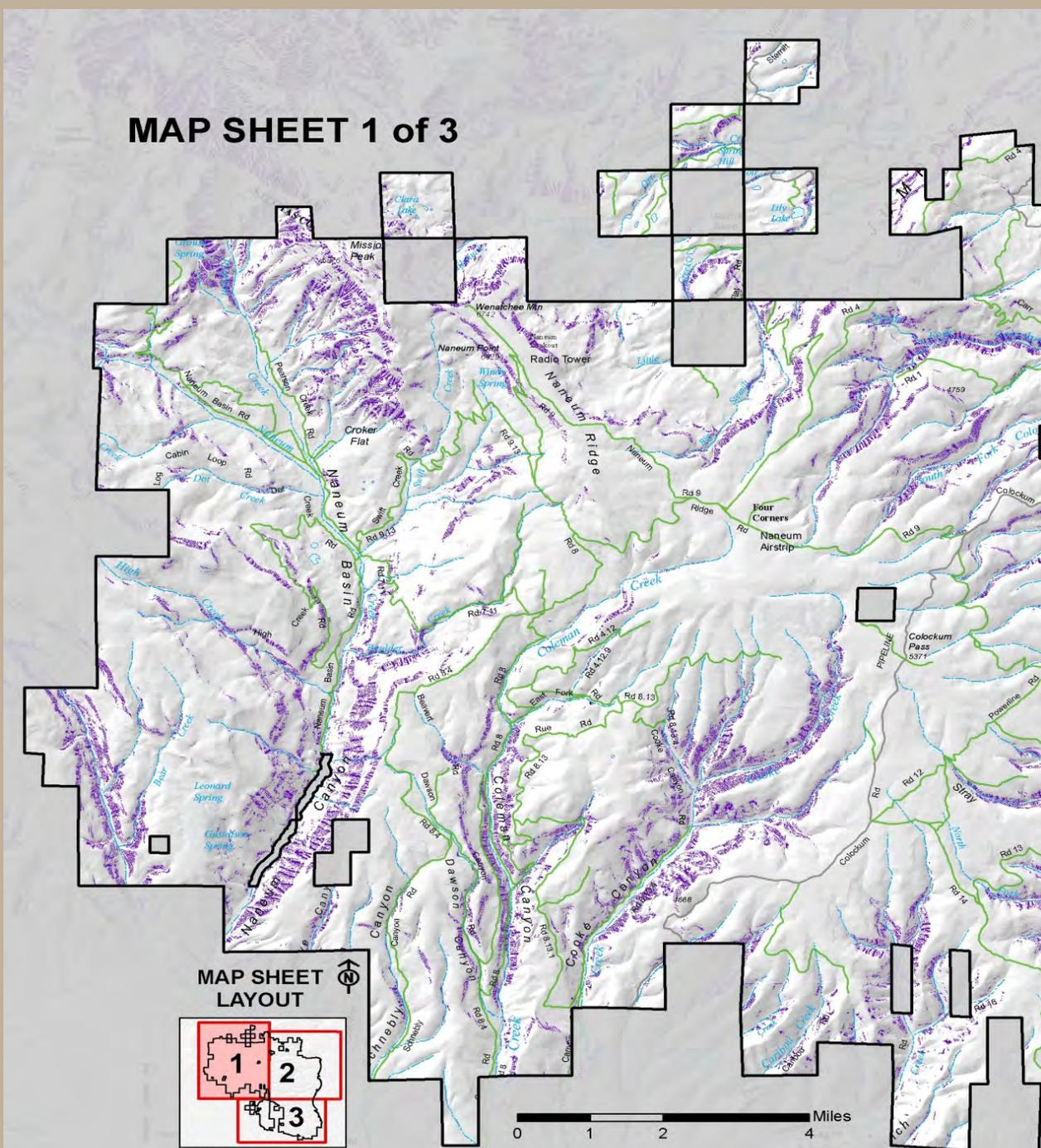
Draft 1-9-13- subject to change without notification



Naneum Ridge to Columbia River Recreation Plan

Areas With High Potential for Landslides

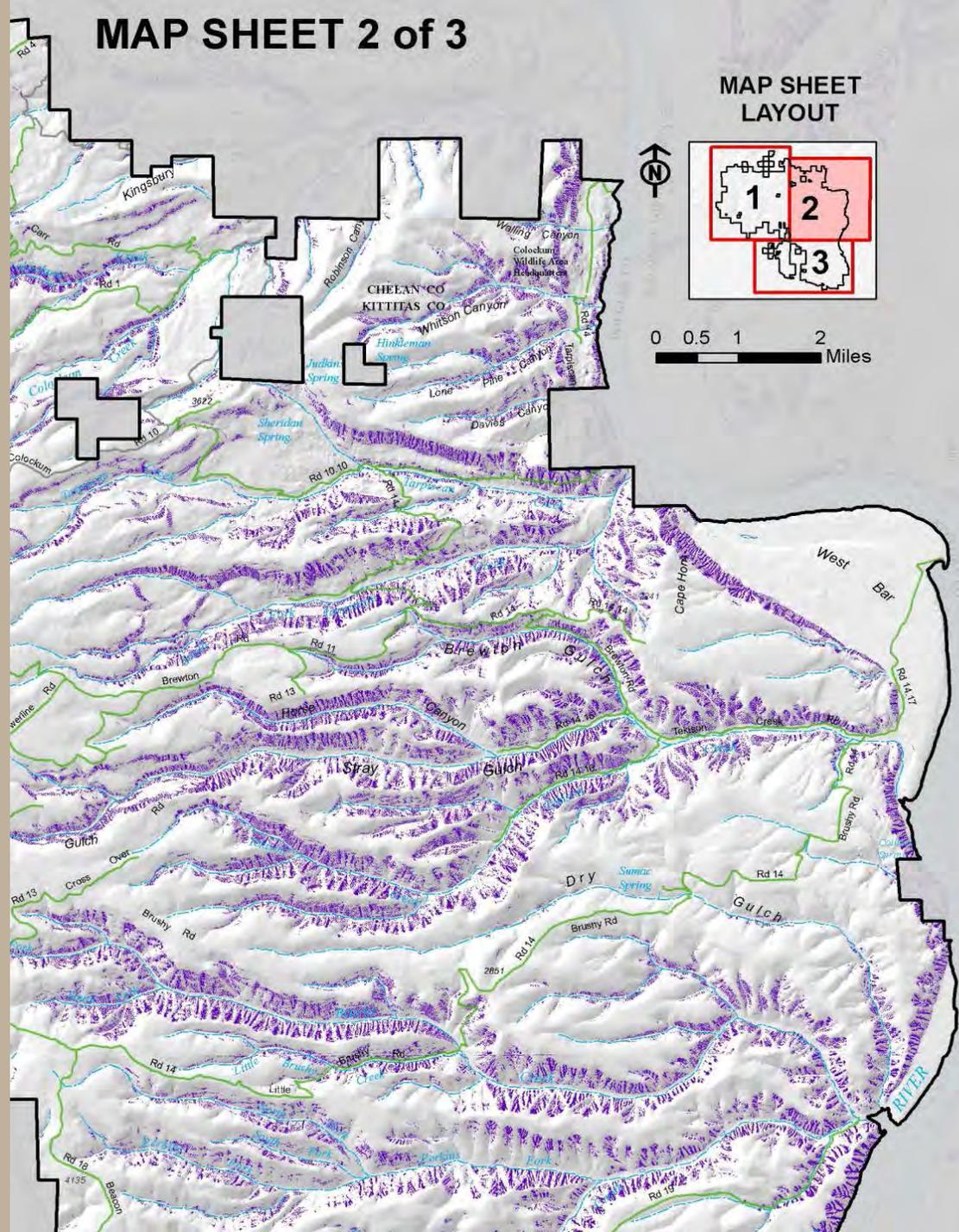
SOURCE DATA: Model-Stephen Slaughter, DNR Forest Resources & Conservation Division. NOTE: THIS IS A DRAFT MODEL AND SHOULD NOT BE USED AS A REMOTE REVIEW DECISION MAKING TOOL WITHOUT FIRST CONSULTING AND FIELD VERIFICATION BY A GEOLOGIST. No LiDar data utilized. 10m DEM.



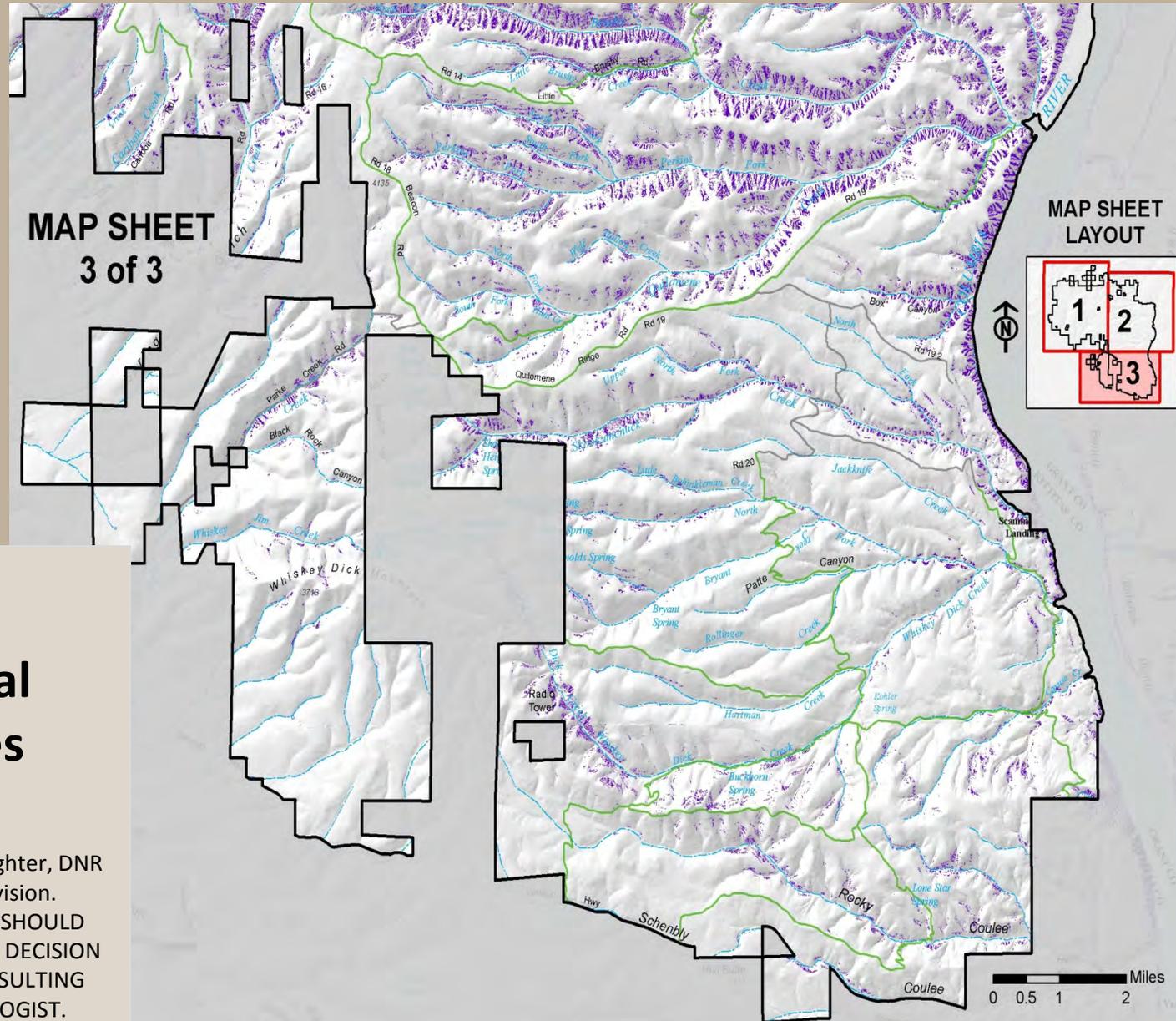
Naneum Ridge to Columbia River Recreation Plan

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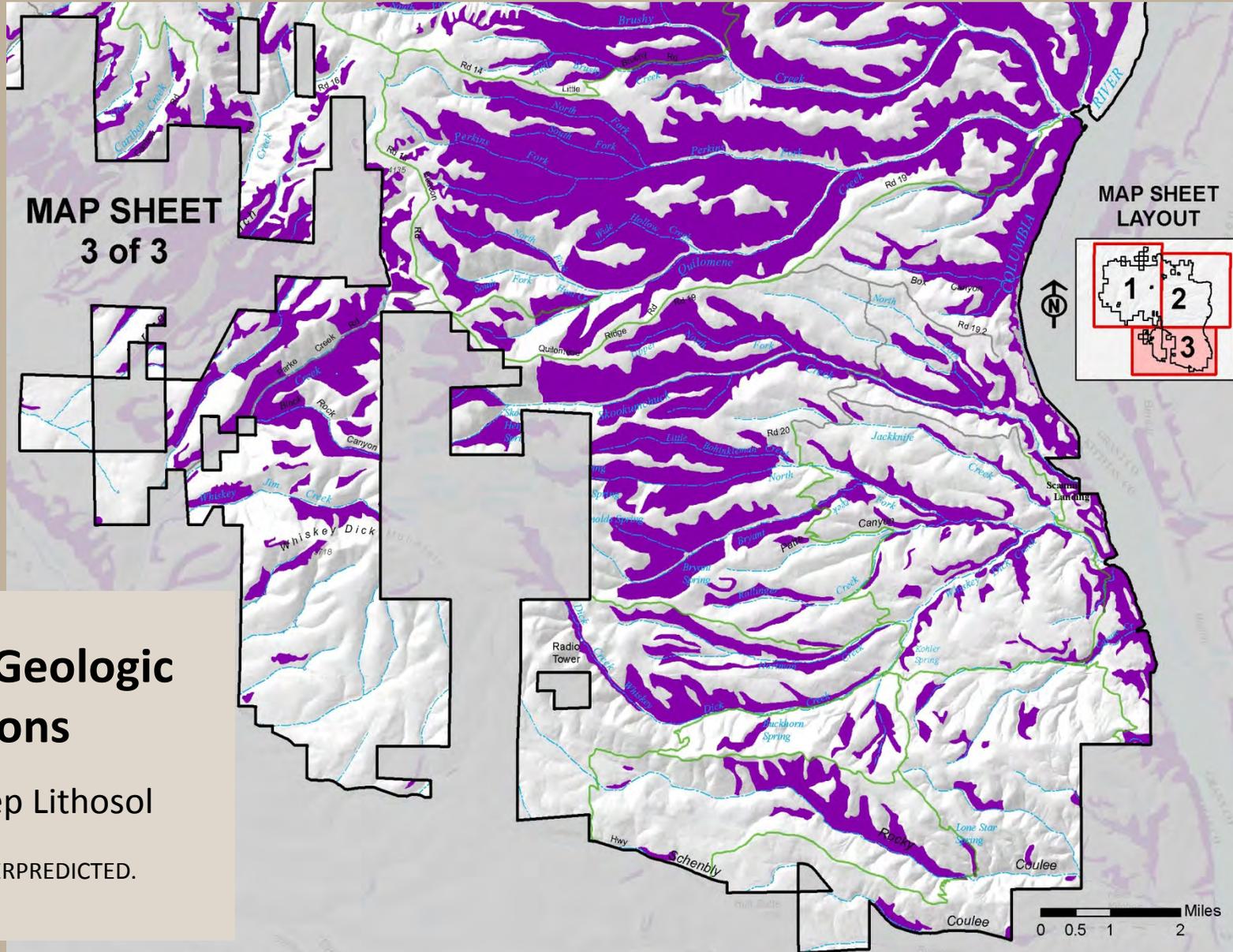


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Naneum Ridge to Columbia River Recreation Plan



Naneum Ridge to Columbia River Recreation Plan

Suitability Matrix

GEOLOGIC/SOILS CRITERIA	Recreation Trails	Recreation Facilities
Soils with High Erosion Potential	Moderate Suitability	Low Suitability
Poorly Drained Soils	Low Suitability	Low Suitability
Slope Percentage	Low Suitability in areas >65% Moderate / Low Suitability in areas 45 – 65%; Moderate Suitability in areas 30 – 45%	Low Suitability in areas >30% Moderate Suitability in areas 15 – 30%
100-Year Flood Plains	Low Suitability	Low Suitability
Areas that have Moved in Previous Landslides	Moderate Suitability	Moderate Suitability
Areas with High Potential for Landslides	Low Suitability	Low Suitability
Special Geologic Formations	Low Suitability for sandstone Moderate Suitability for talus steep lithosols	Low Suitability

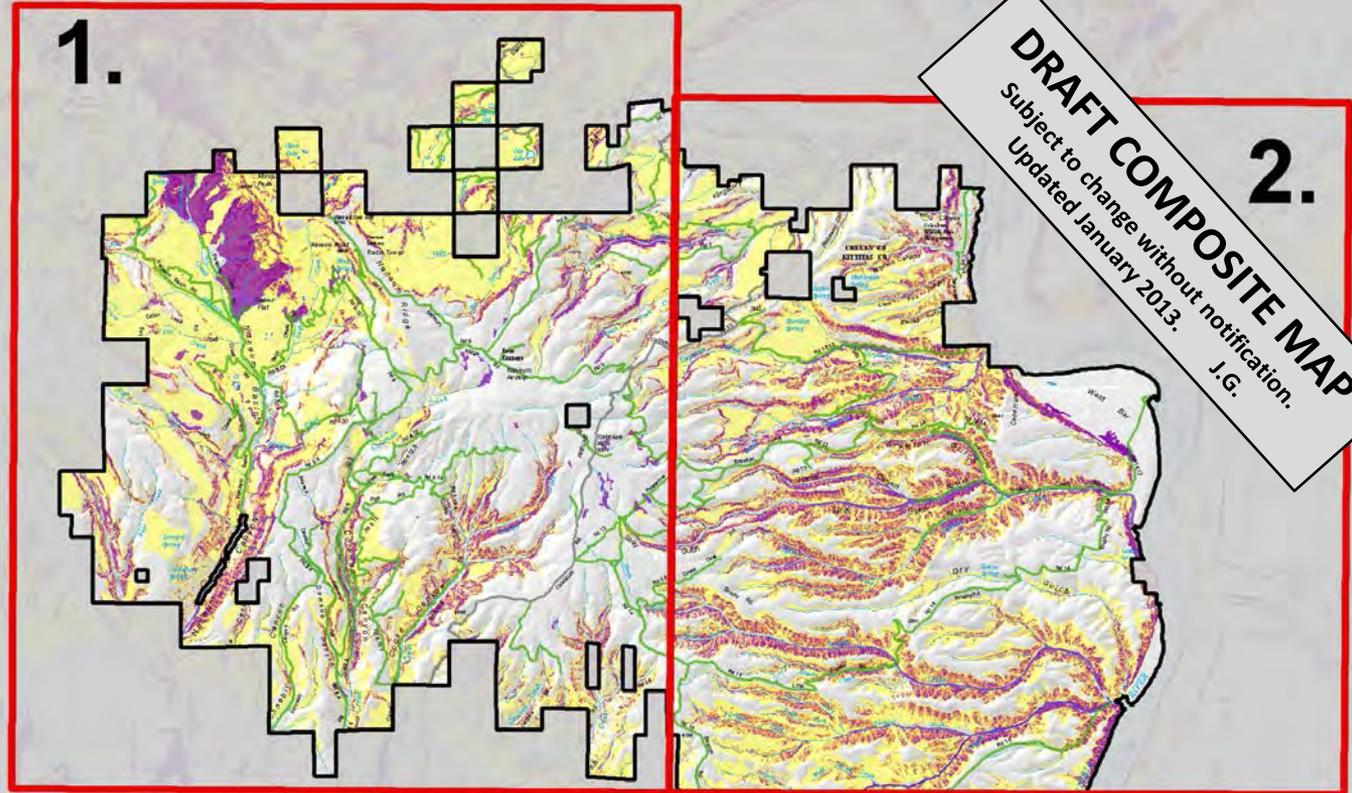
Naneum Ridge to Columbia River Recreation Plan

Geology/Soils

Composite:

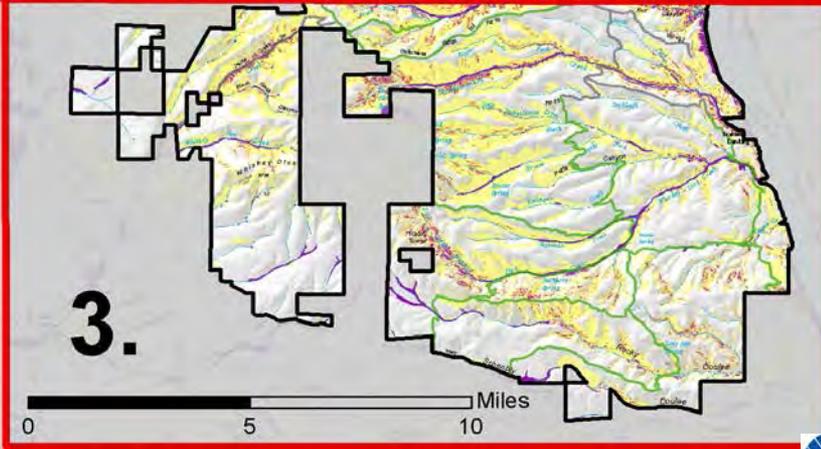
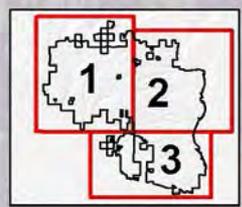
Recreation Land Suitability -
Recreation Trails

COLOR KEY



DRAFT COMPOSITE MAP
Subject to change without notification.
Updated January 2013.
J.G.

MAP SHEET LAYOUT



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Source Data:
FEMA
WA State Dept. Natural Resources
USDA Natural Resources Conservation Service
US Geological Survey



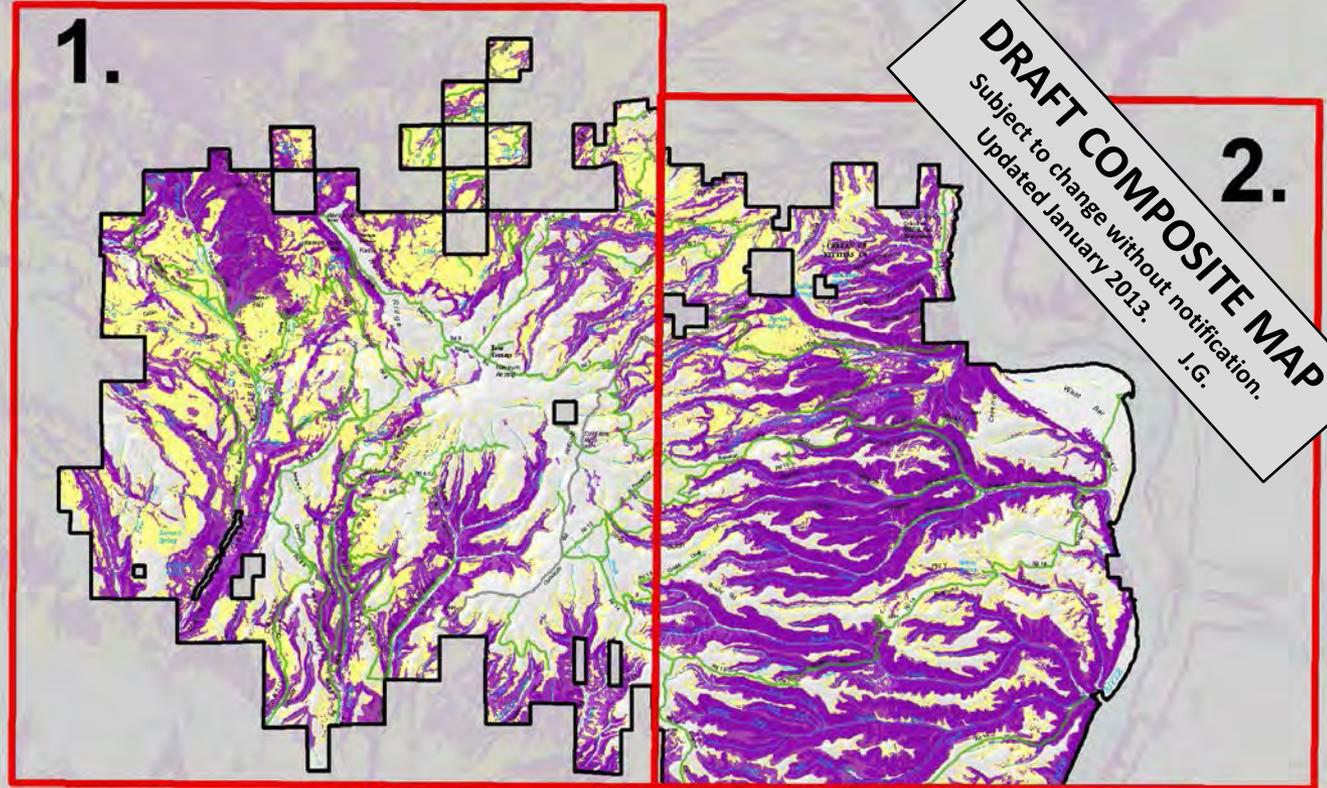
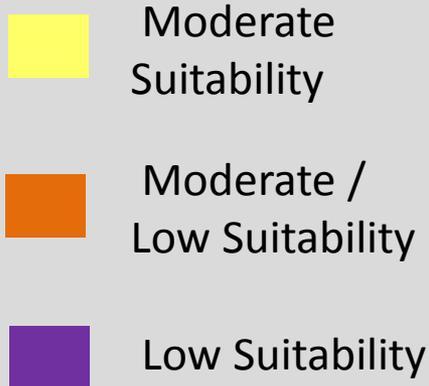
Naneum Ridge to Columbia River Recreation Plan

Geology/Soils

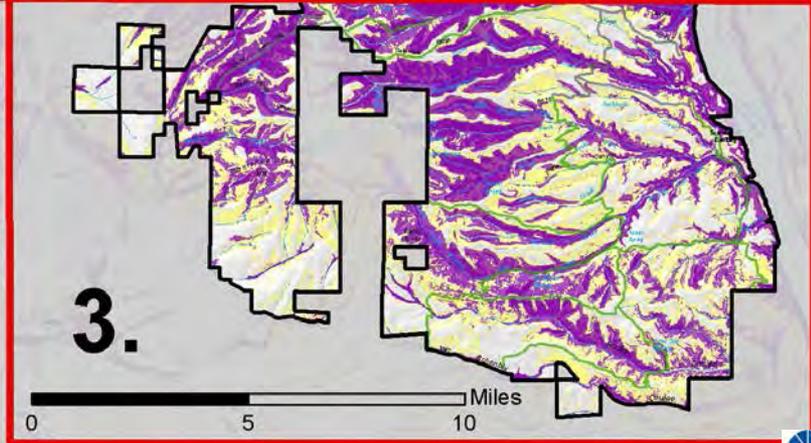
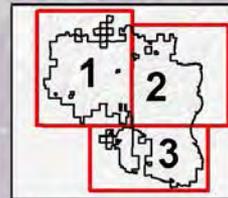
Composite:

Recreation Land Suitability -
Recreation Facilities

COLOR KEY



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FEMA

WA State Dept. Natural Resources

USDA Natural Resources Conservation Service

US Geological Survey



DATA SOURCES

Soils With High Erosion Potential: *DNR SDE Feature Class
FMANFIRE.FD
FMANFIRE.soils*

Poorly Drained Soils: *SE Region DNR File Geodatabase
Feature class: ../nrcs_soil_drainage
ROPA SDE Feature Class
Feature class: SHARED_LM.HYDRIC_SOILS_NRCS*

Slope Percentage: *DNR SDE Raster DEM;
RASTER.SLOPE_PERCENT_10M*

100-year Flood Plains: *FEMA REGION X*

Areas With High Potential for Landslides: *Source: ROPA SDE Feature Class
Feature class: SHARED_FP.HAZONE; SHARED_FP.LSI_POLY;
File geodatabase: \\snarf\am\sl_recreation\rec_plans\naneum\suitability\geo_soils\DATA.gdb
Feature Class: GEOLOGIC_PLMIs_100K*

Areas With High Potential for Landslides: *Source: SE Region ROPA Shared
SDE Raster
SHARED_FP.SLPSTAB_EAST*

Special Formations: *Source: SE Region
File Geodatabase
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Feature class nrcs_soils_talus
DNR SE Region File Geodatabase
...\naneum\suitability\geological\data.gdb
Feature Class: sandstone*