

Key and Priority Watersheds for the Blue Mountains National Forests

March 31, 2010

This document identifies 212 key sub-watersheds within the proclaimed boundaries of the Malheur, Umatilla and Wallowa-Whitman national forests (Table 1), and not including watersheds within the Hell's Canyon Recreation Area that will continue to be managed under the existing comprehensive management plan (Note: under the CMP, all of the Imnaha sub-basin and part of Pine Creek are considered key watershed using the present terminology). Sixty-eight of these watersheds are identified by the respective national forests as priorities for restoration over the next 10 to 15 years. This list includes sub-watersheds in which identified restoration work is nearing completion as well as sub-watersheds in which restoration work is expected to begin in the near future, or is being planned.

The key watersheds identified here are based on a refinement of earlier aquatic strategies found in PACFISH (USDA and USDI 1995) and INFISH (USDA 1995) resulting from the desire to have an integrated strategy that is consistent across all forests in the Pacific Northwest Region. Other elements of this strategy (desired conditions, objectives, standards and guidelines) are incorporated into the proposed forest plan.

The methods used for selecting key watersheds are based on procedures described by Reiss et al. (2009). A paper describing the specific methods used to identify key and priority for National Forest System lands in the Blue Mountains is still in preparation and will be made available separately.

The process for selection of key watersheds is based on a logic-based decision support model (EMDS) which works as an extension to ArcMap. The model evaluates watershed (upslope) conditions, channel conditions, riparian condition, habitat conditions, and population strength and distribution for four focal species (Chinook salmon, steelhead, Bull trout, inland redband trout) based on the following:

- Watershed condition
 - Forest vegetation condition (departure)
 - Non-forest vegetation condition
 - Total road density
 - Riparian road density
- Riparian condition
 - Stream shade
 - Vegetation departure
 - Frequency of occurrence of riparian shrubs
- Channel/habitat condition
 - Bank stability
 - Channel morphology
 - Pool frequency
 - Pool depth

- Large wood frequency
- Population status and distribution for
 - Bull trout
 - Inland redband trout
 - Steelhead
 - Chinook salmon
- Habitat connectivity
- Off-forest watershed conditions
 - Road density
 - Land use intensity
 - Corridor condition
 - Barriers

Channel and habitat attributes are from approximately, 2800 surveyed stream reaches (USFS, Region 6, Level II stream surveys). Surveyed reaches are primarily perennial, fish-bearing streams that are not picked at random. Data collected prior to 1996 are treated differently in the model as the protocols for collecting some of the data (e.g. large wood) are different than for data collected in 1996 and later. Reference conditions were selected from a subset of surveyed reaches that are within established wilderness or roadless areas and that do not have riparian roads over any part of their length.

Model refinements are ongoing. A paper describing the model steps in detail will be made available in Summer 2010.

Key and priority watersheds for the three National Forests in northeast Oregon are identified in Table 1. Note that all watersheds in Table 1 are key watersheds. From this set, the watersheds denoted as priority watersheds are key watersheds where the individual forests expect to focus restoration work over the next 10 to 15 years.

Table 1. Key and priority watersheds identified for the Malheur, Umatilla and Wallowa-Whitman National Forests, exclusive of Hell’s Canyon National Recreation Area. All sub-watersheds listed are key watersheds (denoted KWS); sub-watersheds denoted by “P” are priorities for restoration over the next 10 years.

Sub-basin	HUC6	HUC6 Name	Category
Upper Malheur	170501160101	Upper Big Creek	KWS
	170501160102	Lake Creek	KWS
	170501160103	Bosonberg Creek	KWS
	170501160104	Summit Creek	P
	170501160105	Cliff Creek	KWS
	170501160201	Upper Wolf Creek	P
	170501160202	East Fork Wolf Creek	P
	170501160203	Squaw Creek	P
	170501160204	Calamity Creek	P
	170501160301	Upper Pine Creek	P
	170501161101	Swamp Creek	KWS
	170501161102	Elk Creek	KWS
	170501161103	Crane Creek	P
	170501161105	Skagway Creek	KWS
170501161201	Upper Little Malheur River	KWS	
Powder	170502010601	Upper Pine Creek	P
	170502010603	Clear Creek	P
	170502010605	East Pine Creek	P
	170502010606	Pine Creek-Fish Creek	P
	170502010608	Lake Fork Creek	KWS
	170502010609	Lower North Pine Creek	KWS
Burnt	170502020101	Upper North Fork Burnt River	KWS
	170502020102	Camp Creek	KWS
	170502020103	North Fork Burnt River-Patrick Creek	KWS
	170502020104	Trout Creek	KWS
	170502020105	North Fork Burnt River-Petticoat Creek	KWS
	170502020106	West Fork Burnt River	KWS
	170502020107	Middle Fork Burnt River	KWS
	170502020201	Upper South Fork Burnt River	KWS
	170502020202	Middle South Fork Burnt River	KWS
170502020301	West Camp Creek	KWS	
Powder	170502020302	East Camp Creek	KWS
	170502030101	Cracker Creek	KWS
	170502030105	Deer Creek	KWS
	170502030402	Lower Salmon Creek	KWS

Sub-basin	HUC6	HUC6 Name	Category
	170502030403	Willow Creek	KWS
	170502030404	Rock Creek	KWS
	170502030405	Muddy Creek	KWS
	170502030501	Upper North Powder River	KWS
	170502031002	West Eagle Creek	KWS
	170502031004	East Fork Eagle Creek	KWS
Imnaha	170601020101	North Fork Imnaha River	KWS
	170601020102	South Fork Imnaha River	KWS
	170601020103	Imnaha River-Rock Creek	KWS
	170601020301	Upper Big Sheep Creek	P
	170601020302	Lick Creek	P
	170601020303	Big Sheep Creek-Tyee Creek	P
	170601020304	Big Sheep Creek-Carrol Creek	P
	170601020306	Big Sheep Creek-Steer Creek	KWS
	170601020407	Big Sheep Creek-Lower Little Sheep Creek	KWS
L. Snake - Asotin	170601030201	North Fork Asotin Creek	KWS
	170601030202	Lick Creek	KWS
	170601030203	South Fork Asotin Creek	KWS
	170601030204	Charley Creek	KWS
	170601030206	Upper George Creek	KWS
U. Grande Ronde	170601040101	Grande Ronde River-Tanner Gulch	P
	170601040102	Limber Jim Creek	P
	170601040103	Grande Ronde River-Meadowbrook Creek	P
	170601040104	Chicken Creek	P
	170601040105	Sheep Creek	P
	170601040106	Little Fly Creek	P
	170601040107	Upper Fly Creek	P
	170601040108	Lower Fly Creek	P
	170601040109	Grande Ronde River-Warm Springs Creek	P
	170601040201	Upper Meadow Creek	KWS
	170601040202	Middle Meadow Creek	KWS
	170601040203	Upper McCoy Creek	KWS
	170601040204	Lower McCoy Creek	KWS
	170601040205	Dark Canyon Creek	KWS
	170601040206	Lower Meadow Creek	KWS
	170601040304	Spring Creek	KWS
	170601040306	Rock Creek	KWS
	170601040401	Upper Five Points Creek	KWS
	170601040402	Pelican Creek	KWS
	170601040403	Lower Five Points Creek	KWS

Sub-basin	HUC6	HUC6 Name	Category
	170601040501	North Fork Catherine Creek	P
	170601040502	South Fork Catherine Creek	P
	170601040503	Catherine Creek-Milk Creek	P
	170601040504	Little Catherine Creek	P
	170601040506	Little Creek	P
	170601040507	Catherine Creek-Brinker Creek	P
	170601040702	Mill Creek	P
	170601040902	Upper Indian Creek	KWS
	170601041002	Little Lookingglass Creek	KWS
Wallowa	170601050101	Upper Wallowa River	KWS
	170601050106	Hurricane Creek	KWS
	170601050108	Spring Creek	KWS
	170601050109	Wallowa River-Wallowa Lake	KWS
	170601050201	Upper Lostine River	KWS
	170601050202	Lostine River-Lake Creek	KWS
	170601050204	Lower Lostine River	KWS
	170601050401	Upper Bear Creek	KWS
	170601050402	Lower Bear Creek	KWS
	170601050501	Upper Minam River	KWS
	170601050502	Minam River-China Cap Creek	KWS
	170601050503	North Minam River	KWS
	170601050504	Minam River-Chaparral Creek	KWS
	170601050505	Little Minam River	KWS
170601050506	Minam River-Trout Creek	KWS	
L. Grande Ronde	170601050507	Lower Minam River	KWS
	170601060301	Upper South Fork Wenaha River	KWS
	170601060302	Lower South Fork Wenaha River	KWS
	170601060303	North Fork Wenaha River	KWS
	170601060304	Beaver Creek	KWS
	170601060305	Wenaha River-Rock Creek	KWS
	170601060306	Upper Butte Creek	KWS
	170601060307	Lower Butte Creek	KWS
	170601060308	Wenaha River-Cross Canyon	KWS
	170601060309	Upper Crooked Creek	KWS
	170601060310	First Creek	KWS
	170601060311	Lower Crooked Creek	KWS
	170601060312	Lower Wenaha River	KWS
	170601060401	Upper Chesnimnus Creek	KWS
	170601060402	Devils Run Creek	KWS
170601060403	Middle Chesnimnus Creek	KWS	

Sub-basin	HUC6	HUC6 Name	Category
	170601060407	Peavine Creek	KWS
	170601060502	Elk Creek	KWS
	170601060504	Joseph Creek-Sumac Creek	KWS
	170601060506	Davis Creek	KWS
	170601060507	Lower Swamp Creek	KWS
	170601060508	Joseph Creek-Cougar Creek	KWS
	170601060601	Joseph Creek-Peavine Creek	KWS
	170601060602	Joseph Creek-Rush Creek	KWS
	170601060603	Upper Cottonwood Creek	KWS
	170601060604	Broady Creek	KWS
	170601060605	Horse Creek	KWS
	170601060606	Lower Cottonwood Creek	KWS
L. Snake-Tucannon	170601070601	Headwaters Tucannon River	P
	170601070602	Panjab Creek	P
	170601070603	Little Tucannon River	P
	170601070604	Cummings Creek	P
Walla Walla	170701020101	Upper South Fork Walla Walla River	KWS
	170701020102	Middle South Fork Walla Walla River	KWS
	170701020201	Upper Mill Creek	KWS
Umatilla	170701020301	Upper North Fork Touchet River	KWS
	170701030104	North Fork Umatilla River	KWS
	170701030202	East Meacham Creek	KWS
	170701030203	Butcher Creek	KWS
	170701030204	North Fork Meacham Creek	KWS
	170701030205	Camp Creek	KWS
U. John Day	170701030206	Boston Canyon	KWS
	170702010104	Utley Creek	KWS
	170702010305	Corral Creek	KWS
	170702010306	Lower Deer Creek	KWS
	170702010401	Tex Creek	KWS
	170702010405	Lower Murderers Creek	KWS
	170702010601	Rail Creek	KWS
	170702010602	Deardorff Creek	KWS
	170702010603	Reynolds Creek	KWS
	170702010605	Dads Creek	KWS
	170702010701	Upper Canyon Creek	KWS
	170702010702	East Fork Canyon Creek	KWS
	170702010801	Strawberry Creek	KWS
	170702010805	Indian Creek	KWS
170702010806	Castle Creek	KWS	

Sub-basin	HUC6	HUC6 Name	Category
	170702011006	Dry Creek	KWS
	170702011103	Fields Creek	KWS
	170702020101	North Fork John Day River-Baldy Creek	KWS
N.F. John Day	170702020102	Trail Creek	KWS
	170702020103	North Fork John Day River-Onion Creek	KWS
	170702020104	Trout Creek	KWS
	170702020105	North Fork John Day River-Crane Creek	KWS
	170702020201	Upper Granite Creek	P
	170702020202	Bull Run Creek	P
	170702020203	Beaver Creek	P
	170702020204	Clear Creek	P
	170702020205	Lake Creek	P
	170702020206	Lower Granite Creek	P
	170702020301	North Fork John Day-Dixson Bar	KWS
	170702020302	Meadow Creek	KWS
	170702020303	Big Creek	KWS
	170702020304	North Fork John Day-Corral Creek	KWS
	170702020401	North Fork Desolation	P
	170702020402	Upper Desolation Creek-Battle Creek	P
	170702020403	Desolation Creek-Kelsay Creek	KWS
	170702020404	Lower Desolation	KWS
	170702020702	Meadow Brook	KWS
	170702020706	Upper Potamus Creek	KWS
	170702020801	Swale Creek	P
	170702020802	Little Wall Creek	P
	170702020803	Little Wall Creek-Skookum Creek	P
	170702020804	Wilson Creek	P
	170702020805	Middle Big Wall	P
	M.F. John Day	170702020806	Lower Big Wall Creek
170702030101		Squaw Creek	P
170702030102		Idaho Creek-Summit Creek	P
170702030103		Dry Fork	P
170702030104		Clear Creek	P
170702030105		Bridge Creek	P
170702030106		Mill Creek	P
170702030201		Vinegar Creek	P
170702030202		Little Boulder Creek-Deerhorn	P
170702030203		Granite Boulder Creek	P
170702030204	Big Boulder Creek	P	
170702030205	Coyote Creek-Balance Creek	P	

Sub-basin	HUC6	HUC6 Name	Category
	170702030206	Middle Camp Creek	P
	170702030207	Lick Creek	P
	170702030208	Lower Camp Creek	P
Silvies R.	170702030302	Big Creek	P
	171200020103	Upper Scotty Creek	KWS
	171200020201	Upper Bear Creek	KWS
	171200020302	Upper Camp Creek	KWS
	171200020503	Myrtle Creek	KWS
	171200020601	Crowsfoot Creek	KWS
	171200020602	Whiskey Creek	KWS
	171200020603	Bear Canyon Creek	KWS
	171200020604	Little Emigrant Creek	KWS
Silver	171200020606	Sawtooth Creek	KWS
	171200040101	Still Spring Creek	P
	171200040102	Delintment Creek	P
	171200040103	Dodson Creek	P
	171200040104	Sawmill Creek	P

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