

APPENDIX E

**PRIORITIZATION OF SUBWATERSHEDS FOR
POTENTIAL CONSERVATION EMPHASIS**

Systematic Identification of Priority Subwatersheds within the Mohawk Watershed

Abundant scientific literature points to the importance of geographic focal areas in watershed restoration and aquatic conservation, but no such areas had been identified previously for the Mohawk watershed. We used a systematic ranking procedure to identify five subwatersheds within the Mohawk system that would be good candidate areas for focused efforts to improve water quality and create habitat strongholds for cutthroat trout and other aquatic species. The procedure emphasized watersheds with high public ownership (to build on existing conservation efforts) and areas that had relatively higher watershed sensitivity in combination with relatively less disturbed forest conditions (to capture sensitive watershed areas with less recent disturbance).

Our procedure ranked each of the 19 subwatersheds of the Mohawk for three indicators of sensitivity, two indicators of forest condition, and percent public ownership. We then calculated a priority score for each subwatershed that was the average of its mean rank for the sensitivity indicators, its mean rank for the forest condition indicators, and its double-weighted rank for percent public ownership. The resultant priority scores for subwatersheds were then arrayed from lowest to highest, with low scores identifying potential focal or emphasis areas (Table E1).

The five subwatersheds with the lowest (and thus best) priority scores were **Cash, Shotgun, McGowan, Cartwright, and Parsons**.

Table E1. Prioritization matrix for 19 subwatersheds within the Mohawk watershed, Oregon.

Subwatershed	Values for subwatershed conditions										Ranks for subwatershed conditions									
	Watershed sensitivity					Forest condition					Watershed sensitivity					Forest condition				
	Percent of slopes >65% ancient landslide	Percent ancient landslide	Percent rain-on-snow zone	Percent "older" forest*	Percent not clearcut 1972-95**	Percent of slopes >65% ancient landslide	Percent ancient landslide	Percent rain-on-snow zone	Percent "older" forest	Percent not clearcut 1972-95	Mean	Percent of slopes >65% ancient landslide	Percent ancient landslide	Percent rain-on-snow zone	Percent "older" forest	Percent not clearcut 1972-95	Mean	Percent public	Priority score	
Cash	0.4	0.0	59	35	91	16	13	5	11.3	1	2	1.5	1	1	2	1.5	1	3.7		
Shotgun	3.2	0.0	45	21	93	5	13	8	8.7	10	1	5.5	2	1	1	5.5	2	4.5		
McGowan	2.0	18.3	54	16	87	7	4	7	6.0	11	5	8.0	4	11	5	8.0	4	5.5		
Cartwright	2.7	0.0	37	32	78	6	13	9	9.3	3	10	6.5	5	3	10	6.5	5	6.5		
Parsons	1.2	45.9	54	26	88	12	1	6	6.3	5	3	4.0	10	3	3	4.0	10	7.6		
Upper Middle Mohawk	1.5	0.0	7	33	77	11	13	15	13.0	2	11	6.5	8	2	11	6.5	8	8.9		
Drury	0.1	0.0	3	11	83	19	13	18	16.7	18	8	13.0	3	18	8	13.0	3	8.9		
Log	0.8	5.1	12	15	80	15	5	13	11.0	13	9	11.0	7	13	9	11.0	7	9.0		
Spores	0.2	0.0	36	11	86	18	13	10	13.7	19	6	12.5	6	19	6	12.5	6	9.5		
Blk Canyon	1.7	0.0	33	15	74	10	13	11	11.3	12	14	13.0	9	12	14	13.0	9	10.6		
Lower Mill	1.9	0.4	28	22	52	8	6	12	8.7	9	18	13.5	11	9	18	13.5	11	11.0		
Kelly	0.4	0.0	4	28	87	16	13	17	15.3	4	4	4.0	13	4	4	4.0	13	11.3		
Lower Mohawk	1.9	0.0	7	26	84	8	13	16	12.3	7	7	7.0	14	7	7	7.0	14	11.8		
Lower Middle Mohawk	0.9	0.0	2	27	77	14	13	19	15.3	6	12	9.0	12	6	12	9.0	12	12.1		
Upper Mohawk	5.3	29.9	63	14	72	3	2	4	3.0	16	15	15.5	16	16	15	15.5	16	12.6		
Upper Mill	4.7	0.3	74	14	44	4	7	3	4.7	15	19	17.0	15	15	19	17.0	15	12.9		
N.Fk. Mohawk	8.8	18.5	93	13	64	1	3	2	2.0	17	16	16.5	18	17	16	16.5	18	13.6		
Wade	1.1	0.0	8	23	77	13	13	14	13.3	8	13	10.5	17	8	13	10.5	17	14.5		
S.Fk. Mohawk	8.0	0.0	97	15	56	2	13	1	5.3	14	17	15.5	19	14	17	15.5	19	14.7		

* Spatially explicit data on forest vegetation that a regional computer model (Laboratory for Applications of Remote Sensing in Ecology, Corvallis, Oregon) interpreted from 1988 satellite imagery were used to identify the watershed's "older" stands of conifers, then adjusted for those stands that data from Cohen et al. (1998) indicate were harvested between 1988 and 1995. Areas of forest the regional model classified as conifer dominated stands about 80 years or more old in 1988 and not harvested by 1995 were grouped together in what we termed "older" forest stands in the Mohawk watershed. Discussions with local foresters familiar with recent ground-based stand age data suggest that the true age of these "older" stands was actually about 60 years or older. It is our understanding that the regionally calibrated model tends to overestimate the age of conifer stands in the Mohawk watershed because it interprets multiple characteristics of stand structure, not actual tree age, and tree growth in the watershed is more rapid than the regional average.

** Based on a GIS analysis of spatial data that Cohen et al. (1998) interpreted from satellite imagery.