

Report on the Status of Revegetation Work on Upper Munson Valley Road,
Crater Lake National Park

July 29, 1999

Weather conditions have been wet and cool during the latter part of July.

Site 837	Count	Flower	Vigor	
ANMA	137	5%	Poor	
Aster sp.	2	0	Good	
ARNE	7	0	Poor	
Carex sp.	221	15%	50% Poor; 50% Good	
ERMA	67	20%	Fair	
Grass	80	0	25% Good; 75% Poor	
LOIN	NP (Not Planted)			
Lupinus sp.	72	50%	Good	
PERU	18	50%	Good	
Phacelia	15	75%	Good	
PHDI	11	0	Poor	
PONE	5	0	Fair	
SPUM	11	75%	Good	
VASC	5	0	Good	

Site 810	Count	Flower	Vigor	
ANMA	30	0	Fair	
Aster sp.	8	0	Fair	
ARNE	11	0	50% Good; 50% Fair	
Carex sp.	34	10%	Good	
ERMA	18	5%	50% Good; 50% Fair	
Grass	3	0	Fair	
LOIN	16	0	Fair	
Lupinus sp.	4	0	Fair	
PERU	NP			
Phacelia	8	75%	Good	
PHDI	NP			
PONE	NP			
SPUM	NP			
VASC	NP			

Site 783	Count	Flower	Vigor	
ANMA	29	0	Fair	
Aster sp.	1	0	Fair	
ARNE	13	0	Poor	
Carex sp.	39	10%	Good	
ERMA	4	10%	Poor	
Grass	2	0	Fair	
LOIN	21	0	Fair	
Lupinus sp.	10	75%	Good	
PERU	8	25%	50% Good; 50% Poor	
Phacelia	0	75%	Good	
PHDI	2	0	Poor	
PONE	3	0	Poor	
SPUM	0	75%	Good	
VASC	NP			

Site 740	Count	Flower	Vigor	
ANMA	0	0	Poor	
Aster sp.	6	0	Fair	
ARNE	NP			
Carex sp.	2	0	Poor	
ERMA	1	0	Poor	
Grass	4	10%	25% Good; 75% Fair	
LOIN	34	0	Fair	
Lupinus sp.	0	10%	Fair	
PERU	NP			
Phacelia	0	75%	Good	
PHDI	0	0	Good	
PONE	NP			
SPUM	2	75%	Good	
VASC	NP			

Recommended Actions:

Relative mortality of the 1998 native planting project is estimated to be at 25% as of this date. If the mortality approaches 35%, consideration should be given to undertake replacement plantings to account for those plants lost to environmental conditions such as lack of precipitation or poor soil fertility. Current road projects or animal disturbance affecting the area should not necessitate further plantings as these factors may not cause mortality. The duff layer that was spread on the erosion matting should be added to at the end of this field season if mortality from the first to the last assessment of 1999 exceeds 10% overall.

August 12, 1999

Rains have occurred almost daily since the last population census on 7/29. Lupine and grass/sedge counts were taken only on clumps of ~1in sq.

Site 837	Count	Flower	Vigor
ANMA	181	10%	Poor
Aster sp.	25	0	Good
ARNE	9	0	Poor
Carex sp.	205	40%	50% Poor; 50% Good
ERMA	115	50%	Fair
Grass	127	10%	25% Good; 75% Poor
LOIN	NP		
Lupinus sp.	81	75%	Good
PERU	27	75%	Good
Phacelia	16	100%	Good
PHDI	11	0	Poor
PONE	6	0	Fair
SPUM	11	100%	Good
VASC	5	0	Good

Good seed sprouting of Lupinus and grass species on areas where duff layer (~500ft²) was spread. Lupinus cover was approximately 30% and grass cover was approximately 20%. Mountain Hemlock (TSME) saplings have yellowish foliage and poor to fair vigor. Phlox and PONE species adjacent to revegetation area seem to be in full bloom and good vigor.

Site 810	Count	Flower	Vigor
ANMA	89	10%	Fair
Aster sp.	26	0	Fair
ARNE	12	0	50% Good; 50% Fair
Carex sp.	49	20%	Good
ERMA	23	10%	50% Good; 50% Fair
Grass	25	0	Fair
LOIN	18	0	Fair
Lupinus sp.	4	0	Fair
PERU	NP		
Phacelia	13	100%	Good
PHDI	NP		
PONE	NP		
SPUM	NP		
VASC	NP		

Areas where a duff layer (~200ft²) was spread have grass sprout cover of 50% and lupine cover of 10%. Gravel from a recent chip/seal project on the road has covered vegetation approximately 6ft from the roadside.

Site 783	Count	Flower	Vigor	
ANMA	52	0	Fair	
Aster sp.	4	0	Fair	
ARNE	10	0	Poor	
Carex sp.	55	25%	Good	
ERMA	8	25%	Poor	
Grass	28	0	Fair	
LOIN	11	0	Fair	
Lupinus sp.	13	100%	Good	
PERU	12	50%	50% Good; 50% Poor	
Phacelia	2	100%	Good	
PHDI	3	0	Poor	
PONE	4	0	Poor	
SPUM	2	100%	Good	
VASC	NP			

The SE end of the revegetation area has been covered by the recent chip/seal road project. There is a 15% cover of lupine which has advanced from the non-disturbed area.

Site 740	Count	Flower	Vigor	
ANMA	10	0	Poor	
Aster sp.	10	10%	Fair	
ARNE	NP			
Carex sp.	8	0	Poor	
ERMA	1	0	Poor	
Grass	13	25%	25% Good; 75% Fair	
LOIN	40	0	Fair	
Lupinus sp.	20	25%	Fair	
PERU	NP			
Phacelia	6	100%	Good	
PHDI	3	0	Good	
PONE	NP			
SPUM	5	100%	Good	
VASC	NP			

There is a 10% cover of lupine and a 5% cover of phlox which has advanced from the non-disturbed area.

Recommended Action:

If rains do not continue for more than a two week period, watering of the revegetation areas should be undertaken once a week until precipitation reoccurs on a regular biweekly basis.

August 27, 1999

Rains have stopped since the last population census on 8/12. Weather has been generally warm and dry, with cool nightly temperatures.

Site 837	Count	Flower	Vigor	
ANMA	225	10%	Poor	
Aster sp.	19	0	Fair	
ARNE	9	0	Poor	
Carex sp.	204	50%	50% Poor; 50% Good	
ERMA	86	50%	50% Fair; 50% Poor	
Grass	97	15%	15% Fair; 85% Poor	
LOIN	NP			
Lupine	115	100%	Good	
PERU	24	100%	Good	
Phacelia	17	100%	Good	
PHDI	9	0	Poor	
PONE	4	0	Fair	
SPUM	16	100%	Good	
VASC	5	0	Good	

Lupinus seeding cover on the duff layer was approximately 40% and grass seeding cover was approximately 35%. TSME seedlings were noticed sprouting in several areas of Site 837, however outside of the duff layer.

Site 810	Count	Flower	Vigor	
ANMA	83	30%	30% Good; 70% Poor	
Aster sp.	17	0	Fair	
ARNE	12	0	Fair	
Carex sp.	42	80%	Good	
ERMA	24	20%	50% Good; 50% Fair	
Grass	30	5%	Fair	
LOIN	18	0	Fair	
Lupinus sp.	4	50%	Good	
PERU	NP			
Phacelia	12	100%	Good	
PHDI	NP			
PONE	NP			
SPUM	NP			
VASC	NP			

Lupinus seeding cover on the duff layer was approximately 40% and grass seeding cover was approximately 30%. ANMA was observed to have greater vigor where it had been planted in clumps of 4 cones or more.

Site 783	Count	Flower	Vigor	
ANMA	50	0	Poor	
Aster sp.	19	10%	10% Good; 90% Poor	
ARNE	10	0	10% Good; 90% Poor	
Carex sp.	43	50%	Good	
ERMA	11	10%	Fair	
Grass	22	25%	Fair	
LOIN	11	0	Fair	
Lupine	15	100%	Good	
PERU	13	100%	Good	
Phacelia	2	100%	Good	
PHDI	4	0	Fair	
PONE	4	0	Fair	
SPUM	2	100%	Good	
VASC	NP			

Lupinus sp. cover advancing from outside Site 783 remains the same.

Site 740	Count	Flower	Vigor	
ANMA	8	0	Poor	
Aster sp.	6	0	Poor	
ARNE	NP			
Carex sp.	3	0	Poor	
ERMA	1	0	Poor	
Grass	16	25%	25% Good; 75% Fair	
LOIN	40	0	Fair	
Lupinus sp.	18	25%	Fair	
PERU	NP			
Phacelia	5	100%	Good	
PHDI	2	0	Poor	
PONE	NP			
SPUM	4	100%	Good	
VASC	NP			

Lupinus sp. cover and Phlox cover advancing from outside Site 740 remains the same.

Recommended Actions:

If rains do not occur within the next week, the realignment areas will be watered with an additive of vitamin B-1 to promote nutrient uptake.

September 10, 1999

On the night of August 30 and all the following day, snow was the predominant weather condition, with unseasonably cool temperatures lasting several days thereafter. Light rains occurred occasionally during this time, after which the weather turned warm and dry again.

Site 837	Count	Flower	Vigor
ANMA	220	15%	Poor
Aster sp.	20	0	Fair
ARNE	9	0	Poor
Carex sp.	210	40%	50% Poor, 50% Good
ERMA	79	35%	50% Fair, 50% Poor
Grass	88	10%	15% Fair, 85% Poor
LOIN	NP		
Lupinus sp.	108	75%	Good
PERU	23	20%	Good
Phacelia	15	50%	Good
PHDI	8	0	Poor
PONE	4	0	Fair
SPUM	14	50%	Good
VASC	5	0	Good

Grass and lupinus sp. sprouting on the duff layer continues to evidence the most vigor of plant regeneration on the site.

Site 810	Count	Flower	Vigor
ANMA	70	15%	10% Good, 90% Poor
Aster sp.	15	0	Fair
ARNE	12	0	Fair
Carex sp.	35	50%	Good
ERMA	20	5%	50% Good, 50% Fair
Grass	27	0	Fair
LOIN	18	0	Fair
Lupinus sp.	4	25%	Good
PERU	NP		
Phacelia	10	50%	Good
PHDI	NP		
PONE	NP		
SPUM	NP		
VASC	NP		

Site 783	Count	Flower	Vigor	
ANMA	41	0	Poor	
Aster sp.	18	0	Fair	
ARNE	10	0	Fair	
Carex sp.	36	25%	Good	
ERMA	9	0	Fair	
Grass	20	10%	Fair	
LOIN	11	0	Fair	
Lupinus sp.	13	50%	Good	
PERU	13	0	Good	
Phacelia	2	50%	Good	
PHDI	4	0	Poor	
PONE	4	0	Fair	
SPUM	2	0	Good	
VASC	NP			

Site 740	Count	Flower	Vigor	
ANMA	7	0	Poor	
Aster sp.	6	0	Poor	
ARNE	NP			
Carex sp.	3	0	Poor	
ERMA	1	0	Poor	
Grass	14	10%	Fair	
LOIN	40	0	Fair	
Lupinus sp.	15	15%	Fair	
PERU	NP			
Phacelia	5	40%	Good	
PHDI	1	0	Poor	
PONE	NP			
SPUM	4	50%	Good	
VASC	NP			

Recommended Action:

Most plants have passed the flowering stage and are well into, or past, the seeding stage. As such, further watering will not be needed for the remainder of the season. To promote further sprouting of grass, sedge, and lupinus sp. seed, a conscientious effort should be made in the future to increase the duff layers which were added to the work sites manually in 1998. It was apparent that natural seeding was most successful on these duff layers. If replacement plantings are to occur in the future, revegetation material which is propagated in cone containers should be planted in groups of 4 to 6 cones. Species such as Pearly Everlasting (*Anaphalis margaritacea*) tend to thrive in the rocky soil present at revegetation sites, however have a hard time establishing themselves in this poor soil when planted singly.