

SEMI-ANNUAL REPORT

ANALYSIS OF COMMUNITY COMPOSITION AND HABITAT OF  
PEDIOMELUM PARIENSE IN BRYCE CANYON NATIONAL PARK

NPS Contract Number PX 1200-8-0838

David W. Roberts and Gregory P. Hallsten

Department of Forest Resources

and Ecology Center

Utah State University

Logan, Utah 84322-5215



## SUMMARY

During the field season, eight detailed vegetation sample plots were established in the area of known occurrence for Pedimelum pariense. Five of the sample plots contained P. pariense, three did not. All voucher specimens of plant species have been identified, and the vegetation data from the sample plots have been analyzed. The percent cover, frequency, and density of vascular plant species for all sample plots are included as Appendix 1.

During the same field season, an intensive mapping effort was undertaken to clearly delimit the distribution of P. pariense in Bryce Canyon National Park. Figure 1 is a map of the known distribution of P. pariense determined from this effort.

While we have not yet completed the analysis of the abundance of P. pariense, we were able to establish several new locations for this species, and feel that it is probably more abundant in Bryce Canyon than previously thought.

## WORK TO BE COMPLETED

In each sample plot ten 10cm soil samples were collected for analysis. Analysis of the soil samples has not yet been completed, and is scheduled for completion this winter. We do not anticipate any problems in completion of this research.



Macroplot number	1	2	3
Location:			
Quarter quarter	SENW	SENW	NWSW
Section	13	13	13
Township	37S	37S	37S
Range	4W	4W	4W
Topographic position:			
Slope (percent)	5	20	5
Aspect (degrees)	65	145	345
Elevation (feet)	8240	8200	8280
Bearing (degrees)	328	122	164

Cover/ Frequency/ Density

Trees

<i>Abies concolor</i>	-	*	-
<i>Juniperus osteosperma</i>	*	-	-
<i>Juniperus scopulorum</i>	-	(1.7)/10/2	*
<i>Pinus longaeva</i>	-	-	-
<i>Pinus ponderosa</i>	*	*	*
<i>Pseudotsuga menziesii</i>	-	*	-

Shrubs

<i>Arctostaphylos patula</i>	3/30/4.1	12.8/100/51	7.9/100/33.1
<i>Ceanothus martinii</i>	-	0.3/40/14.3	(7.4)/20/3.1
<i>Cercocarpus ledifolius</i>	*	-	-
<i>Chrysothamnus depressus</i>	-	-	*
<i>Chrysothamnus parryi</i>	*	*	*
<i>Gutierrezia sarothrae</i>	-	*	0.5/(20)/-
<i>Juniperus communis</i>	-	*	*
<i>Mahonia repens</i>	-	-	-
<i>Ribes cereum</i>	-	-	-
<i>Symphoricarpos oreophilus</i>	*	*	*
<i>Tetradymia canescens</i>	(0.2)/10/1.4	*	(0.7)/10/1.1

Graminoids

<i>Carex rossii</i>	2/30/5.5	(1.3)/20/6.1	0.3/20/5.4
<i>Elymus elymoides</i>	0.3/20/6.8	-	0.3/10/1.1
<i>Elymus lanceolatus</i>	-	-	-
<i>Elymus salinus</i>	-	-	-
<i>Muhlenbergia montana</i>	-	-	*
<i>Poa fendleri</i>	*	*	-
<i>Stipa comata</i>	-	-	0.8/10/1.1
<i>Stipa hymenoides</i>	-	*	(0.9)/60/7.6

Forbs

<i>Arabis demissa</i>	0.5/30/5.5	*	-
<i>Arenaria fendleri</i>	(1.2)/30/4.1	-	*
<i>Astragalus sp.</i>	-	-	-
<i>Astragalus convallarius</i>	0.3/20/2.7	*	0.3/20/2.1
<i>Astragalus humistratus</i>	*	-	-
<i>Astragalus kentrophyta</i>	(0.1)/10/1.4	-	-
<i>Astragalus megacarpus</i>	-	-	-
<i>Castilleja linariifolia</i>	(0.1)/10/1.4	-	0.3/(10)/-
<i>Cirsium sp.</i>	-	*	*



Macroplot number	1	2	3
Location:			
Quarter	SENW	SENW	NWSW
Section	13	13	13
Township	37S	37S	37S
Range	4W	4W	4W
Topographic position:			
Slope (percent)	5	20	5
Aspect (degrees)	65	145	345
Elevation (feet)	8240	8200	8280
Bearing (degrees)	328	122	164

Cover/ Frequency/ Density

<i>Clematis columbiana</i>	-	-	-
<i>Cryptantha</i> sp.	*	-	*
<i>Draba subalpina</i>	-	-	-
<i>Erigeron canus</i>	*	-	-
<i>Eriogonum alatum</i>	*	(0.1)/10/2	*
<i>Eriogonum racemosum</i>	(0.8)/10/1.4	-	*
<i>Euphorbia brachycera</i>	-	(0.4)/10/2	*
<i>Gilia aggregata</i>	*	*	*
<i>Haplopappus armerioides</i>	-	-	-
<i>Hymenoxys acaulis</i>	1/40/20.5	0.5/20/8.2	0.3/10/1
<i>Hymenoxys richardsonii</i>	0.3/20/2.7	-	0.5/30/3
<i>Linum kingii</i>	-	-	2.3/40/5
<i>Linum perenne</i>	-	-	(0.2)/10/1
<i>Machaeranthera canescens</i>	-	*	-
<i>Machaeranthera grindelioides</i>	0.3/10/1.4	-	0.5/30/5
<i>Oenothera howardii</i>	-	-	0.5/50/6
<i>Pediomelum pariense</i>	(0.8)/30/4.1	0.5/30/12.2	0.8/80/17
<i>Penstemon</i> sp.	(2.1)/10/2.7	-	-
<i>Penstemon caespitosus</i>	(0.5)/10/1.4	-	-
<i>Petradoria pumila</i>	5/80/32.9	0.3/10/-	*
<i>Phlox</i> sp.	-	-	-
<i>Senecio multilobatus</i>	*	*	(0.5)/10/1
<i>Stephanomeria tenuifolia</i>	*	-	-
<i>Streptanthus cordatus</i>	-	*	-
<i>Yucca angustissima</i>	-	-	(1.9)/10/3
unknown forb	-	0.3/10/2	-
forb 1	-	-	-
forb 2	-	-	-

Cover was estimated using quadrat frames. Where this figure is presented in parentheses, the species did not occur in a quadrat and cover was estimate from the line-intersept transect.

Frequency and density were estimated using line-intersept transects. Where the frequency figure is presented in parentheses, the species did not occur on the transect and frequency was estimated from quadrats. Where a dash occurs in the density position, the species did not occur on the transect. Density was not recorded in the quadrats so no figure can be given.

\* indicates occurrence within the macroplot but not on the transect or in the quadrats.

Taxonomy follows A Utah Flora.



4	5	6	7	8
NWSE	SWSW	NESW	SWSE	SWSW
13	13	13	13	13
37S	37S	37S	37S	37S
4W	4W	4W	4W	4W
10	10	25	10	15
255	315	70	305	325
8220	8240	8160	8220	8290
358	246	62	96	294
-	-	(0.5)/10/3.8	-	-
-	-	-	-	-
*	6.3/(10)/-	(0.6)/10/3.8	*	-
-	-	-	*	-
*	(1.7)/10/1.7	*	*	*
-	-	*	-	-
8.5/80/44.1	3.5/50/22	3/40/23.1	5.8/60/42.9	6.5/70/44.
*	0.3/10/1.7	*	-	0.8/20/5.6
-	*	-	-	-
-	-	-	-	*
*	-	-	-	-
-	(10)/10/3.4	-	-	*
-	-	(5.4)/30/23.1	-	-
*	-	-	-	-
-	-	(0.8)/10/3.8	-	-
-	*	-	*	*
0.5/70/11.9	0.5/30/10.2	(0.1)/10/3.8	(2.9)/30/9.5	0.5/30/11.
-	-	-	-	*
-	-	-	-	*
-	-	-	*	(0.1)/10/2.
*	-	0.3/10/3.8	-	-
-	-	-	-	-
0.3/(10)/-	-	(0.4)/30/15.4	-	*
-	-	-	-	-
0.5/10/1.7	0.8/40/10.2	*	0.5/40/16.7	0.5/20/5.
-	(0.2)/10/1.7	*	-	0.3/(10)/
0.3/10/1.7	-	*	-	0.3/10/2.
-	-	-	-	-
0.3/20/8.5	-	-	-	-
(0.5)/10/5.1	-	-	-	-
-	0.3/(10)/-	-	-	(0.1)/10/2.
*	(0.7)/20/3.4	-	*	*



4	5	6	7	8
NWSE	SWSW	NESW	SWSE	SWSW
13	13	13	13	13
37S	37S	37S	37S	37S
4W	4W	4W	4W	4W
10	10	25	10	15
255	315	70	305	325
8220	8240	8160	8220	8290
358	246	62	96	294
-	-	(1)/10/3.8	0.3/(10)/-	0.5/30/8.
*	0.3/(10)/-	-	0.3/20/4.8	0.5/20/5.
-	-	0.3/10/3.8	-	-
-	-	-	-	-
*	*	-	-	-
*	-	-	-	-
(0.4)/20/3.4	0.3/(10)/-	-	*	0.5/(20),
-	-	-	-	-
*	-	-	*	-
0.5/30/8.5	0.8/50/11.9	-	(0.3)/20/7.1	0.5/10/2.
*	(0.4)/10/1.7	-	(0.2)/10/2.4	*
*	0.8/50/18.0	-	*	*
*	-	-	-	-
-	-	-	-	-
*	0.5/10/1.7	-	*	0.3/(10),
-	0.3/20/3.4	*	(0.3)/10/4.8	0.3/(10),
0.8/30/8.5	0.3/20/3.4	*	*	(0.3)/10/2
-	-	-	-	-
(2.3)/20/3.4	-	-	-	-
1.8/20/3.4	0.8/10/5.1	-	0.3/20/4.8	0.3/20/5
-	-	-	*	-
*	-	*	-	*
-	-	-	-	-
-	-	-	-	-
*	*	(3.6)/10/3.8	*	*
-	-	(1.0)/10/7.7	-	-
-	-	-	(0.5)/20/4.8	-
-	-	-	(0.3)/10/2.4	-





○ Distribution of Pedicularis parviflora

• 7 Transect location



