

Rare Plant Inventory, 2005

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Paisley, VIP

November 2, 2005

Overview:

Information found in previous reports from rare plant studies(1990,1995,1997) at Bryce Canyon gave UTM coordinates that were found to be inaccurate. This is in reference specifically to the 1997 "Five Year Monitoring Report" by Ames-Curtis et al. This may have been due to the use of older and less accurate GPS units or inaccurate methods of digitizing the points.

Objective:

The 2005 inventory became a project in finding more accurate points using the Trimble's GeoExplorer3.

Background information of the GPS unit, GPS/GIS programs:

The GeoExplorer3 was the only GPS type used, this unit utilized firmware version 1.2. Only point data was taken while in the field. The GPS was held for 80 seconds at each location of rare plant rebar to promote higher accuracy.

Back in the office, Pathfinder Office 2 was the program used to download this data and to correct the files. In order to correct the files, a base station in Cedar City named "USFS, Dixie National Forest" was used. The corrected files were then exported into shapefiles and were viewed in ArcMap version 9.1.

Maps:

Below are three updated maps of the rare plant survey plots that were GPSed. There were 22 plots GPSed, and the maps are divided into three sections. Image 1 is the northern section, Image 2 is the Peekaboo Loop section, and Image 3 is the southern portion of the survey.

Image 1. Northern Portion of Bryce Canyon's Rare Plant Survey Plots, 2005

Northern Portion of Rare Plant Plots, 2005

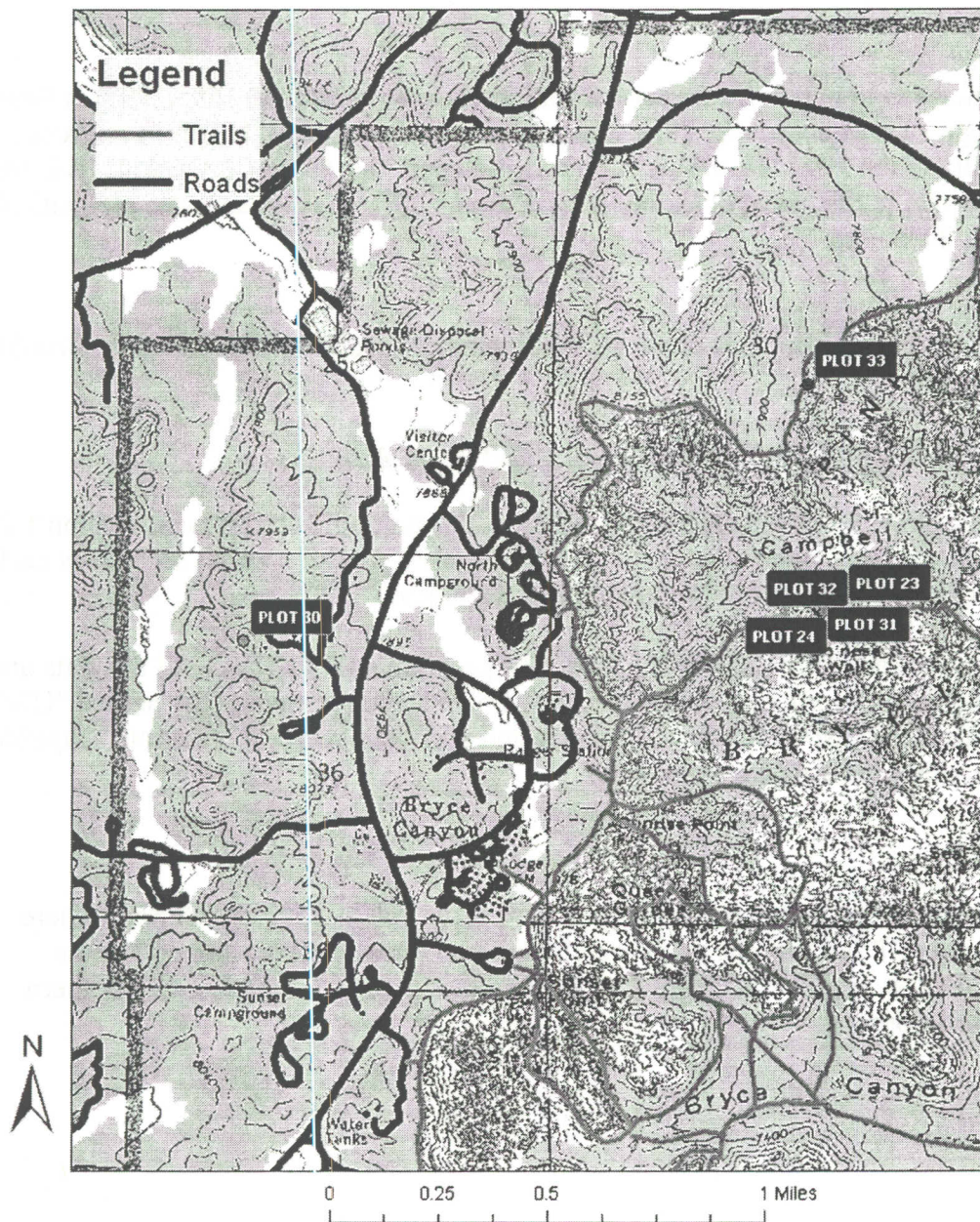


Image 2. Peekaboo Loop's Rare Plant Survey Plots, 2005

Peekaboo Loop Portion of Rare Plant Plots, 2005

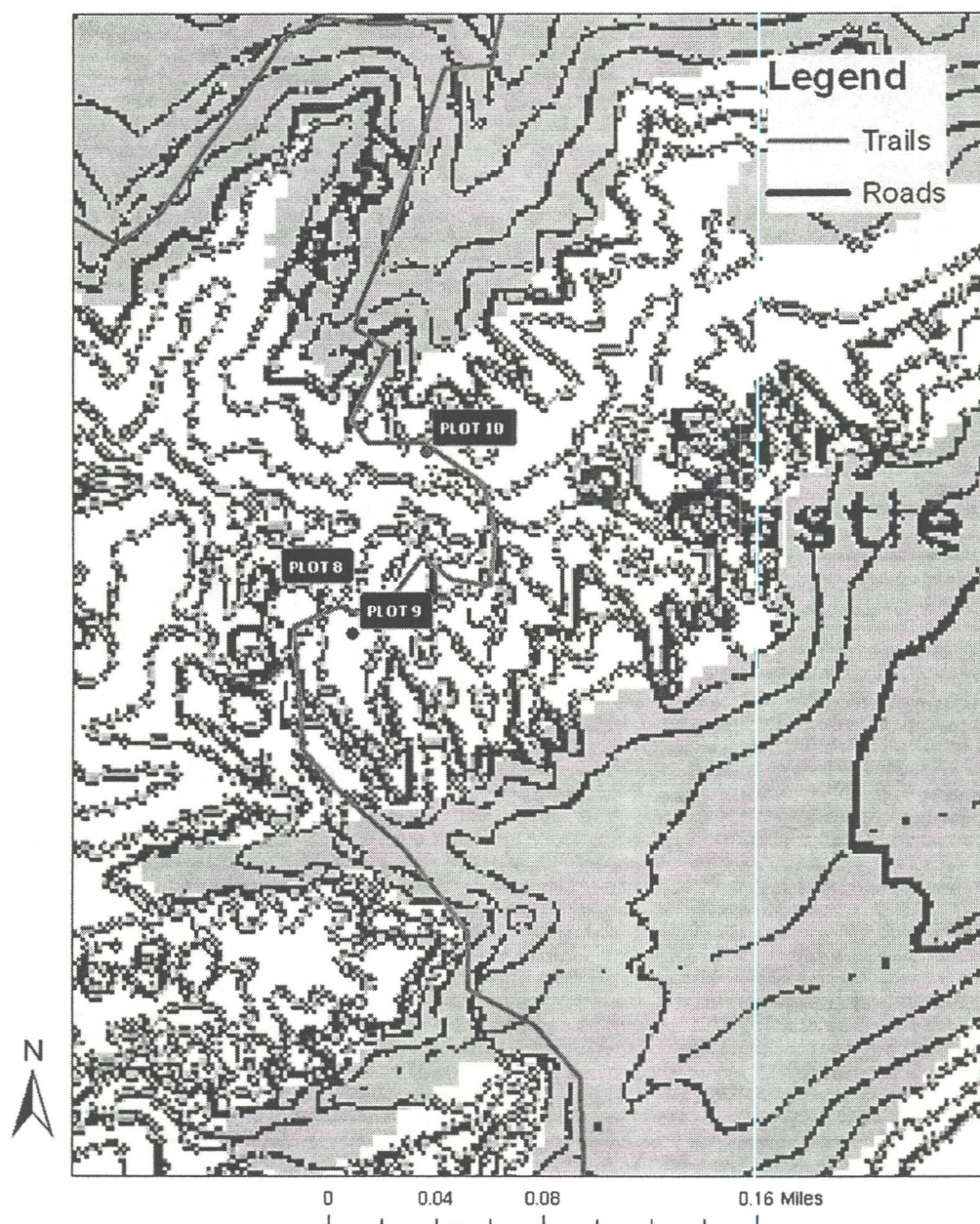
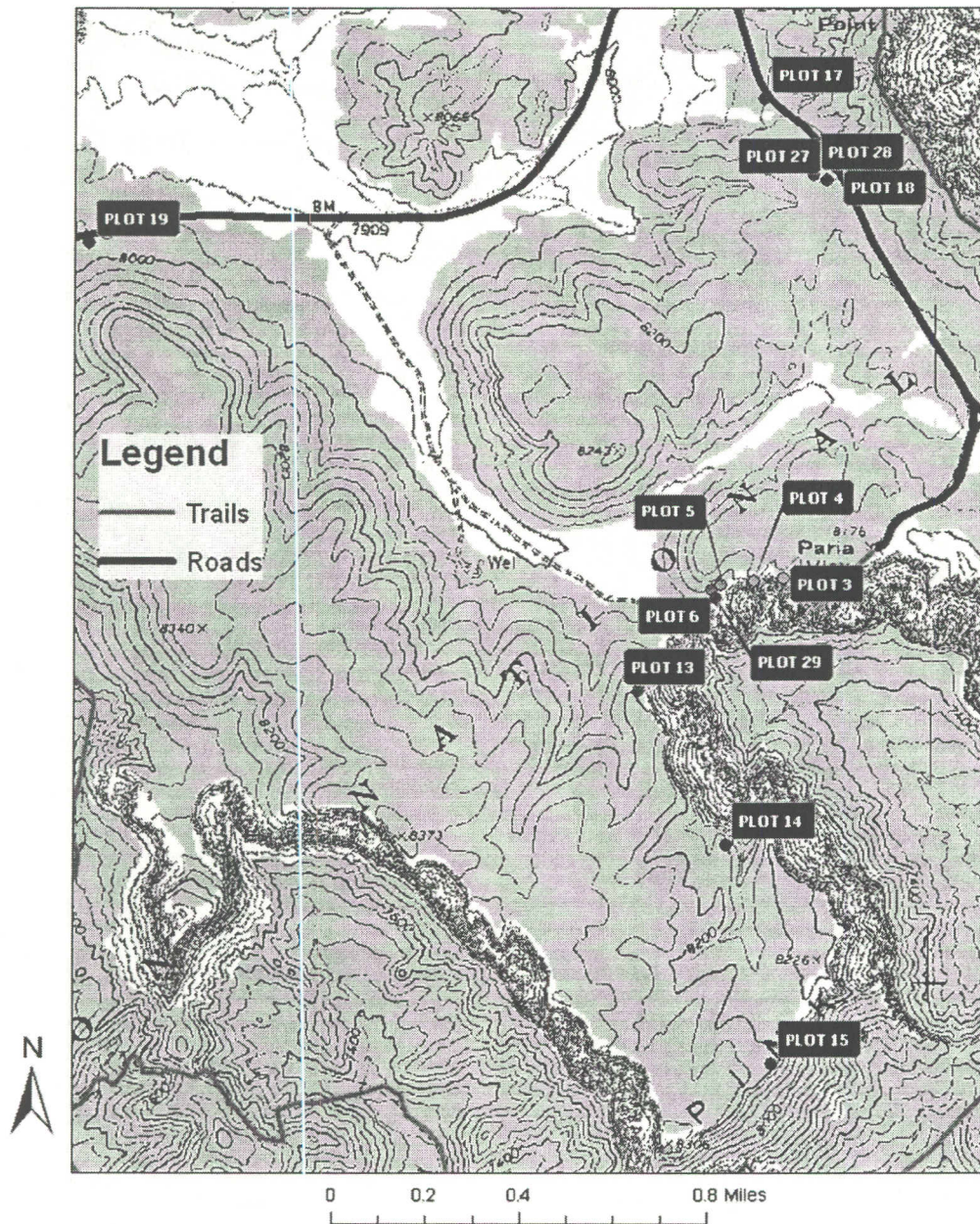


Image 3. Southern Portion of Bryce Canyon's Rare Plant Survey Plots

Southern Portion of Rare Plant Plots, 2005



3.2 Threatened and endangered species and species of special concern³²

Bryce provides habitat for numerous species of concern. These are:

Plants:

There are 23 taxa at Bryce considered "sensitive." These species are found within the breaks, the area of highest visitor use in the Park, and some (marked with an asterisk) have been monitored "over time and seem little affected by the current level and location of visitor activities."³³

These species are:

- Ward milkvetch (*Astragalus wardii*)
- Reveal indian paintbrush* (*Castilleja parvula* var. *revealii*)
- Yellow-white catseye* (*Cryptantha ochroleuca*)
- Cedar Breaks biscuitroot (*Cymopterus minimus*)
- Abajo daisy (*Erigeron abajoensis*)
- Jone's gentian (*Gentianella tortuosa*)
- Cedar Breaks goldenbush (*Haplopappus zionis*)
- Jones golden-aster (*Heterotheca jonesii*)
- King's ivesia (*Ivesia kingii*)
- Intermountain ivesia (*Ivesia sabulosa*)
- Bryce bladderpod (*Lesquerella rubicundula*)
- Little desert parsely (*Lomatium minimum*)
- Jones' locoweed (*Oxytropis oreophilla* var. *jonesii*)
- Paria breadroot* (*Pediomelum pariense*)
- Red Canyon phlox (*Phlox gladiiformis*)
- Red Canyon beardtongue* (*Penstemon bracteatus*)
- Markagunt beardtongue (*Penstemon leiophyllus* var. *leiophyllus*)
- Lepidota twinpod (*Physaria chambersii* var. *membranacea*)
- Podunk groundsel (*Senecio malmstenii*)
- Peterson catchfly* (*Silene petersonii*)
- Wyoming rock-tansy (*Sphaeromeria capitata*)
- Townsendia (*Townsendia minima*).
- Widtsoe Buckwheat (*Eriogonum aretioides*)

Animals:

There are five species of animals that are considered threatened or endangered by the federal government or listed as a species of concern for the state of Utah.

These species are:

- Utah prairie dog (*Cynomys parvidens*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

³² This section based on National Park Service 2002, p. L-12, and meeting with Resource Management Staff August 4.

³³ National Park Service 2002, p. L-13.

Appendix D: Sensitive Plant List Bryce Canyon National Park⁸⁴

APIACEAE

- Cymopterus minimus*, Least Spring Parsely (G1)
- Lomatium minimum*, Least Lomation (G3)

ASTERACEAE

- Erigeron abajoensis*, Abajo Daisy (G1)
- Haplopappus zionis*, Cedar Breaks Goldenbush (G2)
- Heterotheca jonesii*, Jones' Goldenaster (G2)
- Senecio malmstenii*, Podunk Groundsel (G1)
- Sphaeromeria capitata*, Head Sphaeromeria (G3)
- Townsendia montana* var. *minima*, Bryce Canyon Townsendia

BORAGINACEAE

- Cryptantha ochroleuca*, Yellowish Cryptanth (G1)

BRASSICACEAE

- Lesquerella rubicundula*, Breaks Bladderpod (G3)
- Physaria chambersii* var. *membranacea*, Lepidote Twinpod (G2)

CARYOPHYLLACEAE

- Silene petersonii*, Maguire' Campion (G2)

FABACEAE

- Astragalus wardii*, Ward's Milkvetch (G3)
- Oxytropis oreophila* var. *jonesii*, Jones' Oxytrope
- Pediomelum pariense*, Paria Breadroot (G2)

GENTIANACEAE

- Gentianella tortuosa*, Jones' Gentian (G3)

POLEMONIACEAE

- Phlox gladiiformis*, Cedar Canyon Phlox (G3)

POLYGONACEAE

- Eriogonum aretioides*, Widtsoe Buckwheat (G2)

ROSEACEAE

- Ivesia kingii*, King's Ivesia (G3)
- Ivesia sabulosa*, Sevier Ivesia (G3)

SCROPHULARACEAE

⁸⁴ Unpublished document provided by Kristin Legg, Chief of Resource Management, Oct. 12

Castilleja parvula var. *revealii*, Reveal's Paintbrush (G2)

Penstemon bracteatus, Platy Penstemon (G2)

Penstemon leiophyllus, Markagunt Penstemon (G3)

() Utah Natural Heritage Ranking

G1 – Critically Imperiled Globally (typically 5 or fewer occurrences)

G2 – Imperiled Globally (6 to 20 occurrences)

G3 – Rare or Uncommon (21 to 100 occurrences)

Species by Land Manager

Ceanothus	greggii	var. franklinii
Cryptantha	osterhoutii	
Cystopteris	utahensis	
Dalea	flavescens	var. epica
Epipactis	gigantea	
Eriogonum	corymbosum	var. smithii
Habenaria	zothecina	
Lomatium	latilobum	
Lygodesmia	grandiflora	var. entrada
Oreoxis	trotteri	
Perityle	specuicola	
Phacelia	howelliana	
Xylorhiza	glabriuscula	var. linearifolia
Zigadenus	vaginatus	

Bryce Canyon NP

Astragalus	limnocharis	BRCA
Castilleja	parvula	var. limnocharis
Cryptantha	ochroleuca	var. revealii
Cymopterus	minimus	
Eriogonum	aretioides	
Haplopappus	zionis	
Heterotheca	jonesii	
Lepidium	montanum	var. claronense
Pediomelum	pariense	
Penstemon	bracteatus	
Physaria	lepidota	var. membranacea
Senecio	malmstenii	
Silene	peterstonii	
Sphaeromeria	capitata	

Canyonlands National Park

Astragalus	monumentalis	
Astragalus	musiniensis	
Astragalus	piscator	
Caesalpinia	repens	
Ceanothus	greggii	var. franklinii
Cryptantha	osterhoutii	
Cystopteris	utahensis	
Epipactis	gigantea	
Eriogonum	corymbosum	var. smithii
Gilia	latifolia	var. imperialis
Habenaria	zothecina	
Lygodesmia	grandiflora	var. entrada
Oreoxis	trotteri	
Perityle	specuicola	
Phacelia	howelliana	

1993 Fed Registry
listed

Plants listed as
threatened or
endangered (Fed Registry)
known to occur in
BRCA-type habitats

"Pea Family"
Fabaceae
Cedar B. Milk-vetch

apiaceae

CANY

NCPN contacts:

email

• Liz Ballenger

Liz-Ballenger@nps.gov

• Amy Tendick

amy-tendick@nps.gov

Genus

Castilleja ^{parvula}

- Scrophulariaceae

~~Fuscar Plateau Indian Paintbrush~~
Reveal Paintbrush

Bristlecone & ponderosa comm,

7,500 - 10,000 elev

Cryptantha ochroleuca

yellowwhite cryptantha

Boraginaceae perennial

Heterotheca Jonessii

Asteraceae "goldenasters"
perennial, short

Pediomelum Pariense

Paria River Indian Breadroot
Fabaceae, perennial

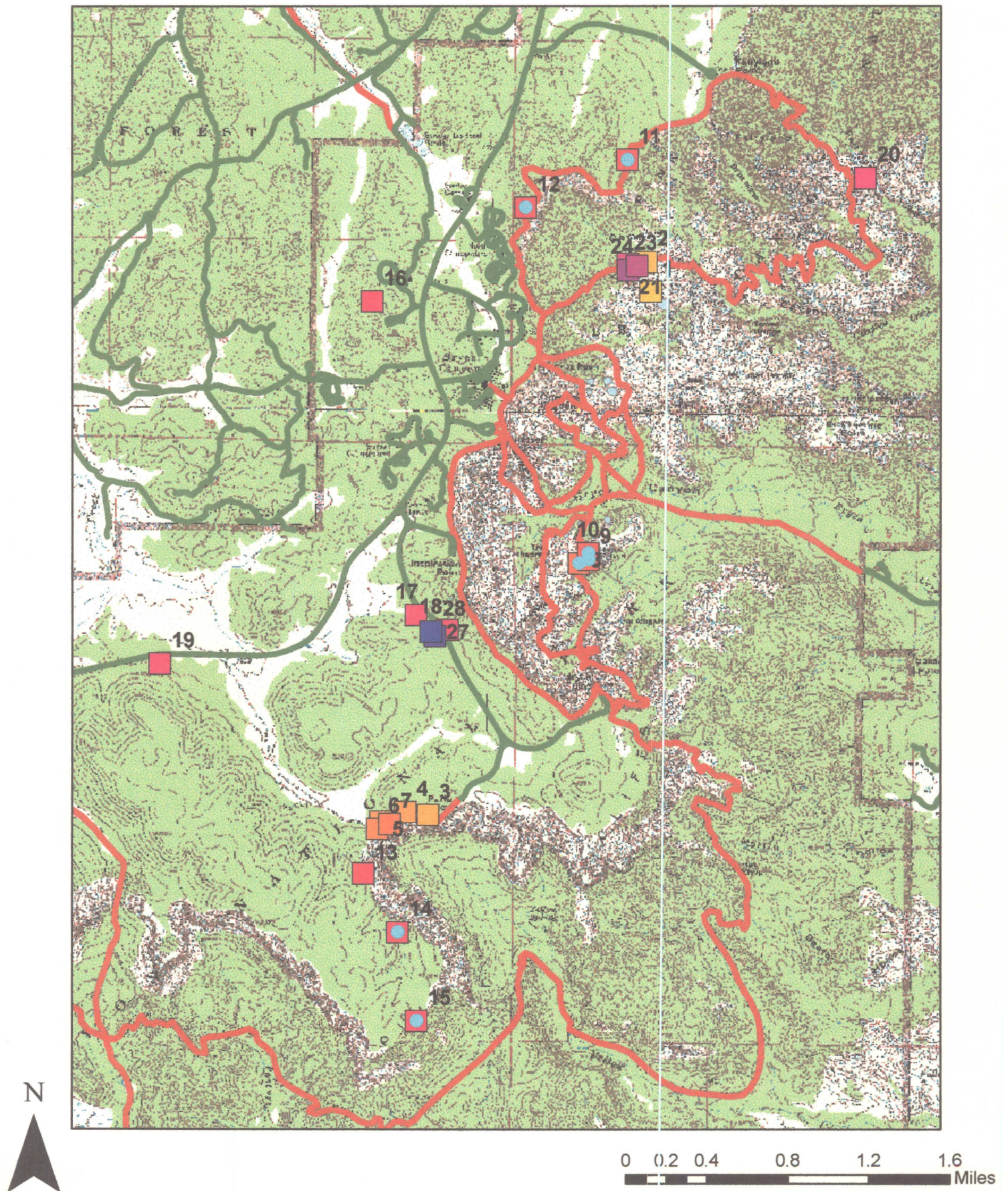
Penstemon bracteatus

Red Canyon beardtongue
perennial, Scrophulariaceae

Silene Petersonii

perennial, Caryophyllaceae
SIPE

Endangered Plant Sites, 2005



VIMP

2° 2' 175

Endangered Plant Sites, 2005



0 0.5 1 1.5 2 Miles

POT SPECIMENS FOUND 1997 SPECIMENS NOTED

WRY LOOP
CLUSTER

21
NOW
31

WRY LOOP
EAR CHILDS
ALL

22
now
24

WRY LOOP
CLUSTER

23

Y

SIPE
TOMO
CARE

Y

398292 E
4165864 N

WRY LOOP
CLUSTER

24

Y

SIPE
TOMO

Y

398269.84 E
4165792.25 N

WRY LOOP
CLUSTER

25

Y

HEJO

390676 E
4154783 N

26

Y

HEJO

390636 E
4154315 N

WRY LOOP
CLUSTER

27

Y

CAPA
CROC
TOMO
OXJO

396649.34 E
4162650.75 N

28

Y

CAPA
OXJO
TOMO
CROC

396603 E
4162221 N

WRY LOOP
CLUSTER

29
WAS
7

Y

PEPA

Y

Pania bread host

396237.28 E
4161349.25 N

30
WAS
16

Y

PEPA
CROC

396246.47 E
4165730.25 N

679 8872
pawley@scinternet.net

		Plot Found	Specimens 1997	Specimens Notes	GPS
Fairyland DOP Cluster 1, 24, 32, 23, 2	31	Y	SIPE	Y	No rebar 398177.44 E 4165806.00 N
	32 was 1	Y	CAPA PERR TOMO	Y	398270.22 E 4165808.75 N
(1) CAMPBELL GO .2 KM. SITE N.E. REBAR ON . SIDE & R/M OSE TOWARD ANYON BETWEEN LAT TOP & RAINAGE GULY	33 was 11	N	TOMO OXJO	Least Townsendia	398161.41 E 4166643.50 N

@1995
date

398085,
4166864

PLOT
FOUND SPECIMENS
1997

RIM TRAIL N.E.
1.6 MILES OF N.
CAMPGROUND
bet. FAIRY OVERLOOK
& SUNRISE PT.
NOW
33

RIM TR. (E) & N. Campground
10-15 MIN. SITE ON
SIDE (upslope)

OUT around RIM
FROM PARIA

OUT around RIM
FROM PARIA

OUT around RIM
FROM PARIA

BRYCE/PARIA
ROAD CUT ON
E

BRYCE PARIA
on E in MANSANTA

HWY 63 1.6 mi
to E. CREEK MEADOW
PICNIC AREA

FAIRY TRAIL
NEAR CHINESE
WALL. Adj. to
TRAIL.

11				
12	N	OXJO		397310 E 4166265 N
13	Y	PEPA		396064.50 E 4161184.75 N
14	N	PEPA CAPA		396308.16 E 4160480.00 N
15	N	PEPA		396457.41 E 4159729.50 N
16				
17	Y	TOMO CROR		396500.00 E 4163037.25 N
18	Y	LAPA CROC TOMO		396685.72 E 4162895.75 N
19	Y	TOMO		394240 E 4162606 N
20	N			

PLOT		PLOT SPECIMENS FOUND 1957	
1	Now 32		
2	N	CAPA PEBR CROC	no rebar found 398235.38 E 4165794.00 N
3	Y	PEPA	396520.50 E 4161401.25 N
4	Y	PEPA	396390 E 4161403 N
5	Y	PEPA	396192.12 E 4161339.25 N
6	Y	PEPA	396151.81 E 4161346.00 N
OUT around TIM FROM PAPA		7	PEBR SIPE TOMO
NOW 29			
from sunset pt. Queens garden at Wall St.	8	PEBR SIPE TOMO	397806.19 E 4163471.50 N
9		PEBR	397770 E 4163407 N
10		TOMO	397808 E 4163516 N

ROT SPECIMENS SPECIMENS
FOUND 1997 NOTED

FAIRY LOOP CLUSTER	~~21~~ NOW 31	?			
FAIRY LOOP NEAR CHINESE WALL	22 NOW 24				
FAIRY LOOP CLUSTER	23	Y	SIFE TOMO CARE	Y	398292 E 4165864 N
FAIRY LOOP CLUSTER	24 WAS 22	Y	SIFE TOMO	Y	398269.84 E 4165798.25 N
UNDER PIM GARFIELD CO. LINE	25	Y	HEJO		390676 E 4154783 N
	26	Y	HEJO		390636 E 4154815 N
BRYCE/PALIA ON ②	27	Y	CAPA CROC TOMO OXJO		396649.34 E 4162850.75 N
	28	Y	CAPA OXJO TOMO CROC		396603 E 4162821 N
OUT OF BOUND PIM FROM PALIA	29 WAS 7	Y	PEPA	Y	396237.28 E 4161349.25 N
	30 WAS 16	Y	TOMO OXJO CROC		396045.47 E 4165730.25 N

		Plot Found	Specimens 1097	Specimens Notes	GPS
FAIRYLAND LOOP CLUSTER 31, 24, 32, 23, 2	31	Y	SIPE	Y	No rebar 398177.44 E 4165806.00 N
	32 WAS 1	Y	CAPA FERR TOMO	Y	398270.22 E 4165808.75 N
N. CAMPFELD GO 1.2 KM SITE ON REBAR ON S. SIDE RIM NOSE TOWARD CLAYON BETWEEN FLAT TOP & DRAINAGE GULCH	33 WAS 11	N	TOMO OXJO		398161.41 E 4166643.50 N

HDI

PLOT
FOUND SPECIMENS
1997

RIM TRAIL N.E.
6 MILES OF N.
CAMPGROUND
ET. FAIRY OVERLOOK NOW
SUNRISE PT. 33

1/4 TR. (E) & N. Campground
-15 MIN. SITE ON
SIDE (upslope) 12

OUT around rim
FROM PARIA 13

OUT around rim
FROM PARIA 14

OUT around rim
FROM PARIA 15

~~16~~
NOW
30

BRYCE/PARIA
ROAD CUT ON 17

BRYCE PARIA
ON (E) IN TRANSITION 18

HWY 63 1.6 MI
TO E. CREEK MEADOW
ICNIC AREA 19

FAIRY TRAIL
EAST OF RAIL
VALLEY. ADJ. TO
RAIL. 20

N

OXJO

Y

PEPA

N

PEPA
CAPA

N

PEPA

Y

TOMO
CROZ

Y

CAPA
CROZ
TOMO

Y

TOMO

N

@1995 data

New GPS
Coordinates: 397271, 4166482

397310 E
4166265 N

396064.50 E
4161184.75 N

396308.16 E
4160480.00 N

396457.41 E
4159729.30 N

396500.00 E
4163037.25 N

396646, 4163087

396685.72 E
4162895.75 N

@1995
data.

394353, 4162813

394240 E
4162606 N

1401

PLOT
FOUND SPECIMENS
1997

RIM TRAIL N.E.
6 MILES OF N.
campground,
et. FAIRY OVERLOOK NOW
SUNRISE PT. 33

1/4 TR. (E) & N. campground
-15 MIN. SITE ON
SIDE (upslope) 12

UT around rim
from PARIA 13

UT around rim
from PARIA 14

OUT around rim
from PARIA 15

~~16~~
NOW
30

BOYCE/PARIA
ROAD CUT ON 17

BOYCE PARIA
ON (E) IN MANS. PART 18

HWY 63 1.6 mi
to E. CRICK MEADOW
ICNIC AREA 19

FAIRY TRAIL
(E) IN CRICK
MEADOW. ADJ. TO
RAIL. 20

N

OXJO

Y

PEPA

N

PEPA
CAPA

N

PEPA

Y

TOMO
CROR

Y

CAPA
CROR
TOMO

Y

TOMO

N

@ 1995 data

New GPS
Coordinates: 397271, 4166482

397310 E
4166265 N

396064.50 E
4161184.75 N

396308.16 E
4160480.00 N

396457.41 E
4159729.30 N

396500.00 E
4163037.25 N

396646, 4163087

396685.72 E
4162895.70 N

@ 1995
data

394353, 4162813

394240 E
4162606 N

Plot		Plot SPECIMENS FOUND 1997	
1			
Now			
32			
2	N	CAPA PEBR CROC	no rebar found 398235.38 E 4165794.00 N
3	Y	PEPA	396920.50 E 4161401.25 N
4	Y	PEPA	396390 E 4161403 N
5	Y	PEPA	396192.12 E 4161339.25 N
6	Y	PEPA	396151.81 E 4161346.00 N

ST ORLAND
M FROM
LEIA

Now
29

DOM
DIST PT
TOML
VS. ST.

7	Y		
8	N	PEBR SIDE TOML	397906.7 E 4163471.50 N
9	N	PEBR	397770 E 4163407 N
10	N	TOML	397802 E 4163510 N