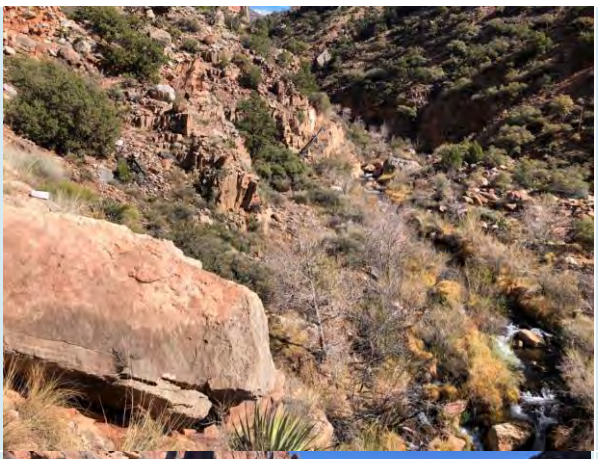
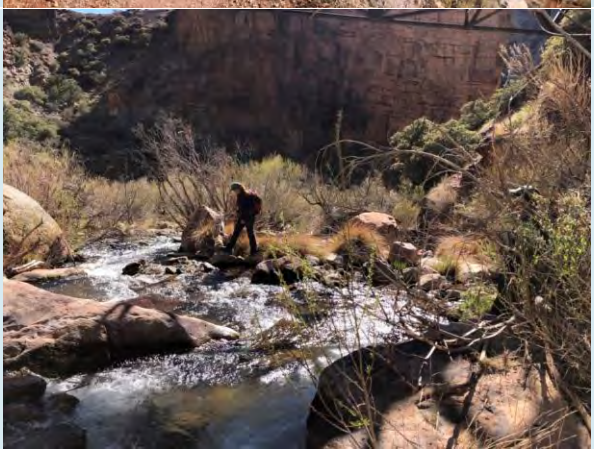
Appendix B: Representative Site Photographs

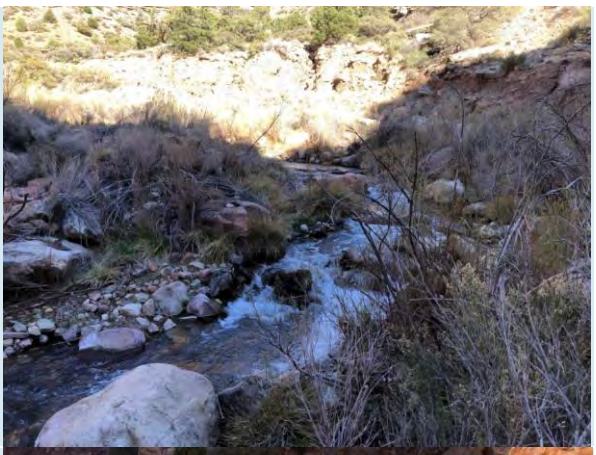
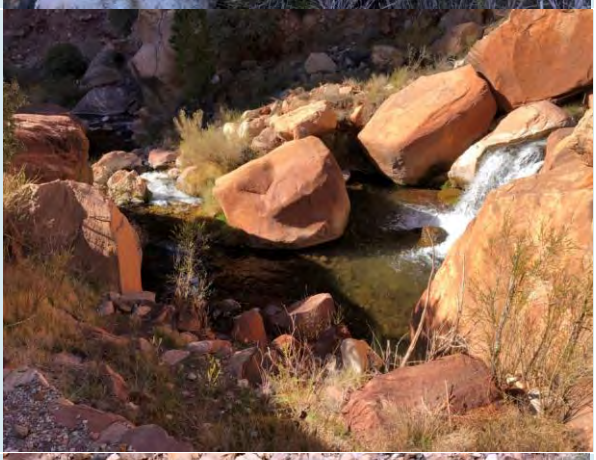
No.	Latitude/ Longitude	Compass Direction	Photograph	Notes
1	36.193477/ -112.033757	20.9		View of effluent pipe with water flowing down a steep slope towards emergent wetland W-1 and perennial stream S-1a (Bright Angel Creek).
2	36.193339/ -112.033385	334.6		Perennial stream S-1a on the right with abutting scrub-shrub wetland W-2 on the left, viewing upstream. Wetland W-2 is dominated by mule-fat (*Baccharis salicifolia*), narrowleaf willow (*Salix exigua*), water sedge (*Carex aquatilis*), and Ferriss' horsetail (*Equisetum × ferrissii*).

3	36.192832/ -112.032734	117.9		View of scrub-shrub wetland W-3. Wetland W-3 is dominated by narrowleaf willow, mule-fat, water sedge, and Ferriss' horsetail.
4	36.192509/ -112.032493	25.2		View of perennial stream S-1b (Bright Angel Creek) and scrub-shrub wetland W-3 in the immediate foreground (narrowleaf willow is visible). Wetland W-3 is dominated by mule-fat, narrowleaf willow, water sedge, and Ferriss' horsetail.
5	36.192443/ -112.032462	134.6		View of scrub-shrub wetland W-4. Wetland W-4 is dominated by mule-fat, narrowleaf willow, water sedge, and Ferriss' horsetail.

6	36.192286/ -112.032368	32.4		View of perennial stream S-1b and abutting scrub-shrub wetland W-4. Note the rock wall that borders the wetland.
7	36.191789/ -112.031921	43.8		Looking north (upstream) at Bright Angel Creek as it flows south just outside the project study area.

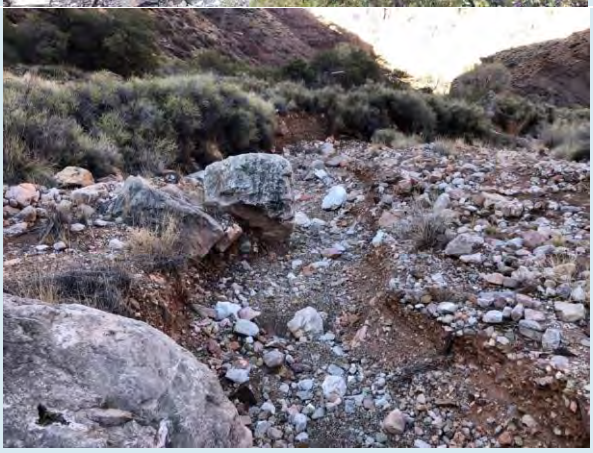
8	36.191144/ -112.031987	258.2		Looking north (upstream) at perennial stream S-1d (Bright Angel Creek) as it flows south through the project study area.
9	36.189930/ -112.031897	104.2		View of perennial stream S-1d (Bright Angel Creek) along the right side of photograph and the TCWL along the left side of photograph.
10	36.187949/ -112.032199	70.6		View of perennial stream S-1e (Bright Angel Creek) as it flows south through the project study area.

11	36.187746/ -112.032311	320.2		View of perennial stream S-1f (Bright Angel Creek) along right foreground of photograph. The North Kaibab Trail is located upslope on the left side of the photograph.
12	36.187391/ -112.032351	117.7		View along the North Kaibab Trail. Perennial stream S-1f is visible along the right background at the bottom of rock slope.
13	36.185053/ -112.032035	358		View downstream (south) of perennial stream S-1h (Bright Angel Creek).

14	36.184279/ -112.032650	355.3		View of perennial stream S-1i (Bright Angel Creek). The North Kaibab Trail is on the upper slope to the right of the photograph.
15	36.184510/ -112.034042	288.8		View of perennial stream S-1j (Bright Angel Creek).
16	36.184098/ -112.034635	328.2		View of perennial stream S-1k (Bright Angel Creek).

17	36.182488/ -112.034602	77.5		View of perennial stream S-1l (Bright Angel Creek).
18	36.181601/ -112.034398	163.9		View of perennial stream S-1m (Bright Angel Creek).
19	36.178820/ -112.034218	319.4		View of isolated ephemeral feature E-2. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.

20	36.178176/ -112.035632	261.2		View of isolated ephemeral feature E-3. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.
21	36.176285/ -112.037181	68.6		View of perennial stream S-1o (Bright Angel Creek) in the middle of photograph. The North Kaibab Trail is along the left foreground.

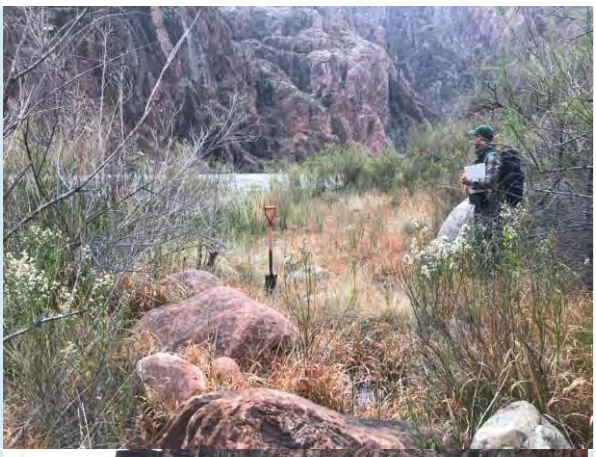
22	36.174982/ -112.038024	0.5		View of scrub-shrub wetland W-6 which is dominated by willow baccharis (*Baccharis salicina*), narrowleaf willow, and water sedge.
23	36.172447/ -112.038833	220.2		Viewing (downstream) of perennial stream S-1p (Bright Angel Creek).
24	36.171082/ -112.039460	278.4		View of isolated ephemeral feature E-5a. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, high volume precipitation events.

25	36.170706/ -112.040621	186.1		View of ephemeral feature E-6a. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.
26	36.170227/ -112.041517	124.8		View of ephemeral feature E-6b. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.

27	36.105989/ -112.094457	118.6		View of isolated, artificially irrigated wetland W-8. Irrigation ditches throughout Phantom Ranch convey flow to irrigate landscaped vegetation.
28	36.102499/ -112.095917	177.1		View of forested wetland W-9 at Phantom ranch. Wetland W-9 is dominated by Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), mule-fat, willow baccharis, and saltgrass (*Distichlis spicata*).

29	36.102036/ -112.096255	229.2		View of irrigation ditch and scrub-shrub wetland W-14 in Bright Angel Campground. Wetland W-14 is dominated by willow baccharis, California satintail (*Imperata brevifolia*), and saltgrass.
30	36.102348/ -112.096097	196.3		View of scrub-shrub wetland W-10 that abuts Bright Angel Creek. Wetland W-10 is dominated by mule-fat, willow baccharis, California satintail, and saltgrass.
31	36.102334/ -112.096003	245.2		Viewing north (upstream) at perennial stream S-1s (Bright Angel Creek). Note the pedestrian bridge that connects Phantom Ranch with the Bright Angel Campground.

32	36.099632/ -112.094476	18.5		View of scrub-shrub wetland W-15 that abuts Bright Angel Creek. Wetland W-15 is dominated by mule-fat, willow baccharis, California satintail, and saltgrass.
33	36.099706/ -112.093568	219.4		View of scrub-shrub wetland W-17 that abuts S-1t (Bright Angel Creek). Wetland W-17 is dominated by mule-fat, inland saltgrass, and scouring horsetail (*Equisetum hyemale*).
34	36.098918/ -112.092519	194		View of scrub-shrub wetland W-18. Wetland W-18 is dominated by mule-fat and saltgrass.

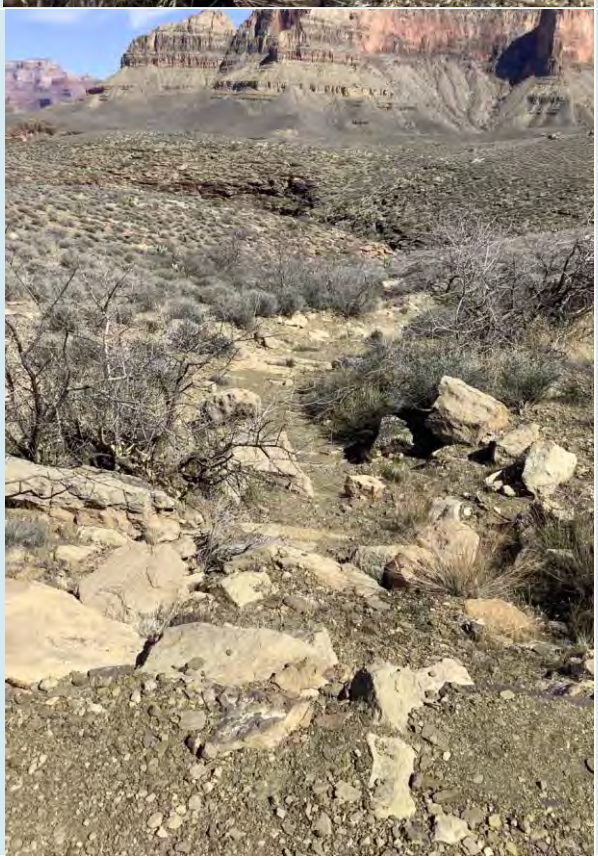
35	36.098625/ -112.092602	155.3		View of scrub-shrub wetland W-19 that abuts feature R-1a (Colorado River).
36	36.098200/ -112.095608	141.9		View of scrub-shrub wetland W-20 that abuts feature R-1a. The wetland is the thin line of vegetation below the boulders in the right middle ground.
37	36.098416/ -112.098784	107.2		View of feature R-1c (Colorado River).

38	36.099339/ -112.101166	163.3		View of feature R-1c flowing west on the northern portion of the project study area.
39	36.100216/ -112.103569	276.6		View of scrub-shrub wetland W-21 with the Colorado River (R-1d) in the background. Wetland W-21 is dominated by arrowweed (*Pluchea sericea*), willow baccharis, California satintail, scratchgrass (*Muhlenbergia asperifolia*), and bushy bluestem (*Andropogon glomeratus*).

40	36.099276/ -112.111031	355.2		View downstream (west) of feature R-1e (Colorado River).
41	36.099037/ -112.111287	53.1		Viewing south (upstream) of feature S-8 (Pipe Creek). Note the instream vegetation and rocky substrate.

42	36.098563/ -112.111459	339.9		Viewing downstream of feature S-8 (Pipe Creek). Note in-stream vegetation of mule-fat, rocky benthic substrate, and elevational drop of Pipe Creek. Pipe Creek's confluence with feature R-1e is visible in the right background.
43	36.092313/ -112.117277	191.8		Viewing west over the project study area. Vegetative community is comprised of blackbrush (*Coleogyne ramosissima*) and pricklypear (O*puntia* spp.).

44	36.08856/ -112.121951	326.6		View of ephemeral feature E-9. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.
45	36.087546/ -112.122895	127.4		View of ephemeral feature E-10. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.

46	36.086818/ -112.123533	120.3		View of ephemeral feature E-11. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.
47	36.085601/ -112.124838	114.2		View of ephemeral feature E-12. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.

48	36.084373/ -112.124771	311.5		View of ephemeral feature E-13. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.

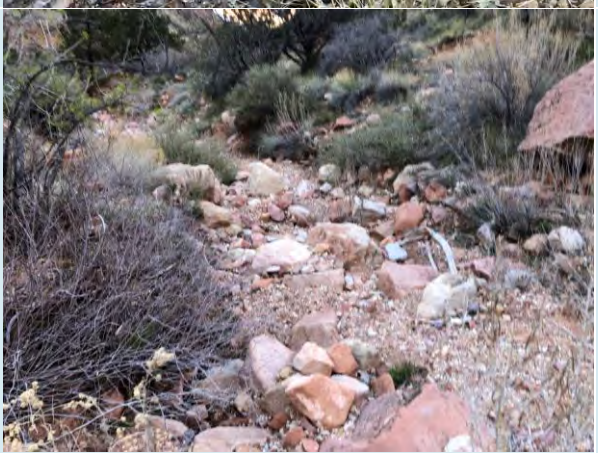
49	36.084052/ -112.123658	325.3		Viewing downstream at feature S-14a (Garden Creek). Note the lack of riparian wetlands due to the deeply incised channel and rocky streambanks.
50	36.083079/ -112.123836	320.1		Looking northwest at Garden Creek as it flows adjacent to the project study area.

51	36.079773/ -112.125625	345.9		View of ephemeral feature E-15. The drainage ends its at its confluence with the Bright Angel Trail. This drainage has a morphology characteristic of ephemeral drainages in the region and exhibits characteristics that indicate flows are conveyed solely during low frequency, low volume precipitation events.
52	36.07978/ -112.12581	59.4		View of feature S-14b (Garden Creek) as it flows north through the project study area. Note the lack of riparian wetlands due to the deeply incised channel and streambanks.

53	36.078601/ -112.126529	352		View of feature S-16a (unnamed tributary of Garden Creek) as it flows west down a slope from Two Trees Spring. The feature flows downslope to forested wetland W-22.
54	36.078523/ -112.127067	309.8		View of forested wetland W-22. Wetland W-22 is dominated by velvet ash (*Fraxinus velutina*), Fremont cottonwood, Goodding's willow, willow baccharis, and chairmaker's bulrush (*Schoenoplectus americanus*).

55	36.078566/ -112.127393	272.8		View of feature S-14c (Garden Creek) and forested wetland W-22. Note the pool in the left middle ground created by hikers to soak their feet.
56	36.078285/ -112.127868	73		View of feature S-14d (Garden Creek) and forested wetland W-23 along the left side of photograph. Wetland W-23 is dominated by velvet ash, Fremont cottonwood, Goodding's willow, willow baccharis, and chairmaker's bulrush.

57	36.0778/ -112.128449	346.2		View of forested wetland W-23. The structure in the foreground is made of rock and mortar for dispersant of spring water.
58	36.077267/ -112.128774	205.5		View of emergent wetland W-24 in the Indian Garden Campground. Wetland W-24 is dominated by chairmaker's bulrush and is fed by a spring at Campsite #7.
59	36.077126/ -112.12894	20.9		View of a spring that flows from under the tree. This spring feeds emergent wetland W-24 and eventually flows north to Garden Creek.

60	36.077283/ -112.128641	171.6		View of unnamed intermittent stream, feature S-18, on the east side of the Bright Angel Trail.
61	36.067675/ -112.134181	2		View of rock-lined drainage as it intersects with a trail.

62	36.065929/ -112.135417	353.9		View of a network of trails and hillslope erosion.
63	36.060378/ -112.139112	218.8		View of a rocky drainage with no defined bed and bank and hillslope erosion.

64	36.056354/ -112.112587	356.8		View of project study area on the South Rim of the Park. The landscape is dominated by ponderosa pine (*Pinus ponderosa*) and juniper (*Juniperus* spp.).
65	36.031952/ -112.130338	159.8		View of project study area on the South Rim of the Park. The landscape is dominated by ponderosa pine and juniper.