



Talinum brevifolium. This photo was taken in Capitol Reef NP. The population found in Arches NP had white flowers.

Veg Mappers Find “New” Plants for Utah National Parks

Text and photo by Sarah Topp

What goes on behind the scenes in your national parks? Park visitors see rangers, interpreters, and other helpful people at the entrance booths and visitor centers. But public service is only part of the picture, and research activities are generally not well-publicized. Moab is home to the Southeast Utah Group (SEUG), which functions, in part, as the resource management arm for Arches and Canyonlands National Parks, and for Natural Bridges and Hovenweep National Monuments. Part of what SEUG does is inventory and monitor plant and animal populations. As part of this larger program, plant inventory has been conducted in these parks, and in additional parks on the Northern Colorado Plateau, including (in Colorado) Dinosaur, Black Canyon of the Gunnison, and Colorado National Monuments, and (in Utah) Cedar Breaks National Monument, and Bryce Canyon and Capitol Reef National Parks.

During the 2006 field season, the inventory crew (also known as veg mappers) worked in Arches and Bryce Canyon National Parks. The goal of veg mapping is to create a comprehensive map of plant associations commonly found growing together across the park landscape, for example, Ponderosa pine and manzanita, a common forest type on the Paunsaugunt Plateau in Bryce Canyon NP. Typically, certain plant species are often found growing together based on factors such as soil type, aspect, elevation and fire history. The veg mapping crew collects data in the field, visiting several hundred sample sites having various combinations of these factors within each park. Once data are analyzed and photo interpretation completed, the vegetation map will provide information designed to assist resource managers in a variety of ways, as well as serving as a baseline for monitoring change over time.

Each park has a list of plants considered “present in the park” and this list is backed up by voucher specimens for every species, housed in each park’s herbarium. Our friend and advisor, Walt Fertig, compiled the current lists through a series of herbarium reviews for several parks over the last few winters. Walt also confirmed the identification of all the specimens subsequently collected. Each park’s herbarium serves then, as a museum and also as a reference point for future botanical researchers interested in identification and location information of plant species found within the park. Over time, populations of species may increase in size, remain virtually the same, or may disappear altogether, for various reasons.

Under the guidelines of our research permit, we were authorized to make collections for the herbarium of plant species not already represented in the herbarium with a voucher. These plant finds are considered “new” plant records for the park, although not necessarily new to science.

In 2006, the park service crew consisted of four people, often working in remote areas of the parks. Traveling cross-country, using aerial photographs, satellite imaging and GPS units, the crew found and made collections of 61 new species, including 5 new families, and several new genera within families already represented. Of these 61 species, 48 are natives and 13 are non-natives.

The crew worked in Arches NP during April and May, where we found 41 new species records. Four species represented new genera, and one, *Talinum brevifolium*, introduced a new family for the park, Portulacaceae, the Purslane Family. Sausage-leaf talinum grows in sandstone depressions and crevices primarily in the southeastern counties, and was found in a remote area of the park overlooking Clover Canyon. Another new species, *Asclepias ruthiae* (Ruth’s milkweed), is uncommon and previously was known in Grand County from just a couple of records - one from the early 1980’s and one from the mid 1990’s. This small milkweed was found in an area where grazing had occurred previous to the park’s establishment.

The months of June, July and August were spent working in Bryce Canyon NP where we found 30 new species for the park. The most interesting Bryce Canyon finds were in the Chenopodiaceae (Goosefoot Family). These plants are commonly found on saline, shaley and silty soils in what are generally thought of as “wastelands” or “badlands”. On the Tropic Shale Formation in Bryce Canyon NP, we found 7 new species in the Goosefoot Family. This soil type is uncommon in Bryce Canyon, which has soils predominantly derived from limestone; due to their unique photo signature, we targeted these sites for our inventory work. A couple of our more common shrubs, *Sarcobatus vermiculatus* (greasewood), and *Atriplex confertifolia* (shadscale) were among the new finds. A less common shrub,

Zuckia brandegeei (siltbush) is certainly one of the more graceful members of this family.

Near the southern end of the park, 2 new families were added for Bryce Canyon. One, Typhaceae (Cattail Family), was represented by the broad-leaved cattail, *Typha latifolia* which was flourishing along the edges of a remote spring. The other new family, Hydrophyllaceae (Waterleaf Family), was represented by a robust *Phacelia mammillariensis* found growing on a steep adobe hillside.

I wondered how so many new plant species could be found in parks that are 40+ years old. The explanation is probably a combination of things: a lack of funding for botanical research, being in the right place at the right time (especially where the fleeting period and irregular blooming cycles of annuals is concerned), travel to remote sites within the parks, and the possibility of new arrivals, especially in areas of high traffic where more “weedy” species may be introduced over time. In Arches NP, the new finds along the Colorado River corridor may have been due to timing, as we surveyed there in August when the water was low with easy shoreline access. In any case, it was very exciting and rewarding for everyone involved, and we are looking forward to more discoveries in future years.

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New Vascular Plant Records from Arches and Bryce Canyon National Parks – 2006

Nomenclature follows Welsh et al. (2003) *A Utah Flora, third edition*. All specimens are deposited in the ARCH or BRCA herbaria.

Arches National Park

Aegilops cylindrica (Fertig 22651)
Amaranthus retroflexus (Fertig 22998)
Asclepias ruthiae (Topp ST05180601)
Aster hesperius (Fertig 22992)
Bassia scoparia (Moran s.n.)
Bothriochloa ischaemum (Moran s.n.)
Bromus japonicus (Topp ST08080602)
Calamagrostis scopulorum (Fertig 22994)
Chamaesyce glyptosperma (Fertig 22991)
Chloris virgata (Moran s.n.)
Chorispora tenella (Topp ST05070603)
Chrysothamnus nauseosus var. *consimilis* (Fertig 22993)
Cyperus esculentus (Fertig 23008)
Datura wrightii (Topp ST05090601)
Descurainia sophia (Topp ST05070601)
Digitaria sanguinalis (Fertig 22999)
Elymus cinereus (Topp ST08080606)
Eremopyrum triticeum (Topp ST04210602)
Eriogonum inflatum var. *fusiforme* (Fertig 22658)
Festuca pratensis (Fertig 22653)
Gaillardia pulchella (Fertig 22996)
Galium aparine var. *echinospermon* (Topp ST05020602)
Galium multiflorum var. *multiflorum* (Topp ST08080601)
Hibiscus trionum (Fertig 23006)



Asclepias ruthiae. Voucher specimen deposited in Arches NP herbarium.

Juniperus scopulorum (Fertig 22646)
Lactuca serriola (Topp ST05200602)
Lepidium moabense (Moran s.n.)
Lythrum salicaria (Topp ST08230601)
Munroa squarrosa (Fertig 22997)
Oxytenia acerosa (Fertig 23000)
Panicum obtusum (Topp ST08220607)
Panicum virgatum (Fertig 22648)
Philadelphus microphyllus (Topp ST05150602)
Physalis longifolia (Fertig 23007)
Polygonum lapathifolium (Topp ST080605)
Populus x intercurrents (Topp ST05020604)
Scirpus maritimus (Topp ST08230603)
Spartina gracilis (Topp ST08070601)
Spartina pectinata (Topp ST08230605)
Talinum breviflorum (Topp ST05200601)
Tridens muticus (Topp s.n.)

Bryce Canyon National Park

Arabis selbyi (Topp ST06150604)
Aster hesperius (Topp ST07290601)
Atriplex confertifolia (Ballenger EB07270601)
Atriplex powellii var. *powellii* (Topp ST07280604)
Bassia scoparia (Topp ST07280609)
Carex duriuscula (Topp ST06140601)
Carex interior (Topp ST07290601)
Carex pellita (Topp ST06290603)
Chrysothamnus linifolius (Topp ST07280601)
Chrysothamnus nauseosus var. *gnaphalodes* (Fertig 23060)
Cirsium scariosum var. *scariosum* (Topp ST07160602)
Cleomella palmeriana var. *palmeriana* (Topp ST07280602)
Distichlis spicata (Topp ST07280606)
Elaeagnus angustifolia (Topp ST06150603)
Halogeton glomeratus (Topp ST07280611)
Opuntia fragilis (Topp ST06140601)
Phacelia mammillariensis (Topp ST06150606)
Populus x intercurrents (Topp ST06150601)
Potentilla pensylvanica (Topp ST06280602)
Salix eriocephala var. *watsonii* (Topp s.n.)
Sarcobatus vermiculatus (Topp ST06290601)
Senecio hydrophilus (Ballenger EB07290601)
Spartina gracilis (Topp ST06150607)
Sporobolus cryptandrus (Topp ST07290602)
Suaeda torreyana var. *torreyana* (Topp ST07280605)
Thelypodopsis sagittata var. *ovalifolia* (Topp ST07110601)
Thlaspi montanum var. *montanum* (Fertig 22534)
Typha latifolia (Ballenger EB07290602)
Ulmus pumila (Fertig 22543)
Zuckia brandegeei var. *plummeri* (Topp ST07280608)