



# Annotated Checklist of Vascular Flora

## *Golden Spike National Historic Site*

Natural Resource Technical Report NPS/NCPN/NRTR—2009/206



**ON THE COVER**

Mullein (*Verbascum thapsus*), an introduced species at Golden Spike National Historic Site, Utah.  
Photograph by Walter Fertig.

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# Abstract

In 2005–2006, the National Park Service’s Northern Colorado Plateau Network received funding to develop a revised checklist of the vascular plant flora of Golden Spike National Historic Site. This entailed a thorough review of existing literature, re-examination of herbarium specimens collected from Golden Spike National Historic Site, and additional field work to corroborate unverified species reports or locate new species. Based on this study, 144 vascular plant taxa have been confirmed or reliably reported as occurring in the site (137 are known from validated herbarium specimens and 7 from unvouchered literature reports). Three species formerly considered part of the historic site flora have now been shown to be falsely reported. The current flora of Golden Spike National Historic Site represents about 4% of the known flora of Utah and 7.7% of the flora of the Great Basin ecoregion within Utah. Although no species from Golden Spike National Historic Site are listed as threatened or endangered, at least six taxa are considered species of concern by the state natural heritage program. Introduced plants make up 30.5% of the site flora (44 species), of which only two species are considered noxious weeds by the State of Utah. Further surveys in Golden Spike National Historic Site are likely to find additional new species (about 163 are known from similar habitats outside the historic site boundary), especially among late-flowering and weedy taxa.



# Acknowledgements

I would like to thank the following individuals for their assistance with this project. Dr. Angela Evenden, botanist and former leader of the Northern Colorado Plateau Network (NCPN) program in Moab, was an active proponent of this project and helped secure funding for field work and herbarium studies in 2006. Laura and Mike Fertig assisted with field work in October 2006. Drs. Michael Piep and Mary Barkworth provided access to Golden Spike National Historic Site (NHS) collections housed at the Intermountain Herbarium on the campus of Utah State University. Dr. Leila Shultz shared data from her work in Golden Spike NHS and helped me track down some references. Libby Nance, former database specialist with the NCPN, assisted with development and quality control of the historic site's NPSpecies database. Libby Nance, Janet Coles, Sarah Topp, and Helen Thomas also provided data from recent vegetation mapping studies in the historic site. Drs. Stanley Welsh and Duane Atwood provided access to herbarium collections at Brigham Young University (BRY). Thanks to the technical reviewers (Dr. Angela Evenden, Dr. Dusty Perkins, and Libby Nance) for their comments and suggestions. To any others who I may have inadvertently forgotten, please accept my apologies (and thanks).

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# 1 Introduction

In 2006, the National Park Service (NPS) established a cooperative agreement with the University of Wyoming, through the Rocky Mountains Cooperative Ecosystem Studies Unit, to produce a series of technical reports summarizing the vascular plant flora of each of the 16 national park units of the Northern Colorado Plateau Network (NCPN). These reports are based on existing information in the park service's NPSpecies database system and augmented by further data mining, reviews of state and regional herbaria, and new field surveys to resolve the status of many reported and unconfirmed species. The objective of these reports is to summarize the current state of knowledge of the flora of each park for the benefit of NPS biologists and interpretive staff, outside researchers, and the general public. The following report addresses the vascular flora of Golden Spike National Historic Site, in northwestern Utah. Other NCPN park units are addressed in separate reports.

## 1.1 Background and justification

One of the primary missions of the NPS is "to conserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment of this and future generations" (NPS 2000). Due to their high degree of protection and distribution across a wide variety of habitat types, the nation's national park units make a significant contribution to the protection of biological diversity (Noss and Cooperrider 1994). Unfortunately, the full contribution of the NPS system is not known, as many park units have traditionally lacked comprehensive biological inventories or monitoring programs to identify the composition and condition of their biota. Knowing the status of park flora and fauna is critical for effective park management and for systematically identifying and filling gaps in the nation's protected area network (Margules and Pressey 2000).

To rectify this shortcoming, Congress passed the National Parks Omnibus Management Act in 1998 to provide guidance and funding for an inventory and monitoring program across the entire National Park System. Since 2000, the NCPN Inventory and Monitoring Program has been developing and verifying species lists of vertebrates and vascular plants for each park unit

in the network (Evenden et al. 2002). This effort has entailed reviewing existing species checklists, corroborating the identification of specimens in park museum and herbarium collections, locating additional specimen records from other museums, mining relevant literature and datasets, and conducting field surveys to locate new taxa or confirm unsubstantiated reports.† All of these data have been synthesized in NPSpecies, the park service's standardized database for documenting park status (present, probably present, unconfirmed, falsely reported), abundance, residency, nativity, and rarity. With the production of a technical series of reports on the flora of each park, the NPSpecies data will now be available to a broader audience.

## 1.2 Objectives

The objectives of this project were to:

1. Document the current status (present, reported, potential, or falsely reported) of all vascular plant species that have been cited as occurring in Golden Spike National Historic Site based on a review of herbarium collections and past literature.
2. Develop an annotated checklist of the flora of Golden Spike National Historic Site with supplemental information on taxonomic synonyms, distribution, within-park abundance, flowering period, growth form, nativity, habitat, and sources for each record.

## 1.3 Study area

### 1.3.1 History and setting

In 1862, the U.S. Congress passed legislation authorizing construction of the first transcontinental railroad to link the eastern United States to growing population centers on the Pacific coast. The Union Pacific Railroad built the eastern portion of the line (starting in Omaha, Nebraska, and extending across the Great Plains and Rocky Mountains), while the Central Pacific Railroad was responsible for the line heading over the Sierra Nevada and Great Basin. After six years and construction of 1,776 miles of new track, the two rail lines met at Promontory Summit, north of the Great Salt Lake in Utah Territory, on May 10, 1869. The final railroad tie was secured with a special golden spike to commemorate the

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†Taxa refer to all named species, subspecies, and varieties.

occasion (the golden spike was immediately replaced with a less theft-prone and more practical iron spike) (Utley and Ketterson 1969).

The short-lived town of Promontory grew up around the golden spike site, but was essentially abandoned when the railroad terminus moved to Ogden in 1870. The rail line itself was largely bypassed by a shortcut built across the Great Salt Lake in 1902. By 1942, the line over Promontory Summit was completely abandoned and the track removed for scrap used in World War II (Utley and Ketterson 1969).

Following efforts by local citizens and historians, a seven-acre area around the historic townsite of Promontory was designated a national historic site in 1957. The area was transferred to the National Park Service in 1965, and expanded to include more than 15 miles of railroad grade and historic sites, such as the Big Fill and Big Trestle. In 1980, Congress expanded the site's boundaries to their present size (2,735 acres, Figure 1.3.1) and mixture of public and private lands (Evenden et al. 2002).

Golden Spike National Historic Site (NHS) is located approximately 32 miles west of Brigham City and 55 miles north of Ogden in north-central Box Elder County, Utah (Figure 1.3.1). The site occupies the saddle of a major pass across the Promontory Range at the northern edge of the Great Salt Lake Basin. Elevation ranges from 4,360 feet (1,329 meters) to 5,280 feet (1,609 meters). Temperatures can vary from daytime highs of 20° F in winter to 100° F in mid-summer. Average annual precipitation is 8–12 inches (200–300 mm), mostly coming as winter snow (Evenden et al. 2002).

### 1.3.2 Geology

Golden Spike NHS and the adjacent Promontory Mountains are part of an uplifted fault block of Pennsylvanian–Permian age dolomite and limestone displaced to the east during the Sevier Orogeny in the Cretaceous (Chronic 1990). In the Pleistocene, these rock layers were reworked by the rising and falling of Lake Bonneville (the freshwater precursor of the Great Salt Lake), which covered most of northwest Utah. Receding lake waters ultimately left a series of terraces of fine-grained lake sediments, alluvium, and outcrops of dolomite bedrock.

### 1.3.3 Vegetation

Most of Golden Spike NHS is a sagebrush grassland dominated by basin big sagebrush (*Artemisia tridentata* var. *tridentata*), graystem rabbitbrush (*Chrysothamnus nauseosus* var. *gnaphalodes*), and purple three-awn (*Aristida purpurea*) grassland. Disturbed areas along old railroad lines and roads have high concentrations of cheatgrass (*Bromus tectorum*), common sunflower (*Helianthus annuus* ssp. *lenticularis*), and broom snakeweed (*Gutierrezia sarothrae*).

### 1.3.4 Previous botanical studies

The earliest scientific exploration of the north end of the Great Salt Lake was conducted by Howard Stansbury in 1849, while tracing one of the proposed routes for a transcontinental railroad. Although Stansbury's party collected several new species to science (including cliffrose, *Purshia* [*Cowania*] *mexicana* var. *stansburyana*), none apparently came from the immediate vicinity of Golden Spike NHS (Cronquist et al. 1972).

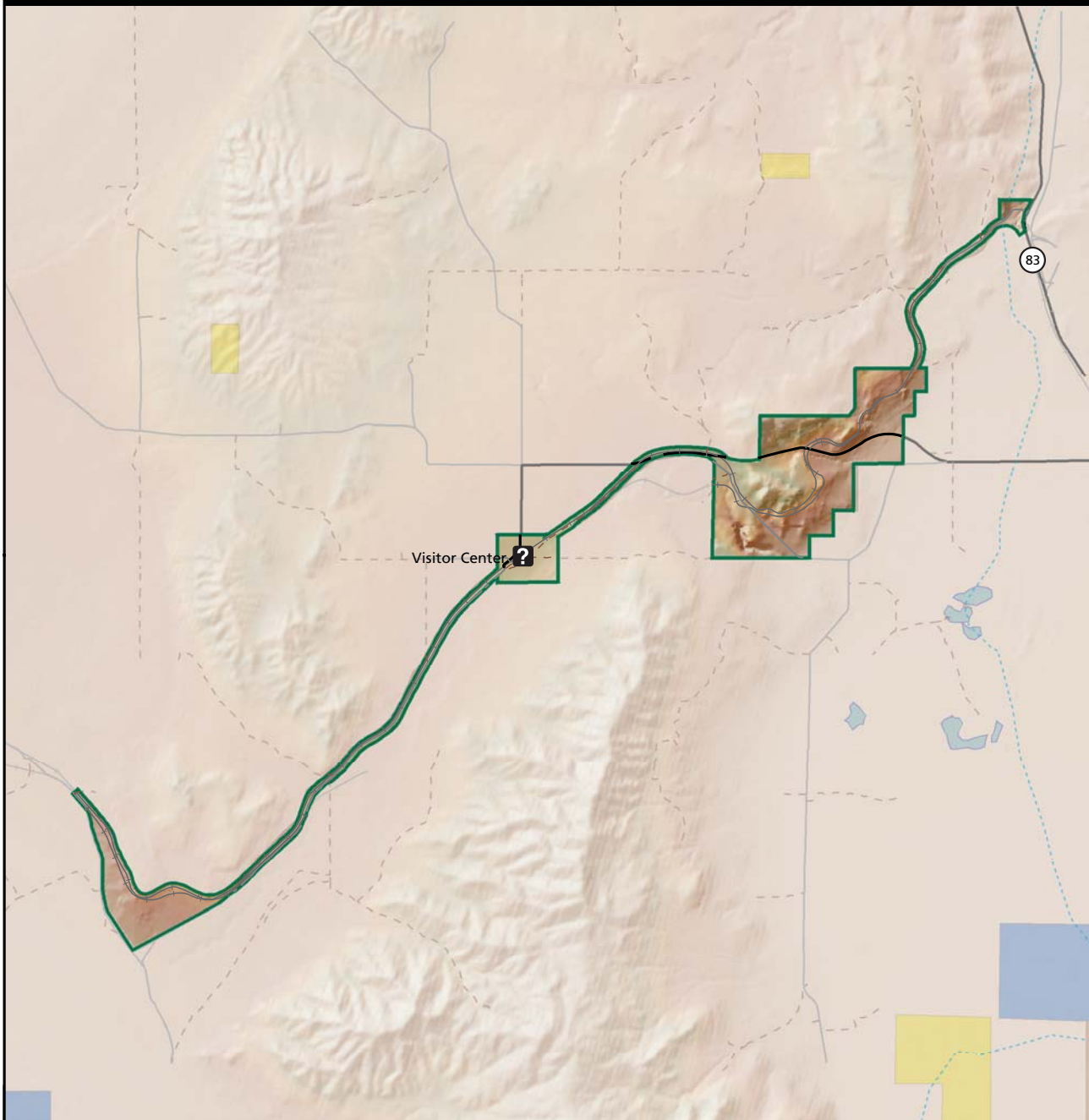
Evenden et al. (2002) discussed an early floristic study from the 1970s, but the list (Hansen 1975) has not been relocated. Lois Arnow, of the University of Utah, collected the earliest-known herbarium specimen (annual wheatgrass, *Eremopyrum triticeum*) from Golden Spike NHS in 1975 (Table 1.3.4). Leila Shultz and colleagues documented the local endemic Passey's onion (*Allium passeyi*) and three other taxa within the site during a 1980 study (Boyce 1980).

The first major floristic study of the Golden Spike area did not take place until the mid 1990s. Linda Allen, Michael Curto, Robert Fitts, and colleagues from Utah State University and the Utah Native Plant Society conducted a one-day field survey in May 1994, and documented 47 new species for the historic site (Allen and Curto 1994). The study was continued in 1995, with 68 additional species being vouchered or reported. Allen and Curto (1995) cited 120 species for Golden Spike NHS in their final report, with 109 confirmed with herbarium specimens (deposited at Utah State University) and 11 observed but not vouchered (Table 1.3.4, Figure 1.3.4).

Field work since 2005 has resulted in two dozen additional species being collected or reported for the area. Leila Shultz and colleagues from Utah State University reported two new species in 2005

# Golden Spike National Historic Site

Utah



Established April 2, 1957  
 1,329–1,609 meters elevation  
 (4,360–5,280 feet elevation)  
 1,107 hectares (2,735 acres)



### Legend

- Intermittent streams
- Paved roads
- Unpaved roads
- Unimproved/4WD roads
- Old railroad beds
- Park boundary (NPS)
- Bureau of Land Management (BLM)
- Private
- State
- Water

MAP CREATED BY ANETH WIGHT, NCPN (DERIVED FROM EVENDEN ET AL. 2002)

Figure 1.3.1. Location of Golden Spike National Historic Site, Box Elder County, Utah.

(their vouchers could not be relocated for corroboration in 2006). My wife, Laura, and I found 17 new species and relocated 7 previously reported (but unvouchered) taxa in 2006. Janet Coles

and others from the NCPN vegetation mapping crew discovered five new species in 2007 (NCPN in ed.).

**Table 1.3.4. Chronology of plant collecting efforts, Golden Spike National Historic Site.**

Year	Collector(s)	# of new taxa	Comments
1975	L. Arnow	1	Lois Arnow collected annual wheatgrass ( <i>Eremopyrum triticeum</i> ) from GOSP grounds (specimen at BRY).
1980	L. Shultz, J. Shultz, & B. Boyce	4	Leila Shultz and colleagues collected Passey's onion ( <i>Allium passeyi</i> ) and three other plant species while conducting a rare plant survey (Boyce 1980).
1994	M. Curto, L. Allen, R. Fitts, & L. Teerlink	47	Allen and Curto (1994) collected vouchers of 47 new species during a one-day survey supported by Utah State University and the Utah Native Plant Society.
1995	M. Curto, L. Allen, M. Hysell, & G. Ellis	63 (+ 5 reported)	Allen, Curto, and colleagues added 63 additional species during 1995 field work. Their final species list contained 109 verified species (with vouchers at Utah State University) and 11 unvouchered reports (6 of which have since been corroborated) (Allen and Curto 1995).
2005	L. Shultz, F. Wagner, & R. Banner	2 reported (1 of these confirmed in 2007)	Leila Shultz and colleagues from Utah State University reported forage kochia ( <i>Kochia prostrata</i> ) and seepweed ( <i>Suaeda</i> sp.) for the site (specimens could not be located in 2006 search of Utah State University Herbarium). Janet Coles of NCPN verified Torrey's seepweed ( <i>Suaeda torreyana</i> ) at Golden Spike NHS in 2007.
2006	W. Fertig & L. Fertig	17	Fertig and Fertig discovered 17 new plant species for Golden Spike NHS and relocated 7 species previously reported by Allen and Curto (1995) without vouchers.
2007	J. Coles, P. Williams, & B. Condie	4 (+ 1 reported)	Four new species were documented and a fifth was reported (without a voucher) by vegetation mappers with the NCPN (in ed.).



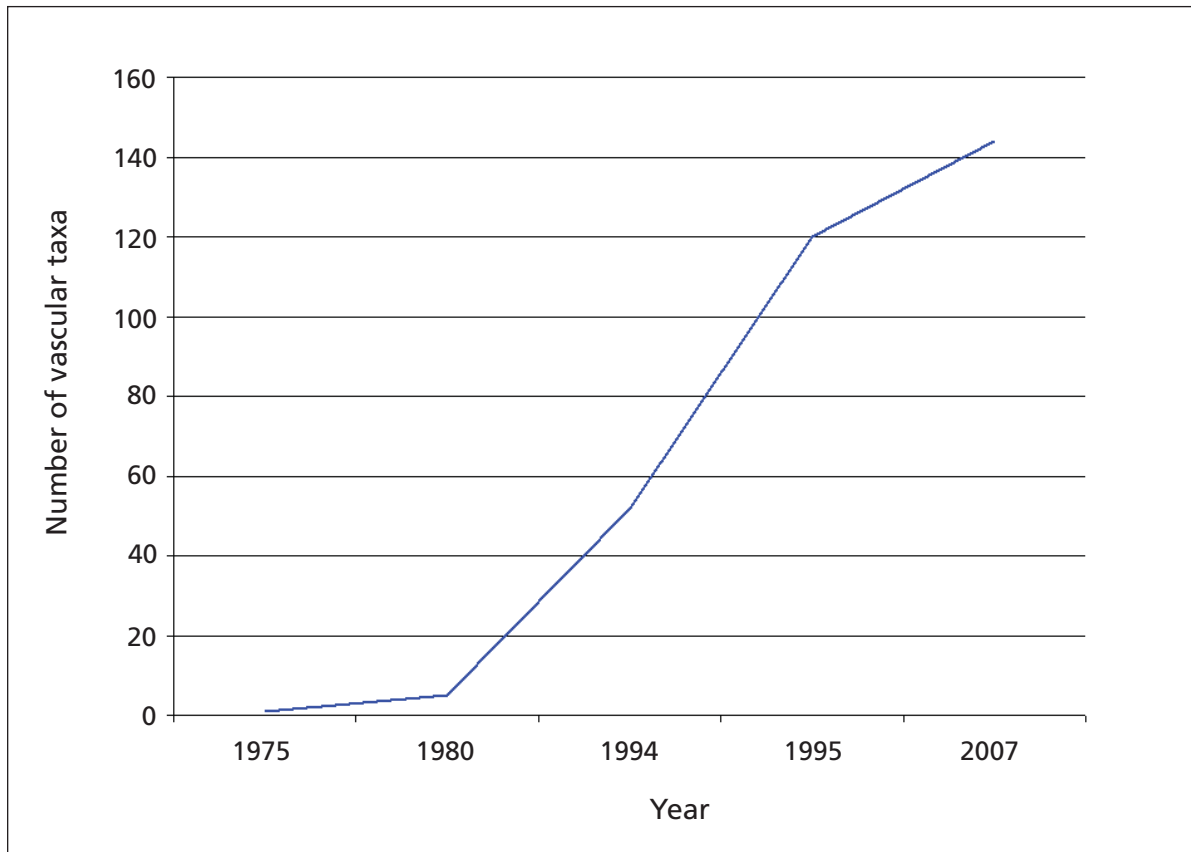


Figure 1.3.4. Increase in the number of plant taxa confirmed as present in Golden Spike National Historic Site, 1975–2007.



## 2 Methods

In June 2006, I reviewed all available mounted specimens from Golden Spike NHS housed in the Intermountain Herbarium at Utah State University (UTC) to determine whether each was correctly identified to species, subspecies, or variety following the nomenclature of Welsh et al. (2003). As necessary, I made corrections and annotations to each specimen and to the voucher records in the site's Automated National Cataloging System (ANCS+) and NPSpecies database.

Based on this herbarium work, a review of park references (Allen and Curto 1995), and a query of the Intermountain Herbarium online digital plant database, I developed four lists:

1. A revised checklist of species that were present in the park (confirmed by an authenticated voucher; included in Appendices A and D);
2. A list of species that were reported in the literature but not corroborated with a voucher (equivalent to "probably present" in NPSpecies terminology; included in Appendices A and D);
3. A list of potential species ("unconfirmed" in NPSpecies) known from the vicinity of Golden Spike NHS using an unpublished list generated by Dr. N. Duane Atwood of Brigham Young University and Albee et al. (1988) (included in Appendix B); and
4. A list of species that are now known to be misidentified or highly questionable (Appendix C).

Each list was annotated with supplemental information on life form, geographic range (within the context of Utah), population size in the historic site (derived from Allen and Curto 1995 and field observations), flowering period, distribution across general vegetation types, nativity, data source (collector and collection number from a sample specimen or literature citation), year of earliest collection (from herbarium records), and relevant synonymy and taxonomic problems (based on review of Barkworth et al. 2003, 2007; Barneby 1989; Cronquist 1994; Cronquist et al. 1972, 1977, 1984, 1997; Dorn 2001; Flora of North America Editorial Committee 1993, 1997, 2000, 2002a, 2002b, 2003, 2005, 2006a, 2006b, 2006c; Holmgren et al. 2005; and Weber and Wittmann 2001). The annotations to these lists and label data from the herbarium review were then incorporated into the NPSpecies database for Golden Spike NHS.

Work in 2006–2007 focused on confirmation of reported and potential species for the site flora through field surveys and review of collections from state and regional herbaria. I made two collecting trips to Golden Spike NHS, in June and October 2006, to target missing species, emphasizing undersampled weedy and late-flowering taxa. Herbarium studies were undertaken at Brigham Young University (BRY), Utah State University (UTC), and the University of Wyoming (RM) in March, June, and October 2006, and February and March 2007. Finally, I found additional new species reports by examining unmounted collections by NCPN researchers conducting vegetation mapping (NCPN in ed.).



# 3 Results

## 3.1 Summary of the flora of Golden Spike National Historic Site

Of the 132 vascular plant vouchers from Golden Spike NHS in the UTC and BRY herbaria that I examined in 2006, 4 were misidentified (3%), 11 were revised to a more current name (8.3%), 35 had variety or subspecies names added (26.5%), and 82 were found to be correctly determined (62.1%) (Fertig 2006). Based solely on these collections, the confirmed flora of Golden Spike NHS stood at 109 taxa (with 11 additional species reported, but not vouchered by Allen and Curto [1995]). Field surveys in 2006 netted 24 additional species (17 taxa were new to the historic site and 7 had previously been reported but

not vouchered). In 2007, four new species were added through the efforts of the NCPN vegetation mapping team (NCPN in ed.), bringing the total documented flora of Golden Spike NHS to 137 (Table 3.1, Appendices A, D).

Seven additional taxa have been reported for Golden Spike NHS but have yet to be corroborated with a voucher specimen (Table 3.1, Appendix A). Of these, five were reported by Allen and Curto (1995) and two others from unconfirmed herbarium reports at Utah State University and observations by the NCPN vegetation mapping crew (NCPN in ed.). Taken together, the number of confirmed and reported vascular plant taxa at Golden Spike NHS stands at 144 taxa (Table 3.1, Appendix A).

Entering the 2006 field season, I recognized 167

**Table 3.1. Statistical summary of the flora of Golden Spike National Historic Site.**

Category	Number confirmed in park	Number additionally reported for park	Total
<b>Taxonomic diversity</b>			
Total taxa (including varieties and subspecies)	137	7	144
Full species (excluding varieties and subspecies)	136	6	142
Families	31	1	32
<b>Life form diversity</b>			
Tree taxa	0	0	0
Shrub taxa	18	2	20
Perennial forb taxa	61	3	64
Annual forb taxa	37	1	38
Perennial graminoid taxa	14	1	15
Annual graminoid taxa	7	0	7
Fern taxa	0	0	0
<b>Biogeographic diversity</b>			
Introduced taxa	40	4	44
Native taxa			
Locally endemic taxa	1	0	1
Regionally endemic taxa	5	0	5
Disjunct taxa	0	0	0
Peripheral taxa	2	0	2
Sparse taxa	3	0	3
Widespread taxa	86	3	89
<i>Total native taxa</i>	<i>97</i>	<i>3</i>	<i>100</i>

The number of taxa and families is based on taxonomic concepts of Welsh et al. (2003). See Appendices for an explanation of the various categories.

taxa as potentially occurring in Golden Spike NHS, based on the proximity of the site to other known populations (Albee et al. 1988; Fertig 2006). Four of these species were found to occur in Golden Spike NHS based on field collections or relocated herbarium specimens in 2006–2007. The current number of potential species that I am recognizing for Golden Spike National Historic Site is 163 (Appendix B).

Of the original pool of species documented or reported for Golden Spike NHS, I found that three taxa were falsely reported based on misidentified voucher specimens in the UTC herbarium (Appendix C).

The confirmed and reported flora of Golden Spike NHS represents 4% of the 3,594 native and naturalized taxa documented for the state of Utah by Welsh et al. (2003) and 21.2% of the state's 151 plant families (Table 3.1). Within Box Elder County, the historic site flora captures 15.2% of the 948 taxa reported by Welsh et al. (2003). At the ecoregional scale, Golden Spike NHS contains 7.7% of the 1,876 species from the Utah portion of the Great Basin (Shultz et al. 2006; Welsh et al. 2003).

### 3.2 Life form and biogeographic diversity

Although ecologically dominant, shrub species make up only 13.9% of the confirmed and reported plant taxa of Golden Spike NHS (see Table 3.1). No tree species are presently known from the area, although Evenden et al. (2002) reported an historical record of box-elder (*Acer negundo*). Perennial forbs are the most species-rich life form in the historic site's flora, with 64 known and reported taxa (44.4% of the total flora). Annual forbs and grass-like plants comprise just over 31% of the flora. Like shrubs, perennial graminoids are ecologically important but relatively species-poor, representing less than 11% of the total flora. No ferns or fern-allies are present at Golden Spike NHS (see Table 3.1).

Of the historic site's 100 native taxa, 89 (89.0%) are widespread across Utah and western North America. Only one species (Passey's onion) is a local endemic (restricted to an area of less than 1° of latitude × 2° of longitude; see Appendix A for complete definitions of biogeographic categories). Regional endemics (largely restricted to the Great Basin) comprise an additional 5.0% of the Golden Spike NHS flora (see Table 3.1). The remaining 5% of the flora consists of species at the margin of their contiguous range (peripheral taxa) or that occur sparsely over Utah.

### 3.3 Plants of special concern

Golden Spike NHS has no plants listed as threatened or endangered under the U.S. Endangered Species Act. Passey's onion was formerly a Category 2 candidate for potential listing under the act (Table 3.3), but currently has no protective status. Six taxa in all are tracked as species of concern by the Utah Conservation Data Center (UTCDC) (UDWR 1998).

### 3.4 Non-native species and noxious weeds

Introduced plant species (not historically native to Utah or North America) make up 30.6% of the confirmed and reported flora of Golden Spike NHS (Table 3.4). This figure is significantly higher than the statewide average of 13.5% non-native species (Fertig 2007; Welsh et al. 2003). Of the 44 introduced plant species confirmed or reported for Golden Spike NHS, only two are listed as noxious by the State of Utah (State of Utah Department of Agriculture and Food 2007). Field bindweed (*Convolvulus arvensis*) occurs in disturbed soils over much of the historic site, particularly along abandoned railroad lines. Dyer's woad (*Isatis tinctoria*) was reported as occasional by Allen and Curto (1995) but was not vouchered and has not been relocated since.

**Table 3.3. Plant species of conservation concern, Golden Spike National Historic Site.**

Family	Species	Common name	TNC global rank	Legal status	UTCDC status
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>latiloba</i>	Louisiana wormwood	G5T5		Peripheral, S1
Compositae (Asteraceae)	<i>Microseris troximoides</i>	dandelion microseris	G5		Peripheral, S1
Cruciferae (Brassicaceae)	<i>Arabis lignifera</i>	Sweetwater rockcress	G5T5		Add. Data,
Liliaceae (Alliaceae)	<i>Allium passeyi</i>	Passey's onion	G1	USFWS former C2 candidate	Rare, S1S2
Liliaceae (Calochortaceae)	<i>Calochortus bruneaunis</i>	Bruneau mariposa	G5		Peripheral, S2
Scrophulariaceae	<i>Penstemon cyananthus</i> var. <i>subglaber</i>	Raft River penstemon	G4T3?		Watch, S2?

This list is derived from Utah Division of Wildlife Resources (1998). All species are confirmed as present at Golden Spike NHS.

**Codes:** **TNC global rank** assesses abundance and conservation priority on a scale of 1–5 (1 being extremely vulnerable and 5 being secure) for full species (G) and varieties or subspecies (T) across their entire range. A “?” indicates uncertainty in the rank, Q = taxonomic questions, U = unknown, and NR = not ranked. A comparable scoring system is used to measure state abundance (S) in Utah under the column UTCDC status. Under **legal status**, USFWS = U.S. Fish and Wildlife Service. C2 = category 2 candidate (a former category used for taxa that might warrant being proposed for threatened or endangered status following additional research). **UTCDC status** includes conservation categories adopted by the state natural heritage program to prioritize endemic and rare plant taxa (UDWR 1998). These categories include: Historical (presumed extinct or only known historically through their range), Rare (plants with rangewide viability concerns), Watch (regional endemics without rangewide viability concerns), Peripheral (rare or uncommon in Utah, but more common rangewide), Infrequent (plants occur infrequently over western U.S.), Taxonomic Problems (validity of species, subspecies, or variety has been questioned), Additional Data (species appear rare, but more information needed before being assigned to a different category).





## 4 Discussion

Since the publication of Allen and Curto's 1995 checklist, the known flora of Golden Spike NHS has increased by nearly 17% to the current total of 144 confirmed and reported taxa (Tables 1.3.4 and 3.1, Figure 1.3.4, Appendix A). Based on available habitats and proximity, at least another 163 plant taxa may occur within the site (Appendix B). Should all of these potential species be

found, the documented flora of the site would increase by nearly 53%. Many of the "missing" potential or reported taxa consist of cryptic species that flower late in the growing season, or occur in undersampled weedy habitats. Confirmation of reported species should remain a high priority, as some of these taxa may ultimately prove to be erroneous. Additional studies would also be useful to better refine the abundance and distribution of species of high management interest (especially rare plants and invasive non-natives).



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# Appendices

The following appendices contain annotated checklists of the vascular flora of Golden Spike National Historic Site.

Appendix A lists all species that have been confirmed for the flora with an authenticated voucher specimen (including extant and historical records) or which have been reliably reported for the historic site in the literature (Allen and Curto 1995; NCPN in ed.). Vouchers were examined from Utah State University's Intermountain Herbarium (the official repository of GOSP collections) and collections from Brigham Young University (BRY) and the digital museum database of the Intermountain Herbarium (UTC). Species entries in Appendix A are organized alphabetically by family and genus.

Appendix B includes species that may potentially occur within Golden Spike NHS based on the proximity of the historic site to other populations or the presence of suitable habitat.

Appendix C lists species that have been previously reported for Golden Spike NHS but are now considered erroneous because they are based on misidentified specimens or questionable literature records.

Appendix D contains the same confirmed, historical, and reported taxa as in Appendix A, but organized by life form rather than by family in order to better meet the needs of NPS interpretive specialists.

The codes and references for each field in the appropriate appendices are summarized below.

## Family (Appendices A, B, C, and D)

Family concepts and nomenclature follow *A Utah Flora, third edition* (Welsh et al. 2003). Alternative family names and treatments from other regional floras (Dorn 2001; Flora of North America Editorial Committee 1993, 2002b; Holmgren et al. 2005; Weber and Wittman 2001) are listed in parentheses.

## Species name (Appendices A, B, C, and D)

Nomenclature for scientific names and taxonomic concepts are derived from Welsh et al. (2003). Scientific names are listed in alphabetical rather than phylogenetic order.

## Synonyms/Taxonomic notes (Appendices A, B, and C)

Pertinent synonyms are included for species with alternative scientific names in other recent state and regional floras (Barkworth et al. 2003, 2007; Barneby 1989; Cronquist 1994; Cronquist et al. 1972, 1977, 1984, 1997; Dorn 2001; Flora of North America Editorial Committee 1993, 1997, 2000, 2002a, 2002b, 2003, 2005, 2006a, 2006b, 2006c;

Holmgren et al. 2005; Weber and Wittmann 2001). No effort has been made to identify additional synonyms from monographs and floras preceding the early 1970s.

## Common name (Appendices A, B, C, and D)

Common names are derived primarily from Welsh et al. (2003) and the *Intermountain Flora* (Barneby 1989; Cronquist 1994; Cronquist et al. 1972, 1977, 1984, 1997; Holmgren et al. 2005).

## Life form (Appendices A, B, C, and D)

Life form is based on the stature and growth habit of typical members of a species at reproductive maturity. **Trees** are woody perennials with a single stem or trunk and are typically over 3.5 m tall. **Shrubs** are woody perennials with one to many trunks arising from near the base of the plant and are usually less than 3.5 m tall. **Perennial Forbs (PerF)** are broad-leaved dicots or monocots with non-woody stems (at least above ground level) that live for multiple years. **Annual Forbs (AnnF)** are broad-leaved dicots or monocots with non-woody stems that complete their life cycle (mature, flower, and die) in one year. **Perennial Graminoids (PerG)** are linear-leaved, grass-like monocots that live for multiple years. **Annual Graminoids (AnnG)** are linear-leaved, grass-like monocots that complete their life cycle (mature, flower, and die) in one year. **Ferns and fern-allies (Fern)** are non-flowering vascular plants that reproduce by spores.

## Range (Appendices A, B, and C)

Range represents the distribution of a species within Utah and the state's contribution to the plants overall global range. **Disjunct (Disj)** taxa have their Utah distribution separated from the main, contiguous portion of their range by a gap of more than 800 km (ca 500 miles). **Introduced (Intro)** taxa are those that are not native to Utah or North America but which have become naturalized (breeding on their own without human assistance). **Local Endemics (LocEn)** are taxa whose entire global range is restricted to an area of less than 16,500 km<sup>2</sup> (ca 6,370 mi<sup>2</sup>, or 1° of latitude × 2° of longitude). **Peripheral (Periph)** taxa have a widespread global distribution but occur at the margin of their contiguous range in Utah and occupy less than 5% of the state's area (usually only within a few miles of the state border). **Regional Endemics (RegEn)** are taxa with a global range of 16,500–250,000 km<sup>2</sup> (an area about the size of the state of Wyoming). **Sparse** taxa occur widely across Utah or North America but their range within Utah is small and patchy, with populations restricted to specialized or uncommon habitats. **Widespread (Wide)** taxa have global ranges exceeding 250,000 km<sup>2</sup> and occur over at least 10% of the state.

## Park status (Appendices A, C, and D)

Park status identifies whether a species is Present (**Pres**),

Historical (**Hist**), or Reported (**Rep**) for Golden Spike NHS. Species are considered Present if a confirmed voucher or documented observation has been made within historic site boundaries since 1970. Historical species have been confirmed with a voucher from the historic site but have not been relocated since before 1970. Reported species are listed for the historic site in the literature (Allen and Curto 1995; NCPN in ed.), but have not been corroborated with a voucher specimen. Species that may potentially occur in Golden Spike NHS are listed in Appendix B. Rejected taxa (listed in Appendix C) have either been falsely reported (**FalsRep**) in the literature based on misidentified herbarium specimens or are considered Questionable (**Ques?**) because park reports are from well outside their known or expected range.

#### **Pop. size (Appendix A)**

Population size refers to the abundance and frequency with which a species occurs within Golden Spike NHS. Abundance data are derived from Allen and Curto (1995) and personal observations. Abundant (**Abun**) taxa have large populations, have a broad ecological amplitude (often being dominant in one to several vegetation types), or occur extensively across the historic site. Common (**Com**) taxa have large local populations but may be restricted to a single vegetation type or do not occur across the entire historic site. Uncommon (**Unc**) taxa have low to medium-sized populations, typically have a narrow ecological amplitude (or at least contribute relatively little to total vegetative cover), or have a small range across the historic site. **Rare** taxa usually have low population numbers and are restricted to a single location within the historic site. A “?” indicates that population size is unknown.

#### **Source (Appendix A)**

Sources are the evidence for the assigned park status. In the case of Present and Historical taxa, sources are herbarium records (with collector, collection number, and repository) that were corroborated during this study. For reported taxa, the source is a published or unpublished reference citing the species within the historic site. Specimen repositories include the Intermountain Herbarium (UTC) of Utah State University and Brigham Young University (BRY).

#### **Year doc. (Appendix A)**

Year documented indicates the first year in which a species was confirmed or reported to occur in Golden Spike NHS. This year does not necessarily correspond with the date of the voucher specimen cited under Source. “NA” indicates that the first year is not known (used mostly for “reported” taxa).

#### **Comments (Appendices A, B, C, and D)**

This column includes additional comments on the status of a particular species in the historic site, the place of origin for introduced species, legal status, and other data.

#### **Nativity (Appendix D)**

Nativity indicates whether a species is native to Utah or Introduced (Intro) based on Fertig (2007).

#### **Flower time (Appendix D)**

Flower time refers to the months in which a species is most likely to be in flower. NA indicates a species that is a non-flowering fern or gymnosperm.

#### **Habitat (Appendix D)**

The distribution of species across generalized habitats in Golden Spike NHS is indicated by an “x” in the columns Sage/Grs and Dist and is derived from Allen and Curto (1995). **Sage/Grs** = sagebrush steppe and grassland. **Dist** = disturbed ground (including roadsides, railroad grade, and parking area around the visitor center). Additional comments are included for species that are found on rocky slopes and talus or are restricted to plantings at the visitor center.

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Amaranthaceae	<i>Amaranthus albus</i>		tumble pigweed	AnnF	Intro	Pres	Unc	Fertig 23044 (UTC)	2006	Native to tropical America
Asclepiadaceae	<i>Asclepias asperula</i> var. <i>asperula</i>		spider milkweed	PerF	Wide	Pres	Unc	Curto, Allen, & Ellis 1263 (UTC)	1995	
Boraginaceae	<i>Amsinckia intermedia</i>	<i>A. menziesii</i> var. <i>intermedia</i>	tanweed fiddleneck	AnnF	Wide	Pres	Unc	Curto & Allen 1208 (UTC)	1995	Reports north of Washington Co. may be misidentified <i>A. tesselata</i>
Boraginaceae	<i>Cryptantha humilis</i>	Includes var. <i>nana</i> , <i>Oreocarya humilis</i> ssp. <i>nana</i>	dwarf cryptanth	PerF	Wide	Pres	Com	Shultz & Shultz 4133 (UTC)	1980	
Boraginaceae	<i>Lappula occidentalis</i> var. <i>cupulata</i>	<i>L. texana</i> , <i>L. redowskii</i> var. <i>cupulata</i> , <i>L. marginata</i>	cupseed stickseed	AnnF	Wide	Pres	Com	Curto, Allen, Fitts, & Teerlink 1105 (UTC)	1994	
Cactaceae	<i>Opuntia fragilis</i>	<i>O. fragilis</i> var. <i>brachyarthra</i>	brittle prickly-pear	PerF	Wide	Rep	Unc	Allen & Curto 1995	1995	
Caryophyllaceae (Asteraceae)	<i>Holosteum umbellatum</i>	<i>H. umbellatum</i> ssp. <i>umbellatum</i>	holosteum	AnnF	Intro	Pres	Com	Curto, Allen, & Hysell 1204 (UTC)	1995	Native to Europe
Chenopodiaceae	<i>Atriplex canescens</i> var. <i>canescens</i>	<i>A. canescens</i> var. <i>occidentalis</i>	four-wing saltbush	Shrub	Wide	Rep	?	Coles JC07010701 (UTC)	2007	Voucher has not been confirmed
Chenopodiaceae	<i>Atriplex confertifolia</i>		shadscale	Shrub	Wide	Rep	?	Bruce Condie observation	2007	Type locality is Great Salt Lake (near mouth of Weber River), Weber Co., UT (Fremont 761 NY)
Chenopodiaceae	<i>Atriplex patula</i>		spear orach	AnnF	Sparse	Pres	Unc	Fertig 23040 (UTC)	2006	
Chenopodiaceae	<i>Atriplex rosea</i>		tumbling orach	AnnF	Intro	Pres	Unc	Fertig 23042 (UTC)	2006	Native to Eurasia

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Chenopodiaceae	<i>Bassia prostrata</i>	<i>Kochia prostrata</i>	forage kochia	PerF	Intro	Rep	?	Shultz, Wagner, & Banner 20264 (UTC)	2005	Native to Eurasia. Shultz et al. collection has not been relocated for confirmation.
Chenopodiaceae	<i>Chenopodium album</i> var. <i>berlandieri</i>	<i>C. berlandieri</i> var. <i>zsackei</i>	pitseed goosefoot	AnnF	Wide	Pres	Com	Fertig 22687 (UTC)	2006	
Chenopodiaceae	<i>Halogeton glomeratus</i>		halogeton	AnnF	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1069 (UTC)	1994	Native to Eurasia
Chenopodiaceae	<i>Salsola paulesenii</i>		barbwire Russian-thistle	AnnF	Intro	Rep	?	Allen & Curto 1995	1995	Native to Eurasia
Chenopodiaceae	<i>Salsola tragus</i>	<i>S. kali</i> , <i>S. iberica</i> , <i>S. pestifer</i> , <i>S. australis</i>	Russian thistle	AnnF	Intro	Pres	Unc	Fertig 23032 (UTC)	1994	Native to Asia
Chenopodiaceae	<i>Suaeda torreyana</i> var. <i>torreyana</i>	<i>S. moquimii</i> , <i>S. nigra</i> , <i>S. fruticosa</i>	Torrey's seepweed	AnnF	Wide	Pres	?	Coles JC07010702 (UTC)	2005	Shultz, Banner, & Wagner # 20264 (UTC) has not been relocated for confirmation.
Compositae (Asteraceae)	<i>Achillea millefolium</i> ssp. <i>lanulosa</i>	<i>A. lanulosa</i> , <i>A. millefolium</i> var. <i>occidentalis</i> ; vars. not recognized in <i>Flora of North America</i> (2006)	common yarrow	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1104 (UTC)	1994	
Compositae (Asteraceae)	<i>Agoseris glauca</i> var. <i>laciniata</i>	<i>A. parviflora</i>	cutleaf agoseris	PerF	Wide	Pres	?	Curto, Allen, & Hysell 1249 (UTC)	1995	
Compositae (Asteraceae)	<i>Ambrosia acanthicarpa</i>	<i>Franseria acanthicarpa</i>	bur ragweed	AnnF	Wide	Pres	Com	Fertig 22686 (UTC)	2006	
Compositae (Asteraceae)	<i>Ambrosia psilostachya</i>	<i>A. coronopifolia</i> , <i>A. psilostachya</i> var. <i>coronopifolia</i>	western ragweed	PerF	Wide	Pres	Unc	Fertig 22700 (UTC)	2006	



Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Artemisia dracunculoides</i> ssp. <i>glauca</i>	<i>Oligosporus dracunculoides</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	tarragon	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1103 (UTC)	1994	
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>latiloba</i>	<i>A. ludoviciana</i> ssp. <i>candicans</i>	Louisiana wormwood	Shrub	Sparse	Rep	?	Williams PW002 (UTC)	2007	Voucher has not been confirmed
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>ludoviciana</i>		Louisiana wormwood	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1093 (UTC)	1994	
Compositae (Asteraceae)	<i>Artemisia nova</i> var. <i>nova</i>	<i>A. arbuscula</i> var. <i>nova</i> , <i>Seriphidium novum</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	black sagebrush	Shrub	Wide	Rep	?	Williams PW003 (UTC)	2007	Voucher has not been confirmed
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>tridentata</i>	<i>Seriphidium tridentatum</i> ssp. <i>tridentatum</i>	basin big sagebrush	Shrub	Wide	Pres	Abun	Shultz & Shultz 4135 (UTC)	1980	
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>vaseyana</i>	<i>Seriphidium vaseyanum</i> , includes var. <i>pauciflora</i>	mountain big sagebrush	Shrub	Wide	Rep	?	Allen & Curto (1995)	1995	Type locality of <i>A. tridentata</i> var. <i>pauciflora</i> is Left Fork of Hobbie Creek, Utah Co., UT (Goodrich et al. 21492 BRV)
Compositae (Asteraceae)	<i>Balsamorhiza hookeri</i> var. <i>hispidula</i>	<i>B. hispidula</i>	hairy balsamroot	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1083 (UTC)	1994	Type locality is Lake Point, Tooele Co., UT (Jones 1727 UC)
Compositae (Asteraceae)	<i>Balsamorhiza sagittata</i>		arrowleaf balsamroot	PerF	Wide	Pres	Unc	Curto & Allen 1211 (UTC)	1995	
Compositae (Asteraceae)	<i>Brickellia microphylla</i> var. <i>watsonii</i>	Included in <i>B. microphylla</i> var. <i>microphylla</i> in <i>Flora of North America</i> (2006)	Watson's brickellbush	Shrub	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1111 (UTC)	1994	Type locality is American Fork Canyon, Utah Co., Utah (Watson 494 GH)

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Brickellia oblongifolia</i> var. <i>linifolia</i>		Mohave brickellbush	Shrub	Wide	Pres	Com	Curto & Allen 1491 (UTC)	1995	Type locality of var. <i>linifolia</i> is American Fork, Jordan Valley, Utah Co., UT (Watson 493 YU)
Compositae (Asteraceae)	<i>Chaenactis douglasii</i>	Includes var. <i>douglasii</i> & var. <i>montana</i>	hoary dusty- maiden	Perf	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1100 (UTC)	1994	
Compositae (Asteraceae)	<i>Chrysopsis villosa</i> var. <i>minor</i>	<i>C. villosa</i> var. <i>hispida</i> , <i>Heterotheca villosa</i> var. <i>hispida</i> , <i>H. villosa</i> var. <i>minor</i>	hispid golden-aster	Perf	Wide	Pres	Com	Fertig 22701 (UTC)	2006	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>gnaphalodes</i>	<i>C. nauseosus</i> var. <i>hololeucus</i> , <i>Ericameria nauseosa</i> var. <i>hololeuca</i>	graystem rabbitbrush	Shrub	Wide	Pres	Com	Fertig 23028 (UTC)	2006	
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>lanceolatus</i>		lanceleaf rabbitbrush	Shrub	Wide	Pres	Com	Curto & Allen 1489 (UTC)	1995	
Compositae (Asteraceae)	<i>Cirsium undulatum</i> var. <i>undulatum</i>	<i>C. undulatum</i>	wavy-leaved thistle	Perf	Wide	Pres	Com	Curto, Allen, Fitts, & Teerlink 1086 (UTC)	1994	
Compositae (Asteraceae)	<i>Crepis intermedia</i>	<i>Psilochenia intermedia</i>	gray hawksbeard	Perf	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1110 (UTC)	1994	
Compositae (Asteraceae)	<i>Erigeron pumilus</i> var. <i>concinus</i>	<i>E. concinnus</i> var. <i>concinus</i> , includes var. <i>subglaber</i>	Navajo fleabane	Perf	Wide	Pres	Com	Curto & Allen 1217 (UTC)	1995	
Compositae (Asteraceae)	<i>Grindelia squarrosa</i> var. <i>serrulata</i>	Vars. not recognized in <i>Flora of North America</i> (2006)	curly-cup gumweed	Perf	Wide	Pres	Com	Curto, Allen, Fitts, & Teerlink 1092 (UTC)	1994	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Gutierrezia sarothrae</i>		broom snakeweed	Shrub	Wide	Pres	Abun	Curto, Allen, Fitts, & Teerlink 1066 (UTC)	1994	
Compositae (Asteraceae)	<i>Haplopappus acaulis</i> var. <i>acaulis</i>	<i>Stenotus acaulis</i> var. <i>acaulis</i>	stemless goldenweed	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1253 (UTC)	1995	
Compositae (Asteraceae)	<i>Helianthus annuus</i> ssp. <i>lenticularis</i>	Ssp. not recognized in <i>Flora of North America</i> (2006)	common sunflower	AnnF	Wide	Pres	Com	Fertig 22683 (UTC)	1995	
Compositae (Asteraceae)	<i>Iva axillaris</i>	<i>I. axillaris</i> var. <i>axillaris</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	poverty-weed	PerF	Wide	Pres	Unc	Curto & Allen 1487 (UTC)	1995	
Compositae (Asteraceae)	<i>Lactuca serriola</i>		prickly lettuce	AnnF	Intro	Pres	Unc	Fertig 22703 (UTC)	1995	Native to Europe
Compositae (Asteraceae)	<i>Lygodesmia grandiflora</i> var. <i>dianthopsis</i>	<i>L. dianthopsis</i>	western rush-pink	PerF	RegEn	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1088 (UTC)	1994	Type locality is Great Salt Lake islands, UT (Watson 707 GH)
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>canescens</i>	<i>Aster canescens</i> , <i>Dieteria canescens</i> var. <i>canescens</i>	hoary aster	PerF	Wide	Pres	Unc	Fertig 23041 (UTC)	2006	
Compositae (Asteraceae)	<i>Microseris troximoides</i>	<i>Nothocalais troximoides</i>	dandelion microseris	PerF	Periph	Pres	Unc	Curto & Allen 1213 (UTC)	1995	
Compositae (Asteraceae)	<i>Senecio multilobatus</i>	<i>Packera multilobata</i>	basin groundsel	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1109 (UTC)	1994	Type locality is Uinta River, Uintah Co., UT (Fremont 549 GH)
Compositae (Asteraceae)	<i>Taraxacum officinale</i>		common dandelion	PerF	Intro	Pres	Unc	Fertig 23043 (UTC)	1995	Native to Eurasia
Compositae (Asteraceae)	<i>Tetradymia canescens</i>		spineless horsebrush	Shrub	Wide	Pres	Unc	Curto, Allen, & Hysell 1419 (UTC)	1995	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Tetradymia nuttallii</i>		Nuttall's horsebrush	Shrub	RegEn	Pres	Unc	Curto, Allen, & Hysell 1425 (UTC)	1995	
Compositae (Asteraceae)	<i>Tragopogon dubius</i>	<i>T. dubius</i> var. <i>major</i>	yellow salsify	PerF	Intro	Pres	Unc	Curto, Allen, & Ellis 1256 (UTC)	1995	Native to Europe
Convolvulaceae	<i>Convolvulus arvensis</i>		field bindweed	PerF	Intro	Pres	Com	Fertig 22685 (UTC)	1995	Utah state noxious weed. Native to Eurasia
Cruciferae (Brassicaceae)	<i>Alyssum alyssoides</i>		pale madwort	AnnF	Intro	Pres	Abun	Curto, Allen, Fitts, & Teerlink 1095 (UTC)	1994	Native to Europe
Cruciferae (Brassicaceae)	<i>Alyssum desertorum</i>		desert madwort	AnnF	Intro	Pres	Abun	Curto, Allen, & Hysell 1195 (UTC)	1995	Native to Europe
Cruciferae (Brassicaceae)	<i>Arabidopsis thaliana</i>		mouse-ear cress	AnnF	Intro	Pres	Unc	Curto & Allen 1206 (UTC)	1995	Native to Europe
Cruciferae (Brassicaceae)	<i>Arabis lignifera</i>	<i>Boechera lignifera</i>	Sweetwater rockcress	PerF	Sparse	Pres	?	Curto & Allen 1215 (UTC)	1995	
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>osmiarium</i>	<i>D. pinnata</i> ssp. <i>halictorum</i>	western tansy- mustard	AnnF	Wide	Pres	Com	Curto, Allen, & Hysell 1245 (UTC)	1995	
Cruciferae (Brassicaceae)	<i>Descurainia sophia</i>		flixweed	AnnF	Intro	Pres	Com	Curto, Allen, Fitts, & Teerlink 1081 (UTC)	1994	Native to Europe
Cruciferae (Brassicaceae)	<i>Draba cuneifolia</i> var. <i>cuneifolia</i>		wedgeleaf draba	AnnF	Wide	Pres	Unc	Curto, Allen, & Hysell 1198 (UTC)	1995	
Cruciferae (Brassicaceae)	<i>Draba verna</i>		spring whitlow- grass	AnnF	Intro	Pres	Com	Curto, Allen, & Hysell 1203 (UTC)	1995	Native to Asia
Cruciferae (Brassicaceae)	<i>Euclidium syriacum</i>		Syrian mustard	AnnF	Intro	Pres	Unc	Curto, Allen, & Hysell 1251 (UTC)	1995	Native to Europe

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Cruciferae (Brassicaceae)	<i>Isatis tinctoria</i>		Dyer's woad	PerF	Intro	Rep	?	Allen & Curto 1995	1995	Utah state noxious weed. Native to Europe
Cruciferae (Brassicaceae)	<i>Lepidium perfoliatum</i>		clasping pepperwort	AnnF	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1091 (UTC)	1994	Native to Europe
Cruciferae (Brassicaceae)	<i>Malcolmia africana</i>		African mustard	AnnF	Intro	Pres	Unc	Curto, Allen, & Hysell 1244 (UTC)	1995	Native to Africa
Cruciferae (Brassicaceae)	<i>Sisymbrium altissimum</i>		tumble mustard	AnnF	Intro	Pres	Com	Curto, Allen, Fitts, & Teerlink 1102 (UTC)	1994	Native to Europe
Cupressaceae	<i>Juniperus osteosperma</i>	<i>Sabina osteosperma</i>	Utah juniper	Shrub	Wide	Pres	Rare	Curto, Allen, & Hysell 1418 (UTC)	1995	
Euphorbiaceae	<i>Chamaesyce glyptosperma</i>	<i>Euphorbia glyptosperma</i>	ridge-seeded spurge	AnnF	Wide	Pres	Unc	Curto & Allen 1488 (UTC)	1995	
Geraniaceae	<i>Erodium cicutarium</i>		stork's-bill	AnnF	Intro	Pres	Abun	Curto, Allen, Fitts, & Teerlink 1070 (UTC)	1994	Native to Europe
Gramineae (Poaceae)	<i>Agropyron cristatum</i>	<i>A. cristatum</i> var. <i>cristatum</i> , <i>A. cristatum</i> ssp. <i>pectinatum</i> , <i>A. pectinatum</i> , <i>A. sibiricum</i> , <i>A. desertorum</i> , <i>A. fragile</i> , <i>A. mongolicum</i>	crested wheatgrass	PerG	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1074 (UTC)	1994	Native to Eurasia
Gramineae (Poaceae)	<i>Aristida purpurea</i>	<i>A. glauca</i> , <i>A. purpurea</i> var. <i>fendleriana</i> , <i>A. purpurea</i> var. <i>longiseta</i> , <i>A. fendleriana</i>	purple three-awn	PerG	Wide	Pres	Abun	Curto, Allen, Fitts, & Teerlink 1065 (UTC)	1994	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Bromus briziformis</i>	<i>B. brizaeformis</i>	rattlesnake chess	AnnG	Intro	Pres	Com	Curto, Allen, Fitts, & Teerlink 1114 (UTC)	1994	Native to Eurasia
Gramineae (Poaceae)	<i>Bromus diandrus</i>	<i>Anisantha diandra</i> , <i>B. rigidus</i>	ripgut brome	AnnG	Intro	Pres	Unc	Curto & Allen 1205 (UTC)	1995	Native to Eurasia
Gramineae (Poaceae)	<i>Bromus japonicus</i>	<i>B. arvensis</i> , includes <i>B. commutatus</i>	Japanese chess	AnnG	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1098 (UTC)	1994	Native to Eurasia.
Gramineae (Poaceae)	<i>Bromus tectorum</i>	<i>Anisantha tectorum</i>	cheatgrass	AnnG	Intro	Pres	Abun	Curto, Allen, Fitts, & Teerlink 1068 (UTC)	1994	Native to Eurasia
Gramineae (Poaceae)	<i>Elymus cinereus</i>	<i>Leymus cinereus</i>	Great Basin wildrye	PerG	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1119 (UTC)	1994	
Gramineae (Poaceae)	<i>Elymus elongatus</i>	<i>E. elongatus</i> var. <i>ponticus</i> , <i>Agropyron elongatum</i> , <i>Thinopyrum ponticum</i>	tall wheatgrass	PerG	Intro	Pres	Unc	Curto & Allen 1492 (UTC)	1995	Native to Eurasia
Gramineae (Poaceae)	<i>Elymus elymoides</i>	<i>E. elymoides</i> var. <i>elymoides</i> , <i>Sitanion hystrix</i>	squirreltail	PerG	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1113 (UTC)	1994	
Gramineae (Poaceae)	<i>Elymus hispidus</i>	<i>E. hispidus</i> var. <i>hispidus</i> , <i>Agropyron intermedium</i> , <i>Elytrigia intermedia</i> , <i>Thinopyrum intermedium</i> ssp. <i>intermedium</i>	intermediate wheatgrass	PerG	Intro	Rep	?	Allen & Curto 1995	1995	Native to Eurasia

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Elymus smithii</i>	<i>Agropyron smithii</i> , <i>Pascopyrum smithii</i> , includes vars. <i>smithii</i> & <i>palmeri</i>	western wheatgrass	PerG	Wide	Pres	Unc	Curto, Allen, & Hysell 1416 (UTC)	1995	
Gramineae (Poaceae)	<i>Elymus spicatus</i>	<i>Agropyron spicatum</i> , <i>Pseudoegneria spicata</i> , includes ssp. <i>inermis</i> & <i>spicata</i>	bluebunch wheatgrass	PerG	Wide	Pres	Com	Curto, Allen, & Hysell 1422 (UTC)	1994	
Gramineae (Poaceae)	<i>Elymus triticoides</i>	<i>Elymus triticoides</i> var. <i>triticoides</i> , <i>Leymus triticoides</i>	creeping wildrye	PerG	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1094 (UTC)	1994	
Gramineae (Poaceae)	<i>Eremopyrum triticeum</i>	<i>Agropyron triticeum</i>	annual wheatgrass	AnnG	Intro	Pres	?	Arnow 4430 (BRY)	1975	Native to Asia
Gramineae (Poaceae)	<i>Hordeum murinum</i>	<i>H. murinum</i> ssp. <i>leporinum</i> , <i>H. leporinum</i> , <i>Critesion glaucum</i>	rabbit barley	AnnG	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1073 (UTC)	1994	Native to Europe.
Gramineae (Poaceae)	<i>Poa bulbosa</i>		bulbous bluegrass	PerG	Intro	Pres	Com	Curto, Allen, Fitts, & Teerlink 1076 (UTC)	1994	Native to Eurasia and Africa
Gramineae (Poaceae)	<i>Poa pratensis</i>	<i>P. agassizensis</i>	Kentucky bluegrass	PerG	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1116 (UTC)	1994	Native to Europe
Gramineae (Poaceae)	<i>Poa secunda</i>	Includes <i>P. gracillima</i> , <i>P. juncifolia</i> , <i>P. sandbergii</i> , <i>P. canbyi</i> , <i>P. scabrella</i> , <i>P. nevadensis</i> , <i>P. ampla</i> and all vars. of <i>P. secunda</i>	Sandberg's bluegrass	PerG	Wide	Pres	Abun	Curto, Allen, Fitts, & Teerlink 1096 (UTC)	1994	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Sporobolus cryptandrus</i>		sand dropseed	PerG	Wide	Pres	Com	Curto, Allen, Fitts, & Teerlink 1071 (UTC)	1994	
Gramineae (Poaceae)	<i>Stipa comata</i> var. <i>comata</i>	<i>Hesperostipa comata</i> var. <i>comata</i>	needle-and-thread	PerG	Wide	Pres	Unc	Curto, Allen, & Ellis 1259 (UTC)	1995	
Gramineae (Poaceae)	<i>Stipa hymenoides</i>	<i>Oryzopsis hymenoides</i> , <i>Achnatherum hymenoides</i>	Indian ricegrass	PerG	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1115 (UTC)	1994	
Gramineae (Poaceae)	<i>Triticum aestivum</i>		wheat	AnnG	Intro	Pres	Unc	Curto, Allen, & Ellis 1260 (UTC)	1995	Native to Eurasia
Labiatae (Lamiaceae)	<i>Marrubium vulgare</i>		common horehound	PerF	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1085 (UTC)	1994	Native to Eurasia
Leguminosae (Fabaceae)	<i>Astragalus beckwithii</i> var. <i>beckwithii</i>	Includes var. <i>weiserensis</i>	Beckwith's milkvetch	PerF	RegEn	Pres	Com	Curto, Allen, Fitts, & Teerlink 1101 (UTC)	1994	Type locality is Cedar Mountains west of Lone Rock, Tooele Co., UT (Beckwith s.n. GH)
Leguminosae (Fabaceae)	<i>Astragalus cibarius</i>		browse milkvetch	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1252 (UTC)	1995	Type locality is Utah Valley, Utah Co., UT (Jones 1679 MINN)
Leguminosae (Fabaceae)	<i>Astragalus utahensis</i>		Utah milkvetch	PerF	Wide	Pres	Com	Curto, Allen, & Hysell 1241 (UTC)	1995	Type locality is Stansbury Island, Tooele Co., UT (Stansbury s.n. NY)
Leguminosae (Fabaceae)	<i>Melilotus officinalis</i>		yellow sweet-clover	PerF	Intro	Pres	Unc	Curto, Allen, & Ellis 1264 (UTC)	1995	Native to Europe



Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Liliaceae (Alliaceae)	<i>Allium acuminatum</i>		taper-tip onion	PerF	Wide	Pres	Com	Curto, Allen, & Ellis 1258 (UTC)	1995	
Liliaceae (Alliaceae)	<i>Allium nevadense</i>	Welsh et al. (2003) include <i>A. atrorubens</i> var. <i>cristatum</i>	Nevada onion	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1238 (UTC)	1995	
Liliaceae (Alliaceae)	<i>Allium passeyi</i>		Passey's onion	PerF	LocEn	Pres	Com	Shultz, Shultz, & Boyce 4137 (UTC)	1980	USFWS former C2 candidate. Type locality is Howell Valley, Box Elder Co., UT (Holmgren, Passey, & Hugie 13125 NY)
Liliaceae (Calochortaceae)	<i>Calochortus bruneauis</i>		Bruneau mariposa	PerF	Periph	Pres	Com	Curto, Allen, Fitts, & Teerlink 1108 (UTC)	1994	
Liliaceae (Calochortaceae)	<i>Calochortus nuttallii</i>		sego-lily	PerF	Wide	Pres	Com	Curto, Allen, Fitts, & Teerlink 1090 (UTC)	1994	
Liliaceae	<i>Fritillaria pudica</i>		yellow-bell	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1193 (UTC)	1995	
Liliaceae (Melanthiaceae)	<i>Zigadenus paniculatus</i>	<i>Toxicoscordion paniculatum</i>	foothills death camas	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1242 (UTC)	1995	
Linaceae	<i>Linum perenne</i> ssp. <i>lewisii</i>	<i>L. lewisii</i> var. <i>lewisii</i> , <i>Adenolinum lewisii</i>	blue flax	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1421 (UTC)	1995	
Loasaceae	<i>Mentzelia dispersa</i>	Includes var. <i>compacta</i> , <i>dispersa</i> , & <i>latifolia</i> , <i>Acrolasia dispersa</i>	Nevada stickleaf	AnnF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1106 (UTC)	1994	
Loasaceae	<i>Mentzelia laevicaulis</i>	<i>Nuttallia laevicaulis</i>	giant blazingstar	PerF	Wide	Pres	Unc	Curto & Allen 1486 (UTC)	1995	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Malvaceae	<i>Sphaeralcea munroana</i>	Includes ssp. <i>munroana</i> & <i>subrhomboidea</i>	white-stem globe-mallow	PerF	Wide	Pres	Com	Curto, Allen, Fitts, & Teerlink 1082 (UTC)	1994	
Onagraceae	<i>Epilobium brachycarpum</i>	<i>E. paniculatum</i> var. <i>paniculatum</i>	autumn willow-herb	AnnF	Wide	Pres	Rare	Fertig 22695 (UTC)	2006	
Onagraceae	<i>Oenothera caespitosa</i> var. <i>crinita</i>		Jones' evening-primrose	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1243 (UTC)	1995	Type locality is Rabbit Valley, Wayne Co., UT (Ward 526 US)
Papaveraceae	<i>Argemone munita</i> var. <i>rotundata</i>		armed prickly-poppy	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1079 (UTC)	1994	
Polemoniaceae	<i>Leptodactylon pungens</i>	<i>Leptodactylon pungens</i> var. <i>pungens</i> , <i>Linanthus pungens</i>	prickly-phlox	Shrub	Wide	Pres	Unc	Williams PW001 (UTC)	2007	Previous report from Allen & Curto (1995) based on a misidentified specimen of <i>L. watsonii</i> .
Polemoniaceae	<i>Leptodactylon watsonii</i>	<i>Linanthus watsonii</i>	Watson's prickly-phlox	PerF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1112 (UTC)	1994	Type locality is Cottonwood Canyon, Salt Lake Co., UT (Watson s.n. GH)
Polemoniaceae	<i>Microsteris gracilis</i> var. <i>humilior</i>	<i>Phlox gracilis</i> ssp. <i>humilis</i>	slender phlox	AnnF	Wide	Pres	Unc	Curto, Allen, & Hysell 1197 (UTC)	1995	
Polemoniaceae	<i>Phlox hoodii</i> var. <i>canescens</i>	Includes ssp. <i>glabrata</i> , <i>hoodii</i> , & <i>viscidula</i>	carpet phlox	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1199 (UTC)	1995	Type locality of var. <i>canescens</i> is S of Great Salt Lake, Tooele Co., UT (Beckwith 4 GH)

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Polemoniaceae	<i>Phlox longifolia</i>	Includes vars. <i>longifolia</i> & <i>stansburyi</i>	long-leaf phlox	PerF	Wide	Pres	Unc	Curto & Allen 1216 (UTC)	1995	
Polygonaceae	<i>Eriogonum cernuum</i> var. <i>cernuum</i>	Vars. not recognized in <i>Flora of North America</i> (2005)	nodding wild buckwheat	AnnF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1075 (UTC)	1994	
Polygonaceae	<i>Eriogonum hookeri</i>		Hooker's wild buckwheat	AnnF	Wide	Pres	Unc	Fertig 23039 (UTC)	2006	Type locality is American Fork Canyon, Utah Co., Utah (Watson 1033 US)
Polygonaceae	<i>Eriogonum ovalifolium</i>	<i>E. ovalifolium</i> var. <i>ovalifolium</i>	cushion wild buckwheat	PerF	Wide	Pres	Unc	Curto, Allen, & Ellis 1261 (UTC)	1995	
Polygonaceae	<i>Polygonum aviculare</i>	<i>P. arenastrum</i> , <i>P. aviculare</i> ssp. <i>aviculare</i>	yard knotweed	AnnF	Intro	Pres	Unc	Fertig 22690 (UTC)	2006	Native to Eurasia
Polygonaceae	<i>Rumex crispus</i>		curly dock	PerF	Intro	Pres	Unc	Curto, Allen, & Hysell 1426 (UTC)	1995	Native to Eurasia
Ranunculaceae (Helleboraceae)	<i>Delphinium nuttallianum</i>	<i>D. nelsonii</i>	Nuttall's larkspur	PerF	Wide	Pres	Unc	Curto & Allen 1207 (UTC)	1995	
Ranunculaceae	<i>Ranunculus testiculatus</i>	<i>Ceratocephala orthoceras</i> , <i>C. testiculata</i>	bur buttercup	AnnF	Intro	Pres	Com	Curto, Allen, & Hysell 1194 (UTC)	1995	Native to Eurasia
Rosaceae	<i>Amelanchier utahensis</i>		Utah serviceberry	Shrub	Wide	Pres	Unc	Curto, Allen, & Hysell 1248 (UTC)	1995	
Rosaceae	<i>Petrophyton caespitosum</i>	<i>Spiraea caespitosa</i>	rock spiraea	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1424 (UTC)	1995	
Rosaceae	<i>Prunus virginiana</i> var. <i>melanocarpa</i>	<i>Padus virginiana</i> ssp. <i>melanocarpa</i>	western chokecherry	Shrub	Wide	Pres	Unc	Curto, Allen, & Hysell 1250 (UTC)	1995	
Rosaceae	<i>Rosa woodsii</i>	<i>R. woodsii</i> var. <i>ultramontana</i>	Woods' rose	Shrub	Wide	Pres	Unc	Fertig 23037 (UTC)	2006	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Rubiaceae	<i>Galium aparine</i> var. <i>echinospermum</i>	<i>G. spurium</i>	cleavers	AnnF	Wide	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1107 (UTC)	1994	
Santalaceae	<i>Comandra umbellata</i> var. <i>pallida</i>		bastard toadflax	PerF	Wide	Pres	Unc	Curto, Allen, & Ellis 1257 (UTC)	1995	
Saxifragaceae	<i>Lithophragma parviflorum</i>	<i>L. parviflora</i>	smallflower woodlandstar	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1201 (UTC)	1995	
Saxifragaceae (Grossulariaceae)	<i>Ribes aureum</i>	<i>R. aureum</i> var. <i>aureum</i>	golden currant	Shrub	Wide	Pres	Unc	Curto, Allen, & Hysell 1247 (UTC)	1995	
Scrophulariaceae	<i>Castilleja chromosa</i>	<i>C. angustifolia</i> var. <i>dubia</i> , <i>C. applegatei</i> ssp. <i>martinii</i>	desert paintbrush	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1254 (UTC)	1995	
Scrophulariaceae	<i>Collinsia parviflora</i>		blue-eyed Mary	AnnF	Wide	Pres	Unc	Curto, Allen, & Hysell 1196 (UTC)	1995	
Scrophulariaceae	<i>Linaria dalmatica</i>	<i>L. genistifolia</i> ssp. <i>dalmatica</i>	Dalmatian toadflax	PerF	Intro	Pres	Unc	Fertig 22692 (UTC)	2006	
Scrophulariaceae	<i>Penstemon cyananthus</i> var. <i>subglaber</i>	<i>P. holmgrenii</i>	Raft River penstemon	PerF	RegEn	Pres	Unc	Curto, Allen, & Hysell 1420 (UTC)	1995	
Scrophulariaceae	<i>Verbascum blattaria</i>		moth mullein	PerF	Intro	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1084 (UTC)	1994	Native to Europe
Scrophulariaceae	<i>Verbascum thapsus</i>		woolly mullein	PerF	Intro	Pres	Unc	Fertig 22702 (UTC)	1995	Native to Eurasia
Scrophulariaceae	<i>Veronica biloba</i>	<i>Pocilla biloba</i>	two-lobe speedwell	AnnF	Intro	Pres	Rare	Fertig s.n. (UTC)	2006	Native to Asia
Solanaceae	<i>Lycium barbarum</i>	<i>L. halmifolium</i>	matrimony-vine	Shrub	Intro	Pres	Unc	Fertig 22689 (UTC)	1995	Native to Eurasia
Solanaceae	<i>Nicotiana attenuata</i>		coyote tobacco	AnnF	Wide	Pres	Unc	Fertig 22696 (UTC)	2006	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Golden Spike National Historic Site, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Umbelliferae (Apiaceae)	<i>Cymopterus longipes</i>	<i>C. longipes</i> var. <i>longipes</i>	long-stalk spring-parsley	PerF	Wide	Pres	Com	Shultz, Shultz, & Boyce 4138 (UTC)	1980	Type locality is Wasatch Mountains near Salt Lake City, Salt Lake Co., UT (Watson 451 GH)
Umbelliferae (Apiaceae)	<i>Cymopterus terebinthinus</i> var. <i>albiflorus</i>	<i>Pteryxia terebinthina</i> var. <i>albiflora</i> , <i>C. terebinthinus</i> var. <i>calcareus</i>	aromatic spring-parsley	PerF	Wide	Pres	Unc	Curto, Allen, & Hysell 1246 (UTC)	1995	
Umbelliferae (Apiaceae)	<i>Lomatium grayi</i> var. <i>depauperatum</i>		depauperate lomatium	PerF	RegEn	Pres	Unc	Curto, Allen, Fitts, & Teerlink 1067 (UTC)	1994	Type locality is Dugway, Tooele Co., UT (Jones s.n. POM)
Umbelliferae (Apiaceae)	<i>Lomatium triternatum</i> ssp. <i>platycarpum</i>	<i>L. simplex</i> var. <i>simplex</i>	flat-seed lomatium	PerF	Wide	Pres	Unc	Curto & Allen 1210 (UTC)	1995	Type locality is Great Salt Lake (Stansbury s.n. NY)
Verbenaceae	<i>Verbena bracteata</i>		prostrate vervain	PerF	Wide	Pres	Unc	Fertig 22691 (UTC)	2006	

**Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site.**

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Alismataceae	<i>Alisma plantago-aquatica</i>	<i>A. plantago-aquatica</i> var. <i>americanum</i> , <i>A. triviale</i>	water-plantain	PerF	Wide	
Alismataceae	<i>Sagittaria cuneata</i>		northern arrowhead	PerF	Wide	
Amaranthaceae	<i>Amaranthus blitoides</i>	<i>A. graecizans</i>	prostrate pigweed	AnnF	Wide	
Amaranthaceae	<i>Amaranthus retroflexus</i>		redroot pigweed	AnnF	Intro	Native to Central America
Anacardiaceae	<i>Rhus aromatica</i> var. <i>trilobata</i>	<i>R. trilobata</i> var. <i>trilobata</i>	squawbush	Shrub	Wide	
Asclepiadaceae	<i>Asclepias speciosa</i>		showy milkweed	PerF	Wide	
Boraginaceae	<i>Amsinckia tessellata</i>		rough fiddleneck	AnnF	Wide	
Boraginaceae	<i>Cryptantha circumscissa</i>		cushion cryptanth	AnnF	Wide	
Boraginaceae	<i>Cryptantha gracilis</i>		slender cryptanth	AnnF	Wide	
Boraginaceae	<i>Cryptantha pterocarya</i> var. <i>pterocarya</i>		wing-nut cryptanth	AnnF	Wide	
Boraginaceae	<i>Cryptantha torreyana</i>		Torrey's cryptanth	AnnF	Wide	
Boraginaceae	<i>Cynoglossum officinale</i>		common hound's-tongue	PerF	Intro	Native to Eurasia
Boraginaceae	<i>Hackelia patens</i> var. <i>patens</i>		spotted stickseed	PerF	Wide	
Boraginaceae	<i>Heliotropium curassavicum</i> var. <i>obovatum</i>		salt heliotrope	PerF	Wide	
Boraginaceae	<i>Lithospermum incisum</i>		showy stoneseed	PerF	Wide	
Boraginaceae	<i>Lithospermum ruderale</i>		western stoneseed	PerF	Wide	
Boraginaceae	<i>Plagiobothrys leptocladius</i>		alkali popcorn-flower	AnnF	Wide	
Cactaceae	<i>Opuntia erinacea</i> var. <i>erinacea</i>	<i>O. polyacantha</i> var. <i>erinacea</i>	common pricklypear	PerF	Wide	
Cactaceae	<i>Opuntia erinacea</i> var. <i>utahensis</i>	<i>O. polyacantha</i> var. <i>hystericina</i> . Vars. not recognized in <i>Flora of North America</i> (2003); considered a few-spined variant of <i>O. polyacantha</i> .	Utah pricklypear	PerF	Wide	
Cactaceae	<i>Opuntia polyacantha</i> var. <i>polyacantha</i>	<i>Flora of North America</i> (2003) includes vars. <i>rufispina</i> & <i>trichophora</i> in var. <i>polyacantha</i> .	plains prickly-pear	PerF	Wide	
Cactaceae	<i>Pediocactus simpsonii</i>	Includes vars. <i>minor</i> & <i>simpsonii</i>	Simpson's hedgehog cactus	PerF	Wide	
Capparaceae (Cleomaceae)	<i>Cleome lutea</i>		yellow beeplant	AnnF	Wide	
Capparaceae (Cleomaceae)	<i>Polanisia dodecandra</i> var. <i>trachysperma</i>	<i>P. trachysperma</i>	clammy-weed	AnnF	Wide	

Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Caprifoliaceae	<i>Symphoricarpos oreophilus</i> var. <i>utahensis</i>	<i>S. rotundifolius</i>	mountain snowberry	Shrub	Wide	Type locality is Logan, Cache Co., UT (Rydberg s.n. US).
Caryophyllaceae	<i>Gypsophila paniculata</i>		tall baby's-breath	PerF	Intro	Native to Eurasia
Caryophyllaceae	<i>Saponaria officinalis</i>		bouncing-bet	PerF	Intro	Native to Europe
Caryophyllaceae (Aisinaceae)	<i>Spergularia marina</i>	<i>S. salina</i>	salt sand-spurrey	AnnF	Intro	Native to Europe
Chenopodiaceae	<i>Atriplex argentea</i> var. <i>argentea</i>	<i>A. argentea</i>	silver orach	AnnF	Wide	
Chenopodiaceae	<i>Atriplex gardneri</i> var. <i>falcata</i>	<i>A. falcata</i>	Jones' saltbush	Shrub	Wide	
Chenopodiaceae	<i>Atriplex heterosperma</i>	<i>A. micrantha</i>	two-seed orach	AnnF	Intro	Native to Eurasia
Chenopodiaceae	<i>Atriplex powellii</i> var. <i>powellii</i>	<i>A. powellii</i>	Powell's orach	AnnF	Wide	
Chenopodiaceae	<i>Atriplex prostrata</i>	<i>A. patula</i> var. <i>triangularis</i>	thinleaf orach	AnnF	Wide	
Chenopodiaceae	<i>Atriplex truncata</i>		wedge orach	AnnF	Wide	
Chenopodiaceae	<i>Bassia americana</i>	<i>Kochia americana</i>	greenmolly	PerF	Wide	
Chenopodiaceae	<i>Bassia hyssopifolia</i>		five-horn smotherweed	AnnF	Intro	Native to Eurasia
Chenopodiaceae	<i>Bassia scoparia</i>	<i>Kochia scoparia</i> , <i>B. sieversiana</i>	summer-cypress	AnnF	Intro	Native to Eurasia
Chenopodiaceae	<i>Chenopodium glaucum</i> var. <i>salinum</i>	<i>C. salinum</i>	oakleaf goosefoot	AnnF	Wide	
Chenopodiaceae	<i>Chenopodium rubrum</i> var. <i>rubrum</i>	<i>C. rubrum</i>	red goosefoot	AnnF	Wide	
Chenopodiaceae	<i>Grayia spinosa</i>	<i>Atriplex spinosa</i> , <i>A. grayi</i>	spiny hopsage	Shrub	Wide	
Chenopodiaceae	<i>Sarcobatus vermiculatus</i>		greasewood	Shrub	Wide	
Chenopodiaceae	<i>Suaeda calceoliformis</i>	<i>S. depressa</i>	broom seepweed	AnnF	Wide	
Chenopodiaceae	<i>Suaeda occidentalis</i>	Included in <i>S. calceoliformis</i> by some authors	western seepweed	AnnF	Wide	
Compositae (Asteraceae)	<i>Ambrosia artemisiifolia</i>	<i>A. artemisiifolia</i> var. <i>elatior</i>	common ragweed	AnnF	Wide	
Compositae (Asteraceae)	<i>Arctium minus</i>		burdock	PerF	Intro	Native to Eurasia
Compositae (Asteraceae)	<i>Artemisia spinescens</i>	<i>Picrothamnus desertorum</i>	budsage	Shrub	Wide	
Compositae (Asteraceae)	<i>Aster eatonii</i>	<i>Symphotrichum eatonii</i> , <i>A. bracteolatus</i>	Eaton's aster	PerF	Wide	

**Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.**

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Compositae (Asteraceae)	<i>Aster frondosus</i>	<i>Symphotrichum frondosum</i> , <i>Brachyactis frondosa</i>	leafy aster	AnnF	Wide	
Compositae (Asteraceae)	<i>Aster glaucodes</i>	<i>Eucephalus glaucus</i> , <i>Eurybia glauca</i> , <i>Herrickia glauca</i> var. <i>glauca</i>	blueleaf aster	PerF	Wide	
Compositae (Asteraceae)	<i>Balsamorhiza macrophylla</i>		cutleaf balsamroot	PerF	RegEn	
Compositae (Asteraceae)	<i>Bidens cernua</i>		nodding bur-marigold	PerF	Wide	
Compositae (Asteraceae)	<i>Bidens comosa</i>	<i>Bidens tripartita</i>	three-lobed beggarticks	PerF	Sparse	
Compositae (Asteraceae)	<i>Centaurea solstitialis</i>	<i>Leucantha solstitialis</i>	yellow star-thistle	PerF	Intro	Utah state noxious weed. Native to Europe
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>consimilis</i>	<i>Ericameria nauseosa</i> var. <i>consimilis</i> , <i>E. nauseosa</i> var. <i>oreophila</i> , <i>Chrysothamnus nauseosus</i> var. <i>oreophilus</i>	greenish rabbitbrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>viscidiflorus</i>		green rabbitbrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Crepis occidentalis</i> var. <i>costata</i>		basin hawksbeard	PerF	Wide	Type locality is Stansbury Island, Great Salt Lake (Watson 715 GH)
Compositae (Asteraceae)	<i>Erigeron aphanactis</i> var. <i>aphanactis</i>	<i>E. concinnus</i> var. <i>aphanactis</i>	hairy daisy	PerF	Wide	
Compositae (Asteraceae)	<i>Lactuca tatarica</i> ssp. <i>pulchella</i>	<i>L. pulchella</i> , <i>L. oblongifolia</i> , <i>Mulgedium pulchellum</i>	blue lettuce	PerF	Wide	
Compositae (Asteraceae)	<i>Lygodesmia spinosa</i>	<i>Stephanomeria spinosa</i> , <i>Pleiacanthus spinosus</i>	thorny wire-lettuce	AnnF	Wide	
Compositae (Asteraceae)	<i>Perityle stansburyana</i>	<i>P. stansburii</i>	Stansbury's rock-daisy	PerF	RegEn	Type locality is Stansbury's Island, Great Salt Lake, UT (Stansbury s.n. GH or NY)
Compositae (Asteraceae)	<i>Petrorhiza pumila</i> var. <i>pumila</i>	<i>Solidago petradoria</i>	rock-goldenrod	PerF	Wide	
Compositae (Asteraceae)	<i>Senecio integerrimus</i> var. <i>exaltatus</i>		western groundsel	PerF	Wide	
Compositae (Asteraceae)	<i>Sonchus asper</i>		spiny-leaf sow-thistle	AnnF	Intro	Native to Europe



**Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.**

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Compositae (Asteraceae)	<i>Tetradymia spinosa</i>	<i>T. spinosa</i> var. <i>spinosa</i>	shortspine horsebrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Townsendia florifer</i>	<i>T. florifera</i>	showy townsendia	PerF	Wide	
Compositae (Asteraceae)	<i>Xanthium strumarium</i> var. <i>canadense</i>	<i>X. pensylvanicum</i> , <i>X. saccharatum</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	rough cocklebur	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Arabis glabra</i> var. <i>glabra</i>	<i>Turritis glabra</i> . Vars. not recognized in Holmgren et al. (2005)	tower-mustard	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Arabis holboellii</i> var. <i>secunda</i>	<i>A. holboellii</i> var. <i>retrofracta</i> , <i>Boehera holboellii</i> var. <i>secunda</i> , <i>B. retrofracta</i>	Holboell's rockcress	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Brassica nigra</i>	<i>Sinapis nigra</i>	black mustard	AnnF	Intro	Native to Europe
Cruciferae (Brassicaceae)	<i>Capsella bursa-pastoris</i>		shepherd's-purse	AnnF	Intro	Native to Europe
Cruciferae (Brassicaceae)	<i>Cardaria draba</i>	<i>Lepidium draba</i> , <i>C. draba</i> var. <i>draba</i>	whitetop	PerF	Intro	Native to Europe
Cruciferae (Brassicaceae)	<i>Cardaria pubescens</i>		hairy whitetop	PerF	Intro	Native to Asia
Cruciferae (Brassicaceae)	<i>Chorispora tenella</i>		blue mustard	AnnF	Intro	Native to Asia
Cruciferae (Brassicaceae)	<i>Draba reptans</i>		dwarf draba	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Erysimum asperum</i> var. <i>purshii</i>	<i>E. asperum</i> var. <i>arkansanum</i> , <i>E. capitatum</i> var. <i>capitatum</i> , <i>E. capitatum</i> var. <i>purshii</i>	sand dune wallflower	PerF	Wide	Type locality is near the Great Salt Lake, Salt Lake Co., UT (Carrington s.n.)
Cruciferae (Brassicaceae)	<i>Hutchinsia procumbens</i>	<i>Hornungia procumbens</i> , <i>Hymenolobus procumbens</i>	ovalpurse	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Lepidium densiflorum</i> var. <i>densiflorum</i>	Includes var. <i>macrocarpum</i>	prairie pepperwort	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Schoenocrambe linifolia</i>	<i>Sisymbrium linifolium</i>	flax-leaved plainsmustard	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Thelypodopsis sagittata</i> var. <i>sagittata</i>	<i>Thelypodium sagittatum</i> var. <i>sagittatum</i>	arrowhead thelypody	PerF	Wide	

Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Cruciferae (Brassicaceae)	<i>Thelypodium integrifolium</i> var. <i>complanatum</i>		folded thelypody	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Thelypodium milleflorum</i>		manyflower thelypody	PerF	Periph	
Cuscutaceae (Convolvulaceae)	<i>Cuscuta denticulata</i>	<i>Grammica denticulata</i>	smalltooth dodder	AnnF	Wide	
Cuscutaceae (Convolvulaceae)	<i>Cuscuta indecora</i>	<i>C. indecora</i> var. <i>neuropetala</i> , <i>Grammica indecora</i>	smalltooth dodder	AnnF	Wide	
Cyperaceae	<i>Eleocharis palustris</i>	Includes <i>E. macrostachya</i> , <i>E. erythropoda</i> , & <i>E. uniglumis</i>	common spikerush	PerG	Wide	
Cyperaceae	<i>Scirpus americanus</i>	<i>Scirpus olneyi</i> , <i>Schoenoplectus americanus</i>	American bulrush	PerG	Wide	
Cyperaceae	<i>Scirpus fluviatilis</i>	<i>Bolboschoenus fluviatilis</i> , <i>Schoenoplectus fluviatilis</i>	river bulrush	PerG	Sparse	
Cyperaceae	<i>Scirpus maritimus</i>	<i>Scirpus maritimus</i> var. <i>paludosus</i> , <i>Schoenoplectus maritimus</i> , <i>Bolboschoenus maritimus</i> var. <i>paludosus</i>	alkali bulrush	PerG	Wide	
Cyperaceae	<i>Scirpus microcarpus</i>		panicked bulrush	PerG	Wide	
Cyperaceae	<i>Scirpus pungens</i> var. <i>longispicatus</i>	<i>Scirpus pungens</i> var. <i>polyphyllus</i> , <i>Schoenoplectus pungens</i> var. <i>longispicatus</i> , <i>Schoenoplectus</i> <i>pungens</i> var. <i>polyphyllus</i> , <i>Schoenoplectus pungens</i> var. <i>pungens</i>	three-square bulrush	PerG	Wide	
Cyperaceae	<i>Scirpus validus</i>	<i>Schoenoplectus tabernaemontani</i> , <i>Schoenoplectus lacustris</i> ssp. <i>validus</i> ,	soft-stem bulrush	PerG	Wide	
Dipsacaceae	<i>Dipsacus sylvestris</i>	<i>D. fullonum</i> var. <i>sylvestris</i>	teasel	PerF	Intro	Native to Europe
Gentianaceae	<i>Centaureum exaltatum</i>		Great Basin centaury	AnnF	Wide	
Gramineae (Poaceae)	<i>Aegilops cylindrica</i>	<i>Cylindropyrum cylindricum</i>	jointed goatgrass	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Agrostis exarata</i>		spike bentgrass	PerG	Wide	
Gramineae (Poaceae)	<i>Avena fatua</i> var. <i>fatua</i>	<i>A. fatua</i>	wild oats	AnnG	Intro	Native to Eurasia

**Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.**

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Gramineae (Poaceae)	<i>Bouteloua eriopoda</i>	<i>Chondrosium eriopodum</i>	black grama	PerG	Wide	
Gramineae (Poaceae)	<i>Bromus carinatus</i>	<i>Bromus marginatus</i> , <i>B. polyanthus</i> , <i>Ceratochloa carinata</i>	mountain brome	PerG	Wide	
Gramineae (Poaceae)	<i>Bromus hordeaceus</i>	<i>B. mollis</i> , <i>B. racemosus</i>	soft chess	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Bromus rubens</i>		red brome	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Crypsis schoenoides</i>		common pricklegrass	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Distichlis spicata</i>	<i>D. spicata</i> var. <i>stricta</i> , <i>Distichlis stricta</i>	desert saltgrass	PerG	Wide	
Gramineae (Poaceae)	<i>Echinochloa crus-galli</i>	Includes <i>E. microstachya</i> , <i>E. muricata</i> var. <i>microstachya</i>	barnyard-grass	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Elymus junceus</i>	<i>Pthyrostachys juncea</i>	Russian wildrye	PerG	Intro	Native to Russia
Gramineae (Poaceae)	<i>Elymus repens</i>	<i>Agropyron repens</i> , <i>Elytrigia repens</i>	quackgrass	PerG	Intro	Utah state noxious weed. Native to Eurasia
Gramineae (Poaceae)	<i>Eragrostis cilianensis</i>		stinkgrass	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Eragrostis hypnoides</i>		teal lovegrass	AnnG	Periph	
Gramineae (Poaceae)	<i>Festuca octoflora</i>	Includes vars. <i>glauca</i> , <i>hirtella</i> , & <i>octoflora</i> , <i>Vulpia octoflora</i>	six-weeks fescue	AnnG	Wide	
Gramineae (Poaceae)	<i>Hordeum jubatum</i>	<i>Critesion jubatum</i>	foxtail barley	PerG	Wide	
Gramineae (Poaceae)	<i>Hordeum marinum</i>	<i>H. geniculatum</i>	Mediterranean barley	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Muhlenbergia asperifolia</i>		scratchgrass	PerG	Wide	
Gramineae (Poaceae)	<i>Phalaris arundinacea</i>	<i>Phalaroides arundinacea</i>	reed canary grass	PerG	Wide	
Gramineae (Poaceae)	<i>Phleum pratense</i>		timothy	PerG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Polygonum monspeliensis</i>		rabbitfoot-grass	AnnG	Intro	Native to Eurasia and Africa

Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Gramineae (Poaceae)	<i>Puccinellia distans</i>		weeping alkaligrass	PerG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Puccinellia nuttalliana</i>	<i>P. airoides</i>	Nuttall's alkaligrass	PerG	Wide	
Gramineae (Poaceae)	<i>Secale cereale</i>		cultivated rye	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Sporobolus airoides</i> var. <i>airoides</i>	<i>S. airoides</i>	alkali sacaton	PerG	Wide	
Hydrophyllaceae	<i>Hesperochiron pumilus</i>		dwarf hesperochiron	PerF	Wide	
Iridaceae	<i>Iris missouriensis</i>		Rocky Mountain iris	PerF	Wide	
Juncaceae	<i>Juncus arcticus</i>	<i>J. arcticus</i> var. <i>balticus</i> , <i>J. arcticus</i> ssp. <i>ater</i> , <i>J. balticus</i> var. <i>montanus</i> , includes var. <i>mexicanus</i>	Baltic rush	PerG	Wide	
Juncaceae	<i>Juncus drummondii</i>	Includes vars. <i>drummondii</i> & <i>subtriflorus</i>	Drummond's rush	PerG	Wide	
Juncaceae	<i>Juncus longistylis</i>		longstyle rush	PerG	Wide	
Juncaginaceae	<i>Triglochin cocinna</i> var. <i>debilis</i>	Included in <i>T. maritimum</i> by many authors	low arrowgrass	PerG	Wide	
Labiatae (Lamiaceae)	<i>Lycopus asper</i>		rough bugleweed	PerF	Wide	
Leguminosae (Fabaceae)	<i>Astragalus argophyllus</i> var. <i>argophyllus</i>		silver-leaved milkvetch	PerF	Wide	
Leguminosae (Fabaceae)	<i>Astragalus calycosus</i> var. <i>calycosus</i>		Torrey's milkvetch	PerF	Wide	
Leguminosae (Fabaceae)	<i>Astragalus convallarius</i> var. <i>convallarius</i>	<i>A. diversifolius</i> var. <i>campestris</i>	lesser rushy milkvetch	PerF	Wide	
Leguminosae (Fabaceae)	<i>Astragalus lentiginosus</i> var. <i>salinus</i>		salt milkvetch	PerF	Wide	
Leguminosae (Fabaceae)	<i>Lathyrus pauciflorus</i> var. <i>utahensis</i>		Utah sweetpea	PerF	RegEn	Type locality is Salina Canyon, Sevier Co., UT (Jones 54411 POM)
Leguminosae (Fabaceae)	<i>Lupinus caudatus</i> var. <i>utahensis</i>	<i>L. argenteus</i> var. <i>utahensis</i> , <i>L. caudatus</i> ssp. <i>caudatus</i>	Utah lupine	PerF	Wide	Type locality is Wasatch Mountains or Antelope Island, Salt Lake Co., UT (Watson s.n. GH)

Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Leguminosae (Fabaceae)	<i>Trifolium fragiferum</i>		strawberry clover	PerF	Intro	Native to Europe
Leguminosae (Fabaceae)	<i>Trifolium pratense</i>		red clover	PerF	Intro	Native to Europe
Leguminosae (Fabaceae)	<i>Trifolium variegatum</i> var. <i>variegatum</i>		variegated clover	AnnF	Periph	
Malvaceae	<i>Sidaicea candida</i>	Includes vars. <i>candida</i> & <i>glabrata</i>	white checker-mallow	PerF	Wide	
Onagraceae	<i>Camissonia minor</i>	<i>Oenothera minor</i>	lesser camissonia	AnnF	Wide	
Onagraceae	<i>Camissonia scapoidea</i> var. <i>utahensis</i>		Utah camissonia	AnnF	Wide	Type locality is Black Rock, Salt Lake Co., UT (Watson 414 US)
Onagraceae	<i>Camissonia walkeri</i>		Walker's camissonia	AnnF	Wide	
Onagraceae	<i>Oenothera villosa</i> var. <i>strigosa</i>	<i>Oenothera strigosa</i> , <i>Oenothera biennis</i>	oenothera strigosa, oenothera biennis	PerF	Wide	
Plantaginaceae	<i>Plantago elongata</i>		longleaf plantain	AnnF	Periph	
Plantaginaceae	<i>Plantago major</i>	Includes "native" var. <i>pachyphylla</i>	common plantain	PerF	Intro	Mostly native to Europe. Type locality of the native phase "var. <i>pachyphylla</i> " is Salt Lake City, Salt Lake Co., UT (Jones 1030 POM)
Plantaginaceae	<i>Plantago patagonica</i>	Includes vars. <i>gnaphaloides</i> , <i>spinulosa</i> , & <i>breviscapa</i>	woolly plantain	AnnF	Wide	
Polemoniaceae	<i>Gilia leptomeria</i> var. <i>leptomeria</i>	<i>Aliciella leptomeria</i>	common gilia	AnnF	Wide	
Polemoniaceae	<i>Ipomopsis congesta</i> var. <i>congesta</i>	<i>Gilia congesta</i> var. <i>congesta</i>	ball-head gilia	PerF	Wide	
Polygonaceae	<i>Eriogonum heracleoides</i>	<i>E. heracleoides</i> var. <i>heracleoides</i>	whorled wild buckwheat	PerF	Wide	
Polygonaceae	<i>Polygonum lapathifolium</i>	<i>Persicaria lapathifolia</i>	willow-weed	AnnF	Intro	Native to Eurasia
Polygonaceae	<i>Polygonum persicaria</i>	<i>Persicaria maculosa</i>	lady's-thumb	AnnF	Intro	Native to Eurasia
Polygonaceae	<i>Polygonum ramosissimum</i>	<i>P. ramosissimum</i> var. <i>prolificum</i> , <i>P. ramosissimum</i> var. <i>ramosissimum</i>	bushy knotweed	AnnF	Wide	
Polygonaceae	<i>Rumex patentia</i>		patience dock	PerF	Intro	Native to Eurasia
Polygonaceae	<i>Rumex stenophyllus</i>		narrow-leaved dock	PerF	Intro	Native to Eurasia
Polypodiaceae (Aspleniaceae)	<i>Cystopteris fragilis</i>	Includes <i>C. utahensis</i> , <i>C. reevesiana</i> , & <i>C. tenuis</i>	brittle bladder fern	Fern	Wide	

Appendix B. Potential (unconfirmed) taxa of Golden Spike National Historic Site, cont.

Family	Species name	Synonyms/Taxonomic notes	common name	Life form	Range	Comments
Primulaceae (Myrsinaceae)	<i>Glaux maritima</i>		sea-milkwort	Perf	Wide	
Ranunculaceae (Helleboraceae)	<i>Delphinium andersonii</i> var. <i>andersonii</i>	<i>D. andersonii</i>	Anderson's larkspur	Perf	Wide	
Ranunculaceae	<i>Ranunculus cymbalaria</i>	<i>R. cymbalaria</i> var. <i>cymbalaria</i> , <i>Halerpestes cymbalaria</i> ssp. <i>saximontana</i> . Vars. not recognized in <i>Flora of North</i> <i>America</i> (1997)	marsh buttercup	Perf	Wide	
Rosaceae	<i>Purshia tridentata</i>		antelope bitterbrush	Shrub	Wide	
Scrophulariaceae	<i>Castilleja angustifolia</i> var. <i>flavescens</i>		narrowleaf paintbrush	Perf	RegEn	
Scrophulariaceae	<i>Cordylanthus maritimus</i> var. <i>canescens</i>		alkali bird's-beak	AnnF	Wide	
Scrophulariaceae	<i>Veronica americana</i>		American brooklime	Perf	Wide	
Scrophulariaceae	<i>Veronica peregrina</i> var. <i>xalapensis</i>		purslane speedwell	AnnF	Wide	
Solonaceae	<i>Hyoscyamus niger</i>		black henbane	AnnF	Intro	Native to Europe
Solonaceae	<i>Solanum triflorum</i>		cut-leaf nightshade	AnnF	Wide	Native to C North America, may be adventive in UT.
Typhaceae	<i>Typha latifolia</i>		broad-leaved cattail	PerG	Wide	
Umbelliferae (Apiaceae)	<i>Cymopterus purpurascens</i>		basin white-cup spring- parsley	Perf	Wide	
Violaceae	<i>Viola nuttallii</i> var. <i>major</i>	<i>V. nuttallii</i> var. <i>praemorsa</i> , <i>V. praemorsa</i> var. <i>altior</i> , <i>V.</i> <i>praemorsa</i> ssp. <i>major</i> , <i>V.</i> <i>praemorsa</i> ssp. <i>lingulifolia</i>	upland yellow violet	Perf	Wide	
Zygophyllaceae	<i>Tribulus terrestris</i>		puncture vine	AnnF	Intro	Native to Eurasia

The vascular plant species listed here are known from the vicinity of Golden Spike National Historic Site in Box Elder County, Utah, but have not previously been reported or confirmed for the historic site. Species on this list are derived from a checklist of potential species for NCPN parks prepared by Dr. N. Duane Atwood of Brigham Young University in 2001 or from the *Atlas of the Vascular Flora of Utah* (Albee et al. 1988). Some species from Appendix C could be considered as potentially occurring in the historic site, but are not included here.

**Appendix C. Rejected (falsely reported or questionable) taxa of Golden Spike National Historic Site.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Compositae (Asteraceae)	<i>Microseris nutans</i>		nodding microseris	PerF	Wide	FalsRep	Report from Allen & Curto (1995) based on misidentified specimen of <i>Agoseris glauca</i> var. <i>laciniata</i> .
Cruciferae (Brassicaceae)	<i>Arabis holboellii</i>	<i>Boecheria holboellii</i>	Holboell's rockcress	PerF	Wide	FalsRep	Report from Allen & Curto (1995) based on a misidentified specimen of <i>A. lignifera</i> .
Rosaceae	<i>Amelanchier alnifolia</i>		Saskatoon serviceberry	Shrub	Wide	FalsRep	Report from Allen & Curto (1995) based on a misidentified specimen of <i>A. utahensis</i> .

The vascular plant species listed here have been reported for Golden Spike National Historic Site from published and unpublished literature (Allen and Curto 1995) or from herbarium specimens, but are now believed to be erroneous because of misidentifications (False Reports or FalsRep) or because the historic site is well outside the known or expected range of the species (Questionable or Ques?).

Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grs	Dist	Comments
<b>Shrubs</b>								
Chenopodiaceae	<i>Atriplex canescens</i> var. <i>canescens</i>	four-wing saltbush	Native	Rep	May-Sep	X		
Chenopodiaceae	<i>Atriplex confertifolia</i>	shadscale	Native	Rep	May-Sep	X		
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>latifolia</i>	Louisiana wormwood	Native	Rep	Jul-Oct	X		
Compositae (Asteraceae)	<i>Artemisia nova</i> var. <i>nova</i>	black sagebrush	Native	Rep	Sep-Oct	X		
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>tridentata</i>	basin big sagebrush	Native	Pres	Jul-Sep	X	X	
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>vaseyana</i>	mountain big sagebrush	Native	Rep	Jul-Sep	X		Rocky sites
Compositae (Asteraceae)	<i>Brickellia microphylla</i> var. <i>watsonii</i>	Watson's brickellbush	Native	Pres	Aug-Oct	X		Rocky sites
Compositae (Asteraceae)	<i>Brickellia oblongifolia</i> var. <i>linifolia</i>	Mohave brickellbush	Native	Pres	Jun-Aug	X		Rocky sites
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>gnaphalodes</i>	graystem rabbitbrush	Native	Pres	Aug-Oct	X		
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>lanceolatus</i>	lanceleaf rabbitbrush	Native	Pres	Jul-Sep	X	X	
Compositae (Asteraceae)	<i>Gutierrezia sarothrae</i>	broom snakeweed	Native	Pres	Jul-Oct	X		
Compositae (Asteraceae)	<i>Tetradymia canescens</i>	spineless horsebrush	Native	Pres	Jun-Sep	X		
Compositae (Asteraceae)	<i>Tetradymia nuttallii</i>	Nuttall's horsebrush	Native	Pres	May-Jun	X		Rocky sites
Cupressaceae	<i>Juniperus osteosperma</i>	Utah juniper	Native	Pres	NA	X		
Polemoniaceae	<i>Leptodactylon pungens</i>	prickly-phlox	Native	Pres	May-Jul	X		Rocky sites
Rosaceae	<i>Amelanchier utahensis</i>	Utah serviceberry	Native	Pres	Apr-Jun	X		
Rosaceae	<i>Prunus virginiana</i> var. <i>melanocarpa</i>	western chokecherry	Native	Pres	May-Jul	X		Rocky sites
Rosaceae	<i>Rosa woodsii</i>	Woods' rose	Native	Pres	May-Jul	X		
Saxifragaceae (Grossulariaceae)	<i>Ribes aureum</i>	golden currant	Native	Pres	Mar-Jul		X	Planted at visitor center
Solanaceae	<i>Lycium barbarum</i>	matrimony-vine	Intro	Pres	Mar-Oct		X	Planted at visitor center



Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grs	Dist	Comments
<b>Perennial Forbs</b>								
Asclepiadaceae	<i>Asclepias asperula</i> var. <i>asperula</i>	spider milkweed	Native	Pres	May–Jul	X	X	
Boraginaceae	<i>Cryptantha humilis</i>	dwarf cryptanth	Native	Pres	Apr–Jun	X		Rocky sites
Cactaceae	<i>Opuntia fragilis</i>	brittle prickly-pear	Native	Rep	Jun–Jul	X		
Chenopodiaceae	<i>Bassia prostrata</i>	forage kochia	Intro	Rep	Aug–Oct		X	
Compositae (Asteraceae)	<i>Achillea millefolium</i> ssp. <i>lanulosa</i>	common yarrow	Native	Pres	May–Sep	X		Rocky sites
Compositae (Asteraceae)	<i>Agoseris glauca</i> var. <i>laciniata</i>	cutleaf agoseris	Native	Pres	May–Sep	X		
Compositae (Asteraceae)	<i>Ambrosia psilostachya</i>	western ragweed	Native	Pres	Aug–Oct	X	X	
Compositae (Asteraceae)	<i>Artemisia dracunculus</i> ssp. <i>glauca</i>	tarragon	Native	Pres	Jul–Oct	X		Rocky sites
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>ludoviciana</i>	Louisiana wormwood	Native	Pres	Jul–Oct	X		
Compositae (Asteraceae)	<i>Balsamorhiza hookeri</i> var. <i>hispidula</i>	hairy balsamroot	Native	Pres	Apr–Jul	X	X	
Compositae (Asteraceae)	<i>Balsamorhiza sagittata</i>	arrowleaf balsamroot	Native	Pres	Apr–Jul	X		
Compositae (Asteraceae)	<i>Chaenactis douglasii</i>	hoary dusty-maiden	Native	Pres	May–Sep	X		
Compositae (Asteraceae)	<i>Chrysopsis villosa</i> var. <i>minor</i>	hispid golden-aster	Native	Pres	May–Sep	X		Rocky sites
Compositae (Asteraceae)	<i>Cirsium undulatum</i> var. <i>undulatum</i>	wavy-leaved thistle	Native	Pres	Jun–Sep	X	X	
Compositae (Asteraceae)	<i>Crepis intermedia</i>	gray hawksbeard	Native	Pres	May–Jul	X		
Compositae (Asteraceae)	<i>Erigeron pumilus</i> var. <i>concinus</i>	Navajo fleabane	Native	Pres	May–Aug	X		Rocky sites
Compositae (Asteraceae)	<i>Grindelia squarrosa</i> var. <i>serrulata</i>	curly-cup gumweed	Native	Pres	Jul–Sep		X	
Compositae (Asteraceae)	<i>Haplopappus acaulis</i> var. <i>acaulis</i>	stemless goldenweed	Native	Pres	May–Jul	X		Rocky sites
Compositae (Asteraceae)	<i>Iva axillaris</i>	poverty-weed	Native	Pres	May–Sep	X		

Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grs	Dist	Comments
<i>Perennial Forbs, cont.</i>								
Compositae (Asteraceae)	<i>Lygodesmia grandiflora</i> var. <i>dianthopsis</i>	western rush-pink	Native	Pres	May–Jun		X	
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>canescens</i>	hoary aster	Native	Pres	May–Sep	X		
Compositae (Asteraceae)	<i>Microseris troximoides</i>	dandelion microseris	Native	Pres	Apr–Jun	X		
Compositae (Asteraceae)	<i>Senecio multilobatus</i>	basin groundsel	Native	Pres	Apr–Aug	X		
Compositae (Asteraceae)	<i>Taraxacum officinale</i>	common dandelion	Intro	Pres	Apr–Dec	X	X	
Compositae (Asteraceae)	<i>Tragopogon dubius</i>	yellow salsify	Intro	Pres	May–Jul	X	X	
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed	Intro	Pres	Jun–Aug	X	X	
Cruciferae (Brassicaceae)	<i>Arabis lignifera</i>	Sweetwater rockcress	Native	Pres	May–Jul	X		Rocky sites
Cruciferae (Brassicaceae)	<i>Isatis tinctoria</i>	Dyer's woad	Intro	Rep	May–Jun		X	
Labiatae (Lamiaceae)	<i>Marrubium vulgare</i>	common horehound	Intro	Pres	May–Oct		X	
Leguminosae (Fabaceae)	<i>Astragalus beckwithii</i> var. <i>beckwithii</i>	Beckwith's milkvetch	Native	Pres	Apr–Jul	X		
Leguminosae (Fabaceae)	<i>Astragalus cibaricus</i>	browse milkvetch	Native	Pres	Apr–Jul	X		
Leguminosae (Fabaceae)	<i>Astragalus utahensis</i>	Utah milkvetch	Native	Pres	Apr–Jul	X		
Leguminosae (Fabaceae)	<i>Melilotus officinalis</i>	yellow sweet-clover	Intro	Pres	May–Oct		X	
Liliaceae (Alliaceae)	<i>Allium acuminatum</i>	taper-tip onion	Native	Pres	May–Jul	X	X	
Liliaceae (Alliaceae)	<i>Allium nevadense</i>	Nevada onion	Native	Pres	Apr–Jul	X		Rocky sites
Liliaceae (Alliaceae)	<i>Allium passeyi</i>	Passey's onion	Native	Pres	Jun	X		Rocky sites
Liliaceae (Calochortaceae)	<i>Calochortus bruneauis</i>	Bruneau mariposa	Native	Pres	May–Jul	X		
Liliaceae (Calochortaceae)	<i>Calochortus nuttallii</i>	sego-lily	Native	Pres	Jun–Jul	X		
Liliaceae	<i>Fritillaria pudica</i>	yellow-bell	Native	Pres	Mar–Jun	X		

Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grass	Dist	Comments
<i>Perennial Forbs, cont.</i>								
Liliaceae (Melanthiaceae)	<i>Zigadenus paniculatus</i>	foothills death camas	Native	Pres	Mar–Jun	X		
Linaceae	<i>Linum perenne</i> sp. <i>lewisii</i>	blue flax	Native	Pres	Apr–Aug	X		
Loasaceae	<i>Mentzelia laevicaulis</i>	giant blazingstar	Native	Pres	May–Oct	X		
Malvaceae	<i>Sphaeralcea munroana</i>	white-stem globe-mallow	Native	Pres	May–Oct	X	X	
Onagraceae	<i>Oenothera caespitosa</i> var. <i>crinita</i>	Jones' evening-primrose	Native	Pres	Apr–Jun	X	X	
Papaveraceae	<i>Argemone munita</i> var. <i>rotundata</i>	armed prickly-poppy	Native	Pres	May–Sep		X	
Polemoniaceae	<i>Leptodactylon watsonii</i>	Watson's prickly-phlox	Native	Pres	May–Aug	X		Rocky sites
Polemoniaceae	<i>Phlox hoodii</i> var. <i>canescens</i>	carpet phlox	Native	Pres	Apr–Jun	X		Rocky sites
Polemoniaceae	<i>Phlox longifolia</i>	long-leaf phlox	Native	Pres	Apr–Jul	X		
Polygonaceae	<i>Eriogonum ovalifolium</i>	cushion wild buckwheat	Native	Pres	Apr–Aug	X		Rocky sites
Polygonaceae	<i>Rumex crispus</i>	curly dock	Intro	Pres	May–Sep		X	
Ranunculaceae (Helleboraceae)	<i>Delphinium nuttallianum</i>	Nuttall's larkspur	Native	Pres	Apr–Jul	X		Rocky sites
Rosaceae	<i>Petrophyton caespitosum</i>	rock spiraea	Native	Pres	Aug–Sep	X		Rocky sites
Santalaceae	<i>Comandra umbellata</i> var. <i>pallida</i>	bastard toadflax	Native	Pres	Apr–Aug	X		
Saxifragaceae	<i>Lithophragma parviflorum</i>	smallflower woodlandstar	Native	Pres	Apr–Aug	X		
Scrophulariaceae	<i>Castilleja chromosa</i>	desert paintbrush	Native	Pres	Apr–Jun	X		
Scrophulariaceae	<i>Linaria dalmatica</i>	Dalmatian toadflax	Intro	Pres	Jul–Aug		X	
Scrophulariaceae	<i>Penstemon cyananthus</i> var. <i>subglaber</i>	Raft River penstemon	Native	Pres	May–Jul	X		
Scrophulariaceae	<i>Verbascum blattaria</i>	moth mullein	Intro	Pres	Jun–Aug		X	
Scrophulariaceae	<i>Verbascum thapsus</i>	woolly mullein	Intro	Pres	Jun–Aug	X	X	
Umbelliferae (Apiaceae)	<i>Cymopterus longipes</i>	long-stalk spring-parsley	Native	Pres	Apr–Jun	X		
Umbelliferae (Apiaceae)	<i>Cymopterus terebinthinus</i> var. <i>albiflorus</i>	aromatic spring-parsley	Native	Pres	Apr–Jun	X		Rocky sites
Umbelliferae (Apiaceae)	<i>Lomatium grayi</i> var. <i>depauperatum</i>	depauperate lomatium	Native	Pres	May–Jul	X		Rocky sites

Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grasses	Dist	Comments
<i>Perennial Forbs, cont.</i>								
Umbelliferae (Apiaceae)	<i>Lomatium triternatum</i> ssp. <i>platycarpum</i>	flat-seed lomatium	Native	Pres	May–Jul	X		
Verbenaceae	<i>Verbena bracteata</i>	prostrate vervain	Native	Pres	May–Sep		X	
<b>Annual Forbs</b>								
Amaranthaceae	<i>Amaranthus albus</i>	tumble pigweed	Intro	Pres	Jun–Oct		X	
Boraginaceae	<i>Amsinckia intermedia</i>	tarweed fiddleneck	Native	Pres	Apr–May		X	
Boraginaceae	<i>Lappula occidentalis</i> var. <i>cupulata</i>	cupseed stickseed	Native	Pres	Apr–Jun	X		
Caryophyllaceae (Alsiniaceae)	<i>Holosteum umbellatum</i>	holosteum	Intro	Pres	Feb–May		X	
Chenopodiaceae	<i>Atriplex patula</i>	spear orach	Native	Pres	Jun–Sep	X		
Chenopodiaceae	<i>Atriplex rosea</i>	tumbling orach	Intro	Pres	Jul–Sep		X	
Chenopodiaceae	<i>Chenopodium album</i> var. <i>berlandieri</i>	pitseed goosefoot	Native	Pres	Jul–Sep		X	
Chenopodiaceae	<i>Halogeton glomeratus</i>	halogeton	Intro	Pres	Jul–Aug		X	
Chenopodiaceae	<i>Salsola pauciflora</i>	barbwire Russian-thistle	Intro	Rep	Jun–Sep		X	
Chenopodiaceae	<i>Salsola tragus</i>	Russian thistle	Intro	Pres	Jun–Sep		X	
Chenopodiaceae	<i>Suaeda torreyana</i> var. <i>torreyana</i>	Torrey's seepweed	Native	Rep	Jun–Sep	X		
Compositae (Asteraceae)	<i>Ambrosia acanthicarpa</i>	bur ragweed	Native	Pres	Jul–Oct		X	
Compositae (Asteraceae)	<i>Helianthus annuus</i> ssp. <i>lenticularis</i>	common sunflower	Native	Pres	Jun–Sep		X	
Compositae (Asteraceae)	<i>Lactuca serriola</i>	prickly lettuce	Intro	Pres	Jul–Sep		X	
Cruciferae (Brassicaceae)	<i>Alyssum alyssoides</i>	pale madwort	Intro	Pres	May–Jul	X		
Cruciferae (Brassicaceae)	<i>Alyssum desertorum</i>	desert madwort	Intro	Pres	Apr–Jul	X		
Cruciferae (Brassicaceae)	<i>Arabidopsis thaliana</i>	mouse-ear cress	Intro	Pres	Apr–May	X		
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>osmiarum</i>	western tansy-mustard	Native	Pres	Mar–Aug	X		

Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grass	Dist	Comments
<i>Annual Forbs, cont.</i>								
Cruciferae (Brassicaceae)	<i>Descurainia sophia</i>	flixweed	Intro	Pres	Mar–Aug	X	X	
Cruciferae (Brassicaceae)	<i>Draba cuneifolia</i> var. <i>cuneifolia</i>	wedgeleaf draba	Native	Pres	Feb–Jul	X		Rocky sites
Cruciferae (Brassicaceae)	<i>Draba verna</i>	spring whitlow-grass	Intro	Pres	Mar–Jun	X	X	
Cruciferae (Brassicaceae)	<i>Euclidium syriacum</i>	Syrian mustard	Intro	Pres	May–Jun		X	
Cruciferae (Brassicaceae)	<i>Lepidium perfoliatum</i>	clasping pepperwort	Intro	Pres	May–Jul		X	
Cruciferae (Brassicaceae)	<i>Malcolmia africana</i>	African mustard	Intro	Pres	Apr–Jul		X	
Cruciferae (Brassicaceae)	<i>Sisymbrium altissimum</i>	tumble mustard	Intro	Pres	May–Aug		X	
Euphorbiaceae	<i>Chamaesyce glyptosperma</i>	ridge-seeded spurge	Native	Pres	Jun–Aug	X	X	
Geraniaceae	<i>Erodium cicutarium</i>	stork's-bill	Intro	Pres	Feb–Oct	X	X	
Loasaceae	<i>Mentzelia dispersa</i>	Nevada stickleaf	Native	Pres	Apr–Aug	X		
Onagraceae	<i>Epilobium brachycarpum</i>	autumn willow-herb	Native	Pres	Jul–Sep	X		
Polemoniaceae	<i>Microsteris gracilis</i> var. <i>humiflor</i>	slender phlox	Native	Pres	Mar–Jun	X		
Polygonaceae	<i>Eriogonum cernuum</i> var. <i>cernuum</i>	nodding wild buckwheat	Native	Pres	Apr–Oct	X		Rocky sites
Polygonaceae	<i>Eriogonum hookeri</i>	Hooker's wild buckwheat	Native	Pres	Jun–Oct	X		
Polygonaceae	<i>Polygonum aviculare</i>	yard knotweed	Intro	Pres	May–Oct		X	
Ranunculaceae	<i>Ranunculus testiculatus</i>	bur buttercup	Intro	Pres	Mar–Jun		X	
Rubiaceae	<i>Galium aparine</i> var. <i>echinospermum</i>	cleavers	Native	Pres	Apr–Jun	X		Rocky sites
Scrophulariaceae	<i>Collinsia parviflora</i>	blue-eyed Mary	Native	Pres	Apr–Jun	X		
Scrophulariaceae	<i>Veronica biloba</i>	two-lobe speedwell	Intro	Pres	May–Jun	X		
Solanaceae	<i>Nicotiana attenuata</i>	coyote tobacco	Native	Pres	Jun–Sep	X		Rocky sites
<b>Perennial Graminoids</b>								
Gramineae (Poaceae)	<i>Agropyron cristatum</i>	crested wheatgrass	Intro	Pres	Jun–Aug	X	X	
Gramineae (Poaceae)	<i>Aristida purpurea</i>	purple three-awn	Native	Pres	Mar–Sep	X	X	

Appendix D. Confirmed, historical, and reported taxa of Golden Spike National Historic Site, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Sage/Grs	Dist	Comments
<i>Perennial Graminoids, cont.</i>								
Gramineae (Poaceae)	<i>Elymus cinereus</i>	Great Basin wildrye	Native	Pres	Jun-Aug	X		
Gramineae (Poaceae)	<i>Elymus elongatus</i>	tall wheatgrass	Intro	Pres	Jun-Aug		X	
Gramineae (Poaceae)	<i>Elymus elymoides</i>	squirreltail	Native	Pres	May-Aug	X	X	
Gramineae (Poaceae)	<i>Elymus hispidus</i>	intermediate wheatgrass	Intro	Rep	Jun-Aug		X	
Gramineae (Poaceae)	<i>Elymus smithii</i>	western wheatgrass	Native	Pres	Jun-Aug	X		
Gramineae (Poaceae)	<i>Elymus spicatus</i>	bluebunch wheatgrass	Native	Pres	Jun-Aug	X		
Gramineae (Poaceae)	<i>Elymus triticoides</i>	creeping wildrye	Native	Pres	May-Aug	X		
Gramineae (Poaceae)	<i>Poa bulbosa</i>	bulbous bluegrass	Intro	Pres	Apr-Jul		X	
Gramineae (Poaceae)	<i>Poa pratensis</i>	Kentucky bluegrass	Intro	Pres	May-Aug	X	X	
Gramineae (Poaceae)	<i>Poa secunda</i>	Sandberg's bluegrass	Native	Pres	Apr-Sep	X		
Gramineae (Poaceae)	<i>Sporobolus cryptandrus</i>	sand dropseed	Native	Pres	Jun-Aug	X		
Gramineae (Poaceae)	<i>Stipa comata</i> var. <i>comata</i>	needle-and-thread	Native	Pres	May-Jul	X		
Gramineae (Poaceae)	<i>Stipa hymenoides</i>	Indian ricegrass	Native	Pres	May-Jul	X		
<b>Annual Graminoids</b>								
Gramineae (Poaceae)	<i>Bromus briziformis</i>	rattlesnake chess	Intro	Pres	May-Jul	X		
Gramineae (Poaceae)	<i>Bromus diandrus</i>	ripgut brome	Intro	Pres	Apr-Jun	X	X	
Gramineae (Poaceae)	<i>Bromus japonicus</i>	Japanese chess	Intro	Pres	Jun-Aug	X	X	
Gramineae (Poaceae)	<i>Bromus tectorum</i>	cheatgrass	Intro	Pres	May-Jul	X	X	
Gramineae (Poaceae)	<i>Eremopyrum triticeum</i>	annual wheatgrass	Intro	Pres	May-Jul		X	
Gramineae (Poaceae)	<i>Hordeum murinum</i>	rabbit barley	Intro	Pres	May-Jul		X	
Gramineae (Poaceae)	<i>Triticum aestivum</i>	wheat	Intro	Pres	Apr-Jul	X	X	

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