



**SCOTT COUNTY  
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ENVIRONMENTAL HEALTH & INSPECTIONS  
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December 10, 2013

Paul Nelson  
Natural Resource Program Manager  
200 Fourth Ave. W  
Shakopee, MN 55379

Dear Mr. Nelson:

The Department of Natural Resources (DNR) Natural Heritage Database (NHIS) is a collection of databases that provides information on Minnesota's rare plants and animals, native plant communities, and other rare features. The Minnesota County Biological Survey (MCBS) is a major source of this information. The DNR has made the NHIS databases (MCBS Native Plant Communities, MCBS Sites of Biodiversity Significance, MCBS Railroad Rights-of-Way Prairies, and Rare Features Database) available to Scott County and other local government agencies to review through Geographical Information Systems (GIS).

The NHIS database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within the area of interest in the S1/2 of Section 3 and Section 10 of Blakeley Township TWP113N RANGE 25W. Based on the review of the NHIS database provided by the DNR the rare plants and animals, native plant communities, and rare features are listed below and shown in the enclosed map:

MCBS Native Plant Communities:

DRY SAND - GRAVEL PRAIRIE (SOUTHERN)  
ELM - BASSWOOD - BLACK ASH - (HACKBERRY) FOREST  
SUGAR MAPLE - BASSWOOD - (BITTERNUT HICKORY) FOREST  
RED OAK - SUGAR MAPLE  
SOUTHERN FLOODPLAIN FOREST  
PIN OAK - BUR OAK WOODLAND  
DRY HILL PRAIRIE (SOUTHERN)

MCBS Biodiversity of Significance:

HIGH BIODIVERSITY SIGNIFICANCE

MCBS Railroad Rights-of Way Prairies:

NONE IDENTIFIED

Rare Features Database:

NUMBER	SCIENTIFIC NAME	COMMON NAME
1	Besseya bullii	Kitten-tails
2	Dry sand - gravel prairie (southern) type	Dry Sand - Gravel Prairie (Southern)

Acknowledgement:

"Data included here were provided by the Division of Ecological and Water Resources, Minnesota Department of Natural Resources (DNR), and were current as of October 2013. These data are not based on an exhaustive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present."

Copyright notice:

2013 MCBS Native Plant Communities, Biodiversity of Significance, and Railroad Rights-of-Way Prairies  
2010 Rare Features Database

Enclosed is a map of the project area and the Natural Heritage Database (NHIS) information, a spreadsheet of the identified Rare Features Database, and information on Bessey bullii. Please contact the MNR Natural Heritage and Nongame Research Program for additional information on protecting listed Endangered, Threatened, and Special Concern Species.

Sincerely,

*Kate Sedlacek*

Kate Sedlacek  
Scott County Environmental Health  
952-496-8351

Attachment R-3

[Keyword Search](#) | [A-Z Search](#) | [Filtered Search](#)

*Besseyia bullii* (Est.) Rydb.

Kitten-tails

**MN Status:**  
threatened

**Federal Status:**  
none

**CITES:**  
none

**USFS:**  
none

**Group:**

vascular plant

**Class:**

Dicotyledoneae

**Order:**

Scrophulariales

**Family:**

Scrophulariaceae

**Life Form:**

forb

**Longevity:**

perennial

**Leaf Duration:**

deciduous

**Water Regime:**

terrestrial

**Soils:**

sand

**Light:**

full sun, partial

shade

**Habitats:**

Upland Prairie,

Savanna, Fire

Dependent Forest

**Best time to see:**



JAN

**Synonyms**

*Wulfenia bullii*

**Basis for Listing**

It appears that Minnesota is the population center for this Midwestern endemic species, which is considered rare or threatened wherever it occurs. When *Besseyia bullii* was placed on the state endangered species list in 1984, more than half of the historically known populations of the species in Minnesota were located in what is now the metropolitan area of Minneapolis-St. Paul and surrounding suburbs. At that time, only 5 of 21 previously documented sites were known to survive. However, the work of the Minnesota Biological Survey in eastern counties since the late 1980s documented quite a few additional locations for this species. Despite these recent discoveries, *B. bullii* is at risk because its preferred habitat closely coincides with the preferred siting of housing developments. Without statutory protection, these newly documented populations on bluff prairies, dry open woods, and savannas in the metropolitan area



Map Interpretation

## Attachment R-4

FEB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MAR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
APR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MAY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JUN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JUL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AUG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SEP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OCT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NOV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DEC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

could disappear. *Besseyia bullii* was reclassified as threatened in 1996.

#### Description

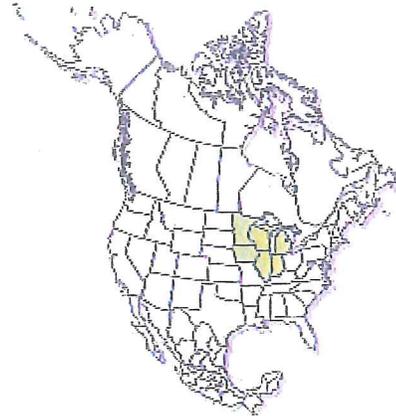
*Besseyia bullii* is quite distinctive and bears no close resemblance to any other species encountered in Minnesota. It is characterized by a dense spike of sessile, yellowish flowers, each with two, long, exerted stamens. Basal leaves are large, pubescent, and heavily veined. Stems are unbranched, and their many small, alternate leaves partially clasp the stem. Plants flower in early spring but the spike and basal leaves remain visible throughout most of the summer.

#### Habitat

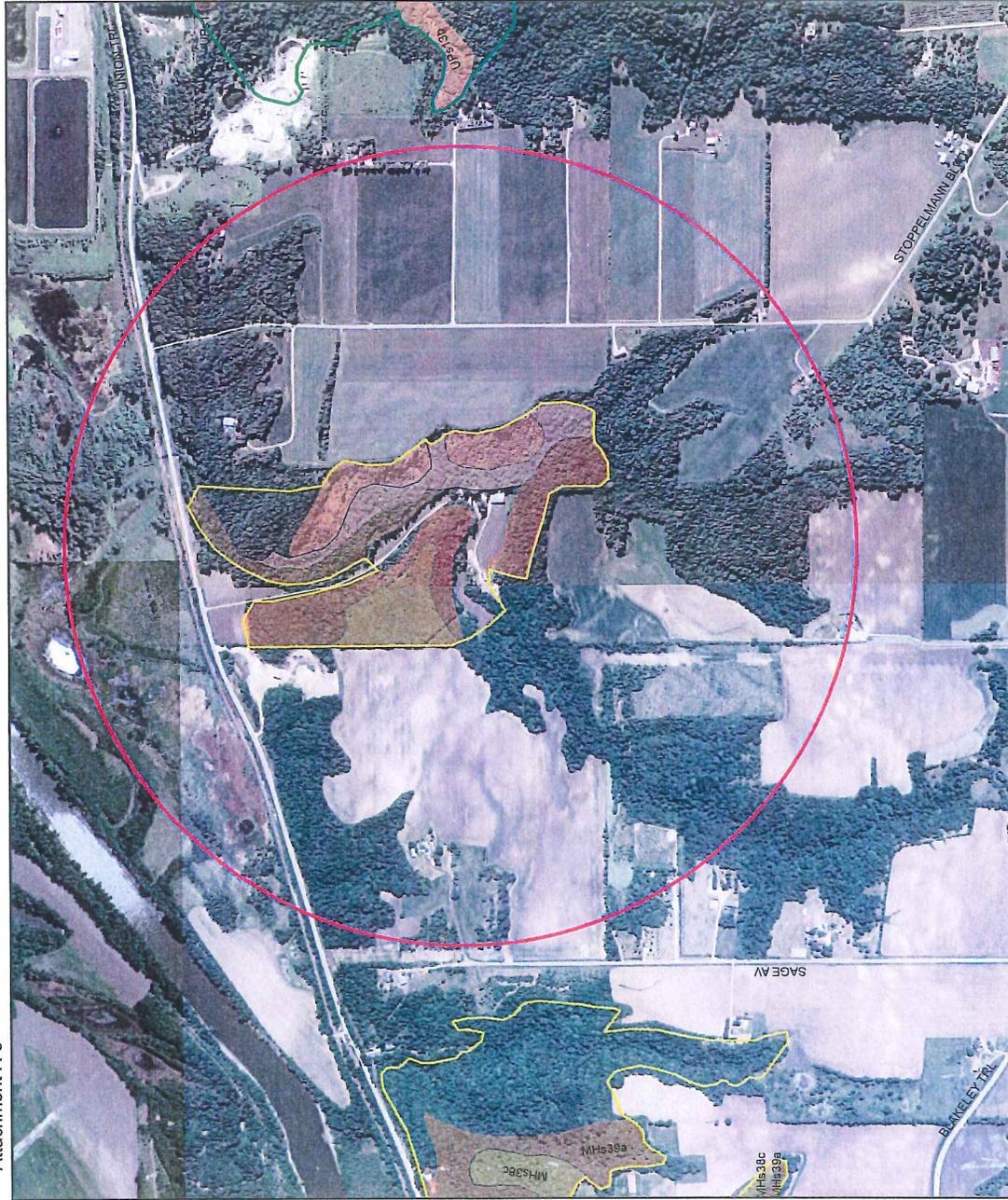
*Besseyia bullii* is primarily a species of **oak savanna** communities, though it also occurs in **dry prairies** and oak woodlands (including **dry-mesic oak (maple) woodlands**, **dry-mesic oak-hickory woodlands**, and **dry-mesic pine-oak woodlands**). The Minnesota populations are largely restricted to the bluffs and terraces of the St. Croix, Mississippi, and Minnesota river valleys, with many populations occurring in the greater Twin Cities area. Terraces of the Cannon River also support a number of populations. Plants show a preference for partial to open light and upper slopes. Some populations exhibit a preference for less xeric north-facing slopes in prairie habitats. Soils are most often sandy to gravelly, well-drained soil derived from alluvium or limestone bedrock.

#### Biology / Life History

*Besseyia bullii* is a perennial herb. Flowers usually appear in May and the fruits dehisce by late June. This species appears to produce flowers in its second or third year. The first couple of years the plant produces only basal leaves. Flowering plants produce larger and more numerous basal leaves than nonflowering plants. Pollinators are unknown, but several species of *Bombus* (bumblebees) have been collected on a western relative. There may be as many as 17 to 93 capsules per inflorescence, with anywhere from 1 to 24 seeds per capsule. Seeds are small and flat. Wind appears to be a method of seed dispersal, although distance of dispersal is limited. Seeds appear to germinate best within a few months after maturation. Seeds that experienced dormancy had low germination rates,



Map Interpretation



**Plant Communities and Rare Features**

- FDs37b
- FFs68a
- MHs38c
- MHs39a
- MHs49a
- UPs13b
- UPs13d

**Community Type Ranking**

- Below
- High
- Moderate
- Outstanding

**Scope Area**



**DEPARTMENT OF NATURAL RESOURCES  
NATURAL HERITAGE DATABASE**

BLAKELEY TOWNSHIP  
TWP113N SEC25W SEC3&10

4/1/15

1 inch = 928 feet

Attachment R-6

DNR Rare Feature Database	Number	MAPPEDDATE	SCL_NAME	COM_NAME	NAME_TYPE	NAME_CAT	ORDER_	FAMILY	NCNAME_V15	GENDESC1	GENDESC2
	1	4/4/05	Besseya butill	Kitten-tails	Botanical	Vascular Plant	Scrophulariales	Scrophulariaceae		1.5 MI W OF BELLE PLAINS, S OF HWY 16. 16 PLANTS LOCATED IN WOODED AREA ON EDGE OF BLUFF PRAIRIE. 7 PLANTS IN FLOWER. HABITAT IS SAND PRAIRIE ON EDGE OF MAPLE-BASSWOOD FOREST WITH DIVERSE EPHEMERAL FLORA. TREES INCLUDE MAPLE, BASSWOOD, CEDAR, BLACK WALN PRAIRIE DOWD MOSTLY BY SCHIZACHYRIUM SCOP & BOUTELOUA CURT W/ MUCH SORGHASTRUM, MUHLY CUSP, SPOROBOLIS HET, KOELERIA, & ANDROPOGON GER IN PARTS. VERY GOOD SPP DIVERSITY. SOME AREAS OF HEAVY RHUS GLABRA. SCATTERED JUNIPERUS VIRG, SALIX HUMILIS, AMORPHA	UT, OAK, LARGE PRAIRIE AREA ON HIGH SW SLOPES, SUCCEEDING TO SUMAC. MANAGEMENT SHOULD INCLUDE REMOVING SOME WOODY SPECIES ENCROACHING ONTO PRAIRIE EDGE.
	2	4/5/05	Dry sand - gravel prairie (southern) type	Dry Sand - Gravel Prairie (Southern)	Ecological	Terrestrial Community - Other			DRY PRAIRIE (SOUTHEAST) SAND- GRAVEL SUBTYPE		CANESCENS, QUERCUS MACRO, LITTLE DISTD POA PRATENSIS BARELY PRESENT. PLANTED PINES IN ONE PART. LOCATED ON COARSE SANDY OUTWASH ON STEEP SLOPES FACING SLOPES ALONG CREEK ON TERRACE WITHIN MINNESOTA RIVER VALLEY.

## Attachment R-7



regardless of stratification or hormonal treatments ([NatureServe 2008](#)).

The best time to identify *B. bullii* is when it flowers in late April to late May, but the spike and basal leaves remain visible throughout the summer.

#### Conservation / Management

*Besseyia bullii* has suffered a significant decline because of habitat loss. Threats to its habitat include gravel mining, limestone quarrying, landfills, residential and industrial development, and succession of oak savannas to forests in the absence of fire. Management techniques should be used to maintain or regain suitable habitat conditions. Active management does not appear to be as necessary at gravel prairie sites due to the xeric conditions and increased erosion. More intensive management may be required at savannas or wooded sites where species vigor is decreased. Management tools may include fire, which may be effective in reducing woody vegetation and encouraging flowering. However, careful timing of prescribed fires is critical. Fire should only be used in early spring before plants appear above ground, usually during late March or early April. Once the plants appear above ground, even 2.5-5.1 cm (1-2 in.), they can be severely damaged by fire. *Besseyia bullii* occurs in isolated patches, which makes it conducive to protection from certain types development, if protection of existing populations is incorporated into the early planning stages of development.

#### Conservation Efforts in Minnesota

The [Minnesota Biological Survey](#) has been completed within the likely range of this species in the state. Of the many locations documented for *B. bullii* over the past 25 years, some populations have been destroyed, but many still survive. A number of populations occur on protected public lands, including the [River Terrace Prairie Scientific and Natural Area](#), [Afton State Park](#), and [Wild River State Park](#), among others.

#### References

- Gleason, H. A., and A. Cronquist. 1991. Manual of vascular plants of northeastern United States and adjacent Canada. Second Edition. New York Botanical Garden, Bronx, New York. 910 pp.
- Great Plains Flora Association. 1986. Flora of the Great Plains. University Press of Kansas, Lawrence, Kansas. 1,402 pp.
- NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia.