

# THE BOTANY PROGRAM

To collect & maintain reliable & comprehensive data on  
Montana's native botanical species....

**Vascular Plants**

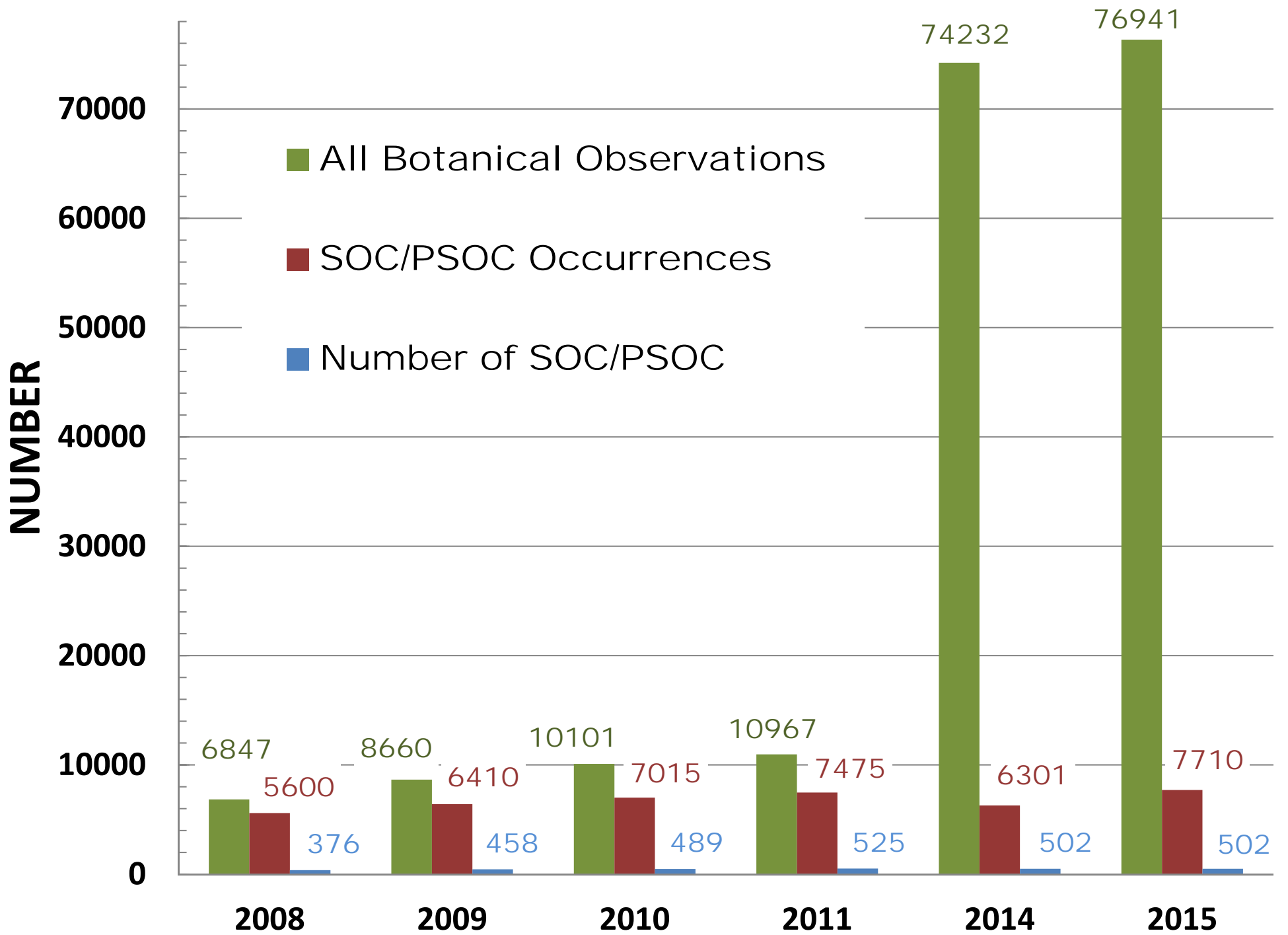
**Mosses, Liverworts, Hornworts**

**Lichens**

**Diatoms**

**Algae**

**Fungi**





# How Botany Is Meeting Our Mission.... VASCULAR PLANTS





# MONTANA IS HOME TO...

## 2013 Checklist of Montana's Vascular Plants

June 3, 2013

By  
Scott Mincemoyer  
Montana Natural Heritage Program  
Helena, MT

This checklist of Montana vascular plants is organized by Division, Class and Family. Species are listed alphabetically within this hierarchy. Synonyms, if any, are listed below each species and are slightly indented from the main species list. The list is composed of species which have been documented in the state and are vouchered by a specimen collection deposited at a recognized herbaria. Additionally, some species are included on the list based on their presence in the state being reported in published and unpublished botanical literature or through data submitted to MTNHP. The checklist is made possible by the contributions of numerous botanists, natural resource professionals and plant enthusiasts throughout Montana's history. The taxonomy and nomenclature used in this checklist relies heavily on the Manual of Montana Vascular Plants by Peter Lesica, Grasses of Montana by Lavin and Seibert and published volumes of the Flora of North America (FNA 1993+) but does not strictly follow any one of them.

The Checklist of Montana Vascular Plants can be viewed or downloaded from the Montana Natural Heritage Program's website at:  
<http://mtnhp.org/plants/default.asp>

This publication will be updated periodically. Please send comments and suggested revisions to the author at [smincemoyer@mt.gov](mailto:smincemoyer@mt.gov).

### Number of Taxa Recognize

Families: 134  
Genera: 730  
Species: 2571  
Infraspecific Taxa: 305  
Hybrid Taxa: 16  
Unique Taxa: 2892  
Native: 2314  
Exotic: 435

### 10 Largest Families in Flora

Asteraceae: 379 species  
Poaceae: 248  
Cyperaceae: 175  
Brassicaceae: 145  
Fabaceae: 132  
Rosaceae: 100  
Caryophyllaceae: 71  
Plantaginaceae: 69  
Ranunculaceae: 69  
Amaranthaceae: 57

### 10 Largest Genera in Flora

Carex: 130 species  
Astragalus: 49  
Erigeron: 37  
Salix: 34  
Juncus: 31

2,571 vascular species  
435 exotics  
2,314 natives

\*The number of Native and Exotic Taxa may not equal the number of Unique Taxa which are only reported for Montana, being categorized as undetermined.

<http://mtnhp.org>

# VASCULAR PLANTS "STATUS UNDER REVIEW"

417 PLANT SPECIES

- Disputed State rank or not ranked
- Status is not common, not rare, but is unknown
- Reviewing 42 plants (10% of back-log)
- Funding: Department of Agriculture
- Project is bringing in data, populating field guide
- Project creates a defensible State rank



## Dense-flower Knotweed

*Polygonum polygaloides* ssp. *confertiflorum*

Other Names: *Polygonum confertiflorum*

**Status Under Review**

[See other species in family: Polygonaceae](#)



## Desert mountain phlox

*Phlox austromontana*

**Status Under Review**

[See other species in family: Polemoniaceae](#)



## Douglas's Aster

*Symphytotrichum subspicatum*

Other Names: *Aster subspicatus*

**Status Under Review**

[See other species in family: Asteraceae](#)



## Draba calcifuga

*Draba calcifuga*

**Status Under Review**

[See other species in family: Brassicaceae](#)



## Drummond's Cinquefoil

*Potentilla drummondii*

**Status Under Review**




# How Botany Is Meeting Our Mission....

## VASCULAR PLANTS

### Coefficient of Conservatism (C-) Values

- Funding: MTDEQ
- C-value:
  - reflects plant's tolerance to disturbance & affinity to a specific, unimpaired habitat.
  - basic unit to compare land parcels, gauge restoration, & monitor wetland projects.
- 2015:  
1,412 plants assigned C-value
- 2016:  
312 plants to be assigned a C-value

**COEFFICIENT OF CONSERVATISM  
RANKINGS FOR THE  
FLORA OF MONTANA: PART I**



Prepared for:  
Montana Department of Environmental Quality

Prepared by:  
Andrea Pipp

Montana Natural Heritage Program  
A program of the  
Montana State Library's Natural Resource Information System  
that is operated by the University of Montana.

August 21, 2015





# How Botany Is Meeting Our Mission....

## VASCULAR PLANTS



### TEACHING

Boosting  
people's skills in  
identifying  
wetland plants.

Funding: MTDEQ  
2015: 5 classes  
2016: 3 beginner  
2 advanced



# How Botany Is Meeting Our Mission....

## VASCULAR PLANTS

### Spalding's Catchfly - Threatened

*2015: data on 6 populations to build long-term trend monitoring for CSKT*





# How Botany Is Meeting Our Mission....

## VASCULAR PLANTS

### Shoshonea pulvinata – G2G3, S2, BLM Sensitive



Funding: BLM

Long-Term Demographic  
Monitoring:

- 7 years of monitoring between 1991 – 2015
- Trend Report due late Feb. 2016





### Water Howellia - Threatened

Funding: Swan Ecosystem Center  
& Collaborative Forest Landscape Restoration Program  
& USFS

#### Goals:

- Synthesize data on 220 Water Howellia ponds
- Analyze long-term monitoring studies
- Analyze persistence in context of manmade disturbances from 1978-2015.
- Produce a peer-reviewed scientific paper & summary report for USFS Management





# How Botany Is Meeting Our Mission...

## MOSSES, LIVERWORTS, HORNWORTS



**328 MOSSES**





# How Botany Is Meeting Our Mission... **MOSSES**

## Populating Moss Field Guide & Botany Database

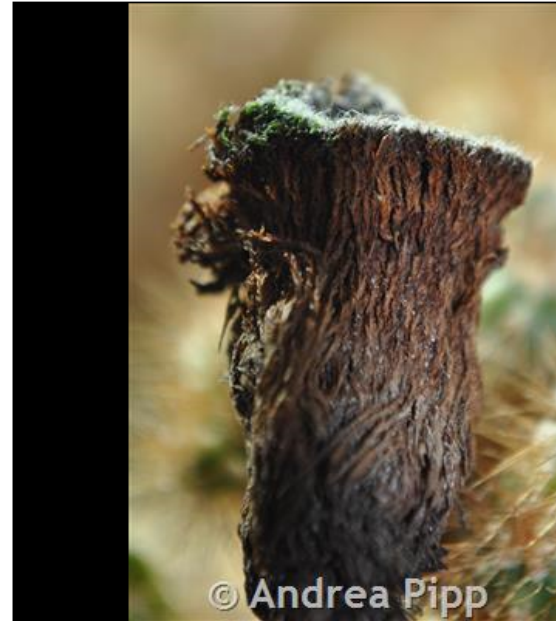
### Photographs & Species' Profiles populated for:

- 58 of 328 mosses (18%)
- 19 of 71 SOC / PSOC mosses (27%)

### PNW Consortium of Herbaria:

- 6,127 Montana Moss & Liverwort Observations

#### Britton's dry rock moss - *Grimmia brittoniae*



© Andrea Pipp

Moist state.



[Image Copyright and Usage Information](#)

#### Species of Concern

Global Rank: [G2](#)  
State Rank: [S2](#)

#### Agency Status

USFWS: [SENSITIVE](#)

BLM:

MNPS Threat Rank:

#### External Links

[Map Viewer](#)  
Montana Observations

[Google](#)  
for more Images

[NatureServe](#)  
Species Report

[Google](#)  
for more Web Pages

[NRCS](#)  
PLANTS Profile

#### General Description

Plant: Extremely hoary, compact glaucous blue-green cushions. Brown inside. Stems 2.0-3.0 cm tall.

Leaf: Dry leaves are loosely appressed to somewhat contorted. Moist leaf and stem make an angle of less than 25 degrees (erectopatent). Lanceolate, 0.5-1.0 x 0.3-0.4 mm, and keeled. Awn 2.0-4.0 long, smooth, flattened at base, and decurrent. Both margins narrowly recurved; however, once detached from the stem and placed under a coverslip the margins appear plain. Costa ends before apex, is weak, and projects on abaxial side (keeled).

Leaf Cells: Basal laminal cells near costa are rectangular, straight to little sinuose, and thick-walled. Basal laminal cells near margin are quadrate and thick-walled transversely. Median laminal cells are short-



# How Botany Is Meeting Our Mission....

## LICHENS



**MTNHP Database: 639 spp**  
**Documented in MT: 1,074 spp**

**Student Intern:**

- **Update MTNHP checklist**
- **Update nomenclature**
- **Begin bringing in data**

### Montana Lichens: An Annotated List

Bruce McClane  
Roger Rosentreter  
Toby Spribille  
Othmar Breuss  
Tim Wheeler



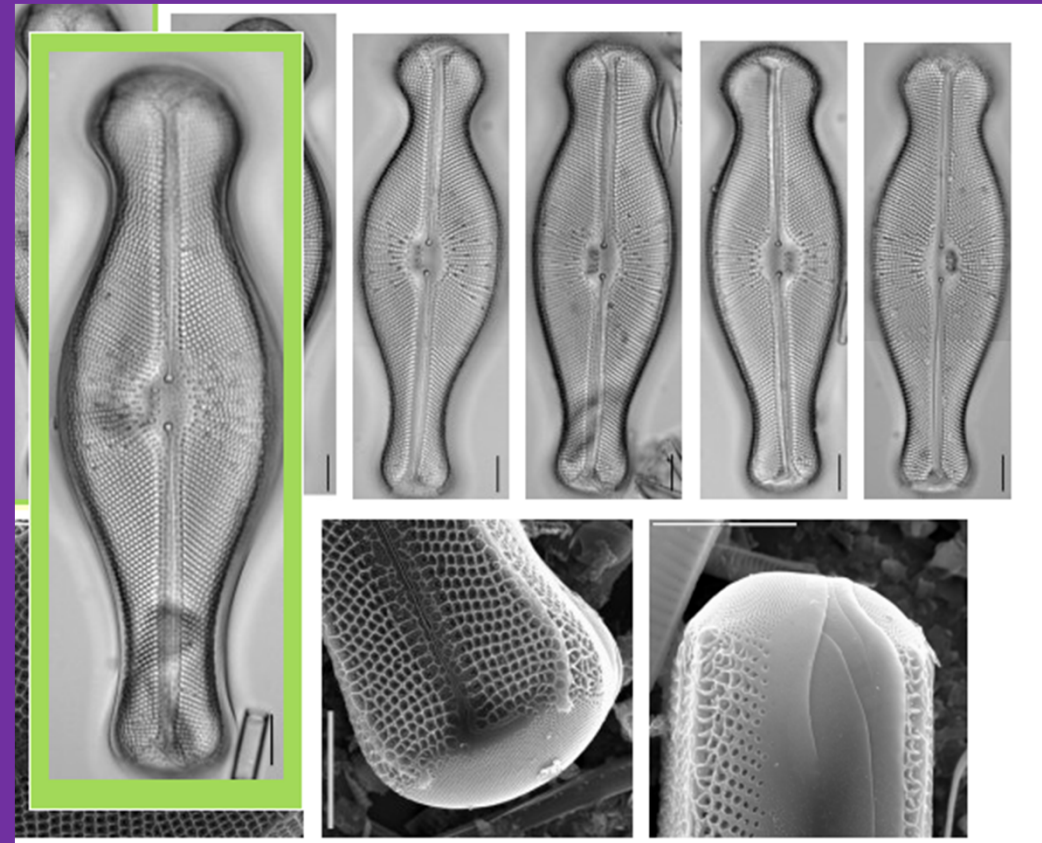
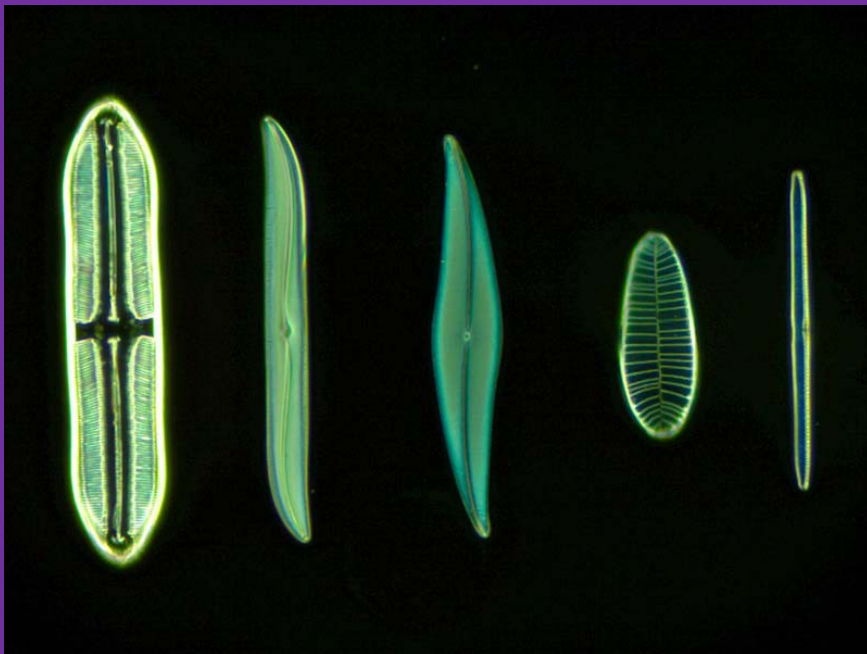
Monographs in North American Lichenology Vol. 2

# How Botany Is Meeting Our Mission....

## DIATOMS – algae in glass houses

### Coming Soon:

- 152,073 MTDEQ diatom observations
- 87 Didymo observations
- Herbarium observations



Didymo



How Botany Is Meeting Our Mission...

# ALGAE & FUNGI

