

**DIGITIZING NORTH AMERICAN
LICHEN AND BRYOPHYTE
SPECIMENS
LBCC
(powered thru
<http://symbiota.org>)**

**Corinna Gries
Edward Gilbert
Thomas H. Nash III**

**3.4 million
specimens,
74 institutions,
3.3 years later**

BRYOPHYTES AND LICHENS

- Different evolutionarily but similar in size and habitats occupied (epiphytes, soil mats, and rocks)
- Both dominate much of the arctic and northern boreal regions (lichens in upland areas and bryophytes in wet habitats).
- Both also occur commonly in many other ecosystems (deserts to tropics)
- Bryophytes, particularly in peat bogs store a major part of the worlds organic carbon
- Both are very useful in deposition monitoring

LICHENS BRYOPHYTES CLIMATE CHANGE

Research Questions:

- How are changes in distribution patterns of lichens and bryophytes over time correlated with man-made environmental changes?
- How accurately can we predict where specific species can be found using existing herbarium data?

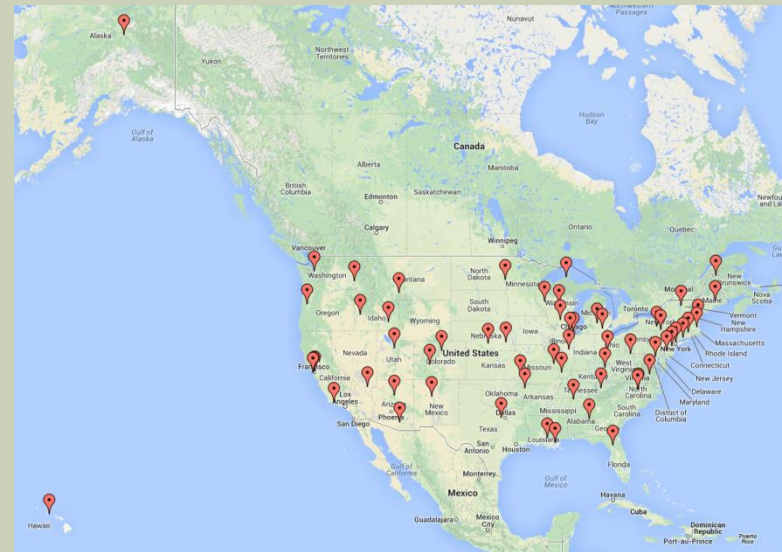
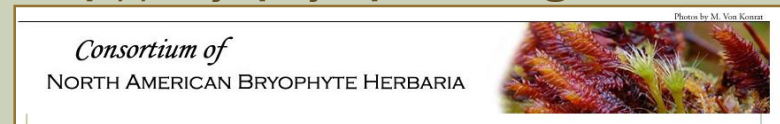
Goals and Scope

- 16 digitization centers (collaborators) – now 22
- 7 collections added as PENs
- 74 non-governmental US herbaria (95%)
 - ~ 2.3 million specimen (90%)
 - 900,000 lichens
 - 1.4 million bryophytes
- Mobilizing existing digital records – 12 institutions so far

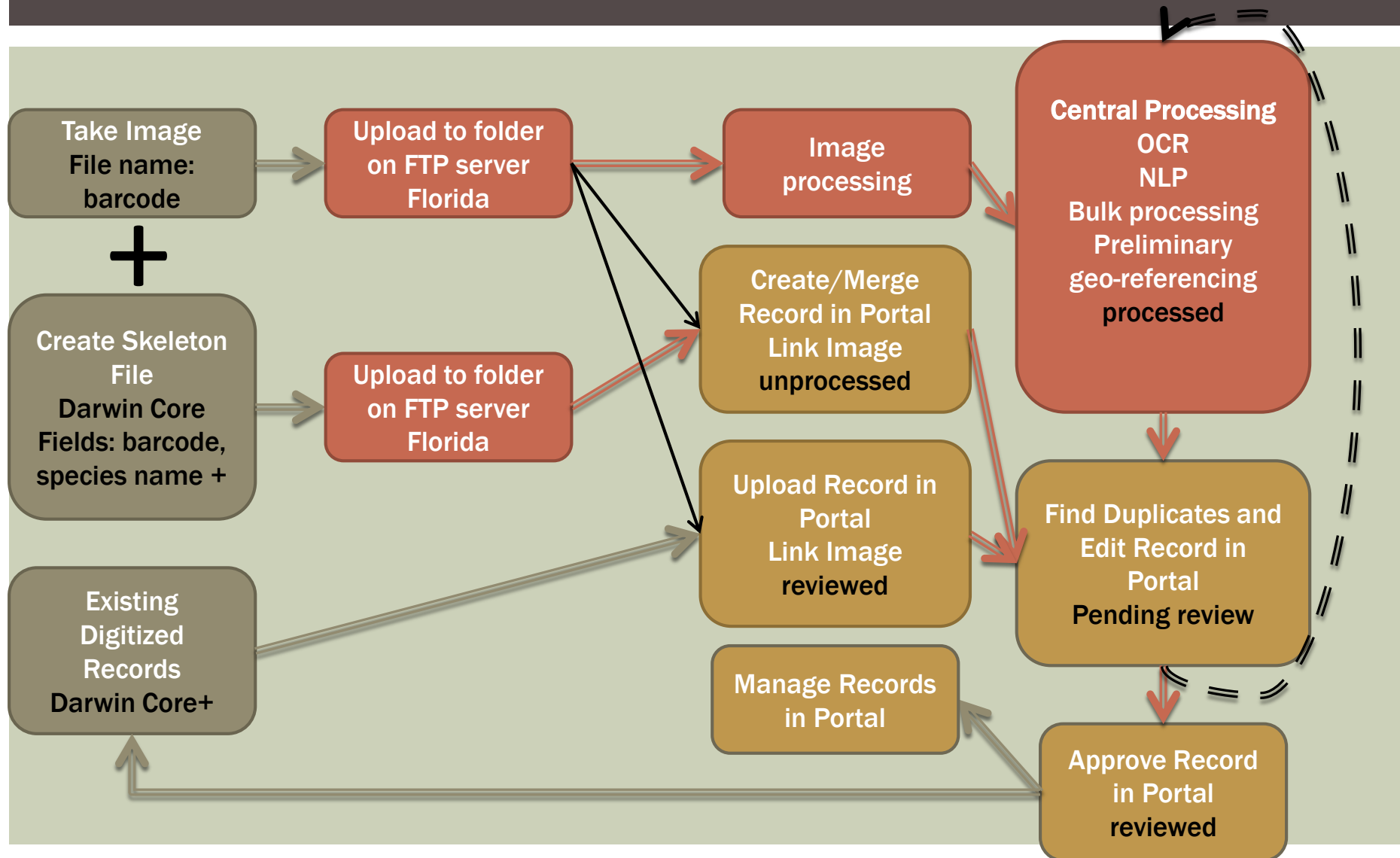
<http://lichenportal.org>



<http://bryophyteportal.org>



Well established workflow



TRANSCRIPTION

University of Wisconsin - Madison (WIS)

[Home](#) >> [Crowd Sourcing Central](#) >> [Editor](#)

[<](#) [<<](#) | 4 of 2615 | [>>](#) [>](#)

Occurrence Data

Determination History

Images

Genetic Links

Admin

Collector Info

Short Form <<

Catalog Number ? Other Numbers ? Collector ? Number ? Date ?
WIS-L-0013032 Teuvo Ahti 1967-07-27 Auto search

Associated Collectors ? Verbatim Date ?

Exsiccati Title Number

Latest Identification

Scientific Name ? Author ?
Cladonia bellidiflora (Ach.) Schaerer
ID Qualifier ? Family ? Cladoniaceae
Identified By ? Date Identified ?

Locality

Country State/Province County Municipality
USA Alaska

Locality
Thompson Pass Mile 25.2 Richardson Hwy.

Locality Security

Latitude Longitude Uncertainty ? Datum ? Verbatim Coordinates
61.16667 -145.66667 61°10'N, 145°40'W

Elevation in Meters Verbatim Elevation
838 2750 ft.

Misc

Habitat
In montane tundra.

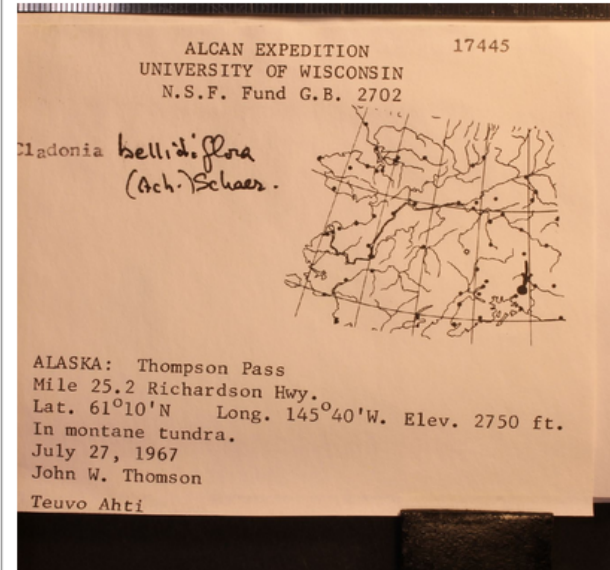
Substrate

Associated Taxa

Description

Notes

Label Processing



OCR Image

Options

- OCR whole image
 OCR w/ analysis

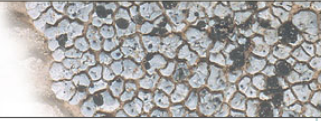
Image 1 of 1

ALCAN EXPEDITION
UNIVERSITY OF WISCONSIN
N.S.F. Fund G.B. 2702
Cladonia
J
17445
1 c I
'nr/
ALASKA: Thompson Pass Mile 25.2 Richardson Hwy.
Lat. 61°10'N Long. 145°40'W. Elev. 2750 ft. In
montane tundra.
July 27, 1967 John W. Thomson
Teuvo Ahti

PORTALS

Consortium of NORTH AMERICAN LICHEN HERBARIA

Photos by F. Burgartz



Main Menu

[Search Collections](#)
[Image Library](#)

Flora Projects

[Arizona](#)
[California](#)
[Colorado](#)
[Florida](#)
[Massachusetts](#)
[North Carolina](#)
[Wisconsin](#)
[Southern Subpolar Region](#)
[USNP Project](#)

Dynamic Floras

[Dynamic Checklist](#)
[Dynamic Key](#)

[About CNALH](#)
[Data Usage Policy](#)
[Links](#)
[Bryophyte Portal \(CNABH\)](#)
[Symbiota Help Page](#)
[Log In](#)

Welcome to the Consortium of North American Lichen Herbaria

The Consortium of North American Lichen Herbaria (CNALH) was created to serve as a gateway to distributed data resources of interest to the taxonomic and environmental research community in North America. Through a common web interface, we offer tools to locate, access and work with a variety of data, such as keying to species.

The CNALH data portal is more than just a web site - it is a suite of data access technologies and a distributed network of universities, botanical gardens, museums and agencies that provide taxonomic and environmental information. Initially created to integrate databases between Arizona State University and the Santa Barbara Botanical Garden, the consortium is growing to extend its network to other partners within North America.

Join the Consortium of North American Lichen Herbaria as a regular visitor and please send your feedback to CNALHadmin@asu.edu

News and Events

- [NSF Press Release 11-136](#) - US National Science Foundation awarded support to a collaboration of herbaria in order to database ca. 2.3 million North American lichen and bryophyte specimens ([NSF ADBC 1115116](#))
- **September 2011** - 543302 occurrence records integrated into data portal supplied by 15 different data providers

■ Lichen portal (<http://lichenportal.org>)

Photos by M. Von Konrat

Consortium of NORTH AMERICAN BRYOPHYTE HERBARIA



Main Menu

[Search Collections](#)
[Image Library](#)
[Dynamic Checklist](#)
[About CNABH](#)
[Data Usage Policy](#)
[Links](#)
[Lichen Portal \(CNALH\)](#)
[Symbiota Help Page](#)

[Log In](#)
[New Account](#)
[Sitemap](#)

Welcome to the Consortium of North American Bryophyte Herbaria

The Consortium of North American Bryophyte Herbaria (CNABH) was created to serve as a gateway to distributed data resources of interest to the taxonomic and environmental research community in North America. Through a common web interface, we offer tools to locate, access and work with a variety of data, starting with searching databased herbarium records.

The CNABH data portal is more than just a web site - it is a suite of data access technologies and a distributed network of universities, museums and agencies that provide taxonomic and environmental information. Initially created with financial assistance from the American Bryological and Lichenological Society, the consortium is growing to extend its network to other partners within North America.

Join the Consortium of North American Bryophyte Herbaria as a regular visitor and please send your feedback to CNABHadmin@asu.edu

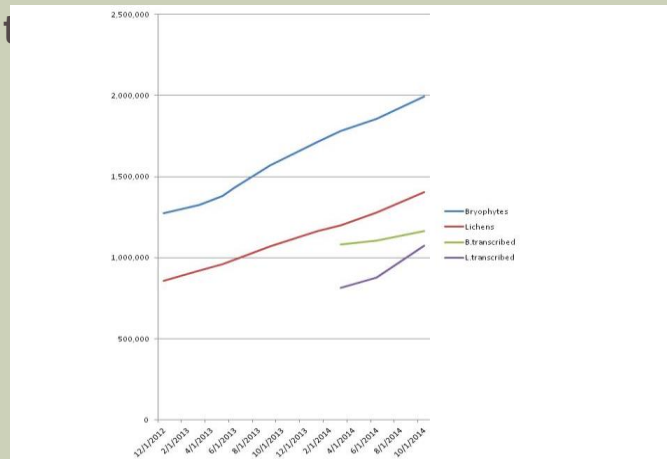
News and Events

- [NSF Press Release 11-136](#) - US National Science Foundation awarded support to a collaboration of herbaria in order to database ca. 2.3 million North American bryophyte and lichen specimens ([NSF ADBC 1115116](#))
- **June 2011** - 822457 occurrence records integrated into data portal

■ Bryophyte portal (<http://bryophyteportal.org>)

NUMBERS

- Imaging Speed (300-) 600 to 1000 (-1500)+ per day
- Institutions currently imaging or having imaged 22
- Additional institutions providing specimens to image 52
- Total number of images generated (to Oct. 2014) 1,500,000+
- Records available on bryophyte portal 1,993,911
 - Involving 55 institutions
- Records available on lichen portal 1,406,089
 - Involving 62 institutions
- Total specimen records in the portals 3,400,000
 - Involving 74 institutions



Numbers current and final year

- Total specimens (with images or complete) ca. 3,400,000
(Add at least 10 other institutions and add to current total to bring the final total to over 4,000,000)
- Specimens transcribed with locality information 2,236,855
(Major emphasis for next year+ for all institutions and volunteer network coordinated thru NY 50 to 300 per day per person)
- Specimens georeferenced currently 947,028
(Emphasis increase last half year of no cost extension period – WIS and anyone interested – Batch process – thousands per day)

Thank you to NSF & our 100+ Collaborators

Funded by the NSF ADBC program