

NANSH: small collection support

Edward Gilbert



National Science Foundation
WHERE DISCOVERIES BEGIN

NANSH Biodiversity Portal

- Data publisher
- Symbiota portal
- Data integration
 - 90+ institutions
- Management options
- Community portal
- Distributed support!



*North American Network
of Small Herbaria*

Homepage

- [Search Collections](#)
- [Dynamic Checklist](#)
- [Dynamic Key](#)
- [Image Library](#)
- [About Network](#)
- [Resource Links](#)
- [Symbiota Help Page](#)

Other Networks

- [Great Plains](#)
- [Intermountain](#)
- [MABA Flora](#)
- [SEINet](#)
- [SERNEC](#)

Welcome Edward Gilbert!

- [My Profile](#)
- [Logout](#)
- [Sitemap](#)

North American Network of Small Herbaria

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Small herbaria constitute a major source of information for understanding North America's plant diversity. These collections are typically regional in scope with strong ecological, taxonomic, and geographic biases. They frequently hold specimens that are unduplicated in larger herbaria and usually represent intense samplings of community composition that significantly expand our knowledge of landscape-level biogeography. As a result, they are singularly important to the study of regionally and nationally significant natural communities.

Until recently, access to the wealth of biodiversity data stored in small herbaria has been hampered by travel requirements, insufficient staff, and long-term loans that render specimens unavailable for extended periods. With the advent of biodiversity collections digitization, small herbaria are now poised to overcome these obstacles by making label data and specimen images readily available online through searchable electronic databases. As more institutions take advantage of open-source, community-supported digitization software, the online presence of small collections will rapidly increase and with it the volume of available biodiversity data.

Plant of the Day



What is this plant?
Click here to test your knowledge

Scientific Community Portals

- Modular framework
- Community-based biodiversity portals
- Distinct datasets
 - Taxonomic scope
 - Geographic scope
- Custom look & feel
 - CSS, config files

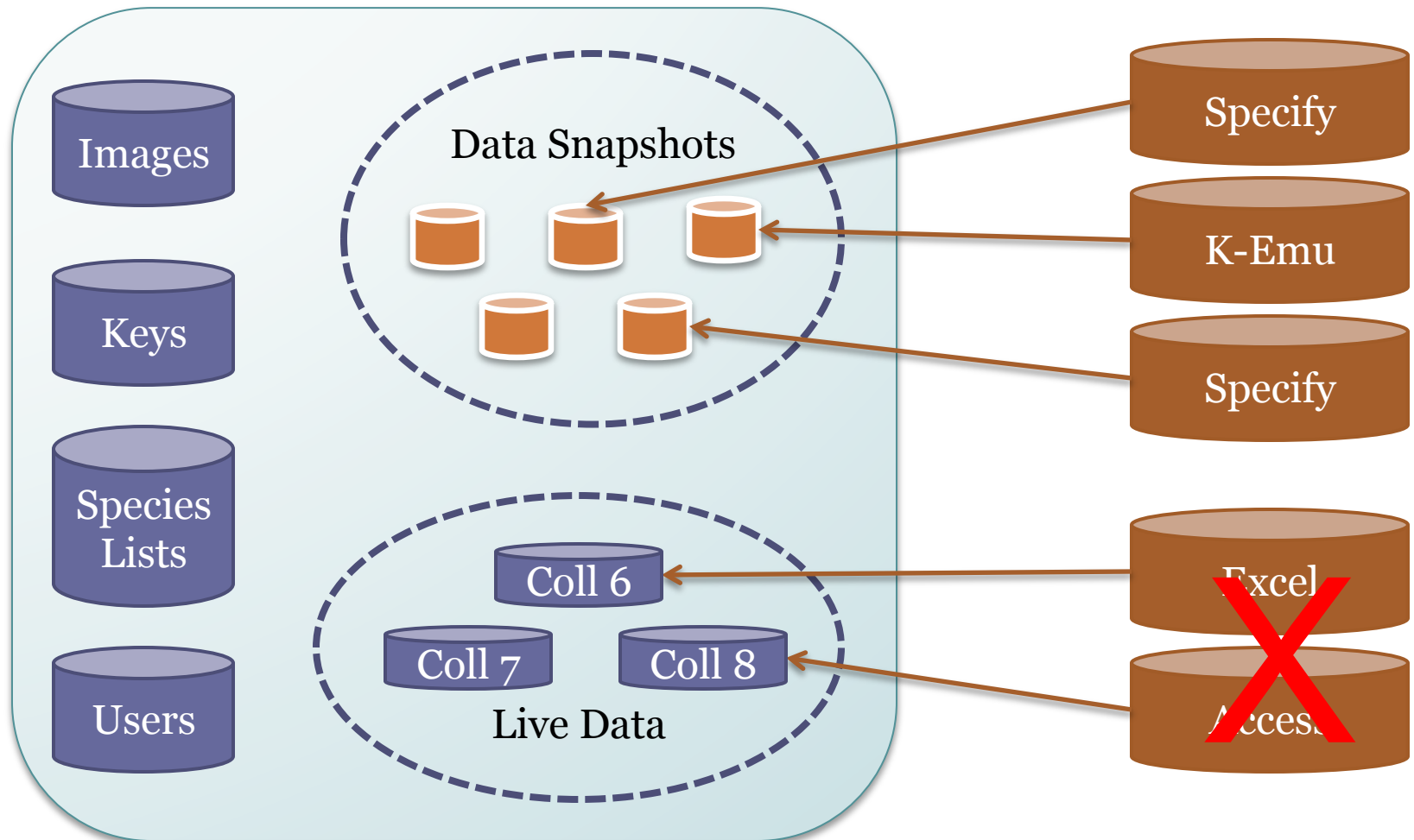
The screenshot shows the homepage of the Consortium of North American Lichen Herbaria. At the top right, there are two photo credits: "Photos by M. Von Konrat" and "Photos by F. Bungartz". The main header features the text "Consortium of NORTH AMERICAN LICHEN HERBARIA" next to a photograph of lichen. Below the header is a "Main Menu" sidebar with the following items: "Search Collections", "Image Library", "Flora Projects" (with sub-items: Arizona, California, Wisconsin, Southern Subpolar Region, USNP Project), "Dynamic Floras" (with sub-items: Dynamic Checklist, Dynamic Key), "Log In", and "New Account". The main content area has a "Welcome to the Consortium of North American Lichen Herbaria" section. It contains two paragraphs of text: the first describes the consortium's purpose as a gateway to distributed data resources, and the second describes it as a suite of data access technologies and a distributed network of institutions. Below this is a call to action: "Join the Consortium of North American Lichen Herbaria as a regular visitor and please send your feedback to CNALHadmin@asu.edu". At the bottom of the page, there is a footer with the text "Join CoTRAM as a regular visitor and please send your feedback to Leslie Landrum" and a row of small thumbnail images.

Specimen Centric Model

- Baseline data
- Expert reviewed vouchers
- Verifiable
- Proof of occurrence
- Reproducible
- Millions of occurrence records



Specimen Management



Symbiota - Biodiversity CMS

- Read-only user interface
- Password Protected
 - Online Browser-based application
 - Platform independent
 - Globally accessible
 - No special software installation (free)
 - Make use of web services

Desert Botanical Garden Herbarium Collection (DES)

Home >> Collection Management >> Editor

Occurrence Data | Determination History | Images | Genetic Links | Admin

Collector Info

Catalog Number ? Other Numbers ? Collector ? Number ? Date ?
DES00042309 | Baker | s.n. | 1996-04-06 | Dupes? | Auto search

Associated Collectors ? Verbatim Date ?
Clinehens, Ward

Latest Identification

Scientific Name ? Author ?
Mammillaria polythale | Martius

ID Qualifier ? Family ?
Cactaceae

Identified By ? Date Identified ?

Locality

Country State/Province County Municipality
Mexico Hidalgo

Locality
In cultivation at Desert Botanical Garden, Phoenix, AZ, USA (33deg 27'33" N, 111deg 56'35" W, 1100 feet elev)

Locality Security

Latitude Longitude Uncertainty ? Datum ? Verbatim Coordinates
20.670101 -99.336396 1000 Tools

Elevation in Meters Verbatim Elevation

Georeferenced By Georeference Sources ? Georeference Remarks
Valle M | georef batch tool 2013

Georeference Protocol ? Georef Verification Status ? footprint (polygon)
reviewed - high confidence

Misc

Habitat

Substrate

Associated Taxa

Description
Flowers diam 15-21 mm, length 19-24 mm; stigma = 6-7, pale yellow or cream; outer perianth burgundy or red

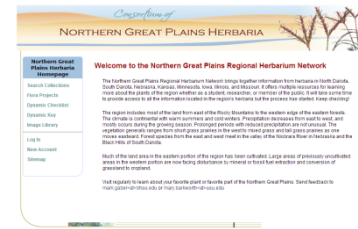
Notes

Additional Features

- Duplicate linking
- Exsiccati
- Loan management
- Genetic linkages
- Specimen comments
- OCR / NLP
- Crowdsourcing
- Versioning of Edits
- Batch georeferencing
- Darwin Core Archive Publishing
- Data Cleaning
- Sensitive species protection

SEINet Network

- Integrated Data
- Distributed Network
 - Great Plains
 - InterMountain
 - MABA
 - SEINet – AZ
 - SEINet – NM
 - SERNEC
 - VPlants



Getting Started with NANSH

- Create an account
 - [New Account link in left menu](#)
- Explore
- Create a collection
 - [Title, acronym, contact name, email, icon, short description](#)
- Load data
 - [Specimen data, images](#)
- When? Now!!!

Once you have an Account

- Login
- Go to My Profile
- Explore management menu
- Review your metadata
 - License
 - Live data -vs- snapshot
 - GUID source
- Visit site map
- Create a species list

Become a Power User

- Add/Edit records
- Permissions
 - Adding new users
- Batch Georeferencing
- Reviewing edits
- Download backup
- Darwin Core Publishing tool
- Duplicate clustering tool

Loading Data

- Option available in menu
 - Import/Update Specimen Records
- Ed can map and upload your initial data
 - Recommended!
- Text file (CSV, tab-delimited), Darwin Core Archive (IPT), etc

Batch Upload Images

- Must first have collection in system
- Ask Ed/Gil/Anna for FTP connection info
 - Obtain FTP client
- Upload images to your folder
 - /acronym/nansh/
- Email Ed so that he can activate upload profile
 - only needed after first upload

Image Upload Requirements

- JPGs only
 - Image archiving should be handled locally
- Apply some JPG compression
 - 70-90 quality level
- Catalog number in file name
 - Required for batch loading
 - e.g. DES0123456.jpg, WIS-L-0123456_a.jpg, WIS-L-0123456_b.jpg
 - Note: Uploading same file name will replace image
- Uploading folders of images recommended
- In focus, good lighting, etc
- X-height > 20 pixels (only needed for OCR)

Skeletal Data

- CSV or tab-delimited text file
- First column must be field names
- Field names must match Symbiota field names
 - No spaces, NOT case sensitive
 - Basically Darwin Core
- catalogNumber only required field
 - Used to link skeletal records with image
- Order of upload isn't important

NANSH: Biodiversity Portal

- Inventory support
 - Floras
 - Checklists
 - Voucher links
- Interactive keys
- Field images
- Species descriptions
- Community portal



The screenshot shows the homepage of the North American Network of Small Herbaria. At the top, there is a banner with the title "North American Network of Small Herbaria" and a background image of yellow flowers. Below the banner, the page is divided into two main columns. The left column contains a navigation menu with the following items: "Homepage", "Search Collections", "Dynamic Checklist", "Dynamic Key", "Image Library", "About Network", "Resource Links", "Symbiota Help Page", "Other Networks" (with sub-items "Great Plains" and "Intermountain"), "MABA Flora", "SENet", "SERNEC", "Welcome Edward Gilbert", "My Profile", and "Logout". The "Welcome Edward Gilbert" link is circled in red. The right column features the title "North American Network of Small Herbaria" and a paragraph of introductory text. Below this text is a section titled "Plant of the Day" with a photograph of a green plant and a link to "What is this plant?".

North American Network of Small Herbaria

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Checklists assigned to your account +

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- [Backyard](#)
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- [Carex of Arizona](#)
- [Davidson Canyon and Cienega Creek](#)
- [Davidson Canyon and Cienega Creek 2](#)
- [Davidson Canyon and Cienega Creek 3](#)
- [Florida](#)
- [Grapevine Springs](#)
- [Himmel Park](#)
- [Little Water Canyon](#)
- [New Mexico Rare Plants](#)
- [North Carolina](#)
- [North Dakota](#)
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- [Reid Park - Trees and shrubs](#)
- [Reid Park Zoo](#)
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- [University of Arizona Arboretum](#)
- [VASCULAR PLANTS OF COLORADO](#)
- [vPlants List](#)
- [West Fork of Oak Creek](#)

Inventory Project Administration

- [Tucson Flora](#)

North American Network of Small Herbaria

Home >> San Pedro Riparian National Conservation Area

San Pedro Riparian National Conservation Area Games



Authors: Elizabeth Makings

Publication: Makings, E 2006. Flora of the San Pedro Riparian National Conservation Area. Desert Plants Vol. 22(2); 104 pp. Makings, E 2003.

Flora of the San Pedro Riparian National Conservation Area, Cochise County, Arizona. M. S. Thesis, Arizona State University, Tempe

[More Details](#)

Families: 1

Genera: 45

Species: 101 (species rank)

Total Taxa: 106 (including ssp. and var.)

POACEAE

Achnatherum eminens

Andropogon glomeratus

Aristida adscensionis

Aristida purpurea var. *longiseta*

Aristida purpurea var. *nealleyi*

Aristida temipes

Aristida temipes var. *gentilis*

Aristida temipes var. *temipes*

Arundo donax

Avena fatua

Bothriochloa barbinodis

Bothriochloa ischaemum

Bothriochloa laguroides ssp. *torreyana*

Bouteloua aristidoides

Bouteloua barbata

Bouteloua chondrosioides

Bouteloua curtispendula

Bouteloua eludens

Bouteloua eriopoda

Bouteloua gracilis

Bouteloua repens

Bouteloua rothrockii

Bromus catharticus

Cenchrus spinifex

Chloris crinita

Options

Search: Poaceae

Common Names

Synonyms

Filter:

Original Checklist

Common Names

Display as Images

Notes & Vouchers

Taxon Authors

Rebuild List



Authors: Elizabeth Makings

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Page 1 of 2: 1 | 2

Options

Search:

- Common Names
 Synonyms

Filter:

▼

- Common Names
 Display as Images



Achnatherum eminens
[POACEAE]



Andropogon glomeratus



Aristida adscensionis



Aristida purpurea var.
longiseta



Aristida purpurea var. *nealleyi*



Aristida ternipes



Aristida ternipes var. *gentilis*



Aristida ternipes var. *ternipes*



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rare; Elizabeth Makings 827 [ASU], Elizabeth Makings 1682 [ASU]

Aristida adscensionis

Elizabeth Makings 824 [ASU], Elizabeth Makings 594 [ASU], Elizabeth Makings 762 [ASU], Elizabeth Makings 1300 [ASU]

Aristida purpurea var. *longiseta*

Elizabeth Makings 865 [ASU], Elizabeth Makings 1513 [ASU]

Aristida purpurea var. *nealleyi*

Elizabeth Makings 803 [ASU], Elizabeth Makings 1075 [ASU], Elizabeth Makings 1366 [ASU]

Aristida temipes

Elizabeth Makings 503 [ASU]

Aristida temipes var. *gentilis*

Elizabeth Makings 685 [ASU], Elizabeth Makings 492 [ASU], Elizabeth Makings 688 [ASU], Elizabeth Makings 488 [ASU]

Aristida temipes var. *temipes*

Elizabeth Makings 1214 [ASU], Elizabeth Makings 1330 [ASU]

Arundo donax

Elizabeth Makings 1650 [ASU], Elizabeth Makings 813 [ASU]

Avena fatua

Elizabeth Makings 229 [ASU]

Bothriochloa barbinodis

Elizabeth Makings 512 [ASU], Elizabeth Makings 1040 [ASU], Elizabeth Makings 472 [ASU]

Bothriochloa ischaemum

Elizabeth Makings 1272 [ASU], Elizabeth Makings 1659 [ASU]

Bothriochloa laguroides ssp. *torreyana*

Options

Search: Poaceae

- Common Names
 Synonyms

Filter:

Original Checklist

- Common Names
 Display as Images
 Notes & Vouchers
 Taxon Authors

Rebuild List





ASU : Plants

Arizona State University Vascular Plant Herbarium

Catalog #: ASU0061906

Occurrence ID (GUID): e110b1d0-bf93-42f6-b515-a1468c825892

Secondary Catalog #: 247180

Taxon: *Achnatherum eminens* (Cav.) Barkworth

Family: Poaceae

Collector: Elizabeth Makings 1538

Date: 14 May 2003

Locality: USA, ARIZONA, Cochise County, Upper San Pedro River floodplain. Foot of Brunckow Hill, ca. 1 mile south of Charleston Road, on west side of rocky outcrop.

31.6262 -110.174

Elevation: 1280 meters

Verbatim Elevation: 4200ft

Habitat: Rocky outcrops, granitic, volcanic substrate

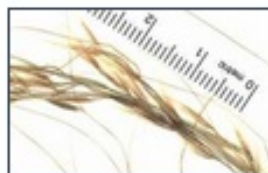
Associated Species: *Aloysia wrightii*, *Acacia constricta*, *Acourtia wrightii*, *Zinnia acerosa*, *Muhlenbergia porteri*, *Sphaeralcea laxa*, *Digitaria californica*, *Tridens muticus*, *Eragrostis lehmanniana*, *Hibiscus denudatus*.

Description: Perennial grass ~70 cm. panicle branches nodding, leaf blades curved perpendicular to culm revealing conspicuous ligule. blades revolute, especially near tips.

Specimen Images



Large Version



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Bothriochloa laguroides ssp. *torreyana*

Options

Search:

- Common Names
 Synonyms


Filter:

Original Checklist ▼

- Common Names
 Display as Images
 Notes & Vouchers
 Taxon Authors



West Fork of Oak Creek

Search statement: (o.county LIKE "Coconino%") AND (o.locality LIKE "%West Fork%") 

Non-Vouchered Taxa

Missing Taxa

Voucher Conflicts

Reports

Possible Voucher Conflicts

List of specimen vouchers where the current identifications conflict with the checklist. Voucher conflicts are typically due to recent annotations of specimens located within collection. Click on Checklist ID to open the editing pane for that record.

Conflict Count: 12

Checklist ID	Collector	Specimen ID	Identified By
Chenopodium pratericola	Edward Gilbert (852)	Chenopodium atrovirens	Nuri Benet-Pierce (3 April)
Oxalis corniculata	Edward Gilbert (309)	Oxalis pilosa	Guy Nesom
Parnassia palustris var. montanensis	Edward Gilbert (288)	Parnassia parviflora	
Parnassia palustris var. montanensis	D. J. Pinkava (11875)	Parnassia parviflora	Patrick Elvander, 9-1989
Parnassia palustris var. montanensis	Edward Gilbert (262)	Parnassia parviflora	
Parthenocissus vitacea	D. J. Pinkava (11879)	Parthenocissus inserta	
Quercus X pauciloba	Edward Gilbert (189)	Quercus gambelii x turbinella	
Quercus X pauciloba	Edward Gilbert (437)	Quercus gambelii x turbinella	
Salix X pendulina	Edward Gilbert (942)	Salix babylonica	
Symphyotrichum falcatum var. commutatum	Edward Gilbert (809)	Symphyotrichum lanceolatum	Max Licher
Symphyotrichum falcatum var. commutatum	Edward Gilbert (295)	Symphyotrichum lanceolatum	Max Licher
Viola nephrophylla	Edward Gilbert (15)	Viola sororia ssp. affinis	

Plant Atlas of Arizona Project

- Arizona Native Plant Society
- Grand Canyon Trust
- Desert Botanical Garden
- U.S. Forest Service
- Northern Arizona University
- Museum of Northern Arizona



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- [Little Water Canyon](#)
- [New Mexico Rare Plants](#)
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- [Reid Park - Herbs](#)
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- [Tucson Flora](#)

Personal Specimen Management

- Data entry
- Data Management
- Label Printing
- Cloud management
 - Password Protected
 - Web browser
 - Platform independent
 - Globally accessible
 - No special software
- Initially “Observations”

General Observations (SEINet) Home >> Personal Management >> Editor << [7 of 1234] >> > >

Occurrence Data | Determination History | Images | Admin

Collector info

Catalog Number	Other Numbers	Collector	Number	Date
		M. Licher	3024	2011-03-27

Associated Collectors

Latest Identification

Scientific Name	Author
Medicago minima	(L.) L.
ID Qualifier	Family
	Fabaceae
Identified By	Date Identified

Locality

Country	State/Province	County	Municipality
USA	Arizona	Yavapai	

Locality: Tent Rocks, SE of Camp Verde, south side of tuff formations

Locality Security

Latitude	Longitude	Uncertainty (meters)	Datum	Elevation in Meters	Verbatim Elevation
34.496667	-111.748972	10	NAD83	1030	ft. 3370ft

Verbatim Coordinates: 34° 29' 48.0" N 111° 44' 56.3" W

Georeference Sources | Georef Verification Status | Georeference Remarks

Misc

Habitat: Dry wash channel at base of tuff formations in Desert Scrub habitat, with widely scattered junip

Substrate:

Plants of Arizona
Scrophulariaceae

Castilleja exilis A. Nels.

USA, Arizona, Yavapai County, Mesquite Spring, Cottonwood Basin SE of Camp Verde. 34° 29' 02.5" N 111° 46' 16.7" W [NAD83] Elev: 930m. (3040ft)

Damp bank at spring location, N facing slope. Riparian zone in desert scrub habitat. Annual herb, 45 to 65 cm, green bracts with red tips; infrequent

Associated species: *Solidago altissima*, *Dalea candida*, *Eriogonum giganteum*, *Schoenoplectus americanus*, *Toxicodendron rydbergii*, *Mimulus cardinalis*, *Salix laevigata*, *Fraxinus velutina*, *Salix gooddingii*, *Andropogon glomeratus*

M. Licher 2792 16 July 2010

Northern Arizona University Herbarium



Plants of Arizona
Scrophulariaceae

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M. Licher 2792 16 July 2010

Northern Arizona University Herbarium



Plants of Arizona
Poaceae

Eragrostis cilianensis (All.) Vign. ex Janchen

USA, Arizona, Yavapai County, Confluence of Mesquite and Cottonwood Springs, Cottonwood Basin SE of Camp Verde. 34° 28' 59.2" N 111° 46' 22.1" W [NAD83] Elev: 920m. (3020ft)

Sandy riparian creek bed without surface water in desert

Voucher Network

