



# Using databases for exploring research questions

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LAB MEETING 11/30/2020

# Data, Databases, and Research Questions: Overview

- ▶ What type of the data do you want to collect?
  - ▶ Qualitative data (images, list of species, species origin, plant life form, insect life cycle, species occurrence, etc.)
  - ▶ Quantitative data (body length, wing size, stylet length, leaf thickness, trichome density, leaf area, etc.)
  - ▶ Combination of both?
- ▶ What research (or other) questions do you want to investigate?
  - ▶ Collecting measurements
  - ▶ Species identification
  - ▶ Conducting review, meta-analysis, etc.
  - ▶ Something else?

# Today's talk: Outline

- ▶ Examples of available public databases
- ▶ Data you could extract
- ▶ Questions you might be interested in

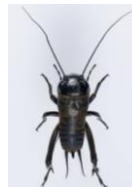
- ▶ Plant databases



- ▶ Various species (including plants and insects)



- ▶ Specific insect databases



# USDA plants database



▶ <https://plants.sc.egov.usda.gov/java/>

The screenshot shows the USDA PLANTS Database website. At the top, it features the USDA logo (United States Department of Agriculture) and the Natural Resources Conservation Service (NRCS) logo. Below the logos is a banner with the text "PLANTS Database" and a row of various plant images. A navigation menu includes links for Home, About PLANTS, Team, Partners, What's New, NPDT, Help, and Contact Us. On the left side, there is a search box with a "Name Search" label and a "Go" button. Below the search box are links for "State Search", "Advanced Search", and "Search Help". A red arrow points to the search box. Below the search box is a "PLANTS Topics" section with a list of topics including Alternative Crops, Characteristics, Classification, Cover Crops, Culturally Significant, Distribution Update, Documentation, Fact Sheets & Plant Guides, and Introduced, Invasive, and Noxious Plants. The main content area includes a "You are here: Home/" breadcrumb, a description of the database, a "Plant of the Week" section featuring a purple passionflower (*Passiflora incarnata* L.), and a "Spotlights" section featuring the 2016 National Wetland Plant List. On the right side, there is an "I Want To..." section with a list of links for various plant-related actions.

Common name  
Scientific name



# USDA plants database

- ▶ Plant origin
- ▶ Species distribution
- ▶ Life form
- ▶ Taxonomy
- ▶ Images
- ▶ Other characteristics

The screenshot shows the USDA Plants Database interface for *Miscanthus sinensis* (Chinese silvergrass). The page includes a search bar, navigation tabs (GENERAL, IMAGES, SYNONYMS, CLASSIFICATION, LEGAL STATUS, WETLAND, RELATED LINKS), and a detailed profile section. The profile section contains a photograph of the plant, a map of the United States showing its distribution (shaded in blue), and a table of general information.

**General Information**

Symbol:	MISI
Group:	Monocot
Family:	Poaceae
Duration:	Perennial
Growth Habit:	Grass/Innold
Native Status:	CAN 1 LAS 1

**Characteristics**

**Data Source and Documentation**

**Native Status Legend:**

- Native
- Native, No County Data
- Introduced
- Introduced, No County Data
- Both
- Both, No County Data
- Absent/Unreported

**Native Status Legend:**

- LAB
- AK
- HI
- PR
- VI
- NAV
- CAN
- GL
- SPH
- NA

**IMAGES**

click on a thumbnail to view an image, or see all the *Miscanthus* thumbnails at the Plants Gallery





# The Invasive Plant Atlas of the US

▶ <https://www.invasiveplantatlas.org/>

Invasive Plant Atlas  
of the United States

Home | About

Google Custom Search

Home Aquatics Grasses Herbs/Forbs Shrubs/Subshrubs Trees Vines All Species Images Parks Sources

Adobe Flash Player is blocked

Contribute Plant Distribution Data to  
**EDDMapS**  
Early Detection & Distribution Mapping System

Contribute Pictures of Invasive Plants to  
**BUGWOOD**  
Image Database System

**Invasive Species News**

Check out our new EDDMapS maps website!  
Tallowtree Spread Increased by Hurricanes  
Cooperative Extension Advisor needed in

Life form  
All species



# The Invasive Plant Atlas of the US

**Invasive Plant Atlas**  
of the United States

Home | About

Home Aquatics Grasses Herbs/Forbs Shrubs/Subshrubs Trees Vines All Species Images Parks Sources

## Grasses and Grasslike Plants

Grasses and Grasslike Plants, known as Graminoids includes grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), arrow-grasses (Juncaginaceae), and quillworts (Isoetes). The following species have been reported to be invasive in natural areas in the U.S. Species native to the U.S. are included when they are invasive in areas well outside their known natural ranges, as a result of human activities. For more information on each species, including the listing sources, images, and distribution maps, click on the species.

**238 Species**

Subject Name	Scientific Name	Family	U.S. Nativity
punagrass	<i>Achnatherum brachychaetum</i> (Godr.) Barkworth	Poaceae	Exotic
Indian ricegrass	<i>Achnatherum hymenoides</i> (Roemer & J.A. Schultes) Barkworth	Poaceae	Native
jointed goatgrass	<i>Aegilops cylindrica</i> Host	Poaceae	Exotic
ovate goatgrass	<i>Aegilops geniculata</i> Roth	Poaceae	Exotic
barb goatgrass	<i>Aegilops triuncialis</i> L.	Poaceae	Exotic
crested wheatgrass	<i>Agropyron cristatum</i> (L.) Gaertn.	Poaceae	Exotic
desert wheatgrass	<i>Agropyron desertorum</i> (Fisch. ex Link) J.A. Schultes	Poaceae	Exotic
Siberian wheatgrass	<i>Agropyron fragile</i> (Roth) P. Candargy	Poaceae	Exotic
Pacific bentgrass	<i>Agrostis avenacea</i> J.F. Gmel.	Poaceae	Exotic
velvet bentgrass	<i>Agrostis canina</i> L.	Poaceae	Native
colonial bentgrass	<i>Agrostis capillaris</i> L.	Poaceae	Exotic
redtop	<i>Agrostis gigantea</i> Roth	Poaceae	Exotic
creeping bentgrass	<i>Agrostis stolonifera</i> L.	Poaceae	Exotic
silver hairgrass	<i>Aira caryophylla</i> L.	Poaceae	Exotic
creeping meadow foxtail	<i>Alopecurus arundinaceus</i> Polr.	Poaceae	Exotic
water foxtail	<i>Alopecurus geniculatus</i> L.	Poaceae	Exotic
slender meadow foxtail	<i>Alopecurus myosuroides</i> Huds.	Poaceae	Exotic
meadow foxtail	<i>Alopecurus pratensis</i> Linnaeus	Poaceae	Exotic
European beachgrass	<i>Ammophila arenaria</i> (L.) Link	Poaceae	Exotic
broomsedge bluestem	<i>Andropogon virginicus</i> L.	Poaceae	Native
sweet vernalgrass	<i>Anthoxanthum odoratum</i> L.	Poaceae	Exotic
sweet vernalgrass	<i>Anthoxanthum odoratum</i> ssp. <i>odoratum</i> L.	Poaceae	Exotic
tall oatgrass	<i>Arrhenatherum elatius</i> (L.) Beauv. ex J.&K. Presl	Poaceae	Exotic
tall oatgrass	<i>Arrhenatherum elatius</i> var. <i>elatius</i> (L.) P. Beauv.	Poaceae	Exotic

**Invasive Plant Atlas**  
of the United States

Home | About

Home Aquatics Grasses Herbs/Forbs Shrubs/Subshrubs Trees Vines All Species Images Parks Sources

## cheatgrass

*Bromus tectorum* L.

USDA PLANTS Symbol: BRTE  
U.S. Nativity: Exotic  
Habit: Grass or Grasslike

Jump to: [Resources](#) | [Images](#) | [Distribution Maps](#) | [Sources](#)

**Taxonomic Rank:** Liliopsida: Cyperales: Poaceae

**Synonym(s):** downy brome, early chess, military grass, thatch bromegrass

**Native Range:** Africa, temp. & trop. Asia, Europe (GRIN);

**Appearance**  
Bromus tectorum is an erect-stemmed annual grass that grows to about 8-25 in. (20-70 cm) in height.

**Foliage**  
The leaf sheaths and blades are covered with soft short hairs. The leaves are 0.08-0.16 in. (2-4 mm) wide and up to 8 in. (20 cm) long. Its ligules are 0.04-0.1 in. (1-2.5 mm) long.

**Flowers**  
The panicles measure 2-7.75 in. (5-20 cm) long, have numerous branches, retain an open quality and are generally nodding. The panicles bear from 3 to 8 drooping spikelets, each spikelet is 0.25-1.4 in. (2-3.5 cm) long. The glumes are awl-shaped. The lemmas are narrowly lanceolate, 0.04-0.06 in. (1-1.5 mm) wide, toothed, and sometimes hairy. They have slender, straight awns that are 0.4-0.67 in. (10-17 mm) long. Flowering occurs from May to June.

**Fruit**  
The seeds can germinate in the fall or in the spring; fall germination is generally more common. B. tectorum has a fibrous root system is finely divided. When a seed germinates in the fall, the developing root system is able to expand over the winter, giving the plant an increased ability to exploit available water and nutrients in the spring.

**Ecological Threat**  
Bromus tectorum has the ability to draw down soil moisture and nutrients to very low levels, making it difficult for other species to compete. An increased cycle of fires favors annual species at the expense of many perennials. Due to its tendency to mature early and then dry out, it gains a competitive advantage through the promotion of fire. It is an agricultural, nursery and orchard pest.

**Identification, Biology, Control and Management Resources**

Element Stewardship Abstract - The Nature Conservancy  
Weed of the Week - USDA Forest Service  
Weed Field Guide - USDA Forest Service

**Selected Images from Invasive.org**

**View All Images at Invasive.org**

**Fruit(s):**  
Steve Dewey, Utah State University, Bugwood.org  
Additional Resolutions & Image Usage

**Plant(s):**  
Steve Dewey, Utah State University, Bugwood.org  
Additional Resolutions & Image Usage

**Plant(s):**  
Chris Evans, University of Illinois, Bugwood.org  
Additional Resolutions & Image Usage

**Feature(s): Ligule**  
Fred Fuhr, University of Missouri, Bugwood.org  
Additional Resolutions & Image Usage

**Infestation:**  
Chris Evans, University of Illinois, Bugwood.org  
Additional Resolutions & Image Usage

**Plant(s); habit**  
Forest and Grass, Steve Dewey, Bugwood.org

**Infestation:**  
Leslie J. Marnett, University of Connecticut, Bugwood.org

- ▶ Appearance
- ▶ Flowers/seeds size
- ▶ Native range
- ▶ Ecological threat



# TRY Plant Database

▶ <https://www.try-db.org/TryWeb/Home.php>

Quantitative plant traits

Woody and non-woody plants

Data need to be requested  
(easy and quick)

Data are in txt-format: can be  
opened in Excel (if data are  
not too large) or in Linux (if  
data are too large)

**TRY** Plant Trait Database

Home About TRY Data Portal Feedback Registration

### Quantifying and scaling global plant trait diversity

TRY is a network of vegetation scientists headed by Future Earth, the Max Planck Institute for Biogeochemistry, and iDiv providing free and open access to plant trait data.

Database version 5 online (2019-03-26)  
11,850,781 trait records  
279,875 plant taxa

**Data Portal**

PhotosyntheticPathway  
Respiration LeafArea NfixationCapacity  
SLA RegenerationCapacity PlantLifespan  
WoodDensity GrowthForm  
PhenologyType LeafN  
LeafP LeafLongevity PhotosyntheticCapacity  
MaxPlantHeight SeedMass

#### News

**Activity Report (2020-11-05)**  
In October 2020, TRY received 391 requests and released 47.8 million trait data for 357 requests; 28 new publications were reported. This brings the totals to 12457 received requests, 1439 million trait records released for 11022 requests, and 336 recorded publications ([link](#))

**10 Billion Data Served (2020-08-11)**  
As of today, TRY has released more than 10,000,000,000 data from the database, 1.3 billion traits and 8.7 billion auxiliary data. ([link](#))

**New Publication (2020-07-02)**  
Byun, Blos and Brisson: Restoring functionally diverse communities enhances invasion resistance in a freshwater wetland. *Journal of Ecology*. ([link](#))

**New Publication (2020-07-02)**  
Bergmann et al.: The fungal collaboration gradient dominates the root economics space in plants. *Science Advances*. ([link](#))

**Request 10,000 (2020-05-20)**  
TRY has just received the 10,000th request for data from the Plant Trait Database ([link](#))

News Archive

Follow TRY

Global maps of leaf traits using remote sensing, climatological data, the TRY database, and machine 2020-04-





# TRY Plant Database

**TRY Plant Trait Database**

Home About TRY Data Portal Feedback Registration

Explore Data Request Data Contribute Data Request PI Center (Request PIs only) Dataset Custodian Center (Dataset Custodians only)

**Data Portal**

Explore the TRY database

**Data Explorer**

**Request data and manage your requests**

**TRY Database**

**Request PI Center** (Request PIs only)

**TRY File Archive**

**File Pickup** (File Requesters only)

**Contribute data and manage your contributions**

**Contribute Data**

**Dataset Cust. Cntr.** (Custodians only)

**File Owner Cntr.** (File Owners only)

Logos: DIVERSITAS, GLOBAL IGBB CHANGE, futurørth, iDiv, Max Planck Institute for Biogeochemistry, CLIMATE SOCIETY, FRB, BioDISCOVERY

Disclaimer Page calls: 213031 Gerhard Boenisch, Jens Kattge, created 2012-04-27, modified 2018-05-08

- ▶ Exploring data
- ▶ Requesting data



# TRY Plant Database

## ▶ Exploring data

**TRY Plant Trait Database**

Home About TRY Data Portal Feedback Registration

Explore Data Get Data Contribute Data Request PI Center (Request PIs only) Dataset Custodian Center (Dataset Custodians only)

Only number of measurements etc. presented - no trait values

**Data Explorer**

The Data Explorer enables you to search the TRY database and provides information about the content of the TRY database with respect to traits, species, original datasets and regions. Trait values are available at Get Data.

**Information by Trait**

Trait table

Detailed information for 1 trait

Species table for several traits

**Information by Species**

The accepted species list contains about 100,000 entries. Therefore, it does not make sense to view the entire list in your browser. However, you can download the species list by right clicking the link and choosing "Save target as ..." from the popup menu.

You can also view the accepted species list partially by first character:

Detailed information for 1 species. Please select the first character of the species of interest:

Traits table for several species

**Information by Traits and Species**

**Information by Dataset**

**Information by Region**

This website is based on database version 5.0 from 2019-03-26, and Data Explorer version 5.7 from 2019-03-26.

**Frequently Asked Questions**

What is the hard- and software of the data explorer?  
 How has the data explorer been tested?  
 Why is the data explorer not as fast as Google?  
 What is the difference between measurement and observation?  
 What database is the Data Explorer based on?

Disclaimer Page calls: 133695 Gerhard Boensch, Jens Kattge, created 2011-07-27, modified 2017-10-16

**TRY Plant Trait Database**

Home About TRY Data Portal Feedback Registration

Explore Data Get Data Contribute Data Request PI Center (Request PIs only) Dataset Custodian Center (Dataset Custodians only)

Only number of measurements etc. presented - no trait values

**Data Explorer**

**Trait Table**

Download table

Search Trait:

(Use trait names, part of trait names, or TraitID)

[Advanced Trait Search](#)

Table fields:  
 ObsNum: Number of Observations  
 ObsGRNum: Number of geo-referenced Observations  
 PubNum: Number of public Observations  
 AccNum: Number of Accepted Species  
 Def: Definition  
 DefCon: Link to trait definition.  
 DefCon: Participate in constructing a trait definition.  
 DefCon: Now includes all data from the database.

TraitID	Trait	ObsNum	ObsGRNum	AccNum	Spectrum	Definition
2957	Bark calcium (Ca) content per bark dry mass	30	30	5		<input type="button" value="Under Construction"/>
617	Bark carbon (C) content per bark dry mass	772	534	275		<input type="button" value="Definition"/>
829	Bark carbon (C) isotope signature (delta 13C)	13	13	1		<input type="button" value="Under Construction"/>
830	Bark carbon/nitrogen (C/N) ratio	13	13	1		<input type="button" value="Under Construction"/>
2958	Bark copper (Cu) content per bark dry mass	30	30	5		<input type="button" value="Under Construction"/>
831	Bark crystals	3593	2747	1644		<input type="button" value="Under Construction"/>
248	Bark density (bark dry mass per bark volume)	737	737	274		<input type="button" value="Definition"/>
2959	Bark iron (Fe) content per bark dry mass	30	30	5		<input type="button" value="Under Construction"/>
2961	Bark magnesium (Mg) content per bark dry mass	30	30	5		<input type="button" value="Under Construction"/>
2962	Bark manganese (Mn) content per bark dry mass	30	30	5		<input type="button" value="Under Construction"/>
618	Bark nitrogen (N) content per bark dry mass	742	742	45		<input type="button" value="Definition"/>
832	Bark nitrogen (N) isotope signature (delta 15N)	13	13	1		<input type="button" value="Under Construction"/>
833	Bark persistence (deciduous, persistent)	3460	3460	1069		<input type="button" value="Under Construction"/>
619	Bark phosphorus (P) content per bark dry mass	455	455	31		<input type="button" value="Definition"/>
2960	Bark potassium (K) content per bark dry mass	30	30	5		<input type="button" value="Under Construction"/>
834	Bark sclereids arrangement	3874	3010	1844		<input type="button" value="Under Construction"/>



# TRY Plant Database

## ▶ Requesting data

## ▶ Example of the request:

TRY Data Request 10895

Only public data were requested.

Title:

Host plant usage by the spotted lanternfly, *Lycorma delicatula*

Authors:

Alina Avanesyan (University of Maryland, Department of Entomology)

Olivia Shaffer (Frostburg State University, Frostburg MD)

William Lamp (University of Maryland, Dept of Entomol)

Trait List:

38, 3064, 24, 618, 2957, 617, 838, 837, 3404

Species List:

Description:

*Lycorma delicatula* is a highly invasive insect pest of fruit crops and trees in the eastern US. Nymphs and adults pose a significant economic threat to many woody tree species in MD including native and economically-important trees and woody plants. In this project we focus on exploring the basic behavioral, morphological, and physiological mechanisms which drive food plant selection of this invasive insect in its introduced range.

The screenshot shows the TRY Plant Trait Database website. At the top, there is a navigation bar with links for Home, About TRY, Data Portal, Feedback, and Registration. Below this is a secondary navigation bar with links for Explore Data, Request Data, Contribute Data, Request PI Center, and Dataset Custodian Center. The main content area is titled 'Request Data from the TRY Database' and contains several paragraphs of text explaining the request process, including steps like accepting intellectual property guidelines and providing project details. At the bottom of the page, there are two prominent green buttons: 'Request by traits/species' and 'Request by dataset'. A red arrow points to the 'Request by traits/species' button. The footer of the page includes logos for various partner organizations like Eysenhardt, IGBP Change, futureearth, iDiv, Max Planck Institute for Biochemistry, CLM, and FRB, along with a disclaimer and contact information.



# The LEDA Traitbase

▶ <https://uol.de/en/landeco/research/leda/data-files/>

Downloadable datasets

The screenshot shows the website header with navigation links: University, Studies, Research, International. Below the header, it identifies the user as 'School V | Institute of Biology and Environmental Sciences' and the page as 'Landscape Ecology'. A navigation breadcrumb shows the path: Research > Projects > LEDA > Data Files. The main content area is titled 'Data Files' and features a banner for 'The LEDA Traitbase' with images of a flower and a bird. Below the banner, the section 'Data files' explains that users can download trait data for all species. It provides a detailed note about a change in decimal symbols from commas to periods between different versions of the data files. At the bottom, a table lists 20 different trait datasets with their corresponding file sizes in KB. A red arrow points to the 'Buoyancy' entry, which is marked as 'NEW'.

Navigation: [...] > Research > Projects > LEDA > Data Files

**Data Files**

**The LEDA Traitbase**

**Data files**

Here you can download trait data for all species in the LEDA Traitbase.

In a previous version of the tables "seed bank", "seed mass", "specific leaf area", "seed number" and "terminal velocity", the standard decimal symbol was a comma. Errors were reported when the tables were imported to EXCEL on computers configured with a period as the standard decimal symbol (Numbers tab in the Regional Options tool in Control Panel, usual case in e.g. the U.S.). These errors occurred when values had more than 3 digits and period symbols (periods in Germany, commas in the US) and decimal symbols (commas in Germany, periods in the US) were mixed during the import from txt files to EXCEL files. We are sorry for any inconvenience and ask our users to check for possible errors in earlier downloads.

In the current version, all files now have periods as standard decimal symbols.

In order to download single-click with the right mouse button.

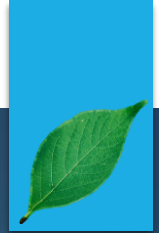
Age of first flowering	TXT(662 KB)
Branching	TXT(716 KB)
Bud bank seasonality	TXT(832 KB)
Bud vertical distribution	TXT(762 KB)
Buoyancy	TXT(44362 KB) !!! NEW !!!
Canopy height	TXT(1079 KB)
Clonal growth organs	TXT(768 KB)
Dispersal type	TXT(833 KB)
Leaf distribution along the stem	TXT(794 KB)
Leaf dry matter content	TXT(1319 KB)
Leaf mass	TXT(1379 KB)
Leaf size	TXT(1272 KB)
Morphology of dispersal unit	TXT(1154 KB)
Plant growth form	TXT(447 KB)
Plant life span	TXT(954 KB)
Releasing height	TXT(500 KB)
Seed bank	TXT(20977 KB)
Seed longevity	TXT(12934 KB)



# R package: TR8: Extract traits data for plant species

- ▶ <https://cran.r-project.org/web/packages/TR8/vignettes/TR8.pdf>
- ▶ retrieves traits data for plant species from the following publicly available databases:
  - ▶ Biolflor <http://www.ufz.de/biolflor/index.jsp>
  - ▶ Ecological Flora of the British Isles <http://www.ecoflora.co.uk/>
  - ▶ LEDA traitbase <http://www.leda-traitbase.org/LEDAPortal/>
  - ▶ Ellenberg values for Italian Flora
  - ▶ Flowering period for Italian Flora (data retrieved from <http://luirig.altervista.org/>)
  - ▶ Mycorrhizal intensity database
  - ▶ MycoFlor database
  - ▶ Catminat database
  - ▶ BROT





# R package: TR8: Extract traits data for plant species

## ▶ Example of retrieving data:

```
##writeLines("PATH=${RTOOLS40_HOME}\\usr\\bin;${PATH}", con = "~/Renviro")

install.packages("TR8",type= "binary", dependencies = TRUE)
install.packages("XML", type = "binary")
library(TR8)

##See available traits
print(available_tr8)

## a vector containing a list of plant species names
intro_species<-c("Acer platanoides","Acer pseudoplatanus","Ailanthus altissima", "Betula pendula", "Prunus avium", "Populus
alba", "Platanus occidentalis", "Rosa multiflora", "Vitis vinifera")
## a vector of traits (split, takes too long with all 5)
to_be_downloaded<-c("le_area","woodiness")
to_be_downloaded2<-c("leaf_thick","C.N.Ratio","Height")
## now run tr8 and store the results in the my_traits object
intro_traits<-tr8(species_list = intro_species,download_list = to_be_downloaded)
intro_traits2<-tr8(species_list = intro_species,download_list = to_be_downloaded2)

##see downloaded data
print(intro_traits)
print(intro_traits2)
```



# Plant Databases: Possible Applications

- ▶ Plant community composition  
(Dylan's project)
- ▶ Plant traits of insect host plants  
(Olivia's project)
- ▶ Plant DNA detection from insect guts  
(identification of SLF host plants)
- ▶ Feeding preference of insect herbivores  
(meta-analysis of grasshopper feeding preferences for exotic vs. native host plants)



# The NatureServe Explorer

▶ <https://explorer.natureserve.org/>

searchable  
database

helpful for  
retrieving U.S.  
Invasive Species  
Impact Rank



# The NatureServe Explorer

NatureServe EXPLORER

Search About the Data About Us Help Adopt a Species

English

Current Search Criteria: Clear All X

Searching For: "Miscanthus sinensis" X Refine

1 record found. Export All Results

Results include only full species with accepted taxonomy and standard ecosystems. See Classification tab for more options.

Matching Species Records:

Plants - Vascular Plants - Flowering Plants - Monocots	NatureServe Status (Rounded)	Distribution
<i>Miscanthus sinensis</i> Chinese Silver Grass	GNR: Unranked	Canada: ON United States: AL, CA, CO, CT, DC, DE, FL, GA, IL, KY, LA, MA, MD, MI, MO, MS, NC, NJ, NY, OH, PA, RI, SC, TN, VA, WV



NatureServe EXPLORER

Search About the Data About Us Help Adopt a Species

English

*Miscanthus sinensis*  
Chinese Silver Grass

GX Presumed Extinct GH Possibly Extinct G1 Critically Imperiled G2 Imperiled G3 Vulnerable G4 Apparently Secure G5 Secure No Status Rank

New Search

State/Provincial Conservation Status (Selected) Documented Distribution (No Data Available)

2000 km  
1000 mi

Powered by Esri

**Classification**

Scientific Name: *Miscanthus sinensis* Anders.  
Other Common Names: Chinese Silvergrass (EN), Chinese silvergrass (EN), Miscanthus de Chine (FR)

Kingdom: Plantae  
Phylum: Anthophyta  
Class: Monocotyledoneae  
Order: Cyperales  
Family: Poaceae  
Genus: Miscanthus

Concept Reference: Kartesz, J.T. 1994. A synonymized checklist of the vascular flora of the United States, Canada, and Greenland. 2nd edition. 2 vols. Timber Press, Portland, OR.  
Name Used in Concept Reference: *Miscanthus sinensis*  
NatureServe Unique Identifier: ELEMENT\_GLOBAL.2.147438  
NatureServe Element Code: PMPOA44040  
Related ITIS Names: *Miscanthus sinensis* Andersson (TSN 41874)

- Taxonomy
- Conservation status for each state

# EDDMapS



▶ <https://www.eddmaps.org/distribution/>

EDDMapS  
find · map · track

HOME REPORT SIGHTINGS DISTRIBUTION MAPS SPECIES INFORMATION TOOLS & TRAINING MY EDDMAPS ABOUT

## Distribution Maps

Search EDDMapS Record ID

Plants Insects Diseases Wildlife

Click on each species to view distribution maps.

Subject Name	Scientific Name	Records	View
Canada thistle	<i>Cirsium arvense</i>	223,401	State   County   Point   List
Dalmatian toadflax	<i>Litharia dalmatica</i>	116,851	State   County   Point   List
japanese honeysuckle	<i>Lonicera japonica</i>	114,237	State   County   Point   List
leafy spurge	<i>Euphorbia esula</i>	111,656	State   County   Point   List
spotted knapweed	<i>Centaurea stoebe ssp. micranthos</i>	107,631	State   County   Point   List
musik thistle	<i>Carduus nutans</i>	87,332	State   County   Point   List
cogongrass	<i>Imperata cylindrica</i>	78,661	State   County   Point   List
bull thistle	<i>Cirsium vulgare</i>	71,132	State   County   Point   List
garlic mustard	<i>Alliaria petiolata</i>	68,077	State   County   Point   List
squarrose knapweed	<i>Centaurea virgata</i>	64,522	State   County   Point   List

Showing 1 to 10 of 3,347 entries



EDDMapS  
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HOME REPORT SIGHTINGS DISTRIBUTION MAPS SPECIES INFORMATION TOOLS & TRAINING MY EDDMAPS ABOUT

## Canada thistle *Cirsium arvense* (L.) Scop.

This species is introduced in the United States

States Counties Points List Species Info

Search:

ID	User	Location	Date
8752498	Corey Schellenger Utah Department Of Agriculture	Morgan, Utah, United States	11/17/2020
8750751	Sara Jo Dickens Ecology Bridge	Summit, Utah, United States	11/09/2020
8750748	Sara Jo Dickens Ecology Bridge	Summit, Utah, United States	11/09/2020
8749886	Marisa Neuzil Teller-Park Conservation District	Park, Colorado, United States	11/08/2020
8749881	Marisa Neuzil Teller-Park Conservation District	Park, Colorado, United States	11/08/2020
8749880	Marisa Neuzil Teller-Park Conservation District	Park, Colorado, United States	11/08/2020
8749879	Marisa Neuzil Teller-Park Conservation District	Park, Colorado, United States	11/08/2020
8713159	Becky Bindi Daggett Weed Department	Daggett, Utah, United States	11/03/2020
8713165	Becky Bindi Daggett Weed Department	Daggett, Utah, United States	11/03/2020
8713169	Becky Bindi Daggett Weed Department	Daggett, Utah, United States	11/03/2020

Showing 1 to 10 of 218 584 entries

helpful for verification or retrieving species distribution





# The Global Biodiversity Information Facility

▶ <https://www.gbif.org/>

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GBIF | Global Biodiversity Information Facility

## Free and open access to biodiversity data

OCCURRENCES SPECIES DATASETS PUBLISHERS RESOURCES

SEARCH

WHAT IS GBIF? ABOUT GBIF UNITED STATES OF AMERICA

Occurrence records  
1,633,212,433

Datasets  
54,939

Publishing institutions  
1,673

Peer-reviewed papers using data  
5,181

News

Community review opens for updated guide to publishing occurrence data from impact assessments

(Almost) everything you want to know about the GBIF Species API

GBIF releases new guide for publication of data on sensitive species

Task group to enhance GBIF-enabled research on species linked to human diseases

Data use

The impact of climate change on islands

Project

New video: an invitation to the private sector

Taxonomy

Newly described species: *Feaella obscura*  
*Feaella (Tetrafeaella) obscura* sp. nov.

Blog

How to choose the right dataset class  
If you are a (first-time) GBIF publisher

Multiple options to search

Helpful for exploring invasive species occurrences and distribution

It also has downloadable datasets



# The Global Biodiversity Information Facility

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Classification

Select a species

Kingdom Animalia

Phylum Arthropoda

Class Insecta

Order Hemiptera

Family Fulgoridae

Genus *Lycorma* Stål, 1863

Species *Lycorma delicatula* (White, 1845)

    ▣ *Aphaena delicatula* White, 1845

Immediate children

Subspecies *Lycorma delicatula* subsp. *delicatula*

Subspecies *Lycorma delicatula* subsp. *jole* Stål, 1863

Subspecies *Lycorma delicatula* subsp. *operosa* (Walker, 1858)

Unranked BOLD:AAJ2800 (cf. *Lycorma delicatula*)

Species | ACCEPTED

*Lycorma delicatula* (White, 1845)


source: Catalogue of Life

Basionym: *Aphaena delicatula* White, 1845

OVERVIEW METRICS REFERENCE TAXON


3,634 OCCURRENCES INFRASPECIES

3,419 OCCURRENCES WITH IMAGES



SEE GALLERY

3,507 GEOREFERENCED RECORDS



Generated 2 days ago © OpenStreetMap contributors, © OpenMapTiles, GBIF.

Any year 1937 - 2020 EXPLORE

Issues: **Basionym relation derived**

NAME USAGES APPLIED TO OCCURRENCES IN GBIF

- ▶ Images
- ▶ Occurrences
- ▶ Taxonomy, etc.



# The Global Biodiversity Information Facility

Classification

Get data How to Tools Community About

Select a species

Kingdom: Animalia

Phylum: Arthropoda

Class: Insecta

Order: Hemiptera

Family: Fulgoridae

Genus: *Lycorma* Stål, 1863

Species: *Lycorma delicatula* (White, 1845)

▾ *Aphaena delicatula* White, 1845

Immediate children

Subspecies: *Lycorma delicatula* subsp. *delicatula*

Subspecies: *Lycorma delicatula* subsp. *jole* Stål, 1863

Subspecies: *Lycorma delicatula* subsp. *operosa* (Walker, 1858)

Unranked: BOLD:AAJ2800 (cf. *Lycorma delicatula*)

*Lycorma delicatula* (White, 1845)

ICZN STATUS

NE NOT EVALUATED

LC NT VU EN CR EW EX

Not Evaluated Source: IUCN

APPEARS IN 4 CHECKLIST DATASETS:

GBIF Backbone Taxonomy  
As *Lycorma delicatula* (White, 1845)

Catalogue of Life  
As *Lycorma delicatula* (White, 1845)

International Barcode of Life project (IBOL) Barcode Index Numbers (BINs)  
As *Lycorma delicatula* White, 1845

The National Checklist of Taiwan  
As *Lycorma delicatula* (White, 1845)

APPEARS IN 15 OCCURRENCE DATASETS:

Naturalist Research-grade Observations  
[View occurrences](#)

flora & fauna(NIBR)  
[View occurrences](#)

Geographically tagged INSDC sequences  
[View occurrences](#)

Hemiptera (Homoptera) collection of National Museum of Nature and Science  
[View occurrences](#)

MIN - Auchenorrhyncha Collection  
[View occurrences](#)

ZFMK Homoptera collection  
[View occurrences](#)

Frost Entomological Museum  
[View occurrences](#)

International Barcode of Life project (IBOL)  
[View occurrences](#)

The Hemiptera collection (EH) of the Muséum national d'Histoire naturelle (MNHN - Paris)  
[View occurrences](#)

Earth Guardians Weekly Feed  
[View occurrences](#)

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CITATION

▶ Lists of occurrences

# The Global Biodiversity Information Facility



Occurrences

SEARCH OCCURRENCES | 64 RESULTS

TABLE GALLERY MAP TAXONOMY METRICS DOWNLOAD

Scientific name Country or area Coordinates Month & year Basis of record Dataset Kingdom Phylum Class Order Family Genus Species

Scientific name	Country or area	Coordinates	Month & year	Basis of record	Dataset	Kingdom	Phylum	Class	Order	Family	Genus	Species
<i>Lycorma delicatula</i> (White, 1845)			2014 October	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2014 October	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>
<i>Lycorma delicatula</i> (White, 1845)			2012 January	Preserved specimen	flora & fauna/NIBR	Animalia	Arthropoda	Insecta	Hemiptera	Fulgoroidea	<i>Lycorma</i>	<i>Lycorma delicatula</i>

Previous 1 2 3 4 Next

downloadable results



# The NCBI GenBank database

▶ <https://www.ncbi.nlm.nih.gov/>

The screenshot shows the NCBI homepage with a search bar at the top containing 'All Databases' and a search button. A red arrow points to the search bar. Below the search bar is a COVID-19 information banner. The main content area is divided into three columns: 'NCBI Home' (a sidebar menu), 'Welcome to NCBI' (a central section with 'Submit', 'Download', 'Learn', 'Develop', 'Analyze', and 'Research' options), and 'Popular Resources' (a list of links including PubMed, Bookshelf, PubMed Central, BLAST, Nucleotide, Genome, SNP, Gene, Protein, and PubChem). A red arrow points to the 'BLAST' link in the 'Popular Resources' section. Below the 'Popular Resources' section is the 'NCBI News & Blog' section with several news items.

Species identification

Retrieving sequences for a certain DNA locus





# The NCBI GenBank database

NCBI Resources How To avanesyan My NCBI Sign Out

Nucleotide  Search

COVID-19 is an emerging, rapidly evolving situation.  
Get the latest public health information from CDC: <https://www.cdc.gov/covid>.  
Get the latest research from NIH: <https://www.nih.gov/coronavirus>.  
Find NCBI SARS-CoV-2 literature, sequence, and clinical content: <https://www.ncbi.nlm.nih.gov/sars-cov-2/>.

Species: Plants (116)  
Molecule types: genomic DNA/RNA (116)  
Source databases: INSDC (GenBank) (116)  
Sequence Type: Nucleotide (116)  
Genetic compartments: Chloroplast (107)  
Sequence length: Custom range...  
Release date: Custom range...  
Revision date: Custom range...  
Clear all  
Show additional filters

Summary - 20 per page - Sort by Default order - Send to: Filters: Manage Filters

See [trnI, rRNA](#) in the Gene database  
[trnI reference sequences](#)

Items: 1 to 20 of 116

- [Miscanthus sinensis IRNA-Leu \(trnL\) gene, partial sequence, trnL-trnF intergenic spacer, complete sequence, and IRNA-Phe \(trnF\) gene, partial sequence, chloroplast](#)  
765 bp linear DNA  
Accession: KP711149.1 GI: 961593718  
Taxonomy  
GenBank FASTA Graphics PopSet
- [Miscanthus sinensis chloroplast DNA, trnL intron, partial sequence](#)  
96 bp linear DNA  
Accession: LC057222.1 GI: 1033728843  
Taxonomy  
GenBank FASTA Graphics
- [Miscanthus sinensis voucher KWN175836 IRNA-Leu \(trnL\) gene, partial sequence, chloroplast](#)  
499 bp linear DNA  
Accession: HG822044.1 GI: 343530317  
Taxonomy  
GenBank FASTA Graphics PopSet
- [Miscanthus sinensis var. condensatus chloroplast trnL gene, partial sequence, haplotype C](#)  
456 bp linear DNA  
Accession: AB168050.1 GI: 84469230  
Taxonomy  
GenBank FASTA Graphics
- [Miscanthus sinensis var. condensatus chloroplast trnL gene, partial sequence, haplotype B](#)  
456 bp linear DNA  
Accession: AB168049.1 GI: 84469229  
Taxonomy  
GenBank FASTA Graphics
- [Miscanthus sinensis var. condensatus chloroplast trnL gene, partial sequence, haplotype A](#)  
456 bp linear DNA  
Accession: AB168048.1 GI: 84469228  
Taxonomy  
GenBank FASTA Graphics
- [Miscanthus sinensis var. purpurascens IRNA-Leu \(trnL\) gene, partial sequence, trnL-trnF intergenic spacer, complete sequence, and IRNA-Phe \(trnF\) gene, partial sequence, chloroplast](#)  
764 bp linear DNA  
Accession: KP711148.1 GI: 961593717  
Taxonomy  
GenBank FASTA Graphics PopSet
- [Miscanthus sinensis subsp. condensatus chloroplast trnL gene, intron, partial sequence, isolate: OGA0405](#)

Results by taxon

Top Organisms [\[Tree\]](#)

- Miscanthus sinensis (87)
- Miscanthus sacchariflorus (22)
- Miscanthus x giganteus (4)
- Miscanthus paniculatus (1)
- Miscanthus nudipes (1)
- All other taxa (1)

More...

Find related data

Database:

Find Items

Search details

Search

Recent activity

Turn Off Clear

- Miscanthus sinensis trnI (116) Nucleotide
- Miscanthus sinensis (4670) Nucleotide
- potato leafhopper (5) Nucleotide
- InsetBase: a resource for insect genomes and transcriptomes
- Acer platanoides IRNA-Leu (trnL) gene, partial sequence, chloroplast Nucleotide

See more...

Nucleotide

Species name and DNA locus



# The NCBI GenBank database

NCBI Resources How To

Nucleotide

COVID-19 is an emerging, rapidly evolving situation. Get the latest public health information from CDC: <https://www.cdc.gov/coronavirus>. Get the latest research from NIH: <https://www.nih.gov/coronavirus>. Find NCBI SARS-CoV-2 literature, sequence, and clinical content: <https://www.ncbi.nlm.nih.gov/sars-cov-2/>

Species: Plants (116)

Molecule types: genomic DNA/RNA (116)

Source databases: INSDC (GenBank) (116)

Genetic compartments: Chloroplast (107), Plasmid (107)

Sequence length: Custom range...

Release date: Custom range...

Revision date: Custom range...

Clear all

Show additional filters

Summary: 20 per page - Sort by Default order

Filters: Manage Filters

Results by taxon

Top Organisms [Tree]

Misanthus sinensis (87)

Misanthus saccorhizus (22)

Misanthus x gigaricus (?)

Misanthus perfoliatus (?)

Misanthus rufipes (?)

All other taxa (?)

Find related data

Database: Select

Search details

(["Misanthus sinensis"] OR ["Misanthus sinensis[All Fields]"] AND ["trnL[All Fields]"])

Search

See more...

Recent activity

Misanthus sinensis trnL (116)

Misanthus sinensis (4670)

potato leathopper (5)

InsectBase: a resource for insect genomes and transcriptomes

Acar platanoides rRNA-Leu (trnL) gene, partial sequence; chloroplast

See more...

Items: 1 to 20 of 116

1. [Misanthus sinensis rRNA-Leu \(trnL\) gene, partial sequence; trnL-trnF intergenic spacer, complete sequence; and rRNA-Phe \(trnF\) gene, partial sequence; chloroplast](#)

765 bp linear DNA

Accession: KP711149.1 GI: 961593718

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#) [PopSet](#)

2. [Misanthus sinensis chloroplast DNA, trnL intron, partial sequence](#)

96 bp linear DNA

Accession: LC057222.1 GI: 103372843

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#)

3. [Misanthus sinensis voucher KWNJ75836 rRNA-Leu \(trnL\) gene, partial sequence; chloroplast](#)

499 bp linear DNA

Accession: HQ822044.1 GI: 343330317

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#) [PopSet](#)

4. [Misanthus sinensis var. condensatus chloroplast trnL gene, partial sequence; hsdR10C](#)

456 bp linear DNA

Accession: AB198050.1 GI: 8449230

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#)

5. [Misanthus sinensis var. condensatus chloroplast trnL gene, partial sequence; hsdR10C](#)

456 bp linear DNA

Accession: AB198049.1 GI: 8449229

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#)

6. [Misanthus sinensis var. condensatus chloroplast trnL gene, partial sequence; hsdR10C](#)

456 bp linear DNA

Accession: AB198048.1 GI: 8449228

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#)

7. [Misanthus sinensis var. rufarvensis rRNA-Leu \(trnL\) gene, partial sequence; trnL-trnF intergenic spacer, complete sequence; and rRNA-Phe \(trnF\) gene, partial sequence; chloroplast](#)

764 bp linear DNA

Accession: KP711148.1 GI: 961593717

Taxonomy: [GenBank](#) [FASTA](#) [Graphics](#) [PopSet](#)

8. [Misanthus sinensis subsp. condensatus chloroplast trnL gene, intron, partial sequence; hsdR10C](#)

OC84925

NCBI Resources How To

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Nucleotide

Advanced

Search

Help

COVID-19 is an emerging, rapidly evolving situation. Get the latest public health information from CDC: <https://www.cdc.gov/coronavirus>. Get the latest research from NIH: <https://www.nih.gov/coronavirus>. Find NCBI SARS-CoV-2 literature, sequence, and clinical content: <https://www.ncbi.nlm.nih.gov/sars-cov-2/>

GenBank

Send To: [Complete Record](#) [Gene Features](#) [File](#) [Clipboard](#) [Collections](#) [Analysis Tool](#)

Choose Destination

Download 1 item.

Format: [FASTA](#)

Show GI

Create File

**Misanthus sinensis rRNA-Leu (trnL) gene, partial sequence; trnL-trnF intergenic spacer, complete sequence; and rRNA-Phe (trnF) gene, partial sequence; chloroplast**

GenBank: KP711149.1

FASTA Graphics PopSet

Go to:

LOCUS KP711149 765 bp DNA linear PLN 31-MAR-2016

DEFINITION Misanthus sinensis rRNA-Leu (trnL) gene, partial sequence; trnL-trnF intergenic spacer, complete sequence; and rRNA-Phe (trnF) gene, partial sequence; chloroplast.

ACCESSION KP711149

VERSION KP711149.1

KEYWORDS

SOURCE chloroplast Misanthus sinensis (eulalia)

ORGANISM Misanthus sinensis

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliopsida; Liliopsida; Poales; Poaceae; PACHAD clade; Panicoideae; Andropogonaceae; Andropogoneae; Saccharinae; Misanthus.

REFERENCE 1 (bases 1 to 765)

AUTHORS Wang, Y.H., Zhang, X.J., and Fan, S.J.

TITLE Phylogenetics of Alopecurus and Phleum (Poaceae) based on plastid and nuclear sequence data

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 765)

AUTHORS Wang, Y.H., Zhang, X.J., and Fan, S.J.

TITLE Direct Submission

JOURNAL Submitted (25-JAN-2015) College of Life Science, Shandong Normal University, No. 88 East Menhua Road, Jinan, Shandong 250014, China

FEATURES

source 1..765

/organism="Misanthus sinensis"

/organelle="plastid:chloroplast"

/mol\_type="genomic DNA"

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/gene="trnL"

trnA <311..360

/gene="trnL"

/product="rRNA-Leu"

misc\_feature 361..733

/note="trnL-trnF intergenic spacer"

gene 734..>765

/gene="trnF"

trnA 734..>765

/gene="trnF"

/product="rRNA-Phe"

ORIGIN

1 aaggatggt gcagagact aatggaagt gttctaacga atcgaagtaa taacgattaa

61 tcacagaacc catattataa tataggtctt ttattttatt ttgaagtaa aattggaat

121 gattatgaaa tagaanaatt ataatttttt tagaatatt gtgaatctat tccaatcgaa

181 tattgagtaa tcaaatctct caattcattg ttctcagat cttttaaaaa gtgagtaatt

241 ggcaggga taagagaga gtccattctt acatgcaat actgacaaca atgaaattct

301 tagttaaagg aaatctctt gactttataa gtgcgaggg ttaagctcc tctatcccca

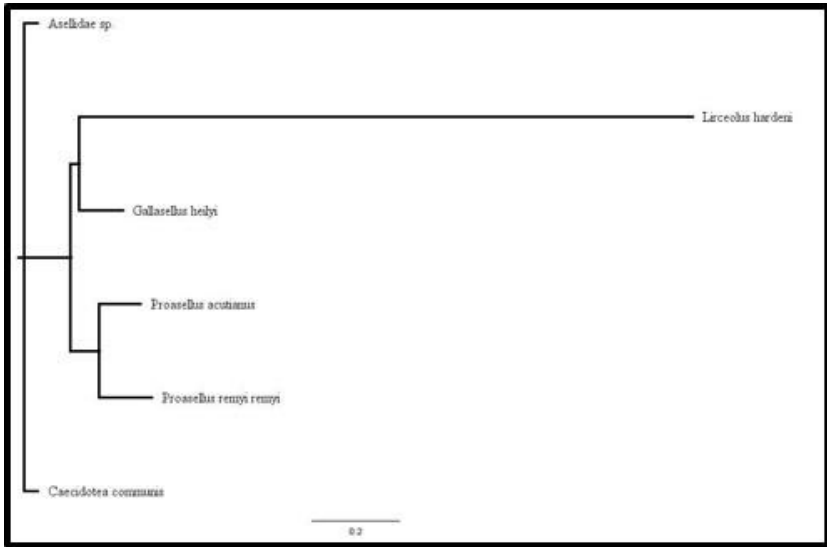
361 aaccctcttt tattccctaa ccatagttgt tatcctttt tctttttatc aatgggttta

Downloadable sequences



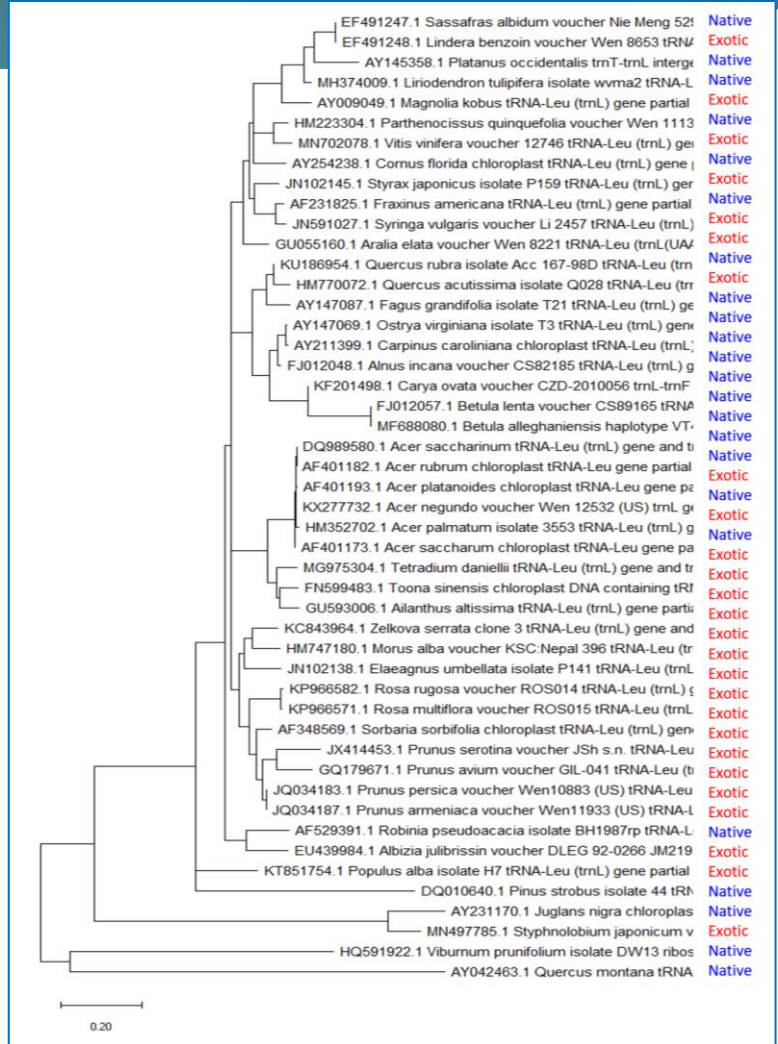
# The NCBI GenBank database

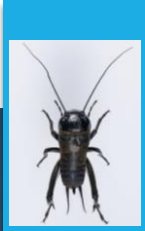
## Possible applications



► Phylogenetic relationships of isopods (Nina's project)

► Phylogenetic relationships of SLF host plants (Olivia's project)





# InsectBase

► <http://www.insect-genome.com/>

**InsectBase**  
Integrated genome and transcriptome resources for insect

**InsectBase** intends to provide a comprehensive platform for researchers who have interests in analyzing insect genes. The database contains more than 12 millions of sequences, encompassing the genomes of 138 insects, transcriptomes of 116 insects, gene sets of 61 insects, 36 gene families of 60 insects, 7,544 miRNAs of 69 insects, 96,925 piRNAs from two insects, 22,536 pathways of 78 insects, 679,881 untranslated regions (UTR) of 84 insects and 160,905 coding sequences (CDS) of 74 insects.

- 26 October, 2015: The InsectBase was accepted by Nucleic Acids Research 2016 Database Issue.
- 1 to 24 September, 2015: The InsectBase is under reconstruction.
- 15 August, 2015: the first official release of the InsectBase.
- 8 July, 2015: Group seminar on InsectBase.
- May, 2014: Starting the InsectBase project.

**Citation:**  
Yin C, Shen G, Guo D, et al. InsectBase: a resource for insect genomes and transcriptomes. Nucleic acids research, 2016, 44(D1): D801-D807.[PDF]  
*We recommend you use Internet Explorer (9.0 or higher) or Google Chrome.*

**Quick start**

BLAST Search

Program: blastn E-value: 10

Database: All species's RNA

Fasta (What is FASTA format?)

FASTA format sequence

Example Sequence

or File input

Choose File No file chosen

BLAST Repeat

**Announcement**

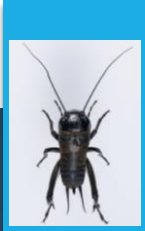
We are happy to announce that female genome of a crucial pomonella, codling moth (*Cydia pomonella*, Tortricidae) was sequenced and assembled by Invasive Alien Species (IAS) Genomics Consortium, China. The consortium developed 400x Illumina and 45x PacBio sequence and combined them into an assembly consisting of about 4000 scaffolds with an N50 of 598 kbp. The assembly was annotated and official gene set is available. If you are interested in the data or collaboration, please contact Professor Fanghao Wan (wanfanghao@caas.cn) and Prof. Fai Li (lifef18@zju.edu.cn).

IAS Genomics Consortium  
2015.11.18

**The distribution of 138 insect genomes**

Order	Percentage
Trichoptera	0.7%
Anoptera	0.7%
Thysanoptera	0.7%
Strepsiptera	0.7%
Phasmatodea	0.7%
Orthoptera	0.7%
Lepidoptera	8.0%
Hymenoptera	21.6%
Hemiptera	8.7%
Blattodea	0.7%
Coleoptera	5.8%
Diptera	0.7%
Diptera	48.6%

Very similar to the NCBI GenBank database



# Odonate Phenotypic DataBase

- ▶ [http://www.odonatephenotypicdatabase.org/shiny/odonates/?\\_inputs\\_&choose\\_species=%22%22](http://www.odonatephenotypicdatabase.org/shiny/odonates/?_inputs_&choose_species=%22%22)

Odonate Phenotypic DataBase

Look Up

Select family  
Choose

Select genus  
Choose

Select species  
Choose

Download

Complete Database Variable Definitions

Genus species

Size ♂

Body Length	Front Wing Length	Hind Wing Length
-	-	-

Size ♀

Body Length	Front Wing Length	Hind Wing Length
-	-	-

Body Colors ♂

Body Colors	Body Color Type(s)	Body Pattern Type(s)
-	-	-

Morphisms

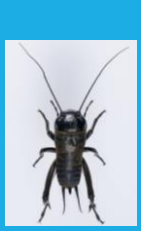
Strength of Sexual Dimorphism	Polymorphisms by Sex	Polymorphisms by Region
-	-	-

Behaviour ♂

Mate Guarding Behaviour	Flight Mode	Territoriality
-	-	-

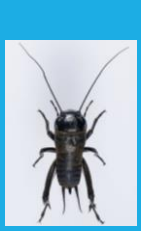
Location and Habitat





# Insect Images

▶ <https://www.insectimages.org/>

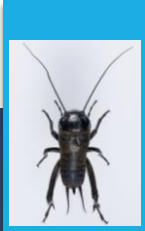


# U.S. National Insect Collection Database

- ▶ <https://catalog.data.gov/dataset/u-s-national-insect-collection-database>

The screenshot shows the Data.gov interface for the 'U.S. National Insect Collection Database'. The page includes a search bar at the top, navigation links for 'DATA', 'TOPICS', 'RESOURCES', 'STRATEGY', 'DEVELOPERS', and 'CONTACT'. The dataset title is 'U.S. National Insect Collection Database' with a metadata update date of February 21, 2020. It features an 'Access & Use Information' section, 'Downloads & Resources' with two 'Web Page' links (one with 53 views), and a 'Metadata Source' section. A red arrow points to the 'Web Page' link with 53 views.

The screenshot shows the Smithsonian National Museum of Natural History website. The page is titled 'Search the Department of Entomology Collections'. It features a navigation menu with 'Entomology Collections' highlighted by a red arrow. Below the navigation, there is a section for 'Entomology Collection' with a detailed description of the collection's history and a large image of an ant. The page also includes search options like 'Keyword Search', 'General Search', and 'Types Search'. A red arrow points to the 'Entomology Collections' tab.



# ESA Common Names of Insects Database

▶ <https://www.entsoc.org/common-names>

The screenshot shows the website interface for the Entomological Society of America's Common Names of Insects Database. At the top, the ESA logo and tagline "SHARING INSECT SCIENCE GLOBALLY" are visible. A navigation menu includes links for ABOUT, RESOURCES, EVENTS, CAREER CENTER, PUBLICATIONS, POLICY & INITIATIVES, and NEWS. The main content area features the title "Common Names of Insects Database" and a brief description of the database's scope. Below this is a paragraph explaining the submission process for new common names. A search section contains several input fields: Common Name, Scientific Name, Order, Family, Genus, Species, and Author, along with an "APPLY" button. To the right, a "USEFUL LINKS" sidebar lists various resources such as PDF lists sorted by common name, scientific name, and taxa, as well as information on proposal forms and the committee roster. At the bottom right, there is a "SEARCH THE ESA ARCHIVES" button and a "FEATURED EVENTS" section.

ENTOMOLOGICAL SOCIETY OF AMERICA  
SHARING INSECT SCIENCE GLOBALLY

ABOUT RESOURCES EVENTS CAREER CENTER PUBLICATIONS POLICY & INITIATIVES NEWS

HOME / RESOURCES

## Common Names of Insects Database

The ESA Common Names database is an essential reference for anyone who works with insects. It includes more than 2,000 common names and is searchable by common name, scientific name, author, order, family, genus, and species.

Interested individuals may propose new common names by submitting the Common Names Proposal Form that is reviewed by the Committee on the Common Names of Insects and voted on by the ESA Governing Board. Detailed information on the submission and approval process is available through the links in the sidebar to the right.

Our understanding of taxonomy evolves over time, and although the Committee on the Common Names of Insects does work to update the taxonomic information included in the ESA Common Names database, sometimes the committee is not aware of recent changes. If you see outdated taxonomic information in the ESA Common Names list, you can help by notifying the committee at [pubs@entsoc.org](mailto:pubs@entsoc.org).

Enter a search term in one or more of the filter fields below and click APPLY to see the results.

Common Name  Scientific Name


Order  Family

Genus  Species

Author

APPLY

USEFUL LINKS



[Full List Sorted by Common Name \(PDF as of 4/16/20\)](#)

[Full List Sorted by Scientific Name \(PDF as of 4/16/20\)](#)

[Full List Sorted by Taxa \(PDF as of 4/16/20\)](#)

[Use and Submission of Common Names](#)

[Common Name Proposal Form](#)

[Proposed Names](#)

[Committee on Common Names Roster](#)

SEARCH THE ESA ARCHIVES

SEARCH

FEATURED EVENTS

# Additional helpful resources

## ▶ BugGuide

<https://bugguide.net/node/view/15740>



## ▶ Illinois Natural History Survey: Insect Collection

<https://insect.inhs.illinois.edu/data/>



## ▶ SCALETOOL / Species Traits Databases

<http://scales.ckff.si/scaletool/?menu=6>



**SCALETOOL** Introduction Drivers Biodiversity Policies and management Connectivity and protected areas

Home » Species traits databases

### Species traits databases

Species traits describe characteristics of species and are relevant to population dynamics across space and time. They affect ecosystem processes indirectly through abiotic control and directly through changes in biotic control (e.g. predators, pathogens). On the other hand, they are also affected by other species traits and environmental conditions which are highly sensitive to global change pressures, such as land use changes and climate change. Since species traits seem to play one of the most important roles in ecosystem processes and are thus highly relevant for conservation planning, it is inevitable to have overviews and compilations for different species available.

For that purpose, existing databases and review literature on species traits and, in the following, dispersal related traits, were compiled. This compilation also includes derived traits like functional traits, area requirements, and habitat selectivity to dispersal and functional connectivity. These data provide an excellent overview on species traits, which can be used for parameterizing model inputs, and will help to assess and visualize scaling effects across taxa and spatial scales. Databases for plants, insects, reptiles, and birds across Europe are either available online or upon author request.

**BIOLFLOR**  
The database BioFlor contains almost 3660 plant species and more than 60 plant traits. Data collection result from several projects conducted in the Department of Community Ecology (UFZ - Centre for Environmental Research) over ... [more]

**Cavity-nesting Wasp and Bee Traits**  
The database includes original (mostly unpublished) and published data on functional traits of European wasp and bee species occurring in trap-nests for cavity-nesting Hymenoptera - the nesting species and their natural enemies. ... [more]

**CLIMBER**  
Climatic niche characteristics of the butterflies in Europe) is a unique dataset on the climatic niche characteristics of 397 European butterflies representing 91% of the European species. These characteristics were obtained by c...

**Dispersal database**  
The dispersal database is a relational database containing information about dispersal of animals from different taxa. In several tables connected either in 1:1, 1:n or m:n relations the authors compiled raw data, descriptive sta... [more]

**European amphibian life-history traits database**  
Amphibians are highly threatened worldwide. They are composed by more than 7400 species constituting one of the most species-rich vertebrate groups. The collection of information on life history traits is difficult due to the eco... [more]

**European Bird Traits Database**  
The database contains data about 90 functional traits for each of 495 European bird species. Traits cover different groups of traits as morphological traits (wing size, bill size, weight etc.), reproductive traits (clutch size, n... [more]

**European Butterfly Trait Database**

**LEDA**  
The LEDA trait base is a data base on traits of the North-West European flora that describes three key features of plant dynamics: persistence, regeneration and dispersal. The data stems from published literature and existing dat... [more]

**Minimum Area Requirements of species**  
We compiled a comprehensive database of MAR estimates from the literature, covering 216 terrestrial animal species from 80 studies. Estimates originate from a) Population Viability Analyses (PVAs) which explored a range of ... [more]

**Plant dispersal distances and traits**  
In this database, available maximum dispersal distance data for plant species were collected summing up to 576 plant species in

Thank you!

Happy Data Mining!

