

BioDiversity - Goals

1. Inventory earth's biota:
Worldwide: 1.6 million species have been described and named
Wisconsin: 32,000+ spp., and in terms of vascular plants 2,450 spp.
2. Identify and name species
3. Classify or place the species in groups

Plantae	Kingdom
Magnoliophyta	Phylum
Magnoliopsida	Class
Sapindales	Order
Rutaceae	Family
<i>Ptelea</i>	Genus
<i>Ptelea trifoliata</i>	Species

Hierarchical classification



Ptelea trifoliata L.
Wafer-ash

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Nomenclature - Using Names

Nomenclature = a system of naming

Common names

What are their advantages?

- colorful and easy to remember
- for most, only means of communication about earth's diversity



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Wafer-ash

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What are their disadvantages?

- One plant can have many names



Ptelea trifoliata L.
Wafer-ash
Stinking-ash
Hop-tree

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Garden pansy
200+ other names!

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- One name can be given to unrelated plants



Fireweed
Epilobium
(Onagraceae)



Fireweed
Erechtites
(Asteraceae)

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- Names can be confusing or misleading



Wafer-ash
Stinking-ash
Hop-tree

(not related to ashes or hops)

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Sweet-fern

(not a fern!)

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Red oak
(type of oak)



Poison sumac
(type of sumac)



Poison-oak
(type of sumac, not oak)

Hyphens often used with non-relationship of two terms

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- Names can be confusing or misleading
- Many plants have no common names



Carex crawfordii

?

Crawford's sedge

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Nomenclature - Using Names

Scientific names

International Code of Nomenclature (for plants, algae, fungi):

the major goal of nomenclature is to provide one correct scientific name for each species



Carex crawfordii Fernald

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Nomenclature - Using Names

Scientific names

Species names: **binomial** system which was first consistently used by Carolus Linneaus

Genus name: *Carex* [noun]

Specific epithet: *crawfordii* [adjective]

Species name: *Carex crawfordii*

Authority: Fernald - the name of the person who came up with the name for this species

Scientific name is the genus + specific epithet + authority



Carex crawfordii Fernald

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Nomenclature - Using Names

Scientific names - general rules

- *Italics* or underlined for species name
- Generic name **must always** be capitalized
- Species epithet **may always** be lower case
- Species epithet should **never** be used alone



Carex crawfordii Fernald

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Nomenclature - Using Names

Scientific names - name changes

- Unfortunately very common
- Gives rise to duplicate names - synonyms - for the same plant
- MANY plants you will encounter in this course have synonyms



Field Manual of Michigan Flora

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Nomenclature - Using Names

Scientific names - name changes – an example

The golden ragwort was named by Linnaeus:
Senecio aureus L.

Switched to the genus *Packera* by Löve & Löve:
Packera aurea (L.) Löve & Löve

Note 4 things:

1. The name in parenthesis - Linnaeus - is the author of the specific epithet
2. Löve and Löve are the authors of the binomial
3. The gender has changed
4. *Senecio aureus* is now a synonym for *Packera aurea*: check out the [Wisconsin State Herbarium](#) to see how it is listed



Senecio aureus L.

Packera aurea (L.) Löve & Löve



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