

Carrot Family:

Part 1 : Smaller Family Members



Japanese hedge parsley,
Dakota County,
2012-07-25



Wild carrot,
Goodhue County,
2009-08-02



Burnet-saxifrage,
Hennepin County,
2018-9-2



Caraway,
Cook County,
2016-6-16



Wild parsnip,
Fillmore County,
2012-9-13

Apiaceae : Part 1

<u>Genus species</u>	Native Flower		Life		<u>Cycle</u>
	<u>Common Name</u>	<u>or Exotic</u>	<u>Color</u>	<u>Plant Stature</u>	
<i>Carum carvi</i> :	Caraway	Exotic	white	small, delicate	Biennial 7
<i>Daucus carota</i> :	Queen Anne's Lace	Exotic ++	white	small	Biennial 12
<i>Pimpinella saxifraga</i> :	Burnet-saxifrage	Exotic	white	small, delicate	Perennial 20
<i>Torilis japonica</i> :	Japanese Hedge Parsley	Exotic	white	small, delicate	Annual 27
<i>Pastinaca sativa</i> :	Wild Parsnip	Exotic ++	yellow	medium, robust	Biennial 34

++ Minnesota State Listed Noxious Weed

All images: Dave Hanson

Biennial

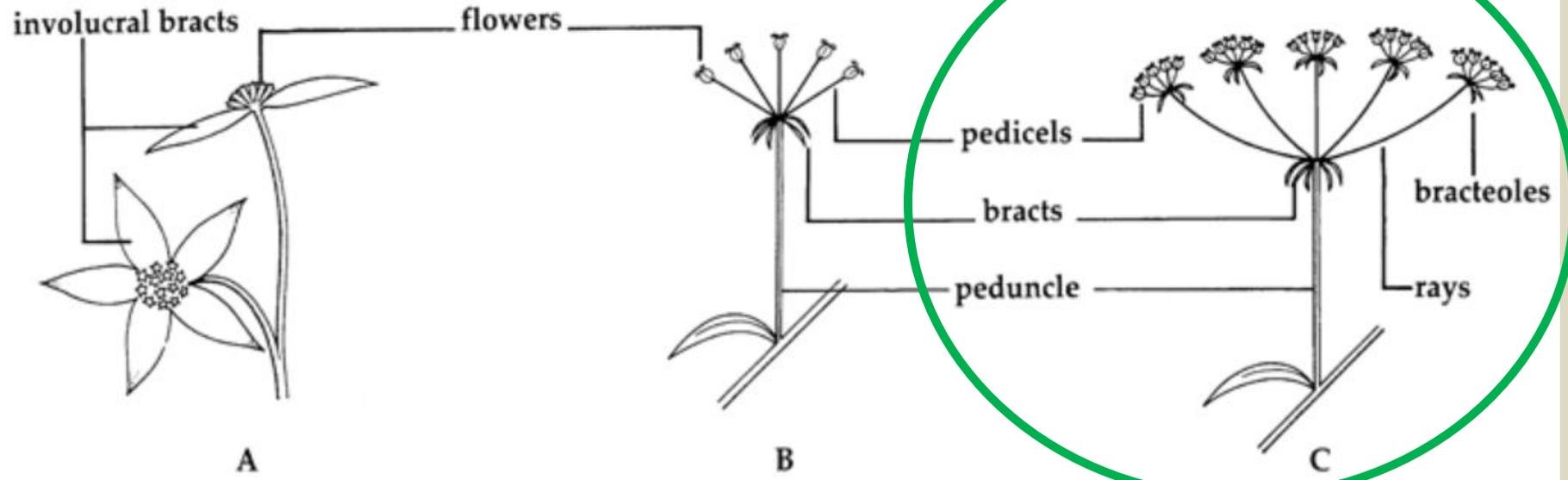
Or

Monocarpic perennial

Mono / carpic (carpo)

one / 'Karpos' Greek : meaning fruit.

The plants life cycle will end with fruit production



Inflorescences in Apiaceae. **A**, heads with sessile flowers and enlarged involucre bracts; **B**, simple umbel; **C**, compound umbel.



This seed form is common in the **Apiaceae** family.

Variations: carpels (mericarps) that are smooth, flat and oval to slightly rounded, ridged or bristly.

Resin or oil canals are often obvious in the fruits (Vitta or Vittae).

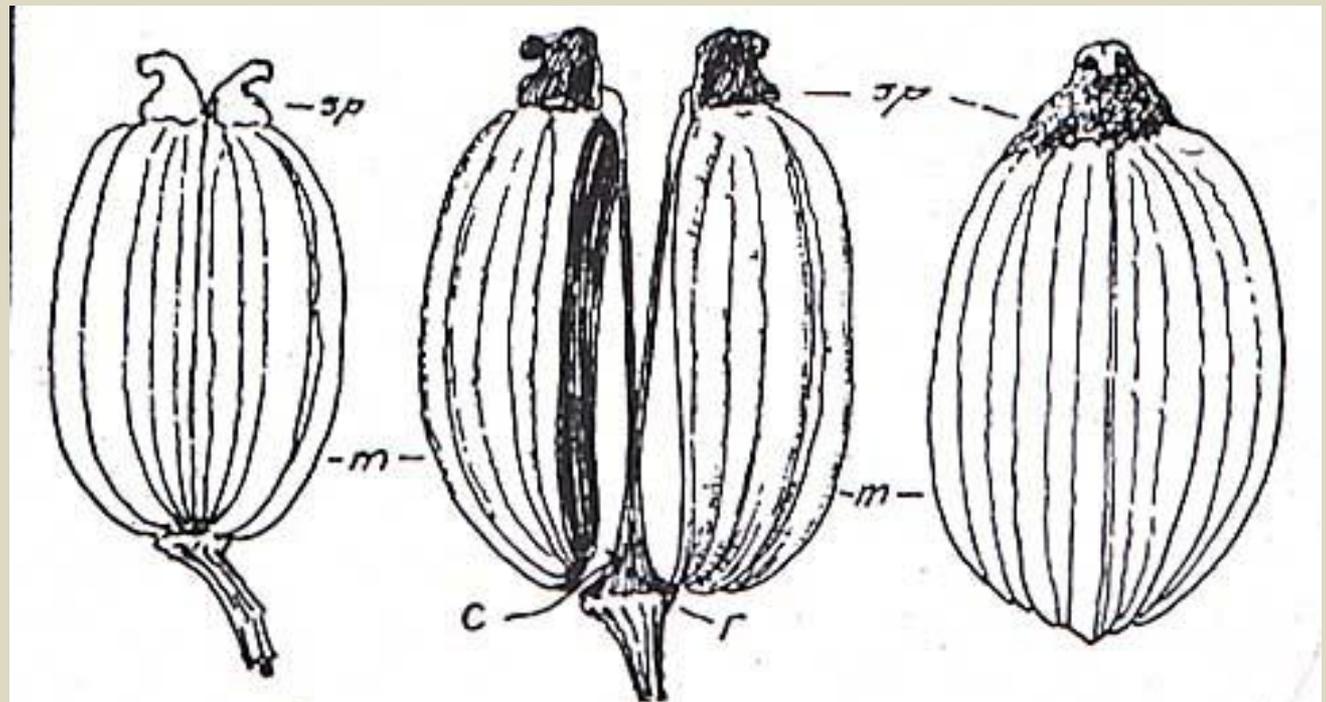


FIG. 64.—Fruit (schizocarp) of an umbellifer (*Foeniculum vulgare*): *sp*, stylopodium; *m*, mericarp; *r*, receptacle; *c*, carpophore.

Fruit drawing - Iowa State university: EEOB department.
<http://www.eeob.iastate.edu/classes/bio366/terminology/fruit/fruit.htm>

schizocarp A fruit that develops from a single compound ovary (with 2 or > locules), but dehisces into separate 1-seeded units (mericarps), each of which appears to be a distinct fruit.

mericarp - each unit of a schizocarp, each of which looks like a distinct fruit. A characteristic of schizocarps of the Apiaceae is the **carpophore**, a thin, forked extension of the floral axis between adjacent mericarps.

The persistent style of the fruit, called the **beak** or **rostellum**, may also be present.



connate
perfoliate



perfoliate



clasping



sessile

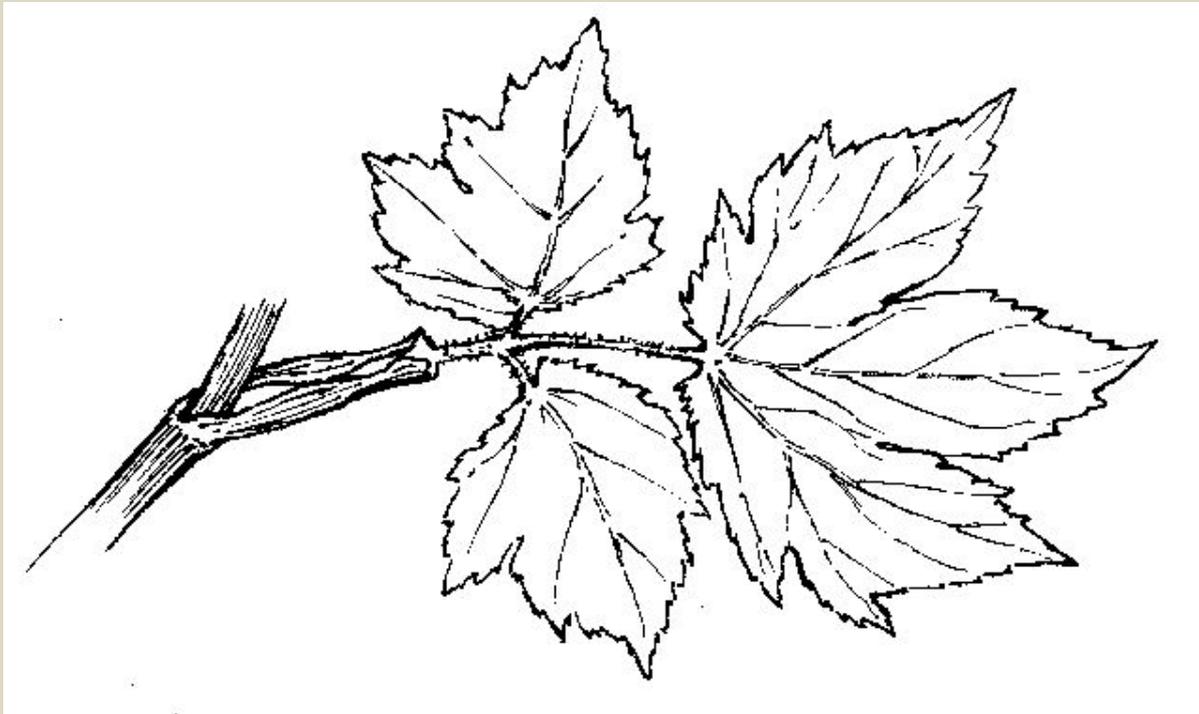


petiolate



sheathing

Northern Ontario Plant Database
http://www.northernontarioflora.ca/leaf_arrangements.cfm



Leaf: *Heracleum maximum*.

By Gordon Morrison. Copyright © 2018 New England Wild Flower Society.

Caraway

Carum carvi L.

Nonnative, biennial
1-4 feet tall.

Unique characteristics:

- 1)Stems are smooth.
- 2)Foliage is compound, very slender leaflets.
- 3)Foliage differs from stem bottom to stem top.
- 4)Look for few (if any) small, linear bracts under umbels.
Bracts and bracteoles often absent.



Caraway images captured in Cook
and Lake Counties along highway 61.

Caraway

Sparse alternate stem foliage is pinnately compound.
Upper stem leaflets are deeply incised and smaller.
Sheaths present at attachments to the **hairless** stem.



Upper petiole surface grooved,
leaflets upturned.



Linear upper leaflets and leafy
appendages at sheath base.



2016-6-16

Caraway

Umbels, flat-topped
with 3-10 umbellets.

Each umbellet holds up to 20
white (pinkish) florets.

Petals are mostly equal in size
and they are notched.

Bloom is typically June - August
2 months, early to late summer.



2016-6-16

Caraway

Fruit or seeds are ribbed.

No hooks or hairs.

About $\frac{1}{10}$ to $\frac{1}{4}$ inch long.

Fragrant when crushed,
foliage and seeds used as
an herb.



2016-6-16

Caraway



Plants prefer full sun, disturbed soils and tolerate drier roadside conditions.

2016-6-16

Queen Anne's Lace

a.k.a. wild carrot

Daucus carota L.

Nonnative, biennial,
2-5 feet tall.

Unique characteristics:

- 1)Stems are typically hairy.
- 2)Often a blood-red floret(s) in the center of white flower head.
- 3)Note - petal size is not consistent. Outer flower petals tend to be larger.
- 4)Significant showy bracts under flower umbels.



Goodhue County,
2009-08-02

Queen Anne's Lace

Hairy, branched stems are hollow and can be 2-5 feet tall.

Predominantly green.



Queen Anne's Lace

Alternate, doubly compound, pinnate, finely divided providing a fern-like appearance.



2009-08-02



2017-06-30

Basal leaf, still cleft, but less finely divided.
Note the grooved, hairy petiole.



Queen Anne's Lace

Several branches may develop each supporting a terminal flower head.

Plants prefer full sun, tolerate partial shade and are found in open fields, along roadsides and woodland edges.



Queen Anne's Lace



Usually, not always, there is a blood-red floret(s) in the center.
Said to be a drop of Queen Anne's blood.

Lake County
2017-09-12

Also, note the size of outer petals.

Queen Anne's Lace

2017-06-30



Umbels are made up of
20-90 umbellets
each with 15-60 florets

Bloom is typically June to September.
2 months, mid summer to early autumn. 17

Queen Anne's Lace



As the seed head dries it pulls into this bird nest like structure.
The individual seeds are spiny, easily caught on fur or clothing.

Queen Anne's Lace

(*Daucus carota*)



Winona County
2017-09-12

Burnet-saxifrage

Pimpinella saxifraga L.

Nonnative, perennial.
2-3 feet tall.

Unique characteristics:

- 1) Roughly hairy stems (very small hairs).
- 2) Uniquely different foliage top to bottom.
- 3) Smooth seeds.



Hennepin County,
2015-07-22

Burnet-saxifrage

Note the fuzzy, ridges of the stem.

Leaflets are deeply incised and decrease in size near the top of the stems.

Look for the clasping leaf sheath.



Hennepin County,
2015-7-22



2017-07-09



Sparse stem foliage is pinnately compound (maybe doubly).
Basal leaves (below) have coarsely
toothed leaflets.
While upper leaves are more incised.



While upper stem leaves (top left) are more incised.
Basal leaves (below right) have coarsely toothed leaflets.

2017-7-9



Burnet-saxifrage



Compound flower umbels,
comprised of 7-20 umbellets.

Each with 10-20 white flowers.

Bracts may be present, but here
note the lack of bracts.

Bloom is typically June to September.
3 months, mid summer.



Hubbard County,
2012-08-09

Burnet-saxifrage

Small seed at $\frac{1}{8}$ inch or less,
faintly ribbed, dark brown color
when mature.



Sun to partial shade often in poor soils
of fields and disturbed roadsides.



Hennepin County,
2018-09-02

Burnet-saxifrage

Hubbard County,
2012-08-09



Japanese hedge parsley

Torilis japonica (Houtt.) DC.

Nonnative, annual
2-6 feet tall.

Unique characteristics:

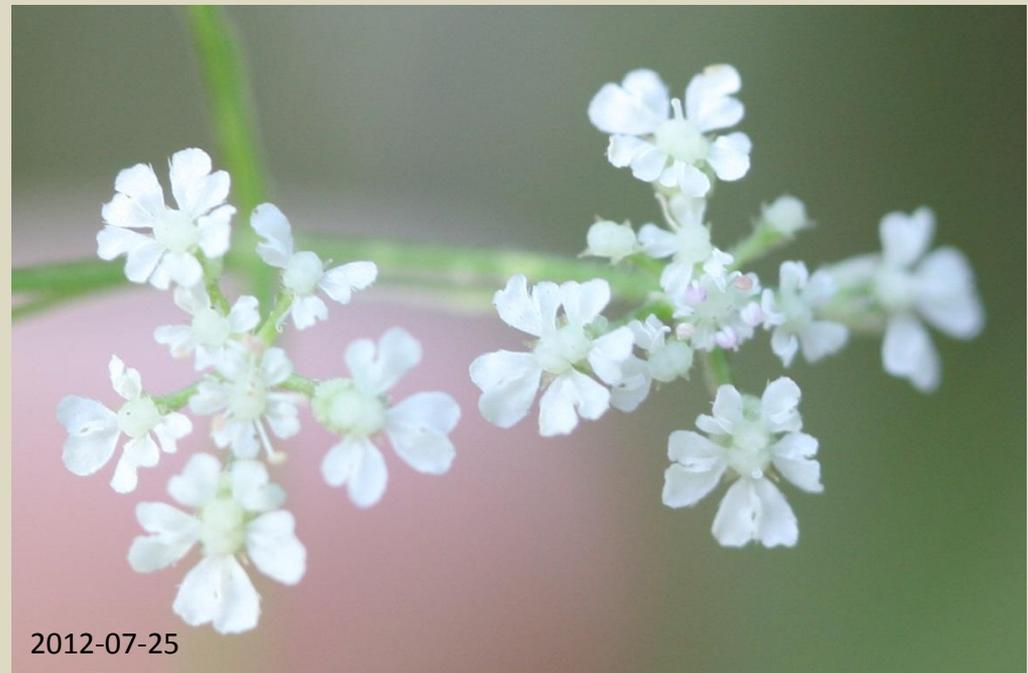
1) Rough hairs along the stem

2) Look for few small, linear
bracts under the umbels.

Here there are 5 bracts visible.
*Similar common hedge parsley
(Torilis arvensis) has no bracts.*

3) Hooked bristles on seed.

*Similar common hedge parsley
(Torilis arvensis) has straight
bristles.*



Japanese hedge parsley

Clasping upper stem
leaves.

Stems covered with
minute appressed hairs.

Stiff, tiny hairs give
stems a rough texture.



Dakota County,
2012-7-25

Japanese hedge parsley

Sparse alternate stem foliage is pinnately compound.
Upper stem leaflets are covered with minute hairs
are deeply incised and smaller.



Dakota County,
2012-7-25

Japanese hedge parsley

Parsley-like basal leaves are similar to upper stem leaves. Pinnately compound, incised, covered with minute appressed hairs. Can be fern-like, deeply incised and smaller.



2012-7-25

Flat-topped umbels with 5-12 umbellets,
each with 10-20 white to pinkish flowers.

Cleft (nearly split) petals are not equally sized.

Bloom is typically June to August.

1 month, early to mid summer.

2012-7-25



Seeds are covered with curved, hooked hairs along ribs.



Similar common hedge parsley (Torilis arvensis) has straight hairs.

Dakota County
2012-7-25

Japanese hedge parsley

Prefers partial shade to full sun,
often found in disturbed sites.



Dakota County,
2012-7-25

Wild Parsnip

Pastinaca sativa L.

Nonnative, biennial
up to 5 feet tall.

Unique characteristics:

- 1) Stem is strongly grooved.
- 2) Yellow flowers - petals curl tightly.
- 3) Seed is flattened.



Early spring seedlings,
 $\frac{1}{2}$ " - $\frac{3}{4}$ " leaves, are stalked, toothed, and heart-shaped.

2012-05-03

Wild Parsnip

Basal rosette leaves
up to 6 inches long, compound,
pinnate, 5-15 toothed leaflets.



Cass County, 2017-9-20



Goodhue County, 2012-5-6

Fillmore Cty, 2012-9-17



Flower stalk is up to 5 feet.
Stem is grooved and hollow.
Alternate, compound leaves,
with 3-5 pinnate leaflets.



Houston Cty,
2017-10-11

Wild Parsnip

Umbels branch into
15-25 umbellets
each with 12-35 flowers.

Bright yellow petals
remain curled.

Bloom Time: June thru July
1-2 months,
late spring to mid summer.



2012-09-13



2012-09-17



2012-9-13

Immature green color,
flattened, oval
and with ridges.

Wild Parsnip



As the seed dries it splits (2-parted), individual seeds are oval with ridges.
Seed matures to a brown color, with darker resin canals.

Plants prefer full sun with dry to moist soils like disturbed roadsides.

Carrot Family:

Part 2 : Larger Family Members



Wild chervil,
Hennepin County,
2017-07-15



Poison hemlock,
Illinois roadside,
2014-6-6



Giant hogweed,
The Poison Garden
UK website



Water hemlock,
Anoka County,
2015-7-26



Cow parsnip,
Saint Louis County,
2014-7-15

Apiaceae : Part 2

<u>Genus species</u>	Native Flower		Life		<u>Cycle</u>
	<u>Common Name</u>	<u>or Exotic</u>	<u>Color</u>	<u>Plant Stature</u>	
<i>Conium maculatum</i> :	Poison Hemlock	Exotic ++	white	large	Biennial 42
<i>Anthriscus sylvestris</i> :	Wild Chervil	Exotic	white	medium, robust	Biennial 50
<i>Heracleum mantegazzianum</i> :	Giant hogweed	Exotic ++	white	very large	Biennial 57
<i>Heracleum lanatum</i> :	Cow Parsnip	Native	white	large, robust	Perennial 64

++ State Listed Noxious Weed All images: Dave Hanson
 Except Giant Hogweed images

Poison hemlock

Nonnative,
biennial plant,
3 -7 feet tall.

Unique Characteristics:

- 1) Pinnate compound leaves
2 or 3 times.
- 2) Leaf shape is triangular -
Petiole is round.
- 3) Stems are smooth, covered by a
whitish wax (easily rubs off), and
mottled or spotted purple.





Triple compound leaf,
leaflets are cleft, no hair.

2014-6-6 43



Stems are mottled or spotted with purple and veins give the appearance of vertical ridges.

2014-6-6

44

Poison hemlock

Far right: stems may be mostly green.

2nd image from right:

Foreground - smooth, poison hemlock.

Background - grooved, wild parsnip.

Below: Base of petioles are covered by sheaths that wrap the hollow stem (clasping).



Fillmore, Cty., 2016-5-11



Olmsted Cty., 2017-6-19



Illinois roadside,
teasel in the background
2014-06-06



Look for bracts.

2-5 inch wide compound umbels of
8-16 umbellets each with 12-25
white flowers.



Poison hemlock

Seeds are about 1/8 inch,
oval to roughly egg shape with
5 broken or wavy ribs.



Winona County
2016-7-28

Poison hemlock



US 52, Goodhue County
2017-6-30

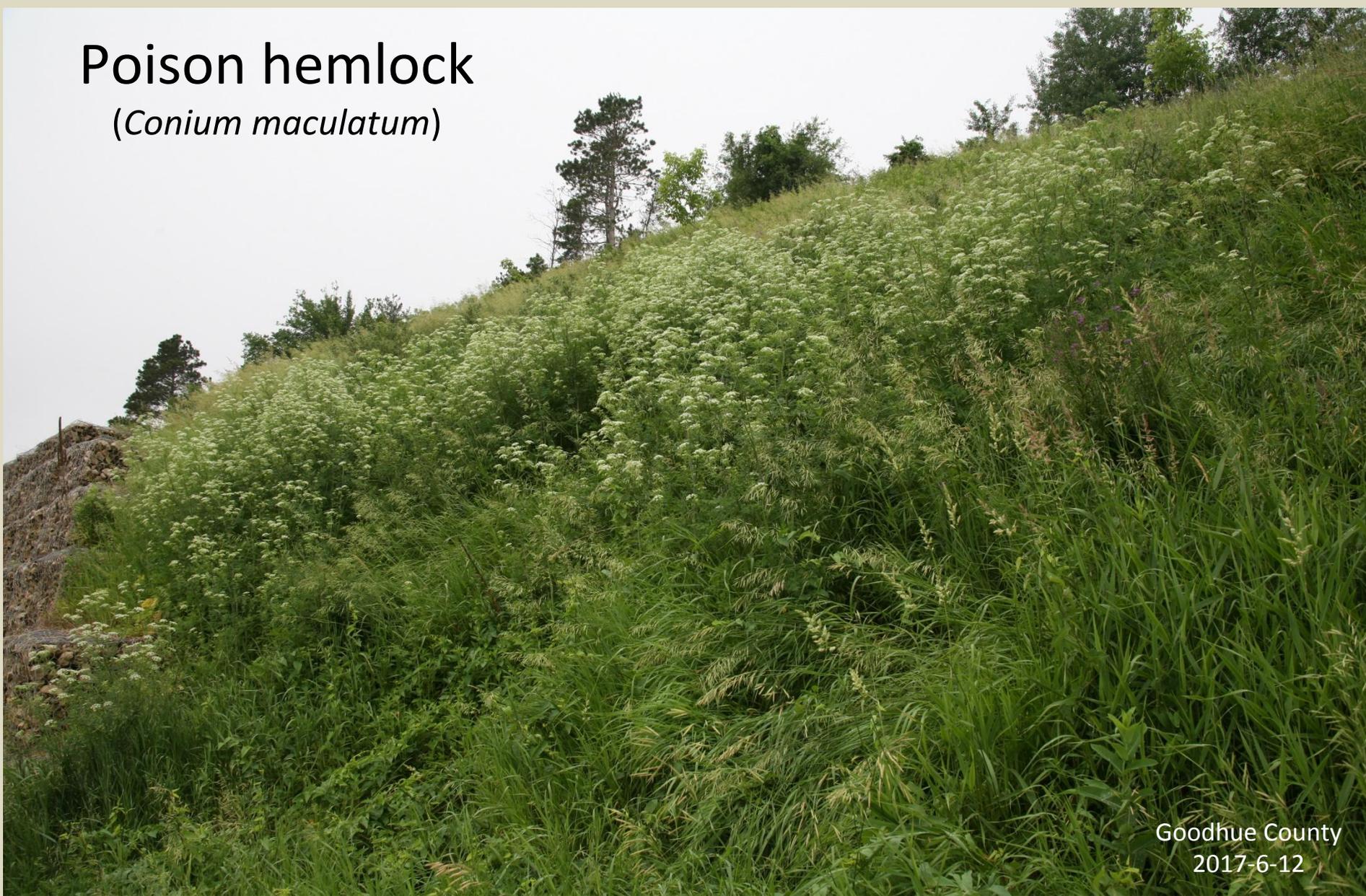
Bloom is typically June - August.
2 months, late spring - mid summer.

Plants prefer full sun to part shade
with fertile, moist soils.

Field edge infestations of poison hemlock in SE MN.

Poison hemlock

(*Conium maculatum*)



Goodhue County
2017-6-12

Wild Chervil

a.k.a. cow parsley

Nonnative,
biennial

2-5' tall

Unique Characteristics:

-) Hair lined stems.
-) Petioles are grooved, hairy.
-) Beaked, black seed is cylindrical.

Reported as edible.



Anthriscus sylvestris (L.) Hoffm.

All wild chervil images from a roadside,
woodland edge in Hennepin County.



Wild Chervil

Stems tend to be green, strong, hollow and ribs very apparent.

Lower stems have short hairs (especially along ribs) and at nodes hairs may be a little longer.

Upper stems may be hairless and smooth.

Note the clasping sheath at the base of the leaf petiole.



Wild Chervil

Foliage has strong similarities to poison hemlock. But, no odor when crushed.

Veins more prominent than poison hemlock; thus, leaves have more texture.

Bottom image: grooved, hairless petioles.



2017-07-15



Wild Chervil

Wild chervil has prominent veins above and hairs on leaflet margins and undersides.

In contrast, Poison hemlock's leaflet surface is smooth (hairless) top and bottom.



2017-07-15



Wild Chervil

Bloom time May-June.
mid spring to early summer.

Flowers are flat-topped, compound umbels
made up of 4-15 umbellets each with 3-10
white, 5-parted, florets.

Typically, no bracts at base of umbels.
Bracts present under umbellets.



Wild Chervil

Seed matures to shiny black.

2-parted, beaked (styles persist),
3/8" long, slightly ribbed.

Bracts may not persist.



Wild Chervil

(*Anthriscus sylvestris*)

Hennepin County
2018-06-01



Plants prefer partial shade to full sun,
woodland edges with moist soils are common.

Giant hogweed

Fashionable country gentlemen had some cultivated wild gardens,
In which they innocently planted the Giant Hogweed throughout the land.
Botanical creature stirs, seeking revenge.
Royal beast did not forget.
Soon they escaped, spreading their seed,
Preparing for an onslaught, threatening the human race.



Long ago in the Russian hills,
A Victorian explorer found the regal Hogweed by a marsh,
He captured it and brought it home.
Botanical creature stirs, seeking revenge.
Royal beast did not forget.
He came home to London,
And made a present of the Hogweed to the Royal Gardens at Kew.

http://www.studiogblog.com/wp-content/uploads/2013/07/Return_Of_The_Giant_Hogweed_by_HappyRussia.jpg

The Return of the Giant Hogweed

Lyrics by Peter Gabriel

Turn and run!
Nothing can stop them,
Around every river and canal their power is growing.
Stamp them out!
We must destroy them,
They infiltrate each city with their thick dark warning odour.

They are invincible,
They seem immune to all our herbicidal battering.

Long ago in the Russian hills,
A Victorian explorer found the regal Hogweed by a marsh,
He captured it and brought it home.
Botanical creature stirs, seeking revenge.
Royal beast did not forget.
He came home to London,
And made a present of the Hogweed to the Royal Gardens at Kew.

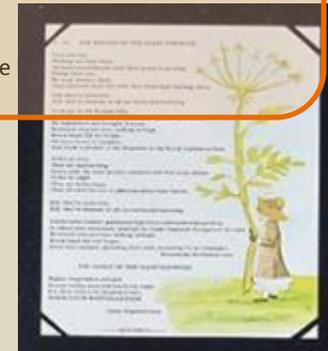
Waste no time!
They are approaching.
Hurry now, we must protect ourselves and find some shelter
Strike by night!
They are defenceless.
They all need the sun to photosensitize their venom.

Still they're invincible,
Still they're immune to all our herbicidal battering.

Fashionable country gentlemen had some cultivated wild gardens,
In which they innocently planted the Giant Hogweed throughout the land.
Botanical creature stirs, seeking revenge.
Royal beast did not forget.
Soon they escaped, spreading their seed,
Preparing for an onslaught, threatening the

The Dance of the Giant Hogweed

Mighty Hogweed is avenged.
Human bodies soon will know anger.
Kill them with your Hogweed hairs
HERACLEUM MANTEGAZZIANI
Giant Hogweed lives



<http://www.vinylrecords>

Giant hogweed

Heracleum mantegazzianum Sommier & Levier



Nonnative, herbaceous, biennial
10-15 feet tall (potentially 20 feet)

Unique Characteristics:

- 1) Stems are large diameter, mottled purple with stiff bristly hairs.
- 2) Foliage is 3-parted, each part is deeply divided.
- 3) Large compound umbels, up to 150 umbellets.



Photos: Invasive Species Council of British Columbia

Giant hogweed



Stems - hollow and large diameter (up to 2"),
mottled purple. Stalks 10-15 feet tall.

Stem images: Leslie J. Mehrhoff, University of Connecticut,
Bugwood



closeup of a giant hogweed stem 2 of 4



giant hogweed stems 4 of 4

Additional stem images: East Multnomah Soil and Water
Conservation District (EMSWCD) Northwest Oregon.

Giant hogweed



Leaves – 3-parted compound, alternate, up to 5 feet across.

Foliage image: Thomas B. Denholm, New Jersey Dept. of Ag., Bugwood.org
Infestation image - basal foliage: USDA, Brian Kooer of the USDA and Matt Bushman study
a patch of hogweed found in a backyard planter in Wakefield in 2004.

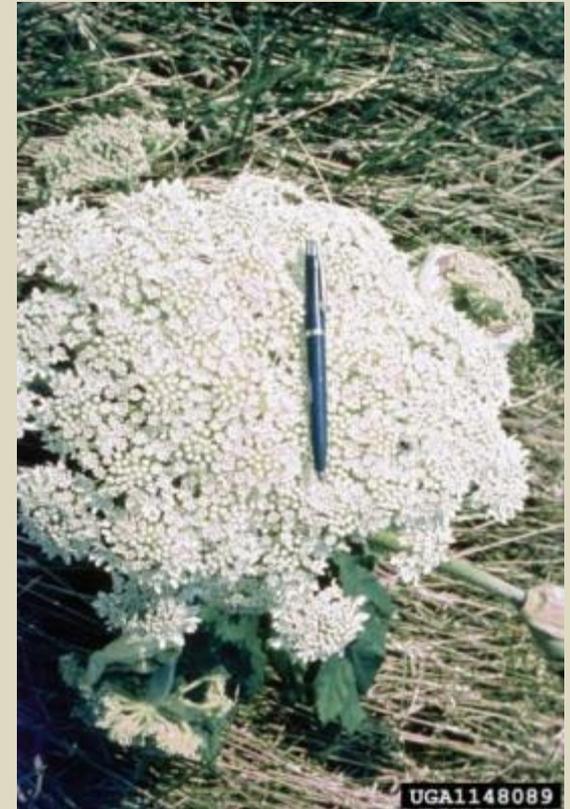
Giant hogweed



Compound umbel with potentially 50-150 rays.
Approximately 1 foot across.

Many small flowers, white and creamy white.

Bloom time is June into July.



Photos: Left - Leslie J. Mehrhoff,
University of Connecticut

Right - USDA APHIS PPQ Archive

Bugwood.org

Giant hogweed



Seed - large, flattened
with brown resin canals.
10s of thousands of seeds/plant.

Prefers partial to full sun and moist soils of riparian and woodland areas.

Found in residential landscapes (often abandoned), fields,
and along river and road corridors.

Winter seed structure: Randy Westbrooks, U.S. Geological Survey,
Seed image: USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org

Cow parsnip

Heracleum maximum W. Bartrum.

Synonym: *Heracleum lanatum* Michx.



Houston County,
2012-05-30

Cow parsnip

Native, perennial
4-10 feet.

Due to its size, often
reported as
giant hogweed.

Unique Characteristics:

- 1)The stems are stout,
ridged, fuzzy and hollow.
- 2)Compound foliage has 3
parts. Can be large.
- 3)Large, loosely clasping leaf
sheaths.



Cow parsnip

Saint louis County,
2014-7-15

Foliage smaller on upper stem.

Lower leaves up to 18 inches
across and long.

Alternate, 3-parted, pinnately
compound leaf.

Leaflets are coarsely
toothed, divided.

Terminal leaflets
strongly 3 lobed.



Cow parsnip

Carlton County,
2015-7-31



Basal foliage of a first year, non-flowering plant.

Cow parsnip

Hennepin County,
2018-06-01



Basal foliage of a second year, flowering plant.



Hennepin County,
2018-07-02

Cow parsnip

Saint Louis County,
2014-7-15

Four to eight inch flat-topped compound umbels of white flowers.

Oversized, notched petals at the outer edge of the umbellets.

Umbels have 8-30 rays, each ray is terminated by an umbellet with 8-30 florets.

Bloom is typically May to July.
1 month, late spring to mid summer.



Cow parsnip



Hennepin County,
2018-07-02

Mature seed is oval, flattened, and up to $\frac{1}{4}$ to $\frac{1}{3}$ inch tall.

Cook County, 2014-9-22

Cow parsnip

Foreground: White flowers,
flat umbels of cow parsnip.

Plants are found in part shade
to full sun and moist soils.
Stream banks, woodlands, and
open wet fields as well as
roadside ditches.

Background: Greenish flowers,
rounded umbels of
purple-stemmed angelica.



Questions ?

Comments ?

Poison hemlock and wild parsnip

Olmsted County,
2017-06-19

Dave Hanson, MnDOT
N.R. Forestry Program Coordinator
email: David.L.Hanson@state.mn.us

