



2019 Winter Webinar Series

Webinar 4: Hazardous Plants (Giant Hogweed, Wild Parsnip, Poison Ivy)

Vicki Simkovic, Ontario Invasive Plant Council

Wednesday, March 6, 2019



Check out our upcoming webinars!

OIPC 2019 Winter Webinar Series		
Date	Topic	Presenter
Wed Feb 6	DSV biocontrol with <i>Hypena opulenta</i> in Ontario, an update	Kathleen Ryan, Silv-Econ Ltd
Wed Feb 20	Management of the largest DSV infestation in the Credit River Watershed: Far from ideal, but we're not giving up!	Freyja Whitten, Credit Valley Conservation
Wed Feb 27	Collaborating to Restore Coastal Wetlands in the Long Point Region	Eric Cleland, Nature Conservancy of Canada
Wed Mar 6	Hazardous Plants (Giant Hogweed, Wild Parsnip)	Vicki Simkovic, Ontario Invasive Plant Council
Wed Mar 13	Out with the bad, in the with good: invasive species control and restoration on Pelee Island	Jill Crosthwaite, Nature Conservancy of Canada
Wed Mar 20	Overview of the CFIA's Invasive Plant Program	Diana Mooij, Canadian Food Inspection Agency
Wed Mar 27	Great Lakes Wide Initiatives: Great Lakes Phragmites Collaborative and Adaptive Management Framework	Elaine Ferrier, Great Lakes Commission
Wed April 10	Toronto Ravine Revitalization Study: 1977-2017	Sandy Smith, University of Toronto



Follow along with
#OIPCwebinar

Registration & more info available at:
www.ontarioinvasiveplants.ca/webinars



Outline

- **Photophytoprodermatitis**

SUNBURN

- *Giant Hogweed, Wild Parsnip, Cow Parsnip*

- Background (Habitat, impacts, distribution, life cycle)
- Identification & Look-alikes
- Reporting Tools (EDDMapS)
- First AID
- Control

- **Uroshiol-induced Contact Dermatitis**

IMMUNE

- *Poison Ivy*

- Background
- Identification & Look-alikes
- First AID

Phytophototoxic Plants:



Giant Hogweed



Wild Parsnip



Cow Parsnip

NATIVE

Phytophototoxic Plants:

Pickering boy, 11 burned by toxic wild parsnip

How to spot, avoid and deal with burning sap of wild parsnip

NEWS Jul 23, 2015 by [Jennifer O'Meara](#)  Oshawa This Week

LIVING 07/14/2018 21:38 EDT | Updated 07/17/2018 11:01 EDT

Teen Covered In Severe Burns After Tangle With Hellish Giant Hogweed

The invasive, toxic plant inconveniently looks like Queen Anne's lace - but giant.

 By Hilary Hanson, HuffPost US


'Very nasty' giant hogweed plant spreading in Ontario causes burns, blindness

Towering plant looks like cow parsnip, but clear sap can cause huge water blisters — almost like boils

NEWS Aug 09, 2017 by [Aly Thomson](#) The Canadian Press

HEALTH July 19, 2018 3:33 pm

Woman suffers horrific burns, blisters after touching invasive wild parsnip plant

 By [Katie Dangerfield](#)
National Online Journalist, Breaking News Global News

ENVIRONMENT August 11, 2017 8:53 am

Updated: August 11, 2017 12:31 pm

Giant hogweed is spreading across Ontario

Global News  RADIO By [Jaclyn Carbone](#) AM980
980 CFPL

VIDEO

Why a giant hogweed invasion is only a matter of time for London



Right now 10 to 12 plants pop up each spring with 90 per cent of reports being imposters





Colin Butler · CBC News · Posted: Jul 12, 2018 4:00 AM ET | Last Updated: July 12, 2018

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CANADA June 22, 2018 2:17 pm

Updated: June 22, 2018 2:24 pm

Canadians urged to watch out for invasive hogweed plant that burns, blinds

By Staff The Canadian Press

Giant Hogweed look-a-like near Harrow prompts info on identifying dangerous invader

The giant hogweed scare in Essex County is over for now.

SHARON HILL, WINDSOR STAR Updated: June 9, 2015

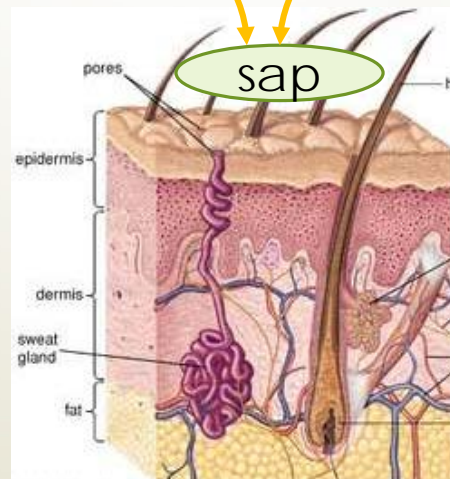
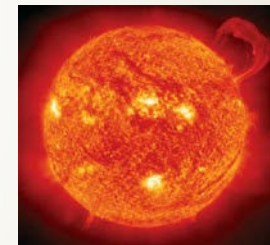
Phytophotodermatitis: What is it?

- Reaction of sunlight (UV-light) to the skin, in previous contact with phytotoxic compounds contained in the plant sap of specific plant species.
- Phytotoxic compounds (furanocoumarins, psoralins) activated by UV-light, cause DNA damage to human skin cells
 - Potentially serious skin damage

phytotoxic plant sap



the sun



DNA

Phytophotodermatitis: What is it?

- Produced by variety of plants as a defense mechanism against predators/herbivores
 - **Apiaceae** (Parsley fx): **Giant Hogweed, Wild Parsnip, Cow Parsnip, Parsley, Angelica, Carrot, Dill, Celery leaves**
 - **Rutaceae** (Lime fx): Citrus fruit (lemons, limes)



M Mioduszewski CMAJ 2015; 187:756

“Margarita” or “Mexican Beer” photodermatitis

Phytophototoxic Plants:



Giant Hogweed



Wild Parsnip



Cow Parsnip

Phytophotodermatitis: Symptoms



- **Initially resembles sunburn:** Burning sensation within 24 hrs
- After ~ 48 hrs, lesions are red, irregularly-shaped, vesiculation, tender/warm to touch, sometimes itchy (partial – full thickness burn)
- Long-term (mths – yrs) hyperpigmentation of skin (hypo rare cases)

Painful >> Itchy

Phytophotodermatitis: Symptoms



- ▶ Non-allergic dermatitis; don't need to be sensitized
- ▶ Fair skinned >> darker skin (melanin protective)
- ▶ High humidity increases percutaneous absorption of phytotoxins

Wild Parsnip Burn:



- ▶ *"I developed a burn from resting a parsnip predator handle on my arm. Someone neglected to scrape off soil on the blade, so I was scraping it off in our garage. I walked into the office and noticed irritation on my arm within 10 minutes. Luckily, I had a sink, Tecnu scrub and Dawn dish soap at my disposal and washed it thoroughly. I still ended up with a red angry burn that got progressively worse over the next 10 days and took over a month to clear up. I used a lot of aloe on it."*
- ▶ *Can get burn from handling contaminated equipment*

Giant Hogweed: History/Background

- *Heracleum mantegazzianum*
- Native to Caucasus Mountains in Southwest Asia
- First record Ontario in 1949, likely introduced as an ornamental plant & spread via waterways
- Wide range of negative impacts to society and the environment
 - Human Health, Pets, Livestock
 - Outcompetes native plants
 - Degrades riparian habitat
- Noxious Weed provincially & federally: Weed Control Act (f) and Weed Seeds Order (p)



Syria

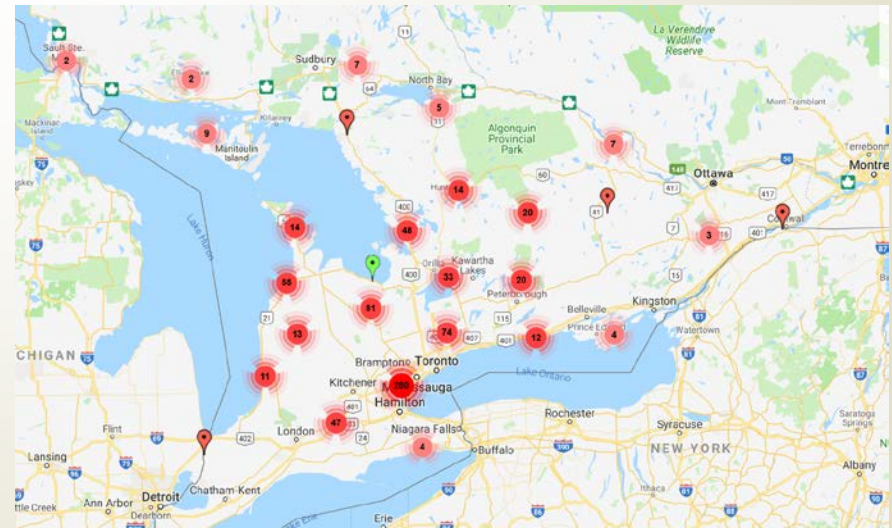
Iraq

Giant Hogweed: Description

- ▶ Full sun
- ▶ Riparian areas
- ▶ Wet ditches
- ▶ Transportation corridors
- ▶ Forest edges
- ▶ Meadows

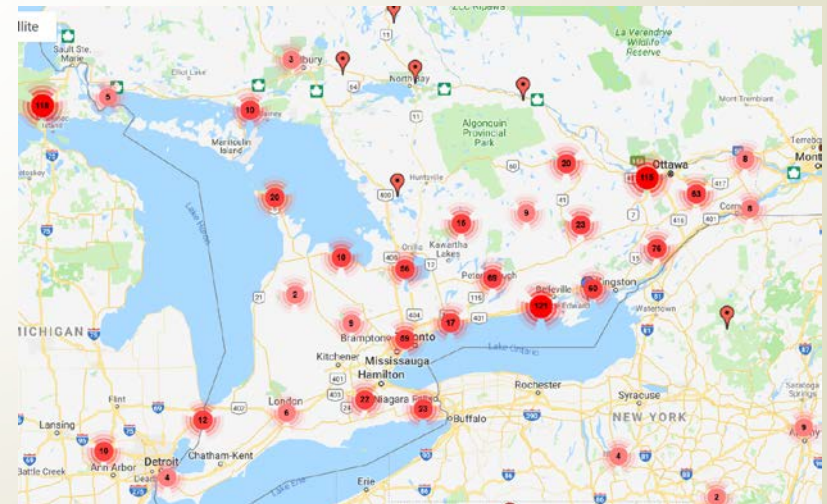


Sixteen Mile Creek, Oakville Ontario. Photo via Invading Species Awareness Program



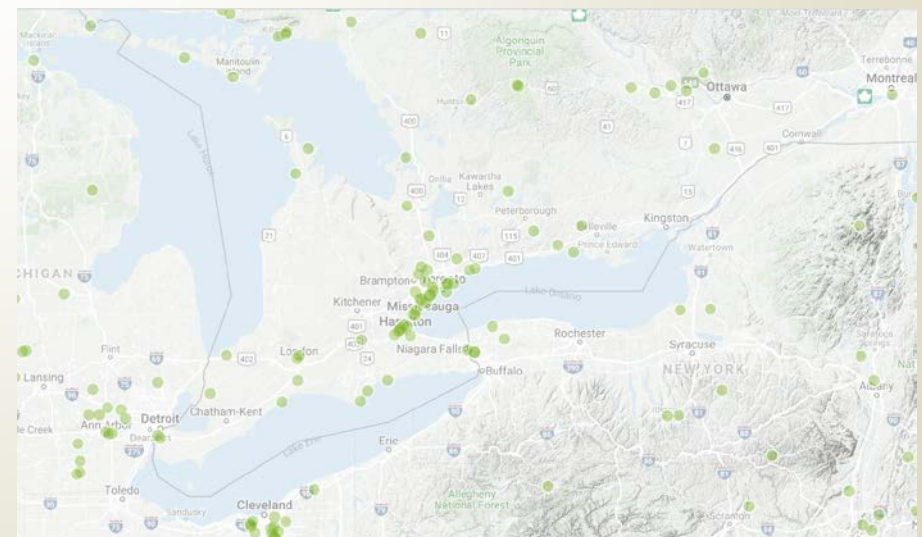
Wild Parsnip: History/Background

- ▶ *Pastinaca sativa*
- ▶ Native to Europe and Asia
- ▶ Grown as root crop for centuries, brought to North America by European settlers
- ▶ Cultivated: grown all provinces, research for medicinal and other uses
- ▶ **Wild:** escaped cultivars
 - ▶ Risk to field workers, not a valuable forage crop (inhibits weight gain and fertility in livestock)
 - ▶ Disturbed areas, field/meadows
 - ▶ Invasive species
 - ▶ Noxious Weed provincially & federally: Weed Control Act (WCA) and Weed Seeds Order (WSO)



Cow Parsnip: History/Background

- *Heracleum maximum*
- Native to Ontario
- Meadows, edges of moist woods
- Leaf & bud stalks (carefully peeled) used as root vegetable by some Indigenous Peoples.
- Most similar in appearance to GH; frequently confused



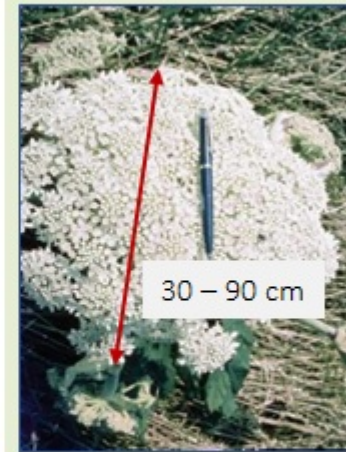
Height

Stems

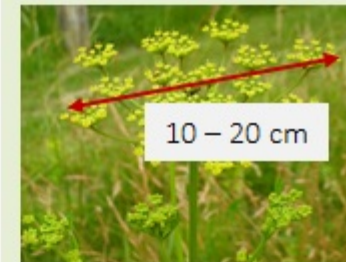
Flowers

Leaves

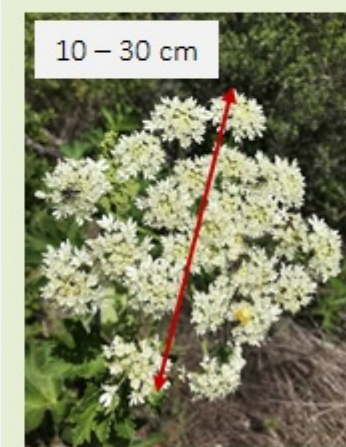
Giant Hogweed



Wild Parsnip



Cow Parsnip



Description: Height



- **Giant Hogweed:**
 - 3 – 5.5 m

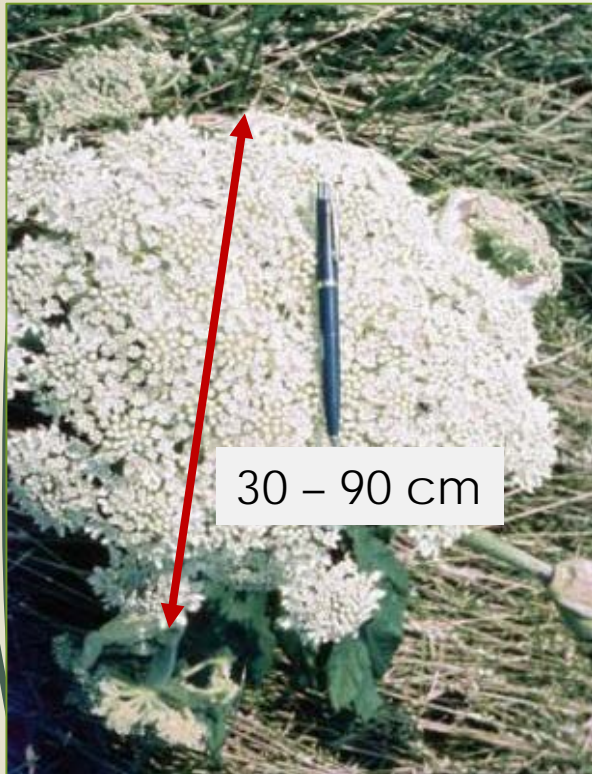


- **Wild Parsnip:**
 - 0.5 – 1.5 m



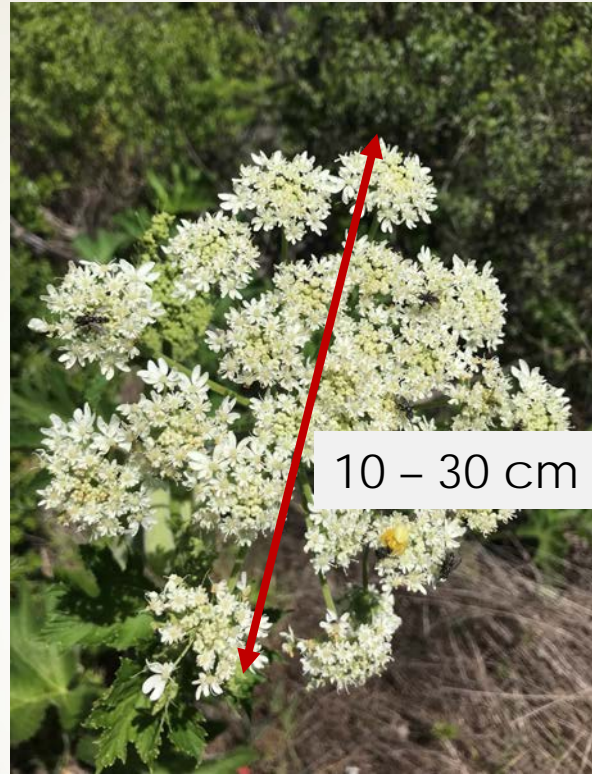
- **Cow Parsnip:**
 - 1 – 2.5 m

Flowers



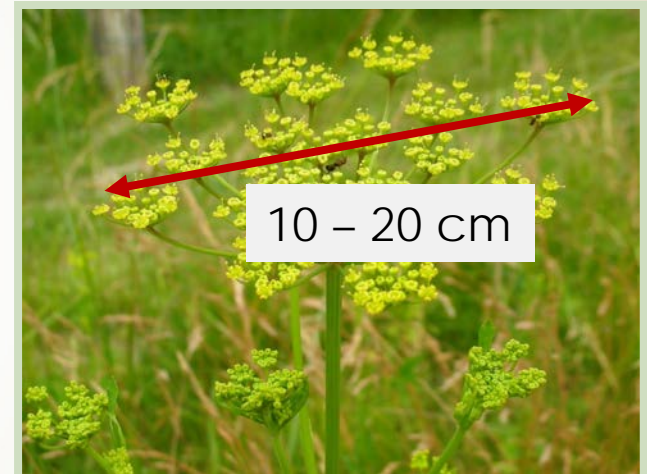
Giant Hogweed

- Large, white
- 50 - 150 rays/umbel
- Umbrella-shaped



Cow Parsnip

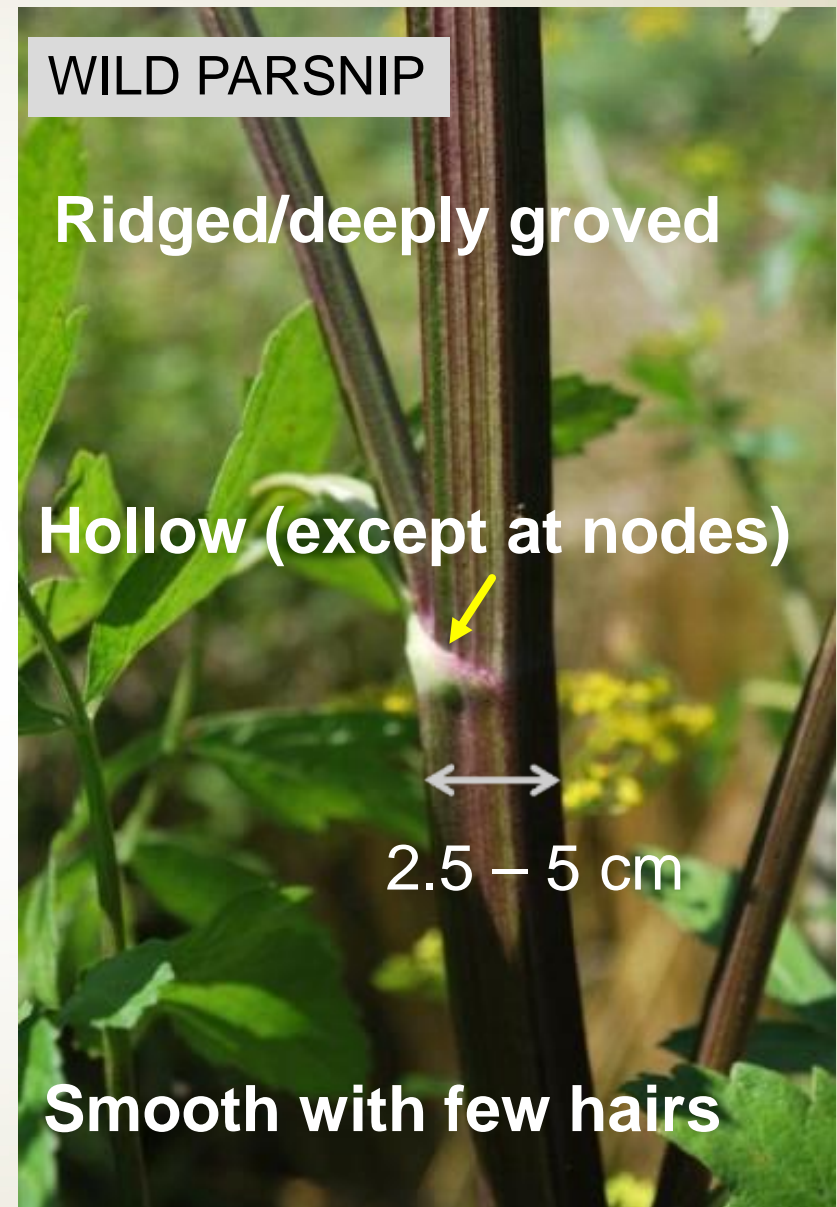
- White
- 15 - 30 rays/umbel



Wild Parsnip

- Yellow

Stems



► When broken, emits clear water sap

Stems



▶ Single stem



▶ Often several stems

Leaves: Giant Hogweed



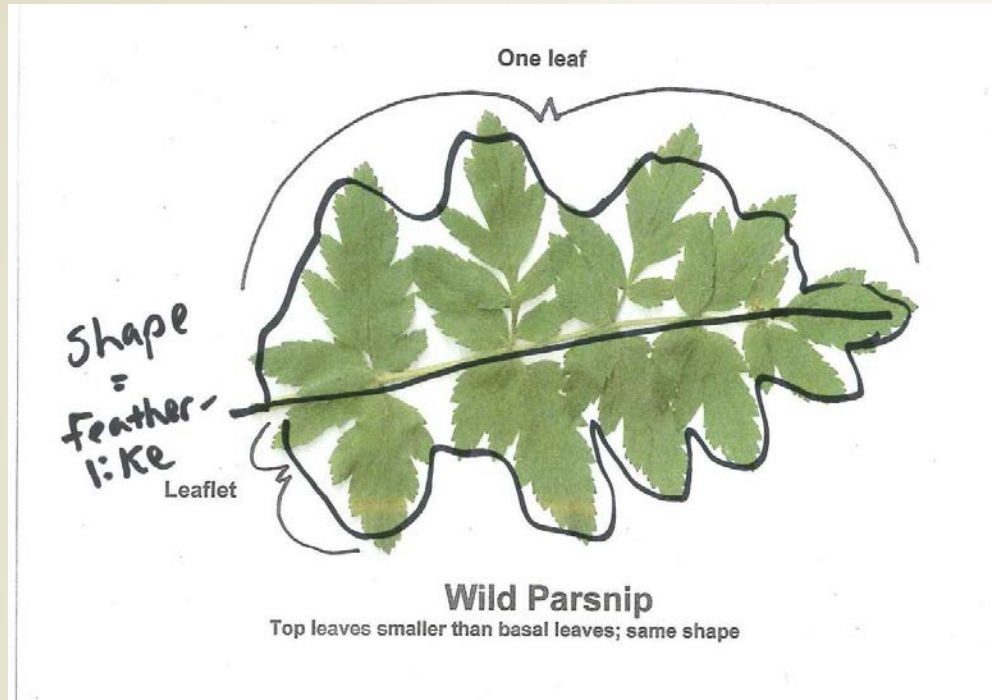
- ▶ Prominently spiked edges (serrated), pronounced jagged appearance)
- ▶ Each leaf divided into 3 parts, those parts again divided into 3
- ▶ Up to 1.5 m (5 ft) long
- ▶ Very short or no petioles (leaflet is directly attached to the stalk)

Leaves: Cow Parsnip



- ▶ Palmately lobed (leaves have lobes shaped like hand with fingers)
- ▶ Leaf blade separated from main stem by longer petiole

Leaves: Wild Parsnip



- Distinct saw-toothed edges, shaped like a mitten or feather-like
- Pinnately compound (leaves have leaflets that grow across from each other along the stem), 15 cm across (GH: 1.5 m)
- 2-5 pairs opposite leaflets, one diamond-shaped terminal leaflet
- Petiole on lower leaves is longer than that on leaves closer to the top of the stem

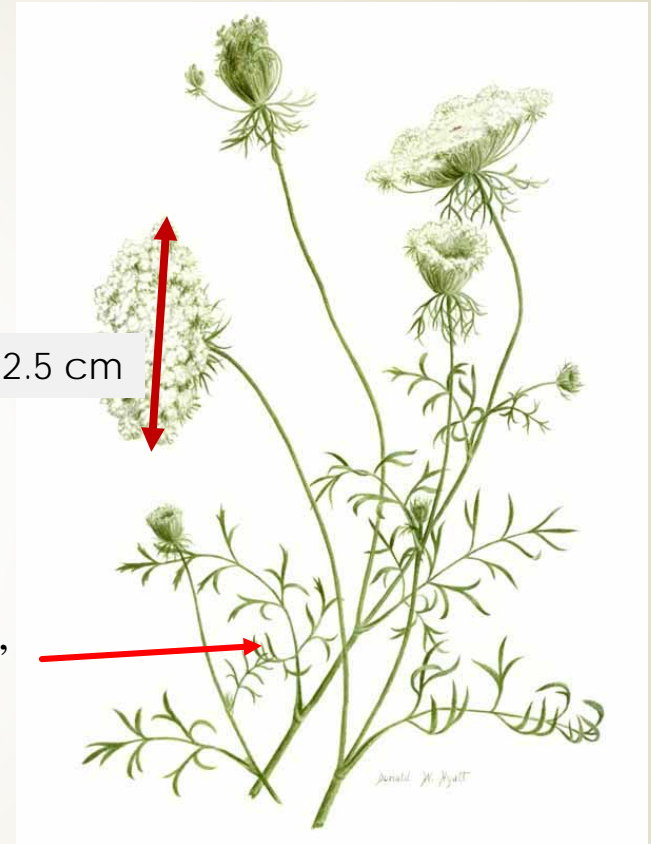
Other "Look-alikes": Queen Anne's Lace



*Single purple flower in center of umbel

7.5 – 12.5 cm

*Finely cut, fern-like leaves



- ▶ Height 0.3 – 1.5 m (about the same size as Wild Parsnip)
- ▶ Fields, meadows, waste areas, roadsides. Alien/non-native.
- ▶ Not phototoxic; carrot smell when crushed (ancestor of garden carrot)

Other "Look-alikes": Angelica



Purple or purple-blotched stem;
smooth (*no hairs)



Compound leaves

- Height 1.2 – 2.1 m
- Green-white, rounded (globe-like) flower umbels, 7-25 cm wide
- Not phytotoxic; native



**BABY GIANT
HOGWEED
(Poisonous)**

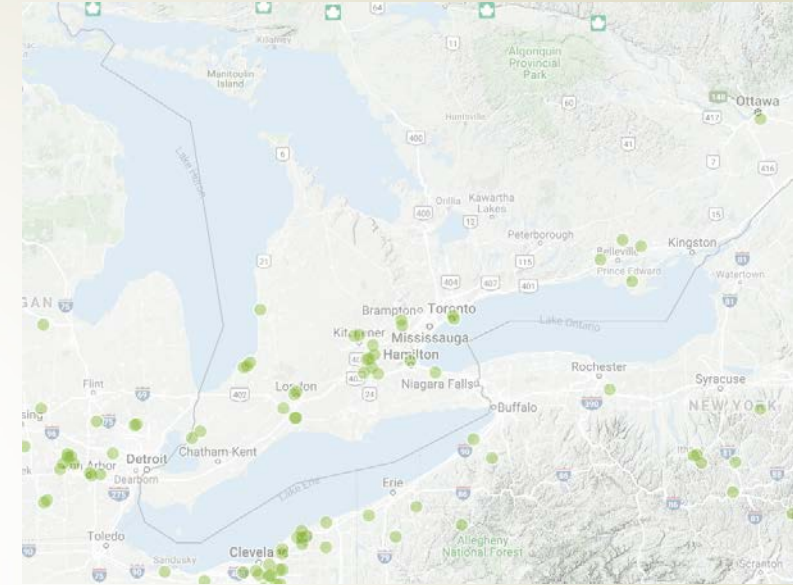
**BABY
ANGELLICA (not
poisonous)**

John Kemp

Other "Look-alikes": Golden Alexanders



Mathis Natvik



- ▶ Leaves 2-3x divided, leaflets finely toothed
- ▶ 30-90 cm
- ▶ Meadows, shores, open woods
- ▶ Native

Other “Look-alikes”: Wild Chervil



- ▶ Tripinnate, subdivided leaves
- ▶ Noxious Weed (Weed Seeds Act (f)); non-native invasive

Reporting Tools:

EDD MapS Ontario

Early Detection & Distribution Mapping System



Reporting with EDDMapS

- o Easy field reporting
- o Generate large quantities of data
 - Road surveys
 - Citizen scientists



www.invadingspecies.com • Invading Species Hotline 1-800-563-7711



➤ Contact the **Invading Species Hotline: 1-800-563-7711**

Control: Health & Safety Considerations

Avoid exposure to sap: Always wear protective clothing & eye protection, regardless of management option.

- ▶ *Phototoxins vary in concentration:*
 - ▶ GH: Fruit >> Leaf >> Stem
 - ▶ GH: 3 seasonal peaks:
 - ▶ June (max), August (Interm), Nov (Min)
 - ▶ Wild Parsnip >> Giant Hogweed

Protective Clothing includes:

- ▶ Eye protection (goggles or face shield)
- ▶ Waterproof gloves & rubber boots
- ▶ Long sleeve shirt & pants
- ▶ Ideal to wear disposable "spray suit" over clothing.
- ▶ Tape coveralls at wrist and ankles to minimize potential contact with skin



Control: Health & Safety Considerations

Removal of *Protective Clothing (Be Careful!)*:

- ▶ Careful don't come into contact with sap
- ▶ 1. Wash rubber gloves with soap & water
- ▶ 2. Remove spray suit
- ▶ 3. Remove eye wear
- ▶ 4. Non-disposable clothing in laundry
- ▶ 5. Wash yourself with soap & water

Wash equipment in contact with sap

First AID: Best Safety Practices...

If you come into contact with sap:

- Wash area immediately with **cool soapy water** (**use liquid dishwashing detergent*)
- **DO NOT** rub the skin or scrub the area
- Remove spray suit & protective clothing; wash gloves
- **Avoid** exposure to **sunlight** for at least 48 hours
- **Apply sunscreen** in area of burn
- Cover the area using a **cool, damp cloth**
 - *Humidity, sweating, warmth opens pores >> absorption*
- Seek **medical advice** (*treatment: chemical burns*) if symptoms (*i.e. burn*) appears within 48 hrs
- If direct exposure to eye, immediately flush with water & seek medical attention

Giant Hogweed: Life Cycle & Control



Basal rosette: early spring (late April – early May)

Giant Hogweed: Life Cycle & Control

Small Populations (≤ 400 plants) or ESAs (no herbicide)

► **DIGGING: Rosette or Flowering Stage**

- *Rosette (most ideal):*
- *Dig out entire root early spring when easier*
- **Flowering (less ideal – higher risk):**
- *Stage 1: Remove flower head*
- *Stage 2: Cut stalk to below eye level*
- *Stage 3: Dig entire root out*



Large Populations (≥ 400 plants)

► **CHEMICAL**

- *Systemic herbicide*
- *Foliar (spring only), wick, stem, wipe*

Giant Hogweed: Life Cycle & Control

Large Populations (≥ 400 plants)

► CHEMICAL:

- Follow all regulations including Ontario Pesticides Act & Ontario Regulations 63/09
- Systemic herbicide: early spring or late fall
- Need numerous applications
- Foliar (spring only), wick, stem, wipe
- Cover in mulch for 10-14 days after application; repeat annually

Table 2: Chemical control techniques recommended by experts for giant hogweed.

Chemical Control Method	Chemical and Concentration	Timing and Application	Details
FOLIAR	Glyphosate (1 - 5% solution*).	Late April /early May. Follow with summer application for missed plants or those that may have re-grown.	Not effective if a plant is flowering.
	Tridopyr (3% solution**).	Late April /early May. Follow with summer application for missed plants or those that may have re-grown.	Must have growing leaves present.
WICK OR WIPE	Glyphosate (22% solution*).	Spring to fall.	Must have growing leaves present.
STEM INJECTION	Glyphosate (5 ml of 5% solution*).	Late May /early June or when flowering. Insert injection gun at about chest height but below a node on the stem.	For plants 1-2m tall or plants that have bolted and are flowering.

*Based on a product containing 540 g/l of chemical. **Based on a product containing 755 g/l of chemical. Please read the label in full before use to ensure that these recommendations meet the requirements of the herbicide you have selected.

Giant Hogweed: Life Cycle & Control

Not Recommended:

- *Mowing; avoid motorized tools (whipper snipper, mower)*
- *Flower removal*

Wild Parsnip:



WP-OVRT: Martin St North

Wild Parsnip: Life Cycle & Control

GOAL: Reduce seed production

Small Populations (≤ 400 plants) or ESAs (no herbicide)

► **DIGGING**

- *Hoe/Shovel: sever taproot 3-5 cm below the soil line*

Large Populations (≥ 400 plants)

► **MOWING**

- *Proper timing is essential*
- *As soon as flowering stalks appear, and before sets seed*
- *Repeat over several seasons, and multiple times/season*
- *Dry conditions (NOT under high humidity)*

Wild Parsnip: Life Cycle & Control

Large Populations (≥ 400 plants)

► CHEMICAL

- *Early spring – late fall, before flowers (if in flower= too late)*
- *Foliar, wick/wicker*
- *Cover in mulch after treatment to reduce germination*

Table 2: Chemical control techniques recommended by experts for wild parsnip.

Chemical Control Method	Chemical and Concentration	Timing and Application	Details
FOLIAR	Glyphosate (1 - 5% solution*).	Late April /early May. Follow with summer application for missed plants or those that may have re-grown.	Not effective if a plant is flowering.
	Aminopyralid/metsulfuron mix (0.14–0.23 g/l solution**) plus surfactant.	Apply before bud stage or early flowering.	Must have growing leaves present.
WICK OR WIPE	Glyphosate (22% solution*).	Spring to fall.	Must have growing leaves present.

Wild Parsnip & Giant Hogweed: Disposal

DO NOT burn or compost wild parsnip!!!

1. If possible, leave stems at removal site allowing them to completely dry out.
2. Taking safety precautions while handling! Place in black plastic bags and leave in the direct sun for at least one week.
3. Contact local municipality to see if they can be sent to local landfill or to the municipal compost (green waste).

Urushiol-Induced Contact Dermatitis: Poison Ivy

- Allergic response to plant oleoresins (urushiol) in sensitized individuals, caused by direct contact of the sap from a portion of bruised or injured plant. All parts – leaves, stem, roots contain urushiol.
- Can be indirect contact (via clothing, shoes, tools, pets, smoke burning plant) as well
- *Dead and live plants both contain oleoresins*
- Immune-mediated response: T cells (vs antibody-mediated)
 - First contact: minor or undetectable reaction, immunological memory is developed (via T cells)
 - Subsequent contact: reaction (“sensitization”)
- **Anacardiaceae** (Cashew fx): **Poison Ivy, Poison Sumac**
Mangoes, Cashews
 - **Native** (Noxious Weed)
 - Beneficial wildlife plant (food & shelter)
 - Noxious Weed (Weed Control Act)



Uroshiol-Induced Contact Dermatitis: Poison Ivy Symptoms

- ▶ Itchy (can be intense) or burning red rash (linear streaking)
~ 4 hrs – 4 days after contact with the plant's oil. Some swelling, red bumps turning into blisters, may ooze clear fluid
- ▶ **Mild** (lack blisters) – **severe** (blisters/bullae, severe edema, extreme discomfort)
- ▶ Most common areas for re exposure: fingernails, clothing, tools, equipment, pets
- ▶ Both covered and exposed areas (GH: sun-exposed areas)

Itchy >> Painful

Appearance 24 h after onset of the rash.



First AID: Best Safety Practices...

- ▶ Learn to recognize & avoid
- ▶ Wear protective clothing (gloves (vinyl not latex), long-sleeved shirts, long pants, boots)
- ▶ Wash all gear and pets in contact with sap (wear gloves)

If you come into contact with sap:

- ▶ Wash area immediately with **cool water and liquid dishwashing detergent**
- ▶ Scrub under your fingernails
- ▶ Oleoresin must be completely removed from the skin **within 10 minutes of contact** to prevent dermatitis
- ▶ Topical treatments to soothe itching (i.e. calamine)
- ▶ Seek **medical advice** if:
 - ▶ Fever (37.8 C), pus in blisters, no improvement

Poison Ivy: Spring



Fresh Poison Ivy leaves in May.
They are the most potent at this time.



Leaves can sometimes be glossy

Poison Ivy: Summer

Many shapes and forms!



Can have a glossy sheen

Poison Ivy: Fall & Winter



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Poison Ivy: Fall & Winter



Poison Ivy: "Look-alikes"



Manitoba maple (*Acer negundo*)

Non-native

Poison Ivy: "Look-alikes"



Toothwort (*Cardamine diphylla*)



Wild Sarsaparilla (*Aralia nudicaulis*)



Virginia Creeper (*P. quinquefolia*)

Poison Ivy: Leaves of Three “Look-alikes”

