

HOW TO SURVEY WEEDS ON YOUR FARM TO HELP MONITOR BIODIVERSITY

WEED FACTS



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Canada thistle ¹

Invasive species, including weeds, are the second biggest threat to biodiversity globally ²

Approximately 250 species of weeds have developed some type of herbicide resistance ³

Crop loss due to uncontrolled weeds amounts to \$43 billion annually in the U.S and Canada ⁴

Corn and soybean yields drop by around 50% when all weed control efforts are eliminated ⁴

Some weed species can indicate soil conditions like phosphorus levels or salt accumulation ⁵

Many invasive weeds were introduced to North America as ornamental plants ³

What are Weeds?

Weeds are simply unwanted plants. On farms, weeds compete with crops for water, space, and nutrients, depleting these resources and reducing crop yields. Many weeds are exotic — they are present outside their usual range or native habitat. This can mean that the pests or diseases that typically control that weed are not present in the new location. This increases the chances of

the weed surviving, spreading, and impacting local agroecosystems.

Why Weed Identification is Important

Identifying weeds can provide information to help design weed control strategies or programs. Knowing what a weed looks like during its different life stages, how it spreads, and where it is present provides key information to decide whether and how to manage a weed.

Recording and Reporting Weeds

- **iNaturalist** (inaturalist.org): Users can use their smartphone to observe biodiversity (pictures, sounds), share with other naturalists, and collectively identify species
- **Invasive Species Council of B.C** (bcinvasives.ca): Has alerts and identification information for all invasive species in the province, including weeds. Invasive species can easily be reported on their app.
- **iMapInvasives** (imapsinvasives.org): Used for participatory monitoring and by professionals to keep track of invasive species in Saskatchewan and some participating US states
- **EDDMaps** (eddmaps.org): A mapping tool used to record the distribution of invasive species. Entries can be made on the webpage or the smartphone app.

How to Survey for Weeds



Go to the centre of a field on your farm to start your weed survey.



Walk a “W” pattern within the field where each arm of the W is 100 paces. If your field is smaller, you can reduce the size of the W.



Every 20 paces along the W, identify and count the number of weeds in a 50 x 50 cm square (0.25 m²). If your W is smaller, adjust the number of paces between sampling locations.



If you can't identify a weed, take notes and photos of it, or collect an individual plant. Resources to help you identify weeds can be found below.

Resources for Identifying Weeds

FIELD GUIDES



Field horsetail⁶

[Invasive Species Council of B.C. Website](#)

- This website has alerts and identification information for all invasive species in the province, including weeds. A digital [field guide for provincial noxious weeds](#) and digital list of invasive weeds are also available.

[The Canadian Food Inspection Agency's "Invasive Plant Field Guide"](#)

- This digital guide can be used to help identify and control weeds on farms. It is well-detailed and includes pictures of the different parts of each weed.

[E.S. Cropconsult's Factsheet of "Important Agricultural Weeds"](#)

- This guide outlines the life cycles of common weeds and provides descriptions for weed identification, including how to distinguish look-alikes.

[Food and Agriculture Organization \(FAO\) Weed Species Database](#)

- This website provides a list of weeds species for specific crops in different countries around the world and information on each listed weed species.

[Ag Weed ID App](#)

- This Canadian smartphone app can help farmers identify weeds from uploaded pictures, provides descriptions of weed species, and allows farmers to build a weed album specific to their farm.

APPS



Creeping buttercup⁷

1. *Cirsium arvense* © [Ivar Leidus](#) (https://commons.wikimedia.org/wiki/File:Cirsium_arvense_-_p%C3%B5ldohakas.jpg) CC BY-SA 3.0.
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6. Field horsetail (*Equisetum arvense*) © [Oleg Kosterin](#) (https://commons.wikimedia.org/wiki/File:Equisetum_arvense_117578473.jpg) CC BY 4.0.
7. Creeping buttercup (*Ranunculus repens*) © [Jörg Hempel](#) (https://commons.wikimedia.org/wiki/File:Ranunculus_repens_LC0036.jpg) CC BY-SA 2.0 DE.

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