

WEED WATCH

WHAT ARE WEEDS?

Weeds are plants growing where they are not wanted. Weeds are a big problem for gardeners because they compete with crops for light, water, space, and nutrients.

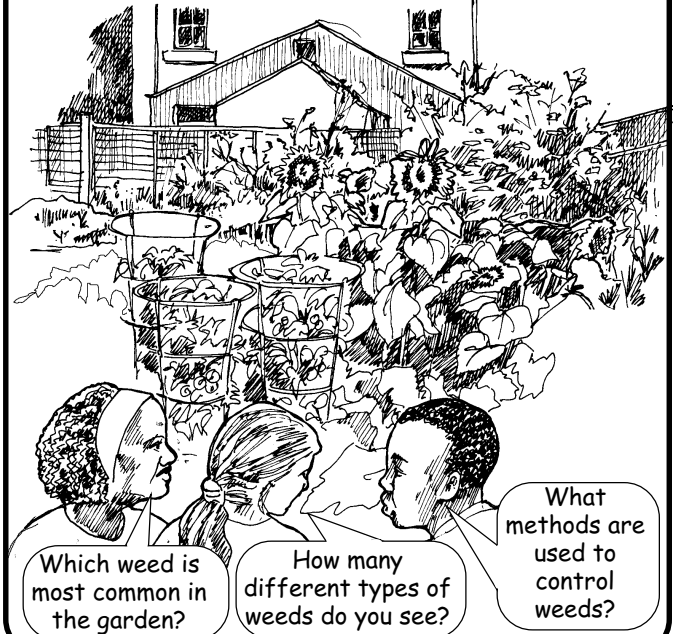
These weeds are shading sunlight from my vegetables!



I know. I spend hours pulling weeds. It would be nice to have a better way to control them.

WHAT IS WEED WATCH?

You collect data about weeds growing in a garden. Although you can be a weed watcher in any garden, if you want to contribute to the online Weed Watch database, you will need to collect data in an urban, vegetable garden.



Which weed is most common in the garden?

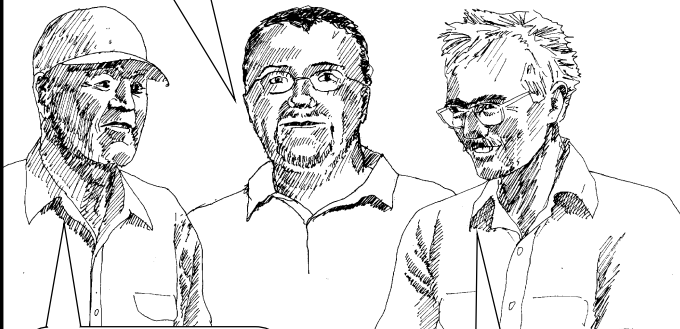
How many different types of weeds do you see?

What methods are used to control weeds?

WHY WEED WATCH?

The data you collect will help Cornell weed scientist Dr. DiTommaso and his colleagues. They will use the data to learn more about urban weeds and to develop methods to control them.

This data will help us answer questions about weeds.



We might prove the hypothesis that weed diversity is greatest in gardens where there is the greatest diversity of crops...

...or that fertilized plots have more weeds than unfertilized plots!

You'll also learn about how fascinating weeds can be!

This information may help me get rid of troublesome weeds....

....or work out which weed control method works best in my garden.



WHAT YOU NEED

- ✓ Weed Watch Data Forms 1, 2, and 3
- ✓ weed identification book
- ✓ copies of Gardener Permission Form
- ✓ paper and pencil
- ✓ clipboard
- ✓ permanent marker
- ✓ meter tape
- ✓ quadrat frame (see instructions for making frame under Weed Survey)
- ✓ flags or stakes to mark plot, or map of the garden
- ✓ plant press (optional)
- ✓ digital camera (optional)

WHAT TO DO

1. Background Research

- ✓ Get a guide to weed species so you will be able to identify weeds.

This book is helpful. It's called "Weeds of the Northeast" by RH Uva and JM DiTomaso. It was published in 1997 by Cornell University Press.

A great resource is the Weed Identification, Biology and Management CD. It can be ordered at <http://www.css.cornell.edu/WeedEco/>

Go to the website of Weed Science Society of America at <http://www.wssa.net/>

2. Gather information

- ✓ Use the Data Forms to collect information about the garden, the weeds, and how the gardeners control the weeds. You may have already collected some of this information during other Investigations.

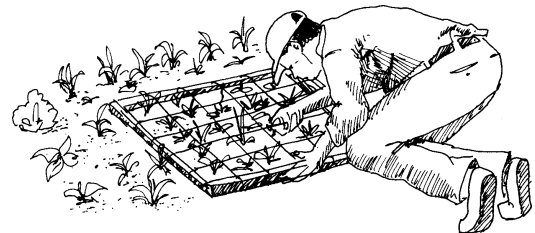
To collect information...



... make observations in the garden,



...interview gardeners,



...and measure weeds.

3. Record information

- ✓ Use the three Weed Watch Data Forms to record the information.

4. Send information

- ✓ Send the completed Weed Watch Data Forms to Dr. DiTomaso by mail or enter the data you collect onto the online Garden Mosaics Weed Watch database.

You can send the data online, or by hard copy to me, Dr. Toni DiTomaso, at:

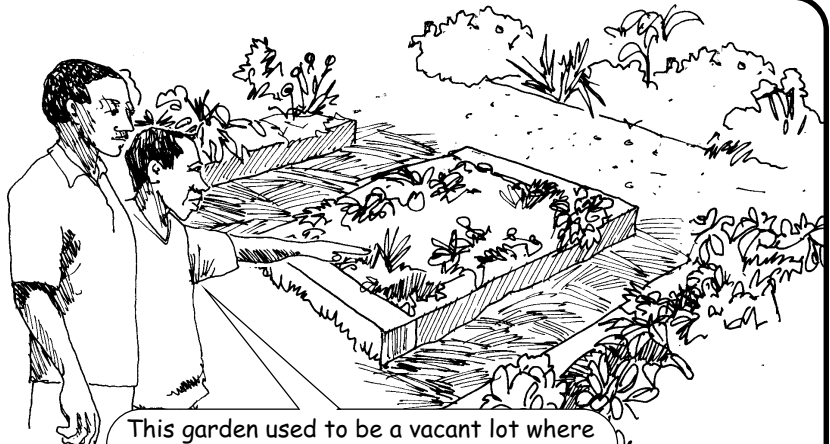
Department of Crop and Soil Sciences/ 903 Bradfield Hall,
Cornell University
Ithaca, NY 14853

If you have any questions, send an email to gardenmosaics@cornell.edu

THE THREE WEED WATCH DATA FORMS

1. GARDEN INFORMATION FORM

- ✓ Arrange to meet the garden manager or other knowledgeable gardener.
- ✓ Interview the gardener about the garden size, history, soils, and weeding practices. Use the Garden Information Form to guide what questions you ask.
- ✓ Walk around the outside of the garden and observe any weeds and how abundant they are.
- ✓ Fill out the Garden Information Form.
- ✓ Enter the data you collect onto the online Garden Mosaics Weed Watch database.



This garden used to be a vacant lot where many different weeds grew. We brought topsoil into the site to start garden plots, but weeds are still a big problem.

2. WEED CONTROL PRACTICES FORM

- ✓ Decide which gardeners you are going to interview.
- ✓ Interview several different gardeners about weed problems in their plots, and how they control weeds. Use the questions on the Weed Control Practices Form to guide what questions you ask.
- ✓ Fill out a Weed Control Practices Form for each gardener you interview.
- ✓ Enter the data you collect onto the online Garden Mosaics Weed Watch database.



Thank you for letting us interview you.

May I take your photo?

What kinds of weeds are your biggest problem? Why?

What do you do to get rid of weeds? Does it work?

Do you know what this weed is called? I can't find it in the Guide.

I'll press its leaves and flowers between two pieces of paper, and take it to a weed expert at Cooperative Extension.

Take a photo of it, and send it to Dr. DiTomasso.

3. WEED SURVEY FORM

- ✓ Decide on up to five garden plots where you will conduct the weed survey. Also, choose two areas of the garden to survey where no crops are growing.
- ✓ Conduct a weed survey for each plot in order to estimate the numbers of different kinds of weeds growing there. Instructions for carrying out a weed survey are shown on the next page.
- ✓ Fill in the Weed Survey Form.

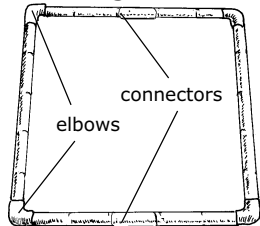
- ✓ Enter the data you collect onto the Garden Mosaics Weed Watch Survey Form.
- ✓ If possible, repeat the Weed Survey several times throughout the growing season.



HOW TO DO A WEED SURVEY

To estimate the number of different kinds of weeds growing in the garden, you are going to observe weeds inside a quadrat. A quadrat is a square piece of ground in a garden plot.

1. Build a 0.5 m by 0.5 m frame, called a quadrat frame. The frame may be made using PVC or meter sticks and string.

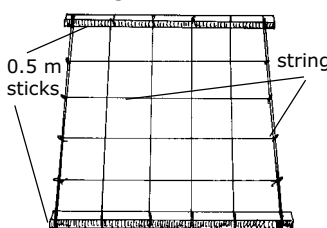


pvc frame

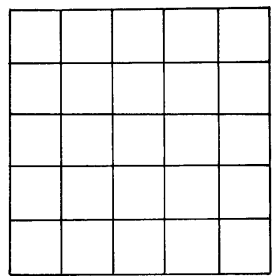
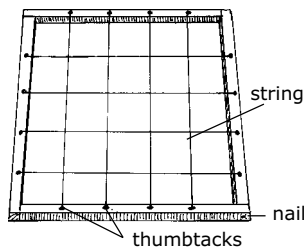
You can separate the frame at the connectors to slide the PVC frame under taller plants, such as tomatoes.

Mark off every 10 cm on the edge of your PVC frame, or tie string to the frame to make a grid.

string/wood frame



wooden frame



50 cm

50 cm

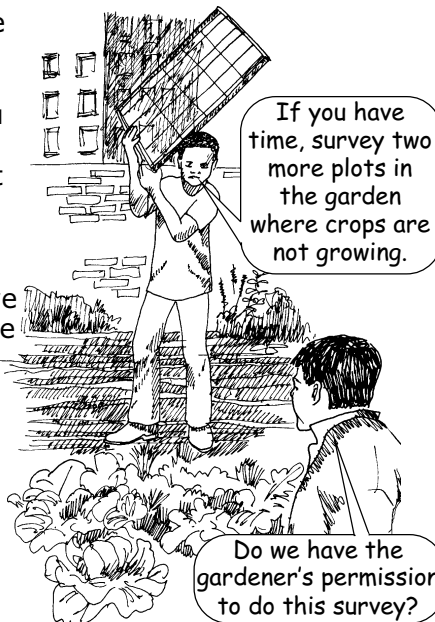


10 cm

10 cm

The grid will help you estimate what percent of the ground is covered by any one species. One 10 x 10 cm square is 4% of the quadrat.

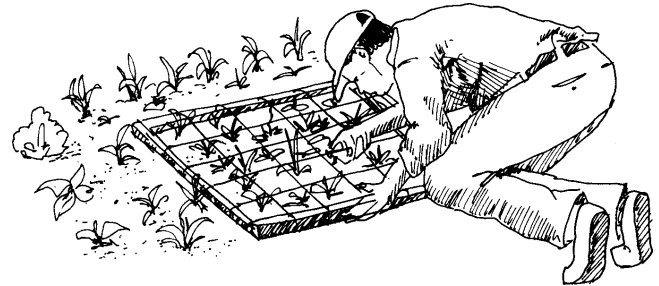
2. Choose five vegetable plots to survey. You can choose the plots at random or select ones that are representative of the entire garden.



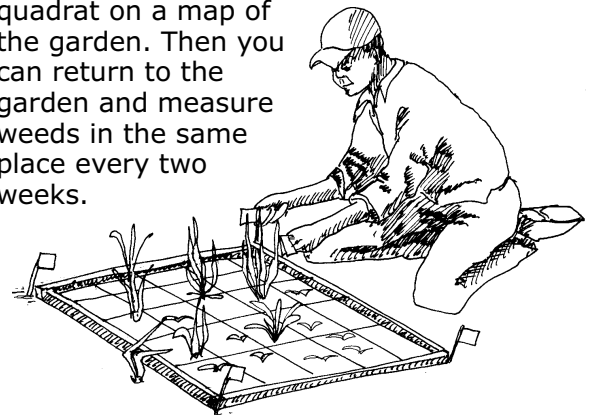
If you have time, survey two more plots in the garden where crops are not growing.

Do we have the gardener's permission to do this survey?

3. For each plot, place the quadrat frame on the ground. Try to place it so that it covers some of the crops and some area between crops.



4. Mark the corners of the quadrat with stakes or flags that can be left in the ground. Or, note the location of the quadrat on a map of the garden. Then you can return to the garden and measure weeds in the same place every two weeks.



5. Observe the different plants, both crops and weeds, within the quadrat. If there are fewer than 25 plants of one species, then count the number of plants. For small plants such as lettuce seedlings, it may be difficult to count each plant. Instead, estimate the percent of the ground in the quadrat that is covered by that type of plant.



6. Fill out the Weed Survey Form and submit the data to the online Garden Mosaics Weed Watch database.