

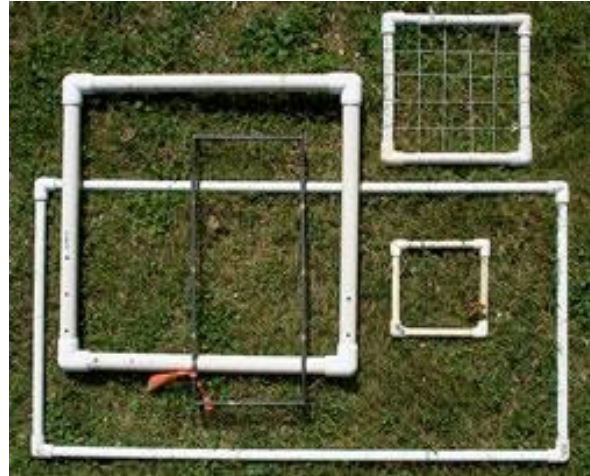
## Invasive Plant Species Protocol

### How to Make a Rectangular Frame (0.5 m x 1.0 m quadrat)

Adapted from Mark V. Wilson and Oregon State University

<http://oregonstate.edu/instruct/bot440/wilsomar/Content/HTM-perarea.htm>

Quadrats are usually marked in the field with a piece of equipment called the quadrat frame. One of the best types of quadrat frames is one you can make yourself out of PVC pipe. PVC quadrat frames are inexpensive to make, can be constructed in any size, and are lightweight and easy to pack into your study area.



#### Task

To build a 0.5 m x 1.0 m quadrat for sampling herbaceous vegetation in an Invasive Plant Species study site.

#### What You Need

- PVC pipe - slight >3 m of approximately 1.3 cm (0.5 in) 40 pipe
- 4 elbow joints of the same PVC pipe size
- PVC cement (optional)
- Meter stick or measuring tape
- Cutting saw to cut PVC (i.e., hack saw)
- Container or bag for final product (optional)

#### What To Do

1. Measure and mark two 1.0 m sections and two 0.5 m sections.
2. Cut along the marks.



3. Use the four elbows to assemble the four lengths into a rectangle. Make sure the pipe is pushed all the way into the elbows.
4. Adjust the connections so the frame lies flat.

Because of the way the elbows are constructed, the inside dimensions of the resulting frame are exactly the lengths of the connected pipe.

5. Measure the frame to confirm this.

You can now use the frame. Just take it apart to carry it into your study area and assemble it on site. It is a good idea to keep all of the parts in a container or bag.

#### *Optional*

The pipe elbows frequently get lost. In order to minimize losing them:

6. Cement an elbow onto either end of the short lengths of pipe using the PVC cement. Before cementing, double-check that the assembled frame lies flat.



#### **How to place a rectangular quadrat frame in the field**

There are some surprising subtleties in placing a quadrat frame in the field. Simply dropping the frame from above is likely to crush the vegetation, leading to incorrect measurements and harming the plants you are trying to measure. A better way is to assemble the frame in the vegetation.