



## Cover It Up! Citizen Science Project

### INSTRUCTIONS FOR SETTING UP YOUR EXPERIMENT

Thank you for joining the Cover It Up Research Team!  
Read through all the instructions before going out to set up your experiment site.  
If you have questions, contact [coveritup@umn.edu](mailto:coveritup@umn.edu).

#### Introduction

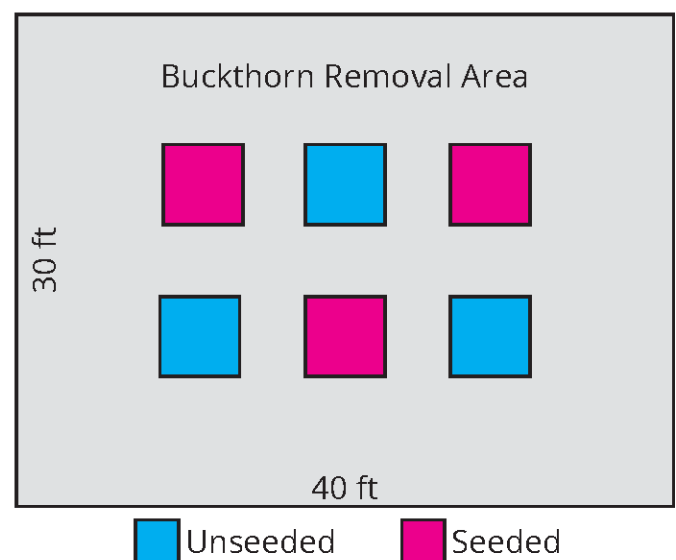
You are part of a statewide research team exploring how we can use seeding of native plants to control buckthorn in environments throughout Minnesota. This spring (2020) you will set up your experiment at your site using the materials provided to you in this kit. Over the next few years (2020-2022), you will collect observations about the seeding experiment in August – September. The following instructions provide the information you need to set up your experiment. The set up process should take approximately one hour.

#### When to set up your experiment

Set-up occurs after buckthorn is removed from your ~30 x 40 ft site. Set up your experiment as soon as you can get to your site in the spring after snow melts and the ground is thawed. This ensures the ground is moist and ready for seeding. Set-up generally occurs in April, but depends on where you are located in the state. Please set up your experiment by May 31<sup>st</sup>.

#### Experiment set up goal

The picture to the right provides a basic illustration of the experiment layout within the area where you removed buckthorn, but each site will be unique. You will place six 5 x 5 ft squares within your site where you will collect observations in the coming years. You will seed three of these squares and the other three will remain unseeded for comparison.



#### Instructions Summary

- Step 1 – Review materials & prepare flags
- Step 2 – Establish six 5 x 5 ft squares
- Step 3 – Take photos and draw site map
- Step 4 – Plant test buckthorn seeds → **POSTPONED, please wait for second shipment of materials**
- Step 5 – Plant seed mix
- Step 6 – Upload photos to Anecdata.org

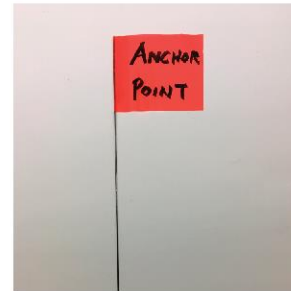
## Step 1 – Review materials and prepare flags

Review the materials in your experiment kit to make sure you have everything you need before heading out to your site. If anything is missing, contact [coveritup@umn.edu](mailto:coveritup@umn.edu). Within your experiment kit you will find the following:

Six pin flag bundles with metal tags



One orange anchor point flag



Six seed mix bags (Three LARGE. Three SMALL)



Folding ruler



Twelve packets of buckthorn test seed

**POSTPONED**

Please wait for second shipment to receive buckthorn test seeds

Clip board, pencil, and site map

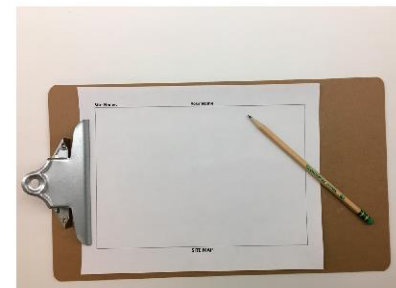


Photo marker booklet



Cardboard disc

**POSTPONED**

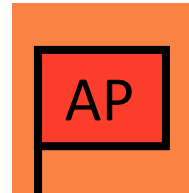
Please wait for second shipment to receive cardboard disc

## Prepare pin flags

### General instructions:

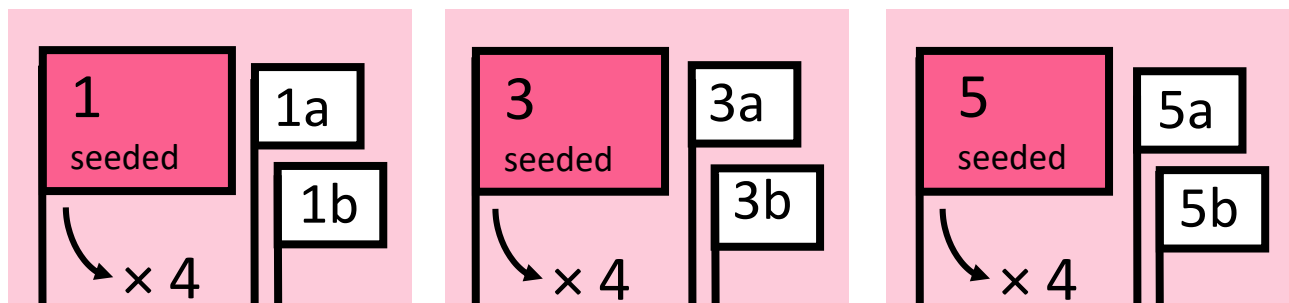
- Prepare your flags before going into the field.
- Use the Sharpie marker included in your kit.
- Write large letters and numbers to fill the space.

**Orange flag:** Write the letters “AP” for Anchor Point



### Three Bundles, each containing four pink and two white flags:

- One bundle at a time, write “1” “3” and “5” on pink flags. This gives you 4 flags to mark all 4 corners of Squares 1/3/5.
- Write “seeded” along bottom edge of *all* pink flags.
- For each bundle’s white flags, write the square number followed by “a” and “b” (see illustration below).



### Three Bundles, each containing four blue and two white flags:

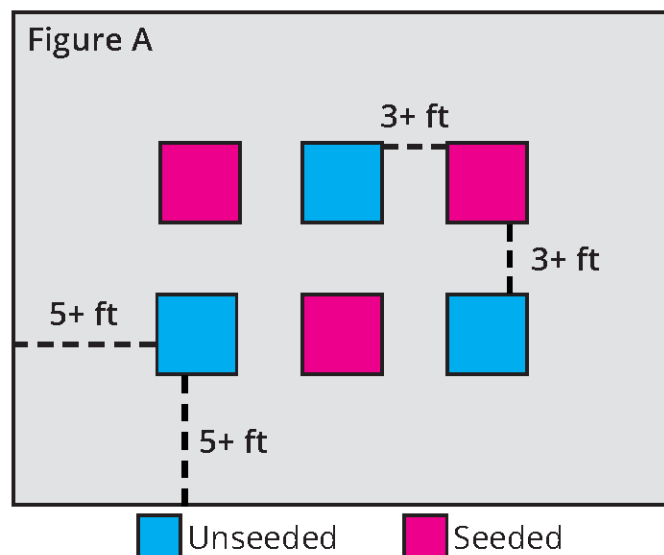
- One bundle at a time, write “2” “4” and “6” on blue flags. This gives you 4 flags to mark all 4 corners of Squares 2/4/6.
- Write “unseeded” along bottom edge of *all* blue flags.
- For each bundle’s white flags, write the square number followed by “a” and “b”.
- Blue bundles look similar to pink bundles illustrated above, except numbered 2, 4, and 6 instead of 1, 3, and 5, and labeled “unseeded” instead of “seeded.”

## Step 2 – Establish the six 5 x 5 ft squares

### Layout of squares

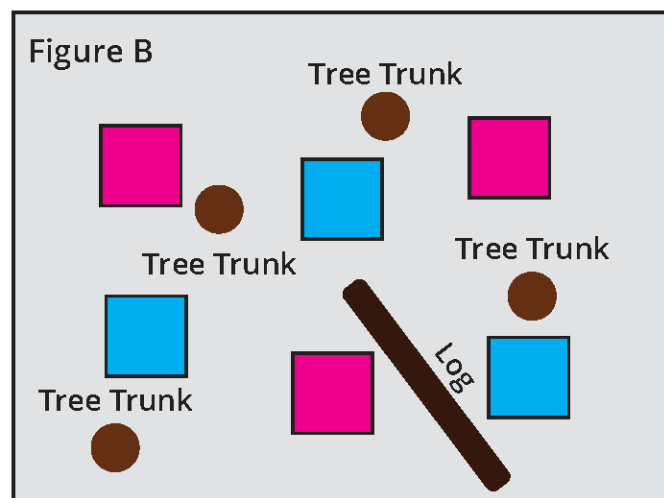
Within the 30 x 40 ft area where you removed buckthorn, you will set up six 5 x 5 ft squares where you will collect observations over the next three years. The **PINK** squares will be seeded, and the **BLUE** squares will be unseeded.

**Figure A** illustrates the ideal arrangement with the six squares centered in the site with at least 5 ft between the squares and the edge of the removal area. **PINK** and **BLUE** squares should alternate on the site. Squares should be placed at least 3 ft apart.



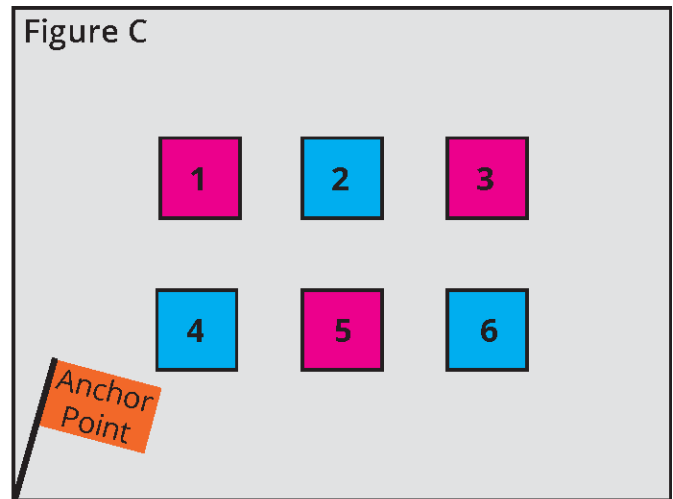
Your site likely includes trees, rocks, logs, and other natural features. Do your best to position squares in relatively uniform growing conditions, and squares should only include areas where seed has a chance of growing. Therefore, avoid placing squares around boulders, large tree trunks, logs, etc. Smaller fallen branches, sticks, etc. are unavoidable and are not a problem. Squares can be positioned to accommodate your site's natural features.

In the end, the arrangement of your six squares may look more like the illustration in **Figure B** to accommodate the conditions at your site. Do your best to position squares at least 5 ft from edge of the removal area, and squares should not be closer than 3 ft.



## Anchor point flag

Before you begin flagging the squares, place the **ORANGE** pin flag labelled as 'ANCHOR POINT' in one corner of the area where you removed buckthorn, as seen in **Figure C**. This flag will be used as a reference location throughout the experiment and will be used in establishing squares, and also for collecting photos and drawing your map.

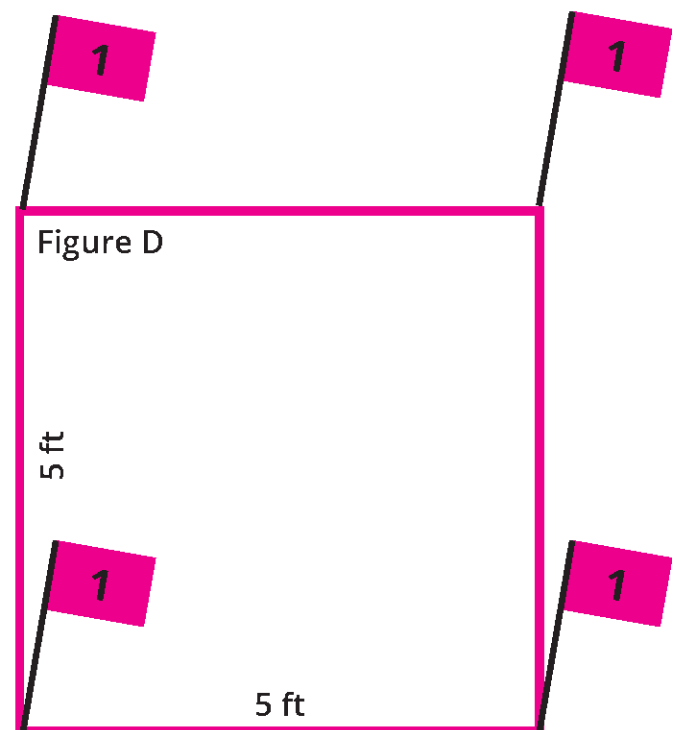


## Measuring and flagging squares

In your experiment kit, you will have received six bundles of pin flags with metal tags. Each bundle is labeled 1-6 and corresponds with the locations of a square, as seen in **Figure C**. There is one bundle per square, and all the pin flags and metal tags in that bundle will be placed at that square location. There should be three bundles of **PINK** & **WHITE** flags and three bundles of **BLUE** & **WHITE** flags.

As you identify each square location, and measure the 5 x 5 ft square boundaries, you will mark the corners with corresponding flags. Use the **PINK** or **BLUE** flags to mark the corners as illustrated in **Figure D**. **WHITE** flags will be used in step 4. As you unwrap the bundles, leave the corresponding **WHITE** flags laying on the ground in the square.

Use the folding ruler to measure the 5 x 5 ft squares and to make right-angles which will help create square corners. The end result may not be an exactly 5.00 ft by 5.00 ft square, that's ok, do your best. Underground rocks and roots often result in having to move the pin flag slightly in order to get the flag securely in the ground. Also, some sites may be sloped, and there is no need to adjust any measurements to accommodate the slope. All squares are 5 x 5 ft measured along the ground.

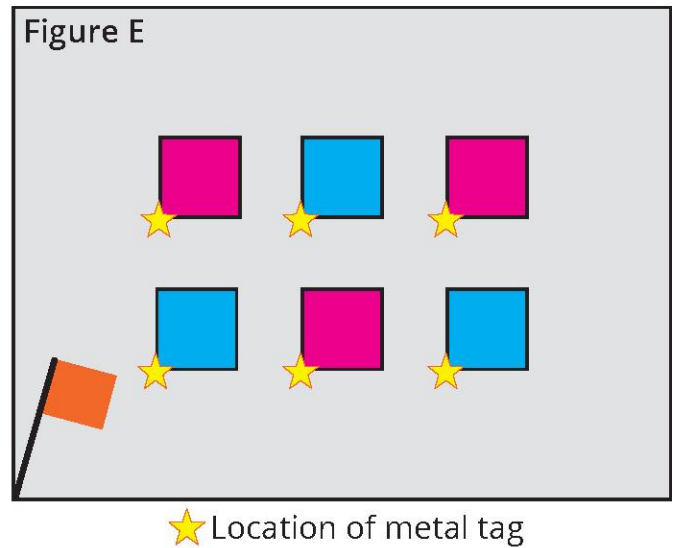




### Placing metal tags

At each square, the **METAL TAG** will be placed at the pin flag that is closest to the **ORANGE** anchor point pin flag, as seen in **Figure E**.

Remove the rubber band and slip the hole of the **METAL TAG** through the pin flag. The **METAL TAG** will lay on the ground, and provides a back-up method in case pin flags go missing or fade.



## Step 3 – Take photos and draw site map

### Photos

Throughout the experiment, we will regularly collect photos of each square, and photos will always be taken from the same side of the square. Photos will be a bird's eye view capturing all four corner pin flags and the corresponding **PHOTO MARKER**.

After setting up each square, stand at the edge of the square with the metal tag on the left corner pin flag, as seen in **Figure F**. Place the **PHOTO MARKER** at this edge by the corner with the **METAL TAG**. Use your cell phone to take a bird's-eye view photo of the square. Do your best to capture all four corner flags in each photo along with the photo marker, see example in **Figure G**.

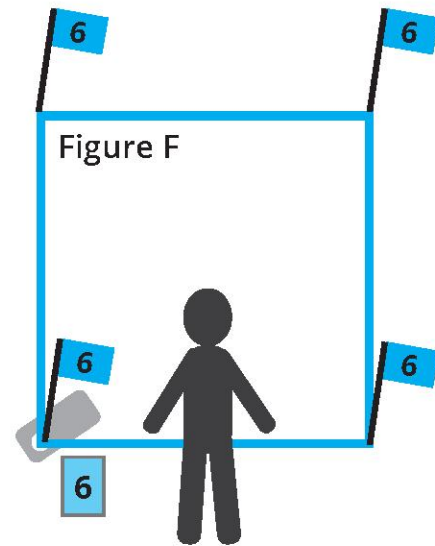
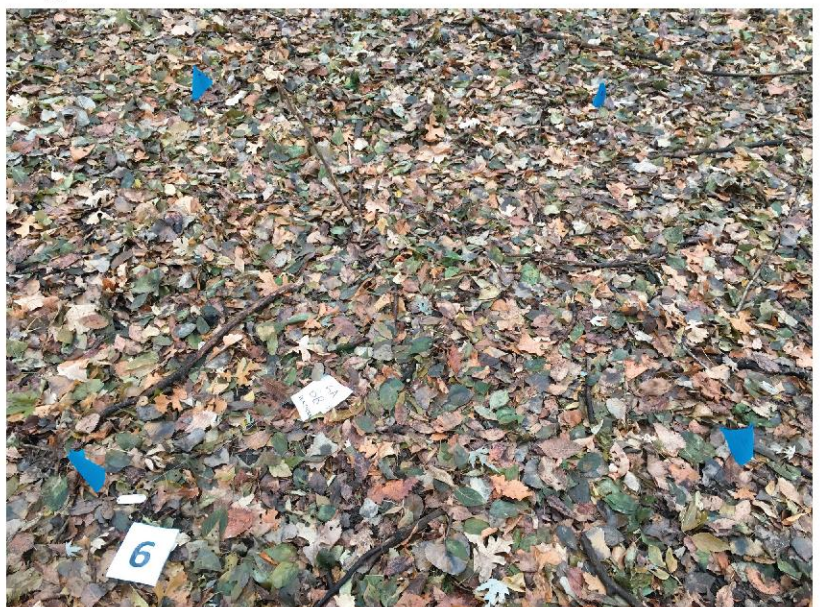


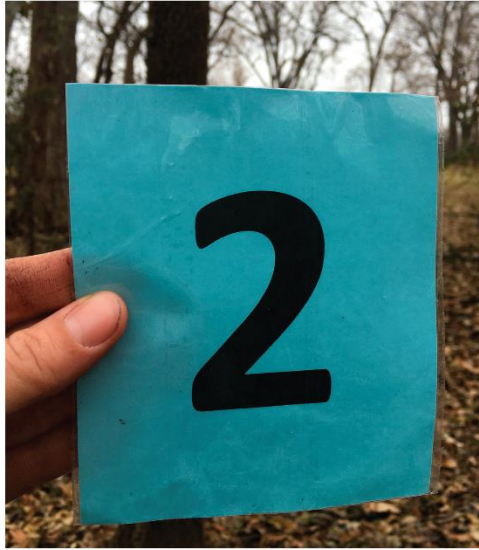
Figure G



### Alternative photo procedure

If you cannot get the **PHOTO MARKER** in the same photo as the square, you can take a picture of the photo marker followed immediately by the photo of the square. If you do this, it's important to take these pictures in the same order so it's easy to identify each unique square, see example in **Figure H**.

Figure H



First photo



Second photo

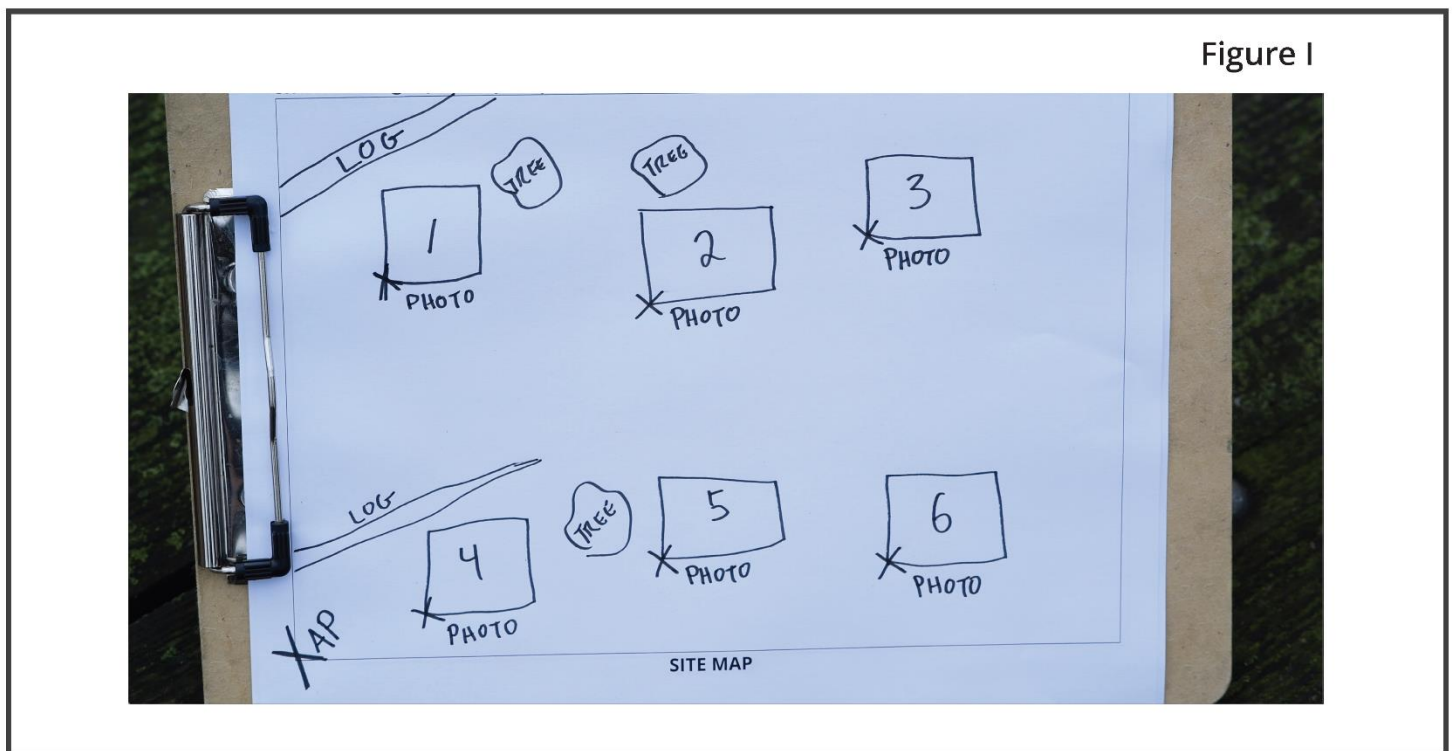


## Site map

Next, on your clipboard, you will have received a blank site map for you to use to roughly sketch your site and the layout of the six squares. On your site map, identify the following key items as well as anything else you would like to note about your site.

- **Anchor point** – Place an X at the corner with the **ORANGE** flag and write the initials 'AP' next to the X.
- **Trees/Rocks/Logs** – Draw the approximate location of the main natural features of the site. No need to include every detail, just those that stand out as key characteristics to you.
- **Six numbered squares** – Draw a square at the approximate locations of each square and write the number to which it corresponds (1-6).
- **Metal tags** – Place an X at the corner of each square where the metal tag is located.
- **Photo marker** – Write 'PHOTO' along the edge of each square where you stood to take the picture.

See **Figure I** for an example of a completed site map.





## Step 4 - Plant test buckthorn seeds

This step has been postponed. Please wait for second shipment of materials with instructions.

## Step 5 - Plant seed mix

Your last step in setting up your experiment at the site is to hand broadcast the bags of seed on the **PINK** squares. Seed mix will only be added to the **PINK** squares. The **BLUE** squares remain unseeded.

### Weather conditions for seeding

Ideally, you are setting up your experiment as soon as you can get to your site in the spring after the snow melts and ground is thawed. This will ensure the ground is moist and ready for seeding. Depending on where you are located in the state, this may occur anytime in April or May. **PINK** squares must be seeded before May 31<sup>st</sup>. Additionally, the seeding should occur at a time with very little wind present. Some of the seed mix is very light and will carry easily in the presence of wind; we want as much seed as possible to land within the **PINK** 5 x 5 ft squares.

### Seeding

The goal is to have a uniform coverage of seed across each **PINK** 5 x 5 ft square. Each LARGE seed and SMALL seed bag is labeled and corresponds with one of the **PINK** squares.

At each **PINK** square, select the bags for the square that correspond with that square number. Start with the LARGE seed bag and stand at one side of the square. Using your hand, carefully sprinkle about  $\frac{1}{4}$  of the bag over the half of the square closest to you. Sprinkle seed from a couple feet above the ground and try to avoid sprinkling seed outside of the 5 x 5 ft square.

Then continue around the square clockwise, sprinkling  $\frac{1}{4}$  of the seed mix from each of the four sides of the square, as seen in **Figure K**. Do your best to sprinkle slowly to get a uniform cover of seed, keeping as much as possible within the boundary of the 5 x 5 ft square, and if you have any remaining seed stuck in your bag, shake it out across the square.

Next, do the same thing again with the SMALL seed bag that corresponds with that square number.

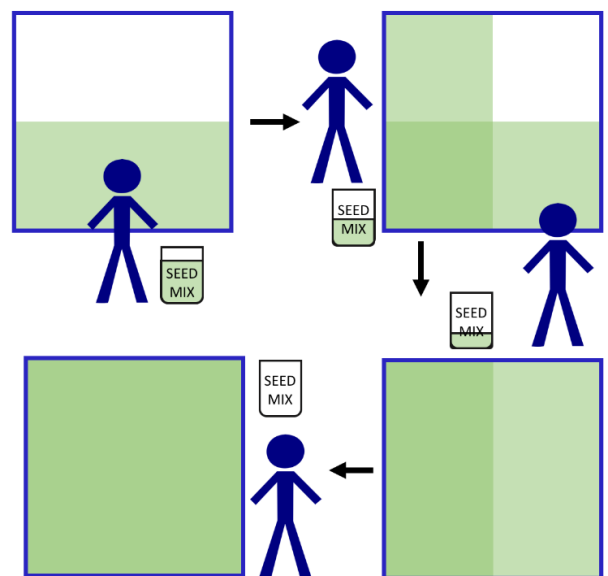


Figure K

## Step 6 – Upload photos

Congratulations on setting up your site! Time to upload the photos you took.

### Introducing Anecdata

Anecdata is a website for citizen science and it is the data-submission home for Cover It Up. Below are step-by-step directions to use Anecdata on a laptop/desktop computer.

### Join Anecdata

1. Open a browser – Chrome is recommended.
2. Type [anecdata.org](https://anecdata.org) in the address bar and hit enter key.
3. Click the “Join the community” button.
4. Enter your information and then click “Create account now.”

### Join Cover It Up project

1. In the search bar, type Cover It Up.
2. Select the project named “Cover It Up! Using plants to control buckthorn”
3. Click “Join project”(Find this button under the photo of seeds, to the far right edge.)
4. Pause **~1 day**. Your request will be reviewed and approved, which takes **>24 hours**.

### Add observation – Site Map

1. Come back **the next day** and login to [anecdata.org](https://anecdata.org).
2. Search for and select the “Cover It Up” project.
3. Click “Add observation.” (Find this button under the photo of seeds, to the far right.)
4. Select “Site Map.” (You should see 3 datasheet choices. This is the top one.)
5. Click the green “Pick a location” button.
6. Type a place name (e.g., “Duluth Minnesota,” or “Appleton Minnesota”) in the blank bar above the map, and **hit the enter key**.
7. Use the cursor to adjust the map until the crosshairs are **approximately** positioned at your site. (Your location does *not* need to be perfect because you already shared GPS coordinates with the research team.)
8. Click the blue “Use this location” button.
9. In the field for date, enter the **date you completed your set-up**.
10. You can **ignore** the hour/minute/seconds fields. Time of day is not important here.
11. \*Connect the device with your photos (e.g., camera or smartphone) to your computer.
12. \*Click “Upload photos” or “Browse”.
13. \*Navigate to your device, then select the photo of your site map, then click “Open.”
14. Optional – type a note or comment. For example, did you place flags on one date and spread seeds on another date? Please describe these kinds of details in the comments.
15. Click **“Save observation,”** a blue button. Then click “Add another” button.

\* If iCloud syncs your photos to your computer, you can bypass steps 11-13. Instead, open an iCloud window next to your web browser window with Anecdata. Then “click-drag-drop” the photo from iCloud onto the web-based datasheet.

## Add observation – Spring Squares 1-6

1. Select “Spring – Squares 1-6” (You’ll see 3 datasheet choices and this is the 2nd.)
2. Repeat steps 5 through 12 from the previous page.
3. \*\*Navigate to your device, then select your photo of **Square 1**, then click “Open.”
4. \*\*Click “Browse” again and this time, select and open your photo of **Square 2**.
5. \*\*Repeat the browse/select/open process for **Squares 3, 4, 5, and 6**.
6. \*\*Check that **your photos are in order from 1 to 6**.
  - The thumbnail image is too small to use for checking. Click on the thumbnail to see a larger image. Check the photo marker to determine the Square number.
  - If your photos are not in order, you can easily re-order them one by one. To do so, click-drag-drop a thumbnail into its proper position.
7. Optional – type a note or comment. For example, did you place flags on one date and spread seeds on another date? Please describe these kinds of details in the comments.
8. Click the blue “Save observation” button.
9. Click the “Done for now” button.

**\*\*Note:** If you used the “Alternative photo procedure” (see page 7), then you will need to select and put in order **12 photos instead of 6**. Put these photos in the same order you

## What else should I know about Anecdota?

- Most importantly, **geoprivacy is enabled**.
  - *What does this mean?* The location of your observation is recorded for researchers but obscured for everyone else.
  - What will an “obscured location” look like to a user? I can explain this with an example. Say I’m a participant and I upload a photo observation. When I fill out my datasheet, I use a particular Falcon Heights address. Once my upload is saved, you will be able to view my observation. When you do so, Anecdota will show my uploaded photo and a map with a large box around Falcon Heights. No one will see crosshairs centered on my site. That information is private.
- Want to add an observation *other than* your site map or 6 squares? Great! Here is how:
  - From the project page, click “Add observation”
  - Select the third datasheet choice, the one called “**Non-standard observations**”
  - Same as before, complete the location and date information.
  - Same as before, upload a photo (or photos).
  - Important: **Add a comment describing what you see and why it is important.**
- If you have questions about Anecdota, ask Abbie by emailing [coveritup@umn.edu](mailto:coveritup@umn.edu).
- Anecdota Help: <https://www.anecdota.org/pages/help>
- About Anecdota: <https://www.anecdota.org/pages/about>

### **Want to learn more?**

Visit the Cover It Up! Citizen Science project website for details about the project timeline & activities, the project commitments, seed mix, and more.

**[coveritup.umn.edu](https://coveritup.umn.edu)**

### **Questions?**

Contact the Cover It Up Research Team

**[coveritup@umn.edu](mailto:coveritup@umn.edu)**



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