

Collection and GPS protocol

Map, planning

- Looking at the map, decide where to go collecting
- Plan your route for maximum efficiency, keeping in mind that sites are ready at different times

GPS setup

- Trimble - Data dictionary
 - File is on the laptop (and will be on the flog)
 - Same code attributes as below
- Topcon - Code and code attributes
 - stipa spartea
 - tag number (text)
 - envelope number (if we're making sure this matches the tag number, this is unnecessary) (text)
 - number of seeds collected (integer)
 - location (text)
 - collected by (text)
 - notes (text)
 - time (date-time, automatically filled-in)
 - Change the options (in the Topo screen) to a 20 second epoch

Crash course in using the GPS

- Trimble
 - Start a new dated file- stipa_YEARMONTHDAY (20100811 for August 11, 2010)
 - Collect using the Stipa point
- Topcon
 - Turn on the data connection (bottom right icon, to the right of the Bluetooth icon), hitting OK to start it.
 - Start TopSURV after the connectivity icon stops moving
 - Start a new job each day with the above naming format
 - Configure → Global → Code file → choose STIPASPARTEA.xml (should be on flog too)
 - Wait for the Network Connection screen to start up and connect. After you close that screen you'll hear the chk-CHK noise of a cocking shotgun. This means you're almost ready to go
 - In the Topo collection screen (in the Survey menu), wait until you get a Fixed connection (or Float with under 20cm accuracy, which will correct to a good loc with multiple epochs)
 - Collect the point and enter the data

Collecting the seeds

- At the site, go up to the first Stipa plant you see, making sure it isn't tagged
- One person should begin taking a GPS point, placing the base of the pole within 3cm to the north of the plant
 - The Trimble should take 30 seconds worth of points
 - The Topcon will have 20 1-second epochs
- Strip the seeds from only one of the culms (making sure to get at least 3)
- Count the seeds and place them into the marked envelope

- Tell the GPSer the data so they can enter it.
- Place a nail into the metal tag and place it just to the south of the plant
- Continue collecting plants at the site, doing your best to move a few meters away each time

Storing the seeds

- I stored them in the Stipa box in the house in the envelopes
- I wouldn't store them in the basement; when you bring them up it'll be less humid and they'll curl up on you. Not good.

Stipa scanning

Materials

Computer with Epson software (for this version of the protocol)

Epson scanner (model #)

Scanning box (cardboard box lid with black construction paper and a heavy weight on top)

Stipa seeds

Randomized sticker sheet with common garden positions

Protocol

- Randomize the envelopes (mix them up!)
- Remove all seeds from the envelope
- Remove sticker for next position from the randomized sticker sheet stick it on the straight part of the awn, avoiding the curling part of the awn

(an illustration here would be nice)

- Arrange all seeds on surface of scanner in the same direction, sticker side down, and if possible, with position stickers oriented so that the tops of the numbers are towards the top of the scanner
- Make sure 1 cm reference measure is at the top of the scanner (a ruler is fine too)
- Place the envelope from which the seeds came on the bottom of the scanner, label side down
- Put the cover box on the scanner, making sure to cover the entire scanning surface
- Scan seeds placed on scanner using ‘Setting 1’ from the Professional Mode of the scanning software

(I need to transcribe the settings for this)

- JPG’s should automatically be saved with the prefix ‘*Stipa*’ and the last 3 numbers of the envelopes (the scanning software only supports 3 digits, so this is acceptable for this year, as all of our envelopes are in the 1000s. Future scanning will need the filename to be edited afterwards, prepending either a 1 or 2 as needed)
- Open JPG file briefly to make sure quality is good and if not, scan again, calling the file by the same name so that it replaces the low quality image
- Remove box from scanner
- Remove envelope from scanner and carefully place labeled seeds back inside
- Begin sticking seeds (see seed sticking protocol)

Notes: Try to use all the same kind of envelopes. It's annoying to shuffle up envelopes when the big ones get mixed in with the smaller ones

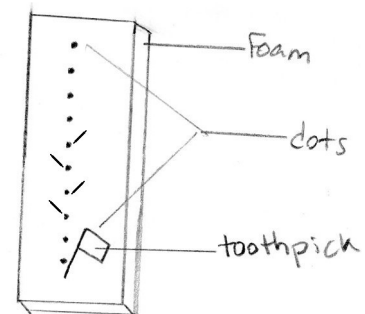
Stipa Sticking

Materials

Lots of space (ideally where the humidity is fairly constant eg the basement)
Several tables
Enough foam boards for the rows (40-50 pieces)
10 small rectangular boxes
Slips of paper
Stickers for Rows and Row/Positions
Toothpicks
Sharpies

Protocol

- Place the tables in a long line (or wherever is convenient in the basement)
- Place pieces of foam on the tables
- Put Row and Row/Position stickers on toothpicks and begin placing them in the foam, putting longer rows onto larger pieces, rearranging the foam as needed. Tables should be divided up into 10s of rows
- Place the proper number of dots at least 2cm apart with the sharpies.
 - Don't start a dot at the toothpick
 - Make sure to finish the rows by the top of the foam; don't wrap the rows back to the bottom of the next line.
- Begin sorting the seeds into their tens of rows (eg 10-19, 20-29 etc)
- Others should take the seeds and begin putting them near (but not in!) the marked dots, angling them away from each other (evens right, odds left, for example). Continue this until all the seeds are placed.
- Check the envelopes, floor, tables, and cardboard boxes for stray seeds.
- Make a list of missing positions and compare them to the leftover sticker sheets (from scanning) and computer records to rectify any irregularities.



Hints and tips

No noodle halves. The cylinders are annoying, apparently. 2 cm is pretty much the minimum distance for the Stipa and longer is better. Trying to cram too many rows onto a too-small piece of foam is a bad thing.

Be sure to push seed all the way into the foam. When planting in the CG it is easy for partially protruding seeds to be pulled out of the foam by grasses when setting down and picking up the foam boards.

Keep the seeds in the basement as long as possible. Once the humidity changes the awns will start curling. They'll curl around each other by the time you reach the common garden.

Stipa planting

For Can't Finds:

Materials

“Can’t find” pin flags

List of “can’t find” locations (make sure all the re-check data has been included)

Meter stick

Protocol

- Go to each location on the list of “can’t finds”
- At each location, search one more time for a plant, just in case
- Once you have determined that there is no Echinacea, line up your meter stick with surrounding locs (plants/staples)
- Place a “Can’t find pin” at the precise location where the plant should be
- Place a flag next to the pin
- Move on to the next location

For Planting:

Materials

Visor

Toothpicks

Meter stick

Stipa Tray

Protocol

- Find the row listed on your Stipa tray and double-check that you have the correct row
- Fill in the memo on your visor with your row (tab tab) initials shortcut-dts
- Find the position of your first Stipa seed
- Check the stipa for that section of 10m, make sure they’re secure and the correct positions. Note any missing Stipa or missing awns in your visor
- Find the loc (pin, staple, or plant). Make sure you’re in the right location and in line with surrounding plants/staples/pins
- Plant the stipa seed 10 cm to the north of the loc, plant it so that the seed is in the soil and the awn is sticking up
- Plant the toothpick 1 cm to the north of the Stipa seed
- Make a note of any irregularities in your visor
- If you can’t find a loc, or can’t plant due to an obstruction (rock, hole, metal), then make a note and do not plant the seed. Another row/pos will be found for the seed
- Find your next position and repeat