Chose shrubs using by walking in one direction and looping around after shrub 15. Open areas 2+ m away. North side of shrubs.

Choose shrub microsite by facing north, turning, approach shrub straight on and place quadrat directly between you and shrub. RDM is collected from center using 20 cm quadrat (clothes hanger) by snipping next to ground with scissors. Place in labelled paper bag. Count number of burrows within the dripline of the shrub, and als within a foot buffer around shrub. Record separately.

From shrub microsite, toss 0.5m q over shoulder. If area behind is too shrubby i.e. no spots > 2m from shrub, toss to left. Count number of burrows in a 1.5m radius around quadrat.

In each microsite record: Plant height and estimate cover: RDM, green veg, bare/small twiggy cover, dead branches and large wood, large rocks.

Shrub x, y, z. Species.

Put RDM in paper bags, label.

**Pitfalls**

8 ephedra/open pairs or 8 ephedra/larrea/open trios for mojave

Dig into ground, parallel to surface. These go in centre of 0.5m quadrat. Fill halfway with a 50% propylene gycol/water mix. Leave out for approximately 72 hours, top up with water as need. Pick up and collect remaining RDM from the right side of the pitfall. If totally unaccessible (i.e. there is shrub roots there) or if surface was disturbed place on left side. Left side only happened ~5 times. Sieve out inverts, place gycol mixture back in bottle. Glycol mixture was reused. Don’t count springtails or similarly tiny inverts because they didn’t all get caught by the sieve. Place in separate vials, add label and 95% ethanol.

Gradient of 3 by 3 sites

Panoche - north, south, plateau ie PAN1,2,3

Cuyama - sites 1, 2, 3

Site one: Pistachio farm.

Site 3: On highway 166, not far off road

Mojave region – Barstow (Ft. Irwin), heart of mojave, sheephole

30 shrub open pairs per shrub species per site (most dominant: Ephedra, atriplex, larrea, matchweed)

Drive up to panoche until you reach the "rec area" which is that parking lot with one picnic bench, outhouse, and information sign.

If you walk south away from the parking lot and into the valley the first slope is the south side. Continue walking until you get to the bottom and start walking up on the other side of the valley. That's the North side. The plateau you gotta drive down past the rex area for a minute or two and it will be one either side, the flat area with metal exclosures everywhere.

|  |  |
| --- | --- |
| x | x1 - was measured as the longest diameter of the shrub plant |
| x | x2 - was the diameter directly perpendicular to diameter x1 |
| h | h - was measured as the tallest branch with leaves |
| methods | Quadrat sampling was conducted with a 50 cm X 50 cm quadrat construction from white PVC pipe |
| methods | Shrubs for each site were chosen within ten meters of one another in a generally linear pattern |
| methods | Open plots were placed approximately two meters from the shrub exterior |
| methods | Quadrats were placed close to the base of the shrub plant such that it was underneath as much of shrub cover as possible. |
| methods | Two soil cores 5 cm in depth were taken at all shrub/open pairs and place into separate coin envelopes. |
| methods | Shrub cores were taken close to shrub base and open cores were taken in center. |
| # sp | Plant species were delineated during the first sampling event by visually obvious differences |
| total seed mass | mass of seeds/mass of sand |
| 2013 census | 1 = Jan 20, 2 = Feb 20 |
| 2014 census | 3 = Mar 25, 28 |
| 2015 census | March |
| 2016 census | March |
| 2017 census | April |

Emme’s protocol:

Good afternoon!

There is a gate code... let me confirm but I believe its **1220** (the Sesame brand lock).

For RDM of open areas: I simply close my eyes, throw the quadrat at random, and sample wherever it lands. To sample, you don't need clippers or anything. I recommend using a glove and just collecting the vegetation with your hand into a bag. Aiming for bare soil left over. Nothing is deeply rooted. Technically, you should only measure grass that is actually rooted in the perimeter of the quadrat (if grass is long, it can bend into the quadrat yet not be rooted there– pull this out so it doesn't give you a falsely high RDM measure). Remember to take lat/long for RDM spots!

For RDM under shrubs: Last year, I made sure to always take RDM from the North aspect of the shrub for consistency. However, not sure what Chris wants this year. If he wants random, remember to record what aspect. Same general procedure as for the open spots (want to randomly pick the specific spot under shrub canopy– mini "toss").  HOWEVER, you don't necessarily want bare soil. You want to collect all grass, but leave dead ephedra debris underlayer.

Let me know if you have any questions!!

Emme

P.S. There are a lot of little rocks mixed in with the grass/soil. These will add a lot of weight when weighing grass so try your best not to get them! Its better to have to leave a little grass on the ground than it is to try to scrape up every last little bit and accidentally pick up rocks.