

1 **September 2009 Santa Catalina Mountains Wild Potato**
2 **Collecting Trip Report**

3
4 September 11-18, 2009

5
6 ***Executive Summary***

7
8 Participants: John Bamberg (B) and Alfonso del Rio (dR)

9
10 Concept: Research comparing “easy” and “remote” sites in the Santa Catalinas (SC), Rincons,
11 Chiricahuas and Huachucas identified SC as rich in diversity. Few SC sites were previously identified
12 and/or represented as germplasm.

13
14 Preparations: Monitor regional rainfall through spring and summer. Permit and advice from USFS
15 office in Tucson (see Appendices). A scouting trip in August suggested that the late rains of summer
16 2009 would provide ideal collections of live transplants in September. Garmin GPS borrowed from
17 Karen Williams, USDA/ARS/PEO, Beltsville. Flights to Tucson and vehicle rental. Conditioning
18 hiking, mostly without packs. Testing of hiking, camping and collecting gear. GoogleEarth “Coronado
19 Hiking Trails” tracks helped to plan daily hikes.

20
21 Results:

22
23 Hiked about 48 miles of trails 5500-9100 ft plus off-trail searching. Made 17 collections from 15 sites
24 as clonal transplant collections of a total of 138 *Solanum fendleri* (*stoloniferum*) plants plus duplicate
25 fruit collections from two of these, and two additional sites as fruit/seed collections only. All sites were
26 previously undocumented and uncollected. All collections have been assigned PI numbers and added to
27 the NPGS potato collection, US Potato Genebank, Sturgeon Bay, WI. Herbarium specimens will be
28 made from regenerants for PTIS and ARIZ.

TRIP LOG

Note: WGS84 minutes beyond 32° N Lat x 110° W Lon. See collection description details in Appendices.

Friday, September 11th

B dropped off at GRB for 6:30 flight, meeting dR at MSP and continuing to TUS arrival at 10:30. Pick up off-airport Thrifty Dodge Journey and to Indian Restaurant on Broadway. To America's Best Value Inn at Park & Benson. Confer & check plan, maps, & equipment. Supper at El Indio on 6th.

Saturday, September 12th

Up 6:00 to Safeway Grocery at Catalina & Tanque Verde for lunch picnic food. Up Catalina Highway and \$10 weekly pass at mile 5. To Middle Bear Campsite site of PI 641040 collected 2005 near mile marker 11 to observe plants at known site. Many small, green and healthy plants with green grass and herbs in moist soil. At 8:55 search pullout at 23.086 x 41.664 where conditions looked very good. To Mt. Biglow road at observatory site of PI 641039 collected 2005, where observe small green collectable plants but some eaten; one small fruit; very favorable soil. At 10:30 to top of Summerhaven loop at previous collection PI 564024 of 1992 where observe only one small plant. At 11:00 to top of ski hill and parking lot at trailhead at 26.440 x 47.154 where a few small and yellowed plants observed directly across road NW from parking lot entrance. At 11:15 back down road to hairpin loop to search at 27.134 x 47.024 where conditions looked very good. At 11:30 to Iron Door for lunch. At noon to search around Marshall Gulch trailhead parking lot where conditions looked very good. At 12:50 to Green Mountain trailhead near San Pedro Vista lookout point. Green Mountain trail with mostly N-facing slopes. Met a group of four hikers. At 1:45 at canyon at 23.781 x 40.746 and 6715 ft. At 2:00 appear to be on wrong trail and retrace. Most of this trail was dry and rocky and looked quite unfavorable. On return search more intently at, and up green N-facing wash. **Collection "Green" #1.** Back to trailhead 3:45 and drive to Hitchcock Campground searching about 0.3 miles up (E) Bear Canyon on both sides. Looked very favorable. Find "Hitchcock", collection #17 site (actual collection deferred until the final day of the expedition). Return to Tucson for supper at India Oven on Campbell and return to motel.

Sunday, September 13th

Up 6:00 to Safeway and Le Buzz coffee & McDonald's in same mall at Catalina & Tanque Verde. Bury plastic freezer box with "Green" collection at site of "Hitchcock" population and water-up at spigot just below Palisades Ranger station at E Butterfly trailhead. Buy "GreenTrails" map (\$9) at visitor center. Arrive Oracle Ridge trailhead parking lot (27.095 x 45.261) at 9:00.

At 10:00, moist W-facing slope with grass, Sacaton, and scrub oak habitat looked favorable at 28.133 x 45.067 and 7420 ft. Continue five minutes to: **Collection "Oracle" #2.** To 10:50 trail intermittently runs with primitive roads. At 10:50 jct with East Fork FT401. At 11:50 reach Catalina camp with running stream at jct with Red Ridge FT2. **Collection "Cat Camp" #3.** At 12:50 resume up Red Ridge toward Summerhaven. At several places, habitat looked appropriate, with large ponderosas, grassy moist and dark sandy soil, lupines, ferns. Reach Ski Run road at 3:30. Had encountered no other hikers on these trails today. At 4:00 reach vehicle parked at Oracle trailhead.

77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122

Return to Iron Door restaurant for blueberry-mango pie & coffee on porch. At 4:50 depart for Tucson, stopping to bury collections at Hitchcock site. Approached Hitchcock site from parking lot so noticed a few plants on N side of wash, too. Eat remnant groceries and chips at LaSalsa on Wilmot & Speedway. Back to motel, download GPS tracks to laptop and plan upcoming hikes.

Monday, September 14th

Up 6:00, register for one more night. Check internet for thrift stores for a cheap bicycle that might be used on highway 3 miles between Butterfly trailheads. Breakfast McDonalds scrambled eggs and Le Buzz for triple espresso & gallette; Safeway for picnic food of almonds and Fiber-One. Calibrate elevation at Palisades = 7900 ft. and water up. At 9:00 depart from Box Camp FT22 trailhead. Along this trail several appropriate habitats, e.g., E-facing moist black soil under ponderosas with ferns, and generally around most areas with herbs near running creek. At 10:50 reach Box Spring FT22A trail jct at 7525 ft. Becomes very steep NW decline, narrow trail in thick brush with trees burned. Originally envisioned bushwacking N about one mile to Marshall Gulch trails (so as not to have to return on same trail), but on the ground it looks like that would be nearly impossible. Saw no other hikers on this trail today. **Collection “Box Spring” #4.** At 11:45 arrive back at 22A jct and at 12:35 back to vehicle.

Lunch at Iron Door. Return to Palisades Ranger station to show ranger Jeanne Hartmann collections. To Rose Lake campgrounds (\$8 admission fee). **Collection “Rose” #5.** At 4:45 finish collecting Rose Lake campgrounds area. Several groups of people were fishing and swimming in the lake, and several tent campers. Check and water cached plants at Hitchcock, take back to Tucson (Oracle collection had been chewed), and return to city. Golden Corral supper. Return to motel. Download tracks and decide not to camp.

Tuesday, September 15th

Up 6:00 to check out of room 106 and register for 3 more nights in room 145 which has southern exposure for plants on windowsill. To Campbell for Rag’n Sage scone and triple. Stop for gas at Circle K and got scolded by clerk for using employee bathroom. Curious convention in this part of the world: Signs saying “no public restroom” usually mean that the restroom is only for patrons, but may mean, as in this case, that even at a gas station with a full line of snacks and beverages, there will be no windshield washing tools nor paper towels at pump and no place to wash hands, even for paying customers. Up Catalina Highway to arrive at Marshall Gulch trailheads (end of road due S of Summerhaven).

Start Sunset trail FT90 at 9:30. Along running stream with moist black soil, looking like very appropriate habitat at 7300-8000 ft. At 10:35 reach jct with Aspen, Wonder of Rocks, Mint Spring and Marshall Saddle trails at 25.858 x 46.387 and 8000 ft. At 10:45 depart on Wonder of Rocks trail FT44. At 11:00 turns S and becomes grassy and mesic. Follows running stream. At 25.707 x 46.747 and 7600 ft looks very good and looked hard here—stream floodplain of grasses, herbs, ferns in dark black organic and sandy moist soil under needle mulch under large burned ponderosas. This would be a good spot for primitive camping. Continue S to where trail crosses stream. **Collection “Rocks” #6.** Retrace starting 12:20 to arrive trails jct at 12:45. Lunch and rest. At 1:30 depart jct, returning to Marshall Gulch via Aspen FT93. Inappropriate habitat until one reaches eastern section where N-facing.

123 **Collection “Aspen” #7.** Depart 2:38 and arrive vehicle at trailhead at 3:00. Met three groups of hikers
124 on this trail today.

125
126 Ice cream at Summerhaven grocery store. At 3:50 arrive Spencer campground (\$8 fee) just S of Box
127 Camp trailhead. Down gravel road to campsites #17-44. Looked very appropriate in grass-covered
128 valleys near stream and drainages. Looked here almost one hour without success. Access to lower
129 (SW) campsites was blocked.

130
131 At 4:50 arrive gravel Organization road access just E of Palisades Ranger station and running to just a
132 few hundred feet south of the Ranger buildings. Many small plants noted to be collected later.
133 Searched unsuccessfully farther down the road near Boy Scout facility.

134
135 At 5:40 to Willow Canyon. Looked very good in moist sandy streambed among willows (23.261 x
136 41.879 and 6940 ft).

137
138 Return to Tucson, check Goodwill on 23rd for used bicycle (for < \$5, but unusable junk); Burger King
139 supper and return to motel at 7:30.

140
141 **Wednesday, September 16th**

142
143 Up 5:20. Try route to mountains bypassing city as Interstate 10 to Houghton N. Longer distance
144 balances faster speed for no-advantage time of about 40 minutes. At Tanque Verde & Catalina Hwy
145 intersection mall got scrambled eggs at McDonalds, 4 shots and gallete at Le Buzz, and Safeway
146 groceries. To Butterfly FT16 trailhead (E, just E of Palisade Ranger Station). To saddle jct with
147 Biglow/Kellogg FT18A. **Collection “Butterfly Start” #8.**

148
149 Continue on Butterfly at 8:55. This entire 6+ mile trail has good potato habitat in many places, with
150 small robust to large flowering/fruitlet plants, particularly with N and NE exposures. Fruit often bear
151 fruit fly oviposit scar. **Collections “Butterfly” #9 and #10.** At 10:45 arrive jct Davis Spring FT31.
152 Alternate name for Davis Spring trail is “Potato Patch”—wonder why. Rest until 11:08. Continue on
153 Butterfly, but note that trail in GPS does not follow NW-pointing “dog snout” track on GreenTrails map
154 and GoogleEarth “Coronado Trails” download. Instead goes more directly to Novia Spring. On return
155 to USPG, contact GreenTrails map company with trackfile of correct path. At 11:20, arrive Novia
156 Spring vicinity. **Collection “Novia” #11.** Past Novia Spring (W) met hiker with 3 dogs at 11:50. At
157 12:32 arrive jct Crystal Spring FT17 (goes N to Oracle road). At 12:35 lunch break in shady spot at
158 25.787 x 43.773. Continue on Butterfly at 1:20 until 1:31 where there is a saddle with fire ring and log
159 seat at about 25.735 x 43.908 and 7400 ft. Just past this at 1:37 at 25.686 x 43.945 again see occasional
160 potatoes in S-facing shady slope along trail. At 2:00 arrive gravel road near highway and W Butterfly
161 trailhead. Had seen occasional small potatoes all the way from saddle to end of trail. We just arrive at
162 trailhead when a new black Jeep pulls up with gentleman from AL visiting AZ for a conference and
163 wondering about Butterfly trail conditions, etc. As he intended to return to Palisades, he graciously
164 agreed to take us back 3 miles on highway to our vehicle.

165
166 To Cookie Cabin at Summerhaven for chili snack and plan rest of day. Leave 3:25 on Ski Run road to
167 top of ski slope parking lot (i.e., Meadow FT5A and Mt Lemmon FT5 trailheads). At 4:05 depart on

168 Meadow FT5A to flat, grassy Lemmon Park. Plants observed here and at parking lot will be collected
169 on last day of expedition as collections #13 and #14.
170

171 At 4:55 retrace path to vehicle. Return to Tucson, stopping for pics. Supper at Mediterranean restaurant
172 in Tanque Verde & Catalina Mall. Wilmot & Speedway Starbucks and return to motel. Download
173 tracks and make list of clonal collections for tomorrow, Thursday, final day in the field.
174

175 Thursday, September 17th

176
177 Up 5:30 to University to Turkish cafe for coffee and egg bagel. To Safeway for picnic food. Up
178 Catalina Hwy to mile marker 10 at the bottom of where the highway runs along Bear Canyon. Would be
179 expected to be too low at < 5500 ft. At 7:50 park at pullout and descend to streambed. **Collection**
180 **“Mile 10” #12.** At 8:37 also search in canyon below mile marker 11 at 22.257 x 42.027 and 5798 ft.
181 Three plants observed, but none collected.
182

183 At 9:20 arrive at ski summit parking lot and at 9:45 collect plants previously discovered in high
184 meadow. **Collection “Meadow” #13.** At 10:00 on return to parking lot, collect plants previously
185 observed. **Collection “Summit Park” #14.**
186

187 At 10:25 depart toward W trailhead of Butterfly trail to collect plants observed there yesterday, returning
188 to vehicle at 11:52. **Collection “Butterfly End” #15.**
189

190 Drive (gravel) East Biglow road to top of Mt Biglow and Kellogg Mt. FT18A trailhead. From 12:00 to
191 12:45 collect plants to intersection with Butterfly trail. Small but robust plants (no fruit) seen
192 occasionally and collected along this ¼ mile path and including at the Butterfly trail jct, site of fruit
193 collection #8. This clonal collection will be considered to be part of collection #8.
194

195 Lunch on Palisades Ranger station deck and talk with ranger Jeanne Hartmann (originally from
196 Menominee Fall, WI), noting error in Butterfly trail track. She provides contact for Marc Rothmeyer,
197 publisher of GreenTrails map, (206) 295-9310, marc@greentailsmaps.com.
198

199 At 2:00 along Organization road just S of Palisades Ranger station collect plants previously discovered.
200 **Collection “Palisades - Boy Scout” #16.**
201

202 Incinerator road (gravel) at 24.587 x 42.556 to Peck Basin overlook FT18A trailhead. Unusually dry
203 crest here at 24.698 x 42.328 and 8070 ft. Found nothing.
204

205 Descend to Hitchcock campground area where plants previously discovered. **Collection “Hitchcock”**
206 **#17.**
207

208 Return to Tucson. At Tanque Verde & Catalina Hwy mall dive dumpster behind Safeway for two
209 cardboard boxes of right size to transport plants in plastic quart freezer boxes to USPG. To Park Mall at
210 Broadway and Wilmot for Rubio’s supper and Seattle’s Best coffee in bookstore. To motel to pack
211 plants and luggage.
212

213 Friday, September 18th and conclusion

214
215
216
217
218
219
220
221
222

Up 6:00 for breakfast at Rag'n Sage of triple and apricot scone. Return to motel to truss up collection transporting boxes, one with 8 boxes, one with 10, packed with newspaper. Gas up on Benson. Return vehicle to Thrifty and shuttle to TUS. Depart to MSN via MSP. B met by family and spends weekend in IL while plants remain on balcony of daughter's residence at Sun Prairie, then taken to Sturgeon Bay USPG on Sunday afternoon, transplanted to Promix in 3" clay pots in GH#1 on Sunday evening, Sept 20.

223 **Appendices**

224

225 Cost

226

227 Extramural funding by Karen Williams, PEO collecting grant of \$3,500. Formal trip claims of \$680
228 (dR) and \$1,603 (B) = \$2,283. Time invested was at least 2 weeks (B) and one week (dR) = \$7,100.
229 Total cost about = \$9,500.

230

231 Possible future trail exploration in the area (miles one-way):

232

233 Palisades to Mud Spring (3)

234 Box Camp to Apache Spring (5)

235 Green & Crystal Springs via Oracle road (7)

236 Mt. Lemmon through Pusch Ridge and Mt Kimball to Tucson (25)

237 Mt Lemmon to Canada del Oro to 5400 ft (6)

238

239 Trail gear list:

240

241 B: Pockets (Permits, pocket knives, toilet paper, billfold), leather holster belt (GPS, one quart water,
242 duct tape, 12” Bowie knife, car keys, maps, notebook & pencil), waistpack (food, camera, sunscreen,
243 mini-flashlight, plastic bags, Sharpie, sunglasses, lighter, paper bags for fruit collections, plastic
244 quart freezer boxes for plant collection), necklace compass, 2 quart shoulder strap canteen, mesh pith
245 helmet. Walking stick not used on this trip. A: backpack with all gear including second GPS.
246 Walking stick, hat.

247

248 Map note

249

250 First trip using GoogleEarth (GE) extensively, which gives a significant advantage for visualizing
251 terrain. Downloaded Coronado Trails track files to GE “My Places” (helpful, but sometimes only
252 approximate the actual trail course). These and custom tracks drawn in GE as .kml files were
253 converted to .gpx files with online freeware to allow upload to Garmin. Garmin tracks load directly
254 back to GE with GE tools. Trackfiles of all trail hiking on this trip and GE converter program are
255 available by contacting USPG.

256

257 Food note

258

259 Fiber-One (breakfast cereal) is a good trail food. Light to carry, easy to handle, filling and more
260 satisfying than too-rich/sweet granola bars. A bag of Fiber-One, a few nuts, and water is all that is
261 needed for a day of hiking.

262

263 Lodging note

264

265 Access to SC is on NE edge of Tucson, but we lodged on SW edge near Interstate because clean and
266 modern lodging available there for about half the price.

267

268

269 Permit waiver

270 (confirmation of determination that none was required):

271

272 **From:** James J Sutton [<mailto:jsutton@fs.fed.us>]
273 **Sent:** Wednesday, September 16, 2009 6:09 PM
274 **To:** Bamberg, John
275 **Subject:** Re: Potato collecting in Santa Catalina's

276

277

278 I owe you a huge apology for not getting back with you sooner.

279 It still stands that you do not need a permit as I have cleared this with the biologist (Josh Taiz) and the District
280 Ranger (Stan Helin).

281

282 The cheapest motels in town are on the frontage road and the motels on the east side ruin about \$100 or more
283 per night. By now you are probably near the mid point of your stay.
284

285 Sorry,
286 James Sutton
287 Santa Catalina Ranger District
288 5700 North Sabino Canyon Road
289 Tucson, AZ 85750
290 (520) 749-7725
291 (520) 749-7723 (fax)

292

293

294

295

296

297

298

299

300 **September 2009 Santa Catalina mountains Collections**

301

302 **PI 658169. BdR 181.** *S. stoloniferum*. September 12, 2009. United States. Arizona. Pima County.
303 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon, from San
304 Pedro Vista on Green Mountain trail #21. Collection #1. Steep N-facing canyon above trail at WGS84
305 32° 23.757' N x 110° 41.007' W and 7180 ft. A few tiny plants among rocks in moist black soil.
306 Collected 5 plants.

307

308 **PI 658170. BdR 182.** *S. stoloniferum*. September 13, 2009. United States. Arizona. Pima County.
309 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to Oracle
310 control road to Oracle trail #1. Collection #2. On W-facing slope above trail at WGS84 32° 28.167' N x
311 110° 45.057' W and 7360 ft. A few healthy green plants in moist black soil in Sacaton, grass and scrub
312 oak. Collected 4 plants.

313

314 **PI 658171. BdR 183.** *S. stoloniferum*. September 13, 2009. United States. Arizona. Pima County.
315 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to Oracle
316 control road to Oracle trail #1 to East Fork trail #401 to Catalina campground near jct with Red Ridge
317 Trail #2. Collection #3. Across creek from campsite to S at WGS84 32° 28.829' N x 110° 45.906' W
318 and 5650 ft. In open and among rocks and grass in moist black soil and leaf mulch in creek bottoms,
319 somewhat S-facing. Alligator juniper and ponderosa with much cattle sign. A few small but robust,
320 green plants. Collected 4 plants.

321

322 **PI 658172. BdR 184.** *S. stoloniferum*. September 14, 2009. United States. Arizona. Pima County.
323 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to Box
324 Camp trail #22 to Box spring trail #22A. Collection #4. At WGS84 32° 24.350' N x 110° 45.456' W
325 and 7250 ft. Along trail in dense brush and grass on very steep W-facing slope in moist very black
326 organic soil. About 20 robust tuberlings to 12 inches, one flowering. Collected 7 plants.

327

328 **PI 658173. BdR 185.** *S. stoloniferum*. September 14, 2009. United States. Arizona. Pima County.
329 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to Rose
330 Lake campgrounds. Collection #5. In grass and needle mulch around campsites #39, #66, and Black
331 Bear flats, but not around lake per se. At WGS84 32° 23.620' N x 110° 42.004' W and 7070 ft. Some
332 plants growing out of cracks in asphalt of roadway. Many robust small plants. Collected 12 plants.

333

334 **PI 658174. BdR 186.** *S. stoloniferum*. September 15, 2009. United States. Arizona. Pima County.
335 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
336 Summerhaven to Marshall Gulch trail #3 to Wilderness of Rocks trail #44. Collection #6. At WGS84
337 32° 25.678' N x 110° 46.789' W and 7595 ft. Where trail crosses creek in habitat of large burned
338 ponderosas. Moist dark organic and sandy soil under willows and among ferns and grass. Dozens of
339 plants, small to 12 inches and spindly and pale depending on shade. Collected 3 plants of which 2
340 survive.

341

342 **PI 658175. BdR 187.** *S. stoloniferum*. September 15, 2009. United States. Arizona. Pima County.
343 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
344 Summerhaven to Aspen trail #93. Collection #7. At WGS84 32° 25.339' N x 110° 45.449' W and 7800

345 ft. Below trail on steep N-facing slope in moist organic soil with thick scrub oak and herbs. Many small
346 robust plants. Collected 13 plants.

347

348 **PI 658176. BdR 188.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
349 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
350 Butterfly trail #16 near Palisades ranger station to jct with Mt Bigelow–Kellogg Mt. trail #18A.
351 Collection #8. At WGS84 32° 24.880' N x 110° 42.691' W and 8275 ft. Hiding under downed branches
352 in grass and shed bark. Many large plants, some flowering and with fruit at trail jct and all along trail to
353 Mt. Bigelow. Collected 15 plants of which 11 survive and 30 fruit, some with grubs yielding 395
354 original seeds.

355

356 **PI 658177. BdR 189.** *S. stoloniferum*. September 16, 2009. United States. Arizona. Pima County.
357 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
358 Butterfly trail #16. Collection #9. At WGS84 32° 25.112' N x 110° 42.650' W and 7890 ft. Steep slope
359 above trail with open NE-facing exposure. Many robust small to large plants, a few with mature fruit
360 with no fruit fly oviposit scar. Collected 9 fruit from only a few plants yielding 342 original seeds.

361

362 **PI 658178. BdR 190.** *S. stoloniferum*. September 16, 2009. United States. Arizona. Pima County.
363 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
364 Butterfly trail #16. Collection #10. At WGS84 32° 25.273' N x 110° 42.746' W and 7760 ft. Steep
365 shady N-facing slope in very black moist soil. Many scattered small plants, occasional larger with fruit,
366 usually with fruit fly scars. One unscarred fruit collected yielding 70 original seeds.

367

368 **PI 658179. BdR 191.** *S. stoloniferum*. September 16, 2009. United States. Arizona. Pima County.
369 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
370 Butterfly trail #16. Collection #11. At WGS84 32° 25.639' N x 110° 42.027' W and 6880 ft. Novia
371 Spring flats. Very black moist soil. Thousands of robust plants, small to large. Collected 8 plants, all
372 survive.

373

374 **PI 658180. BdR 192.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
375 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to mile
376 marker 10 pullout. Collection #12. At WGS84 32° 21.796' N x 110° 42.761' W and 5460 ft. Below
377 pullout near mile marker 10 in lower Bear Canyon. Shady stream bottom in grass with sycamore, brush,
378 datura and vines. Dozens of robust plants. Collected 12 plants of which 9 survive.

379

380 **PI 658181. BdR 193.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
381 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
382 Summerhaven and Ski Run/Summit roads to Meadow trail #5A. Collection #13. At WGS84 32°
383 26.300' N x 110° 47.540' W and 9100 ft. High grassy flat summit meadow (Lemmon Park) with large
384 burned pines. Thousands of widespread robust plants of all sizes, some heavily grazed. Collected 12
385 plants of which 10 survive and 14 fruit, some with fruit fly scar, yielding 242 original seeds.

386

387 **PI 658182. BdR 194.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
388 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
389 Summerhaven and Ski Run/Summit roads to Meadow trail #5A. Collection #14. Around summit

390 parking lot at WGS84 32° 26.437' N x 110° 47.144' W and 9100 ft. In dry needle mulch in shade of
391 pines and aspens and brush. Occasional, mostly small and pale plants. Collected 10 plants; all survive.

392

393 **PI 658183. BdR 195.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
394 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
395 Butterfly trail #16 W trailhead. Collection #15. From small W-facing valley near trailhead at WGS84
396 32° 25.671' N x 110° 44.414' W and 7725 ft. and occasional to about ¼ mile down trail. Collected 9
397 plants; all survive.

398

399 **PI 658249. BdR 197.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
400 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to
401 Palisades Ranger station vicinity and Organization Ridge road. Near Boy Scout Camp. Collection #16.
402 At WGS84 32° 24.580' N x and 110° 42.968' W and 7900 ft. Many small plants in open under large
403 pines. Collected 11 plants; all survive.

404

405 **PI 658184. BdR 196.** *S. stoloniferum*. September 17, 2009. United States. Arizona. Pima County.
406 Coronado National Forest, Santa Catalina Mountains. On Catalina Highway to Mt. Lemmon to near
407 Hitchcock campground. At 150 feet S of campground entrance on S bank of wash on E side of culvert.
408 Collection #17. Thousands of small robust, very dark green plants on flat bank above wash in black,
409 moist sandy soil at WGS84 32° 22.607' N x 110° 41.250' W and 5930 ft. Collected 12 plants; all
410 survive.

411

412



Rose Lake camp collection



Lemmon Park



Tiny plants on Green trail



Catalina Camp habitat



Tuber in rotten wood
at Palisades



On Oracle trail



Lookout to Bear Canyon



Aspen trail vista



Oracle trail habitat



On Red Ridge trail



Wilderness of Rocks trail



Aspen trail habitat



Flowering on Butterfly trail



Fruit on Butterfly trail



Butterfly trail vista toward Oracle



Mile 10 Bear Canyon habitat



Transplants at USPG greenhouse

Map of approximate collection site locations (GreenTrails Map)

