

Proposed Rule: Endangered Species Status for *Chamaecrista lineata* var. *keyensis* (Big Pine Partridge Pea), *Chamaesyce deltoidea* ssp. *serpyllum* (Wedge Spurge), and *Linum arenicola* (Sand Flax), and Threatened Species Status for *Argythamnia blodgettii* (Blodgett's Silverbush)

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I have read carefully through this proposed rule and found it to be clearly written and very thorough. I fully support the Service's efforts to add these three plants to the federal endangered species list and one plant to the federal threatened list. I have made specific comments below, with bold, bracketed text indicated the page, column, and paragraph of the text to which I am referring. Most of my comments fit into these three categories:

1. I made several comments about populations of *Linum arenicola* and *Argythamnia blodgettii* that were not included on this proposed rule, or were included as "uncertain" or "extirpated" when they are actually present (all in Miami-Dade County preserves). I am compiling GPS points for all of these data and will share them with the Service and FNAI before the end of the official comment period. I included photos of these populations, when I had them.
2. I question whether the Service may be over-estimating the number of populations of *Argythamnia blodgettii*, using outdated/vague data for three of the Miami-Dade preserves (it is listed as present in Tropical Park, Martinez Preserve, and Crandon Park).
3. Finally, throughout the document, the proposed rule is not consistent with how it refers to land within the Richmond complex of pine rocklands in Miami. I addressed specific instances in comments.

Specific comments pertaining to specific parts of the proposed rule

[58538, C3, P1] - The work "split" should be "splits"

[58539, C2, P3] - The current accepted name for *Psidium longipes* is now *Mosiera longipes*. Also, in this same paragraph, *Quercus elliotii* is mentioned. This is an older synonym for *Q. pumila*, which is also listed on this same page.

[58540, C3, P1] - The first sentence was weird. Suggested change: "...frequency with which..." and "...also shows ..."

[58544, Table 3]

- The population of 56 plants in “Richmond Pineland” was more specifically found in Zoo Miami, which is part of the Richmond Pinelands. For consistency’s sake, it may be better to leave out the word “Richmond” here because the Martinez population—also in the Richmond pinelands—doesn’t mention it.
- The Zoo Miami site (with 56 plants) is not private (as listed); it is publically owned by Miami-Dade County’s Dept. of Parks, Recreation and Open Spaces.
- My name is misspelled in footnote #6 (as ‘Possely’ instead of the correct ‘Possley’).

[58545, C2, P1] - There is a statement attributed to page 2 of a 2014 report from Fairchild Tropical Botanic Garden. This report is not listed in the literature cited, and I was unable to figure out what it might be. At any rate, the statement is made that a population of *L. arenicola* in the Richmond pinelands is on private land which is slated for development. This is incorrect; that population is the aforementioned 56 plants discovered at Zoo Miami by Dr. Frank Ridgley, a veterinarian at the zoo who has a strong interest in pine rockland flora and fauna. The intimation seems to be that *L. arenicola* was found in the “Coral Reef Commons” area formerly owned by the University of Miami and now owned by RAM Realty. According to recent work by Steve Woodmansee, *L. arenicola* was not found on that property (See pg. 70, of the document: “Habitat Conservation Plant for Coral Reef Commons,” Prepared May 2015 by Johnson Engineering, Inc., for Coral Reef Commons, LLC).

[58546, C2, P1] - There is a statement that the leaves of *Argythamnia blodgettii* are often “colored a distinctive, metallic bluish green.” In my experience, this is only true of dried leaves, as when a specimen is collected or if a leaf or branch of a live plant is damaged. I added a photo along with my comments.

[58546, C2, P1] -Roger Hammer already made a comment to this effect, but it seems the name *Argythamnia blodgettii* is no longer accepted by Wunderlin & Hansen or ITIS. I gather that this change may affect the taxon’s federal status.

[Table 4]

- I was surprised to see *A. blodgettii* listed as present for some of the Miami-Dade County preserves, specifically Tropical Park, Martinez Pineland, and Crandon Park. My coworkers and I have visited all of these preserves (especially the first two) on dozens of occasions to look for endangered plants over the past 15 years and never located *A. blodgettii*, but then again we did not have GPS coordinates and the plant is very easy to miss. I tried to track down the citation to see where these documentations originated. The reference is listed as “FNAI 2011” under the Table, but confusingly, the year 2005 is included after the population estimates in the table, and then in the literature cited, all the FNAI 2011 citations have a letter after them. I assume it refers to 2011b, which pertains *A. blodgettii*. At any rate, I question whether *A. blodgettii* was actually documented at these sites within the past decade. If not, should these three really be considered “extant” populations?

- Martinez Pineland and Larry & Penny are lumped in this table, probably because they are both part of the Richmond pineland complex. If possible, they should be separated, to be consistent with Table 3. As mentioned above, I have not been able to locate *A. blodgettii* at Martinez Pineland, though it could very well be there. However, I (and coworkers) have mapped approximately 5700 *A. blodgettii* in Unit 2 of Larry & Penny Thompson Park in 2008-2009. The population estimate in Table 4 should be upgraded from 6!
- On 3/7/15, I counted 7 *A. blodgettii* in a site that is not listed here: at an FPL easement just north of the Deering Estate. This site, which spans between SW 67th Avenue and Old Cutler Road, at approximately of SW 147th St, is adjacent to Miami-Dade County's "Ludlam Preserve," but *A. blodgettii* has never to my knowledge been documented in that preserve. This population should be added to Table 4.
- Camp Owaissa Bauer is listed in the "uncertain" section (as "Owaissa Bauer County Park," which I don't believe is its proper name, see <http://www.miamidade.gov/ecoadventures/camp-owaissa-bauer.asp>). There is actually quite a bit of *Argythamnia blodgettii* there! Most of it was mapped by Steve Woodmansee in 2009; he was working as a subcontractor under Fairchild for Miami-Dade County. He found 878 individuals. In 2012-2013, I mapped 14 additional plants in additional locations at Camp Owaissa Bauer. Camp Owaissa Bauer should be moved to the "Extant" section of Table 4.
- Camp Owaissa Bauer Addition #1 is listed as "uncertain." I don't know about the #1 but I believe this is the same parcel on the corner of Krome Ave. and Bauer Drive where Jane Dozier and I mapped 377 plants from 2010 to 2014. Camp Owaissa Bauer Addition should be moved to the "Extant" section of Table 4.
- Fuchs Hammock is listed in the "Extirpated" section of Table 4. However, *A. blodgettii* is present there. I mapped 12 plants in 2008. Fuchs Hammock should be moved to the "Extant" section of Table 4.
- The "extirpated" section lists "Bauer Drive Pineland." To me, this sounds like an old way to refer to the aforementioned Camp Owaissa Bauer (which is indeed on Bauer Drive, aka SW 264th St). At any rate, it's confusing. If it is a different site, maybe provide an approximate cross street if that information can be found?

[58550, C2, P3] - The sentence about the Cocoplum housing development makes it sound like the entire area was developed in 2005. That subdivision was there long before 2005, but the single *Linum*-containing lot at the corner of Robles and Vistalmar was not developed until that year.

[58550, C3, P3] - I found the paragraph about development in the Richmond pine rocklands to be confusing for two reasons. First, while it is true that *A. blodgettii* and *L. arenicola* are present in the Richmond pine rocklands, they have not been demonstrated to be present in the 55-ha parcel that this paragraph is specifically discussing (the statement is misleading). See the aforementioned report: "Habitat Conservation Plant for Coral Reef Commons," Prepared May 2015 by Johnson Engineering, Inc., for Coral Reef Commons, LLC. Second, I

didn't understand the sentence about DERM. Is that saying that DERM is managing the private portions of Richmond? That is not the case.

[58552, C3, P1] -The discussion of hardwood reduction as a surrogate for fire in pine rocklands might list a few more of the “cons.” These are discussed in a paper co-written by Fairchild, Miami-Dade NAM, and Miami-Dade EEL staff. See pages 162-163 of this publication: POSSLEY, J. J. MASCHINSKI, J. MAGUIRE AND C. GUERRA. (2014). VEGETATION MONITORING TO GUIDE MANAGEMENT DECISIONS IN MIAMI'S URBAN PINE ROCKLAND PRESERVES. NATURAL AREAS J. 34:154-165.

[58552, C3, P2] - The first sentence of this paragraph omits two of the most important partners in fire management in Miami-Dade preserves: The FFS (Florida Forest Service) and NAM (the Natural Areas Management division of the county's department of Parks, Recreation and Open Spaces). Should TNC also be included in the non-profit section, for their work in Monroe County?

[58553, C1, P1] - The following statement is incorrect: “At the Martinez pineland, a population of *L. arenicola* in a marl prairie that became overgrown due to lack of fire has not been observed since 2011.” I and others have been monitoring this population every year or two and it is doing fine. I last monitored it in May 2015 and the estimate of 100-200 plants is still accurate. Photos available upon request.

[58554, C3, P3] - This section discusses the County's EEL program so this may not be germane, but FTBG works very closely with EEL *and* NAM to assess habitat status and determine potential management threats on Miami-Dade County Preserves.

[58554, C3, P1] - There is a statement that *L. arenicola* and *A. blodgettii* occur on the USCG property and the NOAA property in the Richmond pinelands. Is this a fact, or should it say they *could* occur there? If these species are indeed on these properties, then they should be listed in tables 2 and 3 along with other occurrences. Also, I and other biologists have surveyed the NOAA property and we did not find either species there).

[58556, throughout] - This page mentions RER in Miami-Dade County. RER is the new name for DERM, mentioned previously in this proposed rule. Confusingly, though, everyone still says DERM. See: <http://miamidade.gov/wps/portal/Main/departments>

[58557, C2, P2] - There is a statement about non-native species in hammocks that is attributed to Possley 2013h-I, but that citation is not in the literature cited. I believe that was probably an email I sent to Nicole Adimey about non-native species in hammocks that threaten Florida bristle fern. Most of these species are also valid for hammocks in general, but I would remove *Thelypteris opulenta* (currently only a problem in 2-3 hammocks) and change *N. multiflora* to the new name, *N. brownii*.

[58562, C1, P5] - The text refers to the “areas that support *Linum arenicola* at the Martinez and Richmond pinelands....” Note that Martinez is a preserve within the Richmond Pinelands. This is repeated in the next column as well, in paragraph 3.