From: Wiley, John
To: Roth, Daniela, EMNRD
Subject: [EXT] AHTF in NM - Genetics and 5Y Review
Date: Thursday, July 30, 2020 8:06:32 AM
Attachments: Outlook-tdecstatep.png
Outlook-cid_image0.png
Outlook-stateparkp.png
Outlook-4rkcvsfj.png
Outlook-xsi0ywhi.png

Daniela,

I realized I never replied to you below. This was sitting in my draft folder. Sorry about that.

Also, we were in the middle of completing a status assessment regarding this species when we found this population in New Mexico. Do you mind if I reach out to you regarding our recommendation and next steps for this species?

We will definitely keep you updated on the outcomes of the genetic work. For this species, there is a lot of morphological variability among individuals that make it difficult to separate out varieties without some genetic work. We do not have a lot of information from the populations in Mexico to look at, so it's hard to know what is 'typical' AHTF in the southwest. Based on the gametophyte morphology, it looks North American.

Conservatively, I would say there is no reason based on our current understanding of the genetics and distribution of the species that we would not consider this AHTF. The genetics work should provide additional data that will allow us to either confirm this or support a new taxonomic classification within the species. My understanding is that this work may be preliminaryly completed sometime this summer or early fall.

John J. Wiley, Jr.
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https://www.fws.gov/northeast/nyfo/

From: Roth, Daniela, EMNRD <Daniela.Roth@state.nm.us>
Sent: Tuesday, February 25, 2020 8:56 AM
To: Wiley, John <John_Wiley@fws.gov>

Subject: [EXTERNAL] RE: Fun News: Listed Fern confirmed in NM

Hi John:

Thanks for the info on the need for genetic work on the recent find of *Asplenium scolopendrium var. americanum* in New Mexico. I was wondering why there were still questions on the identification of this fern, even after specialists verified the ID. When are you expecting results and publishing your findings? This is clearly a very important find for New Mexico. I would appreciate if you could keep me updated on the findings of your research.
Best,
Daniela

Daniela Roth
Botany Program Coordinator
EMNRD – Forestry Division
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http://www.emnrd.state.nm.us/SFD/

From: Wiley, John <John_Wiley@fws.gov>
Sent: Friday, February 21, 2020 6:37 AM
To: David.Lincicome@tn.gov; Carl Nordman <Carl_Nordman@natureserve.org>; Roth, Daniela, EMNRD <Daniela.Roth@state.nm.us>; aschotz@alnhp.org; Caitlin Elam <Caitlin.Elam@tn.gov>; Todd Crabtree <Todd.Crabtree@tn.gov>; Anne Frances <Anne_Frances@natureserve.org>; Amanda Treher <Amanda_Treher@natureserve.org>; Hill, Debra M <debra_hill@fws.gov>
Subject: [EXT] Re: Fun News: Listed Fern confirmed in NM

All:

It is an interesting story! I was actually out in NM last week to check out the site and help collect the samples for genetic analysis.

The population is about 66 individuals down in a 20 ft roughly circular lava bubble with a person-sized opening at the top. Or initial impressions are that the gametophyte looks very North American but there are some interesting morphological variations of the sporophytes that suggest it *could be* something a little different. In particular some of the bases of the fronds are more hastate than auriculate, but this is not consistent across all of the plants. The common sori 1/2 down the frond, that seems to be a poor character, is also variable here, with a few approaching 2/3. Weston Testo from University of Florida will be sequencing the samples to compare against americanum, lindenii, among others. Danny Fernando will be putting some samples into his sub-population level work that is focused on US and Canadian

populations.

The three of us that went out will be looking to publish a note in the American Fern Journal regarding the find.

Cheers,
John

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From: David Lincicome <David.Lincicome@tn.gov>
Sent: Wednesday, February 19, 2020 10:57 AM
To: Carl Nordman <Carl_Nordman@natureserve.org>; Roth, Daniela, EMNRD <Daniela.Roth@STATE.NM.US>; aschotz@alnhp.org <aschotz@alnhp.org>; Caitlin Elam <Caitlin.Elam@tn.gov>; Todd Crabtree <Todd.Crabtree@tn.gov>; Anne Frances <Anne_Frances@natureserve.org>; Amanda Treher <Amanda_Treher@natureserve.org>; Wiley, John <John_Wiley@fws.gov>; Caitlin Elam <Caitlin.Elam@tn.gov>
Subject: [EXTERNAL] RE: Fun News: Listed Fern confirmed in NM

Very cool. So this is not a stretch. It is known from Mexico and Haiti too. This may be var. lindenii. I think there is also some question about the Japanese sub-species ssp. japonicum. There might also be another variety or subspecies in the Mediterranean region, ssp. antri-jovis. I think both the Asian and European species are naturalized in New Zealand! Who is who? Anyway a crazy species.

I've copied John Wiley with USFWS on this thread to see if he has anything to add to this story.

Regards,

David Lincicome | Natural Heritage Program Manager
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From: Carl Nordman [mailto:Carl_Nordman@natureserve.org]
Sent: Wednesday, February 19, 2020 9:27 AM
To: Roth, Daniela, EMNRD; aschotz@alnhp.org; Caitlin Elam; David Lincicome; Todd Crabtree; Anne Frances; Amanda Treher
Subject: [EXTERNAL] FW: Fun News: Listed Fern confirmed in NM

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Asplenium scolopendrium var. americanum

Thanks, Daniela for passing on this exciting find!
I'm forwarding this to botanists at NatureServe and our partner programs, Tennessee Natural Heritage Inventory Program, and Alabama Natural Heritage Program.

Details on El Malpais
https://www.nps.gov/elma/learn/nature/lava-tubes-and-caving.htm

Carl

Carl Nordman
Vegetation Ecologist, NatureServe

Tel: +1 919-808-1301 | **CFC** # 10299

NatureServe

From: NMRAREPLANTS-L <NMRAREPLANTS-L@LIST.UNM.EDU> **On Behalf Of** Roth, Daniela, EMNRD
Sent: Wednesday, February 19, 2020 9:11 AM
To: NMRAREPLANTS-L@LIST.UNM.EDU
Subject: [NMRAREPLANTS-L] FW: Fun News: Listed Fern confirmed in NM

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How about this for interesting news?

Possibly Asplenium scolopendrium var. americanum. In New Mexico.

Daniela

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From: Hill, Debra M <debra_hill@fws.gov>
Sent: Wednesday, February 12, 2020 11:09 AM
To: FW2 NM ES <FW2_NM_ES@fws.gov>
Subject: Fun News: Listed Fern confirmed in NM

Hi All-
About a month ago, I was contacted by our New York field office about a potential new location of the listed American Hart's-tongue fern at El Malpais. Due to weather, we were not able to join staff from NY and NPS yesterday, but they sent photos from their site visit. Species experts confirmed the identity of the fern in a cave on the park, and will being doing genetics. I will be working with NYESFO to determine how we move forward from here, but thought I should share this news!

Deb