Summary of Comments on Pituophis_MS_amq.pdf

Page: 1

Author: quattrinia Subject: Underline Date: 5/10/23, 8:02:24 AM

I am not a snake expert, but is snakes right? Or is this a typo?

Author: quattrinia Subject: Sticky Note Date: 5/10/23, 8:03:02 AM

species

Author: quattrinia Subject: Sticky Note Date: 5/10/23, 8:03:41 AM

species delimitation approaches encompass phylogenetic and population genetic analyses. I suggest to reword

Author: quattrinia Subject: Sticky Note Date: 5/10/23, 8:04:19 AM

can you end with a strong concluding remark that would reach broader audiences?

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:53:58 AM

You discuss the effects of rivers in the discussion. Maybe you can add a sentence about what is causing the population structure here.

Page: 2

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:54:27 AM

Please increase font of the legend

Author: quattrinia Subject: Sticky Note Date: 5/10/23, 8:08:51 AM

Watch use of tenses throughout. And here, for example, you say snake and then snakes. Which is preferred?

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:54:56 AM

I highlighted some places throughout the paper that need to be checked for grammar, etc.

Author: quattrinia Subject: Underline Date: 5/10/23, 8:05:27 AM

are

Author: quattrinia Subject: Sticky Note Date: 5/10/23, 8:05:47 AM

what leads?

Author: quattrinia Subject: Highlight Date: 5/10/23, 8:09:37 AM

do you mean their assigned sub-species?

Author: quattrinia Subject: Inserted Text Date: 5/10/23, 8:07:02 AM

s

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:23:29 PM

I wouldn't even consider a synapomorphy to be labile. Suggest rewording,

Author: quattrinia Subject: Highlight Date: 5/10/23, 8:07:48 AM

classified

Page: 3

Author: quattrinia Subject: Highlight Date: 5/13/23, 11:55:38 AM

I think you can remove this highlighted section. This information can be found in other papers.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:55:57 AM

It is not clear how your study differs from the prior one. Please add a few sentences to discuss how your study expands on the prior one.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:23:50 PM

Again, some information that is not needed here. -Like what a SNP is (also you use SNPs before you define it)

Author: quattrinia Subject: Highlight Date: 5/13/23, 12:23:47 PM

I think this is too much information for your introduction. bPP is a long-recognized method in species delimitation, albeit with some issues. And, there is more emphasis now on methods of species delimitation that incorporate gene flow-including bPP. Instead, I suggest just talking about your species concept here and then why this makes the most sense for this group of snakes. Then, simply state the need to apply MSC to distinguish species

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:24:42 PM

In my opinion, the last four paragraphs can be shortened into two short paragraphs. Discuss the populations of pine snakes, then your methods to distinguish them using UCES for phylogenetics, followed by species delimitation. It would be helpful in the last paragraph to lay out, simply, your objectives and/or hypotheses.

Author: quattrinia Subject: Highlight Date: 5/10/23, 8:20:35 AM

et al. (2001)

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:25:03 PM

There are some details missing between tissue sample to illumiprocessor. Did you extract these yourself and perform target capture? Or did Nikolakis et al. do so? Did they generate the UCEs and SNPs? OR just UCEs and so you are expanding on that study by calling SNPs?

And there are several steps between illumiprocessor and phyluce. And, how did you call SNPs?

Many more details needed.

Author: quattrinia Subject: Highlight Date: 5/10/23, 8:17:01 AM

Page: 4

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:25:29 PM

Do the node values represent posterior probabilities? add to legend

Overall, trees look OK, but labels are hard to read. One idea, is to add symbols next to the tip names to represent your different locations (and maybe just the state-is the city necessary?) . And, maybe you can think about a way to map the colors of the subspecies laid out in figure 1 map onto this tree.

Then, you can increase font size of the tip labels and the node labels

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:25:54 PM

Did you use the loci or called SNPs from the loci? The Results section suggests SNPs, but this isn't clear.

Author: quattrinia Subject: Sticky Note Date: 5/12/23, 10:08:54 PM

DAPC is part of the species delimitation process. It is a discovery phase. With bpp, you can validate the species hypothesis

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:25:41 PM

It is true that you need to set a certain number of clusters for DAPC, and then use BIC to assess the most likely number of populations. But, you don't a priori assign samples to those populations, so you are not in fact "testing the populations outlined in the introduction".This statement is misleading. I would reword.

I would also consider removing the outgroup and rerunning DAPC again on your ingroup and increase the number of K. By limiting to 4, you limit the potential structure seen in the phylogeny. (The four purple clades-might they in fact show more population structure?)

Page: 5

Author: quattrinia Subject: Sticky Note Date: 5/12/23, 10:10:15 PM

The colors of the bars do not match the colors of the circles.

Author: quattrinia Subject: Sticky Note Date: 5/12/23, 10:10:38 PM

based on bPP?

Author: quattrinia Subject: Sticky Note Date: 5/12/23, 10:11:59 PM

Do you mean DAPC not PCA?

Author: quattrinia Subject: Sticky Note Date: 5/12/23, 10:13:04 PM

which match the populations discovered in DAPC?

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 8:23:40 AM

Section could be expanded some. Was the tree well supported? Any other patterns?

Page: 6

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:26:23 PM

What would happen if you didn't limit your analysis to testing K up to 4? I am curious about the purple clade of P. m meg sister to the green clade. That is more divergent than the blue ME clade. I suggest revisiting the # K in DAPC analysis and re run with more possible populations

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:00:15 PM

Green symbols are hard to see on this map.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:26:13 PM

You talk about species structure in the population section, you don't really discuss population results across the region, rather, how this maps to the known sub species. Because DAPC can be considered a species discovery approach, I think you cold either change the title subsection or merge with section on BPP.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 9:10:59 AM

this first paragraph should be in the intro.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 9:11:25 AM

Species Delimitation of Pituophis

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:38:16 AM

reorganized some.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:26:27 PM

I disagree that there is "agreement" . DAPC clusters are paraphyletic.

Author: quattrinia Subject: Highlight Date: 5/13/23, 11:34:42 AM

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:36:59 AM

be more specific on anthro activities

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:02:52 PM

In general, I think the Discussion needs attention. The first paragraph is really information that should be stated in the introduction.

One idea is to start the discussion about the utility of the UCEs in species delimitation for snakes. Them transition into the fact that your analyses do not support sub species as species status, rather that these should be considered one species. Then discuss within the species, there is population structure and discuss what is causing that. The conclusions. My suggestion.

Author: quattrinia Subject: Highlight Date: 5/13/23, 8:41:35 AM

Author: quattrinia Subject: Highlight Date: 5/13/23, 11:42:36 AM

Page: 8

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:23:15 PM

I disagree with this. There have been several studies focused on birds, insects, spiders, and marine invertebrates. Suggest rewording to "explored much in snakes or reptiles, etc"

Author: quattrinia Subject: Highlight Date: 5/13/23, 11:48:21 AM

locus

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:20:47 PM

Can you expand on what you mean by inconclusive? And, can you cite prior work? if not you need to add results in the paper to support this statement-or just delete it. I think this section could simply say using SNPs derived from UCEs was useful in species delimitation of your taxonomic group

Author: quattrinia Subject: Underline Date: 5/13/23, 11:51:44 AM

Author: quattrinia Subject: Highlight Date: 5/13/23, 11:43:41 AM

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 11:46:25 AM

I do not think you have evidence for these three subspecies that were mentioned in the introduction-they do not form geographically isolated populations, which is a definition of a subspecies.

Seems like you have evidence for several populations within the species, but that these do not correspond to the three subspecies as previously defined. I suggest consider reprhasing this conclusion.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:22:03 PM

curious, do the color morphs match the DAPC or phylogenetic results at all? Should this be mentioned as well? I am assuming no, but curious.

Author: quattrinia Subject: Sticky Note Date: 5/13/23, 12:23:26 PM

Some of this information doesn't really need to be in this section. Should be in the prior section about pop gen and species delimitation