Checklist Committee

Committee Members: B. R. Costelloe, J. A. Esselstyn, S. P. Maher, R. W. Norris, B. D. Patterson, D. M. Reeder, B. P. Tanis, N. S. Upham (Chair).

Mission:

The Checklist Committee is being repurposed to better reflect its activities. A name change is pending as well as a fully revised mission statement.

Former responsibilities:

First established in 1980, the Checklist Committee was charged with compiling and updating the publication, *Mammal Species of the World: A Taxonomic and Geographic Reference*. Current authors of that volume made up the Checklist Committee, which assembled the following information for each mammalian species: scientific name, author(s) and original citation, type locality, distribution, synonyms, and a comments field with important references and remarks. The 3rd edition from this effort, Wilson and Reeder (2005), has nearly 5000 citations on Google Scholar, which demonstrates its wide interest and use.

Brief history of re-purposing:

The Checklist Committee was repurposed by a vote of the Board of Directors in October 2015 following a series of lively email discussions regarding its current and future role in ASM.

The vote was in response to a motion to dissolve the Committee raised by then-Chair DeeAnn Reeder in September 2015, citing the doubtful need for an ASM committee to continue supervising the series now that Johns Hopkins Press is fully handling the publications. This motion precipitated discussion about the need for current data on mammalian biodiversity to be vetted and distributed to the research community at more regular intervals. Bruce Patterson proposed that the ASM could lead that effort, and specifically model it after existing online efforts such as reptile-database.org. The proposal was seconded by Sue McLaren, and furthered by Nate Upham, Ed Heske, Doug Kelt, Matt Hopton, Hayley Lanier, John Koprowski, Bill Lidicker, Link Olson, Melissa Pardi, Karen Munroe, Melissa Merrick, Bob Timm, and Rodrigo Medellin. The widespread support for this proposal raised a variety of exciting ideas about the nature of such a database, how it may link to existing activities in ASM and beyond, and promote the public visibility of the Society.

Information Items:

(1) The Committee's former membership has been entirely rotated off, with the exception of D. M. Reeder (former Chair) who continues as a member. We thank these former members for their service: R. E. Barry, P. Bloomer, G. N. Bronner, R. L. Brownell, Jr., M. D. Carleton, D. P. Domning, A. L. Gardner, C. P. Groves, K. M. Helgen, H. N. Hoeck, M. E. Holden, S. S. B. Hopkins, R. Hutterer, P. D. Jenkins, C. W. Kilpatrick, C. A. Matthee, J. G. Mead, G. G. Musser,

L. E. Olson, J. L. Patton, A. L. Roca, D. A. Schlitter, A. C. Schunke, N. B. Simmons, A. T. Smith, R. W. Thorington, Jr., G. Veron, D. E. Wilson.

(2) In January 2016, N. S. Upham accepted an appointment from President Lacey to Chair this repurposed effort.

(3) The new membership consists of B. R. Costelloe, J. A. Esselstyn, S. P. Maher, R. W. Norris, B. D. Patterson, D. M. Reeder, B. P. Tanis, and N. S. Upham (Chair). In-committee links were established to the Informatics Committee (Maher, Costello, Tanis) and Nomenclature Committee (Norris, Reeder).

(4) In Feb 2016, the new members of this Committee filled out an online survey to evaluate their goals and priorities for the group, as well as vote on a new name / branding for the incipient database. Priorities for the new database to compile and oversee, by committee survey:

- Top (9/10 votes):
    - Up-to-date list of extant species in Mammalia
- Middle (> 5/10 votes):
    - Up-to-date list of taxonomic authorities for name changes
    - Integration with Mammal Images Library and other per-species content
    - Up-to-date list of phylogenetic position by species / clade
    - Online aggregation of new taxonomic literature as it is released
- Low (< 5/10 votes):
    - Editorial board for per-clade oversight and approval of taxonomic changes
    - Geographic distributions: summarized by continent, country, state in USA
    - Online forum for discussing taxonomic changes
    - Per-species webpages
    - Geographic distributions: by species (as a shp file)

(5) The domain name "mammaldiversity.org" was purchased for $12/yr from Google Domains.

Action items:

(1) We propose to rename this body the "Mammal Biodiversity Committee" to better reflect this committee's repurposed goals. We chose this name over the similar "Mammal Diversity Committee" in order to highlight the role of biodiversity science in our efforts, especially to members of the public that visit the committee pages.

(2) We propose to update the Committee's mission statement as follows:

"The Mammal Biodiversity Committee is guiding the construction of an ASM-based, readily updatable, and online database of mammal taxonomic and biodiversity information. Once established, this database will serve the mammalogy community with the latest information on species-level and higher taxonomic changes, thereby promoting more rigorous study of

mammalian biodiversity worldwide. Specific objectives for this online database include: (i) aggregating new citations on species descriptions and taxonomic revisions; (ii) overseeing and adjudicating a set of basic criteria that are used to evaluate the strength of evidence for new taxonomic changes; and (iii) provide an online forum for the discussion of mammal biodiversity. By serving as both a platform and forum, this initiative aims to stimulate interest in mammals and promote the ASM's role as a leader in high quality research on mammalian biology. Visit www.mammaldiversity.org for more information."

(3) Budget request = $25,000 USD [one-time start up + one-year of maintenance]

a. SCENARIO I — Hire the firm AcroMedia to design and host the website and database.
   i. Same firm that runs the current ASM website and web initiatives (e.g., State lists, Mammal Images Library), so content would be well integrated.
   ii. Database: would run on Drupal 6.0 (version of 2008) for content management
   iii. Front-end: similar to current ASM site; limited flexibility in user interface
   iv. Costs: AcroMedia estimate dated 18 May 2016
      1. If designed within current ASM website: $13,000 – $15,000 [one-time]
         Or if designed as standalone website: $18,000 – $20,000 [one-time]
         +
      2. Website maintenance: ~$2000 / year [ongoing]
         +
      3. Stipend of content manager (ASM member): ~$5000 / year [ongoing]
         = $20,000 – $27,000 total for 1st year of scenario I

b. SCENARIO II — Hire an independent developer to make a bare-bones website to only serve pages of text and taxonomy tables (e.g., csv) that we could update.
   i. This cheaper option would provide more initial design flexibility, but be less integrated with existing ASM content. Would make external links to resources such as the Map of Life (species geographic ranges), Animal Diversity Web (natural history information), Mammal Images Library, etc.
   ii. Database: Not needed, or could use Wordpress to manage content and user forum.
   iii. Front-end: Static user interface with Github Pages (e.g., Jekyll) or Wordpress.
   iv. Costs: estimate from discussions with Map of Life developer Jeremy Malczyk
      1. Hire a web developer to create a user front-end: ~$5000 [one-time]
         +
      2. Website maintenance and hosting fees: ~$2000 / year [ongoing]
         +
      3. Stipend of content manager (ASM member): ~$5000 / year [ongoing]
         = ~$12,000 total for 1st year of scenario II

Respectfully submitted,
Nathan S. Upham, Chair
(nathan.upham@yale.edu)

APPENDIX I

Summary of additional key points that stem from email discussions with the Board of Directors and this Committee:

Suggestions

- Use models of analogous online efforts in other taxa:
  - Amphibian Species of the World (hosted by AMNH and run mainly by Darrel Frost, includes a running tally of changes/additions here)
  - AmphibiaWeb (hosted out of UC Berkeley, also has a ton of trait data and photos, tons of contributors, and an oversight committee)
  - Reptile Database (real-time list of taxonomic changes on a bare-bones website)
  - Several examples from birds (e.g., IOC World Bird Names, Avibase)

- Construct the database in a Wiki-style format that could be updated by any number of vetted contributors and overseen by a moderating body — would serve to democratize the process of contributing to a taxonomic resource and spread out the workload among more individuals.

- Mammal Images Library connections and links, both in the need for an updatable taxonomy to organize those images, and for the future possibility of per-species pages with photos and information.

- State Lists of mammals (a Board-funded initiative of the Public Education Committee) should interface with this effort.

- Equip the database with hyperlinks to papers that name or revise the taxonomy of any species (or genus, family, etc.). This might be papers in *J. Mammalogy*, *Mammalian Species*, or other journals such as *Zootaxa*.

- Use the online database as another way for the ASM to increase its visibility and attract / retain members moving forward into the next 100 years.

- Possible direct inclusion of the International Federation of Mammalogists (Ricardo Ojeda, President) — could initiate an attempt at "interagency" action for discussion at the next IMC meeting in Perth (2017).

- Consider inviting MSW4 authors to serve on an editorial board of per-clade experts to approve changes to the database.

- Consider linking the database structure to NCBI taxonomy and GenBank sequences that have been validated per valid species (addressing a major issue in genetic data integrity).

- Anticipate linking the database to phylogeny, in particular to the forthcoming species-level tree of Mammalia (GoLife and VertLife projects).

Concerns

- What can the ASM create that is manageable in scope and time demands, affordable, and not overly duplicative of existing efforts?

- Avoid overlap with existing databases such as IUCN and Animal Diversity Web, which focus on per-species pages of geographic, conservation, and natural history information.

- Limit obsolescence: EoL, Tolweb, Timetree, ITIS, GenBank's taxonomy, VertNet, every museum's database, and the public sites like Wikipedia and Wikispecies all suffer from the magnitude of what they are trying to accomplish, the rate at which things change, and limitations of their contributors.