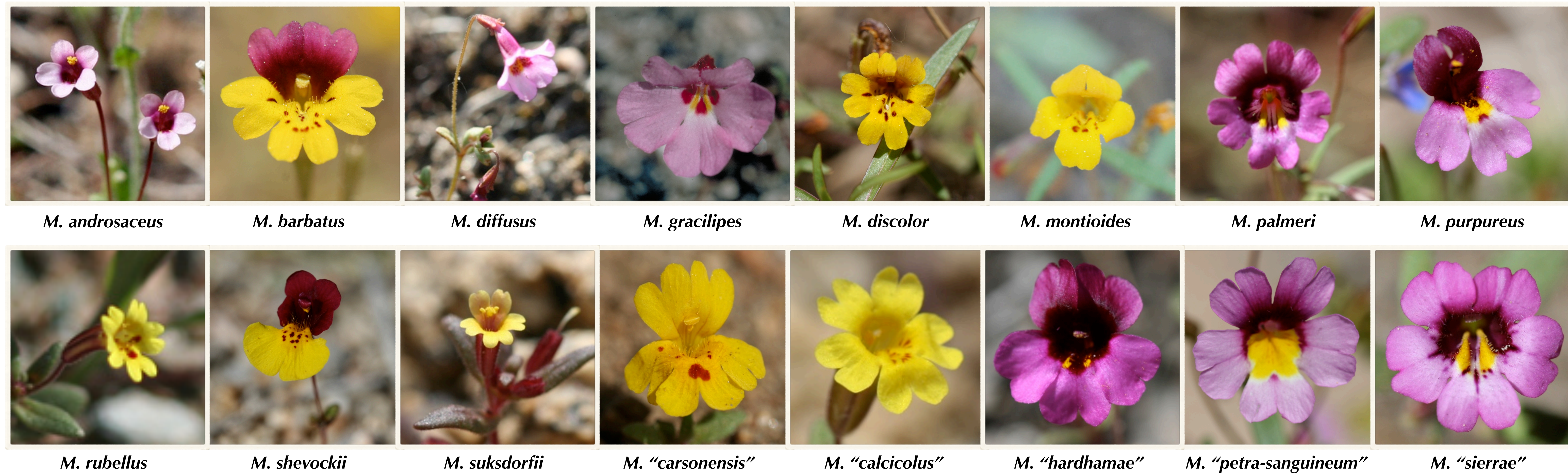


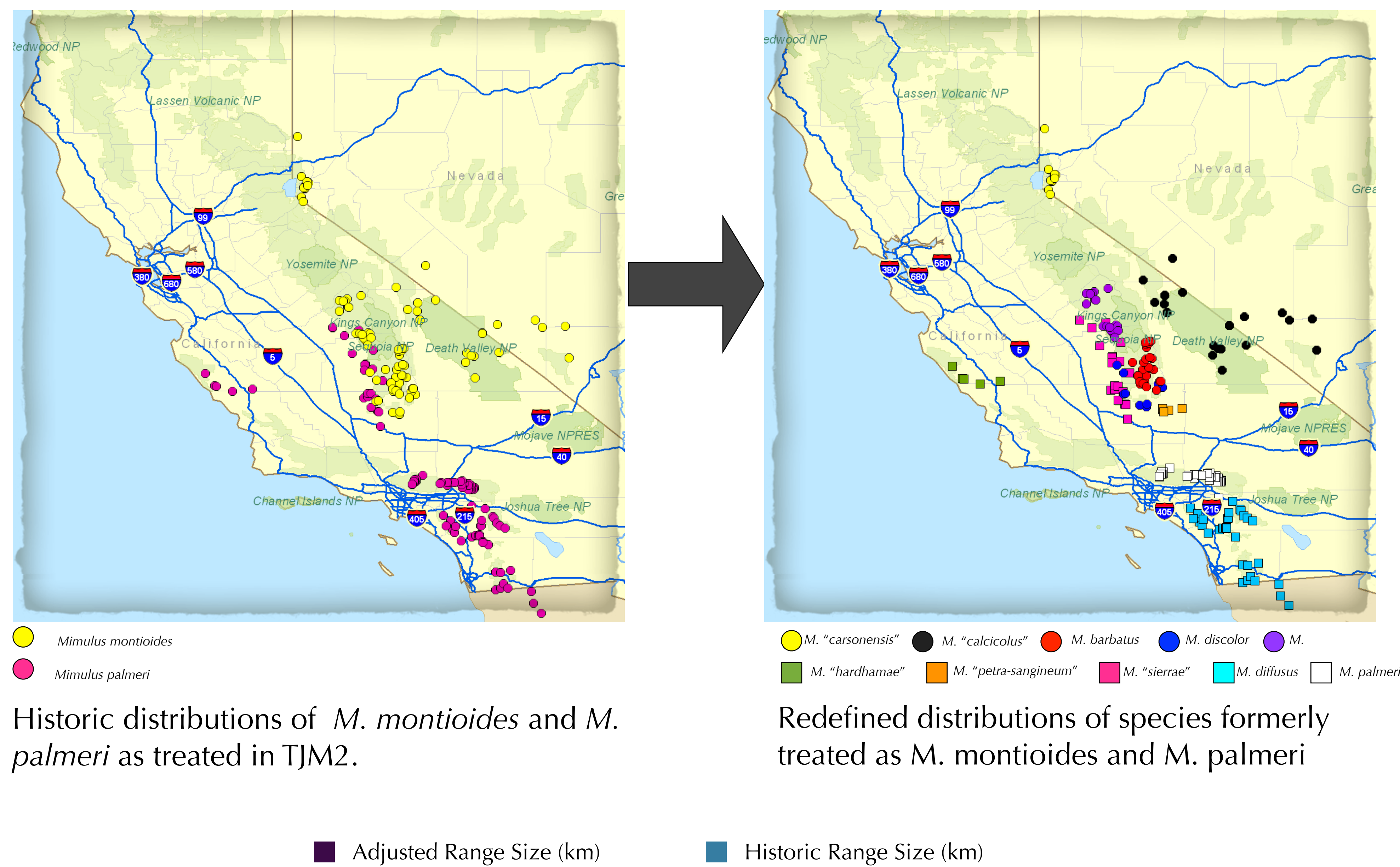
An overview of the *Mimulus palmeri* clade (Phrymaceae): Hidden species revealed

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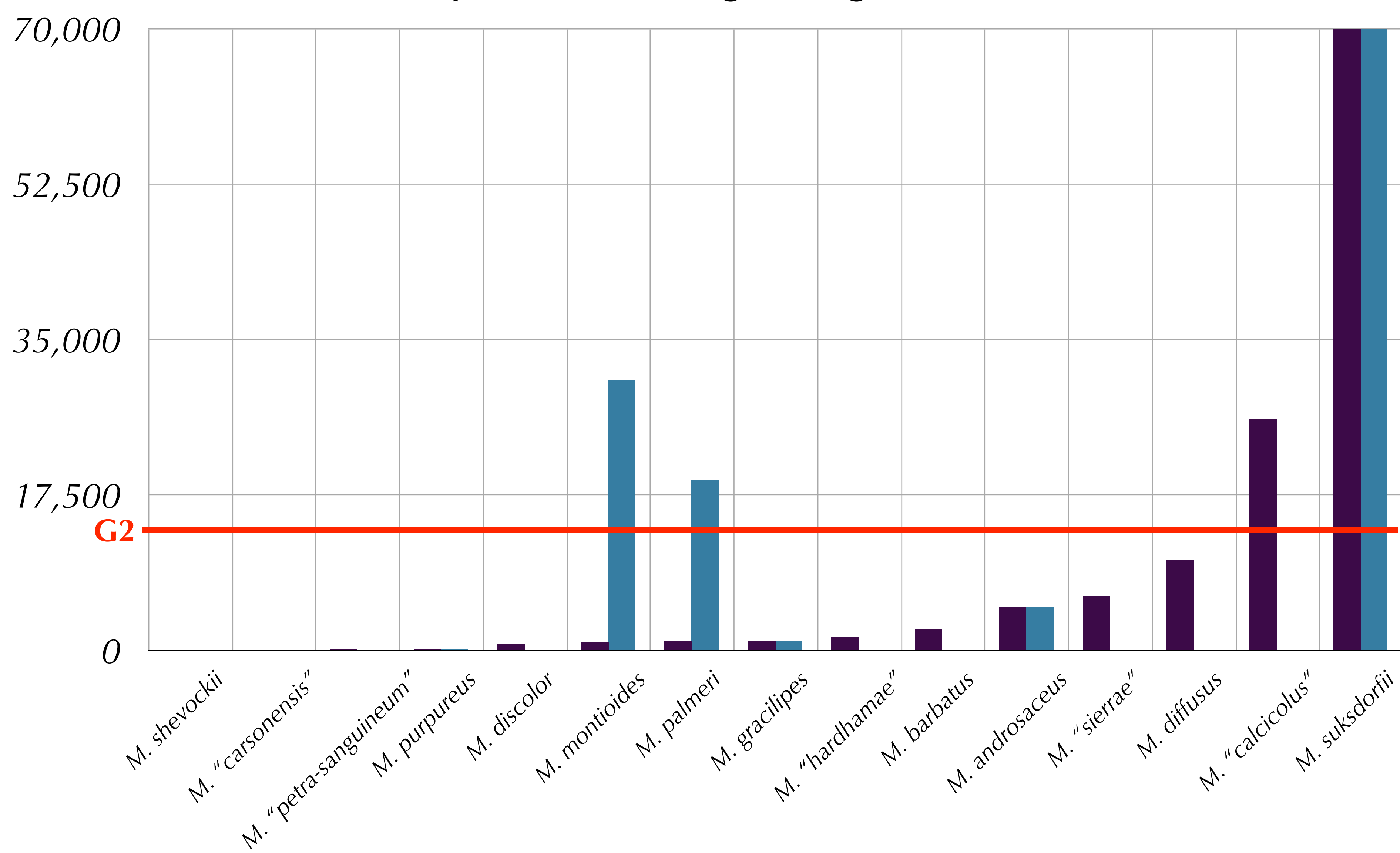
Species included in the study



Floral diversity of the *Mimulus palmeri* lineage (Phrymaceae). Names in quotes are manuscript names at present.



Mimulus palmeri lineage range size variation (km)



Introduction

At least 66 species of *Mimulus* are currently listed by U.S. government agencies and native plant societies as sensitive, rare, or endangered, making *Mimulus* a group of conservation concern. However, species delimitation and taxonomic relationships in *Mimulus* remain unclear, with 90 to 170 species recognized. In many recent regional treatments of the group, some previously recognized rare species with limited distributions have been lumped with more common species. Taxonomic confusion in *Mimulus* persists in part because diagnostic floral characters are often obscured when plants are pressed and dried for preservation as museum specimens. These easily obscured characters are informative in understanding species diversity and delimiting species boundaries within the genus. A primary objective of my dissertation research is to resolve taxonomic issues and identify taxa that are in need of conservation. Because previous taxonomic treatments in *Mimulus* have been based primarily on study of herbarium specimens, more field studies are needed. Over the course of my work I have conducted extensive field research and photographed and collected data and plant material from more than 60 populations. As a result I have identified five undescribed species of *Mimulus*.

Flower Color Polymorphisms



M. barbatus

M. 'calicolus'

M. discolor

Several examples of flower color polymorphism exist within the group. High variation in floral color has been in part responsible for some of the taxonomic confusion.

Future Work:

Previous taxonomic treatments in the genus *Mimulus* have been based primarily on morphological studies of herbarium specimens. I have found field observations and photography key to documenting and understanding diversity in the *Mimulus palmeri* lineage. However additional study is needed for several taxa. Therefore, I propose a study of morphology on living plants that have been grown in a common garden. A morphometric study of approximately 35 quantitative characters and five qualitative characters will be employed to examine morphological character variation and identify characters that demonstrate the best separation of species belonging to the *Mimulus montioides* and *Mimulus palmeri* species complexes.

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